This publication highlights priorities and strategies in meeting current and emerging needs for skills development in South Asia. The report is in line with the Asian Development Bank’s effort to support its developing member countries’ priorities toward global competitiveness, increased productivity, and inclusive growth. It also identifies key issues, constraints, and areas of improvement in making skills training more responsive to emerging labor market needs in South Asia as an important factor in sustaining high economic growth. The report was completed in 2012 under the Australian AID-supported Phase 1 of Subproject 11 (Innovative Strategies for Accelerated Human Resource Development) of RETA 6337 (Development Partnership Program for South Asia).

About the Asian Development Bank

ADB’s vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region’s many successes, it remains home to approximately two-thirds of the world’s poor: 1.6 billion people who live on less than $2 a day, with 733 million struggling on less than $1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.
INNOVATIVE STRATEGIES IN

Higher Education

for Accelerated Human Resource Development in South Asia

January 2014
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Skilled human resources are one of the major binding constraints to sustain high economic growth in South Asia. It is therefore not surprising that the findings from the study show that South Asian countries need to invest significantly in human capital to reap the benefits arising from the limited window of demographic dividend available in the next 3–4 decades and to move up the value chain. The findings are a reminder that the countries' competitiveness and ability to move up the value chain in the longer term will come from innovation, knowledge, and skills, and not from cheap labor or natural resources, which tend to be short-lived. From the current low skills equilibrium linked to low global competitiveness index and human development index, the South Asian countries have a historical opportunity to leapfrog through strategic investment in human capital anchored on information and communication technology.

*Asia 2050*, published in 2011 by the Asian Development Bank, presents two scenarios: (i) the “Asian Century” with sustained high economic growth leading to doubling of Asia’s share of global gross domestic product (GDP) from around 25% currently to just over 50% by 2050; and (ii) the “middle income trap” for several countries, leading to much lower growth and GDP. The initial heavy reliance of the East Asian tiger economies on export-led growth, anchored on early investment in basic education, yielded the necessary skills to take advantage of short-lived cheap labor to build the foundation at the beginning of their journey to prosperity. They were able to quickly expand their investment in secondary education, technical and vocational education and training (TVET), and subsequently in higher education to supply skilled workers to sustain high economic growth and gradual transition to a knowledge economy. The rest is history.

A 2012 McKinsey report, *The World at Work*, noted that South Asian countries, along with some developing economies in Africa, will contribute 60% of the labor force required by the global economy by 2030 due to demographic dividend arising from a growing young population in these developing economies and shrinking working-age populations in advanced economies due to aging. The same report also noted that developing economies, including in South Asia, will face a surplus of low-skilled workers, while there will be a shortage of medium and highly skilled workers.

This regional report, prepared with financial support from Australian Aid, is based on eight country-level reports on TVET and higher education. The report has sought to identify priorities in TVET and higher education on how to meet the emerging needs for skilling and/or upskilling a large number of young people to turn them into a productive and competitive force in both the domestic and global labor markets.

We will continue to learn more about emerging opportunities and seek viable options to support South Asian developing member countries in their efforts to improve the skills and knowledge of their populations to become more productive and competitive, leading to inclusive and sustainable growth.

Juan Miranda  
Director General  
South Asia Department  
Asian Development Bank
The report highlights a number of strategic areas for further dialogue and improvements. In technical and vocational education and training (TVET), it reconfirms that the system remains fragmented, with many ministries involved in each country in providing TVET services although there has been progress in developing and approving national skills development policies, setting up apex bodies to coordinate TVET, and moving toward a unified quality assurance framework. The report notes that the overall provision remains marginal against the actual labor market needs; private sector and employer involvement is limited, as are mechanisms to promote public–private partnerships; and funding remains only a fraction of the projected needs for TVET with an absence of sustainable financing mechanisms such as levies or tax incentives exercised by over 65 countries in the world.

The report emphasizes three major areas to elevate the importance of skills development to reap the benefits offered by the demographic dividend and to move up the value chain: establishing and/or restructuring existing institutions for effective coordination and institutional autonomy to flexibly respond to emerging labor market needs; establishing a single, unified, and sustainable funding window to expand performance-based quality skills training programs to meet the huge needs for training many more people for domestic and overseas labor; and enhancing quality assurance to meet national and international standards, including preparing training packages, training trainers, and building a robust monitoring system.

In higher education, the report highlights the global trends during the past 20 years: elite to mass higher education, emergence of private higher education, increased reliance on tuition, autonomy with accountability, and emergence of special types of higher education. It also highlights the need to establish new institutions for quality assurance, to conduct high-quality research, and to develop specialized institutions. As emerging new practices, the report notes strategic planning, income generation, budget allocations through funding formulas, a focus on applied research, and public–private partnerships. It also points out shortcomings, such as weak quality assurance systems, lack of importance given to applied research, weak autonomy and accountability, and existence of only a few specialized institutions.

Noting that cheap labor or abundant resources are no longer a comparative advantage, it recognizes productivity gains driven by innovation as the real advantage. Highlighting the trend toward global integration, creation of a global labor market, and move toward a knowledge economy and information society, the report calls for constant innovation to generate new knowledge and to apply such knowledge. It underscores the need for a flagship university in each country that would serve as the standard for its move toward having a world-class higher education system offering relevant and quality undergraduate and postgraduate programs. The report recommends depoliticizing higher education institutions, providing institutions more autonomy with increased accountability, diversifying and expanding resources for higher education, and defining a national higher education strategy.

This publication is one of the two-part regional report on TVET and higher education. It presents the findings of the regional technical assistance project Development Partnership Program for South Asia—Subproject 11: Innovative Strategies for Accelerated Human Resource Development in South Asia. Three country-level
workshops were held during the first week of December 2012 in Sri Lanka (1 December), Nepal (3 December), and Bangladesh (5 December) to validate the findings and to seek consensus among some of the key stakeholders around major recommendations and next steps.

The findings emanate from country-level analyses supported by national consultants in each of the three focus countries—Bangladesh (Md. Mohiuzzaman for TVET and M A Mannan for higher education), Nepal (Devi Dahal for TVET and Hridaya Bajracharya for higher education), and Sri Lanka (Sunil Chandrasiri for TVET and higher education with initial inputs from Dayantha Wijeyesekara on TVET)—as well as desk reviews of Bhutan and the Maldives by the national coordinator, Nicholas Tenazas, based in Manila. The regional reports were prepared by Richard Johanson (TVET) and William Saint (higher education). The reports also benefited from comments from David Ablett, Brian Chin, Sofia Shakil, Gi-Soon Song, and Karina Veal from the South Asia Human and Social Development Division (SAHS); Rudi Van Dael from the Bangladesh Resident Mission; Smita Gyawali from the Nepal Resident Mission; and Nelun Gunasekera and K.M. Tilakratne from the Sri Lanka Resident Mission. Brajesh Panth, lead education specialist in SAHS, managed and coordinated the studies with support from Rhona B. Caoli-Rodriguez. He also gave presentations at the country-level workshops held in Bangladesh, Nepal, and Sri Lanka in December 2012 and at the Asian Development Bank in January 2013. Criselda Rufino and Erwin Salaveria provided valuable administrative and logistical support.

Sungsup Ra
Director, South Asia Human and Social Development Division
South Asia Department
Asian Development Bank
Abbreviations

ADB  Asian Development Bank
AHELO  Assessment of Higher Education Learning Outcomes
PRC  People’s Republic of China
EDP  external degree program
GDP  gross domestic product
GER  gross enrollment ratio
HDI  human development index
ICT  information and communication technologies
Lao PDR  Lao People’s Democratic Republic
OECD  Organisation for Economic Co-operation and Development
R&D  research and development
STE  science, technology, and engineering
TVET  technical and vocational education
UIL  university–industry link
UNDP  United Nations Development Programme
UNESCO  United Nations Educational, Scientific and Cultural Organization

Currency Equivalents

as of 24 September 2013

Bangladesh:  $1.00 = 78 taka
Nepal:  $1.00 = 100 rupees
Sri Lanka:  $1.00 = 132 rupees
How to Shape Higher Education for Global Competitiveness in South Asia

**Depoliticize higher education systems, institutions, and campus life.** University life is politicized to an unacceptable degree in all three countries. A highly politicized campus creates a dysfunctional university, which stands a high probability of sending dysfunctional graduates into the world of work.

**Devise a long-term strategy for higher education to steer investments and decision making.** The strategy should clearly spell out the country's vision, expectations, and priorities as a guide for medium-term action plans for the development of relevant, good-quality higher education; and should complement this with a realistic and sustainable scheme for financing these plans.

**Choose one institution in each country and develop it into a flagship research university over the coming decade.** Concentrate resources disproportionately in this institution. Establish strong postgraduate and research programs. Pay academic staff internationally competitive salaries. Recruit the best students.

**Give higher education institutions greater autonomy of action, combined with increased accountability for performance at all levels.** Autonomy is necessary to enable institutions to innovate and adapt in response to rapidly changing external conditions. Accountability is required to ensure that autonomous decision making is responsive to government priorities and societal needs.

**Find ways to diversify and expand the revenue available to underwrite improvements that must be made.** Gains do not come without costs. Expanded, more relevant, and higher-quality education will necessitate additional funding, most likely from private as well as public sources. Increase overall public investment in higher education to world benchmarks. Introduce a simple funding formula for allocating government funds to universities that is based on enrollments and perhaps one small performance variable. Experiment with competitive funds and performance incentives.

**Pay more explicit attention to the relevance of higher education.** Public and private institutions should reposition their higher education offerings to mediate the tension among the individual expectations of university students, labor market opportunities, and the human resource needs of national economic development objectives. Public–private partnerships and university–industry research collaboration could be usefully explored. Employ competitive funds to inject greater relevance into teaching and learning.

**Establish reliable standards of quality within public and private higher education.** Set up a credible quality assurance mechanism. Invest strongly in upgrading the qualifications of academic staff across the entire higher education system. Introduce career progression pathways to ensure that a teaching career in higher education becomes appealing and attracts talented people on a long-term basis. Seek excellence in a few academic programs of high relevance to economic priorities. Use competitive, merit-based admissions.

**Invest significantly in information and communication technologies infrastructure that ties together regional populations, university students, institutions of higher education, research centers, and public service agencies into a national knowledge sharing, e-learning, and innovation network.** Experiment with e-learning and develop appropriate local programs. Use computer-based instruction to deliver self-paced learning, problem-solving pedagogy, and global information resources.

**Prepare, propose, and approve an umbrella higher education law that formalizes as many of the modifications suggested above as possible.** Higher education legislation is conspicuously outdated in Bangladesh, Nepal, and Sri Lanka. Mechanisms for governance, management, financing, and quality assurance would benefit from reforms in all three countries.
Executive Summary

HIGHER EDUCATION IS A KEY NATIONAL ASSET FOR IMPROVING ECONOMIC COMPETITIVENESS

Knowledge has become the heart and soul of development in the 21st century. Knowledge fuels economic growth in the knowledge economy. Comparative advantages in national institutional capacities to access, assess, adapt, and adopt knowledge now drive the innovation that leads to productivity gains and economic growth. Growth is no longer based primarily on comparative advantages in labor or natural resources. Today, the knowledge economy and the information society are the basis for future development. In this arena, higher education is widely recognized as a key national asset that improves competitiveness.

For this reason, governments are placing greater emphasis on investments in higher education. The reasons for this are compelling. First, evidence affirms that countries that invest heavily in higher education benefit economically and socially. Second, econometric tests show a causal relationship linking the level of knowledge accumulation to future economic growth. Third, quality higher education is essential for economies that want to move up the value chain in their production processes. Fourth, recent successes in expanding primary and secondary education enrollments are fueling a rising demand for access to postsecondary opportunities. Fifth, Organisation for Economic Co-operation and Development (OECD) countries provide considerable evidence that research and development performed by universities and the public sector has a positive effect on overall productivity and growth. Sixth, quality higher education produces better primary and secondary school teachers, thereby contributing to the quality of the education system and ultimately to excellence in higher education, which in turn generates a more highly skilled labor force.

In this context, the question currently confronting policy makers is not so much whether to invest in higher education, but rather how best to invest, how much to invest, and how to finance these investments. Unfortunately, many developing countries approach this challenge from a disadvantaged position, given that higher education was underappreciated and underfunded for almost 2 decades due to strong government and donor emphases on basic education.

In the global competition for excellence in higher education, current development strategies often include institutional diversification; science and technology promotion; research capacity-building; expansion of the use of information and communication technology (ICT) for teaching, learning, and management; lifelong learning; and public–private partnerships. Financing strategies tend to focus on private provision; identifying sustainable levels for tuition fees; various financial cost-sharing mechanisms such as student loans, income-contingent loans, and education bonds; institutional income generation; earmarked taxes; and sports lottery earnings. Many of these topics are explored in this report from a South Asian perspective, with special attention to Bangladesh, Nepal, and Sri Lanka.
SOUTH ASIAN ECONOMIES LACK VITAL ELEMENTS FOR COMPETITIVENESS

A substantial lack of competitiveness characterizes Bangladesh and especially Nepal, which rank among the bottom 25% of countries on the Global Competitiveness Scale developed by the World Economic Forum. Sri Lanka does much better, scoring slightly above the mean and gaining on countries such as India and Viet Nam. Malaysia and Thailand are far ahead, ranking in the top 25%, and may offer instructive examples to their neighbors.

The annual rankings of countries on the United Nations Development Programme’s human development index (HDI) registered notable progress throughout the world over the past 2 decades. East Asia and South Asia both recorded above-average advances. At the national level, Bangladesh displayed remarkable progress, increasing its HDI score by 50%. Nepal continued its good showing, building on the foundation of its substantial achievements in the 1970s and 1980s. Sri Lanka moved forward more slowly, although its rate was similar to that of the OECD countries. However, in spite of their laudable achievements, Bangladesh and Nepal are still slower in narrowing the gaps with their neighbors.

Within the world community, South Asia is some distance removed from international frontiers in education, innovation, and the use of ICT. Regional illiteracy rates are high and enrollment ratios for secondary and tertiary education are low. High-skilled workers make up only a small percentage of the labor force and are highly prone to emigration. Although the region’s economic growth has recently been higher than the world average, it has been offset in part by comparatively higher rates of population growth. With a population that is predominantly rural, poor, and dependent on agriculture, South Asia has a more limited capacity for manufacturing and services within its economy and a smaller urban population than East Asia.

STATE OF HIGHER EDUCATION IN SOUTH ASIA

Bangladesh: Accountability for Performance Is Essential for Improving Higher Education

The higher education system in Bangladesh is large, unwieldy, and quite traditional. It enrolls nearly 2 million students to produce a gross enrollment ratio (GER) of 14%.1 The system encompasses 34 public universities, 54 private universities, an open university, and 1,454 public and private degree colleges affiliated with the far-flung National University. During the past decade, public higher education grew at a reasonable annual rate of 4%, while private higher education surged 22% annually to enroll 53% of all students. A range of private provision models exists, and some of them possess recognized excellence.

The University Grants Commission strictly controls curricula in the public and private universities. The National University is an administrative structure that defines standard curricula, administers uniform student exams, and awards degrees to 1.1 million university students a year. As a result, course structure and content are relatively homogenous across all higher education institutions. These procedures—and the regulatory mentality that surrounds them—discourage initiative and impede innovation. Moreover, no national quality assurance agency exists to monitor the quality of the education provided amid the rapid proliferation of private institutions and highly politicized public universities.

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1 The GER is the total enrollment in a specific level of education, such as higher education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school year. It includes net enrollment ratio by indicating the extent of over-aged and under-aged enrollment. It is widely used to show the general level of participation in a given level of education (United Nations Educational, Scientific and Cultural Organization [UNESCO] Institute of Statistics 2009).
Politics seems to pervade all aspects of university life. Academic staff, nonacademic staff, and student unions regularly disrupt the academic calendar and block most attempts at reform. These disruptions also create “session jams” in which new student intakes must be postponed for as long as 3 years.

The higher education system’s traditional structures and restrictive procedures limit its relevance to national development needs. The government’s policy framework for higher education is not well developed and is largely out of date. The principal reference is the Strategic Plan for Higher Education in Bangladesh: 2006–2026, now nearly 6 years old, which remains mostly unimplemented. Some 63% of enrollments are concentrated in arts, social sciences, and business studies. Strikingly, half of all private university students pursue business studies. Although strong labor market demand for engineers is reported, only 7% of students study engineering. Very little research is undertaken, since only 0.2% of the higher education budget is spent on this activity.

The state invests a relatively low percentage in education—about 2.2% of gross domestic product (GDP). It gives even less priority to higher education, assigning it only 11% of the education sector recurrent budget. In the public universities, expenditure per student is quite low at $664, and even lower in the publicly funded colleges and Open University. Highly charged political dynamics on campus preclude the possibility of introducing student tuition fees any time in the foreseeable future to provide much-needed financing to expand high-quality higher education.

Existing methods for determining budget allocations to the public universities are neither rational nor transparent. Budgets are determined on the basis of historical precedent as modified by negotiation and pressure from the vice-chancellors. Thus, budgeting has no strategic purpose, and university strategic planning is not generally practiced.

In its present form, university governance is as much a mechanism for control as for leadership. University vice-chancellors are appointed by the President or the Prime Minister, and their loyalties tend to lie with these officials before university stakeholders. Most members of the University Grants Commission are appointed by the government either directly or indirectly in the case of the three vice-chancellors and three ministry representatives who also serve on the commission. University councils, however, draw one-quarter of their members from government appointees and three-quarters from internal constituencies such as staff and students. Consequently, the end users and consumers of university outputs (i.e., graduates and research) are weakly represented in the governance structures.

The main problem confronting Bangladeshi higher education seems to be a lack of accountability for performance due to pervasive politicization of the system. This exists at the level of university leaders and officers as well as at the level of university teaching staff and students. Until this problem is dealt with, quality and relevance are unlikely to improve.

**Nepal: Higher Education Must Be Focused More Explicitly on the Needs of National Development**

The development of higher education in Nepal is being stunted by government indifference, politicization of university appointments and campus life, and a rigid government bureaucracy that stifles innovation. Most of the country’s higher education system consists of a single higher education institution, Tribhuvan University, which is over 50 years old and enrolls 159,394 students, or 90% of the total, and comprises a seemingly unmanageable number of 60 branch campuses and 826 affiliated private and community-managed colleges. There are eight other much smaller universities. One is a well-regarded nonprofit, nongovernment institution. Four others are nominally public, but cover a significant portion of their running costs through student tuition fees. The remaining three are quite new and are located in the underserved western part of the country.
In terms of Nepal’s national development strategy, higher education remains a poorly utilized resource. A higher education GER of 10% is probably too low to support the gains in economic competitiveness necessary to raise Nepal’s performance among the community of nations. National development priorities highlight agriculture, hydropower, and tourism; but university graduates in agriculture, animal science, and forestry represent only 1% of total graduates. Electrical engineers are almost as scarce, and tourism programs are in their infancy. Overall, enrollments in science, engineering, agriculture, and medicine account for less than 15% of the total.

The government’s lack of attention to higher education is manifested in a steadily declining share of the education budget. The allocation for higher education is currently 13%, representing expenditure per public university student of just $233, possibly among the lowest in the world. This is due in part to the absence of a national policy or strategy for higher education, and the government’s reluctance to confront the politically influenced student and staff trade unions, which tend to block any effort at higher education reform. As a result, the obstacles to modernizing higher education and reorienting it to the needs of the knowledge economy are daunting and unlikely to be overcome without a change in government’s stance in relation to the role of higher education in the nation’s future development.

Sri Lanka: Developing Good-Quality Postgraduate Programs Is Crucial for Raising the Quality and Relevance of Higher Education

Sri Lanka is aggressively pursuing a 20-year national development strategy that assigns an important role to higher education for turning out skilled human resources, problem-solving research, and technical support for industry. Public universities have crafted strategic plans that seek to advance these goals. If all higher education students are considered, the country’s GER is 21%. However, many of these (73%) are external degree program students who pursue formal qualifications as time and interest permit. Thus, 10%–12% may be a more realistic GER. This level cannot support the nation’s current economic aspirations.

The higher education system is vertically and horizontally differentiated, but articulation among the various institutions, including student mobility among them, is weak. Enrollment has been growing at 8% annually, but almost all of the expansion is concentrated in public institutions, leaving private higher education underdeveloped. Competition for admission is strong and graduation rates are high at about 70%–80%, but graduate unemployment has been a serious problem and underscores the insufficient relevance of curricula and teaching. There is widespread awareness of the need for a quality assurance and accreditation agency, and a legislative bill to create one is pending in Parliament.

System management can be daunting. Sri Lanka is one of the few countries in the world with both a ministry of higher education and a university grants commission (i.e., a buffer body); however, these entities normally play similar roles. Government agencies with overlapping mandates create inefficiency and make it hard to get things done. Institutional autonomy is also circumscribed as both the ministry and the commission are involved in (sometimes overlapping) decision making on matters that in other countries are often delegated to the universities. This creates a rather centralized administrative system. Participation in university governance by stakeholders from outside the higher education system is also limited, thus eliminating a potential source of pressure for greater curriculum relevance.

Postgraduate programs seem to be weak and research capacity is not well developed. All postgraduate students reportedly study part time because they are in full-time employment. The minimum time and effort devoted to obtaining a postgraduate degree make it unlikely that any substantive doctoral dissertation research is taking place. As a result, poor-quality postgraduate programs may drag down efforts to produce quality academic staff to raise education quality and build research capacity in higher education.
Sri Lanka spends less of its GDP on education (2.8%) than many other countries and also allocates a smaller share of its education budget (13%) to higher education. Annual expenditure per public university student is about $1,700. Institutional budgets are historically determined and individually negotiated. University education is essentially tuition-free, and this seems unlikely to change any time soon. Academic staff salary levels are comparatively low. This has several repercussions: (i) the best students seek to leave the country; (ii) it is difficult to retain staff; (iii) only less-prepared students can be recruited into academic positions; and (iv) academic staff must seek secondary sources of income, which prevents them from undertaking research.

From a policy perspective, the government’s main priority appears to be equal access to higher education. It has introduced district quotas for university intakes and has set up provincial universities. However, district quotas contribute to education quality problems by bringing in less-prepared students, and setting up provincial universities is challenging due to the lack of infrastructure, the difficulty of attracting and retaining good academic staff, and insufficient financial resources. Consequently, success in expanding access is likely to weaken education quality unless explicit safeguards are put in place.

ELEMENTS OF A STRATEGIC RESPONSE

For Bangladesh, Nepal, and Sri Lanka to advance in the development of their higher education systems, four tasks should be carried out to lay the foundation for subsequent reforms.

First, higher education systems, institutions, and campus life must be significantly depoliticized. University life has become highly politicized in all three countries. Wings of national political parties use coercion and even brutality to acquire influence on campuses. These activities waste time and considerable financial resources through strikes, boycotts, and demonstrations. Such disruptions wreak havoc on the academic calendar and occasionally destroy property while causing personal injuries and even loss of life. They disrupt learning and obstruct teaching, thereby degrading the quality of instruction. They interfere with accepted procedures for appointing academic staff, determining student admissions, and conducting other university business by exerting pressure to set aside merit criteria and replace them with favoritism. They routinely block the introduction of desirable reforms. Most importantly, they subvert essential values that should be at the core of a student’s university experience (i.e., competition based on merit, transcendence of reason, openness to critique, right to an opinion, legitimacy of debate, willingness to recognize multiple viewpoints, value of compromise, and respect for human rights). When these values are restricted, university education cannot fulfill its purpose.

Second, a medium-term national strategy for higher education, together with a rolling action plan, must be devised and regularly updated. A national higher education strategy not only provides direction to higher education development, but also sets priorities for effort and resource allocation. Ideally, it complements and advances the national economic development or poverty reduction strategy by linking graduate output and research to its declared priorities. Furthermore, if the development of such a strategy employs a process of stakeholder consultation, this dialogue can serve to educate various interest groups regarding higher education possibilities and shortcomings, and to nurture areas of consensus that will allow agreed-upon reforms to begin with less contentiousness. In turn, the national strategy serves as a frame of reference for the individual institutional development strategies that universities will need for their own guidance. As university performance is measured against the goals set in their institutional strategies, an important instrument for accountability is created. For these reasons, a national higher education strategy constitutes the foundation for modernization.

Third, greater autonomy of action, combined with increased accountability for performance at all levels, needs to be accorded to institutions of higher education. All available evidence suggests that universities in these
three countries could improve their performance considerably if they were delegated greater procedural and administrative autonomy, especially if this were done in the context of a national higher education strategy and university depoliticization. An analysis of world-class universities points to governance as one of three primary determinants of university excellence. The Shanghai Jiao Tong University international ranking of universities determined that universities with higher rankings were characterized by greater autonomy. A large cross-country assessment concluded that education spending is highly sensitive to governance; funds are only half as effective in improving education outcomes in poorly governed institutions. A World Bank analysis noted “a strong international trend to increasing the autonomy of public institutions by making them independent self-governing organisations.” University autonomy in Bangladesh, Nepal, and Sri Lanka is currently some distance removed from prevailing international practice.

Finally, ways must be found to expand the funds available to underwrite the improvements. Gains do not come without costs. If the three countries are to raise their higher education GER over the coming decade, revitalize research, and improve education quality, they will need significant additional resources. Numerous options exist for increasing and diversifying university revenues. The introduction of student fees would clearly generate the greatest contribution, given that none of the three countries currently charges more than symbolic tuition fees. Options include (i) raising the share of GDP allocated to the education sector (Bangladesh and Sri Lanka); (ii) expanding private higher education (Sri Lanka); and (iii) increasing the portion of the education sector budget allocated to higher education, encouraging public–private partnerships, creating tax incentives for philanthropic donations to universities, introducing a special earmarked tax for education, and setting up a national sports lottery whose proceeds would underwrite education (all three countries).

If—and only if—these four tasks can be accomplished, the three countries should then consider more specific actions that would shape their higher education systems to support national competitiveness in the global economy. To transform higher education in each country, 10 principal actions needed, although many more could be added. Among these actions, 4 are common actions and 6 are particular for each country.

### Actions for all three countries:

- Increase overall public investment in higher education and introduce a simple funding formula for allocating government funds to universities that is based on enrollments and perhaps one small performance variable. Experiment with competitive funds and performance incentives.
- Choose one institution and develop it into a flagship research university over the coming decade. Strengthen the quality and relevance of its postgraduate programs and ensure that they contain strong research components, ideally in collaboration with well-regarded partner universities within Asia. Pay internationally competitive salaries and recruit the best students.
- Define a national research strategy and set up a dedicated funding agency to implement it through various competitive grant programs for research teams, supported by training programs in research design, scientific methods, proposal writing, and research management.
- Prepare, propose, and approve an umbrella higher education law that formalizes as many of the above modifications as possible.

### Actions for Bangladesh

- Restructure university councils so that they (i) have no more than 15 members, (ii) contain a majority of members from beyond government and the university community, (iii) elect their own chair, and (iv) are empowered to choose and appoint their vice-chancellor.
- Restructure the National University into five or six regional universities with divergent functions, while delinking academic staff salaries from the Public Service Commission to provide a measure of quality assurance.
Establish a professionally trained quality assurance and accreditation agency with a mandate to accredit all public and private higher education institutions every 5 years.

Enhance the quality of higher education teaching and learning, and then expand the Bangladesh Open University in order to increase access at manageable cost.

Realign university admissions so that the numbers of future graduates in various fields are more consistent with expected labor market needs.

In collaboration with a private university that possesses a good reputation in business and management studies, establish a national management training program for public and private university officers and deans.

**Actions for Nepal**

- Restructure Tribhuvan University into six regional universities aligned with a new federal structure of government (if such is adopted).
- Expand public university intakes and enrollments in the fields of engineering, agriculture, health sciences, and sciences while decreasing those in arts, humanities, social sciences (except economics), and business studies. For subjects where enrollment is decreased, demand can be met by private institutions.
- Ensure that the recently formed Quality Assurance and Accreditation Council becomes a professionally competent organization, and that accreditation reviews of all institutions of higher education become obligatory rather than voluntary.
- Set up a national open university based primarily on online course delivery and ensure that its staff are well trained in distance education methods.
- Establish an interest-subsidy and risk-guarantee fund to enable commercial banks to offer affordable investment loans to community and private colleges to improve and modernize their facilities and equipment.
- Expand the existing pilot program of means-tested scholarships and grants for economically disadvantaged students.

**Actions for Sri Lanka**

- Establish a professionally trained quality assurance and accreditation agency with a mandate to accredit all public and private higher education institutions every 5 years.
- Strengthen and expand the Sri Lanka Open University, with particular focus on reaching out to underserved geographic areas and absorbing students from the ineffective external degree program that the government reportedly intends to close.
- Strengthen and expand English-medium teaching in secondary education.
- Improve academic salary levels, differentiate them by location, and require full-time dedication to teaching and research.
- Strengthen postgraduate programs, especially in engineering and technology, through “sandwich programs” with well-regarded Asian universities. Require enrollment in doctoral programs to be full time.
- Building on incipient experience with university–industry links, use education conferences, good practice seminars, seed money, and competitive funds to underwrite experimental partnerships aimed at creating such links.

Although it would be ideal to implement all of these actions in each case, the practical reality is that capacity constraints, lack of leadership, economic limitations, and/or political reservations will inevitably constrain what can be achieved. Even so, each accomplishment will be a forward step that reduces the possibility of falling back.
Knowledge has become the heart and soul of development in the 21st century. Knowledge fuels economic growth in the knowledge economy. Comparative advantages in national institutional capacities to access, assess, adapt, and adopt knowledge now drive the innovation that leads to productivity gains and economic growth (World Bank 2012, 5, 12–13, 16). Growth is no longer based primarily on comparative advantages in labor or natural resources. Today the knowledge economy and the information society are the bases for future development.

A knowledge economy rests on four pillars: (i) a skilled population that can create, share, and use knowledge effectively; (ii) policy frameworks and institutional regimes (e.g., economic, trade, finance, governance, and legal) that provide incentives for the efficient use of knowledge and for the flourishing of entrepreneurship; (iii) a modern information infrastructure that facilitates the communication, dissemination, and processing of information and knowledge; and (iv) an effective innovation system composed of firms, research centers, universities, consultants, interest groups, and other organizations that can tap into the growing stock of global knowledge, assess it, and adapt it to local needs (World Bank 2007a, 24). Higher education is vital to all four of these pillars, but its role is central in generating a good human resource base and developing an effective national innovation system.

Nations across the globe are aggressively seeking to construct national knowledge economies to maintain and expand their economic competitiveness. For example, Tunisia is doubling public research and development (R&D) investments, launching a large-scale skills-upgrading program for enterprises, and establishing 10 specialized technopoles. Morocco is investing $1.7 billion in a similar pursuit (Sawahel 2009). Other countries publicly committed to knowledge-intensive strategies for growth include Australia, Chile, the People’s Republic of China (PRC), Costa Rica, Denmark, Finland, India, Malaysia, Norway, Sweden, and Viet Nam. The race to foster capacities for technological innovation in the 21st century has clearly begun.

As knowledge has become paramount, the nature of competitiveness has changed. In an increasingly interconnected global economy, Darwin’s theory of the evolution of species may also be relevant for nations and their institutions: It is not the strongest or even the smartest that survive, but the most adaptable. In this context, new elements that bolster adaptability have assumed importance, including capacities to (i) rapidly redeploy resources to capture new opportunities; (ii) ensure the quality, skills, and flexibility of the labor force; (iii) keep up with rapidly changing technological and organizational advances; (iv) make effective use of information technologies to reduce transaction costs and enhance abilities to respond to opportunities or threats; and (v) move parts of the economy to higher positions on the value chain of production and distribution (Dahlman 2007, 113).
The internet has been a major catalyst for the global knowledge economy. Since 2000, the number of internet users in the world has surged fivefold.1 As connectivity expands, internet users anywhere can overcome the obstacles of time and distance to access much of the world’s current stock of information. This opens the door instantly and equally to new ideas, new markets, and new forms of collaboration. Multiplying sevenfold, the growth of internet usage in Asia since 2000 has exceeded the worldwide average rate of expansion. Some 27.5% of Asia’s population now enjoys internet connectivity. At the level of individual countries, however, the picture is remarkably diverse. While Malaysia (60.7%) and the PRC (40.1%) are among those with the largest shares of their populations linked to the internet, Bhutan, Pakistan and Viet Nam are among the countries that catch up fastest, multiplying their numbers of internet users more than a hundredfold during the past decade. At the other extreme, internet access in Bangladesh (5.0%), Cambodia (4.4%), and Nepal (9.0%) is still severely limited. If this situation continues, these three countries may find themselves shut out of the global knowledge economy.

As societies, economies, and the institutions that support them learn to be more flexible and adept in meeting the challenges of adaptation, the pace of change accelerates. Higher education provides a good example of this phenomenon. Not long ago, universities were among the most change-resistant institutions on earth. This is no longer true. Universities (and higher education) have changed more in the last 10 years than they have in all of their previous history, and this process gives every indication of continuing into the future. Major changes include

- rapid enrollment increases, prompting a system shift from elite to mass education;
- substantial growth in the private provision of higher education;
- increasing reliance on tuition fees to complement government allocations in meeting the increased costs of larger higher education systems;
- governance structures that incorporate multiple stakeholders;
- corporate rather than collegial management;
- greater emphasis on accountability in terms of the relevance of university outputs;
- rapid internationalization of staff, students, curricula, and research;
- new types of universities—virtual, corporate, franchised, and offshore;
- an increase in the university’s role as a market actor;
- growing integration of information and communication technology (ICT) into teaching, learning, research, and outreach;
- a global labor market for academic staff and researchers; and
- the rise of transdisciplinary and application-oriented research and scientific networks.2

Everywhere—including in higher education—talk of innovation abounds. The search for best practices is constant. Incentives to foster innovation permeate personnel policies and funding formulas. Innovation is now a major thrust of corporate and university research.3 Why all this fervor concerning innovation?

Innovation offers nations the opportunity for success on the international stage. The links among innovation, technological change, and economic growth are well established (ADB 2008, 54). New forms of organization, new applications of knowledge, or some combination of the two can generate productivity gains that boost competitiveness and translate into economic benefits for nations, businesses, and individuals. Often innovations do not need to be new to the world; they simply need to be new to a particular setting. Innovation offers the possibility that some developing countries may be able to leapfrog steps in the development process (Chandra 2006, 1).

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3 For example, the Journal of Innovation Economics.
Innovation is an essential factor in economic competitiveness and growth. As labor, capital, products, services, and knowledge become increasingly mobile within a steadily more integrated global economy, innovation creates competitive advantages—often temporary—in accessing and applying these factors in productive processes. As a result, in today’s world, a larger share of a country’s economic growth is due to effective use of knowledge, and even countries well behind the frontier of competition can boost their performance dramatically by expanding their capacities to innovate. This is particularly applicable to South Asia (Dahlman 2007, 121).

Innovation can usefully be understood as a “…multi-stage process whereby organizations transform ideas into improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace.”4 The result increases the value of the product, service, or process, thus making innovation the metaphorical pot of gold that all seek to discover. Innovation occurs when an interaction among institutional capacities, coordination mechanisms, communication networks, and policy incentives identifies, develops, and tests a new idea that ultimately leads to some type of productivity gain (World Bank 2006a). This combination of capacities, coordination, networks, and policies constitutes a national innovation system. (Nelson 1993).

A national innovation system obtains, evaluates, and applies international knowledge to solve local problems. Because of its importance in generating competitive advantages in the economic competition among nations, many countries consciously try to improve the performance of their innovation systems through the development of national innovation strategies (Box 1). These strategies often give explicit or implicit attention to the training and research capacities of higher education institutions.

The two main components of an innovation system are (i) the knowledge and education domain, and (ii) the business and enterprise domain (Spielman and Birner 2008, 7). The productivity of a national innovation system is higher when mechanisms or institutions, such as a strong university system and funding mechanisms for new ventures, facilitate the migration of ideas from the higher education system into commercial practice (Stern, Porter, and Furman 2000, 3). As Porter (1990, 628) asserts, “There is little doubt … that education and training are decisive in national competitive advantage. Education and training constitute perhaps the single greatest long-term leverage point available to all levels of government in upgrading industry.”

Innovation is not a linear process. It emerges from the interactions of people and organizations that have different competencies and assets but converging interests. Consequently, “bridging mechanisms” that facilitate these interactions are a key element of innovation policy. These mechanisms include matching funds to induce private sector collaboration with R&D institutions, university research funding conditioned on collaboration with industry, incubators for aspiring entrepreneurs, technology transfer centers to facilitate access to technological information and training, and venture capital schemes (World Bank 2007a, 86). If one realizes that a university is not only a key component of a national innovation system, but also potentially a microcosm of this system, then these same policy elements can be introduced to good effect within universities themselves.

Higher education is one of the oxen pulling the plow of innovation, and a strong ox is necessary to get the job done. The expansion of this awareness has fueled recent interest in international rankings of universities and discussion of what makes a world-class university. Everyone wants a world-class university—the PRC, the Republic of Korea, Viet Nam, and other countries have announced plans to build them—but it is not clear how to get one (University World News 2009b). A review of highly ranked universities from around the world suggests that their superior performance is largely the result of three complementary sets of factors:

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Australia’s National Innovation Strategy

Australia’s recent innovation performance has failed to keep pace with that of the rest of the world. In the last 8 years, Australia has slipped from 5th to 18th in the World Economic Forum’s global competitiveness index.

In response, Australia developed a national innovation strategy in 2009. It begins by stating, “Our capacity for invention and discovery depends on the strength of our national innovation system. This is the system we use to harness the creativity of our people. One way to make the system stronger is by strengthening its constituent parts. The other is by strengthening the links between those parts. Australia needs to do both.”

To this end, Australia’s science and innovation budget was projected to increase in 2009–2010 by more than 25% over 2008–2009. This direct investment in Australian innovation is to be supported by complementary investments in infrastructure to sustain the innovation process—including a national broadband network—and in an “education revolution,” which is expected to transform every stage of the learning journey from preschool to postdoctoral programs.

The Government of Australia has adopted the following seven national innovation priorities to focus the production, diffusion, and application of new knowledge:

Priority 1: Public research funding supports high-quality research that addresses national challenges and opens up new opportunities.

Priority 2: Australia has a strong base of skilled researchers to support the national research effort in both the public and private sectors.

Priority 3: The innovation system fosters industries of the future, securing value from the commercialization of Australian research and development.

Priority 4: More effective dissemination of new technologies, processes, and ideas increases innovation across the economy, with a particular focus on small and medium-sized enterprises.

Priority 5: The innovation system encourages a culture of collaboration within the research sector and between researchers and industry.

Priority 6: Australian researchers and businesses are involved in more international collaborations on research and development.

Priority 7: The public and community sectors work with others in the innovation system to improve policy development and service delivery.

(i) a high concentration of talented staff and students, including a significant international element; (ii) abundant resources to create a rich learning environment and carry out advanced research; and (iii) favorable governance arrangements that encourage strategic vision, innovation, and institutional flexibility to make decisions in a timely manner (Salmi 2009). It is worth noting that the third factor is not resource-dependent and can be pursued even under conditions of limited funding. However, positive institutional gains ultimately depend on the synergy among all three factors.

Although each country should ideally possess at least one world-class university—defined as one ranked within the world’s top 500 universities—this may not be a medium-term possibility for all countries. In such cases, an important stepping stone to excellence is to develop a flagship research university with strong postgraduate and research programs (Chapter 5). These universities can lift others by their example, serve as sources of innovation that can send ripples throughout the system, and attract collaborative interest from progressive firms in the country. An alternative is to develop world-class capacity in one or two key academic disciplines that are essential for the country’s economic competitiveness. For example, the Bangladesh University of Textiles, opened in 2010, dedicates itself to excellence in textile engineering to help the country maintain its more than $10 billion annual share of the world’s textile export market.

Not surprisingly, the emphasis on innovation is leading to a lot of experimentation. For example, India is setting up 14 “innovation universities” to pursue new approaches to pressing social issues such as hunger, poverty, malaria, and tuberculosis (University World News 2009a). Saudi Arabia is establishing a postgraduate research university that will offer foreign-accredited degrees (University World News 2010d). Malaysia has just launched TalentCorp Malaysia to attract world-class talent to the country, especially in the sciences and research (University World News 2010a).

In Asia and the Pacific, various economies are contending to become regional higher education hubs. The goal is to attract talent while generating income by “exporting education.” Australia, Malaysia, and Singapore are already established destinations for international students. The PRC is rapidly becoming one. Others that have announced their intention to enter this regional hub market include Bhutan, Sri Lanka, Taipei, China, and Viet Nam (Sharma 2011b). With the arrival of the knowledge economy, governments are giving heightened importance to investments in higher education for many of the reasons outlined above. Thus, it is instructive to address directly the question of “why invest in higher education?” Today the reasons are compelling:

- Evidence consistently affirms that countries that invest heavily in higher education benefit economically and socially (ADB 2008, 43).
- Econometric tests show a causal relationship linking the level of knowledge accumulation to future economic growth (World Bank 2007a, 33).
- Quality higher education and training are essential for economies that want to move up the value chain in their production processes (Schwab 2011).
- Recent successes in expanding primary and secondary education enrollments are fueling a rising demand for postsecondary opportunities (UNESCO Institute of Statistics 2011, 16).
- OECD countries provide considerable evidence that R&D performed by universities and the public sector has a positive effect on overall productivity and growth (OECD 2000).
- Quality higher education produces better primary and secondary school teachers, thereby contributing to a better quality education system and ultimately to excellence in higher education, which leads to a more highly skilled labor force.

The question currently confronting policymakers in higher education is not so much whether to invest in higher education, but rather how best to invest, how much to invest, and how to finance these investments. Unfortunately, many developing countries approach this challenge from a disadvantaged position, given that
higher education was underappreciated and underfunded for almost 2 decades due to strong government and
donor emphases on basic education. In the global competition for excellence in higher education, current
development strategies often include institutional diversification; science and technology promotion; research
capacity building; expanded use of technology for teaching, learning, and management; lifelong learning; and
public–private partnerships. Financing strategies tend to focus on private provision; identifying sustainable
levels for tuition fees; various financial mechanisms for cost sharing such as student loans, income-contingent
loans, and education bonds; institutional income generation; earmarked taxes; and sports lottery earnings. Many
of these topics will be discussed further in the following pages in the context of prevailing conditions in South
Asia, with special attention to Bangladesh, Nepal, and Sri Lanka.
If competitiveness, innovation, and skilled human resources are essential for success in the knowledge economy, where do the countries of South Asia stand in terms of these capacities?

COMPETITIVENESS

For more than 3 decades, the World Economic Forum has ranked nations according to their competitiveness. It does this using a global competitiveness index comprised of 12 main variables derived from more than 100 indicators. The variables are legal and administrative framework (institutions), transport and communications infrastructure, macroeconomic stability, health and primary education, higher education and training, market efficiency for goods, labor market efficiency, financial market development, technological readiness, market size, business sophistication (strategies and networks), and innovation. This listing alone illustrates the complexity of the task of boosting national competitiveness. It also indicates that there are multiple pathways to greater competitiveness.

A substantial lack of competitiveness characterizes the economies of Bangladesh and especially Nepal. The two countries rank in the bottom 25% of countries on the World Economic Forum global competitiveness scale (Schwab 2011 and 2007). Sri Lanka does much better, scoring slightly above the mean and gaining on countries such as India and Viet Nam. Malaysia and Thailand are far ahead, ranking in the top 25%, and may offer instructive examples to their neighbors. The relative rankings of most of these countries shifted between 2005 and 2010, sometimes significantly. Bangladesh and especially Nepal lost ground, along with India, Pakistan, and Thailand. Only Sri Lanka and Viet Nam substantially improved their competitive positions, while Malaysia held its own.

Clearly, these trends are the result of interactions among the 12 variables, and it is not possible to isolate the effects of each variable without more extensive multivariate analysis. However, changes over time in the relative rankings of the two variables related to higher education may suggest how they might have influenced changes in competitiveness.

5 The higher education indicator is comprised of the tertiary education enrollment rate, secondary education enrollment rate, quality of the education system, quality of math and science education, quality of schools of management, internet access in schools, local availability of research and training services, and staff qualifications. The innovation indicator is comprised of quality of scientific research institutions, company spending on research and R&D, university–industry collaboration in R&D, government procurement of advanced technology products, availability of scientists and engineers, and utility patents per million population.
Gains in higher education and innovation during the past 5 years appear to correlate with improved competitiveness only in Sri Lanka. Declining competitiveness in higher education and innovation seem correlated with a noticeable drop in ranking of overall competitiveness for Bangladesh, Nepal, and Pakistan. India and Thailand suffered only modest declines in their competitive positions in spite of noticeably poor performance in higher education and innovation, thus suggesting that strong advances in other areas (e.g., improved financial markets in India or increased labor market efficiency in Thailand) may have offset these weaknesses. It is important to recognize that a drop in ranking does not necessarily imply deteriorating performance. Most likely, it means that progress was slower in these countries than in others, thus forcing them to lose ground relative to other countries even though they moved ahead in absolute terms.

THE KNOWLEDGE ECONOMY

The World Bank’s knowledge economy index is another instrument used to assess a country’s competitiveness (World Bank 2012b). It is made up of 4 variables drawn from 12 indicators. The variables are economic and institutional regimes, education, innovation, and information and communication technology (ICT). Higher education plays a role in the latter three.

On the basis of these four capacity variables, Asia as a whole ceded some of its competitive advantage during 1995-2010. East Asia remains far ahead of South Asia in its comparative capacities. Only Viet Nam improved its competitive position in the knowledge economy ranking during the 15-year period. Bangladesh and Nepal fared poorly, falling into the bottom 10% of all countries in the overall ranking. Indeed, researchers for the current study found that the concepts of the knowledge economy were unfamiliar to most university staff in these countries.

HUMAN DEVELOPMENT

Additional insight concerning the role that human resource development policies may have played in enhancing competitiveness can be derived from reviewing trends in the annual rankings of countries on the human development index (HDI) published by the United Nations Development Programme (UNDP). The index takes into account a broader range of indicators that reflect overall human capacities, such as education achievements, health status, and personal income. UNDP’s Human Development Report 2010 also analyzed the impacts of inequality and poverty as constraints to human development. Over the past 2 decades, notable progress, as measured by the HDI, has been registered throughout the world (UNDP 2010, 151). East Asia and South Asia both recorded above-average advances. At the national level, Bangladesh displayed remarkable progress, increasing its HDI score by 50%. Nepal continued its good showing, building on its substantial achievements in the 1970s and 1980s and progressing at the third-fastest pace of any nation during 1970–2009 (UNDP 2010, 54). Sri Lanka moved forward more slowly, although its rate was similar to that of the OECD countries. However, countries such as Bangladesh and Nepal, which began in very disadvantaged positions, are slower in narrowing the gaps with their neighbors in spite of their laudable achievements.

Within the world community, South Asia is behind in education, innovation, and use of ICT. Regional literacy rate—62.4%—and enrollment ratios for secondary and tertiary education are low (UNDP 2010). Highly skilled workers comprise a small percentage of the labor force and are highly prone to emigration. Although the region’s economic growth has recently been higher than the world average, this has been offset in part by comparatively higher rates of population growth. South Asia has a predominantly rural population, high levels of poverty, and an economy based heavily on agriculture (Table 1). Future improvements in competitiveness will depend to a large extent on the success of efforts to integrate poor rural populations into the modern economy by expanding access to education and technology (Dahlman 2007, 119).
Progress in this area could be accelerated if prevailing inequities in income distribution and access to health and education services could be rebalanced. UNDP’s *Human Development Report 2010* assesses the impact of inequalities on human development. It concludes, “Overall, there is a negative correlation between achievement and inequality” (UNDP 2010, 89). In addition, the calculations permit a rough estimate of the cost of inequality in terms of the amount of human development potential that has been foregone as a consequence of various inequities. What does this mean for South Asia?

South Asia exhibits high inequality, particularly in access to health and education (Table 2). As a result of these inequalities, the region’s human development is roughly 30% lower than it would have been in the absence of inequalities. Bangladesh, India, Nepal, and Pakistan pay a high developmental price for the inequalities that characterize their societies. Sri Lanka has managed to craft a more egalitarian society and this may explain in part its relatively higher levels of human development and competitiveness. Conscious efforts by governments to reduce these inequalities would clearly generate dividends in terms of national human development levels.

**CORRUPTION UNDERMINES COMPETITIVENESS**

Just as inequality acts as a tax on human development, corruption undermines competitive advantage in an economy. Since 1997, the international nongovernment organization Transparency International has monitored levels of corruption and ranked them annually. Its corruption perceptions index is derived from polls and surveys.

### Table 1  
**Country Context: Bangladesh, Nepal, Sri Lanka**

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Population (million)</th>
<th>Pop. Growth Rate (%)</th>
<th>Pop. Aged 0–14 Years (%)</th>
<th>Rural Pop. (%)</th>
<th>Gross Domestic Product ($ billion)</th>
<th>Gross National Income per Capita&lt;sup&gt;a&lt;/sup&gt; ($)</th>
<th>Pop. Living on Less Than $2/day (%)</th>
<th>Agriculture Share of the Economy (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>160</td>
<td>1.4</td>
<td>31</td>
<td>72</td>
<td>89</td>
<td>580</td>
<td>85</td>
<td>19</td>
</tr>
<tr>
<td>Nepal</td>
<td>29</td>
<td>1.9</td>
<td>37</td>
<td>82</td>
<td>13</td>
<td>400</td>
<td>88</td>
<td>34</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>20</td>
<td>1.0</td>
<td>24</td>
<td>85</td>
<td>42</td>
<td>1,990</td>
<td>47</td>
<td>13</td>
</tr>
<tr>
<td>South Asia</td>
<td>...</td>
<td>1.6</td>
<td>32</td>
<td>71</td>
<td>1,521</td>
<td>986</td>
<td>...</td>
<td>18</td>
</tr>
<tr>
<td>East Asia</td>
<td>...</td>
<td>0.8</td>
<td>23</td>
<td>56</td>
<td>5,080</td>
<td>2,631</td>
<td>...</td>
<td>12</td>
</tr>
</tbody>
</table>

... = not available, pop. = population.
<sup>a</sup> Calculated using the Atlas method.


### Table 2  
**Inequality-Adjusted Human Development Index**

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>HDI Score</th>
<th>Inequality-Adjusted HDI</th>
<th>Loss Due to Inequality (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Asia</td>
<td>0.516</td>
<td>0.361</td>
<td>30</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>0.469</td>
<td>0.331</td>
<td>29</td>
</tr>
<tr>
<td>India</td>
<td>0.519</td>
<td>0.365</td>
<td>30</td>
</tr>
<tr>
<td>Maldives</td>
<td>0.602</td>
<td>0.508</td>
<td>16</td>
</tr>
<tr>
<td>Nepal</td>
<td>0.428</td>
<td>0.292</td>
<td>32</td>
</tr>
<tr>
<td>Pakistan</td>
<td>0.490</td>
<td>0.336</td>
<td>32</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>0.658</td>
<td>0.546</td>
<td>17</td>
</tr>
</tbody>
</table>

HDI = human development index.

in 180 economies that seek to gauge prevailing perceptions of corruption and enable each economy to assess the annual development sacrifices associated with tolerating corruption. Estimates suggest that an improvement by one index point (out of 10) is associated with higher productivity, a growth in capital inflows equivalent to 0.8% of an economy’s gross domestic product (GDP), and an increase in average income by almost 4%. The rankings for Asia are middling at best, except in Bhutan; Hong Kong, China; and Malaysia. More worrisome is the fact that 9 of 15 Asian economies, including Bangladesh and Nepal, placed in the bottom one-third of this index (Lambsdorff 2010).

SUMMARY

Based on indicators of competitiveness, knowledge economy, and human development, South Asia is in an unenviable position. Its rankings on these measures—with the exception of India’s competitive position in the global competitiveness index—are consistently low (Table 3). Bangladesh and Nepal fall into the bottom quartile and Sri Lanka is near the middle.

What might be done to improve competitiveness, knowledge management, and human development in South Asian economies? The following chapters explore this question in greater depth and offer a menu of recommendations for each country to consider.

<table>
<thead>
<tr>
<th></th>
<th>Global Competitiveness Index Ranking</th>
<th>Knowledge Economy Index Ranking</th>
<th>Human Development Index Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>107</td>
<td>137</td>
<td>129</td>
</tr>
<tr>
<td>India</td>
<td>51</td>
<td>110</td>
<td>119</td>
</tr>
<tr>
<td>Maldives</td>
<td>...</td>
<td>...</td>
<td>107</td>
</tr>
<tr>
<td>Nepal</td>
<td>130</td>
<td>135</td>
<td>138</td>
</tr>
<tr>
<td>Pakistan</td>
<td>123</td>
<td>117</td>
<td>125</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>62</td>
<td>101</td>
<td>91</td>
</tr>
</tbody>
</table>

… = not available.

The importance of cultivating and maintaining competitiveness in order to achieve success in the global knowledge economy, and the influential role that higher education plays in determining this capacity, have been underscored in chapters 1 and 2. In this context, it is prudent to ask: what is the state of higher education in South Asia? The information presented thus far suggests that higher education in South Asia warrants considerable and urgent improvement, and that higher education in Sri Lanka has achieved a somewhat better position compared with its neighbors. Statistics on several dimensions of higher education development in the region and beyond are provided in Table 4. The composition of higher education enrollments in Bangladesh, Nepal, and Sri Lanka is in Appendix 1.

### Table 4 Dimensions of Higher Education Development in Focus and Comparator Countries

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Higher Education Enrollment</th>
<th>Growth Rates 2000–2008a (%)</th>
<th>Tertiary Gross Enrollment Ratio</th>
<th>Private Enrollment (%)</th>
<th>5B Enrollment (%)</th>
<th>Enrollment in STEb (%)</th>
<th>Post-graduate Enrollment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Asia</td>
<td>21,000,000</td>
<td>8</td>
<td>12</td>
<td>28c</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>1,579,377</td>
<td>6</td>
<td>14</td>
<td>54</td>
<td>9</td>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td>Nepal</td>
<td>284,973</td>
<td>11</td>
<td>10</td>
<td>24</td>
<td>0</td>
<td>13</td>
<td>14</td>
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<tr>
<td>Pakistan</td>
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<td>...</td>
<td>6</td>
<td>33</td>
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<tr>
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<td>12</td>
<td>2</td>
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<tr>
<td>East Asia</td>
<td>49,000,000</td>
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<tr>
<td>Cambodia</td>
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<td>7</td>
<td>58</td>
<td>0</td>
<td>23</td>
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<tr>
<td>Lao PDR</td>
<td>89,450</td>
<td>27</td>
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<td>32</td>
<td>61</td>
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<tr>
<td>Philippines</td>
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<td>(0.3)</td>
<td>27</td>
<td>65</td>
<td>10</td>
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<td>...</td>
</tr>
<tr>
<td>Viet Nam</td>
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<td>13</td>
<td>10</td>
<td>12</td>
<td>34</td>
<td>31</td>
<td>3</td>
</tr>
</tbody>
</table>

... = not available, ( ) = negative, 5B = nonuniversity postsecondary education, Lao PDR = Lao People’s Democratic Republic, STE = science, technology, and engineering.

b Includes agriculture, engineering, sciences, and health sciences.
c Without India (30%), others average 13%.

Overall enrollment growth for higher education has generally been high for South Asia, averaging 14% per annum during the period 2000-2008 (ADB 2009, 10). At the country level, annual enrollment growth has ranged from 6% in Bangladesh to 11% in Nepal during the same period. Despite this expansion, access remains relatively limited. The average gross enrollment ratio (GER) for higher education is just 12% in South Asia, in the same range as Nepal (10%) and Bangladesh (14%). Private higher education, a comparatively recent phenomenon, now accounts for 28% of enrollments in South Asia and 35% in East Asia. Institutional differentiation appears to vary considerably, as indicated by the enrollment shares found in nonuniversity higher education (i.e., International Standard Classification of Education level 5B), which is often more technical in substance and more applied in orientation. In the Lao People's Democratic Republic (Lao PDR), almost two-thirds of higher education students can be found in nonuniversity institutions, and in Viet Nam the figure is one-third. In contrast, Nepal possesses relatively few postsecondary technical training institutions, and Bangladesh enrolls less than 5% of higher education students in institutions of this type. It would be worth investigating why this is the case. Postgraduate education seems less well developed in South Asia than elsewhere, and this may impose a significant constraint on efforts to maintain or upgrade academic staff qualifications while enrollment expansion is going on. However, Nepal may be overinvesting in postgraduate education, as its share of total enrollments is almost three times the OECD average. Worldwide, the inability to generate sufficient numbers of qualified academic staff has been the single biggest constraint to safeguarding education quality during periods of rapid growth.

**FINANCIAL EFFORT**

Quality, access, and competitiveness in higher education are intimately linked to the financial resources available and the financing strategies pursued. The share of GDP spent on education indicates the level of a nation's efforts to educate its citizens. In these terms, East Asia makes a greater financial effort on behalf of education than South Asia. Within Asia, Viet Nam commits a larger share of its income to education than most of its neighbors (Table 5).

### Table 5 Financial Indicators for Higher Education in Focus and Comparator Countries

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Higher Education Budget as % of Education Budget</th>
<th>Education Budget as % of Government Budget 2006–2008</th>
<th>Public Education as % of GDP</th>
<th>Public Expenditure per Higher Education Student ($)</th>
<th>R&amp;D Expenditure as % of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Asia</td>
<td>10</td>
<td>15</td>
<td>2.9</td>
<td>...</td>
<td>0.48</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>13</td>
<td>14</td>
<td>2.4</td>
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<td>0.03</td>
</tr>
<tr>
<td>Nepal</td>
<td>13</td>
<td>19</td>
<td>3.8</td>
<td>233</td>
<td>...</td>
</tr>
<tr>
<td>Pakistan</td>
<td>...</td>
<td>11</td>
<td>2.9</td>
<td>...</td>
<td>0.67</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>12</td>
<td>8</td>
<td>2.8</td>
<td>993</td>
<td>0.11</td>
</tr>
<tr>
<td>East Asia</td>
<td>19</td>
<td>16</td>
<td>3.5</td>
<td>...</td>
<td>1.44</td>
</tr>
<tr>
<td>Cambodia</td>
<td>5</td>
<td>12</td>
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<td>153</td>
<td>0.05</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>13</td>
<td>12</td>
<td>2.3</td>
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<td>0.04</td>
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<tr>
<td>Philippines</td>
<td>10</td>
<td>16</td>
<td>2.8</td>
<td>350</td>
<td>0.12</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>22</td>
<td>20</td>
<td>5.3</td>
<td>1,717</td>
<td>0.19</td>
</tr>
</tbody>
</table>


---

6 There is anecdotal evidence that strong student demand for postgraduate studies, especially master of business administration programs, may be linked to individual aspirations to seek more lucrative employment outside the country.
Based on average budget allocation shares during 2006–2008, Nepal and Viet Nam appear to be in the forefront within Asia. In comparative terms, Bangladesh, Cambodia, the Lao PDR, and Pakistan seem to underinvest in education.

The share of the education budget devoted to higher education is a trickier measure. It can be an indication of the importance that the government attaches to the development of higher education. However, it can also indicate the extent to which inequality in access to higher education may distort public expenditures to favor advanced education of the elite over broadening education access for the masses. The question is primarily one of phasing and balance. Public investments should favor the development of basic education in circumstances where primary GER is low and illiteracy rates are high, but the long-term importance of higher education for future success should not be underestimated. For example, it may be entirely appropriate for Viet Nam, with a 97% literacy rate among youth aged 15–24 years, to spend more on higher education. In general, most developing countries tend to allocate 4%–6% of GDP to education and 15%–20% of their education budgets to higher education (World Bank 2002, 82).

The important role that innovation plays in determining national competitiveness in the global knowledge economy means that nations must make some investment, even if narrowly and strategically targeted, in strengthening their capacities for research and development (R&D). A World Bank cross-country comparison of the economic rates of return for R&D found it averaged an impressively high 78% (Lederman and Maloney 2003). As a result of these and similar findings, the research intensity of higher education is increasing apace. For example, India announced in May 2011 that it will double its R&D spending to keep up with major competitors, Brazil and the PRC (Mishra 2011).

A common indicator of the importance a nation accords to R&D is the share of GDP it allocates to this activity. Overall R&D investment in South Asia is quite low at 0.48% of GDP. Within the region, India records the highest allocation at 0.78%, followed by Pakistan at 0.67%. In spite of its comparatively developed higher education system, Sri Lanka spends only 0.18% of GDP on R&D. The Philippines and Viet Nam are in the same range, but Cambodia and the Lao PDR give very little attention to R&D. Globally, OECD countries commit more than 2.0% of their GDP to R&D (OECD 2011).

**UNIVERSITY RANKINGS**

Growing awareness of the importance of higher education in determining national economic competitive advantage has sparked efforts to evaluate and rank the performance of universities worldwide. The two best-known rankings are those reported annually by Shanghai Jiao Tong University in the PRC and the *Times Higher Education Supplement* in the United Kingdom. The Shanghai Jiao Tong University ranking gives greater emphasis to objective measures of academic and research performance, whereas the *Times Higher Education Supplement* ranking pays more attention to institutional reputation as perceived by academic peers and employers.

The Shanghai Jiao Tong University ranking evaluates 1,000 universities and lists the best 500 of these. In 2010, the highest-ranked Asian university was the University of Tokyo (20th). Almost all of the Asian universities in the top 500 are from the People’s Republic of China; Hong Kong, China; Japan; the Republic of Korea; or Taipei, China. The only other Asian university to earn mention is the National University of Singapore. No university from South Asia is recognized in the list.

The *Times Higher Education Supplement* ranking is limited to the finest 200 universities. Here, Asian universities do better, including the University of Tokyo in Japan (26th), Pohang University of Science and Technology in the Republic of Korea (28th), the National University of Singapore (34th), and Peking University in the PRC (37th) within the top 40 places. No institutions of higher learning from South Asia earned a mention.
In 2011, a ranking of Asia’s top 200 universities was issued by Quacquarelli Symonds, an international firm that facilitates career development and professional networking within higher education from a global perspective. The top 30 universities were all located in the PRC; Hong Kong, China; Japan; or Singapore. The first to appear outside of this group is Thailand’s Mahidol University in 34th place. It is followed by India’s Institute of Technology at Kampur (36th). Within the three economies emphasized in this study, Bangladesh’s University of Dhaka appears in 155th place, the University of Colombo in Sri Lanka is unranked below the top 200, and no university from Nepal was included in the study.

COUNTRY HIGHER EDUCATION SNAPSHOTs

The following summary snapshots of higher education systems in Bangladesh, Nepal, and Sri Lanka provide the context for the detailed analyses of higher education access, quality, relevance, governance, and financing in South Asia that is contained in chapters 4 to 9.

Bangladesh

The higher education system in Bangladesh is large, unwieldy, and quite traditional. It enrolls nearly 2 million students to produce a GER of 14%. During the past decade, public higher education grew slowly at 4% per annum, while private higher education surged. In 2008, private institutions enrolled 53% of all university and college students. Staff–student ratios have improved—perhaps too much—over the past decade, declining from 1:18 to 1:15 as academic staff have been hired more quickly than the rate of enrollment growth. No data are available on student graduation rates in higher education. The system encompasses 34 public universities, 54 private universities, an open university, and 1,454 public and private degree colleges affiliated with the far-flung National University.

The National University is an administrative structure that defines standard curricula, administers uniform student examinations, and awards degrees to more than 1.1 million students annually. In addition, the University Grants Commission strictly controls curricula in the public and private universities. This produces relatively homogenous course structure and content across all higher education institutions, with procedures and surrounding regulatory mentality that stifle innovation. No national quality assurance agency exists to monitor the quality of the education provided. That, together with the rapid proliferation of private institutions and highly politicized public universities, leads many observers to decry a decline of education quality in recent years. The quality problem is reportedly most acute in the newer universities located outside the major cities of Chittagong and Dhaka.

Politics seems to pervade all aspects of university life. Academic staff, nonacademic staff, and student unions regularly disrupt the academic calendar and block most attempts at reform. Such political disruptions of campus life also create “session jams” in which new student intakes must be postponed for as long 3 years until existing students, who have fallen behind due to numerous strikes and demonstrations, can complete their degree programs.

7 The rankings consider a survey of academic reputation by university peers, a survey of institutional reputation by employers, research papers by staff, citations per paper, and international flows of students and staff. www.topuniversities.com/university-rankings/asian-university-rankings/2011

8 If only university enrollments (485,937) are considered, then the GER would be 3.6%. Note that total university enrollments as reported by the Ministry of Education are roughly 20,000 higher than the total given by the University Grants Commission. The commission’s figures have been used in this report with the exception of Appendix 1. However, they have been complemented by Ministry of Education statistics on degree enrollments in public and private colleges, which do not fall under the purview of the University Grants Commission. See Government of Bangladesh, Ministry of Education. 2009. Statistical Report 2009. Dhaka. Table 1.1.
The government’s policy framework for higher education is not well developed and is largely out of date. The principal reference is the Strategic Plan for Higher Education in Bangladesh: 2006–2026, now nearly 7 years old, which remains mostly unimplemented. Notably, the national education policy statement of 2010 devoted just three pages to its chapter on higher education and proposed strategies that seem more like a statement of good intentions. One can only conclude that higher education is not currently a government priority.

The state invests only about 2.2% of GDP in education. It accords even less priority to higher education, assigning it only 11.0% of the education sector recurrent budget. Nevertheless, public institutions are funded almost entirely by the state. In the public universities, expenditure per student is low ($664). In the publicly funded colleges and Open University, it is much lower. But public university education, including graduate programs, is provided essentially free of charge. Highly charged political dynamics on campus preclude the possibility of introducing student tuition fees in the foreseeable future. Current methods for determining budget allocations to the public universities are neither rational nor transparent. Budgets are reportedly determined on the basis of historical precedent as modified by negotiation and pressure from the vice-chancellors. Thus, budgeting has no strategic purpose, and university strategic planning is not generally practiced.

In its present form, university governance is as much a mechanism for control as for leadership. University vice-chancellors are appointed by either the President or Prime Minister and their loyalties tend to lie with them before university stakeholders. Most members of the University Grants Commission are appointed either directly by government or indirectly by government in the case of the three vice-chancellors and three ministry representatives who also serve on the commission. University councils, however, draw one-quarter of their members from government appointees and three-quarters from internal constituencies such as staff and students. Consequently, the end users and consumers of university outputs (graduates and research) are weakly represented in the governance structures for higher education. From a management standpoint, the National University is bureaucratic and inefficient. University leaders readily recognize this and note that several attempts at reform have failed.

Traditional structures and controlling procedures limit the system’s relevance to national development needs. They discourage initiative and make innovation difficult. Very little research is undertaken, since only 0.2% of the higher education budget is spent on this activity. Some 63% of enrollments are concentrated in the arts, social sciences, and business studies. Although strong labor market demand for engineers is reported, only 7% of students study engineering.

The country’s higher education system appears to be somewhat out of touch with issues and trends at the international level. Staff have limited understanding of how the globalized knowledge economy functions and the key role that universities can play in boosting a country’s economic competitiveness. Likewise, the contemporary notions of public–private partnerships and university–industry links are not broadly understood or put into practice. The main problem confronting higher education in Bangladesh seems to be a lack of accountability for performance due to pervasive politicization of the system. This exists among university leaders and officers, as well as teaching staff and students. Until this problem is solved, quality and relevance are unlikely to improve.

Nepal

The development of higher education in Nepal is being stunted by the lack of sufficient attention from the government, politicization of university appointments and campus life, and a rigid controlling government bureaucracy that dampens innovation. The country’s higher education system revolves around its first and largest higher education institution, the 50-year-old Tribhuvan University, which enrolls 159,394 students, or 90% of the total, and comprises a seemingly unmanageable number of 60 branch campuses and 826 affiliated private and community managed colleges. The affiliation requirement for all colleges allows Tribhuvan University to
levy service charges on its associated colleges, generating an important source of income. These charges can be
onerosous, amounting to as much as 10% of the private college’s annual revenues. In addition, Tribhuvan University
imposes a standard curriculum on its colleges and administers all student examinations. The affiliation mechanism
imposes homogeneity in teaching at all colleges, and effectively inhibits innovation in pedagogy and curriculum.

Within Tribhuvan University, two distinct subsystems of higher education coexist. One comprises instruction
in sciences, engineering, and medicine. It attracts the best students, admits them through a competitive entrance
exam, charges them significant fees to supplement government allocations, is characterized by high graduation
rates, and sends its graduates into the labor market—often overseas—with success. The other subsystem
encompasses instruction in arts, humanities, and social sciences. Its students are generally less capable, admissions
are open and require aspirants only to have completed secondary education, almost no student fees are charged,
the dropout rate is high, and its graduates are frequently unable to obtain employment.

After Tribhuvan University come seven other much smaller universities. One is a well-regarded nonprofit,
nongovernment institution. Another four are nominally public, but cover a significant portion of their operating
costs through student tuition fees. The other two are located in the underserved western part of the country, but
are quite new and currently boast little more than an appointed vice-chancellor with a government mandate and
high expectations from citizens.

The government’s lack of attention to higher education is manifested in (i) the steadily declining share of the
education budget, which is no more than 10% at present and represents an expenditure per public university
student of just $233, possibly among the lowest in the world; (ii) the absence of a national policy or strategy for
higher education; and (iii) its reluctance to confront the politically contentious student and staff trade unions,
which regularly disrupt the academic calendar, extend the time necessary for students to graduate, and effectively
block any effort at higher education reform.

In Nepal, higher education remains a poorly utilized resource. A higher education GER of 10% is probably
too low to support the gains in economic competitiveness necessary to raise Nepal’s performance among the
community of nations. National development priorities highlight agriculture, hydropower, and tourism, but
university graduates in agriculture, animal science, and forestry number roughly 325 per year, only 1% of total
graduates. Electrical engineers are almost as scarce. Private college proposals to initiate courses in tourism, hotel
management, and hospitality languish for years awaiting approval from their affiliated universities. Moreover, in
spite of the rhetoric about the need to boost agriculture and tourism, no additional funding has flowed into the
universities to produce the skilled human resources and research necessary to support these priorities.

Overall, enrollments in science, engineering, agriculture, and medicine comprise less than 15% of the total, and
constraints on physical facilities prevent their expansion. Public–private partnerships are virtually unknown and
fail to attract government incentives. This limits the opportunities for universities to pursue knowledge sharing
and technology transfer links with industry. The obstacles to modernizing higher education and aligning it with
the needs of the knowledge economy are unlikely to be overcome without a change in government’s stance in
relation to the role of higher education in the nation’s future development.

Sri Lanka

Sri Lanka is aggressively pursuing a 20-year national development strategy that heavily depends on higher
education to provide a skilled workforce, practical research, and technical support for industry. Public universities
have crafted strategic plans that seek to advance these goals. However, various obstacles must be overcome for
this effort is to succeed.

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9 There is no indication that these revenues are reinvested in staff development, library acquisitions, or research to the benefit of Tribhuvan
University’s affiliated members.
If all higher education students are considered, the country’s GER is 21%. However, many of these (73%) are external degree program (EDP) students who pursue formal qualifications as time and interest permit. Thus, a more realistic GER may be in the range of 10%–12%, which is too low to adequately support the nation’s economic aspirations.

The higher education system is vertically and horizontally differentiated, but articulation among the various institutions, including student mobility among them, is weak. Enrollment has been growing at 8% annually, but the expansion is concentrated in public institutions, leaving private higher education underdeveloped. The Open University of Sri Lanka enrolls 8% of higher education students. Gender parity in enrollments has been achieved. Competition for admission is strong, with only 16% of eligible students accepted by public institutions. Estimated graduation rates may be as high as 70%–80%, but graduate unemployment has been a serious problem (e.g., the unemployment rate among EDP graduates is 77%). Some 44% of students pursue science and technology disciplines, and roughly 5% are part-time postgraduate students. The relatively small number of university candidates coming from the high school science stream is a clear constraint on the government’s efforts to promote science and technology in higher education.

Managing the education system can be daunting. Numerous government agencies with overlapping mandates create inefficiency and make it hard to get things done. Sri Lanka is one of the few countries in the world with both a ministry of higher education and a university grants commission (i.e., a buffer body), although these entities normally play similar roles. Institutional autonomy is also rather circumscribed. Both the ministry and the commission make decisions on matters that in other countries are often delegated to universities, thus creating a rather centralized administrative system. Participation in university governance by stakeholders from outside the higher education system is limited. Research capacity is not well developed and although some public–private partnerships can be found in a few of the established universities, the majority of institutions have little interaction with the private sector.

Postgraduate programs seem to be weak. All postgraduate students reportedly study part time because they are employed full time, meaning that they can devote only the minimum time and effort needed to obtain a postgraduate degree. These conditions can drag down quality and severely limit the possibilities for substantive doctoral dissertation research. In turn, poor-quality postgraduate programs may impede efforts to produce the quality academic staff needed to raise education quality and build research capacity in higher education. There is widespread awareness of the need for a quality assurance and accreditation agency, and a legislative bill to create one is pending in Parliament.

From a financial perspective, Sri Lanka spends less of its GDP on education (2.8%) than many other countries and also allocates a smaller share of its education budget (13%) to higher education. Expenditure per public university student is about $1,700 per annum. Institutional budgets are historically determined and individually negotiated. University education is essentially tuition-free, and this seems unlikely to change any time soon. Academic staff salary levels are comparatively low. This has several repercussions: (i) the best students seek to leave the country; (ii) it is difficult to retain staff; (iii) underprepared students are recruited into academic positions; and (iv) academic staff need secondary sources of income, which prevents them from undertaking research.

From a policy perspective, the government’s main priority appears to be equal access to higher education. It has introduced district quotas for university admissions and set up provincial universities. However, district quotas contribute to education quality problems by bringing in less-prepared students, and setting up provincial universities is challenging due to the lack of infrastructure, the difficulty of attracting and retaining good academic staff, and insufficient financial resources. Consequently, success in expanding access is likely to weaken education quality unless explicit safeguards are put in place.
4 Going to University: Who Gets In and Who Does Not

ACCESS

Access to success is the hope that motivates millions of university candidates worldwide. In developed and developing countries alike, everyone realizes that a university degree can be the ticket to a good job at home, or to an even better job overseas. It is therefore not surprising that issues that constrain or facilitate access to higher education can arouse strong passions. Consequently, politicians, especially in emerging democracies, often promise “a university in every province” (or something similar) as a key element of their election campaign platforms.

Increasing access to higher education is clearly in the national interest—if it can be done in a financially sustainable way that does not erode education quality. The most obvious benefit is that it increases the country’s stock of skilled human capital, thereby enabling productivity gains that lead to improved competitiveness and economic growth. A second benefit is that, over time, it serves as a mechanism for reducing the concentration of the nation’s assets in the hands of a few. Spreading education attainment more evenly across the population leads to a more equitable distribution of wealth (Birdsall 1999). High concentrations of wealth can cause social resentment to ferment, which may lead to social unrest and political instability. Among the countries of South Asia, inequality in the distribution of wealth appears to be the highest in Nepal, with a Gini coefficient of 47, and Sri Lanka, with a Gini coefficient of 49. Both of these countries have recently experienced civil strife.

Fueled by social demand and political opportunism, higher education has expanded rapidly in the 21st century. Worldwide, higher education enrollments surged from 101 million in 2000 to 165 million in 2009 for a global tertiary education GER of 27%—double its level in 1990. This growth is projected to continue undiminished. The number of higher education students around the globe is forecast to more than double to 262 million by 2025, with almost all of this growth occurring in the developing world. The PRC and India together will account for half of this increase (Davis and Mackintosh 2012). In South Asia, the number of higher education students jumped from 12.2 million in 2000 to 21.0 million in 2009, an annual expansion rate of 7%. In the process, South Asia more than tripled its tertiary education GER from 4% in 1980 to 13% in 2009. In the coming years, the demand for higher education is expected to remain strong as a result of the prevailing secondary education GER of 56%. The labor market demand for university graduates has generally been rising in Asia, as shown by steady...
increases in wages for university graduates in a number of countries (World Bank 2012, 22). This is likely to further encourage students to go to university.

For individual countries, higher education enrollment growth rates and tertiary GERs vary considerably (Table 6). Growth was robust in Nepal but sluggish in Bangladesh and India. In East Asia, growth was extremely strong in the countries of Cambodia, the Lao PDR, and Viet Nam, but it was quite modest in the “big-system” countries of Indonesia, Malaysia, and Thailand. However, the PRC stands out among the big-system countries as an exception. Its higher education system, which in 2008 enrolled 30 million students, has multiplied sixfold since 1998 and is expected to continue to surge for some time. Development plans call for the country’s 2008 GER of 24% to be boosted to 40% by 2020. Overall, tertiary enrollment growth was much higher in countries with low GERs (except Bangladesh) as they pushed themselves to catch up with the rest of the world.

The dynamics of enrollment expansion have been different each of the focus countries. In Bangladesh, private higher education has played a leading role. It expanded at roughly 28% annually during 2001–2009, compared with public higher education growth of just over 2.0% a year. In Nepal, enrollment growth has been steadily increasing by a robust annual average of 12.0% since 2001. In Sri Lanka, annual enrollment increases have averaged a very reasonable 4.7% since 2000.

Table 6  Higher Education Access in Asia, 2008

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Higher Education Enrollment Growth Rate 2000–2008 (%)</th>
<th>Tertiary GER (%)</th>
<th>Upper Secondary GER (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Asia</td>
<td>7</td>
<td>12</td>
<td>40</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>6</td>
<td>14</td>
<td>31</td>
</tr>
<tr>
<td>Bhutan</td>
<td>7</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td>India</td>
<td>6</td>
<td>13</td>
<td>47</td>
</tr>
<tr>
<td>Maldives</td>
<td>...</td>
<td>6</td>
<td>...</td>
</tr>
<tr>
<td>Nepal</td>
<td>12</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>Pakistan</td>
<td>...</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>5</td>
<td>12</td>
<td>85</td>
</tr>
<tr>
<td>East Asia and Pacific</td>
<td>9</td>
<td>28</td>
<td>63</td>
</tr>
<tr>
<td>Cambodia</td>
<td>21</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>PRC</td>
<td>16</td>
<td>24</td>
<td>66</td>
</tr>
<tr>
<td>Indonesia</td>
<td>5</td>
<td>21</td>
<td>66</td>
</tr>
<tr>
<td>Lao PR</td>
<td>27</td>
<td>13</td>
<td>34</td>
</tr>
<tr>
<td>Malaysia</td>
<td>5</td>
<td>36</td>
<td>50</td>
</tr>
<tr>
<td>Philippines</td>
<td>(0.3)</td>
<td>29</td>
<td>65</td>
</tr>
<tr>
<td>Thailand</td>
<td>4</td>
<td>45</td>
<td>63</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>13</td>
<td>10</td>
<td>...</td>
</tr>
</tbody>
</table>

... = not available, ( ) = negative, PRC = People’s Republic of China, GER = gross enrollment ratio, Lao PDR = Lao People’s Democratic Republic.

Comparing the prevailing GERs for upper secondary education (i.e., the impending candidates for university admission) and higher education give a sense of the intense demand for increased access to higher education. In South Asia, the ratio is more than 3:1. Pressures appear particularly strong in Bangladesh (more than 4:1) and Nepal (almost 6:1). In contrast, these ratios are between 2:1 and 3:1 in East Asia, suggesting that more students are able to be enrolled in higher education.

Higher education expansion is not a simple win–win situation for politicians and families; it also entails risks. A serious risk is the possibility that graduate output will increase more rapidly than the economy’s capacity to create skilled jobs, resulting in high graduate unemployment. Large numbers of unemployed graduates can create political instability if they choose to agitate for jobs, policy changes, or new political leadership.12

Another risk is possible loss of quality within the higher education system. It is easier to boost student numbers than it is to produce the additional qualified academic staff needed to teach them. It is also simpler to increase the rate of student admissions than it is to obtain the funds needed to maintain a constant level of expenditure per student. Under such circumstances, class sizes rise; teacher qualifications fall; and shortages of books, laboratories, equipment, and facilities become chronic. The net result is a loss of education quality. Furthermore, because the quality of skilled workers is as important as their total numbers in a globally competitive economy, declining quality of university graduates can offset much of the expected productivity gain from having more of them.

A third risk of rapid expansion is that many graduates may find their education irrelevant for the needs of the job market. Because expanding a higher education system is expensive, decision makers often choose to channel additional students into lower-cost disciplines such as social sciences, humanities, and business studies. For example, 93% of the 291,000 students in Sri Lanka’s external degree programs are enrolled in these three areas. When there is overproduction of graduates in these fields, employers cannot find the skills they need and graduates are unable to find employment. In addition, university efforts to stretch the limited funds available may force cost-cutting measures that eliminate student attachments, field trips, research, and other activities that give graduates the practical experience that employers find desirable. Irrelevant education wastes students’ time and government’s money.

Higher education expansion also contains hidden costs that may not be fully anticipated by higher education leaders. As enrollments move beyond a GER of 5%, the classroom is no longer filled only with well-prepared, affluent, and acculturated students; a progressively broader slice of society enters the university, including students who are less prepared, less affluent, and less acculturated. Without interventions such as counseling, tutoring, academic strengthening programs, scholarships, and loans, the system will either produce poor-quality graduates or be plagued by high dropout rates. These interventions can be costly, but so is doing nothing.

These risks are not unique to South Asia. Around the world, considerable experience has been generated on how to manage these risks. Solutions that have been tried include improving secondary education, introducing academic and technical streams into secondary education, providing academic counseling programs to enable graduates to make more informed choices, arranging for the mentoring of new university students by older students, laying on special courses to boost foundational preparation in math and science, awarding need-based scholarships, and making student loans available.

**Expanding access through distance education.** Open and distance learning, delivered through open universities or extramural programs, is an attractive way to expand access. For students as well as policy makers, costs can be lower, quality is uniform, students can work or tend families while studying, and large numbers of students can be accommodated. When distance education techniques are merged with information technologies—virtual

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12 For example, during the 1980s, unemployed graduates from a new university in the impoverished highlands of Peru chose to launch a revolutionary guerrilla movement, the Shining Path, rather than return to their villages and face the disappointment of families and friends.
libraries and laboratories, open source materials, YouTube lecture videos, and student and faculty chat rooms—the results can be impressive.

The potential of open and distance learning is enormous. Steadily improving technology and satellite-based facilities have increased interactivity and improved the visual and audio quality of technology-based delivery systems. Better backup systems have made power outages less problematic. Start-up costs are lower (Martin 2011, 88). Web cameras, YouTube, and streaming video allow diaspora scholars to teach students from their homelands. For these reasons, many Asian nations are engaged in significant initiatives to build and expand the information and communications technology (ICT) infrastructure within their higher education systems. Within the three focus countries of this study, the Faculty of Education at Kathmandu University in Nepal has recently inaugurated an online master’s degree program in education management. The online offering, which has initially attracted 24 students from three different countries, is based on a self-paced textbook, online reference resources, and examinations on demand.

At some point the world’s top institutions of higher learning may be cyber universities. The Republic of Korea launched its first cyber university in 2001; today 90,000 Koreans are enrolled at 19 cyber universities. The PRC has established 68 online colleges and is rapidly becoming a major player in this field. Notably, the Association of Southeast Asian Nations, in collaboration with the Republic of Korea, expects to set up a cyber university in Viet Nam by mid-2012. This university’s e-learning programs will benefit Cambodia, the Lao PDR, and Viet Nam, serving students from remote areas and also training skilled personnel in the technology and methods of e-learning. Asia e-University, opened in 2010 by Malaysia with support from 31 countries under the Asia Cooperation Dialogue, currently provides online courses to 5,000 students from Bahrain, Cambodia, India, Indonesia, Sri Lanka, and Viet Nam (World Education News and Reviews 2001).

At present, the potential for e-learning in South Asia is limited by poor broadband access outside urban areas and by student deficiency in English (the language of instruction). In 2012, only 5.0% of Bangladeshis had internet access, and this market is growing slowly. Nepal was marginally better off with 9.0% of the population enjoying access. Overall, 27.5% of the Asian population can connect to the internet, but only a small proportion has higher-speed broadband connectivity. Still, user numbers in the region have multiplied sixfold since 2000. Rapid internet growth occurred during the past decade in Pakistan and Viet Nam, both of which raised their user numbers more than a hundredfold.

Expanding access through institutional differentiation. Another strategy for expanding access while promoting education relevance and efficiency is through policies that promote institutional differentiation and articulation (Box 2). This is the process of creating specialized institutions of higher education that address the needs of particular target groups or labor markets while ensuring that they support broader national economic development goals. Mechanisms that facilitate student mobility within and among institutions, such as an academic credit transfer system, ensure that students can pursue the type of education that best suits them and advance as far as they are academically able.

Governments have pursued institutional differentiation by creating a more diverse array of higher education institutions, complementing public universities with private universities, community colleges, polytechnics, nonresidential universities, and open universities (Table 7). In various ways, all of these models enable higher education to be provided at lower cost than is the case at full-time, face-to-face, residential public universities.

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13 A cyber university, also often called a virtual university, delivers all of its courses over the internet.
14 The Republic of Korea will provide technical assistance and a $1.8 million grant for this purpose. University World News. 2011. South Korea backs ASEAN cyber university. No. 175. 12 June.
15 Political resistance is a third limitation. Politicians usually prefer physical universities in their constituent areas over national open university or cyber university programs.
Institutional Diversification Strategies in Singapore

Singapore illustrates how it is possible to progressively construct a differentiated and articulated higher education system through a sequence of policy initiatives. First, the country’s two colonial era universities were merged in 1980 to form a stronger National University of Singapore. The next year, the Nanyang Technological Institute was established, evolving into a technological university by 1991. It was designed to serve as the human resource foundation for an economic growth strategy based on competence in selected new technologies such as medical robotics, microelectronics, and optics. During the 1990s, 10 postsecondary institutes of technical education were established to generate the mid-level technical skills to support this effort. This had previously been the role of the nation’s five polytechnics, which were subsequently reoriented to emphasize continuing education and postemployment professional development programs. Access to higher education was expanded by setting up several regional junior colleges that were linked to the national university through student transfer mechanisms. Likewise, strong student performers from the polytechnics were given opportunities to progress into universities. At the end of the 1990s, the National University of Singapore initiated a strategic shift to a comprehensive research-intensive university with a strong complement of postgraduate programs. In 2000, the Singapore Management University was opened as a private limited company in partnership with the Wharton School of Business at the University of Pennsylvania. Part of its mandate is to provide lifelong learning options to working professionals. In 2005, the first of three planned regional tertiary institutes of technical education was opened. Strikingly, these new regional institutes are intended to impart practical technical skills to the lowest 25%–30% of the secondary school cohort that previously had no access to tertiary education.


### Table 7 Institutional Differentiation in Higher Education: Bangladesh, Nepal, and Sri Lanka

<table>
<thead>
<tr>
<th>Country</th>
<th>Public Universities</th>
<th>Private Universities</th>
<th>Public Colleges</th>
<th>Private Colleges</th>
<th>Polytechnics/Technical Colleges</th>
<th>Cross-Border Universities</th>
<th>Discipline-Specific Universities</th>
<th>Open University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>33</td>
<td>56(^a)</td>
<td>153</td>
<td>1,941</td>
<td>628</td>
<td>4</td>
<td>1(^b)</td>
<td>1</td>
</tr>
<tr>
<td>Nepal</td>
<td>7</td>
<td>1</td>
<td>296(^c)</td>
<td>515</td>
<td>316</td>
<td>0</td>
<td>1(^d)</td>
<td>0</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>15</td>
<td>0</td>
<td>...</td>
<td>18</td>
<td>26</td>
<td>1(^e)</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Includes two international universities
\(^b\) National Textile University
\(^c\) Includes 216 community colleges
\(^d\) University of Agriculture and Veterinary Science
\(^e\) University of Vocational Technology

For example, private universities play an important role in Bangladesh, the community college model has been adapted in Nepal, and open universities serve significant student numbers in Bangladesh and Sri Lanka. The Bangladesh Open University enrolls 21% of all university students; the Open University of Sri Lanka registers 8% of higher education enrollment. The Government of Nepal planned to establish an open university, with initial courses focusing on information technology, distance education, and rural information management (University World News 2011d). In November 2013, the Open University Preparatory and Development Board drafted the Open University Act and submitted it to the Ministry of Education for endorsement for legislation. Sri Lanka is encouraging the private provision of higher education by local and foreign providers by offering free land and certain tax concessions to as many as 15 well-regarded applicants. One stipulation is that 20% of students would be admitted without any tuition charges (University World News 2010b).

As institutional differentiation proceeds, it inevitably creates a two-tier system of higher education. First-line universities are distinguished by quality, research, postgraduate training, and a national or regional outlook. Second-tier institutions, including community colleges, have different but important functions. They serve the local community, encourage local development, and develop competence in skills that are relevant to the local economy (World Bank 2012, 71).

Differentiation can also be pursued within each general institutional category. For example, among the 34 public universities in Bangladesh are 13 general universities, 13 science and engineering universities, 4 agricultural universities, 2 medical universities, 1 open university, and 1 textile university.

EQUITY

Ensuring equity in access to higher education is important for at least two reasons. First, it enables citizens to feel that they are being treated fairly by their government. It serves to strengthen citizens’ commitment to the national enterprise and helps to legitimize government in their eyes. It is well known that throughout the world income and access to higher education are highly and positively correlated (World Bank 2002, 52). This is certainly true in Asia (Lee and Francisco 2010, 14). Likewise, income inequality has a strong negative effect on secondary enrollments, thereby constraining the pipeline for higher education (Flug, Spilimbergo, and Wachtenheim 1998). Unless conscious public efforts are made to compensate for income inequities in access to higher education, the vicious cycle of elite privilege in access to higher education will remain unbroken.

Secondly, equity guarantees are efficient in human capital terms. Capacities for intelligence and imagination are distributed across the population without regard for income, ethnicity, gender, or geographic location. Where discrimination is based on variables other than ability, it deprives a nation of a portion of its “best and brightest.” A talented low-income student who is denied entry into higher education represents a loss of human capital for society as a whole (Ramcharan 2004). This is not the path to improved national competitiveness.

Income. In spite of the recent massification of higher education in Asia, students from lower-income groups are still less likely to enter and complete higher education (Postiglione 2011, 9). In South Asia, these disparities are particularly pronounced in Bangladesh, Nepal, and Sri Lanka. Income inequalities do not appear only in the university admission process, but begin to shape the composition of the student population much earlier. In Bangladesh, for example, less than 20% of children from the lowest-income quintile enroll in grade 9, but close to 100% from the top income quintile do so (World Bank 2008).

Equity is defined as providing equal opportunities to access and succeed in higher education.
A disproportionate number of students admitted to public universities are from higher-income families because they have received better primary and secondary education, often by attending elite private schools. Too often, the only option available for the poorer, less-prepared students is to attend a private university. But private university tuition fees are generally higher than those of public universities, forcing those who have less to pay more to obtain a university education. This inherent injustice has been one of the factors driving the recent spread of cost sharing within the public universities of the world. Even so, expanding private enrollments and increased cost sharing in higher education have been associated with rising inequity, even in developed countries (OECD 2006, 14). Without public mechanisms for redressing this imbalance, such as need-based scholarships and student loan programs, the hurtful cycle will not be broken.

Some attempts are under way in the focus countries to address inequities in access to higher education. In Sri Lanka, the Mahapola Scholarship program, funded by private contributions but managed by the Ministry of Trade, assists 35,000 low-income students on the basis of academic merit with monthly grants averaging $25 per person. A student bursary scheme provides 18,000 students with average grants of $147 each. Low-income students from peripheral areas are provided with hostel facilities at subsidized rates. Nepal recently launched a financial assistance fund to support students from poor and disadvantaged communities. The fund underwrites scholarships and also work–study opportunities. To ensure that funding reaches the target groups, a creative means test is used to identify needy students. In contrast, Bangladesh reportedly has no financial assistance program for needy university students.

**Tuition-free higher education is not equitable.** Although it may sound counterintuitive, tuition-free higher education is not equitable. This is because poorer students often do not have the means to pay for their meals, accommodation, and transport in towns where they do not live. Thus, even when higher education itself is free, lower-income students are effectively excluded from access unless some type of needs-based scholarship program exists.

**Student loans.** One mechanism for improving equitable access is student loans. This is increasingly common in Asia. For example, the student loan market in India, valued at $8.7 billion, has recently been growing at more than 20% a year (Mishra 2011a). Since 1996, Thailand’s Loan for Education Fund has provided $11.6 billion in loans to 3.7 million low-income students (Lamubol 2011).

In the past, student loan programs were not very successful (Ziderman and Albrecht 1995). A combination of high administrative costs, low repayment rates, and student pressure for more favorable financial terms undermined the programs and made them financially unviable. A student loan program in Sri Lanka was closed in the late 1970s for these reasons.

A major assessment of student loan programs around the world concluded that many programs fail to meet their objectives because they are underfunded (Johnstone and Marcucci 2010). Achieving sufficient loan fund capitalization requires not only substantial initial capital but also regular injections of funding thereafter. Student loans are a very long-term investment. It will take years before repayments from graduates can generate a substantial stream of income for financing higher education. Moreover, the idea that student loan programs can be designed to function as a fully revolving fund is a myth. Because most loan schemes involve substantial interest subsidies—usually the result of political rather than economic decisions—there will be inevitable losses. Loan repayments from existing graduates will never be sufficient to finance the next generation of students in full, given the additional financial requirements associated with expanding enrollment. In short, loan repayments from past students can reduce the need for continued public funding of the student loan program but cannot eliminate it (Woodhall 2004).

As noted, government-subsidized student loan schemes can prove expensive when the interest rate charged is below the market level or when the repayment rates are low. However, such a financing scheme is still less...
costly than a fully free higher education system (Jaramillo and Melonio 2011, 59). One way of getting around
the challenges of initial capitalization of the program, high administrative costs, and low repayment rates is
for governments to encourage commercial banks to offer loans to students. However, because financially needy
students usually cannot provide loan collateral, banks are unwilling to enter this market without some form
of guarantee against risk. This is why most student loan programs involve risk guarantee funds in which the
government will repay the loan if the borrower cannot do so. The difficulty is that this arrangement may encourage
borrowers to default and discourage banks from pursuing defaulters, since both believe that the government will
ultimately pay. When this happens, a student loan scheme may not reduce financial demands on the public purse
as expected.

Today, student loan programs are becoming more successful and can be found in more than 60 countries. Asian
countries with student loan programs include the PRC, India, Indonesia, Malaysia, Mongolia, Nepal, Pakistan,
the Philippines, Singapore, Sri Lanka, Thailand, and Viet Nam (ADB 2009, 16). Considerable accumulated
experience with student loan programs over the past 2 decades has generated good practice guidelines that have
done much to improve the feasibility of these programs. For example, the Colombian Institute of Educational
Credit and Technical Studies Abroad demonstrates that financially sustainable student loan programs for lower-
income families can be designed and managed in a financially sustainable way (Cerdán-Infantes and Bloom
2007). An important additional benefit is that student loans can help recipients to improve their academic
performance. In Mexico, loan recipients had higher grade point averages and lower dropout rates (Canton and
Blom 2004).

Notably, Nepal has been gradually expanding a student loan and scholarship program that includes an innovative
means test to ensure that financial assistance is directed to the neediest students. Rather than trying to estimate
family income in a setting where there is no national income tax, where many workers are engaged in informal labor
or self-employed farming, and where people may be suspicious of strangers asking about their sources of income,
a proxy means test was developed. It is comprised of a simple checklist of easily verified physical indicators that
have been shown to be highly correlated with income. The list includes the type of house construction, cooking
arrangements, and toilet facilities; source of water supply; distance to nearest bus stop; number of children in the
family; and parent’s education level. A short home visit by a loan program representative is all that is needed to
accurately assess family income levels (World Bank 2007b, 92).

Regarding the design and management of student loans, experience suggests at least six requirements for a
successful loan scheme (Woodhall 2004. 47–48):

- efficient institutional management, including adequate systems for the selection of borrowers, the
disbursement of loans, record keeping, data storage, and data processing;
- sound financial management, including setting appropriate interest rates to cover inflation, thus maintaining
the capital value of the loan fund and covering administrative costs;
- effective criteria and mechanisms for determining eligibility for loans, targeting subsidies, and deferring or
forgiving loan repayments;
- adequate legal frameworks to ensure that loan recovery is legally enforceable;
- effective loan collection arrangements using commercial banks, the income tax system (as in Australia, the
United Kingdom, and several other developed countries), national insurance mechanisms (as in Ghana), or
employers (as in South Africa) to ensure high rates of repayment and to minimize default; and
- information and publicity to ensure that recipients understand and accept the underlying principles and
consequent obligations for the borrowing and repayment of loans.

Geographic location. Empirical studies have documented regional inequities of access to higher education in
South Asia. Initial patterns of colonial education, when combined with the subsequent development of national
education systems by ruling elites, have created significant disparities in access to education, especially higher
education, between rural or geographically peripheral regions and centrally located urban areas. For example, there are notable discrepancies in the admission of urban and rural students to higher education in Cambodia, Indonesia, and Thailand.

One common response to the issue of geographic disparities in access is to set up regional universities outside the main cities. For example, since 2005, Sri Lanka has set up two new universities to serve areas of former conflict outside the traditionally dominant Western Province. In addition, it has employed district quotas to inject greater geographic equity into university admissions. Since 2009, Bangladesh has set up seven new public universities in underserved geographic areas. Likewise, in 2010, Nepal established two new universities in the Far Western and Mid Western development regions in order to improve local access. Nevertheless, the capital cities continue to dominate the institutional landscape (Appendix 2). For example, 53 of 87 universities in Bangladesh can be found in the capital city, Dhaka.

**Ethnic minorities.** Most Asian countries include ethnic minorities who have often been disadvantaged historically because of their sociocultural identity, which is different to that of the dominant social groups. For example, the Lao PDR has 3 main ethnic groups and 47 in total. Nepal comprises some 20 ethnic groups. Viet Nam embraces more than 50 different ethnicities and 7 major languages. Sri Lanka has three main ethnic groups. India reflects a kaleidoscope of tribal, caste, and religious minorities. In contrast, Bangladesh’s population is 98% ethnic Bengali.

Today, almost all of these nations have national education policies that guarantee equitable treatment of minorities. However, cultural attitudes regarding the value of education, the maintenance of minority languages, and the physically marginalized location of many ethnic groups present additional challenges. In Nepal, low self-esteem among minorities and the perceived irrelevance of education to them contribute to minorities’ underachievement in education. An additional factor, not unique to Nepal, is subtle tension among different ethnic groups that complicates their participation in general government school (Lee 2002, 58).

Minority ethnic groups generally fare less well than majority populations in obtaining higher education. As in the case of lower-income groups, their primary education enrollment rates are lower and dropout rates are higher. Thus, the number of minority group members who manage to complete secondary education is not generally representative of their group’s size in society. For example, the Marwaris of Nepal have a literacy rate eight times higher than that of the Chamars and the Dusadhs (Lee 2002, 58). Governments do not commonly collect statistics concerning access to services by ethnic groups, and in some cases local ethnic tensions can make such information politically sensitive. In Sri Lanka, university statistics report on the ethnic makeup of enrollments, thereby enabling monitoring as well as transparency. Equity policies in the PRC may provide a useful point of reference for addressing problems in this area. The PRC has introduced a range of policies to improve access by minorities and disadvantaged groups (World Bank 2012, 89).

**Gender.** Women’s access to higher education in Asia has improved significantly during 1990–2009 (UNESCO 2009 and 2011). Gains have been highest in East Asia where Indonesia, the Philippines, Thailand, and Viet Nam have reached gender parity. South Asia, with a regional female participation rate of 41%, has also registered progress. However, these achievements started from a lower base and proceeded at a slower rate. Within the region, Bangladesh, Nepal, and Sri Lanka all recorded the largest gender gains in the region. But only Sri Lanka, with 57% female enrollment, is on a par with East Asia. Bangladesh and Pakistan, with participation rates of a little above one-third, still have some way to go. But in Bangladesh there is a sense of positive momentum, following a laudable increase in women’s access from 16% in 1990 to 35% in 2009. Much more worrisome is India, which has recorded relatively little progress over the same period.

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18 It is worth noting that both Bangladesh and Nepal have made significant strides in women’s participation in higher education since 1980, when Bangladesh’s participation rate was 15% and Nepal’s 20% (Lee 2002, 14).
Women’s access to participation in academic and management positions has not been commensurate with their representation within the university student population. This issue has now moved to the forefront in the struggle for gender equity in higher education. Within Asia, two in three academic staff are men. As one goes up the academic ladder, women become increasingly scarce. Of 1,800 senior academic staff in the region in 2010, men outnumbered women by eight to one. Two-thirds of women academics are found within the lower ranks of the academic hierarchy (Thompson and Moore 2011). In Bangladesh and Nepal, fewer than 20% of academic staff are women, even though female students account for 35%–40% of total enrollments. In Bangladesh this proportion has remained almost unchanged for nearly a decade. Similar divergences exist in Sri Lanka and most other Asian countries, with Thailand being a notable exception.

University management is least open to women. In India, just 9 of 70 vice-chancellors are women. No women lead public universities in Bangladesh or Nepal. In Sri Lanka, only 1 of 15 vice-chancellors is a woman. Nevertheless, new institutions, such as the innovative Asia University for Women in Bangladesh, which opened in 2009 to provide women from 13 Asian nations with quality education and leadership development, should help to accelerate progress.19

What explains the fact that women enter the university as students and staff at rates below those of men? At the student level, the cause is generally attributed to cultural and religious values, especially in rural areas, that favor boys over girls when it comes to supporting their education. Girls born in poor rural households are least likely to be enrolled in school (Aslam, Kingdon, and Söderbom 2008, 72). Preferential support for boys over girls can begin in primary education, thus introducing gender inequities at the very beginning of the education pipeline. Similar attitudes may steer women students disproportionately into “softer, more feminine” disciplines such as education, arts, and social sciences. For example, in Viet Nam women account for only 22% of enrollments in science and technology fields, but more than half of those in education and social sciences (UNESCO 2010, 184–185).

Gender inequities in academic staffing have more complex explanations. Many of these have to do with subtle disincentives linked to lifestyle choices. For example, for women the decision to pursue a doctorate has implications for marriage, childrearing, and the demanding role of balancing professional and household duties. If they reach the stepping-stone of postdoctoral specialization, women in Asia choose primarily teaching-oriented positions while men overwhelmingly select research-oriented opportunities. Given the emphasis on publications in granting tenure, this tends to exclude large numbers of women from tenure possibilities. In addition, the critical period for publications output in support of tenure aspirations generally coincides with a woman’s primary childbearing years. Not surprisingly, many women opt for part-time positions so they can juggle career and family responsibilities. Likewise, given the pace at which knowledge and technology now evolve, women who absent themselves from academia for several years to have children may find that they are woefully out of date when the time comes to consider resuming their academic careers.

Even well-intentioned diversity policies can have negative consequences for women. The limited numbers of women in some academic departments requires them to taken on extra committee responsibilities in order to comply with diversity quotas. This may cause them to lose research time as well as outside consultancies. Moreover, women in majority male departments report that it is more difficult for them to build networks of internal and external professional contacts (Thompson and Moore 2011).

Various policy interventions have been crafted to ameliorate gender inequities in access to higher education. The Bangladesh Female Secondary Schools Assistance Program, set up in 1993, has improved women’s access to higher education by increasing girls’ secondary enrollment, reducing early-age marriage, and enabling them to be

19 The university recruits international staff and employs a curriculum drawn from Oxford University, the University of Chicago, and other top institutions. It joins 10 other women’s universities in Asia located in five countries (Chronicle of Higher Education 2011).
more competitive in the university admissions process (Khandker, Pitt, and Fuwa 2003). A scholarship program in Cambodia for girls entering secondary school increased enrollment and attendance at eligible schools by nearly 30% (Filmer and Schady 2006, 18). Nepal earmarked 6% of its education budget in 2001 for scholarships to enable women to attend universities. In more conservative regions, gender-segregated colleges, libraries, and hostels for girls can boost success in secondary education and increase the chances of university admission. In various countries, intensive preparatory courses for girls following secondary graduation boost their abilities in math and science to increase their chances of university admission. Regarding university staffing, innovative institutions outside the region have adopted policies that allow for part-time tenure and restarting the tenure track after an absence.

CONCLUDING CONSIDERATIONS

To assist countries in expanding access to higher education, the following recommendations are offered:

- Distance education, using online delivery to the extent possible, should be an essential part of any future strategies to expand higher education enrollments.
- The best way to address inequality of access to higher education is by intervening in basic and secondary education to ensure equality within the pipeline that leads to higher education.
- Targeted recruitment programs and the use of admission quotas can help to increase access among underrepresented groups in society.
- A mix of scholarships and income-contingent student loans is far more effective at increasing equity in university access that the provision of tuition-free public higher education.
- Developing a range of diversified higher education institutions, linked through a system of academic course credits recognized across the higher education system, supports cost-efficient access, student mobility, and lifelong learning, thereby maximizing education opportunities for students from all backgrounds.
- To increase the numbers of female academic staff, consider adopting policies that allow for part-time tenure and restarting the tenure track after an absence (e.g., childbirth).
Quality in Higher Education: Everyone Wants It—How Do You Get It?

Quality entails meeting a defined standard; relevance refers to fitness for purpose. In higher education, the two are highly complementary. Quality without relevance can be superfluous; relevance without quality can be ineffective. Although the two concepts are intertwined in practice, for purposes of analysis they will be treated sequentially. This chapter addresses quality. The following chapter will take up relevance.

WHAT IS QUALITY IN HIGHER EDUCATION?

What is education quality and how is it measured? There is no simple answer. Until the end of the 20th century, the quality of the inputs (e.g., staff, libraries, laboratory equipment, and facilities) to higher education was generally assumed to determine the quality of its outputs (i.e., graduates and research). In recent years, however, new thinking has argued that quality inputs do not necessarily guarantee quality outputs (Nusche 2008). The only sure way to assess education quality is to evaluate the outcome of education as measured by student learning achievement.

The OECD initiated the Assessment of Higher Education Learning Outcomes (AHELO) feasibility study in 2008. AHELO focuses on generic skills common to all students, such as critical thinking, analytical reasoning, problem solving, and written communication, as well as on discipline-specific skills (OECD undated).

Until this learning achievement methodology is in place, indicators of quality in higher education will continue to focus on education inputs. For this reason, this chapter will assess quality within the higher education systems of Bangladesh, Nepal, and Sri Lanka through use of input indicators, even though their shortcomings are recognized. It will then review the mechanisms currently in place for quality control and monitoring.

Academic Staff Qualifications

Although the strategy of providing additional resources to an education system has generated mixed success, one consistent finding from education research is that teacher quality strongly influences student outcomes (Hanushek and Wößmann 2007, 1). This is no less true in higher education. Within the academic community, skills are presumed to have a strong relationship to the postgraduate qualifications of the professor. Consequently, one commonly used indicator of higher education quality is the qualifications of academic staff. Rapidly expanding

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20 For the purposes of this report, unless otherwise indicated, the words “professor” and “lecturer” are used in the generic sense of “teacher.”
higher education enrollments, as in the case of Nepal, become a particular concern because student numbers rise quickly from one year to the next, but it can take 5 years or more to produce a doctorate. In addition, appropriately qualified candidates for postgraduate study may not always be available, and the brain drain is an ever-present risk.

In 2009, 33% of academic staff in Bangladesh held doctorates (Mannan unpublished). Although this is a respectable share for a low-income country, it nevertheless represents a decline from 38% in 2001. In Nepal, an estimated 12% of lecturers hold a doctorate (Bajracharya unpublished). Sri Lanka is in a better position, with 40% of academic staff having doctorates. However, one in four lecturers has only an undergraduate qualification; hence, the challenge is to provide master’s degree training to members of this large group (Chandrasiri unpublished).

Compared with other economies in the region, Bangladesh and Sri Lanka stand out for the relatively high percentage of doctorates within their university systems. Only Taipei, China has a higher figure. Nepal’s university system is weak on doctorate qualifications and it is likely that its research capacity suffers as a result. Fortunately, a large share of Nepali academics hold master’s degrees, constituting an ample pool that would benefit from an aggressive doctorate upgrading program. For example, Malaysia recently set a goal of having 75% of its academic staff qualified at doctoral level by around 2022.

Academic staff development can be difficult where local postgraduate programs are weak, overseas programs are expensive, and attractive international employment possibilities exist. But if a country wants to foster a good-quality higher education system to improve its economic competitiveness, that challenge must be tackled. Drawing from proven practices in academic staff development, a possible strategy is presented in Box 3. In most cases, it will probably require partnerships with overseas universities, access to supplemental funding from government and/or donors, and determined departmental leadership to make the strategy work.

Staff Recruitment, Appraisal, and Promotion

The criteria used to recruit academic staff and evaluate their performance play an important role in creating a “culture of quality” within a university. Good practice requires recruitment to be competitive, transparent, and based primarily on academic excellence. Unfortunately, this is not always the case in South Asia. In Nepal, for example, “[t]eacher quality remains an area that requires improvements. There is a need to review the present teacher recruitment criteria and modalities to ensure quality of teacher at the recruitment time” (Bajracharya unpublished, 64).

Staff recruitment and promotion in Bangladesh are based on criteria that leave considerable room for subjective interpretation. Frequent political interventions in this process have been recognized by the University Grants Commission (University Grants Commission of Bangladesh 2006, 23–24, 37). In Nepal, recruitment depends on a written examination and a panel interview. Subjective panel interviews are also a main mechanism, along with research publications, for determining promotion. Sri Lanka employs a more rational approach, using staffing needs identified in the university’s corporate plan to guide recruitment, employing open competition, and publishing position openings and qualifications in national newspapers. All three countries place considerable weight on research publications in their academic promotion decisions, even though national research output has fallen to minimal levels.

Contemporary practice for academic promotion decisions recognizes that the main job of lecturers is teaching. Consequently, promotion criteria place greater emphasis on teaching performance, including feedback from student evaluations and certifications earned through in-service training.
A Recipe for Homegrown Staff Development

Increasing the numbers of good-quality doctoral degree holders is an essential part of any strategy to expand higher education enrollments while maintaining or improving educational quality. They are needed to (i) teach the increasing numbers of students, (ii) raise the overall level of staff qualifications, (iii) mentor junior academics, and (iv) take the lead in enhancing research output. The challenge for Bangladesh, Nepal, and Sri Lanka is that local doctoral programs may not attract the better students, who often prefer to seek a doctoral degree abroad. When this happens, there is a real risk that they will not return home, as academic staff salaries in all three countries are comparatively low. Under these challenging conditions, the following staff development strategy is proposed as the best way to balance quality with cost while creating reasonable possibilities of staff retention:

1. Offer the best undergraduate students the opportunity to join a department as junior instructors following completion of their bachelor’s degrees. The appointment would pay a modest stipend; require a 20% time commitment to assist with teaching, laboratory work, or tutoring; provide admission to a research-based master’s degree program; and include the assignment of a senior staff member as mentor.

2. Upon completion of the master’s degree, the student would be hired at the level of junior lecturer, provided with a short training course on teaching techniques and course design, and asked to teach full time for 1 year, again with a senior staff mentor to provide guidance.

3. Successful completion of this period would make the student eligible for doctorate training within the department or elsewhere in the country. A sandwich model would be followed in which the student does some course work and dissertation proposal preparation at a university abroad, returns to the home university to undertake dissertation research—again with a 1-day-a-week teaching commitment—and returns abroad to complete the data analysis and dissertation. The doctorate would be awarded by the overseas university.

4. If the new doctorate holder returns to the home university, a reentry package would be provided consisting of a 2-year research grant, an office with internet connectivity, and an annual subscription to one scientific journal. In return, an 80% time commitment to teaching would be required. One day a week would be set aside for research.

5. At the end of 2 years, the staff member would have the option of developing a research proposal to be carried out during a 6-month postdoctoral attachment to an overseas university.

At the end of these 9 years, the staff member would have obtained a doctorate from a reputable university, contributed significantly to departmental teaching, completed four different pieces of research on national topics (master’s, doctorate, research grant, and postdoctoral project), and be well positioned to generate the publications needed to support promotion.

Source: Author.
Part-Time Teachers

Although part-time lecturers provide some flexibility in staffing, when their numbers begin to pass 10% of the total, their disproportionate presence can have a negative effect on education quality. Part-time instructors are rarely able to prepare adequately for their classes, meet with students, participate in the institution’s academic committees, or conduct research. These shortcomings impact directly on the effectiveness of teaching and learning, the vision and currency that characterize academic programs, and the knowledge resources that teachers can bring into the classroom. Most importantly, a heavy dependence on part-time staffing undermines the feasibility of institutional capacity-building strategies. Unfortunately, statistics on part-time staff numbers are not available for the public universities in Bangladesh, Nepal, and Sri Lanka.

Pedagogy for Teaching and Learning

How students are taught significantly influences how good they become. Where teaching is conducted by poorly qualified lecturers on the basis of rote memorization, outdated lecture notes, and passive learning techniques, the quality of graduates is unlikely to be high. But where lecturers receive periodic training for upgrading teaching skills, incorporate experiential and interactive learning techniques, and regularly update course content through monitoring developments in their field and sharing the results of their own research, the quality of graduates will be much better. In addition, as the knowledge economy accelerates the pace at which new information and understanding are produced, what students learn at university may soon become outdated. This is why many higher education systems are adopting a lifelong learning orientation and emphasizing the teaching of “soft skills” such as teamwork, communication, problem solving, interpersonal relations, time management, and computer literacy as a complement to disciplinary learning (Hagmann and Almekinders 2003).

Reports from the country studies indicate that Bangladesh, Nepal, and Sri Lanka have much room for improvement in this area. For example, quality is a major concern in tertiary education in Bangladesh. The public universities are providing education following the traditional methods (mainly lecture method and annual evaluation of students, instead of modern methods such as case analysis, presentation, group work, simulation, business games, term paper writing, quizzes, etc.), and in most disciplines, with little changes in the curriculum to meet the growing demands of the economy (Mannan unpublished, 86).

When about 25% of lecturers have received no postgraduate training, their skills in teaching, course design, classroom management, and student assessment are likely to be elementary. Now would be a good time to start an in-service staff development program that focuses on teaching and academic management skills. Notably, the Nepal country study calls for such a program of pre-service orientation and in-service training for lecturers.

Sri Lanka has already begun to do this (Box 4). Of the country’s 15 public universities, 14 have set up staff development centers, which have reportedly been effective in providing training in teaching techniques for academic staff and management training for administrative, technical, and support staff. A higher education teaching certificate confirms that the participant has successfully upgraded his or her skills. Other workshops cover topics such as student assessment theory and practice, learning evaluation methods, and tutoring skills. Future training topics include strategic management, education technology, research methodology, student counseling, and communication skills.
In contrast, the external degree program (EDP) in Sri Lanka has been far less successful. Offered by the conventional universities and Open University, total EDP enrollment is about 291,000 students, or 4.2 times the total enrollment of conventional universities. Enrollment is heavily concentrated in the arts (75%) and commerce and management (25%). The overall completion rate is extremely low—less than 5%. Evidence indicates that three-quarters of EDP graduates are unemployed. It is clear that this program should be a candidate for significant restructuring. It is large and costly, but its benefits to the graduates and the country appear to be minimal.

**Staff–Student Ratios**

The relationship between the number of full-time equivalent academic staff and the number of full-time equivalent students is another indicator that is often used as general gauge of education quality (and efficiency). In terms of quality, fewer students per staff member suggests smaller class sizes with more opportunity for student participation and individual attention from lecturers. In terms of efficiency, the opposite is desirable. The larger the number of students taught per professor, the greater the efficiency. The challenge is to get the right balance between quality and efficiency.

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**Box 4**

**Staff Development Centre of the University of Colombo**

The Staff Development Centre (SDC) of the University of Colombo is a Sri Lankan success story in staff development. In 2010, the SDC completed its 13th year of service to the University of Colombo and other universities. Its beneficiaries encompass academic, administrative, and clerical staff as well as students. In 2010, it carried out seven academic staff development programs and delivered eight other training programs for nonacademic personnel that covered 624 participants. Important components of its training include its Certificate in Teaching in Higher Education, the accreditation of senior staff in higher education, and various short courses in university teaching. In its early years, SDC training was confined to academic staff development, but it gradually expanded to offer skills upgrading to administrative, clerical, and other support staff.

Much of the SDC’s program was developed with the assistance of the Staff and Educational Development Association of the United Kingdom. Subsequently, it successfully applied for funding from Sweden under the Swedish International Development Cooperation Agency’s Department for Research Cooperation. Over the years, the SDC has developed professional links with the International Consortium for Educational Development and the Professional and Organizational Development Network of the United States. This has enabled the international accreditation of SDC programs and continuous upgrading of its courses through the services of international consultants. Notably, the higher education teaching certificate program offered by the SDC is recognized by the Staff and Educational Development Association. Locally, the SDC has developed working relationships with private sector organizations such as the Ceylon Chamber of Commerce, the National Chamber of Commerce, and the National Chamber of Exporters of Sri Lanka.


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Internationally, average staff–student ratios are about 1:20. In Asia, the overall staff–student ratio is 1:17. In South Asia, most countries are clustered around the 1:20 benchmark, with the exception of Nepal, which is somewhat above the average. In contrast, the average ratio in OECD countries is 1:15. It should be noted that in most developing countries, including those in South Asia, available statistics give headcount numbers rather than full-time equivalent numbers. In countries where significant numbers of part-time lecturers are used, the ratio may be somewhat less favorable than it appears.

**Student Admission**

Competitive admission, based on reasoning skills and learning achievement, is one of the most obvious ways that the quality of higher education can be maintained or improved. For example, the 2002 admissions reform at the University of Malaya, which replaced a quota system with a merit-based selection process, demonstrates a genuine interest in attracting better-qualified students (Altbach and Salmi 2012, 400).

The admission process is the doorway to a possible university degree and subsequently enhanced chances for success in life, but it is often surrounded by difficulties. Intense social pressure can be applied to governments and politicians in the effort to sharply expand access. Disadvantaged social groups and geographic regions may lobby for preferential treatment. Keen competition for admission creates opportunities for corruption.

In Sri Lanka, the student selection process for admission to the public universities is extremely competitive. Only 16% of those who are eligible for university entry are able to enroll. Admission is based on three criteria: academic merit, district quotas, and a special quota for underprivileged districts. Although there may be legitimate equity arguments for employing nonacademic criteria, education quality is not well served when intakes are based on considerations other than learning achievement. If a country truly desires to boost the quality of its higher education system, then ensuring the entry of its best students is a foundational requirement. Thus, concerns with equity and excellence need to be balanced in policy making. This is best achieved by creating a diverse array of higher education institutions in which some expand access for the general population and others offer challenging opportunities for the best students to fully develop their potential.

In Nepal, the use of competitive admission examinations has been a point of considerable contention. Numerous efforts have been made to introduce admission examinations. However, strong resistance from student groups, sometimes leading to violent protests, has forced these efforts to be abandoned time and again. The university authorities often give in to student pressures because the student groups are associated with unions that are directly linked to the political parties, which can wield powerful influence. Clearly, some consensus among the political parties concerning the expected role and contributions of higher education in Nepal will be necessary before any meaningful progress in qualitative improvement (and other critical areas) can be achieved.

In Bangladesh, admission is organized differently. At the end of secondary schooling, students take an exam that qualifies them for a higher secondary certificate, which will admit the student to a university degree program. This procedure gives the government much less control over the growth of higher education. For example, a recent doubling of the pass rate in the higher secondary examination has put intense pressure on public universities to accommodate the ballooning numbers.

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21 Staff–student ratios also vary considerably according to academic discipline. Subjects such as business studies and social studies, which can be delivered effectively through a lecture hall format, tend to have larger numbers of students per lecturer. Those that require extensive laboratory work and close monitoring of performance, such as medicine, veterinary science, most physical sciences, and aspects of engineering, are more likely to have smaller numbers of students per lecturer. For efficiency reasons, student numbers per lecturer are frequently higher in private universities.
**Student Intake Quality**

One of the surest ways to improve the quality of higher education is to raise the quality of incoming students by strengthening secondary education. A study of math and reading scores of 15-year-olds from 132 countries found a strong positive correlation between these scores and the quality of higher education in their country, as measured by university rankings, number of researchers, number of patents, etc. The study concluded that these test scores were a better predictor of higher education quality than the level of gross domestic product (GDP) per capita (World Bank 2012, 85). Enhancing secondary education is also cost-efficient, as it reduces the need for universities to devote staff time and institutional resources to remedial and/or bridging programs for poorly prepared secondary school graduates.

**Expenditure per Student**

Expenditure per student is another frequently used, although not very accurate, indicator of higher education quality. The assumption is that quality is related to the amount of resources spent on each student. However, this assumption may not hold when institutional management is inefficient. Nevertheless, when annual per-student expenditures fall below $1,000, this should be cause for concern regarding education quality. At this level, staff salaries and benefits are likely to consume most of the operating budget, leaving very little for expenditures such as research, library acquisitions, instructional materials, laboratory consumables, and equipment maintenance.

Annual expenditure per public higher education student ranges from $233 in Nepal to $1,700 in Sri Lanka, Thailand, and Viet Nam. For those spending less than $1,000 per student, notably Bangladesh and Nepal, the levels of expenditure are too low to do anything but maintain the system they have. These levels will not be sufficient to launch any kind of meaningful reform that will ultimately enable the countries to generate the kinds of skilled graduates and applied research needed to improve their economic competitiveness.

**Academic Support Services for Students**

As enrollment increases occurs and gross enrollment ratio (GER) indicators rise, the need for student-oriented academic support services increases. This is because as the number of university students grows, the academic preparation of each subsequent student admitted to university tends to be a bit less than that of the students who went before. As access extends beyond the elite graduates of the best private secondary schools and reaches out into rural areas, underserved geographic regions, and ethnic minority groups, a diverse array of support services will likely be necessary to maximize these students’ chances of successful graduation. In some cases, nonacademic support, such as locating affordable student housing or accommodating special needs, may also be required.

Students require academic support services at three different moments in their career track. The first is in senior secondary school when they must decide whether to seek a university education and, if so, which course of study to pursue. In this case, the response usually takes the form of career counseling. The second moment is after they enter the university, especially during their first year, when it becomes apparent that their secondary education has inadequately prepared them for university studies. Here, the response is generally a combination of intensive preparation courses and academic tutoring programs. The final moment is before graduation when they seek to identify job opportunities that fit with their education and interests. At this point, useful student services often include job banks, alumni networks, interview training, and help with résumé preparation.

Academic support services for university students are not common in Bangladesh, Nepal, and Sri Lanka. Bangladesh requires additional tutorials for students in academic difficulty. Sri Lankan universities offer English
language tutoring on a voluntary basis. They also have career guidance officers who reportedly receive no particular training for this job. Nepal has no specific assistance programs, so further exploration of this area may prove beneficial. Academic support services can raise overall graduation rates, improve internal efficiency, and contribute to improved equity by helping female and minority group students to stay in school.

**Learning Resources**

In terms of their quality and quantity, libraries, laboratories, and related learning resources are considered to be deficient in all three focus countries. In Nepal, “many institutions and their programs are run without appropriate infrastructure, including appropriate classrooms, labs, libraries, utilities and logistics” (Bajracharya unpublished, iv). Bangladesh confronts similar limitations and hopes to ameliorate the situation by creating a digital library for university use with assistance from the World Bank. In Sri Lanka, “[i]mproving the learning environment is yet another constraint faced by the higher education sector and it is directly linked with student unrest in many universities. This covers a wide range of items, including the absence of proper lecture halls, poor library facilities, insufficient hostel facilities, study rooms, computer labs, and recreation facilities” (Chandrasiri unpublished, 76). For this reason, Sri Lanka’s Ministry of Higher Education announced in late 2011 that it would provide $1 million to each of the nation’s six largest public universities to strengthen teaching and research, and to upgrade infrastructure. Notably, library resources are an explicit criterion for institutional accreditation in all three countries. In this regard, Sri Lanka’s Quality Assurance and Accreditation Council already has conducted 14 specific quality assessments of university libraries.

**Infrastructure and Facilities**

Adequate facilities—the specialized buildings and infrastructure (e.g., utilities, information and communication technology [ICT], and transport) necessary for campus teaching and learning—are essential for effective higher education. If lecture halls, laboratories, and libraries lack sufficient space or have inadequate electricity, water supplies, or bus services, students will not have the minimum conditions necessary to learn. Because physical facilities are costly and take time to construct, it is not uncommon for rapidly rising enrollments to surge past university or government financial capacity to provide them. If left unattended, the facilities deficit can become so large that resolving it is almost impossible.

The Bangladesh country study documents the existence of these problems, particularly within the colleges affiliated with the National University. Nepal confronts similar challenges, especially within its many community colleges where laboratory and library development have been stunted. The situation in Sri Lanka seems to be somewhat better. The long-established universities reportedly enjoy generally adequate physical facilities, although significant facilities shortcomings can be found in new universities, especially those in northern and eastern provinces. In addition, shortages of staff who have been trained to manage and maintain campus buildings compound the facilities problems in all three countries. In all three countries, private universities face chronic shortcomings in physical facilities due to unique challenges associated with their efforts to acquire land and bank financing for building construction.

**Information Technology**

The knowledge economy turns on the constantly improving ICT infrastructure that eliminates time and space as barriers to accessing knowledge, attending a class, or participating in research (Chapter 1). For this reason, today’s good universities, as well as those that aspire to excellence, work hard to build and maintain strong ICT infrastructure and internet access. In this area, the higher education systems of developing nations often find themselves at a competitive disadvantage, perhaps because they arrived late or lack the financial resources to keep pace. Nevertheless, examples can be found of small countries, such as Rwanda in Africa, that have registered surprising progress in this area.
The status of ICT development varies among the focus countries of this study. In Bangladesh, the government’s Vision 2021 strategy aspires to create a “digital Bangladesh.” Yet internet penetration is very low—about 51%—and connectivity is slow. The challenge of implementing this strategy is therefore immense. In higher education, the government has announced an initiative to link all universities and research institutions with high-speed connectivity to the Bangladesh Research and Education Network. Some 73 higher education institutions (15 public universities, 36 private universities, and 22 degree colleges) offer undergraduate programs and 28 institutions offer postgraduate diplomas in ICT with total enrollment of about 17,000 students. Four universities offer doctorate programs in ICT. In public colleges, an average of 90 students must share each computer. In private colleges, the ratio is much better at 23 students per computer. However, internal e-mail systems and digital libraries are rare. By 2013, the government plans to make ICT education compulsory in secondary education.

Sri Lanka is also focusing extensive policy attention on ICT development. Its development policy framework earmarks ICT as one of six subsectors to receive priority attention. However, although usage is expanding rapidly, internet penetration is still only 15%. Universities are expected to play a major role in developing the human resources necessary to advance this and other high-tech areas. The National ICT Workforce Survey estimated the demand and supply for ICT graduates in 2010 to be 3,970 and 4,473, respectively. The lower demand has been attributed to various reasons including lack of knowledge, skills and desirable attitudes from the ICT graduates. However, the total demand for IT workers is expected to grow at 17% per annum according to the same survey (ICTA 2010). Sri Lankan software exports already generate an estimated $80 million in annual revenues, but the local software industry believes that Sri Lanka can achieve $1.0 billion in total ICT-related exports by the end of 2014.

Although Sri Lanka is investing heavily in university ICT infrastructure, ICT use within the system, particularly in public universities, is relatively low and varies widely. At this point, ICT is employed primarily for administrative and record-keeping purposes, and education applications are rare. Still, several undergraduate and postgraduate programs in ICT are already in place. Notable among them is the innovative Bachelor's in Information Technology degree at the University of Colombo. This program offers flexible study options with diploma-level exit points after years 1 and 2. It runs with e-learning support, weekly TV programs, a web portal for online access to study material, and CD-based content for offline access. It also partners with leading private institutes to provide training at the regional level. To boost the development of ICT-skilled graduates, the government is establishing a new science and technology university.

Nepal has reportedly made rapid ICT strides in recent years. Nevertheless, internet penetration is less than 3%. Thus, the country still has a long way to go to join the digital age, especially in the use of ICT for teaching and learning. The Ministry of Education has prepared the ICT in Education Master Plan 2013-2017 with the following goals: (i) to expand equitable access to education, (ii) to enhance quality, (iii) to minimize the digital divide, and (iv) to improve service delivery system in education. The master plan has four key strategy areas: (i) system development, (ii) infrastructure development, (iii) human resource development, and (iv) content development. The linkage with higher education is limited to enhancement of Education Management Information System.

**Student Assessment and Learning Outcomes**

Contemporary student assessment stresses the need for continuous evaluation that emphasizes the demonstration of learning achievement (i.e., competence) (Greaney and Kellaghan 2008). In Bangladesh and Nepal, student assessment is carried out largely on the basis of an annual end-of-course examination that rewards rote memorization of classroom lecture content. In addition, Nepali institutions administer a final graduation examination to undergraduate students; in 2009, the overall pass rate on this exam was only 38%. This exam is not constructed by the lecturers or even by the individual institutions, but by the Office of Controller of Examinations at the country’s main university. Thus, there is considerable room for improving student assessment.
QUALITY ASSURANCE

As the number of universities proliferates, students and their families become concerned that they may not be receiving value for money in higher education, most commonly in the case of private universities and colleges. Nations as diverse as India and Viet Nam have voiced concern that breakneck expansion in recent years has driven down education quality (Mishra 2012). Families often pressure government officials to take steps to ensure compliance with certain acceptable minimum education standards. In response, many governments worldwide have established national quality assurance and accreditation agencies charged with licensing and monitoring the educational quality of all institutions. The ultimate goal is to ensure institutional accountability for performance in the use of public and private funds.

In Asia, a quality assurance movement in higher education has been gaining momentum. Not including the more developed systems of the PRC, Japan, and the Republic of Korea, 11 of 15 Asian countries now possess semiautonomous government agencies charged with quality assurance and accreditation in higher education. Of these 11 agencies, 8 have been established since 2000, underscoring the relative recency of the quality assurance movement in Asia. This does not mean that no quality assurance mechanisms exist in the four countries without such agencies—Bangladesh, the Lao PDR, Nepal, and Viet Nam. In these countries, quality assurance is the domain of specific departments within the ministry of (higher) education, where staff is more likely to be generalist civil servants than trained specialists in higher education quality assessment. Encouragingly, efforts are reportedly underway in Nepal (under the University Grants Commission) to set up such an autonomous agency. The Quality Assurance and Accreditation (QAA) piloting has been completed and 10 institutions were accredited and about 100 institutions, including private colleges, community colleges and university colleges, were listed under various categories. The National Accreditation Council, however, is yet to be formed. In Bangladesh, a government announcement in June 2011 anticipates the formation of a national accreditation council to oversee private higher education (University World News 2011b). Since 2003, most existing higher education quality assurance agencies in Asia have exchanged experience and trained staff through the Asia-Pacific Quality Network.

Globally, the quality assurance movement in higher education has been spurred by several phenomena. One is the almost universal transition from elite to mass participation in higher education that has sharply increased the stress on national budgets. Another is the corresponding surge in the private provision of higher education. A third is a rising general concern with accountability in the use of public funds, and a specific concern with accountability for institutional performance where public universities have been granted greater autonomy. Fourth is growing internationalization in higher education that has triggered calls for closer quality monitoring of cross-border education. New institutions involved with quality assurance in higher education have populated regional and international professional networks designed to share experience, provide specialized training, and work toward the development of common international standards that facilitate the global mobility of students.22

The methodology for conducting a quality assessment, which may lead to institutional or program accreditation, has several common elements that have emerged from extensive international experience over the past several decades. Specifically, accreditation is

\[\text{the process by which a (non-)governmental or private body evaluates the quality of a higher education institution as a whole or of a specific educational programme in order to formally recognize it as having met certain pre-determined minimal criteria or standards. The result of this process is usually the awarding of a status (a yes/no decision), of recognition, and sometimes of a license to operate within a time-}\]

\[^22\] As higher education becomes more international in scope, academic staff and students are increasingly mobile, international partnerships and networks proliferate, and competition for global talent intensifies, the needs for transparency and comparability in quality assurance methods, as well as for a universal understanding of the meaning of a degree, will inevitably increase (Green 2011).
limited validity. The process can imply initial and periodic self-study and evaluation by external peers. The accreditation process generally involves three specific steps: (i) a self-evaluation process conducted by the faculty, the administrators, and the staff of the institution or academic programme, resulting in a report that takes as its reference the set of standards and criteria of the accrediting body; (ii) a study visit, conducted by a team of peers, selected by the accrediting organization, which reviews the evidence, visits the premises, and interviews the academic and administrative staff, resulting in an assessment report, including a recommendation to the commission of the accrediting body; and (iii) an examination by the commission of the evidence and recommendation on the basis of the given set of criteria concerning quality and resulting in a final judgment and the communication of the formal decision to the institution and other constituencies, if appropriate.23

In Sri Lanka, quality assessments of public higher education institutions were first undertaken in 2005 by the University Grants Commission. It established the Division of Quality Assurance to carry out this responsibility, and subsequently boosted the importance attached to quality by naming vice-chancellors to the University Grants Commission Standing Committee on Quality Assurance and Accreditation. In 2010, the semi-autonomous Quality Assurance and Accreditation Council became operational. Since 2005, the commission (and subsequently the council) have completed 319 external quality assessments in public universities. These include 14 institutional reviews, 291 subject reviews, and 14 library reviews. In the process, subject benchmark indicators have been defined and procedural manuals developed for subject reviews, institutional reviews, and external reviews. Unlike many other countries, where quality assurance and accreditation mechanisms commonly emerged to regulate the private provision of higher education and only later expanded to include public universities, in Sri Lanka the focus of quality assurance has so far been solely on public institutions.

In many countries, external review agencies require universities to undertake a self-assessment study as the first step in a quality review. The institutions initially viewed this as a burdensome bureaucratic requirement and consequently treated it in a perfunctory manner. In time, however, the self-study has become recognized as a useful exercise for the institutions themselves, and today it is widely accepted around the world. Numerous guidelines and manuals have been produced to orient public agencies, universities, and other stakeholders to the process (Box 5). Often it is institutionalized, with universities creating their own internal quality audit units to carry out continuous quality monitoring. For example, 70% of European universities now conduct regular internal quality reviews (Crosier, Purser, and Smidt 2007).

If quality is to be improved, it is essential not only to identify shortcomings, but also to provide incentives to overcome them. A competitive fund is a common means of doing this (Saint 2006). Under such programs, institutions submit project proposals that are selected by peer review committees according to transparent procedures and criteria. The criteria vary by country and depend on the policy changes being pursued. Sparked by competitive funding, fresh thinking and additional resources can be brought to bear in efforts to improve education quality.

Several established higher education quality assurance agencies exist within Asia and the Pacific that constitute a “neighborhood resource” for the development of quality assurance agencies in South Asia. One of the oldest in the region is the Hong Kong Council for Accreditation of Academic and Vocational Qualifications, which has its roots in a previous agency founded in 1990. It is notable for its emphasis on self-improvement through benchmarking. The China Academic Degrees and Graduate Education Development Center, established in 2003, follows the basic international model outlined in Box 5. The 5-year-old Malaysian Qualifications Agency reportedly employs a fair and transparent methodology characterized by good stakeholder involvement.

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23 Vlăsceanu, Grünberg, and Pârlea (2007) is a useful and informative reference document. In comparison, the OECD defines quality assurance as the “process of establishing stakeholder confidence that educational provision fulfills expectations and meets minimum requirements” (OECD 2008b).
Australia’s recently renamed Tertiary Education Quality and Standards Agency offers considerable experience, including with transnational quality assurance, and includes a searchable database of good practices in quality assurance on its website.

Among the building blocks of a modern higher education system, quality assurance is perhaps the only one that can be obtained beyond national borders, if the need arises. International accreditation has been used in place of local accreditation in several countries. For example, lacking national accreditation systems, both the Catholic University of Chile and Monterrey Institute of Technology in Mexico successfully sought international accreditation for many of their programs to boost their academic standing and reputation (Altbach and Salmi 2012, 416). Within Asia, Taipei, China’s Ming Chuan University has successfully obtained accreditation from the United States Middle States Commission on Higher Education (World Education Service 2010).

In the knowledge economy, scientific and technological understanding is advancing rapidly. Although external quality reviews can determine whether curricula have been periodically revised and syllabi updated, they may not be able to determine how well these exercises have been carried out. Where libraries have limited journal subscriptions, internet access is slow and unreliable, and funds are too scarce to enable academic staff to attend scientific conferences, it may not be possible for universities to keep curricula content near the cutting edge of the knowledge frontier.

In such cases, two types of information resources can be sought. One is institutional partnerships with overseas universities that may be better positioned within the knowledge economy and willing to share what they know. University partnerships can be used to strengthen curricula review, provide postgraduate degree study

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**Box 5**

**Guidelines and Practical Arrangements for a Quality Assurance System**

**Procedural guidelines for building a quality assurance system**

- Build consensus around clear goals and expectations of the quality assurance system.
- Ensure that quality assurance serves both improvement and accountability purposes.
- Combine internal and external quality assurance mechanisms.
- Build professionalism and technical capacity in order to secure legitimacy.
- Ensure that the members of external evaluation teams are appropriately selected and trained to analyze the information they gather.
- Make stakeholders such as students, graduates, and employers visible in the evaluation procedures.
- Steadily increase the focus on student outcomes (e.g., learning achievement, employability).

**Practical arrangements for a quality assurance system**

- Avoid fragmentation of the quality assurance organizational structure.
- Avoid excessive costs and unnecessary burdens.
- Develop a quality national information system on students and their later employment experience.
- Improve information dissemination with reports that are easily accessible and comprehensible to non-experts.

to academic staff, organize short-term training in teaching techniques, offer informal advice on management issues, and collaborate in joint research. The second resource is the increasing number of free “open source” course outlines, study materials, and reading lists that are available on certain websites. Open educational resources are learning materials that are in the public domain or released with an intellectual property license that allows for free use, adaption, and distribution. Thus, they can be accessed, used, and transformed by anyone, anywhere. For example, the Massachusetts Institute of Technology, a pioneer in the field, provides web-based publication of its course content for 2,100 courses. This includes free lecture notes, exams, and videos from the institute, and no registration is required. Though the concept is simple, the economic potential is tremendous and the advantages are threefold: First, open resources lower education costs substantially. Second, they make high-quality and immediately relevant learning available to any internet-linked student in the world. Third, they help universities reduce their marketing costs. Recognizing the larger economic implications of the open source movement and its potential to dramatically expand the global knowledge economy, the United Nations Educational, Scientific and Cultural Organization (UNESCO) hosted in mid-2012 the World Open Educational Resources Congress (UNESCO 2012).

CONCLUDING CONSIDERATIONS

“Low quality is the biggest problem and greatest challenge facing higher education systems in many developing member countries.” This is the conclusion of the 2008 Asian Development Bank (ADB) review of higher education in Asia (ADB 2008, 42). Lacking output indicators of learning achievement in higher education, current quality assessments are forced to use selected inputs, such as lecturer qualifications or library development, to monitor education quality. This chapter’s review of input indicators reinforces the ADB conclusion that quality is a serious problem for higher education systems in South Asia. Too often, enrollment expansion has outstripped national capacities, both public and private, to fund a corresponding expansion of physical facilities and infrastructure. Although Sri Lanka has managed its higher education development somewhat better, serious damage has been done in Bangladesh and Nepal. Local initiatives in both countries to grapple with these shortcomings have been stalemated by political rivalries and the counterproductive politicization of academic staff and student groups. Because political impediments are the primary barrier to thoughtful development of higher education in these countries, progress is unlikely until a political solution can be devised to create the conditions for constructive change.

Relevant Higher Education: The 21st Century Goal

If relevance is “fitness for purpose,” then what is the purpose of higher education? The answer to this foundational question has changed strikingly during the first decade of the 21st century. For most of higher education’s previous 1,000 years, the answer was consistently “the pursuit of truth.” Traditionally, new understanding was sought through intellectual inquiry and research, transmitted to the next generation through the teacher–student relationship, and safeguarded within the walls of academia. In short, the time-honored purpose of higher education has been teaching and research. During the 20th century a third element—community service—was added with the emergence of the diffusion-of-innovation orientation of the “land grant university” model in the United States.

The knowledge economy has stood the purpose of higher education on its head. Today its purpose is increasingly to craft job-ready graduates, produce problem-solving research, and partner with industry and government in productivity-enhancing undertakings. In essence, the university is becoming a “knowledge conglomerate” (Mohrman, Ma, and Baker 2008). As this occurs, science and technology are more and more widely accepted as authoritative voices and economic assets in a society. To a large extent, these changes are being imposed on the university community by outside pressures applied by government, society, and funding agencies. Within academia, especially in Europe, many decry this shift as instrumentalist or mechanistic, and deplore this deviation from traditional academic values. Nevertheless, the larger dynamics that shape the forces of change are relentlessly pushing higher education away from its established comfort zone.

The daunting pace at which knowledge and technology are expanding has shrunk the “use life” of knowledge, thereby generating needs for periodic professional retraining and lifelong learning. Consequently, the definition of “student” is stretching to include much of the adult population. As information and communication technologies become more accessible, knowledge can be secured anywhere and face-to-face learning loses its exclusivity. Online courses provide the possibility of “just-in-time” learning and begin to undermine the formal structure of degree courses. In the process, new providers, both private and international, appear on the higher education stage and compete to capture these emerging new niche markets. Arcing over all of this is the dominant theme of relevance.

In the quest for relevance, national labor markets and national economic development strategies become important reference points for higher education decision making. Graduate employability becomes a test of educational relevance and confirms the correctness of institutional choices. Increasing societal welfare depends on a nation’s economic competitiveness. By extension, competitiveness hinges on a country’s capacity to turn out highly skilled workers and to apply knowledge in order to attain—and maintain—this objective. Thus, the labor market signals the near-term demand for graduate skills while the national economic development strategy shapes the longer-term requirements for graduate competencies.

This collaborative relationship has been referred to as the “triple helix” (see Etzkowitz and Leydesdorff 1998).
THE EMPLOYABILITY TEST

Global integration and technological innovation are combining to catalyze long-term changes in the world economy that are profoundly altering the structure of labor markets. On one hand, the demand for highly skilled and competent workers is rising even as general unemployment expands. A recent worldwide survey found that 34% of employers report difficulty in finding skilled employees such as engineers, technicians, and salespersons (Bishop 2011). This shortage is prompting an international bidding war for top talent and pushing up salaries for skilled positions. These problems will only intensify in the foreseeable future. South Asian countries will add 1.0 million–1.2 million new entrants to the regional labor force every month for the next 2 decades and will contribute about 40% of the total new entrants to the global labor force of working age (15–64 years). The employment challenge for the region is to absorb these new entrants into jobs at rising levels of productivity. In this context, higher education can play a significant role in terms of skills upgrading (Nayar 2012, 1).

On the other hand, the commodification and outsourcing of routine jobs; their elimination through the use of technology; and an increasing reliance on part-time, temporary, and contract workers are doing away with large numbers of middle-grade jobs, leading to a division of the labor market between well-paying and poorly paying positions. As this structural realignment of labor markets proceeds, rising rates of unemployment are the transitional result. This intensifies the pressure on governments to ensure that citizens are equipped with the skills that employers are seeking, and to create a business environment conducive to job-creating entrepreneurship and innovation.

This phenomenon is already observable in Asia. In a 2011 survey of 11,200 employers in eight Asian countries, 45% of them report difficulty in filling job vacancies due to a lack of available talent (Manpower Group 2011). The most common explanations offered for these problems were lack of experience (25%), shortage of qualified candidates (24%), weak technical skills (16%), and not having the right values and mind-set (10%). All of these explanations speak to the relevance of postsecondary education, the output mix of graduates, and issues of “soft skills.” Notably, the seven most difficult to fill positions in Asia are (i) sales representatives, (ii) technicians, (iii) general laborers, (iv) engineers, (v) accounting and finance staff, (vi) researchers, and (vii) information technology specialists. With the exception of laborers, all of these are products of the postsecondary education system.

India illustrates the problem. India’s National Association of Software and Services Companies, a major trade organization, reports that “75% of technical graduates and 85% of general graduates are unemployable by India’s high-growth global industries” (Wall Street Journal 2011). This waste of student effort and government resources points to the litmus test for producing relevant university graduates: Will they get jobs? The PRC has responded to this question by making it a criterion for the development of academic programs. With unemployment among recent university graduates rising, the PRC Ministry of Education announced in early 2012 that it will encourage universities to phase out or downsize academic programs whose graduates have an employment rate that falls below 60% for 2 consecutive years (World Education News and Reviews 2012).

The concern with graduate employability has become a major driver of change in universities around the world. In Europe, for example, two-thirds of universities surveyed in 2007 considered employability criteria as “very important” in determining their success, significantly more than in 2003 (Crosier, Purser, and Smidt 2007, 32). In response, employer surveys and graduate tracer studies are becoming accepted management tools in higher education. More importantly, the whole concept of university education is undergoing a rethink. No longer is the evaluation criterion simply “what do you know?” Today it is increasingly “what do you know how to do?”

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26 The Manpower Group maintains 4,000 offices in 82 countries.
This conceptual shift is reflected in the recent movement toward assessing learning achievement in terms of occupational competencies, also referred to as “employability” (Nusche 2008, 11). These are the abilities needed to acquire a job in a specific occupation. In various countries, the desired occupational competencies are defined by a national qualifications framework. The focus on educational outcomes shifts the spotlight of evaluation from what the institution intends to teach to what the student has been able to master.

Employability concerns, when passed through the filter of knowledge economy competitiveness, have been manifested in two current areas of emphasis within higher education: science and technology, and “soft skills.” National competence in science and technology is accepted by many as the cornerstone for the innovation capacities that generate increased competitiveness. A 2004 study in Taipei, China underscored higher education’s important role to its economic growth. It found that a 1.0% increase in higher education graduates led to 0.4% growth in industrial production, and a 1.0% increase in science and engineering graduates led to a 0.2% rise in agricultural output. The study concluded that, among all disciplines, science and technology had the largest effect on productivity (T-C. Lin 2004).

Science and Technology

As economies move up the value chain, the kinds of skills required in the national labor market will increasingly emphasize sophisticated technical abilities and high-level generic soft skills—such as critical analysis, problem solving, and communication—that help to raise labor productivity. Experiences from Japan, the Republic of Korea, and Taipei, China suggest that if an economy is to absorb new technology rapidly, one-third or more of its university graduates must come from the sciences and engineering (World Bank 2012, 25).

The proportion of science, technology, and engineering (STE) students in total enrollments varies in Asia from lows of 13% in Nepal and 19% in Pakistan to highs of 44% in Sri Lanka and more than 50% in the PRC, the Republic of Korea, Japan, Malaysia, Singapore, and Thailand (World Bank 2012, 49). With the exception of the Lao PDR (where STE enrollment declined markedly) and Bangladesh (where it increased noticeably), STE enrollment shares appear to have remained fairly stable during 2004–2008. Because the optimal proportion of STE enrollments will depend on a country’s economic structure and its future development prospects, there are no clear guidelines in this area. However, it can reasonably be concluded that the share in Nepal (13%) is too low. Bangladesh is certainly making forward strides, and Sri Lanka appears well positioned.

At the postgraduate level, the STE picture is less encouraging. Nepal produces just 38 doctorates per year, 26% of them in engineering, agriculture, and sciences. In contrast, Sri Lanka awarded almost all of its 280 doctorates in 2010 in STE areas, with medicine accounting for 93% of the total. Bangladesh produced 2,862 doctorates in 2009, but a breakdown by academic fields is not available.

In the effort to expand their STE capacities and boost their quality toward international levels, various countries, often stimulated by the apparent success of the Indian Institutes of Technology, are developing STE-focused universities, frequently with an emphasis on technology areas linked to key components of the national economy.

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27 A national qualifications framework (NQF) defines vocational education and training and/or higher education standards in line with the needs of the labor market, and seeks to strengthen the links between education and employment. NQFs were initially developed in the United Kingdom and have subsequently been formulated for Belgium, France, Germany, Norway, South Africa, Turkey, Ukraine, and elsewhere. In Asia and the Pacific, NQFs can be found in Australia, Fiji, Malaysia, New Zealand, the Philippines, and Singapore. The NQF has various levels covering all stages of learning in secondary education, further education, vocational training, and higher education. Although academic higher education courses are not normally included in an NQF, it is generally aligned with the academic structure of higher education, thus allowing levels of learning achievement to be compared.

28 Outcome-based assessments in higher education were first adopted by Australia, New Zealand, the United Kingdom, and the United States, but are now used by a number of OECD countries.

29 Specifically, the 6% of graduates (2009) in science fields reportedly encounter difficulty in finding employment, but the 3% of graduates in engineering are in high demand.
For example, Singapore is building a University of Technology and Design that is intended to nurture a new generation of innovators in architecture, engineering, and information systems. The university will eschew traditional disciplinary organization and teaching approaches, instead emphasizing problem-oriented teams and project-based learning (Young 2010). Similarly, Bangladesh has set up the Bangladesh University of Textiles to provide better technical assistance to its booming textile export sector, and Nepal has authorized the establishment of an agriculture, forestry, and animal science university in an effort to lift its large subsistence agriculture sector to more productive levels. Likewise, Viet Nam announced in August 2011 that it will construct a new Hanoi University of Science and Technology to help the country compete with the PRC as a low-cost manufacturing center for the world.30

Tertiary-Level Technical and Vocational Education and Training

Postsecondary training in technical and vocational education (TVET) complements university education in preparing a technology-competent work force. It shapes the skill set of the next generation of workers, provides its students with readily employable skills, and helps to compensate for university student undersupply in some areas. It is therefore not surprising that the share of tertiary-level students pursuing TVET (e.g., in polytechnics) accounts for about half of all higher education students in the PRC (48%), the Republic of Korea (41%), and Malaysia (59%). World Bank studies in Indonesia and the Philippines have concluded that “post-secondary TVET institutions have higher labor market relevance and adaptability than universities” (World Bank 2012, 71). In contrast, tertiary TVET students make up just 9% of total tertiary enrollments in Bangladesh, 0% in Nepal, and 2% in Sri Lanka. For this reason, these three countries would benefit from strengthening and expanding their postsecondary TVET programs.

Soft Skills

The challenge of imparting appropriate soft skills for the 21st century has also been recognized in Bangladesh, Nepal, and Sri Lanka. In Sri Lanka, a 2008 survey found that of a predetermined list of seven major attributes, the three most vital as viewed by private sector employers were initiative, flexibility, and adaptability. The personality qualities most often sought by the respondents include communication skills, team orientation, trainability, presentation skills, positive attitudes, accountability, ambition, discipline, and civics (a general understanding of law and order)(Chandrasiri 2008). In Bangladesh, professional observers have called for the incorporation of soft skills development into the curricula of the nation’s universities (Mannan unpublished, 96). The emphasis on soft skills is reinforced by surveys in other Asian countries, which show that employers place considerable importance on problem solving and creativity. As countries move up the value chain in key productive sectors, these types of high-level generic skills will become increasingly important as drivers of labor productivity (World Bank 2012, 26, 29).

In various Asian economies, awareness that soft skills contribute to the development of graduate capacities for creativity and innovation are prompting cautious experimentation with Western-style liberal arts education. For example, the National University of Singapore is partnering with Yale University in the United States to create a jointly run liberal arts college. After pioneering a pragmatic and utilitarian technology-based approach to the role of higher education in economic development for 20 years, Singapore now seeks to discover whether a liberal arts education can better prepare its citizens with the critical thinking, creativity, and flexibility necessary for sustaining success in the constantly shifting terrain of the global economy (Chan 2010). Hong Kong, China has announced that, as of 2012, all university students will be required to take a new fourth-year general education

30 Teaching will be in English and French. A consortium of French universities has designed the curriculum, a French chemist will serve as the university’s first rector, and French professors will initially teach many of the courses until qualified Vietnamese teachers can be recruited (Sharma 2011a).
course. Likewise, several universities in the Republic of Korea are exploring how liberal arts approaches might be incorporated into their curricula.

In spite of these initiatives, many academics in Asia are not convinced of the merits of undergraduate liberal arts education. It remains a controversial topic that is frequently opposed by academic staff. Nevertheless, the country experiments in nurturing capacities for innovation will merit watching in the years ahead.

**Anticipating Human Resource Needs**

The pace at which competition evolves in the global economy requires anticipation and educated guesswork in order for countries to be prepared for successive rounds of technological and organizational change. This is not manpower planning derived from centrally established production targets. It is human resource development guided by national economic strategies. Given the long lead time required to increase human resource capacities in technical fields such as engineering, material sciences, and biotechnology, constant communication and coordination are required among government, the productive sector, and higher education if the high-level skills necessary to implement national development strategies are to be made available in a timely manner. In this context, the economic subsectors prioritized by government are major reference points for higher education. Consequently, national development strategies and university institutional development strategies need to complement each other. The following paragraphs briefly review how this plays out in the three focus countries.

**Bangladesh**


The plan seeks to elevate Bangladesh to middle-income country status by the end of the decade. To this end, it emphasizes human resource development through education and training, especially technical education. A vision of a “digital Bangladesh” lies at the heart of this plan, with emphasis on information technology capacities. For example, computer training will be compulsory in secondary education, and will eventually become mandatory for primary education as well. Six other pillars complete the framework, targeting agriculture and food security; human resource development; transportation and communications infrastructure; better environmental management; a broader industrial base with emphasis on textiles, leather, and food exports; and energy self-sufficiency. Cross-cutting themes are good governance and sound macroeconomic policy.

The skilled human resource requirements to implement this plan are implied, but not made explicit. For example, increasing food security and moving up the value chain in agriculture exports are likely to require specialists in areas such as agricultural marketing, postharvest storage and processing, food technology, and irrigation management, in addition to traditional needs for agronomists, plant breeders, and plant pathologists. Similar skill implications can be deduced from the other plan objectives. What appears to be lacking is a unified national human resource development strategy that would coordinate the education and training programs of various government agencies. Such a strategy would provide a useful reference for institutional development strategies within the universities.

The distribution of university enrollments across the various academic disciplines matches up only partially with the goals of the plan. The overall numbers for science, technology, and engineering appear reasonable. However, the very low enrollment shares found in agriculture (5%), commerce and management (3%), and health sciences
will make it very difficult to attain the plan’s agricultural, industrial, and human resource objectives until the requisite skills are generated to support these initiatives. In this context, the Bangladesh study notes that public universities currently have few links with the labor market. Consequently, course offerings and content frequently do not provide graduates with the knowledge and competencies that the labor market seeks. The private universities, although more responsive to labor market signals, are focused almost entirely on meeting the short-term training demands of students and employers; anticipation of longer-term demand is generally not part of their business strategy. In addition, in an attempt to provide quality control, new course offerings at private universities must first be approved by the University Grants Commission, which often calls upon public university professors to evaluate these proposals. In short, Bangladesh faces significant challenges in achieving greater relevance.

The international labor market is also an important reference point for Bangladesh. In 2010, an estimated 5.4 million migrant workers, representing 7% of the Bangladeshi labor force, sent home $11.1 billion, which represented 12% of national GDP (World Bank 2011, 13–14, 31, 68). Of these, 4.3% held higher education credentials. Conscious efforts to provide these workers with internationally competitive skills could help the country through increasing remittances.

Nepal

Following a period of political turmoil that led to a new form of government in 2006, national development strategy has been expressed in 3-year interim development plans. The first three-year interim plan covered 2007–2010 and the second addressed 2011–2013. Both plans have stressed dual needs for economic growth and poverty reduction with a strong emphasis on employment creation. These efforts will focus on agriculture and human services, with secondary attention to tourism. Proposed initiatives include promotion of cottage industries through microfinance programs, greater industrialization of agricultural products with a view to increasing exports, expansion of potable water systems, increased access to health care, energy grid expansion, extension of the road system, and more conscious attention to environmental management. Again, the corresponding needs for highly skilled persons can be extracted from these plans. They include business developers, accountants, water and waste system engineers, civil engineers, electrical engineers, food technologists, and environmental scientists.

The university system in Nepal produces graduates mainly in the areas of social sciences, education, and the humanities. A secondary concentration is commerce and management. With less than 1% of enrollments in the agricultural sciences, only 4% in the engineering fields, and just 3% in the health sciences, it is probable that severe human resource constraints in these areas will hamper—and perhaps even prevent—implementation of the government’s development plan. The contradiction between an agricultural sector that generates 34% of GDP and the small number of agricultural graduates is glaringly apparent. A significant realignment of disciplinary enrollments, coupled with improvements in teaching techniques and some curriculum reform, would seem to be a necessary condition for achieving the country’s proposed medium-term development objectives. A useful first step would be labor market analysis from a higher education perspective, including employer surveys and graduate tracer studies. One concern is that the controlling structure of Tribhuvan University, which issues standard curricula, conducts uniform student examinations, and awards degrees to 90% of all higher education students, effectively stifles academic innovation of any kind.

An additional overlooked opportunity may be the preparation of Nepalese emigrants for better-paying jobs abroad so that they can produce a higher level of remittances. At present, roughly 1 million people are seeking foreign jobs, and this does not include the large number of Nepalese who undertake seasonal work in India. This represents roughly 10% of the national labor force and 5% of those with higher education. Foreign workers remitted an estimated $3.5 billion in 2010, triple the amount sent home in 2005 (World Bank 2011, 32). Significantly, this contribution accounted for 23% of the country’s GDP. If the government were to recognize
that the need to seek foreign employment is a long-term structural problem in the Nepali economy and take steps to provide youth with the skills to compete favorably in overseas labor markets, the country as a whole would undoubtedly benefit.

Sri Lanka

The national development strategy for Sri Lanka is mapped out in the Ten-Year Horizon Development Framework 2006–2016. This plan takes an explicitly instrumentalist view of education, affirming that “Sri Lanka’s education system will be transformed into one that will provide the technological skills required for rapid economic growth and national development” (Government of Sri Lanka 2006, 144). The economic sectors that are privileged under the plan are tourism, infrastructure, agriculture and fisheries, information and communications technology, business process outsourcing, ports and aviation, and education and training. Unlike Bangladesh and Nepal, Sri Lanka is not burdened with a preponderance of enrollments in the humanities and social sciences. Nearly half of its enrollments are in the sciences, engineering, health sciences, and agriculture. However, with only 8% of students pursuing engineering specialties, it is possible that the country’s engineering capacities may be insufficient to support its ambitions in agriculture, infrastructure, ports, and aviation.

The government’s announced intention to encourage “reputable foreign universities” to set up shop in Sri Lanka in the hope of expanding university intake by 10,000 annually could introduce significant distortions into the disciplinary makeup of graduate output if care is not taken to steer the new institutions’ offerings toward areas of high-priority skills development. It is common throughout the world for private universities to gravitate toward low-cost disciplines (e.g., social sciences and business studies) in a demand-absorbing response to pent-up student pressure for access to university education. In catering to student demand, however, private provision may do little to lay the longer-term human resource foundation needed to attain strategic future economic objectives. Close coordination between the government and new institutions entering Sri Lanka’s higher education market may therefore be prudent to ensure that needed new skills are generated while sidestepping risks of increased graduate unemployment.

The international labor market plays an important part in this island nation’s economy. Some 1.8 million emigrants—20% of the national labor force—work in other countries, sending home $3.6 billion in 2010, or 8% of GDP (World Bank 2011, 228). Strikingly, 30% of those with higher education qualifications leave the country to seek work opportunities abroad. Because higher education in Sri Lanka has, until recently been provided largely free of charge by government, this scale of migration represents a sizable loss to the government on its investments in national human resource development. Greater policy attention to finding ways of retaining university graduates for productive work within the country could only strengthen national economic competitiveness.

In addition, the planned doubling of higher education enrollments by 2020, and the intended recruitment of 50,000 new foreign students by the same date, will require as many as 3,500 new academic staff with postgraduate qualifications (assuming current staff–student ratios are maintained). This implies a prorated annual output of 350 master’s and doctoral degree graduates who are successfully recruited into the higher education system. To achieve this target in light of the 30% attrition rate to emigration, postgraduate output would have to climb to 500 annually. Given that the country currently graduates about 250 doctorates a year (80% of them in the social sciences), the probable shortage of qualified academic staff in key disciplines poses a real risk to the fulfillment of these plans.

Labor Market Observatories

As efforts to boost the competitiveness of national human resources intensify, higher education systems in many countries are finding it useful to carry out periodic employer surveys and graduate tracer studies. Employer
surveys provide feedback on graduate preparedness and performance in the workplace, as well as suggestions for improving pedagogy and curriculum. Graduate tracer studies capture the job-seeking experience of university graduates, asking them how long it took to obtain a job, whether their employment is in their area of education specialization, and what aspects of their university education were particularly useful or unhelpful. Some countries (e.g., Chile, Colombia, Latvia, Mexico, Morocco, and Viet Nam) have institutionalized these activities into a “labor market observatory” that tracks employment trends, records salary levels for different positions, collates employer and graduate feedback for university reference, and publicizes the results to inform student career decisions. The publication of results is important because studies have shown that 7 in 10 young people make career choices based on their parents’ advice and that lack of information is the main explanation for this practice (World Bank 2012, 68).

THE APPLIED RESEARCH TEST

In addition to graduate employability, a second major indicator of higher education relevance in the 21st century is the capacity of higher education institutions, especially public ones, to nourish national productivity and competitiveness through applied research. Research begins with the availability of qualified researchers (i.e., those with doctorates) produced in a country, especially in the science and engineering fields that are so closely aligned with technological innovation. Worldwide, slightly over half of all doctorates earned are in science and engineering. As a region, Asia is somewhat below this norm.

The number of doctoral degree graduates produced annually in a country is important because they play major roles in carrying out research, training new researchers, sharing global knowledge, and generating innovation. Countries with higher doctorate ratios among their academic staff also have higher researcher ratios, which translates into more scientific publications and international networking. The experience of East Asian countries indicates that developing indigenous technological capabilities requires a steady increase in the stock of scientists and engineers who help assimilate and adapt foreign technology. Yet most of the countries in South Asia have few doctoral students, generally 2% or less of total higher education enrollments. This compares with about 5% in Europe and North America (World Bank 2012, 73). In this context, countries such as Bangladesh and Pakistan (1%) may not be producing sufficient numbers of master’s and doctoral degree graduates. On the other hand, Nepal—with 14% of higher education enrollments pursuing postgraduate studies—could have too many, unless large numbers of these students plan to seek employment outside the country.

Flagship Research Universities

The “research university” is the workplace where doctoral teachers and researchers can interact productively with postgraduate students. The presence of a research university is recognized as a key asset for innovation and growth (Altbach 2009). Flagship research universities are developed when governments dedicate substantial resources to one or two public universities so that they can meet international standards (Box 6). The process begins by identifying a few relevant academic departments with good potential and helping them to improve their quality. Often, such improvements can have positive ripple effects in the university’s general institutional culture.

In some cases, it may be advantageous to create separate new universities rather than trying to retool an existing one. For example, the well-regarded Indian Institutes of Technology began as entirely new initiatives. In their assessment of the approaches employed by nine different universities to become flagship research universities, Altbach and Salmi (2012, 408) found that more of them were the result of creating new universities than upgrading existing institutions. However, they are careful to note that the strategy of upgrading existing institutions is also a feasible approach.
Box 6

Creating Flagship Research Universities in East Asia

One proven way to reverse a situation of low-quality higher education is to concentrate substantial resources on a few national universities with recognized capacity in an effort to raise them to international standards. To pursue this strategy, governments need to identify programs or departments (not necessarily an entire institution) that possess good potential. Additional resources are invested in developing a high-quality undergraduate curriculum (competitive admission is critical for this) and solid postgraduate programs linked to productive research activities. Governance reforms are likely to accelerate progress toward excellence, and an unwavering commitment to strategic planning is essential.

Within traditional higher education systems where roughly equitable budget allocations are enshrined as traditional practice, favoring one or two universities over the rest is likely to provoke resistance and protest. In anticipation of this, political leaders should explain publicly the rationale for the strategy and its expected benefits.

Many East Asian economies have already begun to establish flagship universities. The PRC has identified 6% of its universities for special additional funding (the 211 Project and the 985 Project). Japan has identified Kyoto, Osaka, Tohoku, and Tokyo as its core research universities. The Republic of Korea has long pursued its Brain Korea 21 project. Malaysia has picked four universities to become its premier institutions. Taipei, China has allocated nearly $2 billion for the development of top-grade universities.

What appear to be the main elements of a successful strategy? First, recruit the best possible academic staff based on international standards (sometimes including the introduction of bilingual teaching with English as the second language). Second, enroll the best possible students through competitive merit-based admissions, special scholarships, and aggressive marketing. Third, make sustained plentiful funding available, not only for setting up first-rate facilities and appropriate physical infrastructure, but even more importantly for attracting and retaining high-level academics. Finally, strive for representative and accountable governance, visionary leadership, and goal-oriented management in order to combine staff and student talents with financial resources in a focused quest to achieve strategic goals.

This strategy has a proven track record of success. For example, the Hong Kong University of Science and Technology became an internationally ranked university only a decade after its founding in 1991. This success was due in part to two factors. First, its hiring of top academic staff was successful as a result of administrative and academic freedom—including the independence to set its own salary levels—which allowed it to recruit from the Chinese academic diaspora. Second, the university fostered constructive working relationships with local and regional businesses by including a significant number of their representatives within the University Council and by having the autonomy to partner with firms within the region.

A central aspect of a research university is a set of strong doctoral programs, as this is where new research ideas originate and new researchers are developed. The more successful research universities tend to have a high proportion of graduate students—around 40% or more (Altbach and Salmi 2012, 401). Yet in Bangladesh and Sri Lanka, professors lament that students show limited interest in local doctoral programs and that they cannot attract the best students. In addition, where free doctoral programs are provided, as in Bangladesh, resources may be insufficient to offer and assure quality programs. In such conditions, it is difficult to upgrade higher education through a strategy of improving staff academic qualifications.

One strategy for addressing this malaise is to associate local doctoral programs with those of well-regarded foreign universities. This can provide reassurance about the quality and marketability of their doctoral degree. The most common way of achieving this is through sandwich doctoral programs in which a student does initial study and research proposal preparation at the foreign university, returns home to carry out dissertation research and preliminary analysis, and then goes back to the foreign university for final analysis and drafting of the dissertation. Dissertation defense involves representatives from both universities, and the degree can be awarded by either or both. Although sandwich doctoral programs have most commonly involved American or European universities, there is clearly potential for creating similar collaborative programs within Asia.

Applied Research

The same forces that have provoked extraordinary changes to higher education have also reshaped the practice of scientific research. Researchers are taking on new roles, abandoning the traditional practice of individual inquiry to join interdisciplinary teams and international partnerships working on real-world problems.31 In the process, researchers draw on analytical methods used outside of the sciences and enter into working relationships that link universities with governments and corporations. As the complexity of research and its technological requirements increases, institutions are moved to seek research and development (R&D) funding from corporations and private donors, to safeguard their intellectual property, and to spin off for-profit business ventures (Mohrman, Ma, and Baker 2008). There is a growing conviction that “knowledge production and dissemination must spread internationally and that all the regions of the world need a role in the knowledge network” (Altbach 2009, 15).

The heightened importance of applied research has prompted governments and institutions to assess their comparative performance in this area. A number of pertinent indicators have been devised to monitor research capacity and output. Most common among them are (i) researchers per million of population, (ii) scientific publications output, (iii) number of international patents, (iv) national investment levels in research, and (v) high-technology exports as a share of total manufactured exports.

A review of these indicators for developing nations in Asia leads to several conclusions (Table 8). If the numbers of researchers and scientific publications indicate current research capacity, then concentrations of strength appear to exist in India and Pakistan within South Asia. Emerging capability seems apparent in Sri Lanka. If the number of patents and the share of high-tech products within overall manufactured exports are indicators of innovation and applied problem-solving abilities, then India stands alone in South Asia. If R&D investment as a percentage of GDP is an indicator of possible future research capacity, then Sri Lanka is positioned to move ahead.

In comparison, OECD countries make annual R&D investments in excess of 2% of GDP (OECD 2011). Singapore has announced its intention to boost its R&D funding from 3.0% of GDP to 3.5% by 2015. India and Thailand have proclaimed a doubling of their R&D spending by 2016 (Sharma 2010; Mishra 2011b). The New York Times has recognized this “phenomenal increase” in research funding within the Asia region and attributes

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31 This has also been described as “Mode 2” research. See M. Gibbons et al. 1994.
this to (i) policy commitments to building knowledge-intensive economies; (ii) the pressure of various world rankings of universities; and (iii) increased university collaboration with other institutions, both domestically and internationally (Gooch 2010). Indeed, the combined R&D funding of 10 Asian countries now represents one-third of the world’s total R&D spending, a share that is slightly higher than that of the United States (Tatalovic 2012). Clearly, a major expansion of Asian R&D capacities is underway.

For the countries of South Asia, which are still far from the global frontier of knowledge in many sectors, the limited R&D funding currently available may have the greatest economic impact if it is used to make effective use of existing international knowledge. Where scientific capacities and funding are restricted, efforts to generate new knowledge—no matter how prestigious they may be—are unlikely to produce the hoped-for economic returns (Dahlman 2007, 122). In addition, low academic staff salaries often oblige scholars to seek second jobs and additional sources of income to support their families. In such cases, time spent on research can have a high opportunity cost in terms of income foregone. The obvious solution is to improve academic salaries. If this is not possible, then it may be necessary to provide financial incentives in order to jump-start university research.

The quality and relevance of most research carried out in the focus countries seem questionable. The Bangladesh country report observes that R&D funding is limited; research is largely individual in nature; and the institutional capacities to promote research, set research priorities, and provide funding are still being created. However, several small pockets of research capacity have been created as the result of donor-funded capacity-building projects. In Nepal, the numbers of researchers are reportedly small, research is primarily an individual pursuit, and applied research is minimal. The higher education system’s general lack of engagement with the country’s economically important agriculture sector was noted previously. However, the University Grants Commission has recently created (with World Bank assistance) a research division and a research council to stimulate and steer research. In general, much of the limited research produced in all three focus countries is “baseline” or “evaluative” in nature.

In Sri Lanka, “much of the research output of public universities is of low quality and low relevance to national needs” (Chandrasiri unpublished, 39). Within the universities, no more than 10% of academic staff engages in research, and most doctoral dissertation research occurs in the social sciences. In one potentially pioneering

### Table 8 Research Capacity Indicators for Asia, 2010 or Closest Year

<table>
<thead>
<tr>
<th>Country or Group</th>
<th>Researchers per Million Population</th>
<th>Scientific Publications</th>
<th>International Patents</th>
<th>R&amp;D Investment as % of GDP</th>
<th>Share of High-Tech Exports (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Asia</td>
<td>129</td>
<td>19,375</td>
<td>...</td>
<td>0.78</td>
<td>8</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>50a</td>
<td>235</td>
<td>0</td>
<td>0.03</td>
<td>1</td>
</tr>
<tr>
<td>India</td>
<td>137</td>
<td>18,194</td>
<td>1,098</td>
<td>0.80</td>
<td>9</td>
</tr>
<tr>
<td>Nepal</td>
<td>59</td>
<td>72</td>
<td>0</td>
<td>...</td>
<td>0.4</td>
</tr>
<tr>
<td>Pakistan</td>
<td>152</td>
<td>741</td>
<td>2</td>
<td>0.67</td>
<td>2</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>93</td>
<td>125</td>
<td>2</td>
<td>0.17</td>
<td>1</td>
</tr>
<tr>
<td>OECD</td>
<td>3,976</td>
<td>593,017</td>
<td>...</td>
<td>2.34</td>
<td>19</td>
</tr>
</tbody>
</table>

... = not available, GDP = gross domestic product, OECD = Organisation for International Co-operation and Development, R&D = research and development.
a 1995

step away from this trend, Sri Jayawardenapura University has recently established the National Development Research Center, which will offer applied research, training, technical consultancies, and a national database on priority development issues such as water management and maritime resources. However, Sri Lanka does possess recognized research capacity within several of its national research centers, its University Grants Commission has some experience in research development, and recent government policy initiatives (e.g., annual research prizes and increased R&D funding) seek to broaden and deepen the country’s research capabilities. In all three countries, research output and scientific publication remain important criteria for academic promotion.

How might research quality be raised in these countries? At least four accelerating factors have been identified that can play a constructive role in the quest for excellence. They are (i) relying extensively on staff recruitment from the country’s academic diaspora; (ii) concentrating on niche areas, such as the science and engineering disciplines, to enable an institution to achieve a critical mass more rapidly; (iii) using international benchmarking as a guide to orient an institution in its upgrading efforts so as to minimize false starts and wasted efforts; and (iv) introducing significant curriculum and pedagogical innovations that set a university apart from its peers (Altbach and Salmi 2012, 409).

Strong economic justifications support the case for public investment in research. One cross-country study estimated the average rate of return on R&D funding to be 78% (Lederman and Maloney 2003). Another found that a 1% increase in the stock of R&D typically leads to an output increase of 0.05%–0.15% (LaRocque 2007). Against this evidence, a main reason why the governments of many developing countries do not increase their R&D investments is a combination of strong social pressures for expanded health and education services coupled with a general absence of political support for the idea.

Improving Research and Development Impact

Although the case for R&D is compelling, it is important to recognize that the productivity of public funds spent on R&D is frequently very low. In such cases, the following steps can be taken to improve the impact and efficiency of R&D funding (Dahlman 2007, 110–142): (i) competitive evaluation of funding proposals; (ii) use of peer review mechanisms; (iii) micro-incentives to focus research on needs of the economy; (iv) incentives for the private sector to do its own research (e.g., matching grants, tax subsidies, public–private partnership programs); and (v) earmarked funding for specific research needs. In using public funds to stimulate innovation through R&D, it is essential to recognize that effective innovation policies and associated investments must be industry-specific (Chandra 2006, 13, 41).

National Innovation Systems

Ultimately, the competitiveness of a nation in a particular economic subsector does not depend on the efforts of a single institution, such as a university, although its contributions may be important. Rather, sector-specific competitiveness depends largely on a nation’s ability to bring together a range of institutional actors and stakeholders that share a common interest in the performance of that sector, even though in some cases they may be competitors. This concentration of actors has often been called a national innovation system (see page 3) (Nelson 1993).

To assist in comparing the competitiveness of national economies, the World Economic Forum has developed an indicator for a country’s innovation capabilities. The indicator is derived from six component subindicators: the quality of research institutions, company spending on R&D, university–industry collaboration, government procurement of advanced technology, the availability of scientists and engineers, and the number of patents granted by the United States Patent and Trademark Office. The subindicator scores for the three focus countries are in Table 9.
These rankings provide the basis for several observations. First, innovation capacities are incipient in Bangladesh and Nepal, which therefore have sizable capacity-building challenges ahead of them. Sri Lanka is ranked higher, placing in the upper one-third of the ranking. Second, Bangladesh possesses sufficient scientists and engineers to put it in the middle of the worldwide innovation ranking. However, the talents of these researchers are not being put to good use, as suggested by the very low perceptions of company R&D spending and a near absence of university–industry links. Third, Sri Lanka presents a contrast of capacities. Company R&D spending, government procurement of advanced technology, and the number of scientists and engineers are much higher than Sri Lanka’s overall innovation rating. Although the government appears to be doing its part in providing research funds and access to new technology, research output in terms of applied technologies, as measured by patents, is low. The weak links between universities and industry may be part of the cause of this problem. Each of these components of innovation will have to be cultivated in concert if a national innovation system is to emerge.

To initiate, coalesce, and develop national innovation systems focused on specific sectors, a country must identify the key organizational actors in pertinent economic and social sectors, understand their organizational behaviors, and analyze the institutional environment within which they interact. As these dynamics are understood, policy attention will shift toward issues of institutional governance and management structures (for greater flexibility and responsiveness), criteria and incentives for professional performance (for efficiency and higher productivity), and access to information and inter-institutional communication networks (for heightened competitive advantage). Universities with research capacities can be important players, partners, and networkers within a national innovation system. Thus, their systems of governance, management structures, performance accountability, and information infrastructure become factors that condition their effectiveness as national innovation system participants.

**CONCLUDING CONSIDERATIONS**

The OECD (2008c) study program on tertiary education has developed a set of policy recommendations for strengthening higher education relevance and graduate employability. The complete list is presented as the concluding considerations of this chapter because the recommendations are pertinent to many of the countries in South Asia.

- **Improve data and analysis about graduate labor market outcomes.** Consider greater investment in data collection about labor market outcomes. Provide prospective students with information about wages and employment among recent graduates. Conduct surveys of graduates and track long-term graduate labor market outcomes through public data systems.
Reinforce the capacity of institutions to respond to labor demand. Ensure that funding mechanisms established by public authorities create incentives for institutions to respond to student demand. Ensure that tertiary institutions have the capacity to reallocate resources internally in response to students’ preferences. Devise management information systems that generate evidence of institutional performance in meeting enrollment demand. Encourage development of institutional governance and management arrangements that allow for efficiency in the allocation of resources.

Infuse education with a labor market orientation. Build ample choice into the system to meet a variety of student and labor market needs. Expand opportunities for flexible, work-oriented study. Support the diversification of study opportunities. Strengthen the capacities of institutions charged with the provision of degree programs oriented toward working life and short-cycle practice-oriented programs. Establish public institutions with a strong labor market orientation (e.g., polytechnics). Authorize entry of vocationally oriented private education and training providers into the tertiary system.

Include labor market actors in policy development and institutional governance. Consider developing institutional arrangements aimed at coordinating education, training, and employment such as by setting up a cabinet-level committee for human resource development. Involve labor market actors in the formulation of tertiary education policies through their inclusion in bodies that provide advice and analysis to policy makers. Ensure that labor market actors develop an active interest in participating in the dialogue and that their views are valued and properly taken into account in the formulation of policies. Include in deliberative and advisory bodies those who are responsible for employment and skills policies within government. Widen the participation of labor market actors in the bodies responsible for the strategic governance of tertiary institutions. Encourage tertiary institutions to engage employers, both public and private, in the design of programs and even the assessment of students through their involvement in councils or committees.

Encourage higher education institutions to play a greater role in lifelong learning. Enhance higher education’s role in renewing and improving skills of those already in the labor force. Increase the flexibility of provision (e.g., part-time, short cycle, and distance learning). Design education and training alternatives tailored to the needs of employers and given industries. Sustain practices such as internships for students and teachers in industry. Establish and support offices in universities and colleges to liaise with the business sector. Encourage participation of employers in the daily activities of institutions (including governance and curriculum development).

Explore the potential of a national qualifications framework. Encourage employers to specify competencies for employment. Encourage educational institutions to design programs to develop these competencies in students. Ensure that students know what competencies they need to acquire in order to become employable. Set up a qualifications framework to make student transfers across fields of study and institutions more flexible. Facilitate the assessment and recognition of prior learning.

Strengthen career counseling services at secondary and tertiary educational levels. Ensure that career guidance in secondary schools and career placement services in tertiary institutions make good use of data on educational alternatives and labor market outcomes. Ensure that career guidance offices are adequately staffed by trained professionals. Establish a national or regional career services office.
CONTEXT

For most of the 200-year history of modern Humboldtian higher education, university arrangements for governance and management remained largely unchanged. The dominant model was described as a “republic of scholars” in which academic freedom and the pursuit of knowledge were the overriding values. Institutional decision making was collegial, consensus-based, and decentralized within a multitude of departmental, faculty, and institutional committees. The institutional leader—variously titled president, rector, or vice-chancellor—was elected from among the university’s most esteemed scholars to fulfill ceremonial and administrative duties as the first among equals. The university’s institutional mission was to preserve knowledge, add to accumulated understanding, and transmit this intellectual inheritance to the next generation. Any attempt to introduce accountability for performance was routinely rejected as an attack on academic freedom. A similar stance was likely to confront efforts to promote educational efficiency, relevance, or quality assurance. This was the business model that prevailed in academia until almost the end of the 20th century.

Over the past 2 centuries, higher education gradually evolved from an informal relationship between tutors and the students who paid for their classes into a formal institution in which national governments take growing interest. As governments become the proprietors of public universities, they tend to expect a degree of loyalty from the institutions in return for their support. Unfortunately, they do not always get it. When staff and students take it upon themselves to criticize governmental policies or actions in the name of academic freedom, politicians are not pleased. Whether by presidential fiat or legislative degree, they may seek to curb such excesses by bringing the institutions more closely under the sheltering wing of government. When this occurs, public universities often become viewed as extensions of the public service and therefore present inviting targets for political patronage and partisan takeover. In either case, the result is the same: increased government intervention in the affairs of the academic community.

By the 1990s, many governments were heavily invested in a “state control” model of higher education management in which they sought to directly influence key aspects of university affairs (Neave and Van Vught 1994). In Asia, for example, governments—not the academic community—appointed university leaders in 55% of universities surveyed in the mid-1990s (Markham 1996). Similarly, in Australia a large proportion of university council members were named by the minister of education or the provincial governor, or were members of Parliament (Fielden 1996).

As the end of the millennium drew near, leaders and policy makers in higher education began to feel that the pendulum had swung too far in the direction of state control. Rapidly growing numbers of institutions and students, leading to the phenomenon of massification, had created administrative complexities that exceeded the control capacities of government ministries. Government attempts to centrally manage these more complicated systems created unwieldy and inefficient bureaucracies that eventually prompted public calls for reform. Moreover, as market capitalism and the breezes of democratization swept across the globe in the 1990s, efforts accelerated to encourage a withdrawal of the state from nonessential public management functions. For similar reasons, decentralized representative decision-making structures pushed to the fore in both the public and private sectors. In higher education, the outcome of these processes was for the state to step back from direct involvement and seek to operate at arm's length. This produced the “state steering” model of higher education management in which governments sought indirectly to guide higher education institutions toward their policy goals through a combination of incentives and sanctions (Neave and Van Vught 1994).

**AUTONOMY AND ACCOUNTABILITY**

University governance is an important variable that can be manipulated through government policy decisions. Governance reform is generally not costly, but it can have a very positive impact. In their analysis of research universities around the world, Altbach and Salmi (2012, 406) conclude, “The case studies, which analyze a number of positive and less favorable governance situations, show unequivocally that governance, leadership, and management significantly influence the ability of research universities to prosper.” For example, the Indian Institutes of Technology would not have been able to operate as effectively as they do if they had been constrained by the same governance regulations that the other public tertiary education institutions must adhere to in India. To a large extent, university governance arrangements revolve around two main elements: autonomy and accountability.

**Autonomy.** Shaped by these larger trends, the currently prevailing approach to institutional governance and management in higher education may be termed the “autonomy with accountability” model. Ideally, the two work in tandem as checks and balances. On the one hand, autonomy—the right to self-government—seeks to provide universities with the freedom and flexibility necessary to control their own fate as they adapt to change and respond to the challenges of competition from home and abroad. On the other hand, accountability—the assignment of responsibility for performance—strives to ensure that institutions are good stewards of public funds; provide quality education in return for public support; and produce graduates, research, and services that are relevant to the needs of society and the economy. In short, institutions should be largely free to manage their own affairs, but be held responsible for their performance in doing so in the context of government policy objectives.

Growing university autonomy has been recognized as a major worldwide trend of the past 2 decades. A recent international review concludes, “The trend is clearly towards fewer and less comprehensive regulations, and increasing institutional autonomy” (Bleiklie, Laredo, and Sorlin 2007, 497). This trend has found expression in Asia. In Japan, university governance reforms in 2004 legally separated public universities from government, removed civil service status from academic staff, placed more external representatives on university boards, provided block-grant funding, and gave management full discretion over the use of operating budgets (Christensen 2011, 131). Somewhat similar shifts toward decentralized university decision making were also seen in the PRC, Indonesia, and Mongolia (ADB 2008, 46). In mid-2011, the Malaysia Ministry of Higher Education announced that the country’s five research universities would receive full autonomy by 2015 (University World News 2011a). In Nepal, a slow, institution-by-institution process of decentralized management is under way that is gradually increasing the previously limited extent of university autonomy. In contrast, no recent changes in university autonomy have occurred in Bangladesh or Sri Lanka.
Autonomy may usefully be classified as one of two types: academic autonomy and administrative autonomy (University World News 2011a). Academic autonomy relates to curriculum design, research policy, admission criteria, academic staff appointments, and requirements for awarding degrees. Administrative autonomy covers budgeting, financial management, acquiring and disposing of assets, purchasing, hiring of nonacademic staff, and entering into contracts. In general, the higher education systems of South Asia have greater academic autonomy than administrative autonomy.

How can the extent of university autonomy be objectively assessed? Indicators have been developed for this purpose. For example, the European Universities Association recently constructed an “autonomy scorecard” for assessing the extent of its members’ independence. The measure employs 38 indicators comprising four categories of autonomy—organizational, financial, staffing, and academic—and is available online (Estermann, Nokkala, and Steinel 2011).33

Fully autonomous universities are delegated the authority to

- develop and approve their own strategic plans;
- hire and fire academic and administrative staff;
- determine academic staff promotions and define the criteria for doing so;
- determine student admissions and allocate admission places among faculties;
- create and abolish organizational units;
- appoint their own chief executive officer (e.g., vice-chancellor, president);
- determine the use of budgetary resources, including the investment of a portion thereof;
- retain any budgetary surpluses for use in subsequent years;
- determine student fees, including tuition;
- acquire and dispose of assets;
- award their own academic degrees and determine the criteria for doing so;
- create and abolish academic courses and programs;
- handle issues of internal staff and student discipline; and
- define their academic calendar.

A closer look at university autonomy in the study’s three focus countries reveals that each of them still has some distance to go before achieving full autonomy (Table 10). Because Bangladesh has no system-wide umbrella higher education legislation, the University of Dhaka Act of 1973 was used as a reference.34 In Nepal, the Tribhuvan University Act was the primary reference because Tribhuvan University enrolls 90% of the country’s university students and all colleges are required to affiliate themselves with it. In Sri Lanka, the Universities Act No. 16 of 1978 as amended through 1995, together with the statutes of the University of Colombo, are the primary sources of information.

University autonomy is limited in Sri Lanka, and only marginally better in Bangladesh. In contrast, Nepal’s huge Tribhuvan University is quite autonomous and manages itself as a largely independent entity. Some increase in university autonomy in Bangladesh and Sri Lanka would be desirable, as would greater accountability at Tribhuvan University in Nepal. Without the types of autonomy listed in Table 10, institutions lack the flexibility to respond to changing circumstances and solve their own problems, and consequently find it difficult to innovate.

**Accountability.** The extent of university accountability can be ascertained through the use of the following indicators:

---

34 It was replicated for the public universities of Chittagong, Jahangirnagar, and Rajshahi in the same year. Public colleges and institutes affiliated to the Bangladesh National University have much less autonomy.
licensing requirements for new private institutions,
program or institutional accreditation of public and private institutions,
professional qualification examinations,
use of external examiners,
requirement to produce institutional strategic plans,
annual financial and narrative reports linked to the strategic plan,
annual externally conducted audits,
budget allocation mechanisms that reward performance,
governing bodies with external stakeholder representation,
comparative national benchmarking exercises, and
comparative national and/or international university rankings.

An assessment of university accountability in the three focus countries shows that, with the exception of Sri Lanka, accountability is weak (Table 11). This is particularly true in Bangladesh, which lacks a system of quality assurance, strategic planning, and mechanisms to license private universities.

The autonomy-with-accountability approach has nudged many universities toward more corporate behavior. For example, they have strengthened executive leadership, set up capacities for strategic analysis, used these analyses to sharpen strategic plans and missions, introduced rewards for academic staff performance, listened more closely to signals from the funding system, appointed external representatives to internal decision-making bodies, and launched fund-raising campaigns (Bleiklie, Laredo, and Sorlin 2007, 498). Among the consequences of these changes are the rise of powerful management structures that parallel or replace collegial academic structures, the weakening of academic senates as governing councils have been empowered, and the development of a more influential role for senior executives in setting university goals and defining procedures (Bleiklie and Kogan 2007, 479).

Table 10 University Autonomy in Bangladesh, Nepal, and Sri Lanka

<table>
<thead>
<tr>
<th>Autonomy Indicators</th>
<th>Bangladesha</th>
<th>Nepalth</th>
<th>Sri Lankea</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develops and approves its own strategic plan</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2. Hires and fires academic and administrative staff</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3. Determines academic staff promotions</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>4. Determines student admissions</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5. Creates and abolishes organizational units</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>6. Appoints its own chief executive officer</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>7. Determines the use of its budgetary resources</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>8. Retains and uses budgetary surpluses in subsequent years</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>9. Acquires and disposes of assets</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>10. Awards academic degrees and determines the criteria</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>11. Creates and abolishes academic courses and programs</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>12. Handles issues of internal staff and student discipline</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>13. Defines academic calendar</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>14. Determines student fees</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>13</td>
<td>5</td>
</tr>
</tbody>
</table>

Sources:

a Based on University of Dhaka Act (no system-wide legislation).
b Based on Tribhuvan University Act (no system-wide legislation).
c Universities Act of 1978 as amended; many of the above responsibilities belong to the University Grants Commission.
Striking the right balance between autonomy and accountability in higher education is as much policy art as policy science, but success in this area will produce benefits for the economy as well as society. In a recent report on higher education in East Asia, the World Bank states, “The key message is that autonomy combined with competition is conducive to innovation, especially for institutions closer to the technological frontier” (World Bank 2012, 129). For this reason, higher education governance and management in South Asia will be assessed in the following paragraphs through the dual lenses of autonomy and accountability.

If the challenge is a correct balance between autonomy and accountability, then its fulcrum can be found in the governance arrangements that mediate between the two. For universities, the key mechanisms of governance are the institution’s governing board and its senior management team. Who they represent, the extent of their authority, how they are held accountable, and how they interact have a direct bearing on the performance of the institution (Aghion 2009). Not surprisingly, governance has been identified as one of the determining factors that set apart world-class universities from the others (Salmi 2009).

### Table 11 University Accountability in Bangladesh, Nepal, and Sri Lanka

<table>
<thead>
<tr>
<th>Accountability Indicators</th>
<th>Bangladesh</th>
<th>Nepal</th>
<th>Sri Lanka</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Licensing of new private institutions</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2. Accreditation of public and private institutions</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3. Professional qualification examinations</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>4. Use of external examiners</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5. Institutional strategic plans required</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>6. Annual financial and narrative reports</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>7. Annual externally conducted audits</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>8. Budget allocation mechanisms that reward performance</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>9. Governing bodies with external stakeholder representation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>10. Comparative national benchmarking exercises</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

Total: 5 6 8

Source: Higher education laws and commissioned country studies.

Striking the right balance between autonomy and accountability in higher education is as much policy art as policy science, but success in this area will produce benefits for the economy as well as society. In a recent report on higher education in East Asia, the World Bank states, “The key message is that autonomy combined with competition is conducive to innovation, especially for institutions closer to the technological frontier” (World Bank 2012, 129). For this reason, higher education governance and management in South Asia will be assessed in the following paragraphs through the dual lenses of autonomy and accountability.

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### LEGAL FRAMEWORKS FOR HIGHER EDUCATION

Governance arrangements for higher education are defined in sector-wide higher education umbrella legislation, specific higher education laws, university acts, and charters. These are supplemented by government regulations and university statutes, and together make up the legal framework for higher education in any given country. Propelled by enrollment massification and compelled by the requirements of the global knowledge economy, the pace of higher education reforms—formalized in new legal frameworks—has accelerated over the past 2 decades. A worldwide survey of higher education legislation in 72 countries, conducted in 2009, found that during the 1990s some 26 countries approved new laws regulating their higher education sectors. But during the first decade of the 21st century, this number surged to 46 countries (Saint 2009a, 6). In Asia, 7 of the 14 countries surveyed have updated their higher education laws during the current decade. However, the legal instruments for higher education institutions in Bangladesh (1973), Nepal (1959), and Sri Lanka (1978) are among the oldest in the region. Of the three, only Sri Lanka has system-wide legislation—and it is overdue for updating. Bangladesh reportedly tried to introduce a “unified umbrella act” for higher education in 2008, but it fell victim to political opposition.
INSTITUTIONAL AND SYSTEM-WIDE GOVERNANCE

As university systems have expanded and become more complex, many countries have felt the need to establish specialized semiautonomous public agencies charged with the oversight of higher education. These agencies, often referred to as “buffer bodies” or “intermediary organizations,” and frequently called “National Council for Higher Education” or “Commission for Higher Education,” form a vital part of governance and management arrangements in higher education. For this reason, discussion in this section will look first at university institutional governance, and then at system-level governance arrangements and the role played by buffer bodies.

University Governance

For most universities, and certainly those that enjoy a reasonable degree of autonomy, their governing board or council is the highest decision-making body. In an earlier era, when universities existed in their own collegially governed world, the university council was comprised entirely of senior members of the academic community. Only occasionally was a government representative from the ministry of education included in council membership, mainly for purposes of liaison and coordination. As the twin trends of greater accountability for university relevance (discussed in Chapter 6) and democratization fueled a significant rethinking of the role and organization of public agencies at the end of the 20th century, universities gave up their isolation under pressure from new demands for accountability and societal representation. As a result, a wide range of university governance is practiced in the world today. It stretches from the traditional collegial model to the cutting edge of what might be called “accountable corporativism”—a mix of broad stakeholder representation in university decision making with corporativist management practices.

University governance in South Asia possesses intrinsic features and occasionally unique vocabulary (Table 12). In Bangladesh, India, and Pakistan, the highest authoritative body is called the Senate. But unlike the academic senates of many western universities, this body is more akin to the university assemblies found in Latin America. It is generally a rather large body. For example, the University of Dhaka senate has 104 members. The senate’s primary functions are to approve university statutes, ratify budgets, and, in some cases, select candidates to become head of the university. It meets once or twice a year to perform these limited functions.

In addition to their senates, universities in Bangladesh and Pakistan contain a combined governance and executive body called a syndicate, composed of 12 to 25 members, which operates under the purview of the senate and is therefore only roughly analogous to a governing board. However, the syndicate performs many of the functions normally allocated to a governing board, such as managing university assets, developing the institutional budget, and making staff appointments. In both countries, the head of state appoints some or all of the syndicate’s members—even those from the academic community. Sri Lanka inserts notable external representation into university governing boards, but the external appointments are made by the University Grants Commission. Notably, most South Asian countries explicitly reserve some board seats for women representatives.

Levels of university autonomy and accountability vary considerably in South Asia (Table 13). Autonomy is high in Afghanistan and Nepal because their universities are self-governed by the academic community. Substantial and varied external representation contributes to increased accountability among the university governing boards of India and Sri Lanka. However, the high accountability of boards in Pakistan and Sri Lanka is of the negative sort, reflecting close government control of the member appointment process. 35 In Sri Lanka, the University Grants Commission appoints all of the external board members, sets staff recruitment and appointment procedures, approves staff appointments, selects candidates for chief officer for approval by the head of state,

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35 In Pakistan, the head of state directly names all board members and the government controls numerous other aspects of university administration.
### Table 12  University Governing Boards in South Asia

<table>
<thead>
<tr>
<th>Country</th>
<th>No. of Members</th>
<th>Composition</th>
<th>How Appointed</th>
<th>External Accountability</th>
<th>Degree of Autonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>12</td>
<td>All internal</td>
<td>By academic position held, or as the elected representative of designated group</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>12–17</td>
<td>Majority internal; 2 educationalists named by head of state; 2 government appointees; 1 citizen selected by academic council</td>
<td>4 by government; the rest are elected by designated groups</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Bhutan</td>
<td>22</td>
<td>University officials, Cabinet officials, private sector and one student representative</td>
<td>Appointed by authorities</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>India</td>
<td>12–25 (10–12 in Indian Institutes of Technology)</td>
<td>Great variation</td>
<td>Appointed by authorities; elected by constituencies</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>Nepal*</td>
<td>52</td>
<td>8 government; 31 internal; 8 external; 4 teachers unions</td>
<td>8 appointed by government; 21 by position held; 23 appointed by vice-chancellor</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>Pakistan</td>
<td>25–30</td>
<td>100% appointed by the chancellor (head of state)</td>
<td>All by high political authorities (head of state or governors)</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>23</td>
<td>11 internal; 12 external</td>
<td>Internal members are designated by office held; external members are proposed by the university and selected by the University Grants Commission and ministry</td>
<td>High</td>
<td>Low</td>
</tr>
</tbody>
</table>

* Tribhuvan University, which enrolled 90% of all university students in 2009.


### Table 13  South Asia University Governance Classified by Levels of Accountability and Autonomy

<table>
<thead>
<tr>
<th>Accountability</th>
<th>Autonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>Pakistan</td>
</tr>
</tbody>
</table>

Source: Author’s assessment.
controls student admissions, and even approves overseas travel by academic staff (World Bank 2009, 58–59). In addition, administrative staff postings are managed directly by the government, and general public service and treasury regulations for government also apply to the universities. In contrast, the majority of board members in Bangladesh and Nepal represent internal constituencies (officers, teachers, and students), with government nominees or officials accounting for roughly 20%–25% of total board membership.

**Innovations in University Governance**

In comparing university governance practices around the world, one is struck by various innovations to the established ways of doing things. For example, Estonia, Hungary, and Spain have instituted university advisory bodies. These bodies serve as mechanisms for bringing external guidance to bear on institutional governance, but their approval is not required for any decisions and they possess no formal responsibilities in relation to the institution. Members are normally drawn from beyond government and the academic community. The main purposes of an advisory body are to (i) support cooperation between the institution and the ministry of education, (ii) improve connections between the institution and society, and (iii) introduce external perspectives on the institution's development strategy (Eurydice 2008, 40). Latvia, Poland, and Slovenia give institutions the option of creating an advisory body, but they are not required to do so. The University of Tokyo has taken the advisory body to a higher level by creating the President’s Council, which comprises 28 specialists from 15 different countries. Meeting twice a year as a brainstorming forum, the council explores ideas for reform, possibilities for innovation, and new initiatives needed to maintain competitiveness in the 21st century (University of Tokyo 2008, 17).

Another inventive governance mechanism is the *conselho de curadores* (trustees council) found in Brazilian public universities. Headed by a chair who is external to the university, this council is charged with monitoring use of the institution's financial and physical assets. Specifically, it can inspect financial accounts at any time; comment on the budget and annual financial report; and register an opinion on any proposal involving the use of university property, the contracting of loans, the creation of earmarked funds, or the receipt of donations that might carry financial implications for the future. In essence, its mandate is to serve as a check on corruption and ensure full transparency in the use of university resources. The council’s membership varies from 5 persons at the Federal University of Rio de Janeiro to 12 persons at the Federal University of Bahia.

In the United States, numerous steps have been taken in recent years to improve the accountability and performance of university governing boards in both the public and private spheres. A recent survey found that two-thirds of all boards assess their own performance. Three-quarters of private universities conduct performance evaluations of individual board members, most often at the end of a term of service prior to possible reappointment. Almost all boards provide an orientation program for new members with an emphasis on higher education finances. Also, 9 in 10 university boards now have a conflict of interest policy for their members (Association of Governing Boards of Universities and Colleges 2009).

Finally, in Asia, the Government of Malaysia is encouraging the formation of student parliaments as a means of enabling student participation in university affairs that offers a more constructive option than the confrontational politics of student unions (*University World News* 2011e). Given the disruptive student political groups that plague higher education development in Bangladesh and Nepal, this experiment merits watching.

Governance practice among the universities of Asia and the Pacific is also quite diverse. The more traditional model, wherein the university community plays a primary role, prevails in Thailand and, to a lesser extent, in Cambodia and Indonesia. Close government control appears to characterize university governance structures in the

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36 This section draws from Saint 2009a, 26–27.
37 Other topics were trustee responsibilities, the mission and history of the institution, its strategic priorities, and current challenges.
PRC; the Lao PDR; Taipei, China; Thailand; and Viet Nam. Philippine universities reflect an American-inspired model. Malaysia and Singapore have adopted the “new autonomy” approach in which their university boards have strong private sector participation, but little representation from government or the university community. Australian universities employ a mixed governing board of government appointees; alumni representatives; and university community delegates, including students. Japan’s University of Tokyo has a seven-member board of managing directors, chosen by the university president, which must approve all major institutional decisions. This arrangement makes the university a highly autonomous institution and gives vast authority to the university president. In line with global good practice, however, the university has recently taken voluntary steps to increase its accountability to the public. Among these are the introduction of external evaluations of teaching and research performance, increased cooperation with industry, more aggressive dissemination of university-produced knowledge, strengthening of the university’s alumni network, and a requirement for annual narrative reports on progress toward the goals set forth in the university’s strategic plan (Saint 2009a, 12).

Traditional governance structures in several countries are sensing the need to change. In 2005, Viet Nam introduced governing boards within its higher education institutions. In 2008, Cambodia permitted 6 of 13 public universities to establish their own governing boards with broadly representative membership (Mak 2008). In 2012, the Government of Malaysia decided to grant five of its older universities autonomy in governance, finance, human resource management, academic administration, and student intake in the effort to enable them to become more competitive and innovative (University World News 2012). Indonesia is enabling its public universities to become autonomous legal entities governed by their respective boards (Gunawan 2008). Even in Thailand, where universities are treated as governmental units in which financial and personnel matters are managed by the government bureaucracy, an expectation of increased university autonomy has been voiced (Yamnoon 2008). Interestingly, the anticipation of greater autonomy has provoked fierce opposition from academic staff and students—normally champions of increased autonomy—who worry that less government involvement in university affairs may lead to reduced public funding.

System-Wide Governance

National councils or commissions for higher education (as well as university grants commissions) are often called buffer bodies because they occupy the middle ground in the hierarchy between the ministry of education and the individual universities. In this position, they can mediate between government and the universities, and also deflect some criticism from either party away from the other, thereby reducing the possibility that the dissatisfaction of one side with the other will escalate into a political standoff. This arrangement also gives the ministry the option to remain above the dispute and play the role of arbitrator of last resort.

The normal division of labor between the ministry and the buffer body is for the ministry to handle strategic planning, the policy framework, and public budgeting; and for the buffer body to play a more operational role, carrying out quality assurance, institutional budget allocation, monitoring policy compliance, and generating system-wide statistics to inform policy and planning. In most cases, buffer bodies are linked to the ministry but function as legal entities with an autonomous governing board and independent members drawn from both higher education and industry or commerce. Funding for the buffer body is either by a grant from the ministry, university subscriptions, income generated from services provided, or some combination of these sources. For buffer bodies to perform their functions effectively, their governance and staffing arrangements must inspire respect and confidence on all sides.

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38 Some countries create separate ministries of higher education to carry out many of the same responsibilities as those of buffer bodies, but without being able to play the “buffering” function.
The main advantage of having a buffer body is that it removes all the detailed operational issues from the ministry of education. This is a particular advantage in large higher education systems. A major benefit is that it protects the government from charges of intervention in academic affairs. Also, it generally encourages greater institutional autonomy. Furthermore, it saves the parliament from constant lobbying and helps the buffer body to develop an in-depth understanding of the sector. This allows the ministry to concentrate on policy issues and avoid involvement in the daily management of institutions. For its part, instead of relying on career civil servants, the semiautonomous buffer body can recruit specialist staff with a good understanding of higher education. These staff can operate within an independent career structure created by the buffer body in order to attract competent professionals.

The main risk from the government perspective is that the buffer body may fail to follow government policy in making its decisions and in managing the sector. There have been cases where ministers of education have felt that the buffer body stood in the way of reform and that the ministry no longer had control of the sector. The key to overcoming this is for the chair and chief executive of the buffer body to have regular close liaison with senior ministry staff on policy matters, and also to ensure that the buffer body obliges universities to incorporate national policy guidelines into their own strategic plans.

The main risk from the buffer body's point of view is that the ministry will still intervene in the funding and management of institutions in response to direct lobbying by vice-chancellors and others in the sector. Should this happen, the buffer body will become marginalized and institutions will no longer consider themselves bound by its decisions. This situation can easily arise if the ministry loses confidence in the ability of the buffer body to perform its functions. This risk can also be avoided by regular contact between senior staff of the ministry and buffer body to ensure mutual consistency in their actions. In addition, the ministry should exercise self-discipline so that it acts only though the buffer body in any dealings with individual institutions.

Some of the most common responsibilities given to buffer bodies are listed below. However, virtually no buffer body is given authority to carry all of these.

- **Strategic planning.** Government policy goals are translated into a strategic plan for the higher education system. This plan serves to guide the strategic planning of individual institutions.
- **Policy analysis.** Although they do not set policy, buffer bodies often analyze policies to determine their impact, the source of problems, and appropriate remedies, which are recommended to government.
- **Quality assurance and academic program review.** Where quality assurance is not undertaken by an independent agency, buffer bodies often house quality assurance units.
- **Budget development and funding allocation.** The buffer body receives the funding for higher education from the ministry and determines the criteria for its allocation, manages disbursements, and ensures accountability in spending. To do this, it may employ formula funding or competitive funding as incentives for improvement.
- **Monitoring and accountability for policy compliance.** The body develops performance indicators for assessing institutional progress toward the attainment of government’s policy goals and requires institutions to submit regular statistical reports on these indicators.
- **Deciding the total number of student admissions.** Some bodies set admission numbers in line with government policy goals and may even administer a nationwide university entrance examination.

As in the case of university boards, the key questions are: Whose interests are represented? How are members chosen? Are members perceived to be objective and technically competent in their decision making? The answers

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39 The following four paragraphs draw upon Fielden 2008.
to these questions vary among selected countries of Asia. Of 10 countries chosen for review, 3 do not have a
buffer body, preferring to have a government ministry supervise higher education. Among the seven countries
with buffer bodies, membership in the university grants commission or commission on higher education varies
from a low of 5 persons in the Philippines to a high of 28 in Pakistan. However, five of these buffer bodies,
including that of India, have a board membership of 12 or fewer.

In Asia, board membership in the buffer bodies is generally under firm government control. In six of the seven
bodies, board members are appointed by the central government, usually the head of state or the prime minister.
In the seventh, half the members are appointed by the council of ministers. In most cases the buffer body's
accountability is to central government, rather than to the minister of education.

The interests and talents of board members are more diverse in some countries than in others. In the three
focus countries, members are drawn largely from the academic community, complemented by a minority of
government representatives (usually from the ministry of education, the ministry of finance, and the national
planning commission). India broadens this group by incorporating several specialists in important national sectors
such as agriculture, health, and technology. Pakistan goes further and includes some provincial government
representatives as well. Thailand does much the same, but adds professional association representation. These
latter practices are quite consistent with international trends toward greater external representation from beyond
government and the university community, in buffer bodies as well as in university councils, in the effort to
strengthen links between higher education policy making, the labor market, and the economy.

The main functions assigned to buffer bodies, however, are remarkably consistent. In general, they are charged
to (i) assess the funding needs of universities and recommend budget allocations, (ii) monitor and maintain
educational quality, (iii) regulate private higher education, (iv) advise the government on higher education issues,
and (v) coordinate the development of the overall system. In a few cases, such as Sri Lanka, these bodies may also
regulate student admission to the universities.

**LEADERSHIP AND MANAGEMENT**

In Asia, the leaders and chief executive officers of a university are usually called the vice-chancellor or president.
The senior officers who serve directly under them are generally titled deputy vice-chancellor or vice-president,
registrar, and finance officer or bursar. Together, they make up the senior management teams of universities. In
this discussion, all of them will be referred to as university leaders, officers, or managers.

The role of the vice-chancellor as chief executive officer in a university is defined in direct relationship to the
role of the governing board. Weak boards tend to be associated with strong institutional leaders. Conversely,
empowered boards are likely to result in a more circumscribed—and perhaps more accountable—role for the
chief officer. Consequently, university leadership can be a highly autonomous and very powerful decision-making
position, or it can be somewhat more bounded, charged with implementing policies and plans approved by the
governing board and making routine management decisions associated with these responsibilities.

Insights into the extent of the university leader's authority can be gained from four pertinent indicators: (i) how
the leader is selected and the accountability relationships implicitly associated with that process; (ii) the extent of
the leader's control of the institutional agenda by chairing the main decision-making committees and councils;
(iii) the extent to which the leader is empowered to appoint key subordinate staff such as deans, heads, and
department heads; and (iv) the extent to which institutional decisions are made through a representative collegial
process or concentrated in the hands of a small management team or administrative committee headed by the
chief officer. For example, a chief executive officer appointed directly by the head of state who chairs an academic
governing council comprised of university staff and students, appoints his or her deputies and deans, and is not answerable to a higher-level governing board is likely to be quite powerful. On the other hand, a chief executive who is selected by the institution's own governing board, is formally accountable to it, and is expected to work with senior officers chosen on their merits and deans elected by their faculty peers will be obliged to pursue a more consensus-based style of decision making. Thus, university leadership roles range from the autocratic boss to the democratic manager.

Selection Criteria

The professional profile required of the chief officer is an important aspect of university leadership. Traditionally, the head of a university was expected to be an esteemed scholar, often a titled full professor, from within the same university. This is still the case today in a few countries, mainly in Latin America. Near the end of the 20th century, however, an emphasis on entrepreneurship and professional management experience associated with the “new public management” perspective arose in Europe and was adopted in a number of countries (Kelly 1998, 201–207). The new public management approach is oriented toward outcomes and efficiency through better management of public budgets. It is pursued by applying competition to organizations in the public sector and by emphasizing economic and leadership principles. New public management tends to view beneficiaries of public services as customers, and citizens as shareholders. In Asia, the new public management approach (sometimes called university corporativism) has not yet been widely adopted.

Selection Process

University leaders are chosen through one of three main procedures, or variations of these. The first is by appointment, usually by a senior government official such as the prime minister or head of state (e.g., in Bangladesh, Cambodia, Nepal, and Thailand). In some cases, this official chooses from a short list of three names forwarded by the university governing board or academic council. In others, the university body forwards a single recommendation, which the official must either accept or reject. The second procedure is election by the university community. Sometimes a large representative body, such as the 104-member university senate in Bangladesh, is convened for this purpose. Some election processes assign differential weights to the votes of various constituencies. For example, in Indonesia the government’s representative on the Board of Trustees is entitled to 35% of the ballot while the remaining 65% is distributed equally among all other board members. In some cases (e.g., Viet Nam), the government must approve the candidate elected. The third method is selection by the governing board. Frequently, a public call for nominations is issued and selection is openly competitive (e.g., in Finland, Germany, and the United Kingdom). Sometimes competitive international recruitment is undertaken (e.g., in Taipei, China).

In Bangladesh, the head of state or Prime Minister serves as the university chancellor. In that capacity, he or she appoints the university vice-chancellor, choosing from a list of three names proposed by the university senate, and sets the terms and conditions for the vice-chancellor’s service. Furthermore, the head of state (as chancellor) also appoints the university pro vice-chancellor (i.e., deputy vice-chancellor) and its treasurer, thus constituting a university management team that is directly accountable to the highest level of government. In turn, the vice-chancellor convenes and chairs the university senate, the syndicate, and the academic council. The resulting management structure is centralized, hierarchical, and some distance removed from the university tradition of collegial decision making.

In Nepal, the process of appointing the vice-chancellor of Tribhuvan University and the powers accorded to this position create a potent chief executive who is linked to, and accountable to, the highest levels of government. The Prime Minister serves as the university’s chancellor. In that position, the Prime Minister chairs the university assembly and is the institution’s ultimate decision maker. The Prime Minister is closely involved in choosing
the vice-chancellor through his or her power to appoint a three-person committee, chaired by the minister of education, that recommends an appropriate candidate, and to confirm the candidate recommended by this committee. The vice-chancellor then chooses and recommends to the university assembly four persons who, along with the vice-chancellor, rector (i.e., deputy vice-chancellor for academic affairs), and registrar (i.e., deputy vice-chancellor for administration), will form the Executive Council. This council, chaired by the vice-chancellor, holds broad powers in managing the university. It appoints deans, department heads, and college chiefs; prepares and implements the budget; issues internal regulations; sets student fees; contracts and promotes teachers and other employees; and makes organizational decisions. Thus, the vice-chancellor’s power derives, on the one hand, from a direct relationship with the Prime Minister, and on the other hand, from his or her authority to chair the Executive Council and select its members.

In Sri Lanka, the head of state appoints each university’s chancellor, which appears to be a somewhat more ceremonial position than it is in Nepal. The university vice-chancellors are also appointed by the head of state, but the head of state must choose from a list of three names submitted by the university council. The vice-chancellor chairs both the university council and the university senate, thereby influencing events through control of the meeting dates and agendas of business. The vice-chancellor holds the authority to appoint campus rectors, but his influence is somewhat checked by the council’s responsibility to select the university registrar and bursar. Faculty deans are elected by their peers. Consequently, the vice-chancellor in Sri Lanka is obligated to serve two masters: (i) the head of state who made the appointment and the overseeing chancellor who is also chosen by the head of state, and (ii) the university council that made the recommendation for appointment (along with two others) and chooses part of the management team. Through links to the head of state and chairing of the university’s two most important committees, the vice-chancellor remains a commanding figure—but somewhat less so than in Bangladesh and Nepal.

It is worth noting that, unlike in some other countries, the higher education legislation and university statutes in Bangladesh, Nepal, and Sri Lanka are virtually silent with regard to the qualifications and selection criteria to be applied to the recruitment process for a university chief executive. When the legal frameworks for higher education are updated in these countries, attention might usefully be given to these matters. Examples of higher education legislation from countries that specify these criteria could be consulted in this process.

Management Capacity

A report commissioned in 2002 by ADB spotlighted four management issues that were expected to command special attention during the coming years. The issues were to (i) develop new and alternative funding strategies, (ii) create systems of student mobility and transfer of credits across higher education institutions, (iii) formulate and enforce quality standards, and (iv) harness faculty talent to generate income streams for the institution (Chapman 2002, 17). Although most Asian countries have achieved at least some progress in each of these areas, they remain a work in progress for the coming decade. In addition, a new management challenge has arisen: to identify and foster mutually advantageous partnerships with institutions within and beyond the higher education sector. This topic will be explored in Chapter 8.

Regrettably, most persons selected to positions of university management have little training or practical experience with management. In some cases, political criteria guide the choices. In others, academic reputation is the primary consideration. Almost never is a person given a position of management responsibility on the basis of his or her demonstrated qualities as a manager. For this reason, university managers must receive on-the-job training if they are to become skilled and efficient. Some higher education systems address this omission by requiring newly appointed university officers to undergo intensive short courses in management. Other, more forward-looking institutions also give in-service management training to deans, the pool from which university officers are often drawn. Curiously, university schools of management are almost never asked to provide management training to the leaders of their own institutions. This might therefore be an arrangement worth exploring.
Management Innovations

Universities across the globe have created several additional mechanisms to facilitate institutional management. Perhaps most striking are the three-person executive boards instituted by the Netherlands, which replace the single chief executive officer and bring a corporate team approach to running its public universities. Notably, the University of Tokyo relies on a management council to handle important administrative matters. It comprises the university president, several directors or academic staff members appointed by the president, and influential outside individuals who must make up half of the council’s membership. The council deals with regulations, remuneration policies, benefits, tuition and fees, budget creation, assessment of management performance, and other matters. In Argentina, a six-person executive board is charged with implementing decisions taken by the governing board. It is chaired by a vice-president and made up of the secretary general, one dean, one professor, one graduate student, and one undergraduate student. In Turkey, very similar functions are performed by an administrative board comprised of all deans and three elected professors, and chaired by the university president.

CONCLUDING CONSIDERATIONS

To bring local practice more into line with international good practice, the following recommendations are offered:

On governance:

- The majority of university council members should be drawn from the private sector, national professional associations, and relevant nongovernment organizations.
- University council members should elect their own chair from among themselves.
- University councils should be empowered to select and appoint their university’s vice-chancellor.

On management:

- Institutional strategic planning, updated annually, should be required by government.
- National management information systems containing essential statistics on the higher education system should be established and required to prepare annual reports for public dissemination.
- Senior officers should be given periodic management training, perhaps by the university’s own school of management.
From a historical perspective, collaboration between universities and government or industry is quite recent, and has been prompted by shifting approaches to research. Throughout most of the 20th century, university research was highly individualistic and sought to expand the frontiers of knowledge without regard to the utility of new discoveries. Research agendas were defined by the academic community and funded largely by the university’s own resources. The mechanisms for scientific networking and dissemination, mainly scientific journals and academic conferences, were organized around specific scientific disciplines. As new understandings were attained through extraordinary individual intellectual achievement, the scope of these disciplines became narrower and deeper, as they divided and redivided into new subdisciplines. University-based research came to be called “basic research” to distinguish it from the applied research and development (R&D) carried out by the larger industrial firms.

Research practice was competitive and secretive. Individual academics competed with each other within their departments for promotion, prestige, and research funding. Likewise, departments competed with each other within the same university, and universities competed among themselves. Knowledge was not shared as it was being developed, but only after it had been validated by scientific standards.

The arrival of the globalized knowledge economy, discussed in Chapter 1, changed all that. With competitiveness conditioned by productivity, and productivity dependent on innovation, national and corporate research capacities to access, assess, adapt, and apply knowledge became paramount. As the pace of technological, economic, and organizational change accelerated, the efficiency and speed of the research process became an additional consideration in shaping competitiveness. The notion of a national innovation system (summarized in Chapter 6) initially was used to describe the process whereby new technologies are brought to fruition, and subsequently to guide the formulation of policies that seek to create the conditions that foster technological advances.

Research under these circumstances becomes a very different undertaking. First, its value is determined by its usefulness in problem solving. As a result, focused problem solving begins to replace the traditional disciplinary organization of knowledge, and R&D becomes more economically important than basic research. Second, because problems are complex and multifaceted, research is forced to become transdisciplinary in nature, drawing upon whatever areas of knowledge are deemed relevant for finding a solution. Third, the transdisciplinary characteristic requires research to become a team undertaking rather than an individual pursuit, as no one person can hope to absorb and manage constantly evolving knowledge from multiple disciplinary areas. Fourth, the internet and new information and communication technologies allow teams to function in concert even though individual members are in different locations. Consequently, research becomes a networked activity (Gibbons 1998).

As research networks evolve into innovation systems, they incorporate not only various individual skills but also the diverse institutional interests of corporations, government agencies, professional associations, research foundations, and the like. In the process, entities learn that they can collaborate around common interests even as they compete in specific areas. This collaboration in the midst of competition can take the form of
longer-term partnerships, loose alliances, transient links, or coordinated consortia.\textsuperscript{40} As universities overcome institutional resistance to joining networked transdisciplinary R&D undertakings, they become important participants in their respective national innovation systems. As Yusuf and Nabeshima (2007, 9) observe, “most of the technological advances that have economic consequences can be traced indirectly or directly to universities, either through the training provided, the knowledge spillovers, the actual research conducted, or through university–industry links that enabled firms and faculty members to collaborate in the development of technologies.”

**UNIVERSITY–UNIVERSITY PARTNERSHIPS**

Because of their autonomous, individualistic, and academically competitive cultures, universities have not traditionally been inclined to collaborate with one another. But because they share common values, organizational configurations, vocabulary, and management structures, it is often easier—once the advantages become clear—for them to work with each other than it is for them to work with less kindred institutions such as corporations or nongovernment organizations. Such institutional partnerships offer expanded access to quality expertise, improved cost-efficiency, and increased management flexibility. As human talent becomes a vital determinant of competitiveness, as the costs of equipment and facilities for complex research exceed the resources of individual institutional budgets, and as management seeks to avoid becoming boxed in by long-term capacity-building programs that may quickly become obsolete, university collaboration makes sense.

Today, examples of university collaboration are sprouting across Asia. In Singapore, the new University of Technology, intended to be an educational laboratory for new teaching methods and curriculum, is being developed in association with the Massachusetts Institute of Technology in the United States and Zhejiang University in the People’s Republic of China (PRC)(Young 2010). In Indonesia, the corporate-sponsored private Sampoerna University is drawing on the experience of Massey University (New Zealand), Nanyang Technological University (Singapore), and Iowa State University (United States) in its effort to create a curriculum that will employ active learning to train students to solve national problems (Fischer 2010). In India, the London School of Economics is partnering with the corporate-sponsored Reliance Foundation with the goal of lifting several Indian universities to world-class levels (*University World News* 2010c). New examples appear almost daily.

Broadening and deepening interest in international university partnerships is propelled by an improved understanding of their role in contemporary higher education. Two areas of awareness stand out. The first is growing recognition that academic internationalization must move beyond internal restructuring to embrace active outward engagement. The second is the increasing appreciation of the necessity for universities to position themselves—for competitive reasons—within the global arena of higher education. As a result, international university partnerships are being asked to contribute more than ever before to the success and sustainability of the participating universities.

Today, common expectations for university partnerships include contributions to

- student learning as future members of a global workforce and as global citizens;
- curriculum development and course relevance;
- providing international learning experiences;
- developing the international capacities of academic and management staff;

\textsuperscript{40} Gibbons (1998, 5) refers to this new structure as “Mode 2” science.
strengthening research by connecting institutions and researchers with others who hold similar interests;
- tackling pressing global issues relating to health, natural resources, environment, energy, education, conflict, inequality, human rights, and social justice;
- enhancing the international ties and understanding of the surrounding community; and
- promoting the overall mission of the institution while advancing its international position and reputation (Sutton and Obst 2011).

Yet success in university partnerships is not guaranteed, even by the reputations of the partners. In Malaysia, a 5-year collaboration between the Malaysia University of Science and Technology and the Massachusetts Institute of Technology recently fell apart. Reasons for the failure included (i) a high-cost business model, (ii) an emphasis on postgraduate education when a pipeline for good quality undergraduates had not been established, (iii) political changes in the country that eroded government support for the project, (iv) differences in institutional priorities and management styles between the two institutions that were not resolved prior to the agreement, and (v) changing market conditions as a number of other science and technology universities in the region emerged to compete for the best students (Sharma and Virdee 2011). These are all useful lessons for any university considering an international partnership (Box 7).

**Box 7**

**Lessons Learned Concerning University–University Partnerships**

A literature review, which included evaluations of several international university-to-university link programs sponsored by development partners in the Netherlands, the United Kingdom, and the United States, identified the following lessons arising from these experiences:

- Effective capacity building through partnerships is usually the result of a sustained long-term working relationship.
- Partnerships work best when benefits are mutual, power relations are balanced, both institutions have capacity to manage the relationship efficiently, the link is between similar departments or institutions, and there is a possibility of a longer-term capacity-building commitment.
- Interest and support by university leaders is essential for a successful partnership.
- Partnerships are a useful mechanism for orchestrating a timely response by technical expertise to critical development issues such as energy, food security, ethnic conflict, and health-related research.
- The most important contributions of partnerships have been in (i) staff development at the doctorate, master’s, and technician levels; (ii) improved teaching capabilities through course design, new courses, and establishment of master’s degree programs; and (iii) strengthened research capacity through collaboration in research methods, scientific research, books, and equipment.
- Younger, weaker institutions tend to be the neediest in terms of capacity building, but older, stronger institutions tend to attract more institutional partnerships because they are better able to project themselves internationally and manage subsequent relationships.

PUBLIC–PRIVATE PARTNERSHIPS

Public–private partnerships pose greater challenges for universities, yet they are also a vital component of a national innovation system. Within the context of the “triple helix” of government–university–private sector collaboration, these most often take the form of university–industry links (UILs), in which the role of the state shifts from sponsor to facilitator (Mohrman, Ma, and Baker 2008, 12). Since the late 1990s, interest in UILs has grown worldwide. “Strikingly, virtually every industrial country is moving to make university–industry links a centerpiece of their innovation systems, and the notion of a triple helix…. has acquired wide currency”(Yusuf and Nabeshima 2007, 7). In this context, UILs play the role of knowledge accelerators.

Public–private partnerships involving universities have been slow to take hold in many developing countries, especially where there are strong traditions of government involvement in economic activities (e.g., Sri Lanka), where academics may be skeptical of collaboration with “capitalists” (e.g., Bangladesh), and where firms may not be fully aware of their needs for knowledge management (e.g., Nepal). In Pakistan, for example, “There is little research or other interaction between higher education institutions, industry and public sector research institutes” (World Bank 2006b). In Thailand, UILs are few, focused on low levels of technology, and weakly institutionalized (Brimble 2007). In India, a significant gulf appears to separate the academic community from industry (Dahlman and Utz 2005, 91). The upside of this dismal assessment is that the potential of UILs in these countries remains largely untested.

What are university–industry links and why are they important? UILs are collaborative agreements between a research university (i.e., a university with research capacities) and one or more individual firms with a common problem to be solved. The goal of UILs is to help local firms identify, import, modify, and disseminate technology. In developing countries, these activities are intended to enable industries to upgrade their technologies and organization. In the best cases, the UIL industrial partners are located in a regional industrial cluster, a geographic agglomeration of firms active in the same industry. In this context, Nepal’s recently announced intention to establish special economic zones offers an opportunity to locate a new university within one of these zones to pursue a cluster strategy. Clusters facilitate the rapid diffusion of new technologies that serve the common interests of the firms. This is another example of collaboration among competitors.

UILs can bring benefits to both universities and industries. Universities gain through access to complementary expertise and equipment; a possible basis of additional income; enhanced value for academic research; acquisition of business skills such as strategic planning, market analysis, and needs assessments; a source of interesting new research problems; opportunities to provide students with work-related internships; and contacts for student job placements (Netherlands Bureau for Economic Policy Analysis and the Center for Higher Education Policy Studies 2002, 123). Universities that develop expertise in UILs are sometimes called “entrepreneurial universities” (Clark 1998). Firms benefit from access to new knowledge, university expertise, specialized university facilities, students as potential employees, and task interactions that may spark new ideas (Clark 1998).

Some analysts have argued that not all UILs are equally useful. UILs are considered to be valuable when a firm linked to a university takes steps to share the knowledge it gains with other firms in its cluster, through either direct interactions or informal ties intended to solve technical problems. In contrast, UILs will generate little value if they are established with a firm that becomes a dead end in the knowledge pipeline by failing to share its knowledge with other firms in the cluster (Giuliani and Arza 2008).

UILs are not without controversy. Critics argue that they subvert university research priorities away from public interest topics in favor of corporate needs. Others question whether public research capacities should be used to solve the problems of industry. Also, concerns with intellectual property arising from such collaboration,
including the possibility of patents, seem to encourage much greater secrecy around university research output than was true in the past when the "search for truth" orientation justified the public dissemination of research findings. Other complaints are that UILs are very time-consuming and require substantial up-front learning by academics on how the world of business operates.

Although UILs may benefit industry, it is not clear whether they generate much benefit for universities. For example, the Bayh–Dole Act, or University and Small Business Patents Procedures Act of 1980, in the United States—which has regularly been replicated in other countries—permits universities and nonprofit organizations to obtain the property rights to innovations resulting from government-funded research. In this way, it sought to encourage the industrial application of university research. Notably, it endorsed the principle that exclusive licensing of publicly funded technology was sometimes necessary to achieve this goal. In consequence, university patenting has increased steadily since the passage of the act, but licensing agreements have not yet become a significant source of income for universities. A 1996 assessment concluded that gross—not net—earnings from licenses were equal to no more than 1.5% of total research expenditures (Netherlands Bureau for Economic Policy Analysis and the Center for Higher Education Policy Studies 2002, 129). A World Bank publication cautions that the UIL model is still evolving and that its few success stories have not been easy to replicate (Yusuf and Nabeshima 2007, 21).

In spite of such doubts, it appears that UILs are here to stay, especially in Asia. Whereas the 20th century mission of universities was universally accepted as being teaching, research, and community service, in the 21st century that mission is increasingly recast as teaching, research, and commercialization. Examples of this change abound. Since 2001, Japan’s Basic Law for Science and Technology has encouraged universities to develop technologies for industrial use, facilitated patenting of intellectual property by universities, and provided incentives to commercialize university research results. The PRC has gone further, issuing a Ministry of Education directive that redefines the three main missions of PRC universities as teaching, research, and commercialization (Wu 2007, 190). India’s Institutes of Technology have adopted the business incubator and technology transfer model commonly associated with UILs. Malaysia and Taipei, China are also seeking to replicate the United States’ success with UILs.

These and other policy measures have enabled several East Asian economies to develop an intensity of university–industry links that is equal to that of the United Kingdom or the United States. As Bangladesh, Nepal, and Sri Lanka seek to understand how their respective university–industry links could be enhanced, they may find the examples of Malaysia and Singapore to be instructive.

Some insight regarding the limited development of UILs in the three focus countries of this study can be gained by looking at their comparative rankings on indicators of relevance to university–industry collaboration (Table 14). The enabling conditions for fostering university–industry collaboration are largely absent where the

<table>
<thead>
<tr>
<th>Country</th>
<th>Quality of Research Institutions</th>
<th>Industry Spending on R&amp;D</th>
<th>Availability of Scientists and Engineers</th>
<th>Government Purchases of Advanced Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>115</td>
<td>128</td>
<td>78</td>
<td>117</td>
</tr>
<tr>
<td>Nepal</td>
<td>137</td>
<td>127</td>
<td>130</td>
<td>133</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>50</td>
<td>37</td>
<td>34</td>
<td>15</td>
</tr>
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</table>

R&D = research and development.
N = 142 countries.
quality of research institutions is low, industry spends little on R&D, scientists and engineers are scarce, and the
government is not introducing advanced technologies. The table reflects strong leadership by the Government of
Sri Lanka in promoting technological change. It also highlights the relatively good pool of skilled scientists and
engineers available in Bangladesh, whom have yet to be drawn upon in the quest for innovation.

In the above context, it is not surprising that Bangladesh, Nepal, and Sri Lanka are at a nascent stage with regard to
UIL practices. Most academic staff lack a clear understanding of the concept, and university–industry interactions
are few. Commonly, they take the form of inviting industry executives to make classroom presentations or of
placing students in 3–6-month private sector internships as part of their study programs. As a result, it is not
unexpected that The Global Competitiveness Report 2011–2012 ranks Bangladesh 127th of 142 countries (89th
percentile) and Nepal 129th (91st percentile) for university–industry collaboration. Only Sri Lanka attains the
median (73rd place), in part because its business sector spends considerably more on R&D.

Little university–industry collaboration is reported in Bangladesh. However, one exception is the University
and Industry Alliance initiated by the Institute of Business Affairs at the University of Dhaka. The alliance is a
special unit within the institute charged with developing a strong relationship between the university and the
business community. Specifically, it seeks to provide quality services to a wide range of clients and to create a
supportive environment for the two parties to conceive mutually beneficial projects in various sectors of the
economy. In addition, the alliance provides management training and development services designed to meet the
needs of specific industries and individual firms. The Bangladesh University of Textiles, established in 2010, is
also the result of collaboration among textile manufacturers, the higher education community, and government.

Collaboration between universities and industry in Nepal is likewise incipient. One noteworthy initiative has
been the introduction of a Bachelor of Science in Tea Technology and Management at the Mechi Multiple
Campus of Tribhuvan University in 2011. Located in a region that has 40 tea estates, more than 12,000 small tea
farmers, and 42 tea factories with some 70,000 workers, the Mechi Campus became aware that the region does
not have enough trained personnel to properly develop and manage this industry. In response, it designed, in
consultation with stakeholders, an innovative multidisciplinary degree program that combines science, technology,
and management content. It also mobilized local business partners to provide the initial investment required to
launch the program. However, much more could be done by higher education institutions to foster innovations
that would enable the country’s large subsistence agriculture sector to begin moving up the value chain.

In Sri Lanka, public universities account for 34% of the country’s R&D activities, but they work largely in isolation
from industry. University–industry collaboration is reportedly very low. In the attempt to improve this situation,
the universities of Colombo, Kelaniya, and Moratuwa have introduced several university–industry community
interaction cells at faculty or department levels. The cells are expected to (i) establish and maintain university–
industry–community interactions; (ii) encourage undergraduate students to undertake applied research and
case studies; (iii) generate resources in the form of industry-supported projects and consultancies; (iv) provide
management and technical advisory services to entrepreneurs, government, and the surrounding community;
(v) sponsor forums that facilitate networking among business, government, and nongovernment institutions; and
(vi) promote entrepreneurial studies and an entrepreneurial culture within the university. For example, the cell
established within the Faculty of Science at the University of Colombo is currently undertaking two technology
development projects with funding from industry. The country’s growing software industry would seem to offer
good opportunities for this type of collaboration.

Among Sri Lanka’s university–industry interaction cells, the one at the University of Moratuwa appears to be
the most advanced. Established in 2002 within the Faculty of Engineering, it functions as a self-financing entity
that has now expanded to encompass the entire university. Set up with the assistance of ADB, the cell aims to
(i) identify public and private sector organizations willing to collaborate with the university; (ii) diffuse successful university research projects and staff expertise within industry through joint R&D, consultancies, and technology transfer; and (iii) identify and meet the professional development needs of industry. Staff at the university have further organized Uni-Consultancy Services, a not-for-profit association, to act as the university’s vehicle for contracting with industry. Even so, they note that current government regulations for higher education prevent the establishment of business incubators.

In sum, public–private partnerships and UILs are largely untested mechanisms in Bangladesh, Nepal, and Sri Lanka. They are not well understood by either the university community or the private sector, and there is little experience to date to serve as a guide. Where experience exists, it is most likely to be found in private universities than in public ones. Consequently, any initiatives in these areas would be well advised to begin with a preparatory period of public education, awareness raising, and workshop explorations that create a climate of understanding among potential participants.

**HOW TO PROMOTE PUBLIC–PRIVATE PARTNERSHIPS INVOLVING UNIVERSITIES**

Universities must overcome many difficulties if they are to successfully develop productive working relationships with industry. First, traditional university structures do not lend themselves to collaboration with business. Thus, they will have to create—and integrate—new structures appropriate for this purpose, such as technology transfer offices, business incubators, business relations offices, intellectual property units, and technical assistance resources. Second, the institutional values of the academic community are not readily compatible with entrepreneurship. Third, university staff will have to learn new skills with regard to business planning, financing, project management, and interacting with corporate culture. Fourth, university financial management will have to be organized in such a way that business costs can be tracked, inefficiencies identified, and profit or loss calculated. In short, universities will have to restructure various organizational aspects of research and management if they wish to pursue public–private partnerships successfully.

Fortunately, not all universities need to pursue links with industry. Only a few top universities in a country will have the potential to develop strong working relationships with private firms, and within these universities, only a few departments representing specific subsectors may be able to pursue UILs. Demand from the enterprise community is low. Firms do not see universities as a source of marketable ideas or as possible collaborators. As a result, only 13% of firms in Malaysia report having looked for university assistance on particular problems, and less than 20% of large and medium-sized enterprises in the PRC collaborate with universities (World Bank 2012, 79, 162).

Several challenges will have to be surmounted in the working relationship between universities and industry. The first is that there is often a significant credibility gap between industry and academia. Second are the bureaucratic regulations and attitudes that surround business start-up and technology transfer licensing. An important third hurdle is the general lack of adequate channels of communication and mechanisms for information exchange between the two parties. Next is the frequently poor understanding of intellectual property rights within universities. Finally, most universities tend to provide inadequate incentives for staff engagement in UILs and insufficient financial support for such initiatives (Brimble 2007).

UILs can be initiated through the hiring of university graduates by industry, informal conversations, joint research undertakings, commissioning of consultancy work by industry, licensing to firms of university-held patents, or the purchase of industry prototypes by universities. It is what happens after these initial contacts have been made that is important.
General lessons gleaned from international experience with UILs suggests at least five pieces of proven advice: (i) obtain the commitment of top managers and all stakeholders; (ii) focus explicitly on building trust and credibility between university and industry representatives; (iii) base collaboration on entrepreneurial principles and well-developed business plans; (iv) frame collaboration in terms of the core functions of the university, and ensure that elements from more than one of these functions are involved; (v) hire appropriately qualified UIL program managers; and (vi) undertake regular monitoring and evaluation of progress.42

From a university perspective, it will be important to incorporate the UIL concept into university reforms, making UILs a key element of autonomy and financial diversification strategies and a vital component of the university’s outreach program. Attention to developing good information technology infrastructure is another requirement. Within the university, UILs should be presented as long-term relationships that offer opportunities for lifelong learning by both sides. In addition, they should be explicitly promoted through the provision of technical and advisory support, financial incentives, and fiscal support for corporate philanthropy (Brimble 2007, 56).43

Where there is little prior experience with UILs, the establishment of a fund that provides seed money to encourage joint projects can help to prime the pump of collaboration. Such funds may provide full financing or require matching contributions from the participating parties. They may be set up by a development partner or government itself. Such funds usually go beyond traditional competitive research funding to support the commercialization of research and the engagement of universities, research centers, and enterprises in collaborative technology development projects.

In conclusion, the relatively brief history of UILs appears to contain a few notable successes, a larger number of non-successes, and numerous experiences that are still too fresh for judgment. Against this backdrop, those attracted by the enormous potential of UILs would be prudent to start small, go slow, devise improvements as constraints are identified, and commit themselves to a long haul. UILs can work, but they are not a quick fix for either a stagnant economy or a struggling university.

42 Brimble 2007, footnote 225. In addition, generic recommendations include clear objectives, motivated partners, adequate resources, good management, and effective communication and coordination (ADB 2008, 56).43
43 A similar response has been reported in the United States.
In the end, it usually comes down to the money. The question is how you get it and what use you make of it. This holds as true for higher education systems as it does for institutions, both private and public. This chapter discusses the financing of higher education in Bangladesh, Nepal, and Sri Lanka within the context of South Asia and, occasionally, the world.

WHY HIGHER EDUCATION FINANCING IS IMPORTANT

Higher education financing is of considerable consequence, not simply because of its drawdown on the government budget, but because it indirectly affects a country’s development prospects and the quality of life of its citizens. Too much inefficient expenditure on higher education in a developing country can cut into the resources available for primary and secondary education, thus slowing the expansion of literacy and basic workforce productivity. Too little expenditure can create a scarcity of highly skilled people, thereby constraining institutional capacities and performance in the public and private sectors. Likewise, how funds are used conditions the quality and relevance of higher education, determines who gets to study at university, and affects whether the country will be able to compete in the global knowledge economy. All of this ultimately shapes the possibilities for economic growth and social development. For this reason, higher education financing is, or should be, important to every citizen.

UNCERTAIN TIMES

The worldwide economic crisis that began in 2008 is still running its course. So far, its impact on Asian higher education has been less painful than the effects of the 1997–1998 crisis. Still, the dynamics of response are different this time. Falling consumer and industry demand around the world has fueled rising unemployment, especially among youth. In response, students have become determined to obtain a “job ready” education. Consequently, interest and enrollments in higher-level vocational and technical education have been growing in the region (Postiglione 2011, 795). In an effort to spread risk and limit institutional vulnerability, universities have sought partnerships, particularly within the region, in order to shore up sustainability.

Perhaps hastened by the recession, many countries have reached (or will shortly do so) the limit of their governments’ capacities to provide public funding for higher education (Wangenge-Ouma 2011). Confronted by this reality, the solution for public universities is to diversify their sources of revenue in as many ways as they

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44 A similar response has been reported in the United States.

45 In support of this statement, Wangenge-Ouma cites six international publications.
can. Such diversification decreases the financial vulnerability of institutions by spreading risk (Sporn 1999, 271). Some researchers have gone so far as to develop a scale of resource dependency for universities. They conclude that when revenues are diverse enough that no single source accounts for 50% or more, then the institution’s revenue dependency risks are considered to be “low” (Ziderman and Albrecht 1995).

As they approach the limits of public financing for higher education, countries seek ways to improve the efficiency and productivity of their funding. Recent years have witnessed experimentation with different types of budget allocation methods. Among these are performance contracts (Austria, Finland, and France), funding formulas (Australia, the Netherlands, and the United Kingdom), a “taximeter” approach (Denmark), and competitive funding (Chile, Hungary, Indonesia, and Sri Lanka) (Salmi and Hauptman 2006).

Looking back at all the changes in higher education financing that have occurred in recent years, various broad international trends are discernible. Foremost among them has been a decline of public expenditure on higher education, whether in terms of per-student expenditure or as a share of the education budget. This decline has prompted numerous cost-recovery policies and the introduction (or increase) of tuition fees. In this context, the dual-track system of tuition-paying students studying alongside publicly sponsored students is becoming commonplace. As cost sharing expands, student loan programs become more numerous in an effort to assist less affluent students. At the same time, universities are giving greater emphasis to income generation from third parties such as the corporate sector. Likewise, university mergers are increasing, collaboration among universities in sharing common services is growing, and performance-based funding is rising. An important parallel trend has been a surge in private higher education. A new phenomenon is the internationalization of higher education through aggressive strategies to recruit foreign (fee-paying) students and create regional education hubs (Tilak 2006).

A CLOSER LOOK AT UNDERLYING FORCES

Although many forces impinge on the dynamics that shape higher education financing, the four prominent factors are enrollments, staffing, financial effort, and graduation rates. Enrollments determine the size and configuration of the higher education system, and therefore have a major influence on costs. Staff salaries and benefits consume most of institutional budgets and heavily influence the amounts of resources available for enhancing the quality of instruction and building research capacities. Financial effort, i.e., how much the government is willing to invest in higher education, reflects the overall priority and total amount of resources that the country assigns to the sector. Finally, graduation rates provide an indication of system efficiency in the use of resources. Trends in the three focus countries for each of these four areas are now discussed.

**Enrollments.** Higher education enrollments grew at wildly different rates in the three countries targeted by this study (Table 15). The large system in Bangladesh expanded by a reasonable 33% during 2000–2009, although its average annual growth rate of 4% masked severe oscillations in 2002 (–8%), 2004 (–8%), and 2008 (–13%). In contrast, higher education in Nepal exploded. Total enrollments more than tripled in slightly less than a decade, and annual increases averaged a rocketing 11%. Sri Lanka occupied the middle ground, increasing enrollments by 50% for a brisk but manageable 6% annual rate of expansion.

The uncontrolled growth of higher education in Nepal is likely to be accompanied by an array of financing problems, most notably a sharp decline in expenditure per student. Much slower growth rates in Sri Lanka and Bangladesh imply far more manageable situations.

**Staffing.** Trends in the numbers of academic staff show very different profiles than those for enrollments. In Bangladesh, staff growth of 78% during 2001–2009 was more than double the enrollment growth of 33%. This
implies a major hiring campaign during these years. Among the likely effects of this are strong upward pressure on the higher education budget as staff salaries and benefits increase much more quickly than the system as a whole; a probable squeezing out of all other types of expenditure as staff salaries claim almost all of the budget “pie”; and downward pressure on staff–student ratios, which could boost education quality by creating smaller classes. In Nepal, the gain in academic staff numbers was only half that of enrollments. This suggests that it may have been difficult to recruit qualified academics; teacher quality may have eroded if less-qualified instructors were hired to reduce the shortfall; and staff–student ratios have probably worsened, with a negative impact on quality as classrooms become more crowded. In Sri Lanka, data on public university staff numbers for 2006–2009 indicate an overall increase of 19%, or roughly 6% a year. This parallels the rise in public university enrollments during that period, indicating proportionate growth.

### Financial effort and balance

The financial effort a country is willing to make to educate its citizens is indicated by the share of gross domestic product (GDP) devoted to education. Likewise, the portion of GDP expended on higher education shows the priority that the country gives to producing highly skilled workers and research. The share of the education budget allocated to higher education also reflects the degree of balance to be found in education financing.

Historical trends for these indicators in Bangladesh, Nepal, and Sri Lanka show divergent paths. The financing effort made by Bangladesh on behalf of education and higher education has remained essentially unchanged at comparatively low levels during 2000–2009. The limited data available for Sri Lanka suggest a weak and declining national financial commitment to both education and higher education. Only Nepal appears to have strengthened its financial support to these areas since 2007.

In terms of the balance of expenditures within the education sector, Bangladesh and Nepal appear to be underinvesting somewhat in higher education, and Sri Lanka seems to be trending in the same direction. Internationally, allocating 15%–18% of the education budget for higher education is generally deemed to be more appropriate. However, remaining challenges in primary and secondary education in Bangladesh and Nepal may justify their current budgetary distribution. Even so, the 8% allocation to higher education in Bangladesh is unusually low. Efforts should be made in Bangladesh and Nepal to raise higher education’s share of the education budget toward international benchmarks as soon as circumstances allow.
There is a wide range of practice in the distribution of financing within the education sector. At one end, Hong Kong, China reserves 31% of its education budget for its higher education system, which boasts 2 universities ranked within the world’s top 50 (Times Higher Education Supplement 2010). More common in Asia, however, is a relatively low allocation for higher education of 10%–14% of the education budget (Bangladesh, the Lao PDR, Nepal, the Philippines, Sri Lanka). India, Thailand, and Viet Nam are clustered near the OECD average of 23%.

Similar data for other Asian countries can be used to put this public financing effort into perspective. Of 11 Asian countries for which data are available, 5 devote at least 4.0% of national income to financing education. Nepal aligns well with this group; in 2010 it boosted its education spending to 4.5% of GDP (Government of Nepal 2011). This compares favorably with the more modest South Asia regional average of 2.9%, where Bangladesh and Sri Lanka find themselves below this mean. Among the developing countries of East Asia, the average is 4.1% of GDP. Five of these countries also invest 0.5% or more of GDP in higher education, as does Nepal. By spending only 0.3% of GDP on higher education, Bangladesh and Sri Lanka are at the low end of the Asian spectrum. Appropriate future targets would be to attain education sector expenditure equal to at least 4.0% of GDP, higher education investments equal to roughly 0.7% of GDP, and higher education investments equal to roughly 0.7% of GDP.

**Graduation or completion rates.** Ultimately, it is not how much money is spent, but what results are generated by this expenditure that is most important. In higher education, the primary output is graduate degree holders. A higher education system that graduates a high percentage of the students who enroll is efficient and uses its public financing reasonably well. However, if doubts arise regarding the quality and/or employability of graduates, then what seems to be an efficient system may not be cost-effective. In this case, public financing is being wasted and might better be used for another purpose.

Completion rates for higher education in Bangladesh and Nepal are extremely low. Only 5% of students graduate. This puts them on a par with Cambodia and only slightly better than the Lao PDR. In Sri Lanka, the situation is seemingly much better with an estimated completion rate of about 70%, although this figure is so high that it requires confirmation. Even the most efficient higher education systems in the world, such as that of the Republic of Korea, only graduate about 50% of their university student intakes. In the United Kingdom, the completion rate is 40%. In the United States, it is 36%. The rates for the PRC, Indonesia, Malaysia, and the Philippines are less than 20% (World Bank 2012, 48).

The low completion rates in Bangladesh and Nepal should be cause for concern—and action. Failure to complete a degree not only is a waste of public funds, but is also frustrating for most students. From an economic efficiency standpoint, improving the completion rate may be a less costly way of boosting the numbers of graduates than physical expansion of the system (World Bank 2012, 50). Consequently, efforts to double the completion rate in Bangladesh and Nepal over the next 5 years would seem to be an appropriate first step toward remedying this problem.

In sum, it appears that the key dynamics in the higher education systems of Bangladesh, Nepal, and Sri Lanka do not bode well for financing in these countries. In Bangladesh, a reasonably paced expansion of enrollments and a significant upsurge in academic staff numbers prompted no change in the financing effort during 2000–2009. In Nepal, runaway enrollment growth outstripped the numbers of available academic staff, although public funding efforts on behalf of education increased appreciably over the same period. In Sri Lanka, enrollments have grown at a measured pace and academic staff numbers have kept in step, but the country’s funding commitments to both education and higher education have been declining. Each of these cases can be illuminated by a closer look at their higher education revenues and expenditures.

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46 Estimates are based on best available information, which is not comprehensive. Completion rates also vary among courses of study. It was estimated that the percentage of students completing their degree was 60% for veterinary science, 73% for science, 77% for agriculture, 90% for engineering, 91% for social sciences, and nearly 100% for medicine. S. Chandrasiri, personal communication.
THE BUDGETING PROCESS

How university budgets are determined can have an important influence on institutional performance, staff morale, management efficiency, and university innovation. If the budgeting process is seen to be fair, rewards good performance, and provides incentives for efficiency and innovation, it is doing its job. But if budgets are fixed on the basis of last year’s amount and/or the success of personal negotiations, the process will be viewed as illogical, nontransparent, and politically driven. In such cases, opportunities—and money—are being wasted.

Unfortunately, the budgeting processes for higher education in Bangladesh, Nepal, and Sri Lanka are of the latter kind. In Bangladesh, budget allocations are “based on precedence or influence” (Mannan unpublished, 89). In Nepal, the approach is similar, and no criteria or norms are used (Bajracharya unpublished, 73). Sri Lanka also uses the prior year’s budget as the main reference point for university funding allocations. Consequently, these budgeting processes are seen to be nontransparent, unfair, and inefficient. Among other shortcomings, this approach gives the largest increases to the institutions that spent the most in the past, irrespective of their efficiency and innovation in improving access and quality (Chandrasiri unpublished, 105).

One example of the inequity produced by historical budgeting is that different universities may receive widely varying amounts of funding when calculated on a per-student basis. For example, the Government of Nepal allocates $1,116 per student to Pokhara University and $986 per student to the National Sanskrit University, which is more than four times the $222 it gives to the large Tribhuvan University.

Once budgets are defined, flexibility in budget management is a valuable asset. It enables university managers to address changing conditions, deal with the unexpected, and maximize efficiency. Budget management flexibility varies among the three study countries. In Bangladesh, strict adherence to approved line items is required, reallocations within the approved budget are difficult, and any income generated must be turned over to the treasury. In Nepal and Sri Lanka, universities receive their funds as block grants, which give more flexibility in expenditure decisions.

Internationally, it has now become standard procedure to employ some kind of logical and transparent funding formula in determining university budget allocations. The simplest formulas are tied to enrollment numbers and apply an average per-student cost figure to each student registered. Slightly more complex formulas calculate the actual per-student cost for each academic faculty, recognizing that instructional costs vary significantly according to the teaching requirements of the discipline (e.g., large lectures or small classes, required laboratory work, field trips, and/or special requirements such as dairy cattle and barns). These unit cost figures are then multiplied by the number of students registered in each faculty and summed to calculate the budget. More complex formulas, requiring standardized statistics generated by each university’s management information system, may include incentives for certain types of performance, rewards for progress toward policy goals, or some type of competitive element (Salmi and Hauptman 2006). Likewise, block grant budget allocations to universities have become commonplace because of their greater flexibility. Within this international frame of reference, Bangladesh, Nepal, and Sri Lanka should strive, at a minimum, to employ simple funding formulas based on enrollments and average unit costs per student. Furthermore, Bangladesh should consider moving to block grant allocations.

Once funds have been allocated, a small portion (e.g., 5%) can be disbursed through a competitive funding mechanism. Focused on key reform goals and rewarding output or performance, competitive funds can improve cost-effectiveness and increase education quality and relevance. East Asian countries such as Indonesia,

47 The costs of administration and common facilities (e.g., libraries) are prorated.
Mongolia, and Viet Nam possess considerable experience with competitive funds and thus constitute an obvious resource for South Asian countries interested in testing this disbursement mechanism (Saint 2006; World Bank 2012, 119).

**HIGHER EDUCATION REVENUES**

Universities’ expenditures are funded from essentially six sources: government allocations for higher education, government allocations to other sectors that may find their way to higher education (e.g., research, staff training, contracted advisory services), tuition fees, income-generating activities, development partners, and philanthropic fund-raising. Each of these sources will be examined in turn.

**Government allocations for higher education.** Public universities in all three countries are highly dependent on public funding. In 2010, government financing accounted for 85% of university revenues in Bangladesh, 85%–90% in Nepal, and 87% in Sri Lanka (down from 95% in 2008). Consequently, universities in all three countries, with Sri Lanka as a partial exception, have registered little progress toward funding diversification, and apparently they have not been encouraged to do so. Certainly, the requirement in Bangladesh that universities must give any income to the treasury is a powerful disincentive for funding diversification.

**Tuition fees.** Sharing the costs of higher education with university students is one way to ease enrollment-driven pressures on the government for more public funding. As a result, most countries in Asia are starting to rely more on student fees to finance the expansion of higher education (World Bank 2012, 104). For example, in Beijing average university tuition fees range between $600 and $800 per year. In Viet Nam, the introduction of tuition fees has enabled rapid expansion of its higher education system without placing a heavy burden on the government budget.48

Internationally, tuition fee revenues cover 10%–40% of recurrent budgets in countries where this is the practice. When such income supplements rather than replaces government financing, as is usually the case, the resulting quality impacts can be impressive. Because government financing is spent mainly on staff salaries and benefits, tuition revenues can be applied where they are needed most—for library acquisitions, laboratory equipment, classroom teaching technologies, and computerization, among others. Of the top 100 universities ranked internationally by the United Kingdom’s *Times Higher Education Supplement*, 92 charge significant student tuition fees. World-class universities require abundant resources and tuition fees are one way to obtain them.

In Bangladeshi and Sri Lankan public universities, highly subsidized tuition fees have remained almost unchanged for the past 50 years.49 As a case in point, annual tuition fees at the University of Dhaka in 2009 were between $2.57 and $4.29, although government expenditure per student at that university was estimated at $881. Even master’s degree programs were essentially free. In other words, students contributed less than 1% of the cost of their studies. Although the University Grants Commission’s Strategic Plan for Higher Education in Bangladesh: 2006–2026 emphasizes that the current tuition fee structure will have to be rationalized and that government should plan to reduce its share of public university funding from 95% to 70% (University Grants Commission of Bangladesh 2006, 66, 70), progress on this front has been difficult. Students have consistently mobilized to challenge any attempt to have them share in the costs of their education.

48 However, this policy has also made it difficult for students and families of modest means to make these payments.

49 It is curious that despite 30 years of liberal economic policies in Sri Lanka, its higher education sector remains protected and highly subsidized.
International good practice indicates that there are better ways to manage the introduction of student tuition fees. Briefly, governments are advised to follow a phased strategy in any effort to increase tuition fees by a significant amount. The first phase is a public education campaign, aimed at both students and the general populace, that (i) clearly communicates the financial constraints confronted by government as fee-free enrollments move toward massification, (ii) argues the importance of not taking funding from other important priorities to solve the problem, (iii) explains the multiple benefits that graduates can expect from their education, and (iv) notes that many families pay substantial fees for the quality private secondary education that prepared the student to achieve university admission. It is important to stress in these communications that government does not intend to reduce its funding for higher education, and that the student contributions will supplement—not replace—public funding. The result will be better-quality higher education for students.

The second phase is to announce that relatively modest tuition fees (e.g., 15%–20% of the cost per student) will be introduced in 2 years’ time, and that the new policy will only apply to entering students. Those students already admitted and currently on campus will be exempted from fee payment. After 3 years of fee-based intakes, all students will be sharing the costs of their education.

The third phase is to announce, some 9–12 months before the policy goes into effect, that students who may have difficulty paying the fees will be assisted by a program of need-based scholarships and student loans. The long advance notice allows people to discuss the idea, ask questions, and understand the rationale for fees, even if they do not agree with it. It enables students to consider options and plan accordingly. It also gives the government time to put in place a need-based financial assistance program for students who qualify. This approach does not guarantee that the introduction of tuition fees will be free of contention, but for a government with the political will to make the change, it should be manageable process (World Bank 2002, 87, 94).

In Nepal, all higher education institutions are given the legal authority to determine tuition fees. However, tuition fees are a sensitive issue in those institutions, most notably Tribhuvan University, which takes 90% of all enrollments and where costs are heavily subsidized by the government. In these cases, any possibility of adjusting tuition fee levels has been strongly resisted by student unions. Consequently, it was only after a major struggle that Tribhuvan University was able to raise fees to about $4 per month from the previous level of less than $1 per month. Even so, subsequent calculations indicate that the university still recovers less than 15% of its costs, with government contributing the rest.

In Sri Lanka, the government provides tuition-free university education for undergraduates. However, tuition fees are applied for postgraduate studies, where fee levels have been soaring by 40% annually during most of the 2000s. Despite these efforts, tuition fee income contributes less than 6% of university revenues.

Internationally, reliance on student tuition fees to help cover the costs of ever-expanding higher education has been steadily growing and is clearly here to stay. Recognizing this, ADB observed in 2009 that cost sharing in higher education will eventually become necessary for most of its developing member countries due to competing demands on public resources (ADB 2009, 33). In East Asia, tuition fee revenue accounts for 30% of university recurrent budgets in the PRC, 38% in Indonesia, 54% in Mongolia, and 45% in Viet Nam (World Bank 2012, 105). In South Asia, change is already beginning to be felt, and in May 2011 India’s high-level Madhava Menon Committee recommended that universities should be permitted to set their own fees following years of government-controlled low fee levels (University World News 2011c).

Such changes would be consistent with practice elsewhere in the world, where even countries such as the Russian Federation, which retains a constitutional provision stipulating free higher education, and the PRC, which had a 40-year tradition of free higher education, have adopted cost sharing. Seen from this perspective, the current absence of any significant university tuition fees in Bangladesh, Nepal, and Sri Lanka represents considerable potential for raising these countries’ low levels of investment in higher education—if the politics of this change
can be adroitly managed. In this regard, the fact that essentially free higher education has been proved to benefit primarily the children of the richest 20% of a country’s families, to the detriment of aspiring university students from all other income groups, should be worth considering.\(^5^0\)

Within Asia, universities have discovered that a less controversial way of boosting revenue from tuition fees is through the recruitment of foreign students, who generally are charged tuition fees that approximate the expenditure per student. One outcome of this approach is that a number of countries have declared their intention to become regional higher education hubs. Asian economies with announced hub aspirations include Bhutan; India; Malaysia; Singapore; Sri Lanka; Taipei, China; and Viet Nam. Although it has not publicly embraced the higher education hub strategy, the PRC is clearly making an effort to increase its numbers of international students. Other economies outside Asia, for example Australia, are also competing for international students.

**Income generation.** Current reductions in higher education funding, whether due to the competing financial needs of other sectors or to deficit-induced national austerity programs, reflect the simple reality that costs exceed available revenues and therefore something must be done. Policy makers have several choices available. One possibility, discussed in the previous paragraph, is to increase revenues by raising student tuition fees. But this is often not an attractive option due to its potential for generating considerable political conflict. An alternative is to reduce institutional expenses through various efficiency measures. These usually begin with cuts in areas for which little internal advocacy is likely to exist, such as facilities maintenance. But if the need for savings is great, cost-cutting ultimately leads to some type of workforce reduction. This path generally encounters considerable resistance due to personal loyalties in the workplace and the militancy of academic staff unions. A third route is that of increased income generation. This course, at least during an initial stage, is often the most attractive because it does not prick political sensitivities or threaten long-serving employees. It is also a positive rather than a negative initiative. Consequently, universities have invested considerable efforts in creating revenue streams from a wide range of activities, such as contracted training, commissioned research, leasing of university assets, technology commercialization, advisory services, information and communication technology (ICT) services, patents, and various types of business initiatives. If pursued energetically, revenue generation can be rewarding. For example, Australian universities and research organizations generated $1.38 billion from the commercialization of their research activities in 2010 (Maslen 2012).

University income generation, however, is not without drawbacks.\(^5^1\) One is the potential for income-producing activities to divert staff time and institutional resources away from the university’s core mission. Some universities have managed these tensions by creating specialized organizational units such as business offices. Another concern is that business involvement may come into conflict with long-standing notions of academic integrity. This might occur, for example, when a research contractor has a vested interest in the result of the research. Academic compromise might also occur when the dissemination of research findings is suppressed due to intellectual property worries. Again, there are solutions to these risks in the form of enforceable transparency in university contracting and the existence of an academic ethics committee. A third constraint is the unequal distribution of entrepreneurial possibilities across academic disciplines, with the likelihood that some groups will capture most of the benefits. Examples include the sciences and engineering versus the humanities, applied versus basic disciplines, and policy-relevant versus esoteric fields (Chapman 2002, 46). Here, some universities have found a solution in the form of internal revenue-sharing arrangements among academic departments.

Despite these limitations, income generation has proved to be a useful instrument in the toolbox of university financing. Global experience indicates that many higher learning institutions in developing economies are able

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\(^{50}\) Johnstone 2006, 7–8, especially footnote 4.  

\(^{51}\) In addition, staff may resist institutional efforts to produce revenues due to an absence of the necessary infrastructure for handling this income in an accountable manner; a shortage of clients willing to trust the university to carry out its contracted work in a responsible and timely manner; and resistance from staff who may see this as a tax on their individual consulting incomes (Chapman 2002, 18).
to cover 10%–15% of their operating budget through revenue-producing pursuits (Chandrasiri unpublished, 122). But performance varies widely depending on locational opportunities and institutional leadership. For instance, a 2002 study reported that income generation accounted for 17% of university revenues in Denmark, 19% in the Netherlands, 31% in Australia, 34% in public universities of the United States, and 45% in the United Kingdom (Netherlands Bureau for Economic Policy Analysis and the Center for Higher Education Policy Studies 2002, 18).

Income-generating activities within the public universities of Bangladesh, Nepal, and Sri Lanka are poorly developed. The country studies for Bangladesh and Nepal make almost no mention of initiatives in this area.52 In the case of Bangladesh, this is understandable in light of the reported requirement that all university-generated funds must be turned over to the treasury. The situation in Sri Lanka is marginally better. Its university income-generating activities (including interest on bank deposits and miscellaneous receipts) contribute less than 4% of university operating budgets. Ironically, Nepal’s huge Tribhuvan University managed to raise its own-generated income from 8% in 2005 to 15% since 2010, but this was accomplished largely by charging service fees to its expanding number of obligatorily affiliated colleges rather than to any real entrepreneurial initiative of its own. In all of these countries, strategy documents point to university income generation as a future goal. Consequently, this is another area of considerable potential that can be highlighted for explicit policy attention.

Development partners. International development partners are limited short-term sources of financial support for universities in the three countries. Mostly, their resources underwrite partnerships between local universities and their own institutions, joint research, and staff development scholarships in development partner countries. In all cases, the World Bank has been the main contributor of funding for higher education.

Development partner assistance to the education sector in Bangladesh amounted to nearly half of the almost $1.8 billion in aid they provided in 2008–2009, but very little of it has gone to higher education. One exception was the Government of the United Kingdom, which supported a modest program of university links initiated by British institutions, research grants of $16,000–$80,000 on a competitive basis, and more recently, $270,000 from the INSPIRE (International Strategic Partnerships in Research and Education) program that has underwritten four capacity-building partnerships (three on research) between British and Bangladeshi universities. A more significant exception appeared in 2009 when an $81 million, 5-year project funded by the World Bank began to provide competitive funding for innovations in university teaching and research, management capacity building, and an expansion of ICT infrastructure serving the universities.

In Nepal, two World Bank projects have supported government higher education reforms.53 The first project encouraged decentralization and greater autonomy for the constituent colleges of Tribhuvan University, while the second assists improvements in the quality and relevance of university teaching and research, and increased access by qualified but economically disadvantaged students. In addition, the United Nations Development Programme (UNDP) and UNESCO have contributed to strategic planning in the higher education sector on different occasions.

Sri Lanka has also received significant development assistance—representing 18% of the higher education budget in 2009—to upgrade the quality and relevance of its university outputs. Here again, the main actor has been the World Bank with two projects (2003–2010 for $51 million; 2010–2016 for $40 million) designed to align university teaching and research more closely with national social and economic development priorities.54

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52 The Bangladesh study (Mannan unpublished) notes that only 6% of its income comes from nongovernment sources, mainly tuition fees and other student charges.
53 The first project is the Higher Education Project (HEP), 1994-2001, has a total amount of $23.1 million. The Second Higher Education Project (SHEP), 2007–2014, has a total cost of $60 million.
In addition, Austria and the Netherlands are funding a project to upgrade the country’s advanced technological institutes, and the Government of Kuwait is financing a development plan for South Eastern University. During 1983–2009, an intermittent civil war constrained development partner engagement. However, the Government of Sri Lanka projects the possibility of receiving $128 million in donor support for higher education over the coming decade.

Although ADB has financed government projects benefitting primary education, secondary education, and technical education in all three countries, it has not yet systematically extended its support to higher education in any of these countries.

**Philanthropic fund-raising.** The art of philanthropic fund-raising for universities is not well developed in South Asia. Typically such fund-raising involves a combination of alumni donations, tax-deductible gifts from private firms, and grants from nonprofit foundations or individual benefactors. The three country reports indicate that few efforts to tap these sources can be found in the countries studied, but the potential exists to do much more. A partial exception is Bangladesh, where alumni associations reportedly contribute to university building campaigns and laboratory development. Nepal and Sri Lanka have no visible initiatives in the area of philanthropic fund-raising.

One innovative idea is to mobilize contributions from a nation’s diaspora community by means of “diaspora bonds” that could be used to finance development projects (e.g., higher education) in the home country. They could be sold globally to diaspora groups through national and international banks as well as money transfer companies. They could be marketed through ethnic newspapers, community groups, religious centers, and business associations in places where migrants live. Bonds would be sold in relatively small denominations to tap into the collective wealth of relatively poor emigrants (Okonjo-Iweala and Ratha 2011). The World Bank estimates diaspora savings amounting to $4.6 billion for Bangladesh, $1.0 billion for Nepal, and $4.5 billion for Sri Lanka (Ratha and Mohapatra 2011). In view of these numbers, the diaspora bond would seem to be well worth considering by the university grants commissions of these three countries.

**Private higher education.** The private provision of higher education can also be viewed as a revenue source. Because private higher education is funded by the investments of its institutional founders and the tuition fees of its students, this revenue can be a significant complement to public funding of higher education. As such, it allows the higher education system to grow much more rapidly than it would solely on the basis of public funding. It also expands access for students who would otherwise be unable to gain university admission.

Private institutions depend on tuition fees to cover their instructional and management costs. The level of these fees gives some indication of students’ capacity to pay for higher education, and also enables a rough estimate of the complementary financing that private higher education can mobilize in support of national education (Table 16). The data in Table 16 enables two important observations. First, the gap between what a student pays for public higher education and private higher education is extraordinarily large. Most people (except perhaps public university students) would consider this to be highly unfair. Because of this gap, the cost savings of gaining admission to a public university range from $10,000 to $25,000, creating strong incentives to corrupt the admissions process. Second, the financial value of private higher education’s contribution is huge. In essence, it represents the opportunity cost that government would have to pay if it wished to educate the same number of students at public expense. Without private higher education, the higher education GERs in each country would be lower and there would be far fewer highly skilled workers.

Among ADB developing member countries, private higher education enrollments accounted for 42% of total enrollments in 2008 (ADB 2009, 14). Private higher education plays a very important role in Asian countries such as Cambodia, Indonesia, the Republic of Korea, Malaysia, and the Philippines, where it educates more than half of total enrollments. Its contribution is much more modest in Sri Lanka, Thailand, and Viet Nam, where it...
enrolls less than 15% of the total. In these latter cases, some headroom would seem to exist for greater private higher education involvement in the future development of national higher education systems. This seems to be the route that Sri Lanka intends to pursue, although student protests forced temporary suspension of this effort in early 2012 ([World Education News and Reviews](#) 2010; de Alwis 2012). It is worth noting that some countries have found it more cost-efficient to provide publicly funded scholarships to students attending private universities than to enroll them in public institutions (ADB 2009, 11).55

### EXPENDITURES

A university’s expenditure structure reflects how the institution uses its funds to purchase goods and services. Changes in the structure of expenditures over time can signal growing financial strength or vulnerability. Thus, declining expenditures for operations and facilities maintenance may indicate that deferred maintenance is rising. Growing expenditures for teaching in combination with declining expenditures for teaching support and central administration may suggest that the institution is cutting back on administration in order to hire new academic staff or to increase academic staff salaries.

University expenditures normally fall into one of two categories: recurrent (or operational) expenses and investment expenses (also called development or capital expenditures). Recurrent expenses tend to be relatively stable from one year to the next, with changes driven by enrollment growth or changing policy priorities. Investment expenses are much more variable, reflecting the “lumpy” nature of investment projects and the initiation or completion of major works.

Each of the three study countries divides its higher education budget somewhat differently between recurrent and investment expenditures. In Bangladesh, the recurrent share accounts for 87% of the budget and investment is 13%. Nepal gives a lower priority to investment, allocating it just 4% of the budget with the remaining 96% going to recurrent expenses. Sri Lanka places considerable emphasis on investment with an 18% share (down from 25% in 2007), with the balance of 76% allocated to recurrent costs.

### Recurrent Expenditures

Recurrent expenditures are of two main types: academic support and administrative support. Each of these is then broken down into a series of subcategories in order to track how revenues are spent. The subcategories

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**Table 16  Public and Private University Tuition Fees in Bangladesh, Nepal, and Sri Lanka**

<table>
<thead>
<tr>
<th>Country</th>
<th>Annual Public Undergraduate Tuition ($)</th>
<th>Annual Private Undergraduate Tuition ($)</th>
<th>Number of Private Higher Education Students</th>
<th>Approximate Annual Amount of Complementary Funding ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>4</td>
<td>3,623–8,695</td>
<td>200,939</td>
<td>700–1,700</td>
</tr>
<tr>
<td>Nepal</td>
<td>50</td>
<td>150–4,000</td>
<td>74,808</td>
<td>11.2–300</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>0</td>
<td>6,000–11,000</td>
<td>45,700</td>
<td>275–500</td>
</tr>
</tbody>
</table>


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55 See also Fielden 2008.
for academic support include direct teaching, teaching support, research, public service, and other academic expenses. The subcategories for administrative support comprise central administration, works and maintenance, health, student services, general administrative expenses, and staff pension benefits. To the extent permitted by information contained in the three country studies, these categories are further examined.

**Academic Expenditures**

Recurrent budgets for higher education in the three countries grew steadily during 2005–2010. In Bangladesh, where recurrent expenses for higher and upper secondary education are lumped together, annual allocations nearly doubled from Tk42 billion ($534 million) in 2005 to Tk82 billion ($1.05 billion) in 2010. The primary causes of this appear to have been the sharp expansion in the number of public universities during this period combined with rising inflation. In Nepal, the recurrent budget soared by 71% between 2005 and 2008 due to rapid enrollment expansion, even though expenditure per student was extremely low. In Sri Lanka, recurrent budgets have increased by 8% each of the past 2 years. When calculated on a per-student basis, average annual public recurrent expenditure per higher education student was $300 in Bangladesh (2010), $233 in Nepal (2009), and $1,770 in Sri Lanka (2009). When annual expenditure per student falls below $1,000, experience suggests that governments should become concerned about the likelihood of declining education quality.

Direct teaching expenses. This includes the costs of the various colleges, schools, institutes, departments, other instructional divisions of the university, and dean’s offices (e.g., dean of students). Here, the salaries of academic staff are normally a major component. In Bangladesh, direct teaching expenses represented 71% of total expenditures. Although this share might be considered high, the proportion is acceptable. International guidelines suggest that no more than 75% of expenditures should be used for academic staff costs. For example, the average university budget share spent on personnel expenses is 68% in OECD countries and 75% in the United Kingdom. In contrast, salaries constitute 50% of university budgets in Japan, 45% in the Republic of Korea, and 40% in Malaysia. A similar statistic for Nepal is not available. For Sri Lanka, academic salaries consume an impressively low 45% of recurrent expenditures—although, as noted elsewhere in this report, academic salary levels in Sri Lanka are too low to be competitive with opportunities outside the country. When such a wide variation from the norm occurs, it suggests the need for further analysis and explanation.

The average academic salaries prevailing in or about 2008 for the study economies and 15 others are in Table 17. It is readily apparent that the three economies remunerate their academic staff at levels significantly below the prevailing international market rates. Consequently, it is not surprising that all three economies experience substantial emigration by university-educated citizens. Notably, one-third of university graduates in Sri Lanka ultimately leave the country (World Bank 2011, 228). Thailand has sought to increase university staff retention by de-linking university remuneration from civil service pay scales so that managers have greater flexibility in offering competitive salaries. Top universities in Hong Kong, China; Japan; the Republic of Korea; and Singapore confront the problem by providing internationally competitive salary packages to their best staff.

An important additional factor in staff recruitment and retention is how academic salaries are determined. If they are highly standardized, as in Sri Lanka where a single salary scale is set by the University Grants Commission for all universities, then university managers have no means of adjusting to the differential market demand for skills. In universities where historians, philosophers, economists, and engineers are all paid the same, it is common to find that (i) departments of history and philosophy are fully staffed while departments of economics and engineering struggle to fill large numbers of vacant positions, and (ii) the best scholars depart while the

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weaker ones remain. Universities that truly aspire to excellence will have to find ways to attract and retain the best scholars, even in the most competitive professional fields.

Research expenses. In Bangladesh, just 0.26% of the higher education budget was allocated to research in 2009. These funds go to public universities as research grants. The universities, in turn, tend spread these resources broadly but thinly in support of individual staff research projects. In addition, the University Grants Commission manages an annual research competition. In 2009, it provided a total of $117,443 for 266 research projects in various fields. At an average of $442 per award, it is hard to see how significant research might be undertaken.

In Nepal, no information is available on the portion of higher education expenditure that is allocated for research. Since 2007, the government has worked to build research capacities within the higher education system and foster a culture of research. Initiatives have included an annual research competition, training workshops for academic staff on research methodologies, the establishment of research management units within the institutions, and the formation of a research council with private sector representation that advises the University Grants Commission on research policy. Many of these activities have been paid for with $4.5 million in World Bank funding.

Table 17  Average Academic Salaries for Selected Countries, 2008

<table>
<thead>
<tr>
<th>Country</th>
<th>Average Academic Salary per Month ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>420</td>
</tr>
<tr>
<td>Nepal</td>
<td>589</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>423</td>
</tr>
<tr>
<td>Argentina</td>
<td>3,054</td>
</tr>
<tr>
<td>Australia</td>
<td>4,795</td>
</tr>
<tr>
<td>Canada</td>
<td>6,548</td>
</tr>
<tr>
<td>PRC</td>
<td>1,182</td>
</tr>
<tr>
<td>Colombia</td>
<td>2,826</td>
</tr>
<tr>
<td>France</td>
<td>3,905</td>
</tr>
<tr>
<td>Germany</td>
<td>4,333</td>
</tr>
<tr>
<td>India</td>
<td>1,547</td>
</tr>
<tr>
<td>Malaysia</td>
<td>3,107</td>
</tr>
<tr>
<td>New Zealand</td>
<td>4,490</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>6,611</td>
</tr>
<tr>
<td>South Africa</td>
<td>4,076</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>4,343</td>
</tr>
<tr>
<td>United States</td>
<td>5,816</td>
</tr>
</tbody>
</table>

PRC = People’s Republic of China.
In Sri Lanka, specific information on research funding within higher education is not available. Research expenditures are included within an “other” category, representing 5.8% of total recurrent expenditure, which also covers postgraduate programs, publications, extension courses, and external examinations. On this basis, one might guess that research consumes no more than 2% of recurrent expenditures at best. In comparison, Mongolia spends 1.5% of university budgets on research. In the United Kingdom, university research allocations average 7%–10% of recurrent budgets (Postiglione 2011, 6).

**Administrative Expenditures**

The administrative expenses category comprises all costs that are not directly related to teaching or research. It includes central administration, maintenance and minor works, health services provided by the university, student services (including the halls of residence), employee pension scheme contributions, and general administration. A relatively new category, which does not often appear as a separate expenditure head, is information and communication technology (ICT) expenditures for management information systems.

**Central administration.** This includes the costs of funding the offices and activities of the vice-chancellor, registrar, bursar or finance officer, and their subordinate offices. In Nepal, central administration consumed 29% of the recurrent budget in 2008. Most professional observers would see this figure as unacceptably high. The corresponding statistic for Sri Lanka is 20%, also a somewhat high proportion. In Bangladesh, central administration consumes a much more reasonable 10% of the recurrent budget for higher education.

**Maintenance.** This is a small but important expenditure category because it ensures the normal functioning of equipment, laboratories, computers, vehicles, and physical facilities. Because few in the university hold a vested interest in maintenance, its advocates are scarce. As a result, it is often a target for cost-cutting when resources are needed to accommodate expanding enrollment. A general rule of thumb is that maintenance expenses should receive 5%–7% of the recurrent budget, depending on the age of the campus and the extent of its equipment holdings. In Nepal and Sri Lanka, maintenance accounted for an acceptable 8% of recurrent expenditure in 2008. The equivalent figure for Bangladesh was only 3%, which is likely to be insufficient.

**Student welfare services.** Funds expended here provide nonacademic benefits to students such as housing, feeding, health care, and transport. In some countries, this item can consume a surprisingly large share of the higher education budget. When this occurs, fewer resources are available to finance the main mission of the university, which is teaching. The Bangladesh country study notes that roughly one-third of students receive highly subsidized housing and that although students pay for their meals, these costs are also subsidized. However, the cost of these subsidies is not available. In Nepal, the extent of public funding for student welfare services is reportedly a miniscule 0.2%. In Sri Lanka, this figure is a higher but still reasonable 7.0% of the recurrent budget.

**General administration.** This rubric encompasses a range of miscellaneous expenses essential for running the university. It includes rents paid for leased properties, legal charges, bank fees, electricity costs, water bills, and administrative allowances. None of the country reports discriminates these expenditures in its analysis of higher education financing.

Table 18 presents the distribution of recurrent expenditure in the categories discussed. It shows that Bangladesh allocates the largest overall budget share to academic services. Within academic services expenditure, however, Nepal has the highest proportion spent on salaries while Sri Lanka spends for teaching support most. Nepal provides the largest portion for central administration.
Investment or capital budget expenditures normally comprise the construction of new physical facilities, the awarding of staff development scholarships, the purchase of major equipment items, and development of libraries. Unfortunately, none of the three countries provided discriminated budgetary information on these subcategories of investment expenditure. However, Bajracharya (unpublished) notes that staff development scholarships are nearly nonexistent in Nepal and that library development is also severely underfunded. For policy planning purposes, it would be useful to undertake more detailed surveys regarding university allocations for these important items.

### SIMULATIONS OF GROWTH, REVENUE, AND EXPENDITURE

Are the higher education systems in Bangladesh, Nepal, and Sri Lanka financially sustainable? As the number of secondary school graduates with university aspirations increases, and as the pressure on higher education to contribute the skilled human resources and applied knowledge needed to implement knowledge-economy development strategies intensifies, how much can governments reasonably be expected to do for higher education in the coming years? The question is important because it is essential to predict possible funding shortfalls in higher education well in advance.57

In an attempt to answer this question, simulation models were developed for Bangladesh, Nepal, and Sri Lanka. The models project the total public revenues likely to be available to invest in higher education, as well as the total

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57 This is because cost-sharing initiatives—the primary untapped source of additional revenue in these countries—will require a number of years to be designed, proposed, accepted, and implemented before they begin to generate additional funding resources.
public expenditures likely to be required under various assumptions during 2011–2020. The data projections used as the basis for the country simulations pertaining to various GER levels and budgetary allocations are presented in Appendix 5. The expenditures do not include the costs of postgraduate training for the additional academic staff that must be recruited to teach the increasing numbers of students.

**Bangladesh**

Economic growth rates in Bangladesh are anticipated to average well above 8% per annum in 2013-2024, promising increases in the revenue available to fund education (and higher education). At present, the education sector receives a low level of funding equivalent to slightly over 2% of GDP. Higher education in turn receives 11% of the education sector budget, which is also below international norms. Private higher education enrolls 54% of total enrollments, significantly above the average for South Asia. The population of Bangladeshis aged 20–24 years old (the basis for calculating gross enrollment ratios for higher education) is expected to grow steadily at just under 2% annually throughout the decade. Thus, higher education enrollments will have to increase by 2% a year simply to maintain the current GER of 14%. Using the total number of public higher education students from universities and colleges (875,867), cost per unit is estimated to be at $300.

Over the next 10 years, strong economic growth would easily enable the country to maintain a 14% GER despite population growth. If the country would aspire for a higher education GER of 18% over the coming decade, higher education budget deficits would be generated for the first 2 years of the decade until strong economic growth eventually enables a budgetary surplus in 2013 (Appendix 3, Table A3.3).

However, boosting the GER to 20% would be financially more difficult under current budgeting conditions, although projected economic growth would eventually enable a balanced budget by the middle of the decade (Appendix 3, Table A3.3). Increasing higher education’s share of the education budget to 15%, a level well within international norms, will eliminate the deficits noted above and a future enrollment growth at a GER of 20% (Scenario 1) becomes financially possible (Appendix 3, Table A3.4). As a result, the goal of a GER of 20% stated in the University Grants Commission’s 2006 strategy document would be attained.

However, if the government would maintain the 15% budget share for higher education, but raise its expenditure per higher education student to $500 in an effort to boost educational quality and relevance, a status quo GER of 14% (Scenario 2) would run deficits for the first 4 years until economic growth enabled a balanced budget in 2015, but higher GER levels would not be financially possible (Appendix 3, Table A3.5). If the higher education budget share were further increased to 18% (Scenario 3), which is still within international benchmarks, per-student expenditure of $500 would be possible for a 14% GER with only a single deficit year in 2011. This higher budget share, combined with projected economic growth, would permit a balanced budget by 2013 for a GER

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58 The fixed assumptions are (i) the US dollar value of the country’s GDP is the figure reported by the International Monetary Fund in 2010; (ii) the likely economic growth rate for GDP during 2011–2016 is that projected by the International Monetary Fund in 2010; (iii) the 2017–2020 growth rate is an extrapolated conservative estimate based on the foregoing projections; (iv) the share of GDP devoted to education will remain as reported by UNESCO in 2010; (v) the share of the education sector budget allocated to higher education will remain as reported by UNESCO in 2010; in addition, the access and quality implications of increasing these shares are also calculated; (vi) the gross enrollment ratio for higher education in the country is that calculated by the study team (the financial consequences of attaining a somewhat higher GER by the end of the decade are also estimated); and (vii) the number of youth aged 20–24 years in each year during 2010-2019 will be as projected by the United States Census Office in its international population statistics.

59 This GER level is higher than the 8%–10% reported in various international education databases. However, it reflects the currently reported higher education enrollment of 1,579,377 students as a percentage of the estimated number of people aged 20–24 in 2010.

60 Enrollment in the Bangladesh Open University was not incorporated here because its students are largely self-financing.

61 In the base-case scenario (Appendix 3, Table A3.3), it was assumed that the GER would remain unchanged at 14%, the share of public higher education enrollments in total higher education would continue to be 46%, the education sector would maintain its 2.2% share of GDP, higher education would continue to receive 11% of the education sector budget, and expenditure per public higher education student would be $300 per year.
of 18% with $500 per-student expenditure. Similar conditions would allow a non-deficit GER of 20% in 2015 (Appendix 3, Table A3.6).

Other options for raising the expenditure level per higher education student while expanding the GER would be to (i) increase the overall share of GDP spent on education (which is significantly below international norms), (ii) further expand the proportion of private higher education enrollments (which are already above international benchmarks), (iii) raise tuition fees charged to public higher education students (which are almost non existent), or (iv) pursue some combination of these options. But without bringing additional resources to bear, the gains in higher education quality and relevance needed to foster greater innovation and economic competitiveness in Bangladesh will be difficult to realize.

**Nepal**

Nepal’s future economic growth is expected to average a reasonable, but not robust, 6% a year (Appendix 4, Table A4.1). The country’s population of young adults aged 20–24 is projected to increase slowly until it stabilizes toward the end of the decade and then begins to decline in 2020 (Appendix 4, Table A4.2), which is expected to help improve the financial position of the higher education system in the longer term. Nepal currently allocates 4.5% of its GDP to the education sector (on par with international averages), and 10% of this is given to higher education (a comparatively low percentage). The Government of Nepal is estimated to spend a very low $233 per public university student (Bajracharya unpublished, 33). With slackening demographic pressures, steady economic growth, and very low expenditure per student, Nepal is not likely to experience any significant financial difficulty in raising its higher education GER from 10% to 20% over the coming decade if it maintains its very low levels of expenditure per public student (Appendix 4, Table A4.3).

Increasing expenditure per student to $400 and maintaining a GER of 10% (Scenario 1) would require a higher education budget share increase to 15% to ensure financial sustainability—a level that is more in line with international benchmarks. Notably, this same budget share would permit the country to achieve a GER of 15% during the decade while raising expenditure per student to $400 (Appendix 4, Table A4.4), although a 20% GER would remain beyond its grasp.

If higher education’s share of the education budget were further increased to 18% (Scenario 2), a level that is still well within international norms, then a GER of 20% could be attained even while increasing per-student expenditures to $400 (Appendix 4, Table A4.5). Alternatively, an 18% budget share would enable expenditure per student to be nearly tripled to $600 at the current GER level of 10% (Scenario 3), thus injecting a potential for major improvements in educational quality and relevance (Appendix 4, Table A4.6). Additional ways of expanding the financial pie for higher education would include increasing the proportion of private higher education enrollments and raising public university tuition fees. Although politically contentious, raising fees offers the greatest potential for future increases in higher education funding aimed at building new campuses, improving physical facilities, and initiating research programs.

**Sri Lanka**

Sri Lanka enjoys the best possible financial conditions for expanding and improving its higher education system. Strong economic growth of 8% or more annually is expected over the next 10 years of 2013-2024 (Appendix 5, Table A5.1) and demographic pressures are expected to ease significantly during the same period, with the total number of young adults aged 20–24 peaking in 2015 and then declining 5% by 2020 (Appendix 5, Table A5.2). Although the country’s education spending is comparatively low (2.0% of GDP) and its allocation to higher education from the education budget is similarly low (12.0%), Sri Lanka’s higher education policy position is still enviable because of its robust economic growth, significant decreases in population, and untapped financing options still available.
The simulations used a GER of 7%, accounting for about 112,977 students who are actively pursuing degrees through residential courses, evening programs, and the Open University.\(^{62}\) Using this same number of students, average expenditure per student is calculated at $993.

With positive economic prospects and slowing population growth, Sri Lanka’s higher education system can progressively raise its current 7% GER to 15% over the coming decade while maintaining its present budget shares and expenditure levels per public higher education student (Appendix 5, Table A5.3). However, even a 15% GER is probably too low for a country with Sri Lanka’s development aspirations. In addition, improving the quality of higher education to enhance graduates’ competitiveness to support national economic strategies requires a substantial increase in expenditure per student. Therefore, if public funding per student were increased to $1,200 (Scenario 1), expected economic growth would allow financial sustainability to be attained at the 2012 GER level (Appendix 5, Table A5.4). If a GER of 12% were pursued while raising expenditure per public student to $1,200, a financing deficit would be generated during the first 7 years of the decade (Appendix 5, Table A5.4). After that, economic growth and demographic easing would permit sustainability. Initial deficits could be offset by sequencing strategies or by temporarily raising higher education’s share of the education budget.

However, if higher education’s budget share were raised to 15% (Scenario 2)—a level consistent with international benchmarks—then a GER of 15% would be financially attainable while investing $1,200 per public student (Appendix 5, Table A5.5). Increasing per-student expenditure to $1,500 (Scenario 3) at a 7% GER would also be possible with a 15% budget share, and even a GER of 12% would eventually prove sustainable following an initial 6 years of deficits (Appendix 5, Table A5.6).

These simulations suggest what might be financially feasible in terms of expanding and improving Sri Lankan higher education over the coming decade by making relatively modest changes in higher education financing. Of course, a much more ambitious agenda would be possible if the country could attain an internationally comparable level of education expenditure relative to GDP (i.e., 4% instead of 2%). Likewise, policy encouragement for private universities, which is currently nonexistent, could do a lot to raise the GER at little cost to the government besides quality assurance monitoring.

**FINANCING REFORM AS A CONTINUOUS PROCESS**

Financing reform in higher education is more of a political issue than a technical matter (World Bank 2002, 103). The reasons for this vary, but commonly include staff mistrust that they may lose benefits and privileges, student concern that their “entitlements” may be reduced, and management preferences for systems that they have learned to use effectively. For these and additional reasons, higher education finance reform is likely to confront resistance and is best undertaken incrementally over time. Too often, cautious administrators resist making needed changes until the severity of the financial crisis forces sudden major reform—the surest way to trigger a social explosion among staff, students, and their supporters.

If the reform includes increased cost sharing by students, then governments should recognize that current fee levels constitute an implicit “social contract” with enrolled students until they reach graduation (ADB 2009, 22). Thus, new fee levels should be announced well in advance and applied only to new students. Also, a clear

\(^{62}\) Although the 2009 World Bank study reports a GER of 21.0% (based on all students enrolled) and the University Grants Commission calculates a much more restricted GER of 4.3% using only university enrollments, the simulations employ a GER of 7.0%, which is arguably more realistic. This is the result of subtracting the relatively inactive 291,000 external degree students (included in the World Bank calculations) who are characterized by very low graduation rates, lengthy time to graduation, and almost no public investment in their education. This leaves 112,977 students who are actively pursuing degrees through residential courses, evening programs, and the Open University.
trade-off has been found to exist between the fiscal impact of the proposed reform and the extent of resistance that it will encounter; i.e., the more significant the reform, the greater the opposition is likely to be (Johnstone 2006, 9).

Because it is a politically volatile issue, ministries of (higher) education are often reluctant to champion increased cost sharing in higher education. In such cases, acknowledged good practice is to establish an independent expert commission to assess options and make appropriate recommendations for a sustainable solution (ADB 2009, 26).

It is striking that global experimentation with financial reforms has been a constant feature of the higher education policy landscape in the 21st century. Finland and France have introduced performance contracts as a principal allocation mechanism and inched toward greater cost sharing. The United Kingdom has raised tuition fees substantially and offset these with expanded scholarship and student loan programs. In Pakistan and the Philippines, governments have found that they can accommodate publicly funded students in private higher education institutions at lower per-student costs (Fielden and LaRocque unpublished, 11). The PRC has made tuition fees compulsory and directed higher education institutions to diversify their revenue sources. As noted on page 85, several Asian economies have announced intentions to become regional higher education hubs in the effort to boost both revenues and quality.

Ultimately, financing reform in higher education should be an almost continuous process. This is because changing circumstances require constant attention, and funding is the primary mechanism available to governments for steering higher education systems toward policy goals. If the process must be continuous, then the goal must be ever-widening diversification of revenue sources. “The future lies in sharing costs, diversifying income sources, creating new sources of revenue, building partnerships at home and abroad, and creating wealth beyond teaching and research” (Tewarie 2011, 244–245).

At the same time, the impact of higher education expenditures can be enhanced through rational and strategic approaches. To achieve this, the following four financial planning questions would need to be answered in the context of each country (Tewarie 2011, 235):

- How many students should be supported by public resources to study abroad and for what percentage of their costs?
- How many students can be effectively educated by distance delivery and e-learning?
- What is the most rational approach to development and expansion of the higher education system, and how will this be paid for? How can costs be shared in a harmonious strategy of win–win collaboration with a range of stakeholders?
- If new institutions are required, what kind should they be? Can a mix of public and private options be employed to share their cost?

CONCLUDING CONSIDERATIONS

To assist countries in devising and implementing reforms to higher education financing, the OECD offers guidance on good practice in this area (OECD 2008a):

- The overarching principal of any funding strategy should be for public funds to steer the higher education system toward goals and objectives that facilitate higher education’s contribution to society and the economy.
- The funding approach should reinforce main policy goals such as expansion, quality, cost-efficiency, equity, or capacity building.
Funding should be informed by a long-term strategy that includes investment plans and initiatives to raise additional resources.

Funding methodologies must be transparent; flexible; predictable; and fair to institutions, students, and taxpayers, while ensuring public accountability, freedom to innovate, institutional autonomy, and market responsiveness.

There is no economic justification to discriminate between public and private institutions as long as quality is assured.

Institutional funding for teaching should be formula-driven, using both input and output indicators and strategically targeted components. Consider using performance agreements or contracts negotiated between the state and individual institutions.

Improve cost-effectiveness by (i) linking funding more closely to graduation rates, (ii) creating incentives to reduce the length of study time, (iii) reducing public subsidies for students who remain too long in the system, (iv) eliminating duplicated programs, and (v) rationalizing low-enrollment programs and downsizing faculty when enrollments decline.

In addition, the following recommendations pertain more specifically to Bangladesh, Nepal, and Sri Lanka:

- Increase budgetary shares for science and engineering programs, postgraduate programs and research, and scholarships or student loans to improve equity of access.

- Encourage the expansion of good quality (i.e., accredited) private higher education institutions through a combination of (i) tax incentives to encourage philanthropic contributions and business collaboration; (ii) reduced import duties on books, instructional materials, laboratory equipment, and computers; (iii) permission for government scholarships and student loans to be used at private institutions; (iv) inclusion of private universities in low-cost government internet networks at no additional cost; and (v) loan guarantees for accredited private universities that lack the collateral to borrow for expansion.
Moving Forward

In today’s competitive global economy, not to advance is to fall back. Relevant, high-quality national higher education systems are an asset that countries can use to increase their chances of moving forward—economically, socially, and developmentally. But the path ahead is neither clear nor straightforward. Governments can steer their countries in the right direction through thoughtful strategies and aligned policies, but they cannot plan their arrival point in advance. The pace of technological, political, and social change creates a context of ever-changing rules and terrain. No one has much relevant experience to serve as a guide in this environment, so it is necessary to learn while doing.

The road ahead for higher education in Bangladesh, Nepal, and Sri Lanka will be uphill and rocky. The preceding chapters have documented the numerous shortcomings that place their higher education systems in a comparatively disadvantaged position, as well as the accomplishments that might be built upon and assets that could be employed to accelerate progress. It is clear that higher education institutions and systems in these three countries must begin to do things differently if they are to produce the skilled human resources and knowledge needed to support their nations’ competitiveness in the global economy. Whether these changes are called reform, transformation, retooling, or modernization is less important than what is accomplished.

How, then, might these three countries advance the development of their higher education systems? Although a number of different actions are necessary in each case, four common tasks should first be carried out to lay the foundation for positive changes: First, higher education systems, institutions, and campus life must be significantly depoliticized. Second, a medium-term national strategy for higher education, together with a rolling action plan, must be devised and regularly updated. Third, greater autonomy of action, combined with increased accountability for performance at all levels, needs to be accorded to institutions of higher education. Finally, ways must be found to diversify and expand the total revenue available to underwrite the improvements that must be made. Let us take a closer look at these four tasks.

**Task 1: Depoliticize higher education.** To unacceptable but varying degrees, university life has become highly politicized in all three countries. Wings of national political parties employ coercion and even brutality to acquire influence on campuses. These activities have multiple negative effects and no positive ones. They waste time and considerable financial resources through strikes, boycotts, and demonstrations, which are extremely disruptive to the academic calendar and occasionally destroy property while causing personal injuries and even loss of life. They disrupt learning and obstruct teaching, thereby diluting the quality of instruction. They interfere with accepted procedures for appointing academic staff, determining student admissions, and conducting other university business by exerting pressure to set aside merit criteria and replace them with favoritism. They routinely block the introduction of desirable reforms. Most importantly, they subvert essential values that should comprise the core of a student’s university experience: competition based on merit, the transcendence of reason, openness to critique, the right to an opinion, the legitimacy of debate, a willingness to recognize multiple viewpoints, the value of compromise, and a respect for human rights. When these values are restricted, university education

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63 Whenever university classes are suspended, one financial cost to the government (and citizens) is the sum total of academic staff salaries that are paid during the period of suspension. These amounts can be sizable.
cannot fulfill its purpose. A highly politicized campus creates a dysfunctional university, which stands a high probability of sending dysfunctional graduates into the world of work.

**Task 2: Devise a national higher education strategy.** A national higher education strategy not only provides direction to higher education development, it also sets priorities for effort and resource allocation. Ideally, it complements and advances the national economic development or poverty reduction strategy by linking graduate output and research to its declared priorities. Furthermore, if the development of such a strategy employs a process of stakeholder consultation, this dialogue can serve to educate various interest groups regarding higher education possibilities and shortcomings, and to nurture areas of consensus that will allow agreed-upon reforms to begin with less contentiousness. In turn, the national strategy serves as a frame of reference for the individual institutional development strategies that universities will need for their own guidance. As university performance is measured against the goals set in their institutional strategies, an important instrument for accountability is created. For these reasons, a national higher education strategy constitutes the foundation for modernization.

**Task 3: Grant universities autonomy.** The importance of flexible, autonomous, and accountable university governance has been broadcast worldwide during the past decade. An analysis of world-class universities points to governance as one of three primary determinants of university excellence. A review of institutions included in the Shanghai international ranking of universities determined that universities with higher rankings were characterized by greater autonomy (Aghion 2009). A large cross-country assessment concluded that education spending is highly sensitive to governance; funds are only half as effective in improving education outcomes in poor governance environments (Baldacci 2008). A World Bank review noted “a strong international trend to increasing the autonomy of public institutions by making them independent self-governing organisations” (Fielden 2008). University autonomy in Bangladesh, Nepal, and Sri Lanka is currently some distance removed from prevailing international practice, as discussed in Chapter 7. All available evidence suggests that universities in these three countries could improve their performance considerably if they were delegated greater procedural and administrative autonomy, especially if this were done in the context of a national higher education strategy and university depoliticization.64

In the end, however, it is often more effective to establish entirely new institutions than to try to reform existing ones (Altbach and Salmi 2012). In doing so, conscious efforts must be made to seize the opportunity to do things differently. If not, the common tendency is to replicate prevailing models, staff the new institutions with professors and administrators recruited from existing universities, and style the new institution’s statutes after the “tried and true” legal frameworks of older institutions. If this happens, the chance for innovation will be squandered.

**Task 4: Expand and diversify revenue.** Gains do not come without costs. Expanded, more relevant, and higher-quality education cannot be attained by spending $500 or less per public higher education student (i.e., universities and degree colleges) as is the case in Bangladesh and Nepal, especially when 90% of higher education funding comes from the public purse. Although Sri Lanka invests more—about $1,700 per public university student—its academic staff are among the lowest paid in the world. This makes it difficult to attract talented scholars, retain staff once they obtain a doctorate, keep them involved in research and student advising when they are often working a second job to augment their salaries, and motivate them to perform well on a daily basis. If the three countries are, as all of them publicly state, to raise their higher education GERs over the coming decade, revitalize research, and improve educational quality, they will need significant additional resources.

Numerous options exist for increasing and diversifying university revenues. The introduction of student fees would generate the greatest contribution, given that none of the three countries currently charges more than symbolic tuition fees. But other options exist, including raising the share of GDP allocated to education (Bangladesh, Sri

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64 It should be noted that they already enjoy a fair degree of academic autonomy.
Lanka); expanding private higher education (Sri Lanka); and increasing the portion of the education budget allocated to higher education, encouraging public–private partnerships, creating tax incentives for philanthropic donations to universities, introducing a special earmarked tax for education, and setting up a national sports lottery whose proceeds would underwrite education (all three countries). In short, universities in all three focus countries will need more income and new sources of revenue if they are to meet public expectations over the next 10 years.

If—and only if—these four tasks can be accomplished, then the three countries should consider more specific actions that would shape their higher education systems to support national competitiveness in the global economy. To transform higher education in each country, 10 principal actions needed; 4 are common actions and 6 are particular for each country. These are outlined in the following paragraphs.

**Actions for all three countries**

- Increase overall public investment in higher education and introduce a simple funding formula for allocating government funds to universities that is based on enrollments and perhaps one small performance variable. Experiment with competitive funds and performance incentives.
- Choose one institution and develop it into a flagship research university over the coming decade. Strengthen the quality and relevance of its postgraduate programs and ensure that they contain strong research components, ideally in collaboration with well-regarded partner universities within Asia. Pay internationally competitive salaries and recruit the best students.
- Define a national research strategy and set up a dedicated funding agency to implement it through various competitive grant programs for research teams; support those teams with training programs in research design, scientific methods, proposal writing, and research management.
- Prepare, propose, and approve an umbrella higher education law that formalizes as many of the above modifications as possible.

**Actions for Bangladesh**

- Restructure university councils or syndicates so that they (i) have no more than 15 members, (ii) contain a majority of members from beyond government and the university community, (iii) elect their own chair, and (iv) are empowered to choose and appoint their vice-chancellor.
- Restructure the National University into five or six regional universities with divergent functions, while delinking academic staff salaries from the Public Service Commission to provide a measure of quality assurance. The present arrangement is intended to provide a measure of quality assurance, but it is not fulfilling its function.
- Establish a professionally trained quality assurance and accreditation agency with a mandate to accredit all public and private higher education institutions every 5 years.
- Enhance the quality of higher education teaching and learning, and then expand the Bangladesh Open University to increase access at a manageable cost.
- Realign university admissions so that the numbers of future graduates in each discipline are more consistent with expected labor market needs.
- In collaboration with a private university that possesses a good reputation in business and management studies, establish a national management training program for public and private university officers and deans.

**Actions for Nepal**

- Restructure Tribhuvan University into six regional universities aligned with a new federal structure of government (if such is adopted).
Expand public university enrollments in the fields of engineering, agriculture, health sciences, and sciences while decreasing those in arts, humanities, social sciences (except economics), and business studies. For subjects where enrollment is decreased, demand can be met by private institutions.

Ensure that the recently formed Quality Assurance and Accreditation Council becomes a professionally competent organization and that accreditation reviews of all institutions of higher education become obligatory rather than voluntary.

Set up a national open university based primarily on online course delivery through community computer laboratories linked by wireless stations to the existing fiber optic cable running the length of the main valley, and ensure that its staff are well trained in distance education methods.

Establish an interest subsidy and risk guarantee fund to enable commercial banks to offer affordable investment loans to community and private colleges to improve and modernize their facilities and equipment. Currently these educational institutions cannot invest in improving their facilities due to a lack of loan collateral and high interest rates. This program could have a strong and cost-effective leveraging effect on the qualitative improvement of community-provided and private higher education.

Expand the existing pilot program of means-tested scholarships and grants for economically disadvantaged students.

**Actions for Sri Lanka**

- Establish a professionally trained quality assurance and accreditation agency with a mandate to accredit all public and private higher education institutions every 5 years. Set up a permanent program of widely accessible training workshops for public and private university staff in contemporary pedagogy, the teaching of soft skills, curriculum planning, student assessment, and classroom management.
- Strengthen and expand the Sri Lanka Open University, with particular focus on reaching out to underserved geographic areas and absorbing students from the ineffective external degree program that the government reportedly intends to close.
- Strengthen and expand English-medium teaching in secondary education.
- Improve academic salary levels, differentiate them by location, and require full-time dedication to teaching and research.
- Strengthen postgraduate programs, especially in engineering and technology, through “sandwich programs” with well-regarded Asian universities. Require enrollment in doctoral programs to be fulltime.
- Building on incipient experience with UILs, employ education conferences, good practice seminars, seed money, and competitive funds to underwrite experimental partnerships.

Although it would be ideal to implement all of these actions in each case, the practical reality is that capacity constraints, lack of leadership, economic limitations, and/or political reservations will inevitably constrain what can be achieved. Even so, each accomplishment will be a forward step that reduces the possibility of falling back.
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APPENDIX 1
Composition of Higher Education Enrollments in Bangladesh, Nepal, and Sri Lanka

<table>
<thead>
<tr>
<th>Type of University/College</th>
<th>Bangladesh</th>
<th>Nepal</th>
<th>Sri Lanka a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public universities</td>
<td>165,937</td>
<td>25,085</td>
<td>380,988</td>
</tr>
<tr>
<td>Private universities</td>
<td>200,939</td>
<td>7,406</td>
<td>0</td>
</tr>
<tr>
<td>Affiliated public degree colleges</td>
<td>664,036</td>
<td>119,385</td>
<td>0</td>
</tr>
<tr>
<td>Affiliated private degree colleges</td>
<td>449,961</td>
<td>133,097</td>
<td>0</td>
</tr>
<tr>
<td>Open universities</td>
<td>97,004</td>
<td>0</td>
<td>18,233</td>
</tr>
<tr>
<td>International universities</td>
<td>1,500</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1,579,377</td>
<td>284,973</td>
<td>399,221</td>
</tr>
</tbody>
</table>

a Public university enrollments include postgraduate institutes (5,709) and multidisciplinary institutes (4,648), as well as sizable external degree programs (291,000). Public university enrollment is 89,988 students.

APPENDIX 2
University Locations in Bangladesh, Nepal, and Sri Lanka

Figure A2.1  University Locations in Bangladesh

This map was produced by the cartography unit of the Asian Development Bank. The boundaries, colors, denominations, and any other information shown on this map do not imply, on the part of the Asian Development Bank, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries, colors, denominations, or information.
University Locations in Nepal

Koshi R.
Narayani R.
Mahakali R.
Karnali R.
DARCHULA
BAJHANG
HUMLA
MUGU
JUMLAKALIKOT
BAJURA
DAILEKH
JAJARKOT
SALYAN
BANKE
SURKHET
DANG
ROLPA
PYUTHAN
RUKUM
DOLPA
KAPILBASTU
ARGHAKHANCHI
GULMI
PARBAT
BAGLUNG
KASKI
MANANG
MUSTANG
MYAGDI
LAMJUNG
GORKHA
DHADING
TANAHUSYANGJA
NAWALPARASI
RUPANDEHI
PALPA
CHITWAN
PARSA BARA
RAUTAHAT
MAKWANPUR
LALITPUR KAURE
PALANCHOK
BHAKTAPUR
KATHMANDU
NUWAKOT
SINDHUPALCHOK
DOLAKHA
RAMECHHAP
OKHALDHUNGA
SINDHULI
SARLAHI
DHANUSHA
MAHOTTARI
SIRAHA
SOLUKHUMBU
KHOTANG BHOJPUR
DHANKUTAUDAYAPUR
SANKHUWASABHA TAPLEJUNG
JHAPAMORANGSAPTARI
SUNSARI
TERHATHUM
PANCHTHAR
ILAM
RASUWA
ACHHAM
DOTI
KAILALI
BARDIYA
DADELDHURA
BAITADI
KANCHANPUR

Boundaries are not necessarily authoritative.

Universities

- Tribhuvan University (TU), 1959
- Nepal Sanskrit University (NSU), 1986
- Kathmandu University (KU), 1991
- Pokhara University (PU), 1994
- Agriculture and Forestry University (AFU), 2010
- Far Western University (FWU), 2010
- B.P. Koirala Institute of Health Sciences (BPKIHS), 1993
- National Academy of Medical Sciences (NAMS), 2002
- Patan Academy of Health Sciences (PAHS), 2009
- Agricultural and Forestry University (AFU), 2010
- Eastern University (EU), 2010
- Mid-Western University (MWU), 2010
- Far Western University (FWU), 2010
- B.P. Koirala Institute of Health Sciences (BPKIHS), 1993
- National Academy of Medical Sciences (NAMS), 2002
- Patan Academy of Health Sciences (PAHS), 2009

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This map was produced by the cartography unit of the Asian Development Bank. The boundaries, colors, denominations, and any other information shown on this map do not imply, on the part of the Asian Development Bank, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries, colors, denominations, or information.
### Table A3.1 Bangladesh: Calculations of Gross Domestic Product, Education Budget Share, and Higher Education Budget Shares, 2010–2020 ($ billions)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Gross domestic product (GDP)</td>
<td>104.92a</td>
<td>111.2141</td>
<td>119.6664</td>
<td>129.3592</td>
<td>140.3549</td>
<td>152.7061</td>
<td>166.2970</td>
<td>179.9333</td>
<td>194.6879</td>
<td>210.6523</td>
<td>227.9258</td>
</tr>
<tr>
<td>GDP estimated growth rate (%)b</td>
<td>6.0</td>
<td>6.0</td>
<td>7.6</td>
<td>8.1</td>
<td>8.5</td>
<td>8.8</td>
<td>8.9</td>
<td>8.2</td>
<td>8.2</td>
<td>8.2</td>
<td>8.2</td>
</tr>
<tr>
<td>Education budget @ 2.2% GDPc</td>
<td>2.308218</td>
<td>2.446711</td>
<td>2.632661</td>
<td>2.845906</td>
<td>3.087808</td>
<td>3.359535</td>
<td>3.658534</td>
<td>3.958534</td>
<td>4.283134</td>
<td>4.634351</td>
<td>5.014368</td>
</tr>
<tr>
<td>Higher education budget @ 11% of education budgetd</td>
<td>0.253904</td>
<td>0.269138</td>
<td>0.289593</td>
<td>0.313049</td>
<td>0.339659</td>
<td>0.369549</td>
<td>0.402439</td>
<td>0.435439</td>
<td>0.471145</td>
<td>0.509779</td>
<td>0.551580</td>
</tr>
<tr>
<td>Higher education budget @ 15% of education budget</td>
<td>0.346232</td>
<td>0.367006</td>
<td>0.394899</td>
<td>0.426886</td>
<td>0.463171</td>
<td>0.503930</td>
<td>0.548780</td>
<td>0.593780</td>
<td>0.642470</td>
<td>0.695152</td>
<td>0.752155</td>
</tr>
<tr>
<td>Higher education budget @ 18% of education budget</td>
<td>0.415479</td>
<td>0.440407</td>
<td>0.473879</td>
<td>0.512263</td>
<td>0.555805</td>
<td>0.604716</td>
<td>0.658536</td>
<td>0.712536</td>
<td>0.770964</td>
<td>0.834183</td>
<td>0.902586</td>
</tr>
</tbody>
</table>

### Table A3.2: Bangladesh: Higher Education Enrollment Projections, 2010–2020

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Population aged 20–24 years (^a)</td>
<td>13,668,339</td>
<td>13,890,588</td>
<td>14,116,039</td>
<td>14,334,073</td>
<td>14,559,238</td>
<td>14,803,737</td>
<td>15,080,080</td>
<td>15,406,305</td>
<td>15,771,320</td>
<td>16,164,850</td>
<td>16,571,088</td>
</tr>
<tr>
<td><strong>GER = 14% in 2020:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total HE students</td>
<td>1,893,245 (^b)</td>
<td>1,933,245</td>
<td>1,973,245</td>
<td>2,013,245</td>
<td>2,053,245</td>
<td>2,093,245</td>
<td>2,133,245</td>
<td>2,173,245</td>
<td>2,213,245</td>
<td>2,253,245</td>
<td>2,319,952</td>
</tr>
<tr>
<td>No. public HE students ((@ 46%)</td>
<td>875,867 (^c)</td>
<td>889,293</td>
<td>907,693</td>
<td>926,093</td>
<td>944,493</td>
<td>962,893</td>
<td>981,293</td>
<td>999,693</td>
<td>1,018,093</td>
<td>1,036,493</td>
<td>1,067,178</td>
</tr>
<tr>
<td>No. public university students (18%)</td>
<td>160,477</td>
<td>162,936</td>
<td>165,200</td>
<td>166,797</td>
<td>170,009</td>
<td>173,321</td>
<td>176,633</td>
<td>179,945</td>
<td>183,257</td>
<td>186,569</td>
<td>192,092</td>
</tr>
<tr>
<td><strong>GER = 18% in 2020:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total HE students</td>
<td>1,893,245 (^b)</td>
<td>2,003,245</td>
<td>2,113,245</td>
<td>2,223,245</td>
<td>2,333,245</td>
<td>2,443,245</td>
<td>2,553,245</td>
<td>2,663,245</td>
<td>2,773,245</td>
<td>2,883,245</td>
<td>2,982,796</td>
</tr>
<tr>
<td>No. public HE students ((@ 46%)</td>
<td>875,867 (^c)</td>
<td>921,493</td>
<td>972,093</td>
<td>1,022,693</td>
<td>1,073,293</td>
<td>1,123,893</td>
<td>1,174,493</td>
<td>1,225,093</td>
<td>1,275,693</td>
<td>1,326,293</td>
<td>1,372,086</td>
</tr>
<tr>
<td>No. public university students (18%)</td>
<td>160,477</td>
<td>165,869</td>
<td>174,977</td>
<td>184,085</td>
<td>193,193</td>
<td>202,301</td>
<td>211,409</td>
<td>220,517</td>
<td>229,625</td>
<td>238,733</td>
<td>246,975</td>
</tr>
<tr>
<td><strong>GER = 20% in 2020:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total students</td>
<td>1,893,245 (^b)</td>
<td>2,066,245</td>
<td>2,204,745</td>
<td>2,422,245</td>
<td>2,620,245</td>
<td>2,758,745</td>
<td>2,897,245</td>
<td>3,035,745</td>
<td>3,174,245</td>
<td>3,314,218</td>
<td></td>
</tr>
<tr>
<td>No. public HE students ((@ 46%)</td>
<td>875,867 (^c)</td>
<td>950,473</td>
<td>1,014,183</td>
<td>1,077,893</td>
<td>1,141,603</td>
<td>1,205,313</td>
<td>1,269,023</td>
<td>1,322,733</td>
<td>1,396,443</td>
<td>1,460,153</td>
<td>1,524,540</td>
</tr>
<tr>
<td>No. public university students (18%)</td>
<td>160,477</td>
<td>171,085</td>
<td>182,553</td>
<td>194,021</td>
<td>205,488</td>
<td>216,956</td>
<td>228,424</td>
<td>239,892</td>
<td>251,360</td>
<td>262,827</td>
<td>274,417</td>
</tr>
</tbody>
</table>

GER = gross enrollment ratio, HE = higher education, No. = number.

\(^a\) United States Census International Data Base, 2011.

\(^b\) Total higher education enrollment in 2008: 387,433 university students plus 715,420 college degree, honors, and master’s students (Ministry of Education Statistical Report 2009, Table 1.1).

\(^c\) Public higher education enrollment in 2008: 160,447 public university students plus 715,420 public college degree, honors, and master’s students (Ministry of Education Statistical Report 2009, Table 1.1).

Source: Author’s calculations.
### Table A3.3  Bangladesh: Base-Case Scenario

Education gets 2.2% of gross domestic product—Comparison between resources to higher education (11% of education budget to higher education) and estimates of public expenditure for gross enrollment ratios of 14%, 18%, and 20% at $300 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue: 2.2% of GDP for Education</th>
<th>Expenditure: GER = 14%</th>
<th>Expenditure: GER = 18%</th>
<th>Expenditure: GER = 20%</th>
<th>Difference: GER = 14%</th>
<th>Difference: GER = 18%</th>
<th>Difference: GER = 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5) = (1) – (2)</td>
<td>(6) = (1) – (3)</td>
<td>(7) = (1) – (4)</td>
</tr>
<tr>
<td>2012</td>
<td>289,592,723</td>
<td>272,307,810</td>
<td>291,627,810</td>
<td>304,254,810</td>
<td>17,284,913</td>
<td>(2,035,087)</td>
<td>(14,662,087)</td>
</tr>
<tr>
<td>2013</td>
<td>313,049,734</td>
<td>277,827,810</td>
<td>306,807,810</td>
<td>323,367,810</td>
<td>35,221,924</td>
<td>6,241,924</td>
<td>10,318,076</td>
</tr>
<tr>
<td>2014</td>
<td>339,658,961</td>
<td>283,347,810</td>
<td>321,987,810</td>
<td>342,480,810</td>
<td>56,311,151</td>
<td>17,671,151</td>
<td>(2,821,849)</td>
</tr>
<tr>
<td>2015</td>
<td>369,548,950</td>
<td>288,867,810</td>
<td>337,167,810</td>
<td>361,593,810</td>
<td>80,681,140</td>
<td>32,381,140</td>
<td>7,955,140</td>
</tr>
<tr>
<td>2017</td>
<td>435,438,789</td>
<td>299,907,810</td>
<td>367,527,810</td>
<td>399,819,810</td>
<td>135,530,979</td>
<td>67,910,979</td>
<td>35,618,979</td>
</tr>
<tr>
<td>2018</td>
<td>471,144,769</td>
<td>305,427,810</td>
<td>382,707,810</td>
<td>418,932,810</td>
<td>165,716,959</td>
<td>88,436,959</td>
<td>52,211,959</td>
</tr>
<tr>
<td>2019</td>
<td>509,778,640</td>
<td>310,947,810</td>
<td>397,887,810</td>
<td>438,045,810</td>
<td>198,830,830</td>
<td>111,890,830</td>
<td>71,732,830</td>
</tr>
<tr>
<td>2020</td>
<td>551,580,489</td>
<td>320,153,420</td>
<td>411,625,826</td>
<td>457,362,029</td>
<td>231,427,069</td>
<td>139,954,663</td>
<td>94,218,460</td>
</tr>
</tbody>
</table>

( ) = negative, GDP = gross domestic product, GER = gross enrollment ratio.
Source: Author’s calculations.

### Table A3.4  Bangladesh: Scenario 1

Education gets 2.2% of gross domestic product—Comparison between resources to higher education (15% of education budget to higher education) and estimates of public expenditure for gross enrollment ratios of 14%, 18%, and 20% at $300 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue: 2.2% of GDP for Education</th>
<th>Expenditure: GER = 14%</th>
<th>Expenditure: GER = 18%</th>
<th>Expenditure: GER = 20%</th>
<th>Difference: GER = 14%</th>
<th>Difference: GER = 18%</th>
<th>Difference: GER = 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5) = (1) – (2)</td>
<td>(6) = (1) – (3)</td>
<td>(7) = (1) – (4)</td>
</tr>
<tr>
<td>2011</td>
<td>367,006,662</td>
<td>266,787,810</td>
<td>276,447,810</td>
<td>285,141,810</td>
<td>100,218,852</td>
<td>90,558,852</td>
<td>81,864,852</td>
</tr>
<tr>
<td>2012</td>
<td>394,899,168</td>
<td>272,307,810</td>
<td>291,627,810</td>
<td>304,254,810</td>
<td>122,591,358</td>
<td>103,271,358</td>
<td>90,644,358</td>
</tr>
<tr>
<td>2013</td>
<td>426,886,001</td>
<td>277,827,810</td>
<td>306,807,810</td>
<td>323,367,810</td>
<td>149,058,191</td>
<td>120,078,191</td>
<td>103,518,191</td>
</tr>
<tr>
<td>2018</td>
<td>642,470,140</td>
<td>305,427,810</td>
<td>382,707,810</td>
<td>418,932,810</td>
<td>337,042,330</td>
<td>259,762,330</td>
<td>223,537,330</td>
</tr>
<tr>
<td>2019</td>
<td>695,152,692</td>
<td>310,947,810</td>
<td>397,887,810</td>
<td>438,045,810</td>
<td>384,204,882</td>
<td>297,264,882</td>
<td>257,106,882</td>
</tr>
<tr>
<td>2020</td>
<td>752,155,212</td>
<td>320,153,420</td>
<td>411,625,826</td>
<td>457,362,029</td>
<td>432,001,792</td>
<td>340,529,386</td>
<td>294,793,183</td>
</tr>
</tbody>
</table>

GDP = gross domestic product, GER = gross enrollment ratio.
Source: Author’s calculations.
### Table A3.5  Bangladesh: Scenario 2
Education gets 2.2% of gross domestic product—Comparison between resources to higher education (15% of education budget to higher education) and estimates of public expenditure for gross enrollment ratios of 14%, 18%, and 20% at $500 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue: 2.2% of GDP for Education</th>
<th>Expenditure: GER = 14%</th>
<th>Expenditure: GER = 18%</th>
<th>Expenditure: GER = 20%</th>
<th>Difference: GER = 14%</th>
<th>Difference: GER = 18%</th>
<th>Difference: GER = 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
<td>(8)</td>
</tr>
<tr>
<td>2014</td>
<td>463,171,311</td>
<td>472,246,350</td>
<td>536,646,350</td>
<td>570,801,350</td>
<td>(9,075,039)</td>
<td>(73,475,039)</td>
<td>(107,630,039)</td>
</tr>
<tr>
<td>2015</td>
<td>503,930,386</td>
<td>481,446,350</td>
<td>561,946,350</td>
<td>602,656,350</td>
<td>22,484,036</td>
<td>(58,015,964)</td>
<td>(98,725,964)</td>
</tr>
<tr>
<td>2016</td>
<td>548,780,191</td>
<td>490,646,350</td>
<td>587,246,350</td>
<td>634,511,350</td>
<td>58,133,841</td>
<td>(38,466,159)</td>
<td>(85,731,159)</td>
</tr>
<tr>
<td>2017</td>
<td>593,780,166</td>
<td>499,846,350</td>
<td>612,546,350</td>
<td>666,366,350</td>
<td>93,933,816</td>
<td>(18,766,184)</td>
<td>(72,586,184)</td>
</tr>
<tr>
<td>2019</td>
<td>695,152,692</td>
<td>518,246,350</td>
<td>663,146,350</td>
<td>730,076,350</td>
<td>26,100,034</td>
<td>32,006,342</td>
<td>(34,923,658)</td>
</tr>
<tr>
<td>2020</td>
<td>752,155,212</td>
<td>533,589,034</td>
<td>686,043,043</td>
<td>762,270,048</td>
<td>218,566,178</td>
<td>66,112,169</td>
<td>(10,114,836)</td>
</tr>
</tbody>
</table>

( ) = negative, GDP = gross domestic product, GER = gross enrollment ratio.
Source: Author’s calculations.

### Table A3.6  Bangladesh: Scenario 3
Education gets 2.2% of gross domestic product—Comparison between resources to higher education (18% of education budget to higher education) and estimates of public expenditure for gross enrollment ratios of 14%, 18%, and 20% at $500 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue: 2.2% of GDP for Education</th>
<th>Expenditure: GER = 14%</th>
<th>Expenditure: GER = 18%</th>
<th>Expenditure: GER = 20%</th>
<th>Difference: GER = 14%</th>
<th>Difference: GER = 18%</th>
<th>Difference: GER = 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
<td>(8)</td>
</tr>
<tr>
<td>2012</td>
<td>473,879,002</td>
<td>453,846,350</td>
<td>486,046,350</td>
<td>507,091,350</td>
<td>20,032,652</td>
<td>(12,167,348)</td>
<td>(33,212,348)</td>
</tr>
<tr>
<td>2013</td>
<td>512,263,201</td>
<td>463,046,350</td>
<td>511,346,350</td>
<td>538,946,350</td>
<td>49,216,851</td>
<td>916,851</td>
<td>(26,683,149)</td>
</tr>
<tr>
<td>2015</td>
<td>604,716,464</td>
<td>481,446,350</td>
<td>561,946,350</td>
<td>602,656,350</td>
<td>123,270,114</td>
<td>42,770,114</td>
<td>2,060,114</td>
</tr>
<tr>
<td>2018</td>
<td>770,964,168</td>
<td>509,046,350</td>
<td>637,846,350</td>
<td>698,221,350</td>
<td>261,917,818</td>
<td>133,117,818</td>
<td>72,742,818</td>
</tr>
</tbody>
</table>

( ) = negative, GDP = gross domestic product, GER = gross enrollment ratio.
Source: Author’s calculations.
# APPENDIX 4
## STATISTICAL TABLES—NEPAL

### Table A4.1 Nepal: Calculations of Gross Domestic Product, Education Budget Share, and Higher Education Budget Shares, 2010–2020 ($ billion)

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP estimated growth rate (%)</td>
<td></td>
<td>5.3</td>
<td>5.2</td>
<td>5.6</td>
<td>6.1</td>
<td>6.7</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Education budget @ 4.5% of GDP</td>
<td>0.7128</td>
<td>0.7506</td>
<td>0.7896</td>
<td>0.8338</td>
<td>0.8847</td>
<td>0.9440</td>
<td>1.0006</td>
<td>1.0606</td>
<td>1.1243</td>
<td>1.1917</td>
<td>1.2632</td>
</tr>
<tr>
<td>Higher education budget @ 10% of education budget</td>
<td>0.0713</td>
<td>0.0751</td>
<td>0.0790</td>
<td>0.0834</td>
<td>0.0855</td>
<td>0.0944</td>
<td>0.1001</td>
<td>0.1061</td>
<td>0.1124</td>
<td>0.1192</td>
<td>0.1263</td>
</tr>
<tr>
<td>Higher education budget @ 15% of education budget</td>
<td>0.1069</td>
<td>0.1126</td>
<td>0.1184</td>
<td>0.1251</td>
<td>0.1327</td>
<td>0.1416</td>
<td>0.1501</td>
<td>0.1591</td>
<td>0.1686</td>
<td>0.1788</td>
<td>0.1895</td>
</tr>
<tr>
<td>Higher education budget @ 18% of education budget</td>
<td>0.1283</td>
<td>0.1351</td>
<td>0.1421</td>
<td>0.1501</td>
<td>0.1592</td>
<td>0.1699</td>
<td>0.1801</td>
<td>0.1909</td>
<td>0.2024</td>
<td>0.2145</td>
<td>0.2274</td>
</tr>
</tbody>
</table>

GDP = gross domestic product.


<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GER = 10% in 2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total students</td>
<td>284,973</td>
<td>293,875</td>
<td>306,495</td>
<td>319,351</td>
<td>332,066</td>
<td>344,122</td>
<td>354,108</td>
<td>360,909</td>
<td>364,453</td>
<td>364,566</td>
<td>361,722</td>
</tr>
<tr>
<td>No. public students (@ 76%)</td>
<td>216,579</td>
<td>223,345</td>
<td>232,936</td>
<td>242,707</td>
<td>252,370</td>
<td>261,533</td>
<td>269,122</td>
<td>274,290</td>
<td>276,984</td>
<td>277,070</td>
<td>274,908</td>
</tr>
<tr>
<td>GER = 15% in 2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total students:</td>
<td>284,973</td>
<td>310,273</td>
<td>335,573</td>
<td>360,873</td>
<td>386,173</td>
<td>411,473</td>
<td>436,773</td>
<td>462,073</td>
<td>487,373</td>
<td>512,673</td>
<td>542,582</td>
</tr>
<tr>
<td>No. public students (@ 76%)</td>
<td>216,579</td>
<td>235,807</td>
<td>255,035</td>
<td>274,263</td>
<td>293,491</td>
<td>312,719</td>
<td>331,947</td>
<td>351,175</td>
<td>370,403</td>
<td>389,631</td>
<td>412,363</td>
</tr>
<tr>
<td>GER = 20% in 2020</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total students:</td>
<td>284,973</td>
<td>328,373</td>
<td>371,773</td>
<td>415,173</td>
<td>458,573</td>
<td>501,973</td>
<td>545,373</td>
<td>588,773</td>
<td>632,173</td>
<td>675,573</td>
<td>723,443</td>
</tr>
<tr>
<td>No. public students (@ 76%)</td>
<td>216,579</td>
<td>249,563</td>
<td>282,547</td>
<td>315,531</td>
<td>348,515</td>
<td>381,499</td>
<td>414,483</td>
<td>447,467</td>
<td>480,451</td>
<td>513,435</td>
<td>549,817</td>
</tr>
</tbody>
</table>

GER = gross enrollment ratio.

a United States Census International Data Base, 2011.
Source: Author’s calculations.
Table A4.3  Nepal: Base-Case Scenario
Education gets 4.5% of GDP and higher education gets 10% of the education budget—Comparison between resources to higher education and estimates of public expenditure for gross enrollment ratios of 10%, 15%, and 20% at $233 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue: 4.5% of GDP for Education</th>
<th>Expenditure: GER = 10%</th>
<th>Expenditure: GER = 15%</th>
<th>Expenditure: GER = 20%</th>
<th>Difference: GER = 10%</th>
<th>Difference: GER = 15%</th>
<th>Difference: GER = 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5) = (1) – (2)</td>
<td>(6) = (1) – (3)</td>
<td>(7) = (1) – (4)</td>
</tr>
<tr>
<td>2013</td>
<td>83,382,655</td>
<td>60,550,693</td>
<td>63,903,391</td>
<td>73,518,835</td>
<td>24,254,142</td>
<td>20,424,728</td>
<td>15,386,528</td>
</tr>
<tr>
<td>2014</td>
<td>88,468,997</td>
<td>68,383,515</td>
<td>81,204,107</td>
<td>91,040,491</td>
<td>27,573,706</td>
<td>20,001,991</td>
<td>8,507,676</td>
</tr>
<tr>
<td>2015</td>
<td>94,396,420</td>
<td>72,863,639</td>
<td>96,574,651</td>
<td>104,299,233</td>
<td>31,539,812</td>
<td>27,690,943</td>
<td>6,675,595</td>
</tr>
<tr>
<td>2016</td>
<td>100,060,205</td>
<td>77,343,763</td>
<td>100,735,654</td>
<td>107,305,292</td>
<td>30,420,029</td>
<td>22,972,133</td>
<td>4,359,117</td>
</tr>
<tr>
<td>2017</td>
<td>106,063,817</td>
<td>81,823,887</td>
<td>105,729,792</td>
<td>112,299,433</td>
<td>35,006,015</td>
<td>28,907,071</td>
<td>6,100,762</td>
</tr>
<tr>
<td>2019</td>
<td>119,173,305</td>
<td>90,784,135</td>
<td>113,760,475</td>
<td>120,261,217</td>
<td>37,387,040</td>
<td>26,977,342</td>
<td>(4,407,358)</td>
</tr>
<tr>
<td>2020</td>
<td>126,323,704</td>
<td>96,080,465</td>
<td>118,107,286</td>
<td>124,593,192</td>
<td>38,442,996</td>
<td>30,326,534</td>
<td>(5,216,568)</td>
</tr>
</tbody>
</table>

( ) = negative, GDP = gross domestic product, GER = gross enrollment ratio.
Source: Author’s calculations.

Table A4.4  Nepal: Scenario 1
Education gets 4.5% of GDP and higher education gets 15% of the education budget—Comparison between resources to higher education and estimates of public expenditure for gross enrollment ratios of 10%, 15%, and 20% at $400 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue: 4.5% of GDP for Education</th>
<th>Expenditure: GER = 10%</th>
<th>Expenditure: GER = 15%</th>
<th>Expenditure: GER = 20%</th>
<th>Difference: GER = 10%</th>
<th>Difference: GER = 15%</th>
<th>Difference: GER = 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5) = (1) – (2)</td>
<td>(6) = (1) – (3)</td>
<td>(7) = (1) – (4)</td>
</tr>
<tr>
<td>2012</td>
<td>118,441,272</td>
<td>93,174,419</td>
<td>102,014,192</td>
<td>113,018,992</td>
<td>25,266,852</td>
<td>23,950,293</td>
<td>21,631,240</td>
</tr>
<tr>
<td>2013</td>
<td>125,073,983</td>
<td>97,082,734</td>
<td>109,705,392</td>
<td>126,212,592</td>
<td>27,991,248</td>
<td>25,202,988</td>
<td>(3,132,821)</td>
</tr>
<tr>
<td>2014</td>
<td>132,703,496</td>
<td>100,948,003</td>
<td>117,396,592</td>
<td>139,406,192</td>
<td>31,755,547</td>
<td>33,008,205</td>
<td>(1,945,557)</td>
</tr>
<tr>
<td>2015</td>
<td>141,594,630</td>
<td>104,613,149</td>
<td>125,087,792</td>
<td>152,599,792</td>
<td>36,982,162</td>
<td>37,582,657</td>
<td>(8,600,514)</td>
</tr>
<tr>
<td>2016</td>
<td>150,090,308</td>
<td>107,648,954</td>
<td>132,778,992</td>
<td>165,793,392</td>
<td>42,441,354</td>
<td>48,135,852</td>
<td>(5,755,665)</td>
</tr>
<tr>
<td>2017</td>
<td>159,095,726</td>
<td>109,716,184</td>
<td>140,470,192</td>
<td>178,986,992</td>
<td>49,370,759</td>
<td>56,196,513</td>
<td>(11,074,659)</td>
</tr>
<tr>
<td>2018</td>
<td>168,641,470</td>
<td>110,793,560</td>
<td>148,161,392</td>
<td>192,180,592</td>
<td>54,048,232</td>
<td>64,429,932</td>
<td>(10,613,703)</td>
</tr>
<tr>
<td>2019</td>
<td>178,759,958</td>
<td>110,828,034</td>
<td>155,852,592</td>
<td>205,374,192</td>
<td>57,397,074</td>
<td>70,483,422</td>
<td>(13,162,802)</td>
</tr>
<tr>
<td>2020</td>
<td>189,485,555</td>
<td>109,963,336</td>
<td>164,945,004</td>
<td>219,926,672</td>
<td>79,921,170</td>
<td>88,488,366</td>
<td>(26,686,826)</td>
</tr>
</tbody>
</table>

( ) = negative, GDP = gross domestic product, GER = gross enrollment ratio.
Source: Author’s calculations.
### Table A4.5 Nepal: Scenario 2
Education gets 4.5% of GDP and higher education gets 18% of the education budget—Comparison between resources to higher education and estimates of public expenditure for gross enrollment ratios of 10%, 15%, and 20% at $400 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue: 4.5% of GDP for Education</th>
<th>Expenditure: GER = 10%</th>
<th>Expenditure: GER = 15%</th>
<th>Expenditure: GER = 20%</th>
<th>Difference: GER = 10%</th>
<th>Difference: GER = 15%</th>
<th>Difference: GER = 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5) = (1) – (2)</td>
<td>(6) = (1) – (3)</td>
<td>(7) = (1) – (4)</td>
</tr>
<tr>
<td>2012</td>
<td>142,129,526</td>
<td>93,174,419</td>
<td>102,014,192</td>
<td>113,018,992</td>
<td>48,955,107</td>
<td>40,115,334</td>
<td>29,110,534</td>
</tr>
<tr>
<td>2013</td>
<td>150,088,779</td>
<td>97,082,734</td>
<td>109,705,392</td>
<td>126,212,592</td>
<td>53,006,045</td>
<td>40,383,387</td>
<td>23,876,187</td>
</tr>
<tr>
<td>2014</td>
<td>159,244,195</td>
<td>100,948,003</td>
<td>117,396,592</td>
<td>139,406,192</td>
<td>58,296,192</td>
<td>41,847,603</td>
<td>19,838,003</td>
</tr>
<tr>
<td>2015</td>
<td>169,913,556</td>
<td>104,613,149</td>
<td>125,087,792</td>
<td>152,599,792</td>
<td>65,300,407</td>
<td>44,825,764</td>
<td>17,313,764</td>
</tr>
<tr>
<td>2017</td>
<td>190,914,871</td>
<td>109,716,184</td>
<td>140,470,192</td>
<td>178,986,992</td>
<td>81,198,687</td>
<td>50,444,679</td>
<td>11,927,979</td>
</tr>
<tr>
<td>2019</td>
<td>214,511,949</td>
<td>110,828,034</td>
<td>155,852,592</td>
<td>205,374,192</td>
<td>103,683,916</td>
<td>58,659,357</td>
<td>9,137,757</td>
</tr>
<tr>
<td>2020</td>
<td>227,382,666</td>
<td>109,963,336</td>
<td>164,945,004</td>
<td>219,926,672</td>
<td>117,419,330</td>
<td>62,437,662</td>
<td>7,455,994</td>
</tr>
</tbody>
</table>

GDP = gross domestic product, GER = gross enrollment ratio.
Source: Author’s calculations.

### Table A4.6 Nepal: Scenario 3
Education gets 4.5% of GDP and higher education gets 18% of the education budget—Comparison between resources to higher education and estimates of public expenditure for gross enrollment ratios of 10%, 15%, and 20% at $600 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue: 4.5% of GDP for Education</th>
<th>Expenditure: GER = 10%</th>
<th>Expenditure: GER = 15%</th>
<th>Expenditure: GER = 20%</th>
<th>Difference: GER = 10%</th>
<th>Difference: GER = 15%</th>
<th>Difference: GER = 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5) = (1) – (2)</td>
<td>(6) = (1) – (3)</td>
<td>(7) = (1) – (4)</td>
</tr>
<tr>
<td>2011</td>
<td>135,104,112</td>
<td>134,006,908</td>
<td>141,484,488</td>
<td>149,738,088</td>
<td>1,097,203</td>
<td>(6,380,376)</td>
<td>(14,633,976)</td>
</tr>
<tr>
<td>2012</td>
<td>142,129,526</td>
<td>139,761,628</td>
<td>153,021,288</td>
<td>169,528,488</td>
<td>2,367,897</td>
<td>(10,891,762)</td>
<td>(27,398,962)</td>
</tr>
<tr>
<td>2013</td>
<td>150,088,779</td>
<td>145,624,101</td>
<td>164,558,088</td>
<td>189,318,888</td>
<td>4,464,678</td>
<td>(14,469,309)</td>
<td>(39,230,109)</td>
</tr>
<tr>
<td>2014</td>
<td>159,244,195</td>
<td>151,422,004</td>
<td>176,094,888</td>
<td>209,109,288</td>
<td>7,822,190</td>
<td>(16,850,693)</td>
<td>(49,465,093)</td>
</tr>
<tr>
<td>2017</td>
<td>190,914,871</td>
<td>164,574,276</td>
<td>210,705,288</td>
<td>268,480,488</td>
<td>26,340,595</td>
<td>(19,790,417)</td>
<td>(77,565,617)</td>
</tr>
<tr>
<td>2018</td>
<td>202,369,764</td>
<td>166,190,340</td>
<td>222,242,088</td>
<td>288,270,888</td>
<td>36,179,424</td>
<td>(19,872,324)</td>
<td>(85,901,124)</td>
</tr>
<tr>
<td>2019</td>
<td>214,511,949</td>
<td>166,242,050</td>
<td>233,778,888</td>
<td>308,061,288</td>
<td>48,269,899</td>
<td>(19,266,939)</td>
<td>(93,549,339)</td>
</tr>
<tr>
<td>2020</td>
<td>227,382,666</td>
<td>164,945,004</td>
<td>247,417,506</td>
<td>329,890,008</td>
<td>62,437,662</td>
<td>(20,034,840)</td>
<td>(102,507,342)</td>
</tr>
</tbody>
</table>

() = negative, GDP = gross domestic product, GER = gross enrollment ratio.
Source: Author’s calculations.
## APPENDIX 5
### STATISTICAL TABLES—SRI LANKA

### Table A5.1  Sri Lanka: Calculations of Gross Domestic Product, Education Budget Share, and Higher Education Budget Shares, 2010–2020 ($ billion)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP ($ billion)</td>
<td>49.68a</td>
<td>53.65</td>
<td>57.89</td>
<td>62.58</td>
<td>67.78</td>
<td>73.47</td>
<td>79.35</td>
<td>85.69</td>
<td>92.55</td>
<td>99.96</td>
<td>107.95</td>
</tr>
<tr>
<td>GDP estimated growth rate (%)b</td>
<td>8.0</td>
<td>8.0</td>
<td>7.9</td>
<td>8.1</td>
<td>8.3</td>
<td>8.4</td>
<td>8.0</td>
<td>8.0</td>
<td>8.0</td>
<td>8.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Education budget @ 2.0% GDPc</td>
<td>0.9936</td>
<td>1.07309</td>
<td>1.1579</td>
<td>1.2516</td>
<td>1.3556</td>
<td>1.4694</td>
<td>1.5870</td>
<td>1.7139</td>
<td>1.8510</td>
<td>1.9991</td>
<td>2.1590</td>
</tr>
<tr>
<td>Higher education budget @ 12% of education budget</td>
<td>0.1192</td>
<td>0.1288</td>
<td>0.1389</td>
<td>0.1502</td>
<td>0.1627</td>
<td>0.1763</td>
<td>0.1904</td>
<td>0.2057</td>
<td>0.2221</td>
<td>0.2399</td>
<td>0.2591</td>
</tr>
<tr>
<td>Higher education budget @ 15% of education budget</td>
<td>0.1490</td>
<td>0.1609</td>
<td>0.1737</td>
<td>0.1877</td>
<td>0.2033</td>
<td>0.2204</td>
<td>0.2380</td>
<td>0.2570</td>
<td>0.2777</td>
<td>0.2998</td>
<td>0.3239</td>
</tr>
</tbody>
</table>

**GDP** = gross domestic product.


Source: Author’s calculations.

### Table A5.2  Sri Lanka: Higher Education Enrollment Projections, 2010–2020

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Population aged 20–24 yearsa</td>
<td>1,642,443</td>
<td>1,642,443</td>
<td>1,634,576</td>
<td>1,647,630</td>
<td>1,657,273</td>
<td>1,662,830</td>
<td>1,656,493</td>
<td>1,647,630</td>
<td>1,634,576</td>
<td>1,608,886</td>
<td>1,583,177</td>
</tr>
<tr>
<td>GER = 7% in 2020</td>
<td>112,977</td>
<td>114,971</td>
<td>114,420</td>
<td>115,334</td>
<td>116,009</td>
<td>116,398</td>
<td>115,955</td>
<td>114,387</td>
<td>112,622</td>
<td>110,822</td>
<td>110,366</td>
</tr>
<tr>
<td>Total studentsb</td>
<td>112,977</td>
<td>120,677</td>
<td>128,377</td>
<td>136,077</td>
<td>143,777</td>
<td>151,477</td>
<td>159,177</td>
<td>166,877</td>
<td>174,577</td>
<td>182,277</td>
<td>189,198</td>
</tr>
<tr>
<td>GER = 12% in 2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total students</td>
<td>112,977</td>
<td>120,677</td>
<td>128,377</td>
<td>136,077</td>
<td>143,777</td>
<td>151,477</td>
<td>159,177</td>
<td>166,877</td>
<td>174,577</td>
<td>182,277</td>
<td>189,198</td>
</tr>
<tr>
<td>GER = 15% in 2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total students</td>
<td>112,977</td>
<td>125,377</td>
<td>137,777</td>
<td>150,177</td>
<td>162,577</td>
<td>174,977</td>
<td>187,377</td>
<td>199,777</td>
<td>212,177</td>
<td>224,577</td>
<td>236,498</td>
</tr>
</tbody>
</table>

**GER** = gross enrollment ratio

a United States Census International Data Base, 2011.
b Total enrollment in 2010 was 112,977 students: university (73,396), open university (29,222), postgraduate institutes (5,709), and institutes (4,648). The external degree program, with 291,000 students, has a very low completion rate and is to be phased out. Therefore, it is not included in the GER calculation.

Source: Author’s calculations.
### Table A5.3  Sri Lanka: Base-Case Scenario

Education gets 2.0% of GDP and higher education gets 12% of the education budget—Comparison between resources to higher education and estimates of public expenditure for gross enrollment ratios of 7%, 12%, and 15% at $993 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue: 2.0% of GDP for Education</th>
<th>Expenditure: 12% for Higher Education</th>
<th>Expenditure: GER = 7%</th>
<th>Expenditure: GER = 12%</th>
<th>Expenditure: GER = 15%</th>
<th>Difference: GER = 7%</th>
<th>Difference: GER = 12%</th>
<th>Difference: GER = 15%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5) = (1) – (2)</td>
<td>(6) = (1) – (3)</td>
<td>(7) = (1) – (4)</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>150,197,852</td>
<td>114,526,761</td>
<td>135,124,461</td>
<td>149,125,761</td>
<td>35,671,091</td>
<td>15,073,391</td>
<td>1,072,091</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>162,664,274</td>
<td>115,197,046</td>
<td>142,770,561</td>
<td>161,438,961</td>
<td>47,467,228</td>
<td>19,893,713</td>
<td>1,225,313</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>176,328,073</td>
<td>114,583,313</td>
<td>150,416,661</td>
<td>173,752,161</td>
<td>60,744,760</td>
<td>25,911,412</td>
<td>2,575,912</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>190,434,319</td>
<td>115,142,828</td>
<td>158,062,761</td>
<td>186,065,361</td>
<td>75,291,491</td>
<td>32,371,558</td>
<td>4,388,958</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>205,669,065</td>
<td>113,586,500</td>
<td>165,708,861</td>
<td>198,378,561</td>
<td>92,082,665</td>
<td>39,960,204</td>
<td>7,290,504</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>222,122,590</td>
<td>111,833,666</td>
<td>173,354,961</td>
<td>210,681,761</td>
<td>110,288,924</td>
<td>48,767,629</td>
<td>11,430,829</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>239,892,397</td>
<td>110,046,633</td>
<td>181,001,061</td>
<td>223,004,961</td>
<td>129,845,764</td>
<td>58,891,336</td>
<td>16,886,436</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>259,083,789</td>
<td>109,592,942</td>
<td>187,873,614</td>
<td>234,842,018</td>
<td>149,490,847</td>
<td>71,210,175</td>
<td>24,241,771</td>
<td></td>
</tr>
</tbody>
</table>

GDP = gross domestic product, GER = gross enrollment ratio.


### Table A5.4  Sri Lanka: Scenario 1

Education gets 2.0% of GDP and higher education gets 12% of the education budget—Comparison between resources to higher education and estimates of public expenditure for gross enrollment ratios of 7%, 12%, and 15% at $1,200 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue: 2.0% of GDP for Education</th>
<th>Expenditure: 12% for Higher Education</th>
<th>Expenditure: GER = 7%</th>
<th>Expenditure: GER = 12%</th>
<th>Expenditure: GER = 15%</th>
<th>Difference: GER = 7%</th>
<th>Difference: GER = 12%</th>
<th>Difference: GER = 15%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5) = (1) – (2)</td>
<td>(6) = (1) – (3)</td>
<td>(7) = (1) – (4)</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>128,770,560</td>
<td>137,965,212</td>
<td>144,812,400</td>
<td>150,452,400</td>
<td>(9,194,652)</td>
<td>(16,041,840)</td>
<td>(21,681,840)</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>138,943,434</td>
<td>137,304,384</td>
<td>154,052,400</td>
<td>165,332,400</td>
<td>1,639,050</td>
<td>(15,108,966)</td>
<td>(26,388,966)</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>150,197,852</td>
<td>138,400,920</td>
<td>163,292,400</td>
<td>180,212,400</td>
<td>11,796,932</td>
<td>(13,094,548)</td>
<td>(30,014,548)</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>162,664,274</td>
<td>139,210,932</td>
<td>172,532,400</td>
<td>195,092,400</td>
<td>23,453,342</td>
<td>(9,868,126)</td>
<td>(32,428,126)</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>176,328,073</td>
<td>139,677,720</td>
<td>181,772,400</td>
<td>209,972,400</td>
<td>36,605,353</td>
<td>(5,444,327)</td>
<td>(33,644,327)</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>190,434,319</td>
<td>139,145,412</td>
<td>191,012,400</td>
<td>223,852,400</td>
<td>51,288,907</td>
<td>(578,081)</td>
<td>(34,418,801)</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>205,669,065</td>
<td>137,264,652</td>
<td>200,252,400</td>
<td>239,732,400</td>
<td>68,404,413</td>
<td>5,416,665</td>
<td>(34,063,335)</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>222,122,590</td>
<td>135,146,424</td>
<td>203,492,400</td>
<td>254,612,400</td>
<td>86,976,666</td>
<td>12,630,190</td>
<td>(32,489,810)</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>239,892,397</td>
<td>132,986,868</td>
<td>218,732,400</td>
<td>269,492,400</td>
<td>106,955,829</td>
<td>21,159,997</td>
<td>(29,600,003)</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>259,083,789</td>
<td>132,438,600</td>
<td>227,037,600</td>
<td>283,797,000</td>
<td>126,645,189</td>
<td>32,046,189</td>
<td>(24,713,211)</td>
<td></td>
</tr>
</tbody>
</table>

( ) = negative, GDP = gross domestic product, GER = gross enrollment ratio.

**Table A5.5  Sri Lanka: Scenario 2**

Education gets 2.0% of GDP and higher education gets 15% of the education budget—Comparison between resources to higher education and estimates of public expenditure for gross enrollment ratios of 7%, 12%, and 15% at $1,200 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>(1) Revenue: 2.0% of GDP for Education</th>
<th>(2) Expenditure: 15% for Higher Education</th>
<th>(3) Expenditure: GER = 7%</th>
<th>(4) Expenditure: GER = 12%</th>
<th>(5) Expenditure: GER = 15%</th>
<th>(6) Difference: GER = 7%</th>
<th>(7) Difference: GER = 12%</th>
<th>(8) Difference: GER = 15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>160,963,200</td>
<td>137,965,212</td>
<td>144,812,400</td>
<td>150,452,400</td>
<td>22,997,988</td>
<td>16,150,800</td>
<td>10,510,800</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>173,679,293</td>
<td>137,304,384</td>
<td>154,052,400</td>
<td>165,332,400</td>
<td>36,374,909</td>
<td>19,626,893</td>
<td>8,346,893</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>203,330,343</td>
<td>139,210,932</td>
<td>172,532,400</td>
<td>195,092,400</td>
<td>64,119,411</td>
<td>30,797,943</td>
<td>8,237,943</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>220,410,091</td>
<td>139,677,720</td>
<td>181,772,400</td>
<td>209,972,400</td>
<td>90,799,716</td>
<td>38,637,691</td>
<td>10,437,691</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>238,042,899</td>
<td>139,145,412</td>
<td>191,012,400</td>
<td>224,852,400</td>
<td>98,897,987</td>
<td>47,030,499</td>
<td>13,190,499</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>257,086,331</td>
<td>137,264,652</td>
<td>200,252,400</td>
<td>239,732,400</td>
<td>119,821,769</td>
<td>56,833,931</td>
<td>17,353,931</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>299,865,496</td>
<td>132,986,868</td>
<td>218,732,400</td>
<td>269,492,400</td>
<td>110,886,932</td>
<td>81,133,096</td>
<td>30,373,096</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>323,854,736</td>
<td>132,438,600</td>
<td>227,037,600</td>
<td>283,797,000</td>
<td>151,469,396</td>
<td>96,817,136</td>
<td>40,057,136</td>
<td></td>
</tr>
</tbody>
</table>

GDP = gross domestic product, GER = gross enrollment ratio.

---

**Table A5.6  Sri Lanka: Scenario 3**

Education gets 2.0% of GDP and higher education gets 15% of the education budget—Comparison between resources to higher education and estimates of public expenditure for gross enrollment ratios of 7%, 12%, and 15% at $1,500 per student (US dollars at 2010 prices)

<table>
<thead>
<tr>
<th>Year</th>
<th>(1) Revenue: 2.0% of GDP for Education</th>
<th>(2) Expenditure: 15% for Higher Education</th>
<th>(3) Expenditure: GER = 7%</th>
<th>(4) Expenditure: GER = 12%</th>
<th>(5) Expenditure: GER = 15%</th>
<th>(6) Difference: GER = 7%</th>
<th>(7) Difference: GER = 12%</th>
<th>(8) Difference: GER = 15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>160,963,200</td>
<td>172,456,515</td>
<td>181,015,500</td>
<td>188,065,500</td>
<td>11,493,315</td>
<td>20,052,300</td>
<td>27,102,300</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>173,679,293</td>
<td>171,630,480</td>
<td>192,565,500</td>
<td>206,665,500</td>
<td>2,048,813</td>
<td>18,886,207</td>
<td>32,986,207</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>187,747,316</td>
<td>173,001,150</td>
<td>204,115,500</td>
<td>225,265,500</td>
<td>14,746,166</td>
<td>16,368,184</td>
<td>37,518,184</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>238,042,899</td>
<td>173,931,765</td>
<td>238,765,500</td>
<td>281,065,500</td>
<td>64,111,134</td>
<td>722,601</td>
<td>43,022,601</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>257,086,331</td>
<td>171,580,815</td>
<td>250,315,500</td>
<td>299,665,500</td>
<td>85,505,516</td>
<td>6,770,831</td>
<td>42,579,169</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>299,865,496</td>
<td>166,233,585</td>
<td>273,415,500</td>
<td>336,865,500</td>
<td>133,631,911</td>
<td>26,449,996</td>
<td>37,000,004</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>323,854,736</td>
<td>165,548,250</td>
<td>283,797,000</td>
<td>354,746,250</td>
<td>158,306,486</td>
<td>40,057,736</td>
<td>30,891,514</td>
<td></td>
</tr>
</tbody>
</table>

( ) = negative, GDP = gross domestic product, GER = gross enrollment ratio.
Innovative Strategies in Higher Education for Accelerated Human Resource Development in South Asia

This publication highlights priorities and strategies in meeting current and emerging needs for skills development in South Asia. The report is in line with the Asian Development Bank’s effort to support its developing member countries’ priorities toward global competitiveness, increased productivity, and inclusive growth. It also identifies key issues, constraints and areas of improvement in making skills training more responsive to emerging labor market needs in South Asia as an important factor in sustaining high economic growth. The report was completed in 2012 under the Australian AID-supported Phase 1 of Subproject 11 (Innovative Strategies for Accelerated Human Resource Development) of RETA 6337 (Development Partnership Program for South Asia).

About the Asian Development Bank

ADB’s vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region’s many successes, it remains home to approximately two-thirds of the world’s poor—1.6 billion people who live on less than $2 a day, with 733 million struggling on less than $1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.