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World Bank Support for Tertiary Education

It is impossible to have a complete education system without an appropriate and strong higher education system. . . . I am not for a moment suggesting that primary education and secondary education are not at the very essence of development . . . [but that is] not enough. You have to have centers of excellence and learning and training if you are going to advance the issue of poverty and development in developing countries. . . . the key . . . is higher education, not just on the technological side, but to create people with enough wisdom to be able to use it.

James D. Wolfensohn,
Launch of the Report of the
Task Force on Higher Education and Society,
March 1, 2000

In continued pursuit of its mandate to help developing and transition countries reduce poverty and improve living standards through sustainable growth and investment in people, the World Bank has renewed and deepened its commitment to enhancing the contribution of tertiary education to economic and social development worldwide. Through effective partnerships with other multilateral institutions, national governments, NGOs, and the private sector, the World Bank aspires to apply its financial resources and extensive knowledge base toward increased efforts in the tertiary education and science and technology sectors, which will help create the foundations for democratic, knowledge-based economies and societies. This chapter reviews the Bank's experience in supporting tertiary education reforms in developing and transition countries in recent years and offers a framework for continued support of tertiary education development.

Assessment of Recent World Bank Experience in Tertiary Education, 1995–2001

Since 1963, when it began to lend for the education sector, the World Bank has had a prominent role in assisting countries in their efforts to expand tertiary education and improve the quality of institutions and programs. Between 1992 and 1998, lending for tertiary education averaged US\$481 million a year. The Bank is currently implementing tertiary education projects, or projects with tertiary education components, in 28 countries. (See Appendix D for a listing by country; see Appendix E for a synopsis of the World Bank's analytical work on tertiary education, Appendix F for graphical presentations of breakdowns of lending, and Appendix G for project descriptions and lessons from projects.) The general types of intervention, with some examples of specific objectives, are as follows:

- Vision development, strategic planning, and consensus building at both the national and institutional levels
- Finance reforms (e.g., allocation of recurrent budget; competitive funding; cost sharing; student loans; scholarships)
- Governance and management reforms (creation of policy bodies; mergers and federations; adoption of academic credit systems; management information systems)
- Quality improvement (strengthening of existing programs; evaluation and accreditation systems; innovations in program content and delivery; innovations in academic organization; information and communication infrastructure)
- Institutional diversification (establishment or strengthening of polytechnic or technical institutes)
- Science and technology development (strategy development; capacity for monitoring and evaluation; reform of resource allocation mechanisms; competitive funding; promotion of research in priority areas; joint public–private sector technology development; capacity for metrology, standards, and quality testing; intellectual property rights).

In the 1970s and 1980s much of the support provided by World Bank tertiary education projects was piecemeal, with a narrow focus on the establishment of new programs or on discrete measures for improving the quality of existing teaching and research activities. These projects occasionally created well-equipped academic oases—which tended to become unsustainable over time—but the Bank was rarely able to offer the long-term comprehensive support for tertiary education that is required for successful reform efforts and effective institution building.

An internal review of implementation experience with tertiary education projects undertaken in 1992 and an assessment of recent and ongoing interventions in the subsector have offered insights into more productive ways of supporting tertiary education reforms and innovations. The most salient lessons about the relative effectiveness of different approaches toward supporting tertiary education reform and development can be grouped according to three general themes:

- Comprehensiveness of the intervention strategy and sustained long-term engagement in the reform effort
- Political-economy aspects of reform
- The role of positive incentives in promoting change.¹

The Need for a Systemwide, Sustained Approach

Comprehensiveness and sustained long-term engagement are important predictors of outcome. Policy measures and investments that are integrated into a broad reform program based on a global vision and strategy for change are most likely to bear fruit. For example, the implementation of an ongoing project in Argentina has been successful because it has accompanied a well-articulated reform program sanctioned by a new higher education law. The reform program promotes the introduction of internal and external evaluation mechanisms, including a national accreditation system, increased autonomy for the public universities in human and financial resource management, support for quality improvements throughout the university system, institutional strengthening of the Ministry of Higher Education and the public universities, and a new funding formula.

Even in the technical aspects of quality improvement, there is a need for a comprehensive approach reflecting the interrelatedness of academic programs and tertiary education institutions. The various institutional components of the tertiary education subsector, both public and private, constitute a system. How they relate to each other and to the tertiary education system as a whole needs to be considered. High-quality instruction in engineering, medicine, agriculture, and the applied social sciences, for example, requires sound training in the natural sciences, mathematics, and even the humanities (the importance of which for economic development is perceived as less obvious, making the field less attractive as regards donor support). Advanced scientific training and research require strong undergraduate programs and a large, diversified tertiary education system so that undergraduate and postgraduate programs do not compete for scarce staff and financial resources. Centers of excellence cannot be maintained if they must bear the burden of accommodating most of the increasing social demand for tertiary education as well.

Reforms of the financing of public tertiary education, especially the introduction of tuition and other fees, are difficult to implement successfully unless educational opportunity is expanded through equity measures. Financing reforms also require significant devolution of government control in matters affecting institutional costs, as well as incentives for institutions to engage in cost-saving and income-generating activities. Student loan schemes may work well technically yet fail to promote improved efficiency and cost-effectiveness in tertiary education.

The case of Venezuela provides a negative example. There, the World Bank supported the reform of the public student loan agency, FUNDAYACUCHO, with a project designed to increase coverage, improve the financial sustainability of the agency, and enhance its management efficiency. Although the operation was a great success from the viewpoint of disbursements, its real impact was limited because the project was not part of a comprehensive reform of tertiary education financing. A similar operation in Jamaica has had a more positive effect because the reform of the Student Loan Bureau has supported parallel efforts to improve the system's financial situation through increased cost sharing at the University of the West Indies and the University of Technology.

The preference for comprehensiveness does not mean that all aspects of a reform can or should be packed into a single operation. This is where sequencing plays a crucial role in the implementation of a systemwide approach. Sequencing provides the tools to respond and adjust to evolving challenges and to secure long-term involvement through a series of complementary operations. To ensure structural change in a viable and sustainable manner, sufficient time is needed.

The World Bank has been most successful in countries such as China, Indonesia, Korea, and Tunisia, where, through a series of project investments, it was able to develop a sectorwide strategy for intervention. A long-term approach has greatly enhanced the prospects for genuine reforms that are sustainable over time.

In China, for example, project loans have involved different tiers of tertiary education in ways that have strengthened the subsector as a whole. The World Bank began by supporting, within the framework of China's Fourth Modernization Plan of 1980, the country's elite national universities—institutions whose research and training programs had been disrupted by the Cultural Revolution. World Bank funding facilitated construction or rehabilitation of university laboratories and libraries, updating of instructional and research programs with the assistance of foreign scientific experts, and upgrading of the professional qualifications of academic staff through training abroad. Follow-on projects addressed the needs of the provincial universities and other types of tertiary education institutions. Later, the focus shifted toward supporting national resource allocation policies and mechanisms and then

toward strengthening premier institutions engaged in advanced scientific training and research.

In Indonesia and Korea, too, the World Bank has financed multiple projects throughout the tertiary education subsector in the context of an integrated government strategy for quantitative expansion. These projects focused on promoting improvements in quality, especially in the private sector; fostering regional development; and strengthening national research and training capabilities in the public sector through enhanced linkages to the private sector. Sustained cooperation with the Indonesian government has led to a paradigm shift in the way the country's tertiary education system is governed and financed. Similarly, two successive and complementary sectorwide projects in Tunisia have contributed to substantial improvements in the tertiary education system.

Political Economy

Until the beginning of the 1990s, very little attention was paid to the political-economy aspects of tertiary education reforms. The Bank worked under the assumption that to introduce change successfully, it was sufficient to design a technically sound reform program and reach agreement with top government officials. When it came to actual implementation, however, political reality often proved stronger than the technocratic vision. For example, a number of education adjustment loans to Sub-Saharan African countries in the late 1980s and early 1990s included tertiary education reform measures aimed at containing expenditures, enrollment growth, and subsidies. The implementation experience of these operations has not been encouraging. The proposed reform programs, which often included too many conditions that never materialized, have been opposed by various interest groups and have even touched off student rioting.

Launching and implementing tertiary education reforms and innovations has been more successful when decisionmakers have used social communication campaigns effectively and have managed to build consensus among the various constituents of the tertiary education community. Mozambique provides an example. Under the auspices of a national task force, a strategic plan for higher education was debated in the newspapers and on television and radio. Extensive consultations in each province, involving students, civil society, academic staff, researchers, and employers, introduced stakeholders to the proposed plan. Undertaking a broad national consultation exercise does not always work. But to not even attempt a consultation exercise is a guarantee of failure.

Policy dialogue, stakeholder consultation, and consensus building are not discrete activities that are only useful at the beginning of a reform.

Rather, there is a need to maintain and renew attention to the politics of tertiary education reform as country conditions evolve. Failure to do so can expose the project to diminishing commitment or even reversal of policies as a result of elections, change of government, or replacement of key leaders. In Hungary and Senegal the Bank was instrumental in supporting extensive vision development and national consultation efforts, and a loan accompanied the reform. But in neither country was the momentum of consultation fully sustained, and some of the reform measures were abandoned or even reversed after political changes occurred and new actors with a different agenda arrived. The cases of these countries illustrate another important lesson in political economy: it is difficult to promote all the changes simultaneously when introducing deep reforms. Their experiences also underscore the importance of follow-up strategies for continued vision sharing with new authorities, agents, and stakeholders to ensure the sustainability of reforms.

Reliance on Incentives

The extent to which projects rely on positive incentives rather than mandatory edicts to stimulate change has a great influence on outcomes, as institutions and actors tend to respond more readily to constructive stimuli. The World Bank has had favorable experience with a number of policy instruments, including the introduction of competitive funds, accreditation mechanisms, and management information systems.

COMPETITIVE FUNDS. Well-designed competitive funds can greatly stimulate the performance of tertiary education institutions and can be powerful vehicles for transformation and innovation. Argentina's Quality Improvement Fund (FOMEC) has encouraged universities to engage in strategic planning for the strengthening of existing programs and the creation of new interdisciplinary graduate programs. Within universities, faculties that had never worked together started cooperating in the design and implementation of joint projects. In Indonesia a series of World Bank projects that began in 1993 has succeeded in stimulating ownership within the entire academic community of new paradigms in tertiary education. In Egypt the Engineering Education Fund was instrumental in introducing the notion of competitive bidding and peer evaluation in the allocation of public investment resources. The fund promoted in an effective manner the transformation of traditional engineering degrees into more applied programs with close linkages to industry.

A fundamental prerequisite for the effective operation of competitive funds—and one of their significant benefits—is the practice of transparency and fair play through the establishment of clear criteria and pro-

cedures and the creation of an independent monitoring committee. In countries with a relatively small or isolated academic community, it is desirable to draw from a regional or international pool of peer reviewers to reduce the danger of complacency and subjective evaluation among a limited group of national colleagues. Use of a transnational pool is a long-standing practice in the Netherlands, for example. The new competitive fund in Jordan has detailed guidelines that are described in an operations manual, and it relies on international peer reviewers for projects of national interest. In Chile a second wave of tertiary education reforms is being supported by a competitive fund for diversification (development of the nonuniversity sector) and quality improvement of all tertiary institutions. Brazil, Mexico, and Venezuela are encouraging the formation of advanced human capital in science and technology through competitive funding mechanisms. In all these cases, international peer review experts figure prominently.

In some cases there may be a compelling argument for opening several financing windows with different criteria or for setting up compensatory mechanisms to create a level playing field between strong and weak institutions. In Indonesia three different windows were designed to serve universities according to their actual institutional capacity. In the latest tertiary education project in China, as described in more detail in the section "Facilitating Policy Dialogue and Knowledge Sharing," below, the top universities are required to form a partnership with a university in a poor province as a condition for competing. In Egypt the competitive fund in the Engineering Education Reform project had a special window for technical assistance to help less experienced engineering schools prepare well-formulated proposals. Also in Egypt, proposals that included a partnership agreement between a stronger university and a weaker one received additional points for evaluation purposes. In Chile a special window was recently opened to provide preparation funds for universities requiring assistance in strategic planning and subproject formulation.

ACCREDITATION MECHANISMS. Quality assurance systems are necessary instruments in the diversification of tertiary education systems, and the World Bank has supported the formation of national quality assurance systems in a number of countries. In some instances the Bank has helped establish specific and limited accreditation programs, but the general strategy has been to move toward comprehensive systems that cover the entire tertiary education landscape and that are consistent with international practice regarding standard setting, evaluation, and accreditation. In Indonesia, for example, the World Bank supported the introduction of accreditation mechanisms in a project to improve teacher training standards in public institutions. The project started

with a pilot program to define a set of standards for evaluating all teacher training institutions and to establish a baseline for institutional development. Small planning grants were made available to enable the five institutions that participated in the pilot to conduct a self-study, which was then externally evaluated and validated. The pilot study proved useful in generating acceptance for accreditation as a mechanism for improving the quality and relevance of teacher training. The Bank has also supported the establishment of Indonesia's National Accreditation Board for Higher Education.

Sometimes sets of policy interventions can be mutually reinforcing. In Argentina, Chile, Indonesia, and Romania, for instance, only programs evaluated by the national quality assurance system are eligible to compete for innovation and quality enhancement grants. Brazil has a long-standing and successful tradition of supporting its graduate programs in this way.

MANAGEMENT INFORMATION SYSTEMS. Many tertiary education projects supported by the World Bank have facilitated the introduction or development of management information systems (MISs) at the national and institutional levels, on the assumption that neither the state nor individual institutions can formulate and implement reforms without effective monitoring and management tools. In Argentina a Bank-financed project helped put in place intranet and Internet links among all the public universities and between the universities and the outside world. Software for all dimensions of academic management was developed and combined into an integrated MIS that provides information at the level of each individual institution and consolidates this information into a program run by the national tertiary education authorities for monitoring and planning purposes. Many universities were at first cautious, but they ended up enthusiastically embracing these innovations because the adaptations helped them invest in modern information and communication technologies and provided them with useful management tools.

DIFFICULTIES WITH POLITICALLY SENSITIVE REFORMS. The Bank has been less successful in supporting the implementation of politically sensitive reforms such as moving from negotiated budgets to formula funding, reducing subsidies, and introducing tuition fees. In several countries—for example, Argentina and Tunisia—the government has been unable to fulfill its commitment, made at the time of project preparation, to implement a transparent funding formula. In Senegal the authorities recently retracted their undertaking to streamline the scholarship program in such a way as to ensure that only socially and academically deserving students would be eligible. In Hungary the government reversed its decision to charge tuition fees for repeating students.

Directions for Future Bank Support

Immense progress has been achieved in education in the last 50 years. Immense challenges still remain. The main success has been in access, but too many people—especially girls and women—are still excluded, at all levels of education. Too many more are enrolled but learning little. The result is that far too many people in developing countries do not have the foundation skills required to survive—let alone the advanced skills needed to thrive—in our complex, competitive world. The challenges are to improve the quality of teaching and the relevance of learning, and to offer everyone—including the hardest to reach—a good education. The long-term measure of success for developing countries will be the degree to which a system and culture of lifelong learning have been achieved.

Education Sector Strategy (World Bank 1999a)

In the context of the holistic education strategy formulated by the World Bank in 1998, investment in tertiary education is an important pillar of development strategies that emphasize the construction of democratic, knowledge-based economies and societies. The World Bank can play a central role in building these societies by facilitating policy dialogue and knowledge sharing, supporting reforms through program and project lending, and promoting an enabling framework for the global public goods crucial for the development of tertiary education.

Facilitating Policy Dialogue and Knowledge Sharing

In many countries the relationship between the government and the university sector, and between public and private tertiary education institutions, is often tense if not outright conflictive. Attempts at tertiary education reform are usually fraught with controversy. Proposals that are likely to affect established practices and vested interests always meet with fierce resistance and opposition by the groups most likely to be affected by the intended redistribution of power and wealth.

Given the right circumstances, the World Bank may play a catalytic role in encouraging and facilitating policy dialogue on tertiary education reforms in client countries. The Bank can act as a bridge builder by bringing to the table stakeholders who would not normally converse and work together. In Bangladesh and Kenya, for example, the Bank supported the government in the organization of workshops involving public and private universities. In Bolivia the Bank has assisted the public universities and the government in engaging in a constructive dialogue on issues of quality enhancement and accreditation. In addition, the Bank can contribute relevant comparative knowledge about a great variety of national

and institutional experiences that can enrich the debate by offering objective reference points for analyzing the local situation and assessing the range and content of policy options that may be considered. This type of policy dialogue can lead to the formulation of a long-term vision for the country's tertiary education system as a whole and for the preparation of strategic plans at the level of individual institutions.

The World Bank's comparative advantage, in relation to bilateral donors and other multilateral agencies, in supporting policy dialogue in client countries stems from two related factors. First, the Bank has firsthand access to worldwide experiences that can be assembled and shared with interested counterparts and stakeholders. Second, the comprehensive nature of the Bank's work in a given country allows it to adopt a systemwide approach linking education and other sectoral issues to the overall development framework and public finance context rather than focus on discrete, isolated interventions in support of specific institutions.

Social assessments are a tool that the World Bank can use to identify stakeholder concerns and address issues that may be controversial. The first social assessments for tertiary education projects were carried out in Indonesia, Jordan, China, and Chile. In Indonesia analysis of the social climate led the universities in the outer islands to involve young academics recently returned from graduate studies overseas in the self-evaluation exercises, which had previously been conducted only by established faculty members. The social assessment also identified a need to create more direct links with employers of university graduates. In Jordan, when the proposal to carry out a social assessment was mentioned to the seven universities preparing a new project with the Bank in 1998, most representatives were reluctant to embark on such an activity, as there was no tradition in the prevailing academic culture of systematic consultation of students and faculty. One institution, however—Al-Balqa' Applied University (BAU), which had recently been created as a federation of 20 community colleges—was enthusiastic about the concept. BAU had been mandated to overhaul the community college system, which was in a state of disrepair, and the university's officials saw the social assessment as a means of testing their proposed reforms with their stakeholders. Students, parents, faculty members, employers, and community leaders were methodically consulted, and the results of the assessment proved invaluable in ascertaining their aspirations and preparing acceptable reform instruments that carefully integrated issues of access, gender, internal perceptions, and employer expectations.

In China the counterpart agency had initially planned that the new Higher Education Reform project would include only best-performing universities—rich institutions functioning in thriving economic environments, largely on the coast. This would leave out poorer-performing

institutions located in remote and economically disadvantaged areas. China is fairly unusual in that beneficiary institutions which receive credits and loans are directly responsible for repayment; universities running at a loss and needing modernization are typically bad prospects for loans and thus fall even farther behind. Stakeholders interviewed as part of the social assessment, including secondary- and tertiary-level students, parents, the academic community, minority groups (many of them located in disadvantaged areas), and village education committees, were concerned that lack of support for universities in disadvantaged areas would exacerbate the existing social and economic regional disparities. These strongly expressed stakeholder views were taken account of in the final project design through a selection criterion that required wealthy, well-performing universities to enter into official supportive partnerships with poorer universities. Funding for the disadvantaged universities' reform-oriented activities is to come from local governments, allied ministries, or the lead university.

Social marketing and communication campaigns also help engage the diverse sets of stakeholders who are involved in the tertiary education scene. In Chile a thorough stakeholder analysis led the government to accept an explicit communication strategy to support the preparation of a new project with the World Bank and to include students in the government's project preparation team.

Stakeholder interaction with other countries that face similar challenges can help overcome opposition to reform. A study tour to Uganda recently organized for Guinean officials and university leaders under a World Bank-financed project had a remarkable impact. Learning firsthand about management reforms at Makerere University encouraged the Guineans to move full speed toward institutional income-generating activities and increased university linkages with industry. World Bank policy seminars involving several neighboring countries, held recently in South Asia, Eastern Europe, Africa, and Central and South America, have had a similar eye-opening effect, inducing countries to accept more easily reforms that have already been undertaken elsewhere in the region.

Supporting Reforms through Program and Project Funding

In supporting the implementation of tertiary education reforms, the World Bank gives priority to programs and projects that can bring about positive developments and innovations in the following areas:²

- Increasing institutional diversification (through growth of nonuniversity and private institutions) to expand coverage on a financially viable basis and to establish a lifelong-learning framework with mul-

multiple points of entry (construction of accessible pathways from secondary to tertiary education; articulation mechanisms across tertiary education segments; recognition of relevant prior professional and academic experience; capacity building for distance learning)

- Strengthening science and technology R&D capacity (possibly in selected areas linked to a country's priorities for the development of comparative advantage)
- Improving the relevance and quality of tertiary education
- Promoting greater equity mechanisms (scholarships and student loans) intended to create and expand access and opportunities for disadvantaged students
- Establishing sustainable financing systems to encourage responsiveness and flexibility
- Strengthening management capacity through, for example, introduction of management information systems for improved accountability, administration, and governance and for more efficient utilization of existing resources
- Enhancing and expanding information technology and communications capacity to reduce the digital divide, complementing recent global initiatives of the World Bank, such as the Global Development Learning Network, the African Virtual University, the Global Development Network, and World Links, described in Appendix H.

This menu of priority areas does not apply equally to all countries at all times. The relative emphasis and mix of interventions appropriate for any given country are linked to its specific political and economic circumstances at both the macroeconomic and the tertiary education levels. The country's income level, size, and political stability and whether it is in a postconflict situation are all important factors to be taken into consideration. The depth of the World Bank's knowledge about the main challenges faced by a country's tertiary education system and about recent developments in the sector affects the Bank's capacity to provide useful support.

In setting priorities for the appropriate mix of lending and nonlending services in a given country, the Bank will be guided by the following criteria (see also Table 5.1):

- The need for and urgency of change, based on the gravity of the issues faced by the country's tertiary education system. For example, in countries experiencing rapid growth of low-quality private institutions, setting up an accreditation and evaluation system would be a high priority.
- Willingness to reform, as reflected in the government's commitment to implementing reforms and its ability to mobilize major stakehold-

Table 5.1 Priorities for Bank Involvement

<i>Need for change</i>	<i>Willingness to reform</i>	
	<i>Low</i>	<i>High</i>
High	Limited policy dialogue and lending	Full-scale policy dialogue and lending
Low	Limited policy dialogue	Full-scale policy dialogue

ers in support of the reform agenda. Having already undergone a consensus-building exercise and formulated a national vision on the future of tertiary education would be a clear sign of reform readiness.

In establishing the need for change in a given country, it is useful to distinguish between first- and second-generation reforms. First-generation reforms, which address core problems of tertiary education systems (financing, efficiency, equity, and quality assurance), are the first steps in moving from one way of doing things toward a more appropriate approach. These steps might include, for instance, changing from open-ended admissions to selective access; introducing cost sharing through fees and reduced subsidies in institutions that had charged nothing; establishing accreditation and evaluation in previously unregulated systems; transforming scholarships into student loans; creating nonuniversity institutions alongside traditional universities; adopting an academic credit system; and starting to rely on formula funding.

Second-generation reforms are undertaken by countries that have already addressed many of their basic problems but need to do some fine-tuning to take first-generation reforms one step farther or to correct unintended effects. These reforms are no less important than first-generation reforms and are also worthy of World Bank support. Examples of second-generation reforms include extending the eligibility of a student loan program to all tertiary education institutions in a diversified system, introducing flexible mechanisms of articulation and credit transfer among institutions, and establishing competency-based evaluation mechanisms for online courses. In Chile, for instance, a framework for lifelong learning is being established, and new financing mechanisms such as student loans applicable to all types of tertiary education institutions are under consideration. In Korea the government recently launched a seven-year, US\$1.2 billion investment plan for tertiary education institutions, Brain Korea 21. The plan is essentially a new incentive-based financing scheme that offers institutions matching funds on a competitive and selective basis to induce them to excel in cutting-edge research training in areas such as biotechnology and information technology. Brazil, Chile, Mexico, and Venezuela are providing incentives to

world-class research training through highly competitive mechanisms via the Millennium Science Initiative, also supported by the World Bank (see the description in Appendix I).

Most of the options defined in this chapter are directly relevant to middle-income countries. Important distinctions are warranted for at least three groups of World Bank clients: transition countries, low-income countries, and small states. These clients face special conditions that require a different strategic focus and a different set of priorities.

Transition Countries

Under state socialism, many countries in Eastern and Central Europe attained high rates of participation, enviable educational levels, and pathbreaking research output. The achievements of tertiary education were particularly noteworthy in mathematics, natural sciences, and engineering. The introduction of market principles of economic organization resulted in a sharp decline in public funding for colleges, universities, and scientific academies. Demand for engineers and technicians, particularly in military industries, fell sharply, and interest in fields of study relevant to a market economy (economics, management, accounting, marketing, and law) surged. Interestingly, the quickening pace of both social and technological change increased the rate at which skills became obsolete and undermined the effectiveness of the strategy of hyperspecialization that had characterized tertiary education under socialism. Demand for broad skills such as critical analysis, problem solving, and teamwork greatly increased.

Colleges, universities, and scientific academies in transition economies are struggling to adjust to these new realities. Adaptation strategies used by institutions include reallocation of resources from traditional to new areas of study, simplification of curricula and creation of modular training programs to allow greater flexibility and responsiveness to students' needs, and diversification of sources of funding. Many tertiary institutions are involved in commercial activities, including contract research, consultant services, and sale of training services to private enterprises, thus contributing to the development of tertiary education that is more responsive to economic and labor market needs. While some universities and research centers have succeeded in becoming innovative and entrepreneurial, many have failed to overcome institutional inertia.

An urgent priority among national-level public policy issues is to address the increased inequity caused by expansion of tuition-based enrollment. Barriers to reform include predominantly administrative internal governance of institutions, weak linkages with the community, shortages of resources for innovation, and insufficient consistency of public policies in the area of tertiary education.

An effective response to these issues is necessary if transition economies are to be able to provide the human resources required to advance knowledge and apply it for economic growth. The leading options for improving tertiary education include introducing more flexible and less specialized curricula, promoting shorter programs and courses, making the regulatory framework less rigid, and relying on public funding approaches that encourage institutions to respond to market demands for quality and diversity. Other important options include improving access through the provision of financial aid to students, requiring external participation in governance, and professionalizing university administration. Public investments are needed to build capacity for academic and management innovations, to expand the breadth of course offerings at individual institutions, and to create new programs in response to evolving demand-driven areas of learning.

Low-Income Countries

More than 2.3 billion people—53 percent of the total population of the developing world—live in the 79 countries with annual per capita incomes of less than US\$885. These countries, half of them in Sub-Saharan Africa, are eligible for special concessional financing of their development projects through the World Bank's International Development Association (IDA). Their governments are seeking ways to provide tertiary education to over 12 million students, approximately 0.5 percent of the eligible cohort. Of this number, 70 percent are in the 42 countries where annual per capita incomes average less than US\$400. This set of very poor countries will be particularly hard pressed to attain an acceptable standard of tertiary education, even given the modest estimated cost of US\$1,000 per student per year for such a standard. Policymakers in the poorest countries will find it increasingly difficult to devise sustainable ways of increasing access to tertiary education. Yet expanding tertiary education is a principal means of promoting capacity building (especially in agriculture and health), poverty reduction, and increasing social equity.

Low-income countries also face many challenges in science and technology-related public policy issues: ensuring the minimum level of public understanding of science necessary for informed civic decisions; creating channels for appropriate advice on scientific issues in legislation and governance; negotiating and complying with international treaties involving scientific and technological issues; and building local capacity to harness science and technology for the resolution of key economic and social problems.

An appropriate tertiary education development direction for low-income countries should focus on three complementary priority areas:

(a) building capacity for managing and improving the basic and secondary education system, to include the training and retraining of teachers and principals; (b) expanding the production of qualified professionals and technicians through a cost-effective combination of public and private nonuniversity institutions; and (c) making targeted investments in strategic areas of advanced training and research that can yield sizable returns over the medium term.

CAPACITY BUILDING IN SUPPORT OF BASIC AND SECONDARY EDUCATION. Teacher training is essential if a country is to meet the needs for expanded coverage and improved educational quality in the entire education system and to ensure that secondary school graduates are well prepared to access the tertiary level. Universities and other training institutions have a critical role with respect to teacher preparation—not only in initial training but also through professional development programs designed as part of a continuous, lifelong-learning process. Training institutions must offer innovative ways of integrating teaching theory, classroom practice, and simple applied research and must provide continuing support to school and teacher networks regarding concrete student learning problems. The tertiary education system must also train school principals in appropriate leadership skills. To complement efforts to improve pedagogical practices and drive the necessary in-depth, sustained change in the school culture, principals should be trained in basic strategic thinking and in organizational, managerial, and instructional skills. To be fully effective, training policies for teachers and principals should be supported by appropriate remuneration and career incentives. In many low-income countries, as a result of unattractive civil service conditions and frequent turnover of personnel, institutional capacity within the ministry of education and its regional dependencies, and within key national agencies such as those in charge of curriculum development and textbook production, is very weak. Tertiary education institutions can play a critical role in offering appropriate training and advisory services.

DEVELOPMENT OF NONUNIVERSITY INSTITUTIONS. More often than not, the qualifications gap experienced in the modern sector of the economy in low-income countries reflects the unavailability of midlevel management and technical specialists rather than an insufficient supply of high-level managers, engineers, or scientists. Low-income countries should consider establishing or expanding a network of specialized two- or three-year tertiary education institutions such as technical institutes or community colleges to train technicians and applied specialists. Through curricula that are adapted to local economic needs and by building strong links with local industry, these specialized institutions can also

contribute to subregional economic development. Because of the shorter duration of studies and the generally higher internal efficiency, training costs at such institutions are typically lower than those at universities. These institutions can offer access to tertiary education at a lower cost to a larger segment of the eligible population. In many parts of the world private providers have contributed effectively to the development of such nonuniversity institutions.

INVESTMENT IN STRATEGIC AREAS OF ADVANCED TRAINING AND RESEARCH. To strengthen competitiveness and protect national interests in key economic areas, low-income countries should consider concentrating on the strategic development of a few targeted disciplines and raising their quality to international standards. The disciplines should be selected for their direct relevance to the nation's potential for economic growth and should be integrated into a coordinated, multisectoral approach to development of a national innovation system. Recent work on the determinants of national innovative capacity points out the importance of specialization in "disciplines and fields congruent with emerging innovation opportunities in the local environment" (Stern, Porter, and Furman 2000: 8). Postgraduate programs in priority areas should preferably be established on a regional basis in order to leverage scarce resources by taking full advantage of economies of scale. For capacity-building purposes, donor support for the development or strengthening of such programs should not be limited to the initial capital outlay but should also include funding (on a declining basis) for long-term maintenance and incentives to attract and retain qualified professionals.

This three-pronged approach should be complemented by the following elements:

- *Quality teaching materials, textbooks, and equipment*, made available to students in the classroom and via library loans, to ensure that their education is current and that their potential is maximized
- *Open or virtual universities and distance education programs* using existing course modules obtained through negotiated concessional rates in order to minimize costs for core disciplines
- *Computer literacy* for all tertiary students to increase information retrieval, communication capacity, academic freedom, and individual productivity and to build the country's general and institutional capacity
- *Information technology*, facilitated by supportive national telecommunications policies, to enhance access to global knowledge
- *Strong humanities courses* for the transmission of local culture and values.

Even when the economic and financial circumstances of a low-income country make it difficult to prepare an IDA credit at a particular time, the World Bank should remain engaged in the tertiary education sector to encourage a systemwide approach to educational development and to assist in the formulation of a national tertiary education reform strategy, as it has done in Tanzania and Uganda and is currently doing in Pakistan. The following instruments can be used to offer effective support in anticipation of, or in lieu of, an IDA credit: (a) analytical work in partnership with well-targeted groups, (b) continued involvement in national and regional policy dialogue, and (c) technical assistance through Institutional Development Fund (IDF) grants.

Small States

Small states, defined as those with populations of 1 million or fewer, confront a unique set of challenges in their efforts to develop the skilled human resources needed to support their economic growth and social development. First, small states can rarely marshal sufficient resources to establish and sustain even one national university. To achieve a relatively modest tertiary enrollment ratio of 10 percent of the relevant age cohort, a country of 1 million inhabitants would have to enroll roughly 5,000 students, at an estimated annual cost of about US\$5 million. Second, small economies cannot absorb many graduates, resulting in high graduate unemployment and significant brain drain. Third, small states frequently lack suitably trained nationals who can teach the basic range of university disciplines. Staffing is a chronic problem, and reliance on international recruitment is an expensive solution.

The following approaches are proposed for small states:

- Subregional partnerships with neighboring small states to establish a networked university along the lines of the University of the West Indies, the University of the South Pacific, and the University of the Indian Ocean. The Portuguese-language economies of the African Atlantic region (São Tomé and Príncipe, Cape Verde, and the Azores) recently began discussing a similar step. A significant new initiative in Africa is the introduction by the African Economic Research Consortium (AERC) of a collaborative Ph.D. program in economics that draws on the strengths of several universities, building on the success of an earlier collaborative master's program. This development could have important implications for doctoral training in other fields.
- Strategically focused tertiary education institutions that address a limited number of the nation's critical human skill requirements for economic growth (e.g., in tourism and international finance) and seek to provide this training at an internationally competitive level.

- Negotiated franchise partnerships between the national government and external providers of tertiary education to offer specified services. The government of Eritrea, for example, contracted the U.K. Open University in 1998 to educate 200 senior civil servants in an MBA program.
- Government-negotiated provision of tertiary distance education by a recognized international supplier. Since much of the cost of distance education is for up-front investment in the development of course materials, collaboration with a well-established program could be very cost-effective for a small country.

Tailoring Options to Country Needs

To assist countries in defining an appropriate approach to tertiary education reforms, the matrix shown in Table 5.2 presents a preliminary list of salient issues and a menu of reform options for different types of countries. (Appendixes J and K provide useful data on selected country conditions.) The matrix is intended merely to exemplify a range of priorities and degrees of emphasis that a country might consider in making its policy choices. Because different economies generally face different problems of varying degrees of urgency, policymakers should regard the matrix as a generalization that may help simplify deliberations and accelerate dialogue in the four major groups of countries discussed in this chapter: middle-income countries, transition economies, low-income countries, and small states. (The entries for OECD countries are provided for comparison only.)

For example, on the issue of coverage, lack of institutional diversification (an underdeveloped nonuniversity sector; low enrollment in private tertiary education) is more likely to be a serious concern in middle- and low-income countries than in the other groups. These countries will probably need to focus more on increasing enrollments than would be the case in transition countries, where higher levels of enrollment are the norm. For small countries, where a diversified tertiary education system is hardly a viable proposition, the policy options will be different. Similarly, the options for increasing diversification in low-income countries and small states differ from those for other countries because of the limited resources available for expanding enrollment. Low-income and small countries are therefore more likely to rely on open and virtual universities than would middle-income and transition economies.

Operational Implications

Drawing on lessons from recent experience as to the relative effectiveness of different forms and types of support, it is possible to formulate

Table 5.2 Issues and Policy Options, by Country Group

<i>Issues and Options</i>	<i>OECD</i>	<i>Middle Income</i>	<i>Transition</i>	<i>Low Income</i>	<i>Small States</i>
ISSUES AND COUNTRY SITUATION					
Coverage					
Diversified system in place	x	xx	xx	xxx	xx
System not yet diversified	xx	xxxx	xxx	xxxx	xxx
Equity					
Cost sharing in place but no student aid	n.a.	xxx	xxx	xxxx	xxxx
Tuition required for poorer-performing students	n.a.	xxxx	xxxx	xxxx	n.a.
Quality					
Accreditation system in place	x	xx	xx	xx	xxxx
No accreditation system	xxx	xxxx	xxx	xxxx	n.a.
Relevance					
Diversified system in place	xx	x	xx	xx	xx
System not yet diversified	x	xxx	xxx	xxxx	xxx
Financing					
Cost sharing in place	x	xx	xx	xx	xx
Insufficient public financing	xx	xxxx	xxxx	xxxx	xxxx
Internal efficiency					
Access based on selection	x	x	xx	xx	x
Open access	xx	xxxx	n.a.	xxxx	n.a.
Governance					
Accountability mechanisms in place	xxx	xx	xx	xx	x
Autonomy without accountability	xx	xxxx	xxxx	xxxx	xxxx
POLICY OPTIONS					
Formulation of strategic vision					
If no reform has taken place yet	xxx	xxx	xxx	xxxx	xxxx
If first-generation reforms have taken place	x	x	x	xx	xx
Institutional diversification					
Short-duration programs	xx	xxxx	xxx	xxxx	xxx
Open or virtual universities	x	xx	xx	xxx	xxxx
Private institutions	xxx	xxx	xxxx	xx	x
Science and technology development					
Capacity for strategy formulation, monitoring, and evaluation	x	xxxx	xxxx	xxxx	xxxx
Competitive funding	x	xxx	xxx	x	x
Promotion of research in priority areas	x	xx	xx	xxxx	xxx

Table 5.2, continued

<i>Issues and Options</i>	<i>OECD</i>	<i>Middle Income</i>	<i>Transition</i>	<i>Low Income</i>	<i>Small States</i>
Capacity for metrology, standards, quality testing; intellectual property rights	xx	xxx	xxx	xx	xx
Improvement in quality and relevance					
Strengthening of existing programs	x	xxx	x	xxx	xxx
Evaluation and accreditation system	xx	xxxx	xxxx	xxxx	xxx
Innovation in program content and delivery	xx	xx	xxx	xx	xx
Innovation in academic organization	xx	xxx	xxx	xxx	xx
Expansion of equity mechanisms					
Scholarships	x	x	x	xx	xxxx
Student loans	xx	xxx	xxx	x	n.a.
Affirmative action programs	xx	xx	x	xxx	
Sustainable financing					
Formula funding	xxx	xxx	xxxx	xx	xx
Cost sharing	xxx	xxx	xxx	xx	xx
Resource mobilization (institutional level)	xx	xxxx	xxxx	xxx	xx
Strengthening of governance structure and management capacities					
National policy body	x	xxx	xxx	xxx	xx
National management information system	x	xx	xx	xxx	x
Boards with outside representation	xx	xxx	xxxx	xxx	xx
Development of ICT infrastructure					
National access and pricing policy	x	xxx	xxx	xxxx	xxx
Support for institutional-level investment	xx	xx	xx	xxx	xxx

n.a. Not applicable.

Note: The gravity of the problem or the urgency of reform is indicated as follows: X, lowest gravity or urgency; XX, low; XXX, high; XXXX, highest.

basic operating principles for Bank intervention in client countries. Bank support should be:

- Appropriate to a country's specific circumstances
- Predicated on strategic planning at the national, local, and institutional levels
- Focused on promoting autonomy and accountability
- Geared toward capacity enhancement and facilitation of the cross-fertilization of relevant regional experiences

- Sequenced in accordance with the time requirements of the capacity enhancement objectives
- Sensitive to the political dimensions of tertiary education reform.

In countries where the need for reform is acute, and depending on country circumstances, the following lending instruments will be applied to support tertiary education reform and development: adaptable program loans, programmatic loans, poverty reduction strategy credits, technical assistance loans, learning and innovation loans, and International Finance Corporation (IFC) loans and guarantees. The choice of lending instrument depends on the specific circumstances:

- Adaptable program loans (APLs) should be the preferred instruments for lending for tertiary education reforms because they facilitate a systemwide, holistic, longer-term approach than traditional lending instruments and investment projects. In countries where a coherent national vision and medium-term reform policies have been established and where political stability is anticipated, an APL with clearly defined successive phases and monitorable performance indicators offers a longer, more appropriate time horizon to accompany tertiary reform efforts. When necessary, the first phase of the APL would focus on consolidating the strategic framework and on building consensus among all stakeholders. In the context of an APL, competitive funds could be used in a programmatic lending mode, serving as grants for quality improvement projects at the institutional level and disbursed in tranches against the grant agreement rather than against individual expenditure items. The tranches would be released only when the grantholders met established targets. This approach could greatly enhance project performance and would place accountability for reform with the parties to the grant agreement.
- Where the tertiary education reform agenda is high on the government's priority list and where, as a result of government efforts to build consensus and raise public awareness, there is a clear commitment by all stakeholders to carry out the proposed reforms, Bank resources would be channeled through budget support in the context of sectorwide programs.
- In low-income countries involved in the preparation of a poverty reduction strategy credit (PRSC), assistance to tertiary education would focus on three dimensions: (a) resource rationalization measures to ensure balanced development of the entire education sector; (b) the effective contribution of tertiary education to the country's Education for All program, especially through teacher training institutions; and (c) the capacity-building role of tertiary education in

promoting the achievement of the other MDGs (agriculture, health, environment) and facilitate economic diversification efforts. These three areas of intervention would be complemented by targeted support for capacity building in a small number of postgraduate programs of excellence in chosen areas of comparative advantage for the country.

- Where there is government interest in initiating change in the tertiary education sector but the technical or political conditions for implementing a reform or starting an innovation are not fully present, the use of technical assistance loans (TALs) or learning and innovation loans (LILs) would be preferable for assisting governments in moving the reform agenda forward. Countries should use TALs to help formulate a comprehensive reform strategy and build a national consensus in favor of it. LILs should be used to try out innovations before replicating them on a larger scale. In Chile a LIL is being used to pilot new types of incentives for science and technology development within the framework of the Millennium Science Initiative. It is thereby paving the way for the launch of a large-scale operation incorporating the results of the pilot experience. Chile's experience has had positive spillovers in science and technology operations in Brazil, Mexico, and Venezuela.
- In countries that have established a positive regulatory and incentive framework to promote the development of private tertiary education, IFC loans and guarantees in support of individual private institutions would complement other World Bank Group sector support in an effective way. In Argentina, for instance, the International Bank for Reconstruction and Development (IBRD), part of the World Bank Group, has supported the launching of evaluation and accreditation mechanisms to ensure educational quality in both public and private institutions as part of the overall tertiary education reform, while the IFC has financed several individual private universities with accredited programs. In conformity with the purpose and focus of recent operations in South Asia and Latin America (see Appendix G), IFC operations in the tertiary education subsector could include supporting the establishment of new private institutions, strengthening existing private institutions (through expansion, introduction of new programs, and improvement in relevance and quality), and developing student loan schemes to help students attend private institutions (IFC 2001). Currently, in India the IFC, in cooperation with Citibank and with NIIT, one of India's largest and most reputable information technology education firms, is assisting in the creation of the country's first large-scale private sector student loan program, amounting to US\$90 million. The NIIT student loan program will help fill an urgent need, since very few Indian financial institutions currently

provide such loans. Elsewhere, IBRD lending in support of private tertiary education institutions is focusing on systemwide interventions for quality improvement and accreditation through competitive funding and on the establishment of student loan schemes for the entire private sector, on the model of the current IBRD lending operation in Mexico.

Promoting an Enabling Framework for Global Public Goods

Globalization and the growth of borderless education raise important issues that affect tertiary education in all countries but that are often beyond the control of any one government. Among the challenges of particular concern to countries seeking to build up their advanced human capital capacity are new forms of brain drain that result in a loss of local capacity in fields critical to development; the absence of a proper international accreditation and qualifications framework; the dearth of accepted legislation regarding foreign tertiary education providers; the lack of clear intellectual property regulations governing the content and distribution of distance education programs; and barriers to access to information and communication technologies, including the Internet (the “digital divide”). The World Bank is uniquely positioned to work with its partners in the international community—international organizations, bilateral donors, and foundations—to help facilitate or create a discussion platform and promote an enabling framework for the global public goods that are crucial for the future of tertiary education in the developing world.³ This section briefly reviews the issues surrounding global public goods that are important for tertiary education and outlines actions the World Bank can take.

BRAIN DRAIN. An inevitable consequence of an increasingly integrated global economy and an internationally linked knowledge society is a rise in the worldwide mobility of skilled human resources. Circulation of human capital is seen by many economists as promoting global welfare and as representing a certain efficiency in the world labor market. For developing countries, however, this mobility is frequently viewed as a threat to national welfare and as an inefficient use of domestic public resources—as a loss of funds specifically allocated to educate citizens for the local market and of local capacity for satisfying development needs. The flight of human capital from developing countries, commonly referred to as brain drain, is a multifaceted phenomenon that is driven by much more than pure market forces and concerns about employability. It stems from the complex motivations and calculations of highly skilled individuals who choose to leave their families, communities, and homelands and is complicated by national-level pull (attraction) and

push (expulsion) considerations. The motives that enter into educated citizens' decisions about studying or working abroad include the degree to which individual rights and protections are guaranteed at home, prevailing local incomes and employment benefits, the level of basic social services required or desired, the degree of indigenous institutional stability, the amount and type of recognition or affirmation accorded to deserving professionals, the specific work and community environment, and opportunities for professional growth and advancement. Typically, it is the most affluent students, who are the best prepared and can afford to study abroad with their own funding, who choose to emigrate. This is a concern only in that their potential contribution to local capacity may be lost. More troublesome is the human capital flight of individuals educated with local public funds. This represents a double loss to the local economy: loss of locally trained human resources and of human capital investment by the state.

In countries that are concerned about depletion of high-level human capital, governments, institutions, and employers have used both positive and negative interventions and enticements in an attempt to persuade skilled individuals to stay in the country, but usually with only marginal success. Examples of such interventions include salary supplements for professions at risk of brain drain; special reentry packages for graduate students who have completed their studies abroad; free return airfare and shipping and short-term salary guarantees for emigrant professionals who are willing to return home; and the contractual bonding of persons leaving for studies abroad to their employing institutions. Korea, Taiwan (China), and Turkey have implemented successful programs to bring back thousands of experts living overseas. It has been suggested that low-income countries might levy a "departure tax" on professionals who have benefited from highly subsidized local education but wish to leave the country for foreign employment. Some governments require departing professionals with outstanding debt, such as student loans, to repay their debt in full before they are allowed to leave their country.

Human capital emigration is not always a net loss to a country. Emigrants acquire new knowledge and skills while maintaining contact with their home countries, serving as information conduits, and contributing to national development through knowledge sharing. Today's diaspora of national scholars can promote a forging of new institutional partnerships among tertiary institutions abroad and facilitate the flow of knowledge back to their countries of origin. Electronic communication media have made it easier than ever before for intellectual and professional colleagues to remain in touch over distance and time. This professional and social interconnectedness eases not only the circulation of ideas but also the circulation of skilled human capital.

Despite the possible benefits, tertiary institutions and research centers are often at great risk of losing their highest-level human capital to brain drain. The loss of key staff may even generate an institutional crisis. Such hardship can, however, be the impetus for making constructive changes in the organization and remuneration of teaching and research, enhancing working conditions and improving the local climate for scholarship and productivity. Losing key staff, painful as it is, may impel governments to plan for more efficient use of skilled human resources. Another critical requirement for enticing highly skilled individuals to remain in the local labor market is full, unrestricted academic freedom.

As industrial nations face the problems of aging populations and, in many instances, a compression of the labor force, they are likely to become ever more aggressive in recruiting skilled labor from developing countries. It is important that donor agencies, development banks, and national governments not contribute directly to the brain drain through their development assistance projects, especially those supporting tertiary education. Although study and research abroad are critical to intellectual and professional development in many fields, agencies must be cautious about indiscriminately financing multiyear sojourns by local professors and students at tertiary education institutions in industrial countries. Program and project components that include staff development activities based on long-term graduate studies in a high-income country are likely to be vulnerable to staff defections. Evidence is mounting that shorter courses abroad are less likely to result in human capital flight. "Sandwich" or joint-study graduate programs, short tenures, and intensive courses may reduce the risk of staff defections by supporting and nurturing tighter linkages with the home institution. Another mitigating strategy would be to include, as part of scholarship funding, resources for the purchase of the minimum equipment and materials needed by returning scholars, as well as travel funds to allow regular return visits to the hosting institution abroad to regularly update skills and knowledge as needed.⁴ Reliance on training institutions in countries that have an oversupply of skilled labor may also serve as an incentive against human capital flight and as a strategy for government-funded programs aimed at building and retaining local capacity. For example, under a recent World Bank project in Eritrea, the University of Asmara has made extensive use of universities in India for cost-effective staff development, with relatively low risk of brain drain.

A worrisome dimension of the brain drain problem that occasionally arises in the low-income countries with the weakest institutional capacity is the deliberate skimming of locally trained human capital by some industrial country governments. Countries as diverse as Jamaica, Senegal, and Tanzania, which themselves acutely need well-trained primary and secondary school teachers, have lost many qualified teachers to

aggressive recruitment efforts by European countries faced with teacher shortages. The risk that industrial countries will become more forceful in their recruitment practices to compensate for their aging labor pools makes the issue all the more pressing. The World Bank can work with the OECD, the International Labour Organization (ILO), and the governments of developing countries concerned about brain drain to help devise ways of supporting and protecting professions critical to development objectives.

QUALITY ASSURANCE. The rapid development of virtual providers of tertiary education programs on a global scale, the increasing mobility of professionals across national borders, and the absence of quality assurance infrastructure and capacity in many developing countries make it important to establish an international framework that sets out minimum common standards worldwide. Such international accreditation systems are already being developed in some regions. For instance, the tertiary education policies of transition economies in Eastern Europe are greatly influenced by the coordinated international efforts to promote mobility, employability, and competitiveness being undertaken in Europe as a result of the 1999 Bologna Declaration, the 2001 Prague Declaration, and the 2001 Salamanca Convention. In South America the ministers of education of the Mercosur countries (Argentina, Bolivia, Brazil, Chile, Paraguay, and Uruguay) have established a minimum accreditation framework to facilitate the circulation of professionals from all member countries in their common labor market.

In addition to the support provided to accreditation projects in individual countries, the World Bank will contribute toward the goal of establishing an international qualifications framework through consultations with partners in the donor community and specialized professional associations, as well as through the Development Grant Facility. Two sets of complementary initiatives can be envisaged. First, the Bank could provide technical and financial assistance to groups of countries that wish to set up regional quality assurance systems. For example, the six Spanish-speaking countries of Central America (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama) are constructing a regional accreditation system rather than have each country create its own quality assurance mechanism. Second, the Bank could support global quality assurance initiatives in particular disciplines, similar to the current efforts by the World Federation for Medical Education to establish a body of international standards in medical education.

With HIV/AIDS taking its toll on communities, institutions, and local capacity, the World Bank should help promote the pivotal leadership role that tertiary institutions can have in understanding the impact of the disease, through data collection and research and by educating commu-

nities about risks and care options. In addition, the Bank can help mitigate the tragedy by working with tertiary institutions on the implementation of awareness programs, related curricula, sensitive managerial practices, and community engagement.

TRADE BARRIERS. In the past few years the World Trade Organization (WTO) has spearheaded international efforts to reduce national trade barriers. The inclusion in these negotiations of an increasing number of goods and services is now raising concerns among public officials and in the academic community, especially in developing countries, that WTO rules for tradable goods and services might extend progressively to tertiary education services. The threat of increased competition by virtual and other nontraditional providers is leading some governments to take protectionist stands against foreign suppliers. In this context, the World Bank will work at both international and national levels to help define rules of conduct and appropriate safeguards to protect students from low-quality offerings and fraudulent providers, but without erecting rigid entry barriers. The following criteria could serve to guide governments, licensing bodies, and tertiary education institutions in evaluating foreign providers that are not yet accredited by an internationally recognized agency: (a) minimum infrastructure, facilities, and staffing requirements; (b) appropriate, transparent, and accurate information on policies, mission statements, study programs, and feedback mechanisms of foreign providers, including channels for complaints and appeals; (c) capacity-building partnerships between foreign providers and local institutions; (d) comparable academic quality and standards, including the full recognition in the home country of degrees and qualifications delivered by the foreign providers in a developing country; and (e) preservation of national culture.

INTELLECTUAL PROPERTY RIGHTS. A related issue faced by tertiary education institutions in developing countries is that of intellectual property rights for online programs and courses and for access to digital libraries and digital information. The current debate involves two opposing views. On one side, many universities in industrial countries favor enforcing strictly commercial rules for protection of the intellectual ownership of digital courses and materials, on behalf of the university itself or of its professors as intellectual authors. On the other side are the partisans of a public-good approach who, following MIT's recent initiative to offer all its course materials free of charge on its Website, advocate low-cost access to digital courses, textbooks, and journals for tertiary education institutions and scholars in low-income countries. The World Bank will play a brokering role to help create and nurture dissemination partnerships among publishing companies, universities in advanced nations,

and tertiary education institutions in developing countries. This could be done on the model of the recently announced agreement among six leading publishers of medical journals to give free access to their journals to more than 600 institutions in the poorest 60 countries of the world and low-cost access to an additional 30 low-income countries (Galbraith 2001).

BRIDGING THE DIGITAL GAP. The 2001 strategic framework paper, which outlines the World Bank's strategic directions at the corporate level, lists access to digital technologies as one of the main areas to which the World Bank is committed, viewing access to these technologies as a global public good. Many developing countries, especially low-income nations and small states, have limited resources for building up their ICT infrastructure and lack the economic and political leverage to negotiate favorable access and price conditions with international telecommunications firms. The ILO warned in its 2001 *World Employment Report* that the poorer countries may be unable "to reap the advantages that the new technologies could bring at any time soon. This is a worrisome dynamic and is the strongest argument for not letting markets alone dictate the course of the communications revolution" (ILO 2001). On the positive side, the experience of Bangalore, India, shows that a strong telecommunication and information technology infrastructure can stimulate employment growth not only through the development of a local IT industry but also through provision of offshore services for overseas firms and agencies.

As part of its strategic commitment to global public goods, the World Bank will contribute to decreasing the digital divide between industrial and developing countries by supporting investments in ICT infrastructure for tertiary education within countries, or even in a multicountry framework, as is happening under the Millennium Science Initiatives in Latin America and the African Virtual University in Sub-Saharan Africa.

Notes

1. The Operations Evaluation Department (OED) of the World Bank conducted a review of tertiary education projects that had begun in the 1980s and 1990s and had been completed by 2000. The review confirms the importance of considering the political economy of reforms and of relying on positive incentives to induce change in tertiary education systems. The study did not show a clear correlation between the comprehensiveness of reforms and outcomes. The sample, however, did not include some recent tertiary education operations (in, for example, Argentina, Chile, and Indonesia) that support a comprehensive set of reforms and appear at this time to have generated encouraging results. Moreover, many of the projects reviewed in the OED exercise were focused on modern-

ization rather than reforms. A more complete understanding of comprehensive approaches and their effectiveness will be possible only after additional reform projects have been completed and fully evaluated.

2. See Appendix D for a detailed description of the types of intervention under each category.
3. The development agencies include UNESCO, the OECD, the European Union, the International Labour Organization (ILO), the Association for the Development of Education in Africa (ADEA), and the Northern Policy Research Review and Advisory Network on Education and Training (NORRAG).
4. This approach has been successfully pioneered in East Africa by the German Academic Exchange Program (DAAD).