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SECTION: SURVEY

HEADLINE: A world of opportunity

Developing countries see the point of higher education

ACROSS the developing world, higher education is coming in from the cold. Gone are the days when it was purely a luxury for the elite. Governments are rapidly expanding their higher-education systems, with China probably witnessing the biggest expansion of student numbers in history. They are trying to create centres of excellence and throwing open the sector to private entrepreneurs.

The main reason for this flurry of activity is the dramatic growth in the supply of potential students. Secondary school enrolment rates have grown rapidly across the developing world. But there has also been a revolution in economic thinking. Not so long ago the World Bank pooh-pooed spending on higher education as both economically inefficient and socially regressive. Now many development economists are warming to higher education, pointing to the demand for graduates—as demonstrated by their wage premium—and to the positive effect of university-based research on the economy.

Nobody doubts the difficulty of building decent universities in the developing world. In most countries the legacy of colonialism has been compounded by the legacy of anti-colonialism. Colonialism meant that universities concentrated on producing a tiny group of elite administrators, and anti-colonialism tightened their bonds with government.

Public spending on universities in developing countries is highly regressive. In Latin America the professional classes, who account for 15% of the population, take up nearly half of all university places. In Rwanda, 15% of the total education budget is spent on the 0.2% of students who attend universities. Most universities in the developing world are also hopelessly badly managed.

But there are a few bright spots on the horizon. Some universities in poorer countries have been doing world-class research. The botany department of the University of Sao Paulo, for example, was first to crack the genetic code of a bacterium called *Xylella fastidiosa*, which has been laying waste to vineyards in southern California. This work attracted global funding as well as attention from, among others, America's Department of Agriculture and the American Vineyard Foundation.

A second bright spot is that good management can produce striking improvements. Uganda's Makerere University, which in the late 1980s was on the verge of bankruptcy, has increased its student numbers fivefold and is investing in its infrastructure. It has introduced fees for 80% of its students, and now generates a third of its revenue from a variety of commercial ventures such as a bakery and an in-house consultancy.

A third cause for cheer is the proliferation of different kinds of universities. A few years ago most universities in the developing world were much the same: designed for the elite and dominated by the state. Now there is more variety. The biggest change is the emergence of a for-profit sector that concentrates on subjects such as accounting and computer skills, and often pioneers educational innovation.

What are the prospects that the good news will outweigh the bad? To answer this question, it is worth looking more closely at the two countries that are currently conducting the world's biggest experiments in the "massification" of higher education: India and China.

India's higher-education system has plenty of inherited handicaps. Some of them are left over from colonialism and some from anti-colonialism; some arise from poor management and political confusion. B.S. Baswan, the country's secretary for secondary and higher education, notes that his sector lacks a clear political constituency. Yet the problem is deeper than that: the government does not have the resources to fund the expansion it wants, but cannot summon up the political courage to start charging students realistic fees. The result is that India often seems to take one step back for every two steps forward.

Undoubtedly, though, it is making advances. The number of people attending universities almost doubled in the 1990s, from 4.9m to 9.4m. The price of this has been a decline in overall quality. That said, India has two valuable things going for it. One is its collection of elite institutions. For decades, India has been pouring resources into the All India Institute of Medical Sciences, the Indian Institute of Science in Bangalore and, above all, the Indian Institutes of Technology. These institutions take their pick from an army of candidates every year, with 180,000 hopefuls taking the screening test for around 3,500 places in the seven IITs. They provide a highly intensive education, with all students and often professors too living on campus. And they produce a stream of highly educated people who help to set professional standards. "They are a class apart, like Oxford and Cambridge," says P.V. Indiresan, an expert on universities.

These elite institutions help to keep India plugged into the global knowledge economy. R.S. Sirohi, the former director of IIT Delhi, explains that he used to

give his staff long sabbaticals in western universities, and that about a third of them spend time in America every summer. His institute receives sponsorship for research from multinationals such as Sun Microsystems, Cisco, Volvo and Ford. Granted, the elite institutions produce many people who get brain-drained away, but they also keep many bright people from emigrating, and may even attract émigrés back if India's economy keeps booming. It is accepted wisdom in India that the brightest students go to the IITs and the second-best to American universities.

India's other big advantage is a more recent development: a booming private sector. This being India, the sector is plagued by scandal. In February, India's Supreme Court ordered the closure of nearly 100 private universities because of quality concerns. Still, the best private colleges are doing admirable work, responding to unmet demand for technical and managerial education, often in highly creative ways, correcting India's bias towards theoretical education, and encouraging entrepreneurs to pour millions into a sector that has traditionally been starved of funds.

Vinay Rai, a telecoms and steel magnate, is just such an entrepreneur. Rai University bills itself as "India's best private university", with 16 campuses across the country. Mr Rai wants the university to fill a gap in the market, and sees huge demand for education in practical subjects such as management, media, accounting and tourism. But he is interested in more than just tapping a booming market, pointing out that half his students are on scholarships. He wants to shift from training obedient clerks towards training self-starting entrepreneurs. He waxes lyrical about the "beautiful model" of higher education he encountered in America at the Massachusetts Institute of Technology.

The contrast between Rai University's main campus in Delhi and that of Jawaharlal Nehru University, one of India's most distinguished public universities, is striking. Rai University is spick and span whereas JNU is sprawling and untidy. Rai is full of computers, whereas JNU is resolutely low-tech. Rai's students are determined to take part in the global economy, whereas JNU is plastered with signs protesting against the evils of capitalism.

A growing band of successful private companies are pioneering the democratisation of technical education. NIIT, a computer-training company, has 40 wholly owned centres and more than 1,000 franchised operations, and is expanding to America and Britain. It has also established a research-and-development department to discover the most effective teaching methods. One of its cleverest ideas was to give illiterate children free access to computers in order to see how easily they could master them. It has also established links with Citibank to enable students to take out loans to pay fees. The company has become such a brand name that some advertisements in the matrimonial pages of the Times of India specify graduates of NIIT.

In higher education, as in so much else, China is visibly pulling ahead of India. The Chinese are engaged in the biggest university expansion in history. In the 1980s, only 2-3% of school-leavers went to university. In 2003, the figure was 17%. The watershed year was 1999, when the number of students enrolled jumped by almost half. The expansion at the doctoral level is even faster than for undergraduates: in 1999-2003, nearly 12 times as many doctorates were awarded as in 1982-89 (see chart 4, next page). And there is more to come: the number of new doctoral students jumped from 14,500 in 1998 to 48,700 in 2003.

The Chinese are determined to create a super-league of universities to rival the best in the world. The central government is investing heavily in chosen universities, such as Peking, Tsinghua and Fudan, offering higher salaries and more research funding. The state governments are doing likewise. It is no accident that the most widely used annual ranking of the world's research universities, the Shanghai index, is produced by a Chinese university.

What lies behind all this is a gigantic exercise in technology transfer. The Chinese are trying to recreate the best western universities at home in order to compete in more sophisticated industries. They have stocked up with foreign PhDs: in some departments of the University of Peking, a third of the faculty members have American doctorates. They are using joint ventures with foreign universities in much the same way as Chinese companies use joint ventures with foreign companies.

The Chinese have no qualms about using market mechanisms to achieve this technology transfer. Tuition charges now make up 26% of the earnings of public universities, nearly twice the level in 1998; many professors are paid according to the number of students they attract; and China is creating a parallel system of private universities alongside the public ones. For example, the University of Peking has more applicants than places, so it has created a parallel university that charges higher fees and accepts slightly less able students. Links between universities and industry are commonplace. The majority of doctorates earned in China between 1992 and 2003 were in practical subjects, which attract the brightest students: engineering (38% of the total), natural sciences (22%) and medicine (15%).

But will China achieve its academic ambitions? The trouble is that investment will not do the trick without broader cultural changes. Rui Yang, a professor at Australia's Monash University, points out that academic corruption is rife. The powerful academies that distribute much of the research funding are prey to both political favouritism and lobbying. Plagiarism is commonplace. Many academics use a good part of their research funding for personal rather than academic ends.

The country's authoritarianism will also prove a limiting factor, affecting

not only the humanities but the sciences as well. For example, Chinese scientists suppressed information on SARS because it contradicted the official line. A world-class university without freedom of thought is still a contradiction in terms.