



Students will be grateful for a substantial boost to Egypt's education budget.

MIDDLE EAST

Egypt invests in its science

Latest budget establishes research as a national priority.

BY DECLAN BUTLER

Four months after Egypt's revolution toppled the authoritarian regime of President Hosni Mubarak, science and education are slowly emerging from the post-revolution chaos as national priorities. Revitalizing Egypt's sclerotic and chronically underfunded research, education and innovation systems will require sweeping reforms and substantial rises in spending. But modest funding increases and a warmer political climate for research and education have left Egyptian scientists feeling more optimistic than ever before.

"We are going to build our economy to be based on democracy, and science and technology," says Maged Al-Sherbiny, president of the Academy of Scientific Research and Technology in Cairo and assistant minister for research.

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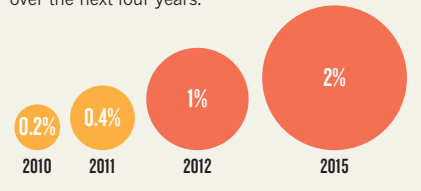
On 1 June, the Egyptian cabinet approved the first post-revolution budget, which boosted

science despite the severe social and economic crises gripping the country. Research spending will rise from E£2.4 billion (US\$404 million) to E£3 billion in the 2011–12 financial year. The education budget also jumped, by 16% to E£55.7 billion.

The increase in science spending still leaves it at only around 0.4% of gross domestic product (GDP), much less than the 1–2% that researchers say they would like. The goal is to reach that level within 4 years, says Al-Sherbiny (see 'Grand plans'). "That target is optimistic," cautions Tarek Khalil, president

GRAND PLANS

Egypt is planning to substantially increase the proportion of GDP that it spends on research over the next four years.



and provost of Nile University in Cairo, "but if we can do it, great."

Over the next three years, the government plans to create 50,000 research posts for young researchers, most of which will be government jobs at universities and research institutes. An extra E£2 billion has been secured for the plan, according to Al-Sherbiny. Several thousand of the posts would be subsidized positions within industry, part of a broader goal to boost the almost non-existent levels of research in the private sector, he adds.

Al-Sherbiny and science minister Amr Ezzat Salama have also proposed other reforms, including raising researchers' salaries and introducing performance-based bonuses, for which E£1.3 billion has been secured, says Al-Sherbiny. Under the proposed reforms, the number of government research institutes would increase from 198 to 258 — including large new centres in microelectronic systems and solar energy. The expanded research efforts will focus on seven areas considered important for Egypt: renewable energy, with an emphasis on solar and wind; water, including desalination, irrigation and groundwater management; food and agriculture; health, including hepatitis C, cancer and obesity; information technology; space; and socioeconomic goals such as increasing science in the classroom.

The fall of Mubarak may also finally open the way to a decade-old proposal by Nobel laureate Ahmed Zewail, an Egyptian-born chemist at the California Institute of Technology in Pasadena, to create a US\$2-billion independent, non-profit science city that would include centres of excellence, hire top researchers and teach the cream of the country's students. The state has provided 120 hectares in 6th of October City, outside Cairo, but public funding for the project looks set to be minimal. Zewail still needs to raise most of the \$1 billion needed to establish the city, and a further \$1 billion as an endowment, through philanthropy and foreign aid. Zewail has set up a board of trustees that includes six Nobel laureates and other prominent individuals such as Susan Hockfield, president of the Massachusetts Institute of Technology in Cambridge, who will direct the project.

Farouk El-Baz, an Egyptian-born geologist at Boston University in Massachusetts, says that even though the political interest in science has not yet translated into adequate funding and reforms, scientists must take into account the many other pressing post-revolution demands, and be patient. "I don't think the reforms are enough yet, but they are going in the right direction; there is no question about that."

Al-Sherbiny says that solidarity from the international scientific community will help. "This is a time when our friends and partners need to stand by us to help us realize our dreams, to offer to work together, to offer expertise and money, to help us build the new system we are trying to establish," he says. ■

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SOURCE: M. AL-SHERBINY