PROFILE

Setback Spurs a Leap Ahead

BANGKOK, THAILAND—Being on the losing end of a bid to host a major research center is never pleasant. But Yongyuth Yuthavong, an organic chemist and director of Thailand's National Science and Technology Development Agency (NSTDA), says the nation's failure to land the U.N.-sponsored International Center for Genetic Engineering and Biotechnology in 1983 spurred officials to increase their commitment to biomedical research and contributed to wholesale changes in how the country's scientific research is funded and managed. It was a blow, he acknowledges, "but in retrospect it was a good thing," says Yuthavong, 53, who led the scientific committee that lost out to Italy and India.

D. NORMILE

Genetic test. Yongyuth Yuthavong says loss of center was wake-up call.

Stung by that rejection, yet convinced biotechnology was of strategic importance, Thai authorities soon created the National Center for Genetic Engineering and Biotechnology and named Yuthavong as its deputy director. In 1991, when a military coup led the United States to end scientific aid to the country, Yuthavong and colleagues quickly drafted a plan for the Thai government to pick up the slack. Within the year, the government created NSTDA and appointed Yuthavong its director. While the new agency had widespread support from the country's scientists, Yuthavong was "the key implementer," says Pornchai Matangkasombut, dean of the Faculty of Science at Mahidol University in Bangkok.

Yuthavong already had firsthand evidence that Thailand needed its own research funding agency. As an associate professor at Mahidol in the early 1970s, he relied on Britain's Wellcome Trust to fund work he began at Oxford University on how the malaria parasite changes the membrane of the host's red blood cells to facilitate its own growth. "There was almost no local support," he says about his research, which led him to be named Thailand's Scientist of the Year in 1984. Daniel Santi, professor of biochemistry at the University of California, San Francisco, says Yuthavong has been "a major contributor" to an increased understanding of how the malaria parasite develops drug resistance.

NSTDA's budget has grown sixfold since 1992, and its system of managing grant proposals, including competitive peer review, gets a thumbs-up from the community. "It's working quite nicely," says Matangkasombut.

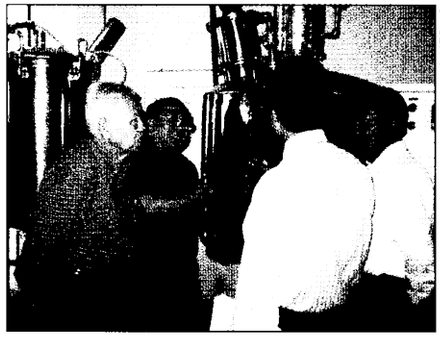
With NSTDA up and running, Yuthavong plans this summer to return to research full-time, but not without some trepidation. The administrative work "has really blunted the research acumen," he says. "Call me next year and ask how it's going." –D.N.

bling components until the RUT grant."

Researchers like Barwami may not be so happy when their grants come to an end, however. Early on, Triono decided to bar RUT grantees from a second award so that they would not become dependent on the program and other scientists could have a chance to shine. "After the grant ends, they should be able to go international with their work," he says.

Marzuki, whose institution doesn't compete for RUT grants, doesn't see it that way. "Triono sees RUT as a steppingstone to other competitive awards. But there aren't any that are equivalent to RUT. And 3 years is too soon to compete successfully for overseas grants." The policy actually undermines peer review, he adds, by excluding proposals from the most talented researchers. As a result, he notes, only about 15 of the roughly 100 proposals his biotechnology panel has received in recent years are worth funding, and last year the medical panel endorsed only two of 76 proposals.

Calling the shots in Malaysia. Similar debates followed the 1988 introduction of peer review for Malaysia's Intensifying Research in Priority Areas program, which represented the first significant pot of competitive research funds in the country. Because government officials wanted scientists to take the initiative, they gave researchers great leeway to propose projects. They also rejected very few proposals. "Because we wanted to build an R&D culture, we weren't too strict about quality," says Fatimah Mohdamin, head of the science division for the Ministry of Science, Technology, and the Environment (MOSTE), who is currently studying for a Ph.D. in science policy at George Mason University in northern Virginia. "The acceptance rate was as high as 90% in the first few years."



J. MERVIS

Firsthand look. Indonesian reviewers visit a research center in Bandung.

By 1995, however, the government had changed directions and adopted a top-down approach, selecting 10 specific priority areas and requiring researchers to show how their research would profit the country. The success rate also plummeted and now stands at about 30%. "After a while, we realized that you can't go into new areas without direction from the top," says Tan Sri Omar Adbul Rahman, science adviser to Prime Minister Mahathir Mohamad, who instituted the program. "Otherwise, the research will just move ahead in small increments."

Although the competition has become stiffer, the overall allocation has grown fivefold over the last three 5-year plans to its current RM1 billion (US$250 million) for 1996–2000. A more pressing problem is inadequate administrative support to oversee the grants process. MOSTE's secretary-general, V. Danabalan, acknowledges that a problem exists. "We are looking at ways to improve the process," he says. At the same time, he says, the government's attempt to shrink the civil service precludes beefing up the bureaucracy. "I don't think that more people is the answer. But we are looking at outsourcing or some type of electronic system."

With more money not an option for Indonesia's battered economy, it's no surprise that some new grants schemes have been put on hold, including a plan to fund large collaborations in strategic areas. But Marzuki says he's still optimistic that the path carved out by RUT will become part of the scientific mainstream. "I'm happy with the way it's working," he says. "And I think that we are slowly educating the community."

–Jeffrey Mervis and Dennis Normile