MANAGING SCIENCE

Agencies Embrace Peer Review To Strengthen Research Base

JAKARTA, INDONESIA—Biochemist Sangkot Marzuki, director of the Eijkman Institute here, still remembers the first meeting to screen proposals for Indonesia's new competitive grants program. It was 1991, and Marzuki was chairing the panel on biotechnology, one of 10 fields that the government had highlighted for increased investment. Drawing on his 17 years at Australia's Monash University, Marzuki began to explain how the process would work: The 10-member panel of senior scientists would eliminate the proposals that were clearly inadequate and send out the rest for peer review. Then the panel would incorporate those comments into a second review and recommend to the government which proposals were worth funding. He didn't get very far. "The panel felt capable of making the decision itself," he recalls. "The resistance was so strong the first year that we used only the panel, no outside peer reviewers."

What Marzuki was proposing ran counter to cultural norms in much of Asia, where criticism is rarely voiced publicly and junior faculty defer to their elders. It would also have meant opening up an activity previously conducted in secret by a handful of insiders. "Their attitude was, 'I know the field and my decision is final,' " he says. "It's hard for people to admit that they may not be an expert in every area." Yet, despite those obstacles, Marzuki's view eventually prevailed: Subsequent rounds of grants have incorporated more peer review.

D. NORMILE

First-class. Prasert Sobhon backs Thai grants system.

Marzuki's efforts to emulate the open, competitive research programs in the world's scientific powerhouses are being repeated across Southeast Asia. In the past decade, governments in the region have established a variety of new science and technology (S&T) programs and agencies, and they are distributing grants according to merit. And government officials insist that these and similar programs will remain in place despite the current economic hard times.

Researchers say these new grant programs and agencies mark a real turning point. There was a sense that the old ways of managing science "would get us nowhere," says Yongyuth Yuthavong, director of Thailand's National Science and Technology Development Agency (NSTDA). That approach, he recalls, included "a committee of very senior people sitting around a table reading [proposals] and saying, 'Shall we fund this?' 'Shall we do that?' "

"Things changed because of the grant sys-

PROFILE

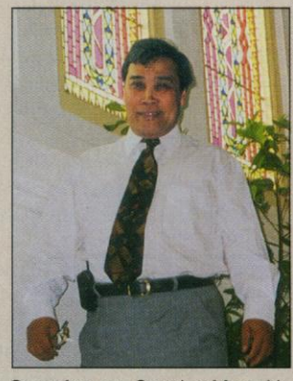
Reviving a Nobel Past in Indonesia

JAKARTA, INDONESIA—It was the fall of 1965—a period of Indonesia's history captured vividly in the Hollywood film *The Year of Living Dangerously*. Sangkot Marzuki remembers joining thousands of other university students in the streets of Jakarta during protests marking the final days of the Sukarno regime. But a less heralded event during those turbulent times would turn out to have a more lasting impact on the 54-year-old biochemist, for 1965 also marked the closing of the Eijkman Institute, named after the Dutch bacteriologist. Eijkman's discovery of the relationship between vitamin B-1 deficiency and beriberi, in the Jakarta lab he founded in 1888, earned him a Nobel Prize. The once-thriving institute was crumbling, however, neglected by a government too poor to support basic research.

Fast-forward 28 years, to 1993. Marzuki is greeting visitors as director of a rebuilt Eijkman Institute, made possible by a $10 million injection of government funds. Marzuki had gone abroad after completing his undergraduate degree and was planning a centennial conference to honor Eijkman's laboratory when he received a faxed message from B. J. Habibie, Indonesia's minister of research and technology, asking him to set up a research institute in molecular biology.

The prodigal son had returned once before, in 1976, but had found the country a scientific backwater. "There wasn't anything going on," he recalls. "The government then wasn't interested in science." But this time he accepted. "I told him it was one of my fondest dreams to reopen the institute, and Habibie said 'OK, do it.' It's modeled after the Institute of Molecular and Cell Biology in Singapore" (*Science*, 15 October 1993, p. 353).

Over the past 4 years, Marzuki has set up a modern laboratory to explore human molecular genetics and the molecular basis of infectious diseases. That approach, he says, allows researchers to follow up on the latest discoveries without worrying about whether the work falls outside the lab's mission. "I don't see any other labs set up like Eijkman—by program activity, not by subject," says Triono, head of health research at BAPPENAS, the country's national planning and development agency. "I hope that it will show the scientific community what needs to be done."



J. MERVIS

Stepping up. Sangkot Marzuki, from protester to institute chief.

In addition to expanding Marzuki's work on thalassemia, the institute has recently begun a $1.5 million collaboration with Australia's Walter and Eliza Hall Institute (WEHI) to pursue the pathobiology of cerebral malaria, the mechanism of resistance to antimalarial drugs, and the development of new vaccines and diagnostic procedures. "It's an extension of what we are doing here," says microbiologist John Reeder, WEHI's senior research officer. "They have some very bright scientists, trained abroad, and we're trying to bring them up to the point where they can be peer collaborators."

Marzuki hopes WEHI's approach to science will rub off on his young staff. And Triono is confident that Marzuki will succeed. "Sangkot is a great scientist trying to make a difference," he says. "I tell him that he belongs to the nation, not just to the Eijkman Institute." –J.D.M.