

# NEWS IN FOCUS

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People in Bangkok line up to vote in the Thai election on 24 March.

## ELECTIONS

# Thailand's science set to prosper in wake of election

*Science reforms introduced by the military junta likely to continue, whoever wins power.*

BY SMRITI MALLAPATY

Thailand is bracing for the results of its first election since a military junta took charge in a 2014 coup. Scientists, like many other people in Thailand, want a more democratic country. But whether a pro-democracy party or a military-backed one ends up in charge, science should prosper as a result of ongoing reforms put in place by the junta that are likely to continue under either government.

“It is only when we have unfortunate incidents, for example a military government, that science, technology and research receives good attention,” says Sakarindr Bhumiratana, chair of the board of the Thai Academy of Science and Technology Foundation in Bangkok.

The 24 March polls pitted several progressive, democratic political parties against a group representing the military, but official results have not yet been released. A preliminary count released by the Election Commission on

28 March indicates that the pro-democracy Pheu Thai party has gained the most parliamentary seats, but that it has not secured the outright majority needed to rule, leaving it and the pro-military Palang Pracharath party scrambling to be first to form a coalition.

The commission has until 9 May to release the official results. Observers say that regulatory and administrative changes introduced by the junta over the past few years, including a new constitution that empowers 250 unelected

► senators to select the prime minister, could favour a military leader.

Although science took a back seat to the economy in the election campaign, researchers hope that the new government — whoever leads it — will continue to fund research and the initiatives set up by the junta.

### MILITARY SUPPORT

Under the junta, spending on research and development (R&D) as a percentage of gross domestic product (GDP) more than doubled to 1% between 2014 and 2017, with the number of people involved in R&D increasing by 65%, according to government statistics.

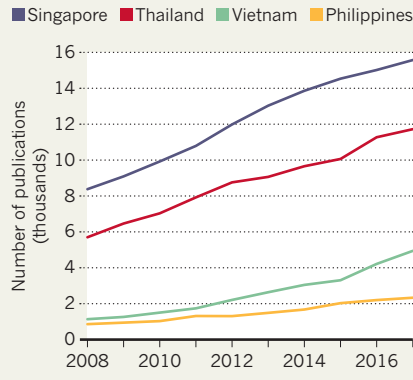
New agencies, budgets and programmes that favour scientists and research often emerge under military regimes, says Patarapong Intarakumnerd, an innovation-policy analyst at the National Graduate Research Institute for Policy Studies in Tokyo. Thailand's largest public research institute, the National Science and Technology Development Agency, based north of Bangkok, was established in 1991 by an administration that was set up following a military coup. And the law introducing the National Science Technology and Innovation Policy Office (STI) was enacted after a coup in 2006. "There is a kind of collusion between the military, economic technocrats and scientific technocrats," says Intarakumnerd.

Last year, the junta launched a 20-year national strategy prioritizing aspects of science and technology that contribute to industry, such as automotive science, robotics, bioenergy and medicine.

"It is likely that the newly elected government will follow this already set strategy," says Numpon Mahayotsanun, a mechanical engineer at Khon Kaen University, who is also chair of the Thai Young Scientists Academy.

### ARTICLE OUTPUT

Thailand's research output, as tracked in the Scopus database, has grown steadily over the past decade. Neighbouring Singapore is a leading producer of scientific research in southeast Asia.



Changing the strategy will be difficult, he says, because of the time and administrative processes required to get new policies approved.

Weeks before the election, the parliament also passed a law to establish a ministry of higher education, science, research and innovation, which is expected to receive royal approval within a few months. The new ministry will combine the Ministry of Science and Technology, the Office of Higher Education Commission, the National Research Council of Thailand and the Thailand Research Fund.

The ministry will be run by a board chaired by the prime minister. The board will determine policies and allocate the science budget, which is set at 16 billion Thai baht (US\$500 million) for 2019. It will have autonomy to push for the commercialization of research and to coordinate national policies, says Kitipong Promwong, secretary general of the STI in Bangkok who will be in charge of the board's secretariat. Previously,

there was little synergy between the policies of individual organizations, with duplication of projects, and limited monitoring and evaluation, he says.

Promwong's team has already started setting priorities for the new ministry, including the transfer of technologies to industries such as tourism, food, biomaterials and health. Investment will focus on Earth and space science, nuclear fusion, quantum science, social science and 'omics' technologies, used in the large-scale analysis of biological molecules such as genes and proteins. The team will also propose that the country's R&D spending should be increased to 1.5% of GDP by 2021, and to 2% by 2026.

The ministry restructuring will be positive for science in Thailand, says Bhumiratana. Innovation and commercialization of research will help to boost the country's income while also helping to improve access to technology, he says.

But Intarakumnerd is not convinced that the restructure will boost research commercialization. He says that countries in the region that have already undergone a technological transformation, such as South Korea, invested significantly in companies but not in universities and public research institutions.

Another criticism of the new strategy is that scientists not working in focus areas feel left behind by the push for economic development, says Titipol Phakdeewanich, a political scientist at Ubon Ratchathani University. Humanities, social sciences and environmental sciences have been neglected in recent years, he says. And, if Thailand ends up with another junta-backed government, social scientists such as himself who study human rights face an uncertain future. "The military sees freedom of expression and human rights as a threat to their power," he says. ■

SOURCE: SCIVAL

### SCIENCE DIPLOMACY

# North Korea strikes rare exchange deal

*Physicists will study neuroscience at leading Italian institute.*

BY ALISON ABBOTT

Researchers at North Korea's leading university have struck an unusual agreement with an Italian institute that will enable physicists from the isolated state to be trained in neuroscience.

The agreement is a rare opportunity for North Korean physicists. Sanctions normally prevent them from being trained by foreign scientists, because of their field's association

with nuclear research. The arrangement will enable North Korean physicists to apply their quantitative abilities to another research field: computational neuroscience.

The deal, forged earlier this month and approved by the Italian foreign ministry, is between the physics department at Kim Il-sung University in Pyongyang and the International School for Advanced Studies (SISSA), a university in Trieste, Italy, which has previously hosted North Korean researchers on an ad hoc basis.

The deal formalizes the institutes' relationship and makes it easier for Kim Il-sung physicists to go to Italy to study under and collaborate with SISSA researchers. The arrangement also makes it easier for SISSA scientists to go to the North Korean university, for example to teach. SISSA researchers expect two or three North Korean students to come each year.

Hak-Chol Pak, head of physics at Kim Il-sung, which publishes nearly half of the isolated state's modest scientific output, told *Nature* that his university wanted to create a neuroscience institute and needed to develop expertise that isn't available in his country. The agreement was independent of politics, he says. "We are scientists, motivated only by science."

SISSA's director, physicist Stefano Ruffo, says he is happy to help students train in the university's cognitive-neuroscience department.

The roots of the agreement go back to 2016, when the United Nations declared international sanctions against North Korea aimed at quelling