

POLITICS

Pakistani science in flux

New government promises to value education, but an economic crisis threatens research.

BY EHSAN MASOOD

Pakistan is reeling from a political earthquake — and researchers are both nervous and excited. On 18 August, the former cricket superstar Imran Khan was sworn in as prime minister. Khan's win has come as a shock because few expected that his party, Pakistan Tehreek-e-Insaf (Movement for Justice, or PTI), would defeat the country's former ruling party and the main opposition.

Khan arrives at a time when Pakistan's research community faces big challenges, from an economic crisis that is strangling labs to a chronic shortage of research and teaching positions for its PhD holders. Although research policy featured little in the bitterly fought election campaign, Khan has a track record of using science and education to alleviate poverty: he has founded a cancer hospital and a technical college. Many researchers are now excited about what he can achieve on a national stage.

"Imran is like our Kennedy. He can lead and he can inspire," says scientist-entrepreneur Faisal Khan, a synthetic biologist at Cecos University in the northern city of Peshawar.

Pakistan has a shortage of internationally competitive public universities. Furthermore, there is no clear path to a research career in the country's institutions, which have weak links to industry and face political interference in senior appointments.

Yet there is cross-party consensus that universities and research are important, says Athar Osama, a member of the Planning Commission, the government body that vets big research proposals. Pakistan has 192 universities, but their funding and regulatory body is in a constant battle to maintain quality in research and teaching. It is continually uncovering academics involved in plagiarism. Two years ago, it shut down 57 PhD and master's programmes because of concerns over quality.

Added to this, years of military rule have given officers an oversized say in the nation's affairs. Two of Pakistan's universities are in the top 500 of the latest QS World University Rankings; one is the National University of Sciences and Technology in Islamabad, which formed when a number of military training colleges amalgamated, and is run by a retired general. The other is the Pakistan Institute of Engineering and Applied Sciences, near Islamabad; it is a spin-off from the Atomic Energy Commission, which runs the country's nuclear programme.

It is difficult for civilian administrations to refuse, or carry out due diligence on, funding requests backed by military or industrial



ATHIT PERAWONGMETHA/REUTERS

Imran Khan was sworn in as prime minister of Pakistan this month.

interests. But former science minister Atta-ur-Rahman is sure that change is coming. He says Khan will protect the independence of institutions. Atta-ur-Rahman was science minister from 2000 to 2002 and universities minister from 2002 to 2008, under the most recent military government. He is now close to the PTI.

In Pakistan, vice-chancellor appointments at public universities must be approved by politicians, which can lead to nepotism. Over the past five years, Atta-ur-Rahman has chaired an independent committee established by the PTI to vet such appointments in the province of Khyber Pakhtunkhwa, which the PTI governs. There have been attempts at interference, he says, but Khan has backed the committee.

Atta-ur-Rahman is hoping to have a role in science policy in the new government. He is lobbying to revive a policy from his time as universities minister, in which the state paid for 2,000 students per year to enrol in PhDs at universities abroad. He's also calling on international universities to partner with Pakistani ones to improve local university quality and conduct joint research. Atta-ur-Rahman established the Pak-Austria Institute of Applied Sciences and Technology, north of Islamabad — a joint venture with Austria's network of Fachhochschule technology institutes.

But Faisal Khan urges the government to proceed with caution. He is a beneficiary of the policy to send PhD students abroad — he

returned from the University of Oxford, UK, in 2013 — and he says that it has created a small army of young people who returned home with no offers of a job. They have established the PhD Doctors' Association. In June, they organized a demonstration in Islamabad, complaining that the government has abandoned them.

Faisal Khan co-founded an incubator for start-up companies called Peshawar 2.0, and set up a lab at his university, using synthetic biology to manufacture enzymes for food processing. "I have 200 PhD-level CVs on my desk and no jobs to give them," he says.

Atta-ur-Rahman says that, after he left office, subsequent governments ignored his plans to provide grants for postdoctoral research and establish a tenure-track system for researchers.

Right now, scientists face a pressing challenge. Decades of corruption have brought the economy and the health system to its knees, says former public-health minister Sania Nishtar. Days before the country went to the polls on 25 July, the central bank stopped international foreign-currency transactions because of a shortage of reserves. This means researchers now need to obtain extra permissions to buy equipment from other countries. If researchers cannot instantly order supplies, this could bring academia to a halt, says Sabieh Anwar, a physicist at the Lahore University of Management Sciences. "The fallout on our capacity to do research will be immense and irreversible." ■