

Pakistan: Where billions vanish

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GEN (retd) Pervez Musharraf, aided by his trusted lieutenant and chairman of the Higher Education Commission, Dr Atta-ur-Rahman, lays claim to a 'revolutionary programme' that has reversed the decades-old decline of Pakistan's universities.

The higher education budget shot up from Rs3.9bn in 2001-02 to an astounding Rs33.7bn in 2006-07. But, in fact, much of this has been consumed by futile projects and mega wastage. Fantastically expensive scientific equipment, bought for research, often ends up locked away in campuses.

An example: a Pelletron accelerator worth Rs400m was ordered in 2005 with HEC funds. It eventually landed up at Quaid-i-Azam University, and was installed last month by a team of Americans from the National Electrostatics Corporation that flew in from Wisconsin. But now that it is there and fully operational, nobody - including the current director - has the slightest idea of what research to do with it. Its original proponents are curiously lacking in enthusiasm and are quietly seeking to distance themselves from the project.

Now for the full story: in his article published in *Dawn* (June 25, 2005), Dr Atta-ur-Rahman announced the HEC would fund a '5MW Tandem Accelerator' for nuclear physics research with an associated laboratory at Quaid-i-Azam University. It was shocking news. First, nowhere in the world of science is a major project approved without a detailed technical feasibility study, and without full participation of those scientists who would be expected to use it for their research.

Second, this machine - whose original form dates back to the 1940s - had long become practically useless for decent nuclear physics research. Whereas it can still be used in certain narrow sub-areas of materials science and biology, to my knowledge there are almost no active researchers in those specialties anywhere in Pakistan.

Immediately upon reading Dr Atta-ur-Rahman's article, I telephoned him. His answer: Dr. Riazuddin, director of the National Centre for Physics, had approved the machine. That was stunning! The soft-spoken and diffident Dr Riazuddin, at 77 years of age, is not only Pakistan's best nuclear and particle physicist, but also a man of great integrity. How could he have agreed to such folly? Why did he sign a flaky PC-1 proposal put together in less than an afternoon?

The answer was to come soon. On Sept 8, 2005, a nation-wide meeting was held in the physics department of Quaid-i-Azam University to look into the possible uses of the Pelletron. But the project's proponents clearly had something else in mind, and probably not a work plan. They bussed in supporters who filled the auditorium. Most had no clue of what a Pelletron was but they seemed to have had instructions to hoot down all who questioned the need to buy one.

And so, when Dr Riazuddin expressed his reservations, and sorrowfully admitted to having signed the PC-1 under pressure, the assembled crowd burst into taunts and jeers. Some demanded that he resign as director. It was depressing to see Pakistan's best scientist and a decent man thus humiliated.

The sad part of this story is not that the machine has arrived, but that in the intervening 30 months the original proponents gave no thought to making use of it or to assembling a group of scientists who could be persuaded to do research using the Pelletron. Still sadder, a second Pelletron was purchased, again with HEC money, for Government College University Lahore. No one can fathom what to do with it either.

The equipment fetish can be followed all the way to the much-advertised HEJ Institute for Chemistry. HEJ consumes the lion's share of research funding in Pakistan today and boasts of the finest and most expensive equipment. For example, even good chemistry departments in the US rarely have more than one or two NMR spectrometers but the HEJ Institute has 12. Well, why not, if that is the price of excellence? Aren't the 3,000+ research papers proof of public money well spent?

The answer is, no. There is little evidence to support HEJ's claim that it has strongly impacted the Pakistani pharmaceutical industry. Readers may have more luck than I did in searching the otherwise elaborate HEJ website for its role in discovering new drugs or processes. But without this, all else is hot air. Only one international patent, registered in the UK and Germany, is listed. Two processes are mentioned as submitted for a US patent. This is not a high record for an institution that has been in existence for over 40 years and claims to be world-class. A good US or European applied science university department typically files several patents every year.

As for the thousands of HEJ research papers, the question is how many of these really matter? A paper is considered important by other scientists only when it contains new ideas or facts. Significant papers are cited frequently in professional journals. But an overwhelming number of HEJ publications, which are largely based upon routine aspects of natural products chemistry, have zero or few citations. The reader may find citation counts by accessing the free database scholar.google.com, or other more comprehensive databases.

My point is not to denigrate the HEJ, or other academic research in Pakistan, but to make the case that such research is consuming a disproportionate amount of resources at the cost of a desperately impoverished educational system. The real problem is that Pakistani students in government schools, colleges, and universities - as well as their teachers - are far below internationally acceptable levels in terms of basic subject understanding.

Current salaries militate against improvement. As a result of Dr Atta's determined intervention, a professor at a government university can earn up to Rs325,000 per month but a government school teacher has a maximum salary of less than Rs10,000. This is highly unwise. Similarly, funds-starved government colleges and schools lack basic infrastructure such as laboratories and libraries but most government universities are awash in so much money that they do not know what to do with it. At QAU, for example, so many air-conditioners have been purchased with HEC

research funds that the electricity bill has shot up by 50 times over the last six years.

A balance is desperately needed. Instead of over-funding universities and research, we need to focus resources on creating good quality schools and colleges. We need to encourage creative and skilled people to become school and college teachers, and for this we need to pay them well. We need teachers who can educate young people into becoming good citizens and with skills valued in the economy, and who can train the few going on to higher education.

The winds of change are blowing across the country. The Musharraf years are over. It is now time for parliament to carry out a full and complete public inquiry into the irresponsible and crazy policies that have hitherto been the hallmark of decision-making. Finally, there is a chance to reset priorities and use resources for a comprehensive reform of our education system.

P.S.

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