

Knowledge Economy: 'The road is long, but Pakistan will get there with continued investments in higher education,' says Dr Javaid Laghari, Chairperson, Higher Education Commission

OVERVIEW (January 07, 2013) : Dr Javaid Laghari is the Chairperson of the Higher Education Commission since August 2009. Prior to this, he was a Senator in Pakistan's Parliament between March 2006 and August 2009. He established SZABIST in July 1995 and remained its Project Director till August 2009. Dr Laghari received his PhD in Electrical and Computer Engineering in 1980 from the State University of New York, Buffalo (NY, USA). He then started his teaching career in the same department at SUNY as Assistant Professor, and 15 years later, left his alma mater as a tenured, full Professor and Director of Graduate Studies. BR Research recently sat down with Dr Laghari in Islamabad to discuss the future of higher education in Pakistan. Here are a few excerpts: Change cannot, and does not come overnight, particularly the change that takes place through education, Dr Javaid Laghari started off, noting that the intangible impact of education spending cannot be compared to infrastructure-based change that is usually visible in a short period of time. "This is something that takes place over a generation. The impact of the investments undertaken by Pakistan in higher education in last 10 years will take some time to come forth. To illustrate, if we think about introducing nanotechnology in a university today, it will be at least 10 years till the first students' batch graduates," he said. **Higher Education and Knowledge Economy** The HEC Chairperson observed that Pakistan has a long way to go before it can qualify as a 'Knowledge Economy'. However, he emphasised the need to look towards the East (rather than West) in that pursuit. "If you look in the Far East, the example of South Korea best explains why the results of spending on higher education take time. They started investing in higher education in the 1960s - but it was only in the last 20 years that the results, of what they had invested in this field in the 1960s, started to show. So, that's easily 30 years - and today South Korea is a model Knowledge Economy for the developing world. We have seen similar patterns for countries of Singapore and Hong Kong, and also in Japan post-WWII," he highlighted. Dr Javaid Laghari noted that Pakistan has been moving towards that direction right since the HEC was established in 2002. "In the first 55 years since Pakistan's independence, a total of 3,281 PhDs were awarded at Pakistani universities. Since the HEC's establishment, in 10 years' time that is, 4,850 PhDs have been awarded. Pakistan produced nearly a thousand PhDs scholars in the year 2012 alone. Currently, over 7,500 scholars are pursuing PhDs both within Pakistan and abroad. At this rate, we estimate that about 2,400 PhDs will be awarded in the year 2020, which will give Pakistan the same competitive advantage in research and innovation as is available to China, India, Malaysia and Turkey. It is showing in the number of research publications coming out of Pakistan that has gone up by 50 percent in the last two years alone," he pointed out. Yet he seems well-cognizant of the fact that a Knowledge Economy is not about just producing graduates and PhDs, but it is also about providing basic human resource capital to a nation. "Innovation, research and entrepreneurship: all three of them are equally important for a Knowledge Economy to take root. Our universities' research capacity has now come to a critical take-off point, as they produced more than 6,200 research publications in 2011. Though we have reached a critical mass in research, it needs to be complemented with innovation and entrepreneurship. This is what is missing in our higher education ecosystem and we have been working for past few years to bridge this gap," he said. Dr Laghari sounded confident that Pakistan remains on the long road to becoming a knowledge-based economy. He referred to

the World Economic Forum's Global Competitiveness Report indicators on higher education and training, technology readiness, and innovation that have shown consistent improvement over the last three years for Pakistan. He termed these improvements as a clear proof that higher education reforms are paying off in Pakistan even as various other indicators not related to the HEC have dipped in recent years. "We are looking into 2020+, when Pakistan would be in a position to get classified as a Knowledge Economy. But that will happen only if we continue to invest in higher education and research. If there are spending cuts in this area, and if turf wars over the domain of higher education continue, then we will be unable to put the last components of this Lego together - that would mean that there will only be an unfinished bridge to the Knowledge Economy, and we will just be producing graduates."

### **Academia-Industry linkages**

HEC has focused in recent years on the leading research-producing universities of Pakistan in this area, by providing them with the required capacity and infrastructure, the Chairperson said, stressing the need to create synergy between industry and academia, "so that what gets done in a university is actually transferred out to the industry, while systematically feeding the industry requirements into university research engine." "Previously, we didn't have many linkages with entrepreneurship groups within the country. In the last two years, we have built these networks. For instance, HEC got together with 'The Indus Entrepreneurs' forum and sponsored their business plan competitions for the second year in 2012. All universities are now participating in such competitions, which is inculcating a spirit of entrepreneurship. We have been setting up the Centres for Entrepreneurship at various universities. The IBA has already set up a big facility in this respect, and it is now collaborating with the Babson College, USA in entrepreneurship. LUMS and NUST also have such centres. Besides this, we are now also reaching out to the Chambers of Commerce across the country," he explained HEC's approach on the issue. Dr Laghari then went on to highlight several examples of the academia-industry collaboration in Pakistan that have benefited the industries as well as local communities. "For instance, the National Textile University in Faisalabad is undertaking research in new designs by joining hands with the textile industry. In agriculture, research undertaken jointly by various universities and the growers' community has led to extension in the varieties and seasons for mangoes grown in Pakistan. Research is currently in progress for increasing mangoes' storage life for export purposes. In Khairpur, HEC has established a huge setup called 'Date Palm Research Center' which displays samplings of nearly all date varieties grown in the world. Researchers are looking at the possibility of growing exotic date varieties in Pakistani climatic conditions. "Similarly, mangoes grown in Kashmir are now being bottled as organic pickles in Faisalabad and exported abroad, with universities' inputs. Animal vaccines, which had to be imported earlier, are now being developed at the University of Veterinary and Animal Sciences, Lahore. The Karakoram University in Gilgit Baltistan is working with the local communities for preservation of items like dry fruits, apricots, etc. Funded by the HEC, a Gemstone Centre is operational in the Peshawar's Engineering University, which is being used to train the local people in terms of their understanding of the rocks' design, refining and valuation. These programmes directly translate into rupees in the pockets of community members, who may happen to be laymen, not necessarily the universities' students or graduates," he explained. Dr Laghari quoted these examples to underline the HEC's aim to go beyond the high-end, industrial research, to conduct research that benefits the local communities and economies. "This is where the Social Science component comes into the picture. We have a strategic focus that says that the universities not only build economies (mostly through science & technology),

but they also have to build communities," he stressed. HEC is setting up three "Centres of Advanced Study and Research" in partnership with the USAID, the HEC Chairperson revealed. Approximately \$125 million will go into these centres over the next three years. "We have identified three top priority focus areas for this project: energy, food security and water resources - three interlinked issues that have become really crucial for Pakistan. These centres are housed within universities and centrally coordinated by the HEC. Besides research, these centres will also be involved in furnishing policy inputs, and will liaise with the private sector, NGOs and foreign donors. The centre for energy is hosted between Peshawar and Islamabad, the agriculture centre is located in Faisalabad, while the water centre is established in Sindh," he briefly described this project. To move towards bridging the industry-academia divide, the Commission has established 'Offices for Research, Innovation and Commercialisation' at 17 public sector universities - another 13 such offices are expected to be set up in 2013. Dr Laghari showed cautious optimism about these setups. "It's going to take time for these setups to give any meaningful results, because they require infrastructure and qualified human resource to function optimally. We are in touch with experts in South Korea, Japan, Britain and the United States, to help us build the ORICs' staffs' capacities. Unfortunately, there is little understanding in our universities about what exactly the purpose of such setups is and what these offices are capable to accomplish."

### **E-learning in Higher Education**

E-learning in higher education is something Dr Javaid Laghari feels Pakistan has to eventually move towards, and recounts some achievements on this front. "We have a dedicated Virtual University that is leading the E-learning initiative in Pakistan - it is offering more than 150 courses in various fields through the internet and Satellite TV. Currently, we have a 15GB fiber optic bandwidth to facilitate e-learning among universities, and all the universities are connected in Pakistan. Every university has a video conferencing facility now, and the HEC's digital library, that contains 45,000 books and 25,000 journals, is accessible to every student on campus for research purposes. All dissertations and theses are being published online. Universities are exchanging lectures, both within the country and abroad. Recently, a renowned patent lawyer from the US addressed via video-conferencing a week-long workshop in Pakistan on innovation and entrepreneurship at Comstech. The forward journey towards E-learning will continue."

### **Spending on Higher Education**

The HEC Chairperson lamented that public spending on higher education has been gradually reduced to just 10 percent of total education spending in Pakistan, whereas the same ratio is between 20-30 percent for other developing countries. Since the ROI in higher education through a sound knowledge economy is estimated to be 400 percent, he noted that the countries with the highest enrollment densities in higher education enjoy the highest GDP per capita. "This perception is false that higher education is eating up bulk of the education spending in Pakistan. Even with low budget, the HEC projects and programmes are visible, unlike those undertaken by authorities at other tiers of education. The government cannot afford to stop recurring expenditures at the HEC because that would lead to protests. Resultantly, the development expenditures have massively declined in real terms as the current nominal development expenditure budget is almost at the same level as it was as five years ago. Universities provide a learning ecosystem, and building and sustaining that ecosystem requires funding." The HEC's official target is to increase accessibility to higher education from the current eight percent to 15 percent by 2020, which will take university enrollment from one million to 2.3 million. "However, we need a sustained GDP growth rate of at least seven percent

to absorb the graduates entering the labour force. If India, China and Turkey can do that, Pakistan also has the potential to do that, but only if we break away the shackles," he summed up.

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