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Indian Scientists Competent But Still at Sea

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BANGALORE, Dec 18 (IPS) - The prestigious Indian Institute of Science (IISc), set up here in May 1909, is celebrating its centenary with year-long lectures and seminars, some of which have revealed Indian science's lack of coherence in dealing with climate change in India. At the turn of the IISc's new century, scientists from the institution and from elsewhere in India are still at the 'discussions and debate' stage of what should, or should not, constitute climate science for India.

Of the 20 Indian scientists who were part of the 2007 Nobel peace prize-winning team of the United Nation's Intergovernmental Panel on Climate Change (IPCC), three were lead authors of various IPCC reports on global warming and attached to the IISc. They were J. Srinivas, N.H. Ravindranath and R. Sukumar.

An Indian, Rajendra Kumar Pachauri, has since 2002 been heading the IPCC, which shared the Nobel with former United States presidential candidate Al Gore for bringing global warming and climate change science to the forefront of the world's conscience.

But in spite of the considerable work they did on global warming, for the IPCC reports, IISc's scientists are yet to present a cogent scientific argument for India that together tackles the spectrum of factors in climate change.

A senior faculty member told IPS that the reputed institute lacked a coherent scientific strategy, with most scientists conducting their climate-change related research in parallel, alongside their own fields of interest. "No one wants to take this on fully because none of us is sure it will get us anywhere, or if anything will come of it," the faculty member said, asking not to be named.

Internationally recognised, retired IISc professor of ecological sciences Madhav Gadgil, believes that a "serious weakness" in the institution's climate change-related research has been its lack of an integrated perspective between environmental science, society and ground issues affecting the latter.

That lack, Gadgil says, has resulted in difficulties in the science's application in the field and at local level. "There has been elaborate work in agricultural research, such as the physiology of wheat under elevated temperatures, but what do we do with this understanding? "

Gadgil, now with the government-run Agharkar Research Institute in Pune in neighbouring Maharashtra state, says he frequently comes across young schoolchildren 'starving for good environmental science ideas'.

"The scientific academic community has not in any sense thought about this and helped at local level", he says.

Gadgil says that as a scientist who has participated in 'one third of IISc's last century', he would like the institute to focus on the application of science in IISc's next one hundred years.

Environmental activist Sunita Narain of the Delhi-based Centre for Science and Environment told a gathering of national and international scientists at the IISc that it was the politics of climate change, which is linked to economic growth, that science needed to understand.

"The politics is also about 'finger-pointing blame' to China and India, when no country yet has changed its own economy to a low-carbon one. Therefore equity [equitable sharing] in climate change agreements is a pre-requisite".

Narain illustrated by way of the EU's emissions which increased last year, but managed a seeming emissions-reduction by "hiding behind" the newly-emerged east European member-nations' low emissions.

But J. Srinivasan, chairman of the Mechanical Science Division and professor at the Centre for Atmospheric and Oceanic Sciences, and lead author of the IPCC's Working Group 1 on physical science, does not quite agree with Narain's view.

" We have to instead look at ourselves, examine changes in pollution in India; for instance, we have very adverse impacts of pollution and climate change on crops and our health," says Srinivasan.

Srinivasan says India needs to 'look' at its population, the dimensions of which are posing serious ecological threats 'which we cannot wish away'.

Narain says her global political view for India does not belie the need for both China and India to do something about controlling their own emissions.

She thinks India and China should participate jointly in a strategy for their own low-carbon growth through a mix of cleaner coal power and renewable energy systems, especially in the transport sector.

"We need to reinvent mobility", she says.

Prof. Srinivas says India has three choices facing it for alternatives to high-carbon systems: carbon sequestration, renewable energy and nuclear power, in spite of high costs.

"Sequestration costs are too high, but larger non-conventional power plants present feasible costs. The challenge is that someone has to kick-start this", Srinivas says.

Nuclear energy has been controversial, says Srinivas, for its long-term impacts, "But as a society we may have to look at this for the short term. The issue is about nuclear fuel being diverted for other purposes and the safety and security necessary for its transportation", he feels.

The issue facing both India, its scientists, planners and activists however, is that the country's alternative technology sciences are not mature yet, with insufficient research and development being conducted on it currently.

Sam Pitroda, who revolutionised the Indian telecom sector two decades ago and is now chairman of the government's Knowledge Commission, told the scientific community at the IISc that India needed to invent, in some cases, reinvent, its own model and not look to western nations for simulations.

"I believe the time has come for the world to recognise that the old, western model of consumption is unsustainable," said Pitroda.

" We have had our peaks [in Indian science] , but our average has not been good. All you now need to do is light to a fire to energise Indian pioneers," Pitroda told the scientists.