

Needed dismantling of data ‘License-Permit Raj’ to boost research and innovation in India*

‘License-Permit Raj’ in several areas of industry, finance, trade and infrastructure sectors was dismantled in India in 1991 by removal of various government restrictions, controls, regulations, licenses, permits and red tape to facilitate favourable investment climate to overcome the then economic crisis and to make the economy of India competitive globally¹. The economic liberalization of 1991 unlocked India’s economic potential that eventually led to a growth in economy as high as 9.6% (at factor cost) in 2007 in comparison to 3–4% growth witnessed during the era of License-Permit Raj^{2,3}. However, the very same License-Permit Raj that stagnated economic growth in India during the period between 1950 and 1980 now restrains Indian science, research and innovation in the form of countless restrictions, permissions, licenses, labyrinth of procedures, red tape for access and acquisition of data from government agencies, causing near stagnation in research output in India since 1995. Such restrictions are scuttling research and innovation in India, preventing the country from unlocking its true potential in science and technology and achieve growth analogous to the economic growth achieved so far.

India continues to lag behind several countries in terms of research output and has been almost stagnant during the period between 1995 and 2009, when the country climbed by just one position from 12th to 11th in terms of contribution of research articles. During the same period, China climbed from 14th position to second position. USA continues to have the largest number of absolute researchers in the world and Japan has the largest number of researchers per million⁴. Currently, India stands at ninth position with a global share of 3.5% in scientific publications⁵. Indian science thus remains less competitive across the world. Though funding of R&D, requirement of qualified manpower and infrastructure are the factors that influence research output, it cannot be denied that the very basic input for any research is

the availability of scientific data and the ease of their access, without which even the best of funding and availability of manpower would serve no purpose. This is true even if the government allocations towards R&D are increased. With less impetus for good research, there is less scope for bettering the existing research with new ideas. Government agencies being repository of large scientific data, the retention of License-Permit Raj – unlike the sectors concerned with Indian economy – has created obstacles for Indian research, making it less attractive, scuttling research output, and has also blocked global contribution to Indian science and technology. A few examples of how existence of License-Permit Raj in data policies of various government organizations currently in force, are reminiscent of License-Permit Raj are illustrated below.

Hydrological data dissemination policy May 2013 brought out by the Ministry of Water Resources, Government of India (GoI) declares the hydrological data pertaining to Indus River System considered as Region I, and Ganges, Brahmaputra, Barak river system considered as Region II as classified⁶. According to the policy, it requires every researcher in the water sector to give an undertaking to the government that the data from Region I and Region II will not be disclosed and only the output from the same will be published. With a ban on publicizing the data used for research in Regions I and II, the scope for review by peers regarding analysis of data, methodology followed and review of results have been restricted, thus casting serious reservations about the very quality of research in Regions I and II. But what neutralizes the argument behind data secrecy is the availability of the very same hydrological data of Region I to Pakistan under Article VI of the Indus Water Treaty⁷ of 1960 and perhaps international users; also the lean season data of River Ganges at Farakka are available for all international users for easy download from the website of Bangladesh Joint Rivers Commission⁸. What the policy-makers have failed to realize is that the adverse impact of data secrecy is felt more by the Regions I and II, in

respect of ability to model and predict likely climate change, plan, design and operate water resources projects, adaptation to climate change scenario, flood-risk management, river morphological studies and sustainable development as part of Integrated Water Resources Management – probably more than the impact felt by any individual researcher due to data secrecy.

Remote Sensing Data Policy (RSDP-2011) states that ‘For acquisition/distribution of remote sensing data within India, license/permission from the Government of India, through the nodal agency will be necessary’⁹. And it cites natural security concerns in acquisition and distribution of data. Also, according to the policy, all remote sensing data of up to 1 m spatial resolution can be distributed on non-discriminatory basis and on ‘as requested basis’. The policy authorizes National Remote Sensing Centre (NRSC) for data acquisition and dissemination that involves a labyrinth of processes and procedures. The open access to remote sensing satellite imagery up to 1 m spatial resolution is not free of cost and so are images lower than 1 m spatial resolution; they come with a price tag ranging from Rs 3500 for a low-resolution product to as high as Rs 30,000 for a medium-resolution AWiFS (56 m) ortho-rectified image¹⁰. The prices are well beyond the reach of an individual researcher. So, the RSDP-2011 tacitly demarcates researchers into ‘haves’ and ‘have nots’ between funded research institutions and unfunded institutions. Except for those privileged ‘haves’, the data policy denies a large majority of passionate researchers in India – whose focus is just beyond an academic career – with a vital component of data input like satellite images used in Geographic Information System (GIS). And GIS has now become so vital in contemporary research in areas like water, agriculture, oceanography, weather, soil, forest mapping, land-use changes, climate change, etc. that any research devoid of remote sensing and GIS is viewed as ‘incomplete’ or ‘inferior’.

The India Meteorological Department, a storehouse of weather data crucial for any climate change-related research in

*Views expressed in this note are those of the author and not those of the institution to which he belongs.

India, has norms that discriminate in respect of research institutions that come under the Ministry of Earth Sciences, GoI and other ministries. Any research institution under a different ministry has to first register with IMD after making a payment of Rs 5000 as registration fees that is valid for one year. After registration, the concerned research institution is supplied with only basic meteorological records/data from the archives but not any publications, atlases, gridded products and satellite data¹¹. Further, voluminous data exceeding one lakh records or a total of 10 Mb size are not supplied under the Department's policy. So, in reality, the research institution eligible for registration is still barred to select the type and size of data in accordance with its research requirements that might cause it to forcibly modify or curtail its research objectives. Research institutions under private sector, NGOs, and individual researchers cannot access data and have to follow even more stringent norms or pay exorbitant prices like Rs 109,252 for daily data for ten stations for 3 years, or Rs 26,335 for monthly data for a single station for 5 years or Rs 102,441 for daily rainfall data for 10 stations for 20 years, etc.¹² that will only discourage anybody from doing research involving meteorological data. Similarly, several agencies across India have evolved policies that discourage researchers in several disciplines in much the same way as hydrological data policy or remote sensing policy.

The License-Permit Raj in respect of scientific data does not serve any purpose. It actually incarcerates Indian research to a few academic institutions under government control with no scope for review by scientific community and validation of the same from review of scientific community other than the government. There is no scope for emergence of new ideas in this scenario. Consequently, Indian science trails the advanced world or will have to be under perpetual mercy for transfer of technology from countries that have pioneered in innovation. Then, there is strong correlation between economic growth and innovation^{13,14}. Just like it was felt that economic liberalization was inevitable in 1991 to boost economic growth in India, it is time the research environment needs a similar boost in liberalizing the various data policies of the government. Scientific data should be accessible without discrimination between government and NGOs; academic institutions under the government and private institutions. The data that are being collated through taxpayers' money for the very purpose of research should not be denied for a cost and should be free and transparent, as the intangible benefits accrued due to new research and innovation could overcome costs. Only a liberalized research environment would boost research and innovation in India similar to the spectacular economic growth achieved after dismantling the License-Permit Raj in 1991 and that would serve as a perfect platform for

achieving the next level of economic growth.

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