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Expanding Vaccine Production

With the present Indian population of over 130 crore, the number of vaccines required to immunise the entire population would be about 310 crore doses (3.1 billion doses) or 218.5 crore doses for the 18+ adult population, allowing about 15% process losses. This is not an easy task. However, the Indian people need to know why India, a pioneer in large-scale vaccine production even before the current pandemic and a major exporter of vaccines, has to rely on just two private domestic manufacturers, Serum Institute of India (SII) and Bharat Biotech, to produce COVID-19 vaccines, a constraint that is painfully obvious today.

India, has a number of public and private sector units that can make a contribution to the expansion of local production of vaccines. Presently, two vaccines, namely Covishield of SII, Pune, and Covaxin of Bharat Biotech, Hyderabad, are available for supply in India. Technology for Covaxin is fully home-grown, through collaboration between Bharat Biotech and the National Institute of Virology (NIV), a public sector research and development (R&D) institute under the Indian Council of Medical Research (ICMR), an agency of the Ministry of Health and Family Welfare. The central government is therefore entitled to make use of march-in-rights available to supporting government entities, as tacitly accepted by Bharat Biotech in extending technology transfer to three public sector vaccine units.

Up to the 2000s, 80% of India's vaccines for the Universal Immunisation Programme were sourced from the public sector. Today, 90% are sourced from the private sector, that too at a higher cost. Brazil, Cuba and China are using public sector companies and institutes to undertake integrated R&D and production operations to vaccinate their populations and export to developing countries to meet their requirements. In contrast, India has neglected its public sector units. India has a large number of a few decades old facilities as well as new facilities

equipped with appropriate modern infrastructure. The central and state governments should be making full use of all these facilities to expand local production of COVID-19 vaccines. Presently, India has 11 public sector units. Some are almost ready to go into production. The government has taken some initial steps in the direction of using a few selected units. The Integrated Vaccine Complex at Chengalpattu, whose construction was completed as recently as 2016, needs just ₹100 crore and some handholding to start the domestic production of COVID-19 vaccines.

There are a number of private sector units that can also contribute to the domestic production of COVID-19 vaccines, such as Biological E, Hyderabad, Panacea Biotech, Solan, etc. In addition to vaccine manufacturing companies, there are also companies that manufacture biologics that have the capacity to be repurposed for the manufacture of vaccines. Already, Dr Reddy's Laboratories and at least five biologics have teamed up with Russia to procure the Sputnik v vaccines in the country. In all, there are close to 30 units that can be involved in the production of COVID-19 vaccines. Such expanded manufacture in India would enable meeting domestic requirements as well as international obligations to which India, and SII in particular, is committed, having also accepted advance payments. Procurement of already approved vaccines from abroad by private sector units is also an option.

While the private sector is itself getting ample albeit highly belated funding from the government, the public sector is still not getting the requisite support. Only recently, some relatively small government grants have been given for the manufacture of Covaxin under licence to state-owned companies, such as Indian Immunologicals Ltd Hyderabad, Bharat Immunologicals and Biologicals Corporation Ltd, Bulandshahar, and Haffkine Institute, a Maharashtra state public sector unit as called for by its chief minister. SII cannot by itself transfer technologies since it is itself making Covishield under licence from AstraZeneca; it can certainly be

nudged to subcontract work to other units. Both *SII* and *Bharat Biotech* could be appropriately persuaded to handhold these other units as one way of paying back their own long-standing obligations to the public sector and the Indian state.

Specific suggestions for the government to announce a policy to urgently ramp up domestic production of vaccines and improve related R&D are as follows:

(i) The existing public sector undertakings (PSUs) and state-owned enterprises be revived and assisted to ramp up vaccine production.

(ii) The use of the Integrated Vaccine Complex at Chengalpattu be handed over to Tamil Nadu government with clear provisions allowing the state governments, PSUs and state-owned enterprises for contractual manufacturing of COVID-19 vaccines using the facility.

(iii) Compulsory licences or appropriate legislation be issued where required to enable interested parties for production of COVID-19 vaccines.

(iv) The conventionally used march-in-rights available to the Government of India/ICMR be used to ensure technology transfer and handholding by *Bharat Biotech* to PSUs, state-owned enterprise and other units to enable them to produce vaccines for domestic use.

(v) Indian companies that are planning to manufacture *Sputnik v* be assisted, as required, for scaling up.

(vi) *SII*, *AstraZeneca* and *Novavax* be persuaded to expand manufacturing in India through joint ventures or other collaborations with suitable public and private sector entities both for domestic use and export, especially for the *Covax* facility.

(vii) Research on new vaccine development strategies and development of multiple vaccines be enabled and encouraged across research laboratories, public sector and private sector institutions. Genomic surveillance be increased appreciably and linked to viral efficacy and epidemiological studies, so that vaccines are constantly checked for efficacy against variants of concern enabling collaborative modification across manufacturers, as required, especially in view of emerging variants

and for different demographics such as children.

Gagandeep Kang, VELLORE;

Shahid Jameel, SONEPAT;

T Sundararaman, NEW DELHI;

Satyajit Rath, PUNE; **Vineeta Bal**, NEW DELHI;

T R Govindarajan, CHENNAI and 210 others

Devotional Ethics and Ecology

Environmental conservation movements encompass a relentless drive towards justice, as the life of *Sunderlal Bahuguna* exemplified. His was that rare voice for justice lost in the clamour for power among the elites of northern India.

Bhakti is Indian devotionism that evolved from Sufi mysticism in the early modern era. The groundedness of *bhakti* is luminescent with an iridescent spirituality without any inertia. This provides a relief from the inertia of conventional feudal-patriarchal religion with its leaden core of ritual and scripture. Digital preservation of forests has been the norm in the Himalayas since the movement led by *Bahuguna* and *Chandi Prasad Bhatt* where mystical religion unites with rationalist ethics.

Not just the *Tehri dam*, but an entire gamut of anti-human practices were problematised by *Bahuguna*, including newfangled post-humanist ethos. While many environmentalists preferred to romance the Western academic space and its ivory tower cachet, *Bahuguna* opted for a performative mode of resistance that provided a counter-spectacle to large-scale industrial aggrandisement. This performative turn took recourse to underlining the vulnerability of the unmediated human in opposition to interests of big capital.

The environmental mythology inevitably invoked by *Bahuguna*, and compatriots did not play into the hands of the revivalist narrative. This denied the right-wing a foothold within the environmental justice movement. Boundary thinking and foregrounding of the “local” as absolute

were vital mistakes in hindsight. *Bahuguna*’s collusion with the *Vishwa Hindu Parishad* and others in the anthropomorphising of river *Ganga* as a goddess, perhaps to alleviate the problem, rather contributed to cumulative revivalist narcissism later on. Auto-affection and tree-hugging owed to the Islamicate traditions which were never acknowledged. Within the already strengthened “*Punyabhumi*” discourse, the environmental justice movement of *Bahuguna* chose to impart an everyday realistic quality. This combined with the rise of the middle class, resulted in the emergence of an unstoppable juggernaut, which decimated every semblance of decency and humanism that the dharmic consciousness of Indic civilisation had ever envisaged.

The anti-dam movement just stopped short of tapping into the motherlode of blood and soil nationalism. The wellsprings of devotionalist *bhakti*, from *Kabir* onwards, temper the humongous machine of the imperial nation state as the *Chipko* movement amply demonstrated. It was a foregone conclusion that the environmental movement would utilise the animist and naturalist tendencies inherent in the collective Indian consciousness.

A more holistic, horizontal modelling of *bhakti*, and environmental auditing is called for from the Himalayas to Kerala. The *Gadgil Report* on the deterioration of the Western Ghats in Kerala (which is a UNESCO world heritage site) and the action plan needed to protect the same, includes stringent measures to prevent quarrying and building activities. The quarries supply raw materials, including sand, for the construction mafia which in turn channelises large-scale funds into the quarries, thus completing what essentially is a vicious cycle of ecological colonisation and injustice. That *Bahuguna* has passed away at a time like this comes as a shock to environmental justice activists world over.

Umar Nizarudeen

KOZHIKODE

EPW Engage

The following articles have been published in the past week in the *EPW Engage* section (www.epw.in/engage).

(1) *George Floyd: Democracy, Police, and Black American Resistance* — *Smriti Singh*

(2) *The COVID-19 Pandemic and a New Sociology of Social Distancing* — *Soumyajit Patra*

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Engage

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