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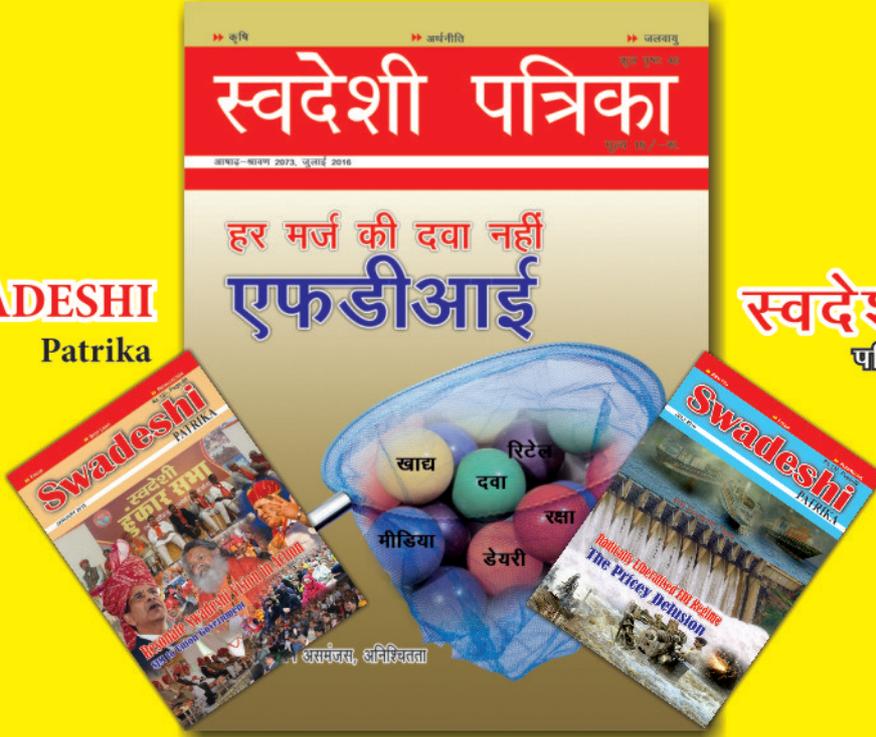
MAY 2021



Profiteering from Pandemic

VOICE OF SELF RELIANT INDIA

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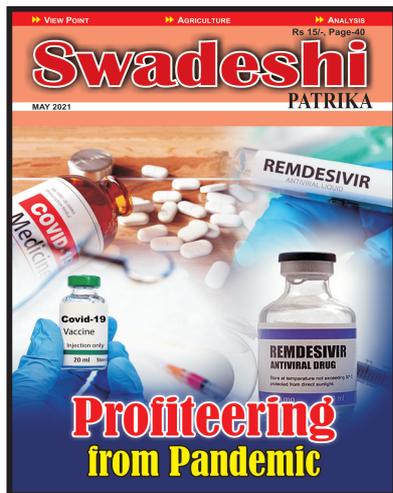
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Examination during Pandemic

With the rapid upsurge in the second wave of Covid-19 cases, almost all the ongoing or upcoming examinations got cancelled or postponed across India. It raises many questions like the relevance of the exam, the necessity of cancelling or postponing exams, the need to adapt and its effect on the examination process. It was necessary during the early stages of the pandemic to temporarily avoid the entire in-person contacts as the nature of Corona-virus was not known at that time. Without a clear understanding of how to prevent the virus from the spread, gathering students to take the examinations was not safe.

However, the examination is an important part of both education as well as the recruitment process. According to UGC academic evaluation of students is a very important milestone in any education system. The performance in the examination gives confidence and satisfaction to the students and reflects competence, performance and credibility that is necessary for global acceptability. Similarly in the recruitment process, especially in government jobs, the examination is a necessary step in the selection. So, cancelling the examination, again and again, cannot be a worthwhile option.

Then what can be the options for taking examinations during the pandemic? First, one should be flexible to choose the date, time and place by the candidate i.e. examination should not be held on a fixed date and time, instead of different time slots on different dates be offered. For example, A candidate can choose a different time and place if their choice is a containment zone or their place of living is a containment zone. Secondly, the majority of the examinations can be conducted online so that students can appear from home. The questions can be mixed type which includes objective type or scenario type of situation analysis. This should compel students to think and apply the knowledge instead of just memorising and copy-pasting the answers.

There may be an occurrence of some problems like internet connectivity issues in some areas, or like students taking help from the internet or other sources but all these can be overcome by engaging appropriate internet-based tools for evaluation.

— Kumar Gaurav, Samastipur, Bihar

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Quote-Unquote



We don't need negationism, to say that nothing happened and everything is fine...We have to keep our minds positive, the bodies corona-negative.

Dr. Mohan Bhagwat
Sarsangchalak (Chief), RSS



The program of free Vaccine by the Government of India is still going on, it will continue. I also urge the states that they should extend the benefit of this free vaccine campaign of the Government of India to as many people as possible in their state.

Narendra Modi
Prime Minister, India



The pandemonium of the pandemic is the monopoly of global multinationals more than the hoarding of merchants, the lack of medicines, traders behind high prices. Now is the time for the government to consider the mandatory license under the Indian Patent Act.

Dr. Ashwani Mahajan
National Co-convenor, SJM

Self-Reliance via Changing Crop Cycle

In the last one-month, good news is coming for the farmers that mustard farmers are getting Rs. 7000 to Rs 8000 for every quintal of mustard in the market. Significantly, in previous years he used to get half of this price or even less. This year increased demand for mustard oil has led to increase in mustard prices and therefore improved income for mustard farmers. In 1950-51 rapeseed and mustard was sown on 2 million hectares of land. This area has reached only 6.2 million hectares in the last 70 years, while average yield per hectare has increased from 368 kg to 1500 kg. That is, both the area and yield of mustard have increased, but in the face of increasing demand for edible oils in the country, this growth is extremely insufficient. That is why even today we import more than 150 lakh tonnes of edible oils and our import bill of edible oils was 69000 crores in 2019-20.

Until some time ago, our country had become highly dependent on imports, for both edible oils and pulses. In recent years, both of these imports have come down and the country is moving towards self-reliance. However, we need to understand the reason for dependence on imports? And how the dependence on imports is now decreasing and how to reduce this further? If we look at pulses, our production of pulses has been limited to 120-140 lakh tonnes for many decades. In the last four-five years, the central government started declaring the minimum support price of pulses and due to the high prices of imported pulses, farmers were encouraged to grow more pulses and pulses production increased to 255.6 lakh tonnes by 2020-21. Still we are little short of our domestic demand for pulses, that is, 270 lakh tons.

Consumer demand for mustard oil has increased significantly compared to other edible oils, while its supply in the country is quite low. If seen in Punjab alone, it is estimated that on the basis of present per hectare yield, there is mustard cultivation on a total of 1.75 lakh hectares of land, then Punjab can meet its mustard demand. Even today, mustard is cultivated only on 32 thousand hectares of land. The main reason for the farmers' indifference to mustard is that they do not get the right price for mustard and hence they prefer to cultivate wheat in this season. Because they can sell the wheat to the government on the MSP. Significantly, this year, wheat gets them an average income of Rs 38000 per hectare, whereas, from mustard they got 63000 to 80000 rupees per hectare. India was not dependent on foreign countries for edible oils earlier. Conspiracies of international companies, neglect of governments, indiscriminate imports, lack of monitoring of farmers, etc. are many reasons, due to which our country has reached a state of huge dependence on imports.

However, the production of oilseeds in edible oils in recent years is expected to increase to more than 366 lakh tonnes in 2020-21. Despite this, we are hugely dependent on imported edible oils, although our import of edible oils has come down. Food grains production may surpass 305 million tonnes in 2020-21, which is 2.7 percent more than last year. Even oilseeds production has also increased by 10 percent. The dependence of foreign countries in edible oils is not a good sign for our country. On the one hand we see that the production of food grains, wheat and rice in the country is much more than the requirement, due to which our food grains stocks are overflowing. The shortage of edible oils somewhere raises questions on our food production management. Agricultural experts believe that we can easily change the situation through changes in crop cycle and selection of crops. This may make India self-reliant in edible oils etc., which will not only save valuable foreign exchange, the income of farmers will also increase.

The government has banned its palm oil import from Malaysia in the last two years. At the same time, the import duty on palm oil has also been increased. Along with these incentives, there are many other measures by which we can make the country self-reliant in edible oils by encouraging the production of oilseeds.

If it is made compulsory for oilseed importers to register their deals with a designated authority, then the government will come to know about details of oil imports, including the type of edible oil, its origin, price and arrival time. In this way, effective control can be exercised on import of edible oil.

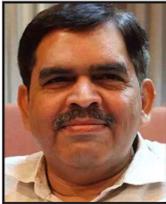
Presently importers are given credit of 90 to 150 days by banks. Edible oil reaches India in 10 to 20 days, but in the remaining days, the importers indulge in speculations. This makes the oil expensive for the consumer, but farmers do not get any benefit of increase in price. If period of this credit is limited for 30-40 days, then the hoarding and speculation of oil may be curbed.

Profiteering from Pandemic

Today, coronavirus, also known as Chinese or Wuhan virus, has engulfed almost the whole of humanity. Due to the huge number of people losing battle for life, caused by this pandemic, there is an increasing risk not only among the people who are infected, but also those who are not. Health facilities appear to be dwarfed in comparison to the severity of pandemic. In such a situation, there is an acute shortage of beds, ICUs and ventilators in hospitals. Due to severity of crisis, there is a huge pressure on oxygen, medical devices, medicines etc. Although the government has made efforts to ensure availability of beds, medicines, oxygen, those efforts are far too little in the face of the current tragedy. Countries like America, England, Italy, Brazil etc have had gone through the similar situations.

In India, there is no dearth of people earning profits by taking advantage of people's compulsion in this type of tragedy. We hear that not only the sellers of medicines, oxygen, oximeters etc., hospitals are also not behind in profiteering. The only way to solve this crisis is to make available adequate equipment and medicines for treatment.

Though, the role of small players can't be denied, so far as the shortage of medicines, their high prices and high profiteering are concerned, global multinational companies are much to be blamed. Due to patents and other intellectual property rights (IPRs), these companies command monopoly rights over production of essential medicines and also medical devices. Due to these laws, the production of these medicines and devices remains concentrated in a few hands, and this makes these companies to charge high prices. Recently we saw that the injection named Remdesivir was priced between Rs 3000 and Rs 5400. Though, after government's intervention its price has been reduced, the availability of these medicines remains a major issue. Black marketing of these medicines is yet another



The prevailing pandemic situation in the world has taught us a big lesson that the survival of humanity is much more important than economics. Therefore, it's time to protect the health of the people all around the world and place the patentee and trade secret protection below peoples' life.
Dr. Ashwani Mahajan



er issue. Many of our companies can produce these medicines and make them available at affordable prices, provided they are given licence by the government.

It is true that these companies have patents for these medicines, but still the Government of India can not only increase the production of these medicines, but can also give relief to the people by drastically reducing prices. Its notable that while amending Indian Patent Act 1970 in 2005 due care was taken to include the provision of compulsory licence which is capable to address public health concerns in a situation of public health emergency or pandemic or a situation which the government deems fit for invoking these provisions.

Compulsory license

There is a provision for grant of compulsory license as per Chapter 16 of the Indian Patent Act (Amended) 1970 and TRIPS provisions. A compulsory license means a license issued by the government, that is, permission according to which a producer is given the right to make, use and sell a patented product without the permission of the patent holder. This means that in the context of medicines, namely, Remdesivir and other medicines, currently used to treat persons infected with Covid-19, if the government issues a compulsory license, then any pharma manufacturer in India can manufacture the same by giving a reasonable royalty to the patent holder. Manufacturers who produce these medicines will have the right to use and sell that product.

Experts believe that Indian Patent Act (Amended) 1970, gives right to the government to issue

compulsory licenses under sections 92 and 100 to produce vaccine and medicines. The government may voluntarily (suo moto) issue a compulsory license using these clauses for non-commercial government use in view of 'national calamity' or 'extreme urgency'.

Significantly, these companies are trying to make profits from the worst pandemic faced by the humanity. There are also reports of massive hoarding of Remdesivir by the Gilead Company. In such a situation, it has become extremely necessary to introduce compulsory licenses for the production of these drugs and vaccines in India.

Although the Government of India, along with South Africa, have also approached the World Trade Organization for relaxation of the TRIPS provisions, after initially opposing the proposal countries like USA, Europe and Japan are also falling in line of the proposal. Significantly, the Doha Ministerial Conference of the World Trade Organization came out with 'The Doha declaration on the TRIPS and public health', in which the sovereign rights of governments were recognized that in case of any emergency or extreme urgency, member countries can bypass TRIPS provisions. The declaration allowed member countries to "determine what constitutes a national emergency or other circumstances of extreme urgency, it being understood that public health crises".

Looking at the likely positive effect of such a move on humanity, a group of lawmakers in the US have also urged President Joe Biden to support India's waiver proposal. Nearly 300 members of the European Parliamentarians urged the European Commission

to support the waiver proposal. Recently, 100 Nobel laureates and former heads of the states including the former prime minister of the UK Gordon Brown requested the US president to support the waiver proposal. Some parliamentarians have even accused UK government to be playing on tunes of pharma companies.

The prevailing pandemic situation in the world has taught us a big lesson that the survival of humanity is much more important than economics. Therefore, it's time to protect the health of the people all around the world and place the patentee and trade secret protection below peoples' life. Though, efforts of the government at trade diplomacy level are commendable, it would be appropriate at this time that government of India takes the following steps to ensure access and availability of the medicines and vaccines required urgently in our fight against COVID19.

- Allow more generic companies to produce Remdesivir under the government use license (Section 100) of the Indian Patents Act with a price ceiling.
- Issue as many government use licenses to produce Tocilizumab and Sarilumab and other critical medicines required to save the life of COVID 19 patients suffering from cytokine storm.
- License vaccine production widely to more pharma companies with technological capabilities, instead of a few companies.
- Provide the regulatory clearance to start the local production of the Sputnik V vaccine. □□

The Author is Professor, PGDAV College, University of Delhi.

Covid Vaccines: The Victory and Battle Ahead

India has secured an unprecedented victory in the General Council of the World Trade Organisation (WTO) on May 5, 2021, when the US, European nations and Japan agreed to fall in line and seconded India's proposal to waive patents from over the Covid-19 vaccines, after fiercely resisting in 10 consecutive meetings held in last six months. It is a victory for global mankind to pave way for augmenting supply of covid vaccines. The US, EU, Japan, Switzerland and Norway after much reluctance had ultimately agreed to support the joint proposal of India and South Africa which was duly supported by 120 other WTO members. Moreover, 110 senators of the President Joe Biden's Democratic Party, 60 former Heads of States and 100 Nobel Laurettes from across the world have put pressure upon Biden – Harris administration. An online petition duly signed by 2 million signatories from across the world was also moved.

Need to Move Fast to Fulfil the Mission

In view of the urgency arising out of rapid rise in infections as well as death toll, the decision makers at home and worldwide need to take certain steps on priority to frame laws for transfer of technology and freeing the vaccines as well as drugs from patent led monopolies or oligopolies. Otherwise, the US nod is a big shot in arm but it is not of much avail unless the final text is finally approved. Still, it may take some time to get the final text approved, as the final meeting of the TRIPs Council is slated for June 6-8. In WTO, rules related to international intellectual property rights can be changed only through consensus, which means that there are still long weeks of negotiations ahead. But, the defection of the US from the nay-sayers on May 5 has added the requisite diplomatic heft to put adequate momentum behind the proposal, which had remained stuck so far despite support from over 120 nations.



The US, EU, Japan, Switzerland and Norway after much reluctance had ultimately agreed to support the joint proposal of India and South Africa which was duly supported by 120 other WTO members.

Prof. Bhagwati Prakash Sharma & Dr. Jaya Sharma



WHO Director-General Tedros Adhanom Ghebreyesus too has also opined that such waivers are part of the WTO toolbox and has asserted that there's no better time to use them than during the once-in-a-century pandemic that has taken 3.2 million lives, infected more than 437 million people and devastated economies, according to Johns Hopkins University. Even today 15 crore persons across the world and 2.2 crore in India are infected. All of them have been swinging between life and death. India has also lost 2.35 lac lives. Practically speaking the entire 7.4 billion global humanity stays threatened from a tragic death from Corona, if infected. It is so, in spite of the fact that fairly effective medicines to cure the Covid-19 and vaccines to prevent fresh infections are on the market shelf. The major hurdle is that the patentees, holding a patent-based monopoly over these drugs and vaccines are neither able to supply these drugs and vaccines at affordable prices and in adequate quantity nor they have been granting enough licences to companies desirous and capable to manufacture and thereby overcome the shortages.

Need for Fast Vaccination

It would not be out of place to mention without praise that Israel has completely unmasked its 8.76 million population by vaccinating 80% of adults in a short span of time. So, now that country is almost safe from any potential Covid-19 infections. Likewise, after the patent waiver from Covid-19 vaccines, turns into a reality and if the supplies are augmented in fairly reasonable time, India as well as the world would get respite



It would not be out of place to mention without praise that Israel has completely unmasked its 8.76 million population by vaccinating 80% of adults in a short span of time.

from the most dreaded Covid-19 pandemic. But it would be feasible if the vaccine patentees would also agree at an earliest date to transfer the technology as well and help companies, desirous and capable to manufacture these vaccines to world over to augment the supplies.

No Patent Waiver Yet Approved for Drugs

The proposal agreed upon in the General Council of the WTO – a 164 member nation body – aims at waiving patents from vaccines alone. This proposal has not yet been covering the medicines from patent waiver clause, likely to be passed in TRIPs Council. So, the companies desirous and capable to manufacture the Covid-19 drugs shall have to apply for compulsory license in their respective countries to manufacture the drugs, wherever the national law permits. India has the provisions for compulsory license under sections 84, 92 and 100 of the Indian Patents Act -1970 which were added at the time when provision for 7 year process patents were replaced by 20 year product patents in pursuance of the Agreement on Trade Related Intellectual Patents (TRIPs). The provisions for compulsory license were incorporated in the

Doha ministerial conference of 2001. But grant of compulsory license would take its due time. The applicants should apply first to the patentee for voluntary license and shall also have to develop the process of synthesis by its own R&D.

Natco Pharma's Initiative Deserve Praise

An Indian company the Natco Pharma has already got Central Drugs Standard Control Organisation (CDSCO) approval for emergency use of Baricitinib tablets for Covid-19 treatment. Baricitinib in combination with Remdesivir, is used for treatment of Covid-19 positive patients. The Indian drugmaker Natco Pharma has received emergency use approval for Baricitinib tablets, 1 mg, 2 mg and 4 mg strengths, from Central Drugs Standard Control Organisation (CDSCO) in India. It has also completed the formal process of applying for voluntary license with an offer of 7% royalty to the original patent holder, the American company Eli Lilly. After fulfilling all these formalities, it has then applied for the compulsory license for manufacture of Baricitinib tablets in India. Baricitinib, in combination with Remdesivir, is used for treatment of

Covid-19 positive patients. The company had earlier on May 3 stated that, it intends to launch the product in less than a week, so as to make it available to the patients across India, the release said.

India has a unique and historic precedence of grant of compulsory license on humane considerations when a compulsory license to the same company Natcowas granted. It is the Indian company, Natco Pharma, which then in 2012 offered to manufacture and sell kidney and liver cancer drug, Nexavar at a price of Rs. 8800 against the German patent holder Bayer's price of Rs. 2,80,000.

India Has Championed the Cause of Humanity in Past Also

The incorporation of provisions for compulsory license in the agreement on TRIPs of the WTO also had a long historic battle of the developing countries, then also under the leadership of India at WTO. It started when the patent holders of drugs for AIDs were charging exorbitantly high prices whereby the treatment cost per patient was as high as \$15000 per annum. At that time Indian pharma companies offered these drugs at a price to cost \$350-450 per patient per annum. So, the developing countries fiercely contested for right to grant compulsory licenses in cases of health emergencies and other public health problems, in the Doha Biannual Ministerial Conference of 2001, under the leadership of India. After hectorically resisting, the industrialised countries had fallen in line on the very first day of Doha meeting and passed a supplementary declaration for compulsory license.

This time as well the consen-

sus for waiver of patents over Covid vaccines has evolved at the behest of India, with hectic support from 120 developing countries over the proposal originally moved by India and South Africa in October 2020. However, in the TRIPs Council much more follow-up actions would be needed to ensure universal access to vaccines, as the final approval is expected to be made in TRIPs Council scheduled in early June this year.

Urgent Steps Needed

The comprehensive steps needed today can be enumerated as under:

A. At the International level efforts need to be expedited for:

- Waiving of Intellectual Property Rights i.e., waiving of Patent Rights on Covid medicines as well. The waiver of patent from Vaccines too should get the final approval at the earliest
- Development of group like G16 created by India against Singapore Issues to be thought of. It can be a G120.
- Invoking of Section 7 of Agreement on TRIPS, which speaks for transfer of technology by the companies to developing countries to facilitate usage of innovations by potential users. (Mere Waiving of IPRs/patents wouldn't be enough, as the development of process to manufacture these medicines and vaccines would be a time-consuming process. So, technology transfer along with the grant of voluntary licenses, either free or at nominal royalty is need of hour.)

B. At the national following actions need to be initiated by the Government:

1. Issue of order under Sections

92 and 100 of the Indian Patents Act to facilitate Compulsory Licensing to enable applicants to manufacture Covid medicines and Vaccines inspite of any patents held by any other entity.

Under section 84 Compulsory license can be applied for 3 years old medicines only. So, the issue of Order under Sections 92 and 100 is most imperative as the Vaccines and some medicines are less than 3 years old.

2. An appropriate law to mandate technology transfer and grant of voluntary licenses by the holders of patents to the companies desirous and competent to manufacture Covid medicines and Vaccines.
3. Bharat Biotech has developed its Vaccine from the genetic resources and major know-how of ICMR and government's financial support. So, it's know-how needs to be shared with companies desirous and capable to manufacture Covaxin.
4. Two Industry Consortia need to be evolved with liberal financial support of government - one comprising pharma manufactures and the other consisting of molecular biotech firms, desirous to participate in the development of process of synthesis of Covid medicines and the other for Vaccine development.

The complete know-how so developed must be accessible to all participating companies. Even companies desirous to join later, should also be allowed on payment of Consortium fee.

Prof. Bhagwati Prakash Sharma is the V/C of Gautam Buddha University, Noida.

Nobody will be safe unless everybody is protected against the Chinese Virus and Market Forces

It may not be the appropriate time to say, but the present situation prevailing over the world cannot be masked. The Wall Street Journal, many other prominent scientific journals, and noted scientists have already conveyed that the present global pandemic named “COVID19” across the World originated with human intention from the Wuhan Institute of Virology, China, and spread throughout the world in a very short time, ‘unlike communism in 20th Century’, though nobody is interested to experience it. As communism had the policy of include everyone, in the globe to bring the revolution for new society and power got succeeded by infecting the people with a virus tool, of course, the present virus credited with more than 167 million confirmed cases including 3.5 million deaths across the world and 26.94 million confirmed cases including 0.3 million deaths in India as per World Health Organization (WHO) up to 10:44 am CEST, 25th May 2021. This has resulted in not only health crisis but also unprecedented economic crisis and supply chain disruption throughout the globe and humanity crisis in corporate hospitals by charging exorbitant amounts even for dead bodies.



India and South Africa approached the World Trade Organization (WTO) to waive off the patents through TRIPS agreements as per the norms in times of epidemics. The present global health situation is a pandemic, in these times, the entire world should be united in forthcoming WTO meetings for the survival of the people and humanity.

Dr. S. Lingamurthy

COVID19 First-wave in India

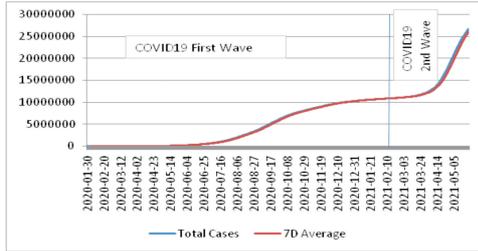
On 30th January 2020, the first case was reported in India among three medical students in the towns of Trissur, Alappuzha, and Kasargod of Kerala who has returned from Wuhan, China. On 12th March 2020, the first fatality was reported, who had a travel history with Saudi Arabia. There was a gradual increment in total confirmed cases and the number of fatalities across the country. Subsequently, the alarming situation led to a complete lockdown in India, which was announced on 24th March 2020 by the Hon’ble Prime Minister for 21 days and further extended two times till 31st May 2020, Hon’ble Prime Minister appealed to the public to ‘take care’ and ‘help the poor within their means and fulfill their basic needs such as food’ by following “social distance”. Shri. Narendra Modi Ji has taken this stringent decision where developed countries were reluctant to think this idea to safeguard their people because they have given prime importance to the economy rather than people and said “Older generation shall be ready to give up their life for the sake of younger generation and economy of the country”, and due to this the entire globe experienced what happened to the USA, Brazil and the UK.

Table-1: COVID19 Confirmed cases, fatalities, and timeline in India

	Total No. of Cases	No. of Days	Per million cases	Cumulative Days	Total No. of Deaths	No. of Days	Cumulative Days	Per million deaths
COVID19 First Wave	100000	110	72.701	110	10000	139	139	8.867
	1000000	59	727.412	169	50000	61	200	36.899
	5000000	61	3637.93	230	100000	47	247	73.074
	10000000	94	7249.69	324	150000	95	342	108.778
	10858371	53	7868.36	377	155252	35	377	112.501
COVID19 Second Wave	20000000	82	14697.658	459	200000	77	454	145.787
	26752447	21	19385.77	480	250000	14	468	184.2
	NA	NA	NA	NA	300000	11	479	220.086

Source: - <https://ourworldindata.org/covid-vaccinations>, accessed on 25th May 2021

Graph-1: Pattern of COVID19 Total Cases and 7 day average in India



Due to strict lockdown policies, India could relatively control the COVID19 outbreak, and it took more than three months to reach 1 lakh confirmed cases and 139 days for ten thousand fatalities. When phase-wise unlock has begun, COVID19 transmission velocity was very high and rampant in both confirmed cases as well as in a total number of deaths. There were 10.85 million confirmed cases including 1.5 lakh deaths during 1st wave of COVID19. Amongst, it took 110 days to spread one lakh confirmed cases, whereas it took about 60 days to unleash from one lakh to one million and from one million to 5 million confirmed cases. Later, within three months, COVID19 spread to the second half of 5 million people and caused 1.5 lakh deaths, thought all possible efforts made by front line doctors, health workers, and vigilant civil society.

There is no clear-cut demarcation between COVID19 first wave and second wave. However, as per the BBC report, the second wave of COVID19 started in India on 10th February 2021. Despite all problems, India could

manage the bigger damage with less than 8000 confirmed cases and 112.5 deaths per million populations during the first wave.

The outburst of COVID19 Second Wave

COVID19 Second wave in India is certainly more destructive. The sudden surge of Pandemic in India has started in the second half of March and April months of 2021, which led to second position in the globe after the USA with 26.75 million confirmed cases including more than 3 lakh deaths. Though there were significant alerts from the Governments and scientific community, India could not control the caused damage as expected as it was done during the first wave of COVID. It took just 21 days to infect more than 6.7 million people including 1 lakh deaths in the recent past. Unlike the first wave, unfortunately, COVID second wave behaved like a tsunami and has infected and caused the death of youngsters, in some families, it is reported more than two deaths owing to COVID19. The trend of per million confirmed cases shoot up to nearly 2.5 times i.e., 19385 in second wave from 7868 of the first wave, and deaths per million has been doubled from 112 to 220 in just three months. The last 50 thousand deaths were registered in just 11 days; with an average of 4,545 deaths is the peak of COVID second wave.

The pattern of new confirmed cases including deaths in the second wave is uneven, and the trend has been declining from 22nd May 2021 in both confirmed cases as well as daily new confirmed

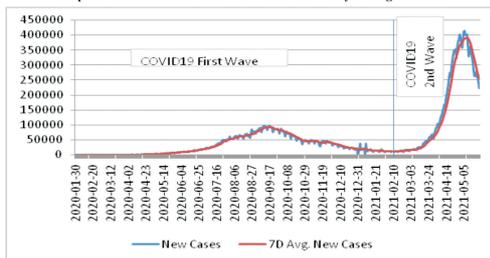
COVID death cases per million as observed in Graph-3, due to subsequent lockdown by the State Governments in India.

Vaccines and market forces

Against the Pandemic COVID19, vaccination tends to be the ray of hope, relatively to have less effect of COVID infection for the people and commencement of vaccine drive promises a return to more normal life and also has concentrated a global market worth tens of billions of dollars in annual sales from some pharmaceutical companies. In India, there is two variant of vaccines, i.e., COVAXIN, India's first indigenous vaccine developed by Bharat Biotech, Hyderabad in collaboration with Indian Council of Medical Research (ICMR) and National Institute of Virology (NIV). Another one is COVISHIELD developed by AstraZeneca and Oxford University in partnership with Serum Institute of India (SII), Pune, Maharashtra. Other than these two vaccines, Moderna and Pfizer, Johnson & Johnson, Sputnik, mRNA, Sinovac, Novavax are available in the global market.

There is a huge gap between the demand and supply of these vaccines for the global population above 18 years old. The vaccine companies have to play a proactive humanity role in producing the vaccines and vaccinating the people at affordable cost and equitable access to everyone in the globe, because as United Nations pointed out "No one is safe unless everyone is safe". The global pandemic needs to be controlled simultaneously in all parts of the world. Thus, hoarding of vaccines and medicines of COVID19 of vaccines is inhuman and unethical, which is being done by some so-called developed coun-

Graph-2: Pattern of COVID19 New Cases and 7 Day average in India



tries, and raising the prices of vaccines by catching the miserable conditions of the infected patient families is unacceptable, being practiced in super specialty and metro hospitals in India. Moderna targeted to capitalize the vaccine towards &18-\$20 billion in near future. Pfizer already accumulated a net profit of \$9.6 billion in a very short time and targeted to charge \$30 per person per shot of vaccine is very costly for developing countries and poor people.

Due to the unavailability and shortage of vaccines in India due to its huge population, the vaccination rate is about 11 percent, which is very low compared to Brazil, France, Italy, Germany, the United Kingdom, the United States of America, and Israel. Canada, UK, and Israel vaccinated more than 50 percent of their people and the USA is near to it. The most populous country next after China is behind this vaccination drive, which needs to be supported by all vaccine-developed companies for the safety of humanity.

The possible solution

The majority of the population lives in developing and underdeveloped countries, given the fact that half of the poor live in South Asian countries whose approximate absolute numbers are 534 million people, who live below \$1 per day. Though India registered remarkable progress in reducing poverty, as per the international poverty line, still it is very high with 176 million people who were living in the extreme poverty line. The present Pandemic COVID19 resulted in further push in absolute number in poor people and IMF estimates that the poor people might get doubled in India. 22 per-

Table-2: Hospitals & Prices of Vaccines in India

COVISHIELD	Cost in Rs.	Metro Cities
Max Hospitals	900	Delhi, Gurgaon, Mumbai
Apollo Hospitals	850	Delhi, Ahmedabad, Chennai, Hyderabad, Kolkata
HN Reliance	700	Mumbai
COVAXIN	Cost in Rs.	Metro Cities
Manipal	1350	Goa, Bangalore
Fortis	1250	Delhi, Gurgaon, Noida, Jaipur
Yashoda Hospital	1200	Hyderabad
BGS Gleneagles Hospitals	1500	Bangalore
Woodlands Hospitals	1500	Kolkata
Apollo Hospitals	1250	Hyderabad, Chennai
HN Reliance Hospital	1250	Mumbai

Source: <https://timesofindia.indiatimes.com/india/at-rs700-rs1500-price-of-covid-vaccine-in-indias-private-sector-among-costliest/articleshow/82509814.cms>. Accessed on 26th May 2021

cent of the households are in the lowest consumption of decile who reported washing hands with soap before a meal, as per a 2018 survey. The high concentration of slums without proper facilities in metro cities reduces the efficacy of social distancing measures and also keeps them away from the primary treatment of the COVID19, due to lack of paying capacity for quality health treatment and lack of individual rooms to isolate themselves if they get infected. Further, the strict following of lockdowns pushed them to subsistence wage, and for some without any earning due to complete or partial closure of firms and workplaces. It is almost similar situation in African countries and a majority of South Asian countries. Now people across the globe are waiting for normalcy in the situation and their survival.

In this situation, leaving the majority of the population of the globe to the market forces of vaccines is not justifiable, because the price of vaccines is not affordable to the poor who are living under the extreme poverty line in the World. Vaccines shall not be hoarded by any country and there shall not be any contrived scarcity of vaccines and medicines of COVID19. Vaccines production must be scaled up as per the requirement of the population, where the present scale of production is not enough to address the global population for the next one year at least. Across

the globe, people lost their working days from January 2020, which lead to further economic burden to not only workers but also to the economies of the countries as a whole. Given the acute health crisis due to pandemic across the globe, for the survival of humanity, to save the people, the vaccine manufacturing companies needs to waive off their patents, should transfer the technology and formula of vaccines to the new companies either through royalty or by having consortium with the manufacturing companies across the globe.

Finally, India and South Africa approached the World Trade Organization (WTO) to waive off the patents through TRIPS agreements as per the norms in times of epidemics. The present global health situation is a pandemic, in these times, the entire world should be united in forthcoming WTO meetings for the survival of the people and humanity. All the underdeveloped countries shall be vaccinated when there is a fulfillment of the demand-supply gap of vaccines and vaccine price shall be affordable to all the countries which are possible through massive production by including other companies in the manufacturing process. For this, all the countries across the world should be united and protected and stay away from the Chinese virus. □□

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Phage Therapy and Vaccine

The Government was driving the economy till March as if the Corona Pandemic was a one-time catastrophe that will get abated with vaccination of large numbers of our people. As it has happened, the Second Wave has come perhaps two months before the widespread vaccination could be done. The Government has avoided imposing lockdown that is being asked for by the medical fraternity. The Government has to choose between the devil and the deep blue sea. The economy will collapse more and people will die less if lockdown is imposed. The economy will collapse less and people will die more if lockdown is not imposed. The bigger issue is that this Second Wave may not be the last; and the present vaccines may not quite work against the future variants of the Corona virus.

Firstly, Second Wave may not be the last. Countries have faced third and even fourth waves. More importantly, the Covid virus is mutating. Ewen Callaway writes on nature.com website that in January 2021 “biotech firm Novavax released data from clinical trials showing that its experimental vaccine, designed to combat the original virus, was about 85% effective against a variant identified in the United Kingdom — but less than 50% effective against 501Y.V2,” which is known as the South Africa variant. This means that the vaccines that are effective against the present strains may not be effective against new mutated strains. Callaway explains that it is normal for viruses to mutate. The influenza virus, for example, mutates frequently. The World Health Organization has established a Collaborating Centre for Reference and Research on Influenza in Melbourne, Australia. This center monitors emerging flu strains for genetic changes that might influence the effectiveness of presently available vaccines for influenza. They continuously assess whether the mutations are “widespread.” They stand back and wait and watch if a new strain is localized to one region or country. They start the process of making a new vaccine if they find the new strain to be widespread.



The National Environment Engineering Institute, Nagpur has undertaken a study of the Ganga River. They found that the water of upper Ganga river has more than 200 types of phages.
Dr. Bharat Jhunjunwala



The Corona virus is similarly likely to mutate continuously requiring the production of continuously new vaccines. The present vaccines against the coronavirus might have to be updated periodically, as they are for influenza. We do not know how much time it may take to update the vaccines and how much damage they may perpetrate before a vaccine is made to combat the new strain. We should not, therefore, be under the impression that we will become free of Corona virus if the entire population of the country is vaccinated.

An alternative approach to combating the Covid Pandemic is to use Phage Therapy. Phages are viruses like the Corona Virus. However, they are beneficent. They kill disease-creating bacteria in the body. That increases the immunity of the body and makes it possible to face the attacks by Corona virus. Professor Andrez Gorski of Poland has said that the beneficent phages can additionally block the pathways of the disease-creating virus. Let us say, the Corona virus has entered a person's lungs. It is trying to enter the cells of the lungs. It would not be able to enter the cells of the lungs if the beneficent virus has already entered the lungs and blocked the cells through which the Corona virus would have wanted to enter.

S. Mert Selimoglu of Pak Group of Companies of Turkey says on the Capsid & Tail Newsletter that one way of dealing with the problem is to administer a mixture of phages as a vaccine. Such mixtures are called "cocktail" in medical parlance. He says that administering a cocktail would enable the vaccine to self-select which

Phages are viruses like the Corona Virus. However, they are beneficent.

bacteria are present in the body. It is like the farmers sowing a mixture of seeds. Those that suit the particular weather grow well; and others die. Similarly, administering a cocktail of phages enables the phages to select the viruses present and attack them. A vaccine made of such cocktail of phages has the advantage that it may be effective against a number of mutations of the Covid virus. The prime requirement for the development of such a cocktail vaccine is the availability of a variety of beneficent phages.

We have an especial advantage here. The National Environment Engineering Institute, Nagpur has undertaken a study of the Ganga River. They found that the water of upper Ganga river has more than 200 types of phages. In comparison, Yamuna and Narmada have only 20-50 types of phages. Thus, we have available with us cocktail of phages that can be used to make a cocktail vaccine.

The Ganga Today Trust based in Uttarakhand has supplied the Ganga water to hundred-odd persons across the country. They have found that 67 percent of those facing mental health problems got relief. The percentage of persons who got relief in other diseases were as follows: neurological problems 56%, digestive problems 55%, dermatological or skin problems 54%, urological problems

50%, arthritis 45%, diabetes 40%, cardiological problems 36% and respiratory problems 33%. These results are based on small numbers less than 25 patients of each disease. Nevertheless they provide a prima facie evidence for the efficacy of the phages of Ganga river against a number of diseases.

The Maryland, USA based Adaptive Phage Therapeutics has already made a phage-based vaccine and is conducting Phase I trials.

We must not be under the impression that all will be well after large numbers of our people have been vaccinated. The virus can mutate and the vaccinations can be rendered ineffective. We must plan for the worst.

We have already lost much time. Even now we are running after foreign vaccines that are effective against specific strains. One elderly person told me that he was waiting for the Pfizer vaccine to become available. Only then he would get vaccinated. We must immediately launch a massive program to make a cocktail phage based vaccine for covid.

The Government must not run on business-as-usual mode. The policy of the Government is to borrow heavily and continue its "consumption"—salaries and perks—as previously. The hope is that the bad times will pass, economy will bounce back, and the borrowings made will be repaid. That may not happen. The second wave may be followed by a third wave; and the third may be followed by a new strain. No one knows how the situation will play out. But we must plan for all eventualities.

Formerly Professor of Economics at IIM Bengaluru

Reforms Can Help to Improve Contribution of Vaccines for Protecting Health

There have been several debates on vaccines in recent times. The position we take here is the one which is more widely held that vaccines have an important role in public health. However in order that vaccines should fulfill this important role and make their important and useful contribution, their use must be based on rationality and scientific facts as well as acceptance of short-term and longer-term public good over narrow selfish interests. There can be wide agreement that this is an eminently reasonable position to take as a base point of the debate ie a point from where we initiate the debate.

We can also identify a certain stage in the history of vaccination when by and large this was indeed the case. Leaving aside a few unreasonable and narrow attempts here and there, on the whole reason and public interest appeared to be in control in the context of vaccination. This is how public trust in vaccines as an important means of protecting health was built up. Vaccination requirements were also of such a nature that these could be accommodated rather easily at various levels.

Then gradually the first murmurs of doubt and dissent began to appear, and we are speaking only about what was said by well-informed public health experts and researchers, in most cases backed by research papers and editorials in well-regarded journals. Firstly, there was concern that development and production of vaccines was passing more and more into the hands of big business interests, including big multinational corporations which had been known earlier for various manipulations to grab enormous profits in the context of medicines and related sectors (including many internationally established cases of selling irrational and highly hazardous medicines). The ground for this had also been prepared



Leaving aside a few unreasonable and narrow attempts here and there, on the whole reason and public interest appeared to be in control in the context of vaccination. This is how public trust in vaccines as an important means of protecting health was built up.

Bharat Dogra





Allegations started appearing that some of the new vaccines being recommended for some diseases were not based on proper reasoning and scientific facts.

by the imposition of unfair patent regimes through trade agreements. In the context of some countries a fierce debate developed over the deliberate closing or scaling down of public sector/government facilities that existed already for developing and making vaccines, so that the field was left more wide open for private business interests, multinational corporations and imports (of technology as well as vaccines).

Secondly, allegations started appearing that some of the new vaccines being recommended for some diseases were not based on proper reasoning and scientific facts. This aspect of the debate had several sub-aspects such as whether vaccine is the right approach in the context of a particular disease, whether the disease in question is really as much of a threat as is being made out, the overall cost-benefit aspects and risks or hazards that may be associated with a particular vaccine or vaccines based on a particular line of development.

Thirdly allegations started appearing, supported by growing evidence, that preceding the appearance of such vaccines, there would be a lot of propaganda, presenting a highly exaggerated picture of how utterly devastating the disease in question can become.

The predictable result was that soon there would be a lot of pressure on the government to welcome the just-arrived vaccine without asking too many questions.

Fourthly, the big companies started introducing new combinations of vaccines, in the process increasing their profits, although there were increasing questions regarding the rationality, desirability and risks regarding the combinations.

Fifthly, as the next predictable step, the immunization content for children was sought to be changed on the basis of new vaccinations and combinations so that the costs increased greatly. This happened despite the fact that there was a fierce debate with several vaccination and health experts even pointing out several risk factors in the new immunization regime and presenting evidence in respected journals.

Sixthly, exceptionally huge and high-dose vaccination drives linked to the stated objective of elimination of some specific disease started being launched, and increased to such an extent that in several countries these became the most dominant activity of the health sector for extended periods, pushing aside much more urgent priorities, even though serious risks, hazards and irrationality of this was by pointed out by several leading health experts

and papers based on this were published in prestigious journals.

Seventhly, some leading billionaires stepped into the arena to promote all the trends mentioned above, and in many countries soon became the most powerful mover in the vaccine sector. Billionaires had a lot of flexibility in their work strategies and they soon succeeded in arranging more support in favor of all these trends. The billionaires, or the organizations promoted by them, became so powerful that even if their hold was removed for some time in a country in the context of some controversial happening they would soon force their way back into positions of power. These billionaires emerged as big donors of international health organizations as well so that the two generally operated in mutual agreement.

More or less simultaneously with the advent of these billionaires it could be seen that those with the expertise and the courage to become a dissenting voice in the context of fast emerging trends started being sidelined from positions of influence.

Ninth, as the vaccine sector was increasingly dominated by very powerful persons and companies, the issue of gaining control started becoming even more important than the issue of immediate profit, and it was well understood that ultimately it is control which can also maximize longer-term profits, apart from giving other advantages. If the general thinking (right or wrong is another matter) in a country at a given time is that the most serious health risks relate to one or two diseases, if life and livelihood protection (in the common perception of people) is re-

lated closely to the protection from these diseases, if vaccines are regarded (in the common perception) as the most reliable and perhaps the only protection from these diseases and if control of technology and supply of these vaccines is mainly with certain companies and billionaires (or the countries where they are based), it follows that these companies and billionaires will get the most control over the health policy of entire countries.

The tenth phase unfolds when authoritarian governments realize that these methods and trends of increasing control also suit them rather well. In several parts of the world authoritarian governments of various hues are increasingly alienated from their own people. They are increasingly on the lookout for means of extending control over people so that even if they adopt anti-people policies people look up to them for providing protection in critical areas. If people start believing that protection from one or two diseases is the most critical issue for them and their near and dear ones, if they additionally believe that the best and perhaps the only means of securing this is through vaccines and if the authoritarian government can present itself as the sole or the main means of ensuring this protection to the masses, then vaccines become a big way of securing support through control.

The eleventh and the last phase comes when authoritarian governments and companies/billionaires controlling vaccination technology/supplies feel that their interests converge and the interests of control and profits are best pursued together in mutual collaboration with each other. Of

A citizens' commission comprising eminent health experts of proven integrity, not linked to billionaires and big companies, may be constituted to give their clear guidance on these important issues.

course this will provide an additional opportunity for big corporations to further extend their control. Data base of vaccinations linked to digital identity numbers can be very useful to both.

Of course some of these trends are still in their early stages and things are still being worked out. Some dissent still survives but is being curbed more strictly. A clearer picture may emerge after some time.

Most of these phases can be confirmed from studying the recent history of vaccines in various countries, all the recent controversies and debates, and if we confine ourselves just to what has been stated by eminent experts, or written about in respected journals or media, several of these trends can be confirmed on this basis. At the same time some trends belong more to the realm of studying democracy, mass psychology, political economy etc.

However we need to return to the basic question with which we started—the cause of ensuring vaccine use in such ways as is best for protecting and serving health of people. It is evident that the various trends identified are not in the interests of health of people. Most of the trends mentioned above point to the need to raise questions.

As the trend has been to

identify more diseases for which vaccine has to be taken, and as this trend appears likely to increase, one question may relate to the overall combined impact of all these vaccines including combinations and frequently repeated vaccinations, as distinguished from considering the impact of each vaccine separately. The overall move towards health scene dominated increasingly by vaccines (rather than overall good health) can also be considered, as also budget allocations likely to be available for various important aspects of health-care.

A citizens' commission comprising eminent health experts of proven integrity, not linked to billionaires and big companies, may be constituted to give their clear guidance on these important issues. These eminent and independent experts can also provide their guidance regarding the improvements needed in the vaccines sector so that the contribution of vaccines to protecting health can be significantly improved within a reasonable budget, with less tensions and uncertainty, with much reduced chances of any adverse impacts, in more confident and self-reliant ways as well as sustainable ways.□□

The writer is a journalist and author who has received several prestigious awards in the course of contributing nearly 9500 articles and 400 books and booklets in English and Hindi on public interest issues. He has been closely involved with several leading peaceful social movements and initiatives. His recent books include Man Over Machine (Gandhian ideas for our times), Planet in Peril and Protecting Earth for Children.

Building back differently

It is clear that the government has not, to date, been able to present an analytical framework to address the exacerbation of the structural downturn in economic growth caused by Covid. Inappropriate legacy analytics have hobbled the government's ability to mount an effective response to the situation.

The language and grammar of most macroeconomic policy in India is based on business cycle theory. Simply put, there is a trend growth rate with ups and downs —variations around the trend. This is captured by empirically constructing a polynomial that is stochastically robust to econometric testing. Policy seeks to be “counter-cyclical”. Alternatively, “output-gap” analytics is deployed — posit a potential output for the Indian economy and then observe whether actual output is close to, or further from, this potential output. This output gap is then used to recommend whether fiscal and monetary policy should encourage or dampen economic activity to secure macroeconomic stabilisation.

But when there are shocks to trend, like Covid, output gap- and business cycle-based analytics are not helpful in addressing the fallout. Fiscal and monetary policy must counter shocks to aggregate supply and demand to reverse a lower trend growth rate. But in the face of an unprecedented decline in gross domestic product, policymakers have used legacy analytics to reject calls to boost aggregate demand through income support. The larger deficits for FY21 and FY22 are simply because, with a negative trend shock, the negative correlation between fiscal deficits and real output growth runs from the latter to the former.

On micro-foundations, the orthodoxy is that macroeconomic analytics must be consistent with the laws of demand and supply, and market price signals. But in the real world, it is important to be clear about (1) whether these actually



Putting India back on the growth track demands a robust analytical framework to address the structural downturn in the economy caused by Covid-19.

Rathin Roy



demonstrate the working of the laws of demand and supply. For example, in the Indian context, an increase in petroleum prices should result in a fall in demand for petroleum. This does not happen. To then argue for lower petroleum taxation would be to proceed on erroneous micro-foundations, and damaging to the macro-economy. (2) Whose micro-foundations we are talking about? One example — the literature on minimum wage hikes shows that these actually increase economic activity—a fact that refutes what standard micro-economic models conclude.

This take on the role of micro-foundations in policymaking is important in the Indian context. When it is clear that inequality is becoming an impediment to economic growth, then it is important to unpack the components of aggregate demand. If this unpacking indicates that relative prices have moved heavily in favour of discretionary spending by the top 10 per cent, then it is important to consider whether economic policy should actively intervene to alter it, instead of just compensating losers with handouts. Not doing so results in a profit-led recovery, as we have witnessed, which further exacerbates the structural demand problem.

The profit-led recovery from Covid has illuminated in footlights what I have been arguing for some time — that the composition of growth directly impacts macroeconomic performance through inequality.

There is a well-established macroeconomic premise that in fully developed economies, the rate of return on capital (r) tends to be higher than the rate of growth of



As a consequence, the profit-led recovery has further exacerbated inequality. But just going back to business as usual will not solve for this.

income (g). When $r > g$, wealth accumulated in the past yields more income than that earned in the present, generating inequality. and merit goods to those earning. Redistributive fiscal policy corrects this by taxing the incomes and assets of those who earn incomes from r and providing subsidies incomes from “ g ”.

This relationship holds when labour and capital resources are fully employed (the “steady state”). Only changes in productivity and technology can change the values of r and g . But emerging and developing economies like India are, by definition, not at steady state. They are “catching up” with developed economies, and as long as they are doing so, the opposite relation should hold: $r < g$.

It is a matter of great concern if inequality rises when $r < g$, as was the situation before the Covid blow to the economy. This is not so just for normative reasons; if a rising tide lifts all boats, then the prosperity of all will increase, and that is a good thing, even if some become more prosperous than others. However, this is not automatically so. Compare Brazil with Japan. In Brazil, unlike Japan, a steady state has been reached but inequality keeps a large

number of people in relative poverty and extreme vulnerability. Growth provides no panacea for this as r is now equal to, or greater than, g .

The Covid crisis has temporarily created a situation where $r > g$. As a consequence, the profit-led recovery has further exacerbated inequality. But just going back to business as usual will not solve for this. We will be back in a situation where $r < g$ but with higher levels of inequality. The prospect of economic stagnation looms larger, and closer, unless we change tack to build back differently.

It is, therefore, essential that in building back from the Covid shock, the $r < g$ dividend is under to alter the output composition of demand, recognizing that the pattern of growth, and the resultant output composition of demand, has been inherently unequalizing. This has scarred the economy in many ways, and is at the root of the structural fiscal weakness of the government, the equable over meager resources to fund essential public goods, and the need to constantly deliver handouts and cash transfers to protest people from immiseration, as they do not share in the prosperity that growth brings.

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Tasteless Diatribe against a Hero



Having purchased and read James Laine's *Shivaji: Hindu King in Islamic India* only after it was officially withdrawn by the publishers, I cannot view the events at the Bhandarkar Oriental Research Institute (BORI) as totally unjustified. Certainly, attacks on centres of learning have no place in Hindu ethos and must not recur. Yet, having gone through 105 pages of shoddy polemics posing as historical research, I am constrained to state that Oxford University Press needs to re-examine its commissioning policy if it hopes to retain credibility as a publishing house.

Moreover, the BORI scholars acknowledged by Laine must honestly inform the nation of the extent to which they are responsible for the unwarranted assertions – we cannot call them conclusions, as no evidence has been adduced or offered – in the impugned book. Far from being a meticulous scholar who has uncovered unpalatable truths about a revered historical figure, Laine is an anti-Hindu hypocrite determined to de-legitimize India's ancient civilizational ethos and its grand rejuvenation by Shivaji in the adverse circumstances of the seventeenth century. BORI is not generally associated with substandard scholarship, and should explicitly declare its position on the actual contents of the book.

Laine exposes his agenda when he foists the unnatural concept of South Asia upon the geographical and cultural boundaries of India; this is awkward because his discussion is India-centric and specific to the Maharashtra region. He is also unable to disguise his discomfort at the fact that Shivaji withstood the most bigoted Mughal emperor, Aurangzeb, and established political agency for the embattled Hindu community, amidst a sea of Islamic sultanates. This has so unnerved Laine that he repeatedly makes inane remarks about Hindus employed under Muslim rulers and vice versa, to claim that the two communities lacked a modern sense of identity, and could not be viewed as opposing entities. What he means, of course, is that Hindus of the era cannot be ceded to have had a sense of 'Hindu' identity.

Reading the book, I was struck by the fact that it did not once mention Shivaji's famed ambition to establish a Hindu *Pad Padshahi*. This is a strange omission in a work claiming to study how contemporary authors viewed Shivaji's historic role, and the assessment of his legacy by subsequent native and colonial writers. The most notable omission is of the poet Bhushan, who wrote: "*Kasibki Kala Gayee, Mathura Masid Bhaee; Gar Shivaji Na Hoto, To Sunati Hot Sabaki!*" [Kashi has lost its splendour, Mathura has become a mosque; If Shivaji had not been, All would have been circumcised (converted)].

Bhushan's verse has immense historical value because the Kashi Vishwanath



Yet, having gone through 105 pages of shoddy polemics posing as historical research, I am constrained to state that Oxford University Press needs to re-examine its commissioning policy if it hopes to retain credibility as a publishing house.

Sandhya Jain

temple was razed in 1669 and thus lost its splendour, and the Krishna Janmabhoomi temple was destroyed and converted into a mosque in 1670. Bhushan came to Shivaji's kingdom from the Mughal capital in 1671, and within two years composed *Shiv Bhooshan*, a biography of Shivaji. It clearly states that Shivaji wanted to set up a Hindu *Pad Padshahi*.

Hence the view that Shivaji had no ideological quarrel with Aurangzeb and was only an adventurer in search of power and resources is juvenile. Laine obviously subscribes to the secularist school of historiography that decrees that Hindus must forget the evil done to them, a phenomenon Dr. Koenraad Elst calls negationism. But history is about truth, and Hindu society's long and painful experience of Islamic invasions and the subsequent Islamic polity has been so well documented in standard works like *Cambridge History of India*, that it is amazing a modern historian should claim there was no tension between Muslim rulers and their Hindu subjects.

Shivaji strove consciously for political power as an instrument for the resurrection of dharma (righteousness), a quest he termed as "Hindavi Swarajya," a word having both geographical and spiritual-cultural connotations. When still in his teens in 1645 CE, Shivaji began administering his father's estate under a personalized seal of authority in Sanskrit, an indication that he envisaged independence and respected the Hindu tradition. A 1646 CE letter to Dadaji Naras Prabhu refers to an oath that Shivaji, Prabhu, and others took in the presence of the deity at Rayareshwar, to establish "Hindavi Swarajya."

Shivaji was aware of the economic ruin and cultural annihilation of Hindus under the various sultanates. He desired to end this suffering, but was personally free from bigotry, as attested by contemporary Muslim chroniclers, notably Khafi Khan. It is therefore galling when Laine smugly proclaims: "I have no intention of showing that he was unchivalrous, was a religious bigot, or oppressed the peasants." A.S. Altekar (*Position of Women in Ancient India*) has recorded how Shivaji, in stark contrast to Muslim kings and generals of his era, ensured that Muslim women in forts captured by him were not molested and were escorted to safety. It is inconceivable that Shivaji would not know that Hindu women similarly situated would have to commit *janbar*. It is therefore incumbent upon Laine and BORI to explain what "unchivalrous" and "bigot" mean.

The insinuation about "bigot" is especially objectionable in view of Laine's insistence that Shivaji had no particular interest in Hindu civilization and no proven relationship with the revered Samarth Ramdas or sant Tukaram. A Maharashtra friend suggests that Laine has probably not read the references cited in his book! What the reader needs to understand is that Ramdas' historical significance lies in the fact that he openly exhorted the people to rise against oppression and hinted in *Dasbodh* that Shivaji was an avatar who had come to restore dharma. By denying that he was Shivaji's spiritual mentor, Laine seeks to disprove that the great Maratha wanted to establish a Hindu *Pad Padshahi*.

Ramdas, a devotee of Rama (Vaishnava sampradaya), visited the

Khandoba temple at Jejuri, Pune; apologized to the god (Shiva) for boycotting the temple due to the practice of animal sacrifice there; and built a Hanuman temple at its entrance. I mention this to debunk Laine's pathetic insistence that devotion to a personal god divides Hindu society. This is alien to our thinking; we see no conflict between Ramdas and the Bhavani-worshipping Shivaji.

Then, there is Laine's tasteless allegation that Shivaji may possibly (whatever that means) be illegitimate, simply because Jijabai, who bore many children while living with her husband in the south, gave birth to Shivaji on her husband's estate near Pune and continued to live there. Maharashtrians point out that Shahaji had to send his pregnant wife to safety in Shivneri due to political instability. Shahaji was on the run with the boy king Murtaza Nizamshah, in whose name he controlled the Nizamshahi. After its fall in 1636, service in the Adilshahi took him to Bangalore (his remarriage produced the distinguished Thanjavur-Bhonsle dynasty); he administered his Pune lands through Dadaji Konddev.

My response to Laine's profound Freudian analysis is that he has thanked his wife and children and dedicated his book to his mother; I couldn't but notice the absence of a father. Is one to deduce something from the omission? Laine can relax: since the Vedas, Hindus have placed only proportionate emphasis on biological bloodlines; there is no shame if a man cannot mention his father; a true bastard is one who does not know the name of his mother.

Sandhya Jain is an author, independent researcher, and writer of political and contemporary affairs. Jain is a post graduate in Political Science from Delhi University and has had over three decades of experience as a professional journalist.

Leanings from Oxygen Logistics

Logistics is at the core of the business. It is at the core of the value chain framework. The relative power of logistics has emerged to be supreme among the various divisions of modern business such as finance, technology, human resources, sales, marketing, production, or anything else. It is the successful implementation of logistics that has enabled cold drink companies such as Pepsi and Coca-Cola to make available their products in the interiors of the world; they have reached places where even today people struggle for water. Basic entities such as health care facilities, clean water, electricity, and communication towers are missing but Lays can sell their potato chips and Coke can sell their cold drinks. These are sufficient proofs that the modern business since the last few decades is heavily dependent on logistics for their survival.

The business model of high volume and low margin has pushed the relevance of logistics to newer and newer heights. If the product is really important then the role of logistics diminishes and the role of other divisions of business such as technology, production, and human resources rises. But if the product is easily substitutable and is not of high-end technology, for example, products like cold drinks and potato chips or toys then logistics is the driver of the business.

The question is whether we should have a high logistic cost or a low logistics cost. If we wish to nurture a business model where the products can be sold at any part of the country and compete with non-indigenous companies then the inland logistics has to be cheaper but if wish that non-essential products be produced locally then the high logistics cost acts as a facilitator for the local business to flourish. The best should rule the market and the domestic customers should get the best product at the cheapest price but time and again this model has failed us. It has failed us during the initial phases of nationwide lockdown in the year 2020 and it has failed us again for supplying oxygen.



We have a government that is committed to vocal for local. Every sphere of life needs strong scrutiny in terms of local business.

Alok Singh



Local essentials need to be locally generated, locally produced, by engaging local talents. This localization favours the environment as it reduces waste by discouraging overproduction; the factory to end-user distance is lesser, the local producer understands local demand better and hence customizes products accordingly.

Technology and management practices can provide solutions where the logistics cost between the end-user and the factory floor can be diminished by absorbing it in the high volume and economies of the scale production model. But do we really need such a model? The oxygen logistics has taught us the hard way. The verdict says that: No, we don't need one big plant, rather we need many smaller plants spread across the country.

The culprits of the Oxygen disaster in India in general and Delhi, in particular, are those lessons and syllabus which has encouraged the entrepreneurs to run blindly for coming up with the best product at the cheapest price and be the supplier to every nook and corner of the world. This business lesson has pushed logistics to the highest level of innovation and in the whole process has killed the importance of localization. It has killed the concept of self-reliance. It has killed the philosophy of social responsibility. It has killed the organic structure of society.

Why should we have potato chips manufactured in a single large plant for consumption across the nation? Why should we have a single common salt manufacturing plant to supply the salt across the nation? Instead, we should have one semiconductor fabrication

Why should we have potato chips manufactured in a single large plant for consumption across the nation? Why should we have a single common salt manufacturing plant to supply the salt across the nation?

plant to fulfil the needs of the country, but no way one factory for potato chips, one factory for cold drinks, one factory for common salt, one factory for detergents.

Today the government, the media, the court, the experts are saying that oxygen generation should be an integral part of the hospital infrastructure. The union government has allotted money through PM Cares fund for setting up oxygen plants across the districts of the country. The Defence Research Development Organization is transferring technology to companies engaged in the building of new upcoming oxygen plants.

The irony is that we have the capability, we have the technology, we have resources but we are running out of time. Who failed us? The logistics failed us. We trusted railways and airways beyond their agility. We have seen oxygen express crisscrossing the length of the country. We are seeing videos of aircrafts lifting necessities for medical oxygen generation.

Missing one single ideology i.e. localization, and so many prac-

es we had to pay and are still paying. Do we need pandemics to teach us that oxygen plants should be established locally and the generation of oxygen plants be made mandatory for big hospitals? Do we need courts to order that the oxygen generation plant be an integral part of the hospital infrastructure, the way we have fire safety and evacuation layouts? Do we want the lawmakers in parliament to sit and come up with a new act regarding hospital infrastructure? Do we wait for NITI Aayog to come up with a suggestion to have oxygen plant everywhere?

The story is not about oxygen plant. It's about faulty business principles. The only sustainable business policy is localization, localization, and localization. The mantra for sustainability is self-reliance, self-reliance, and self-reliance. We have a government that is committed to vocal for local. Every sphere of life needs strong scrutiny in terms of local business.

We should not rest till we have local potato chips manufacturing plant, we should demand a local cold drink bottling plant, and we should expect a local salt manufacturing plant. We need more value addition in our neighbourhood. We don't need business models which save on the manufacturing principle of economies of scales but fail the participation of locals in value addition. We should discard the model of high volume and low margin. It has failed us, it has killed us. Rise and Awake to the new business model. As a consumer, we should stick to local products and services that is the takeaway lesson from oxygen logistics. □□

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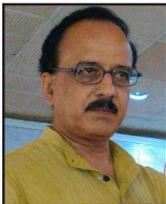
Lessons for India from China's food import

Speaking at an international conference in 1998 at the University College Cork, in Ireland, to commemorate 150 years of the Great Irish Famine that killed nearly one million people, I was asked a question: who will feed India? This question cropped up at a time when the world was already deliberating a hypothesis floated by the well-known environmental researcher and thinker, Lester Brown.

Founder of the US-based environmental think tank, the Worldwatch Institute, and later president of the Earth Policy Institute, Lester Brown in 1995 had built on his analysis to come out with a book *Who Will Feed China?* This had triggered a hot debate, prompting numerous seminars and conferences across the globe. I remember having participated in a few of these conferences, witnessing heated debates that followed. There were terrific academicians who would support Lester Brown's hypothesis, and there were experts who openly challenged it. Nevertheless, 25 years later, faced with record high domestic grain prices, China has emerged as the world's biggest food importer — a reminder of what Lester Brown had warned decades back.

While the severity of China's food crisis is being denied, questions continue to be raised especially after President Xi Jinping launched an 'Operation Clean Plate' campaign in August last year, asking people to ensure that no food is wasted. With an estimated 6 per cent food wasted every year, good enough to feed 200 million people, the campaign even involved restaurants to ensure people are not provided with lavish spreads. If the consumers order for five meals, the restaurants would serve food for four people.

This reminds me of the times when in 1965, the then Prime Minister Lal Bahadur Shastri had asked Indians to observe a fast every Monday. This was primarily to ensure that people learned to 'share and care' at a time when food was in great shortage. In fact, in 1965, a year prior to the start of the Green Revolution, India had imported 10 million tonnes of foodgrains to tide over the



In our country where mainline economists revel in cut-paste prescriptions in the name of agricultural reforms, China's example illustrates how the transformation from state-regulated to market-oriented farming has brought it to the brink of an unmanageable food crisis.

Devinder Sharma



severe food crisis. It shows how precarious the situation was. But after the onset of the Green Revolution, India attained food 'self-sufficiency' but with the easy availability of food over the years, a kind of complacency has set in.

Similarly, China too had taken long strides in food production. It was in 1996 that China had brought in a policy focus to ensure that it meets 95 per cent of its food needs from domestic production. But by 2011, as per the World Trade Organisation (WTO), China had become the world's largest food importer. With rising incomes, the food preferences of the burgeoning middle-class had undergone a change that shifted the food habits from staples to an exploding demand for meat and nutritious products, including dairy.

The changing food habits prompted the government to shift the policy focus from food self-sufficiency to allowing 'moderate imports'. Denials notwithstanding, mass urbanisation and the efforts to move a bulk of the farming population away from agriculture to join the industrial workforce in the cities did leave a gap in production. At the same time, intensive farming practices resulted in heavy soil contamination, groundwater decline as well as pollution, and the resulting environmental degradation reduced the extent of arable lands, prompting China to announce that it will protect 120 million hectares of farmlands to meet its food security needs.

As the average farm size in China declined to 1.6 acres, the growing appetite for chemical fertilisers, including nitrogen, coupled with direct income support for farmers had resulted in a grain sur-



China is clearly on the brink of a severe food crisis, there are important lessons here for India.

plus of 600 million tonnes in 2017. Although the silos were bursting, the growing demand for nutritious foods including beef, also soared meanwhile. The sale of beef to China, for instance, had grown by 19,000 per cent. A change in diet therefore forced China to scout for food all over the world, including India and Pakistan.

According to Fitch Ratings, China's imports of corn, wheat, sorghum and barley in 2020 soared by 136 per cent, 140 per cent, 437 per cent and 36.3 per cent, respectively. It expects the trend to continue in 2021 as well. Already it has exhausted soybean supplies from Brazil, the world's biggest soya producer, and is now turning to the US. So much so, as Forbes points out that despite being the world's second biggest wheat producer, China holds over half of the world's wheat stocks. Similarly, it has 65 per cent of the world's corn inventories.

Unable to meet its growing food needs domestically, China has been on an aggressive spree buying farmlands in Africa and Latin America, and is now turning its attention to purchase farm lands in America, European Union and Australia. The website *farmlandgrab.com* estimates that since 2010, China has already made an investment of \$94 billion in farm activities abroad, purchasing 3.2 million hectares.

While China is clearly on the brink of a severe food crisis, there are important lessons here for India. In a country where mainline economists revel in cut-paste prescriptions in the name of agricultural reforms, the Chinese example illustrates how the transformation from state-regulated farming to market-oriented agriculture has brought it closer to an unmanageable food crisis, perhaps pointing to a bigger crisis ahead. With the experiment to transform China into a manufacturing hub going awry, especially after Africa was able to provide cheap workforce, restoring farm viability now is becoming a still bigger challenge.

China provides \$206-billion farm subsidies every year (add to it tens of billions spent on importing food year after year) that shows if the same amount had gone into converting small farm lands into an economic powerhouse, the world's biggest grain producer could have easily avoided turning into world's biggest grain importer. There was an alternative economic pathway, more sustainable in the long run, that China failed to undertake.

India cannot afford to go on the same beaten track. Or else, the question as to who will feed India will continue to haunt future generations.

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<https://www.tribuneindia.com/news/comment/lessons-for-india-from-chinas-food-import-241793/>

Why the hills are burning?

In the first week of April, India hosted US special presidential envoy for climate, John Kerry, in New Delhi as a precursor to the Leaders' Summit with President Joe Biden later this month and COP-26 (the 26th United Nations Climate Change conference) in November. Around the same time, barely 300 km away in hill state Uttarakhand's capital Dehradun, chief minister Tirath Singh Rawat was huddled in an emergency meeting to deal with the spreading forest fire in the state. His state, along with neighbouring hill state Himachal Pradesh, is witnessing unprecedented wildfires. The situation is getting worse by the day as the region has had a prolonged dry spell, leaving the forest floor "tinder dry".

Uttarakhand and Himachal see the most forest fires in India every year. The Forest Survey of India (FSI) has identified the woodlands along the south, west and southwest regions of Uttarakhand, including Dehradun, Haridwar, Garhwal, Almora, Nainital, Udham Singh Nagar and Champawat districts, as the most vulnerable in terms of the frequency and intensity of wildfires. This year, Nainital, Almora, Tehri and Pauri districts have been the worst hit.

Locals say the standing oak trees are also burning this time, besides the pines, which catch fire more easily. They say this means the earth is completely dry. The lack of soil moisture is a key factor, the last two monsoons in 2019 and 2020 were rain deficient by 18-20 per cent of the seasonal average. Generally, forest fires happen when the ground has large quantities of dry wood, leaves, stumps, dry grass, all of which can easily go up in flames if there is a trigger. Last year, human movement was also restricted because of the lockdown and Covid restrictions, so the forests were in better shape. Increased access to LPG cylinders as cooking fuel has also led to drastic reduction in use of forest waste in the hill states. Even so, the trigger for the fires could be natural or man-made.

A bigger problem is that Indian environment and climate change policy-makers do not factor in forest fires as carbon emitters, nor does the National Disaster Management Authority (NDMA) consider it a natural disaster. Based on analysis of satellite images, the European Union's Copernicus Atmospheric Monitoring Service (CAMS) says the Uttarakhand fires have already emitted 0.2 mega tonnes of carbon in the past month, the highest since 2003. On paper, two-thirds of the state is under forest cover, but its own data shows that in the past two decades, roughly 48,000 ha. has been lost to development activities as well as fires. The locals are used to wildfires in the spring, but it usually peaks in May, and they fear the worst is yet to come.

Meanwhile, Rawat has roped in two MI-17 helicopters from the Centre to fight the fire. Deployed in Kumaon and Garhwal regions, they are using 5,000 litre buckets filled with lake water to douse the flames. Some 12,000 state and central forest personnel are also deployed in the fire-fighting operations but with little success so far. The fire has already destroyed 700 ha. of forest land.

[Continued on page no. 31]



On paper, two-thirds of the state is under forest cover, but its own data shows that in the past two decades, roughly 48,000 ha. has been lost to development activities as well as fires.

Anilesh S. Mahajan

Retailers fear \$ 5 billion loss in Maharashtra alone due to new lockdown

None locks itself down during war, India must have protocol to be on Job



India has to learn to be on working mode and not shut or lock itself down repeatedly. After loss of productivity, jobs and severe thaw in the economy for a year, it should have evolved a protocol to restore normal working conditions.

The hits come at a time when International Monetary Fund just predicts a possible 12.5 growth in 2022 and forecast India as the fastest-growing economy. The second erratic closure may throw a spanner.

During the last 100 years it has suffered many epidemics but never closed down the establishments.

During the difficult times all individuals and organisations came together to strive and restore normalcy. The mid 1990s Surat plague was also combated like that and the dirty city reemerged as a beautiful clean destination but it did not shut its business activities.

Even after nine months after the unlocking process most industries, including education, tourism, travel and even government offices have not gone back to the usual mode. Direct and indirect job losses are hitting not only the economy but social and family lives. The minus 23.9 percent fall in GDP during the lockdown and still speculations by national and international organisations about the growth; another bout of widespread closures and uncertainties are hitting all activities.

The nation remembers that nationwide sudden lockdown on March 25, 2020 at a four-hour notice led to 10.9 million (1.1 crore) jobs being lost and termed the worst-ever year for the job market. It does not include the trek back of at least another 10 crore migrant workers, of a supposed 18 crore, to their homes impacting MNREGA expenses.

There is no centralized data available for how many jobs were created during July-December 2020, a volatile period. In total, HR consultants estimate one million (ten lakh) jobs were added during this period. Now many of these jobs, most in irregular employment, are threatened to be lost again.

Many companies like Parle Products, Tata Motors, Mahindra & Mahindra, Ceat and Axis Bank have largely gone back to WFH format for corporate employees. Many others like ITC, Samsung, RPG, Dabur, Haier, Vedanta, Vivo and Panasonic have issued new guidelines to the workers. Aditya Birla group Global HR director S Misra says that office attendance may come down to 30 percent against the present 50 to 60 percent. This reduces companies' productivity or not it affects travel and transport, restaurant, entertainment and allied sectors.

According to CMIE, since January 2021 about 12 million additional people get jobs, the highest since March 2020. But the April lockdowns can make many of them lose it again.



It cannot force repeated closures of social and economic activities for an unconfirmed fear of a disease. Some health sector people link the new supposed surge to intense vaccination.
Shivaji Sarkar

Stock market is again rocked with both BSE and Nifty slipping every day, banks fretting over another spike in defaults and credit quality, and the manufacturing activity at its lowest pace in seven months restricted by covid19 panic. The curbs imposed almost all over the country and beginning of a second wave of exodus of migrant workers back to their home could dent manufacturing, core sector activities, supply of goods & services and the overall demand.

The rating agency ICRA says that bad loans of Indian banks could rise to 9.7 percent in 2021 and 10.2 percent in 2022 from gross bad loans at 9.6 percent in March 2020 and 8.3 percent in December 2020. The December decline is due to writing off of Rs 1.1 lakh crore of such loans.

A nation trying to recover is being hit hard again. Retailers Association of India (RAI) estimates retailers will lose about \$ 5 billion in Maharashtra alone in April. It says that Maharashtra alone accounts for 10 percent of \$ 85 billion of India's annual retail sales. It says that sales of automobiles, consumer durables, smart phones and apparels, which have just started recovering, will be adversely affected. Even partial lockdowns in different parts hit sales. Kirana stores across the country report that there are no major increase or customer walk-ins.

Work from home occasionally for maximum worker utilization cannot be a permanent mode. The online mode in a poor country like India with critical cash flow in rural areas increases hardship and is devastating the education sector, largely private as income-deprived parents are unable to pay the tuition fees leading to closure of sev-

eral lakh budget schools in Bihar, UP, Rajasthan, MP and many other states. They can neither afford increasing data costs nor they have connectivity nor even smart phones or laptops. The new generation feels not only deprived but also discriminated leading to a severe social divide. In Bihar, the budget school owners are up in arms against the irrational lockdowns.

The situation remains alarming as the factory activity grew at its weakest in March 2021. The Nikkei manufacturing purchasing managers' index (PMI) declined to a seven-month low of 55.4 from 57.5 in February on demand squeeze. A Reuters survey says that Asia's third largest economy despite some recent improvements is heading for the biggest risk to the outlook. The rupee is already taking a hit for national, international situations as well as severe price hike and income squeeze.

The country cannot also relax fiscal deficit norms as suggested by Home Minister Amit Shah. Rising government debts may have many dangers.

[Continued from page no. 29]

Why the hills are burning?

In January 2019, the FSI upgraded their monitoring system by sourcing satellite images from NASA and ISRO for real-time data on fires in the Himalayan states. A long-standing complaint in the region has been that the Forest Act, 1988, dissociates the local community from the forests. Environmentalist and author Shekhar Pathak has been arguing for long that the "van panchayats must be given rights and incentives to protect the jungles". "We must go back

The second largest populated country having a capacity to grow fast has to change its policies. It cannot force repeated closures of social and economic activities for an unconfirmed fear of a disease. Some health sector people link the new supposed surge to intense vaccination. Even the efficacy of the vaccine produced in a jiffy is being questioned as the production and testing process are yet to be made public. It is also said that pneumonia vaccine has yet not been found even after over 100 years of modern medicine. The concerns may remain though the fears are more speculative.

However, it calls for the nation and Prime Minister Narendra Modi to reconsider whether every now and then the country should impose jittery closures. A protocol must be developed so that it continues its work as during war time with least of disruption during any future epidemic. Diseases surge and go but a nation has to sprint to success without closing down for a day. □□

to conventional methods, such as creating waterholes in the hills to recharge groundwater and increase moisture levels and rebuilding 'fire-lines' (30-35 feet buffer trenches) in the forests," he says.

Kerry and the Indian government can continue the preparations for the global climate meet, but policymakers must also find the bandwidth to discern lasting solutions to the perennial problem of wildfires. □□

Gulf of Cambay can become Golden gate to prosperity of Gujarat

The Gulf of Cambay (or Khambhat) extends from north to south about 200kms and the width varies from 25km at the inner end to 150km at the outer mouth, covering an area of about 17000 sq. km.

Narmada, Dhadhar, Mahi, Sabarmati and some rivers from Saurashtra region flow into the Gulf of Cambay, pouring several million cubic meters of sweet water into the sea.

Gujarat is a water deficient State. It occupies 6.4% of land area of the country and has 5% of the country's human population, but its surface water resource is only 2% of the country. The idea of constructing a dam across the Gulf of Cambay, and thus restricting the sea water out side thereby saving and storing sweet water from these rivers into a huge manmade reservoir was mooted long ago. Renowned public dignitaries made suggestions from time to time for construction of a dam across the Gulf of Khambhat.

About twenty years ago, a pre-feasibility study was carried out followed by a technical feasibility study. "Kalpasar" project was launched and an Expert Advisory Group and a Steering Council of Ministers as the apex decision making body were formed to deliberate and approve all major aspects of the project. Further, due to the complex nature of work, a Committee of Secretaries headed by Principal Secretary was also constituted with a view to resolve issues related to technical sanction, rates for all types of works and agreements, environmental, social, economical and Public-Private Partnership related policy issues, etc.

It was envisaged that the project would create world's largest man made fresh water reservoir in the sea and make available about 6500 million cubic meters of fresh water for irrigation to over 10.5 lakh hectare land in 39 talukas of 6 districts of Saurashtra region, besides making available drinking water for Saurashtra and Central Gujarat regions. Besides making available water, the project

It is hoped that a fresh look at the project be given, whatever obstacles have appeared, be removed, and a dynamic leader should be entrusted to steer the project forward. This would be a great contribution to the state of Gujarat by reducing long distances for passengers & freight.
Ashok Verma



would also generate 1470 megawatt power through Wind and additional 1000 megawatt through solar energy.

A 10 lane road and a railway track over the dam would connect Dahej and Bhavnagar, reducing the road and rail distance between the two important cities by around 200 kms to 225kms and triggering exponential industrial growth in the entire belt.

Numerous other indirect benefits have also been envisaged such as about 1.5 to 2 lakh hectares additional land becoming available through reclamation due to end of high tides, generation of high level fresh water table in Saurashtra and Central Gujarat, reduction in soil salinity, development of tourism, improvements in the ports, boost to fisheries etc.

As per one estimate, the project was to cost about Rs. 60,000 crore and the media report in January 2017 stated that as per the estimates of revenue generation, the project would give 12% return.

The project had been moving at average pace initially. Several resolutions were passed between 2006 and 2011. The Expert Advisory Committee met at least a dozen times, several technical studies were carried out and technical experts of international repute were hired. The newspapers carried a report in early 2017 that the project might take 20 years to complete.

The project could still be worked out with a better pace. The Project has far more potential than envisioned till now, and can certainly be completed much faster and at a much lesser cost than being projected now. Some of the possibilities are:

- Instead of a conventional dam,

it could be a much wider rock and clay dam, constructed by dredging the sea and developing the entire area as a unique reclaimed land with holiday resorts, forests and public entertainment parks. Aswan dam in Egypt was constructed in a similar manner.

- The site of the dam should be further south of where it has been envisioned now, taking Dahej and Bhavnagar ports also in the sweet water part.
- There could be a navigation lock system connecting the two sides of the dam through a pair of gates allowing movement of ships from one side to the other at different levels, which would be a further tourist attraction, and luxury cruises could be deployed.
- An island resort could be developed in the fresh water lake area for tourism purposes.
- Water sports could be encouraged.
- An international airport could be developed on an artificial island like the Kansai airport (Osaka) to share the load of traffic from Mumbai, Delhi and Ahmedabad airports. This could be developed as the best airport of India, comparable to Dubai and Changi.
- The difference in level on both sides could be further utilized to generate hydro-electric power.
- The entire sea front would now be more similar to a lake front due to calm and static water level and could be developed along with a rail track/ road for even better connectivity with remote small areas, triggering growth in these areas also.
- All these projects would be

commercially very attractive and many private players would come forward to invest in these, thus saving the Government significant investment. In fact if planned with a good strategy, after the initial technical studies, the Government may not have to invest any more, but would earn by giving licenses to private operators for all such activities.

Such promising project should not be standstill for so long. It is hoped that a fresh look at the project be given, whatever obstacles have appeared, be removed, and a dynamic leader should be entrusted to steer the project forward.

This would be a great contribution to the state of Gujarat by reducing long distances for passengers & freight, providing fresh water to Saurashtra and giving push to growth & prosperity of Gujarat state.

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Such promising project should not be at a standstill for so long. It is hoped that a fresh look at the project be given, whatever obstacles have appeared, be removed, and a dynamic leader should be entrusted to steer the project forward. This would be a great contribution to the state of Gujarat by reducing long distances for passengers & freight. □□

(The Author is Former Director, Onshore ONGC)

Opportunities in Electronic Waste for Atmanirbhar Bharat



Presently Electronic waste is illegally routed into unregulated channels of mafia or informal traders having control in the e-waste market. The supply of e-waste attracts 5 per cent GST. This has indirectly allowed various informal sector players to trade in e-waste by moving it from one city to another by simply paying the GST to ensure legal compliance.
Vinod Johri

Background

We are always puzzled over obsolete and outdated electronic items, mobile phones, laptops, keyboards, leads, computers, old transistors, VCD, VCP, TV, remote controls, electronic cords, UPS, batteries, mouse, scanners, modems, pen drives, server, printers, routers, speakers, smart watches, smart lights, medical testing equipments etc. With COVID-19 keeping people indoors and on devices, the usage of electronics is only getting higher. All electronic items have limited life span so they are obsolete sooner or later.

E-waste is one of the fastest-growing waste streams with an annual growth rate of 3-5%. E-waste quantities are rising 3 times faster than the world's population and 13 per cent faster than the world's GDP during the last five years.

According to information available in public domain, 53.6 million tonnes worth of electronics in 2019 has been discarded, globally up 20 percent in 5 years. But only 17.4 percent was recycled sustainably.

Bharat generated 3.2 million tonnes of e-waste last year, ranking third after China (10.1 million tonnes) and the United States (6.9 million tonnes). It is expected that it may rise to 5 million tonnes by 2021. With COVID-19 keeping people indoors, the usage is only getting higher; and without proper intervention, it is likely to be over 100 million tonnes by 2050 worldwide.

Definition of E-Waste

E-waste is any electrical or electronic equipment that's been discarded. This includes working and broken items that are thrown in the garbage. E-waste is particularly dangerous due to toxic chemicals that naturally leach from the metals inside when buried. The definition of e-waste is likely to keep expanding. In an era of rapid technological advancement, more and more highly sophisticated electronic goods are being invented and manufactured. The technology innovators continue to create electric devices designed to make our lives easier and more convenient in every conceivable way. Therefore, the menace of E-Waste will only grow exponentially over the years.

Hazards of Electronic waste

Waste from end-of-life electrical and electronic equipment, is a rapidly growing global problem. E-waste contains valuable materials that have an economic value when recycled. Unfortunately, the majority of e-waste is recycled in the unregulated informal sector and results in significant risk for toxic exposures to the recyclers, who are frequently women and children who have minimal awareness about the adverse consequences of mishandling e-waste. If the gadgets aren't handled properly, they can lead to organ damage, neurological damage and severe illness not only for the waste workers but also the population residing in the vicinity. Reports show that e-waste workers suffer from stress, headaches, shortness of breath, chest pain, weakness, and dizziness and even DNA damage. Incineration of e-waste also discharges lethal gases into the air.

According to the World Health Organization (WHO), health risks may result from direct contact with toxic materials that leach from e-waste. These include min-

erals such as lead, cadmium, chromium, brominated flame retardants, or polychlorinated biphenyls (PCBs). Danger can come from inhalation of the toxic fumes, as well as from the accumulation of chemicals in soil, water, and food. This puts not just people in danger but land and sea animals as well. In developing countries, the risks are exceptionally high because some developed countries send their e-waste there.

USA's Environmental Protection Agency estimates that up to 60 million metric tons of e-waste end up in landfills every year. When E-waste gets buried at a landfill, it can dissolve in microscopic traces into the gross sludge that permeates at the landfill. Eventually, these traces of toxic materials pool into the ground below the landfill. This is known as leaching which poisons nearby water. Hazardous chemicals like mercury, which are used to extract these metals, leach into the soil, which will be damaged forever. If dumped in landfill, the soil around discarded batteries, tube lights, CFL bulbs will be barren. E-waste will ensure that nothing natural will grow around it, not even grass.

Once the quantities increase, the leaching of metal finds its way to everything around that space, even food. When e-waste travels to our oceans in large quantities, it contaminates water with gaseous or liquid toxins, which we can't even see. The soil from informal electronic recycling sites that recover metals showed high levels of contamination across Mumbai, Delhi, Kolkata and Chennai.

High Risk E-waste handling

Presently Electronic waste is illegally routed into unregulated channels of mafia or informal traders having control in the e-waste

market. The supply of e-waste attracts 5 per cent GST. This has indirectly allowed various informal sector players to trade in e-waste by moving it from one city to another by simply paying the GST to ensure legal compliance. There is a lack of legitimate and cost-effective formal collection mechanisms to channelize waste from consumers into the formal segment. Bharat treats less than 1 per cent of its e-waste formally. There are now 312 authorised recyclers in the country.

Central Pollution Control Board (CPCB) Guidelines on E-Waste

CPCB has issued Implementation Guidelines for E-Waste (Management) Rules, 2016 vide G.S.R. 338(E) dated 23.03.2016 effective from 01-10-2016. These rules are applicable to every producer, consumer or bulk consumer, collection centre, dismantler and recycler of e-waste involved in the manufacture, sale, purchase and processing of electrical and electronic equipment or components in specified schedule. Two categories of electrical and electronic equipment namely (i) IT and Telecommunication Equipment and (ii) Consumer Electricals and Electronics such as TVs, Washing Machines, Refrigerators Air Conditioners including fluorescent and other mercury containing lamps are covered under these Rules. The main feature, of these rules, is Extended Producer Responsibility (EPR). Target based approach for implementation of EPR has been adopted in the E-Waste (Management) Rules, 2016, which stipulate phase wise collection target to producers for the collection of e-waste, either in number or weight, which shall be 30% of the estimated quantity of waste generation during first two year of implementation of rules followed by 40%

during third and fourth years, 50% during fifth and sixth years and 70% during seventh year onwards.

US Regulation

The Resource Conservation and Recovery Act (RCRA) of USA gives Environmental Protection Agency (EPA) the authority to control hazardous waste from cradle to grave. This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. A total of 67 countries have legislation in place to deal with the e-waste they generate.

Recycling of E-waste

The way forward for consumers could be the **4R** method of reuse, repair, recycle, and research. Information in public domain says that e-waste's global worth is around \$62.5 billion annually, which is more than the GDP of most countries. It's also worth three times the output of all the world's silver mines.

While recycling is one of the sustainable solutions to manage e-waste, adequate emphasis should also be placed on "reducing" and "re-using" before recycling. A circular concept, therefore, aims to reduce e-waste at each step in the life-cycle of electronics. It is crucial to design electronics with a longer lifespan and be repairable in order to step towards a green recovery.

The products need to be designed so that they can be reused, durable, and safe for recycling. The producers should also have buy-back or return offers for old equipment and plans to incentivise the consumer financially. Changes in technology such as cloud computing and the internet of things (IoT) could hold the potential to dematerialize the electronics industry.

An ordinary circuit board from a mobile or laptop contains roughly 16 different metals. E-waste contains several toxic materials such as lead, cadmium, chromium, brominated flame retardants, or polychlorinated biphenyls. Most informal sectors will probably be able to retrieve a couple of metals and landfill the rest.

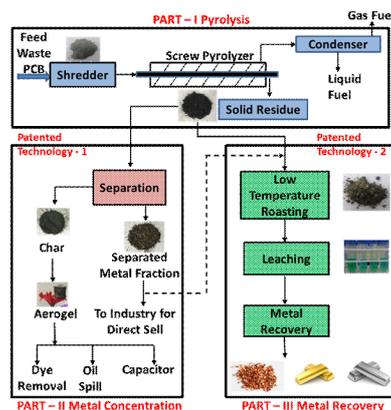
The way forward to ensuring a sustainable chain in manufacturing and recycling is to build effective reuse methods. The purpose of extracting metals and plastic from e-waste is to use them towards making more electronics. UN report says the total recovery rates for cobalt at 30 percent (despite technology existing that could recycle 95 percent). It's used for laptops, smart phones, and electric car batteries, and recycled metals are two to 10 times more energy-efficient than metals smelted from virgin ore. As much as 7% of the world's gold may currently be contained in e-waste, with 100 times more gold in a tonne of e-waste than in a tonne of gold ore.

Top recycling countries

Switzerland is one of the biggest global producers of e-waste and recycles roughly 75 percent of this discarded material. Top five best recycling countries — 1. Germany – 56.1%, 2. Austria – 53.8%, 3. South Korea – 53.7%, 4. Wales – 52.2%, 5. Switzerland – 49.7%.

IIT Delhi research

To deal with one of the fastest growing waste streams, researchers at Indian Institute of Technology, Delhi have developed a zero-emission technology to manage and recycle e-waste to wealth. It said a team led by K.K. Pant and his research group in the Catalytic Reaction Engineering Laboratory at Chemical Engineering Department have adopted a methodology that



uses e-waste as an Urban Mine for metal recovery and energy production. The adopted methodology is a three-step process: (i) Pyrolysis of e-waste (ii) Separation of metal fraction, and (iii) Recovery of individual metals. Researchers said using their method, e-waste is shredded and pyrolyzed (decomposition brought about by high temperature) to yield liquid and gaseous fuels, leaving behind a metal-rich solid fraction. On further separation using a novel technique, the leftover solid residue yields a 90-95% pure metal mixture and some carbonaceous materials. The carbonaceous material is further converted to aerogel (solid of low density) for oil spillage cleaning, dye removal, carbon dioxide capture, and use in super capacitors.

In the next step, a low-temperature roasting technique is employed to recover individual metals such as copper, nickel, lead, zinc, silver and gold from the metal mixture. It gives a recovery of nearly 93% copper, 100% nickel, 100% zinc, 100% lead and 50% gold and silver each. It is a green process in which no toxic chemicals are released into the environment. The team has successfully installed a 10 kg/h (Kilogram per hour) pyrolysis plant for e-waste recycling at IIT Delhi. The gaseous product obtained from the pilot plant is primarily composed of hydrogen and methane whereas the liq-

uid product is rich in hydrocarbons suitable for energy generation.

The technology is an outcome of a Department of Science and Technology, Government of India, funded project and developed technology will cater to the need of “Smart Cities,” “Swachh Bharat Abhiyan,” and “Atmanirbhar Bharat” initiatives of the government, IIT-Delhi said.

The technology has also been patented and published in internationally reputed journals such as the Journal of Cleaner Production, Journal of Hazardous Materials, Waste Management and the Journal of Environmental Chemical Engineering.

Suggested Policy measures

1. National Scrap Policy should be framed for all sorts of Electronic Waste, domestic – industrial scrap as their recycling into products of various electronics, domestic, industrial, packaging, building material, chemicals, landfill etc. will boost national economy and GDP besides ensuring environmental safeguards.

2. E-Waste authorized agencies and industries be liberally licensed across the nation so that people, organizations, Govt. agencies dispose their E-Waste at authorized destinations.

3. All E-Waste recycling industries should be given concessional tax treatment in respect of GST or Income Tax or local taxes.

4. All Government Departments with huge pile up of E-Waste should dispose it within specific time frame.

5. Public awareness should be carried in Media sensitizing against selling E-Waste to local kabari or unauthorized dealers.

E-waste is an opportunity for self reliance in manufacturing of electronic goods, computers, mobiles etc. reducing imports and increasing exports substantially. □□

The author is Sab Vichar Vibhag Pramuksb, Delhi Prant, SJM

SJM protests against Bill Gates



Swadeshi Jagran Manch (SJM) organised online and offline protests against Microsoft founder Bill Gates and Bill Melinda Gates Foundation. The protest was organised against Bill Gates' reported statement that he does not favour sharing vaccine formula with India and other developing countries.

Recently, in a statement issued in the United States, the Gates Foundation CEO Mark Suzman said the Foundation wants no barriers to stand in the way of equitable access to vaccines, including intellectual property, which is why it supports a narrow IP waiver during the pandemic.

SJM, in a statement, said, "Though developed countries who were also trying to block IPR waiver for COVID-19 vaccines and medicines, have amended their stance and have announced support to India and South Africa's proposal in World Trade Organization (WTO), the stance of MNCs and their representative Bill Gates is far from being positive".

SJM alleged that MNC's are making all-out efforts to maximise their profits by exploiting the worst situation faced by humanity, especially developing and poor countries.

During the protest, the protesters were carrying placards deploring Bill Gates statement and favouring 'Patent Free Access' to Vaccine and Medicines. SJM reiterates its demand from the Government of India to issue either government use license under Section 100 or a compulsory licence under section 92 to scale up production of medicines like Remdesivir, Faviracire, Tocilizumab and new medicines like Molnupiravir.

Ashwani Mahajan, national co-convenor of SJM told Organiser that the whole world is affected due to the century's worst pandemic and when there's an acute shortage of essential medicines, and vaccination is deemed the only way to keep large populations safe, trying to block equitable access to vaccines and medicines is not just deplorable, it is a crime against humanity.

The organisation also demanded to facilitate technology transfer of vaccines including the trade se-

crets to all potential manufacturers to scale up the production of Covaxin and Covishield.

The protestors asked the government to license vaccine production widely to more pharma companies with technological capabilities, instead of a few companies. They also asked the government to provide the regulatory clearance to start the local production of the Sputnik V vaccine, impose ceiling of prices of COVID19 medicines and vaccines taking into account the cost of production based formula and transfer the technologies for the production of medicines and vaccine globally.

Manch also articulated the need to waiver of IP and facilitation of technology transfer in all relevant international forums at the global level and accelerate diplomatic efforts at G7, G20 and other groupings.

Those who attended included R Sundaram, National Convenor, Ashwani Mahajan, National Co-Convenor, Kashmiri Lal, National Organiser, Satish Kumar, National Co-Organiser, Kamal Jit National Joint Public Relation Incharge and Vikas Chaudhary Convenor Delhi, SJM.

<https://www.organiser.org/Encyc/2021/5/8/RSS-affiliate-Swadeshi-Jagran-Manch-protests-against-Bill-Gates-position-on-COVID-19-vaccine-patent.html>

Cap Covid-19 medicines, vax prices, issue compulsory license to scale up output: SJM to govt

"Introduction of the competition is the best way to lower the prices. Patent protection is the major barrier to the generic production of these medicines," SJM said in a statement Sunday (2 May), proposing the government to use the public health safeguards in the Patents Act and permit more companies to produce these medicines.

As per Ashwani Mahajan, National Co-Convenor, SJM though the local production of Remdesivir and Favirapvir is taking place, the available quantity is "highly inadequate" to meet the increasing demand due to the severity of the problem.

"Another important medicine to treat Covid-19 patients with a deadly "cytokine storm" is Tocilizumab, which is not produced in India. The importation of this medicine is highly inadequate to meet the requirements," Mahajan said in the statement.

Despite seven Indian companies making Remdesivir under the voluntary license, he said the quantity is not enough to meet the demand, and the price is very high from the point of view of affordability.



Explaining that Remdesivir price it is still very high and ranges between Rs 899-3490 per vial and cost of Tocilizumab is Rs 40,000 per vial, he said: “Under the present scenario the general public is reeling under the corporate greed, which needs to be curbed at any cost”.

“Issue either government use license under Section 100 or compulsory licence under Section 92 to scale up production of medicines like Remdesivir, Faviracire, Tocilizumab and new medicines like Molnupiravir,” he said.

In the case of vaccine, SJM said the country needs nearly 195 crore doses to cover at least 70% of the population, which can't be fulfilled by the two companies alone and there is an “urgent need to bring more manufactures to start the production”.

SJM has called for the facilitation of technology transfer of vaccines, including the trade secrets to all potential manufacturers to scale up production of Covaxin and Covishield and suggested the government to license vaccine production widely to more pharmaceutical companies with technological capabilities, instead of a few companies.

Citing an urgent need to invoke measures like ceiling of the prices of these medicines, SJM said the prices of vaccines announced by both companies for the state government procurement and private hospitals are “exorbitant and may affect the acceleration of vaccination in the country”

The organisation also proposed that India transfer the technologies for the production of medicines and vaccines globally and articulate the need for a waiver of intellectual property and facilitation of technology transfer in all relevant international forums at the global level and accelerate diplomatic efforts at G7, G20, and other groupings.

“SJM strongly deplores the statement of global corporate leader, Bill Gates that vaccine formula shouldn't be shared with India and other countries,” SJM said, terming it “yet another manifestation of corporate greed to profit from the worst pandemic of the century” and that unreasonable profits from medicines and vaccines are unjustifiable in all circumstances especially during pandemic.

<https://ashwanimabajan.wordpress.com/2021/05/03/cap-covid-19-medicines-rax-prices-issue-compulsory-license-to-scale-up-output-sjm-to-govt/>

SJM demands regulatory clearance for local production of Sputnik

Swadeshi Jagran Manch (SJM) has urged the Centre to provide regulatory clearance for the local production of the Russian Sputnik V vaccine and impose a ceiling of prices on Covid-19 medicines and vaccines taking into account the cost of production-based formula. It cited the surge in Covid cases and called for an urgent need to have medicines and vaccines available at affordable prices.

As the vaccination has been opened up for everyone over 18, the SJM has underlined the need for more production. “In the case of vaccines, the country needs nearly 195 crore of doses to cover at least 70% of the population. This cannot be fulfilled by the two companies alone. There is an urgent need to bring more manufactures to start the production. To facilitate the technology transfer, the government has to take measures to overcome the intellectual property barriers including patent and trade secrets,” said SJM.

“...the local production of remdesivir and favirapvir is taking place, the available quantity is highly inadequate to meet the increasing demand due to the severity of the problem. Another important medicine to treat COVID 19 patients with a deadly ‘cytokine storm’ is tocilizumab, which is not produced in India. The import of this medicine is highly inadequate to meet the requirements.”

Amid the high demand for antiviral remdesivir and the exorbitant prices being quoted, the SJM, which has been at the forefront of the campaign for indigentous production, pointed out that despite the voluntary price reduction, it still costs between Rs. 899 and Rs. 3,490 per vial. “Reports in this regard state the cost of the full course of remdesivir including reasonable profit is around USD 9 i.e. around Rs. 666. On the other hand, the cost of tocilizumabis Rs. 40,000 per vial. Under the present scenario the gener-

al public is reeling under the corporate greed, which needs to be curbed at any cost,” SJM said.

The SJM has asked the government to use the public health safeguards in the Patents Act and permit more companies to produce these medicines.

The SJM also slammed Bill Gates for his statement that vaccine formula should not be shared with India and other countries. “This is nothing but yet another manifestation of corporate greed to profit from the worst pandemic of the century. There is an urgent need to invoke measures like the ceiling of the prices of these medicines. The prices of vaccines announced by both companies for the state government procurement and private hospitals are exorbitant and affect the acceleration of vaccination in the country,” SJM said.

<https://www.hindustantimes.com/india-news/swadeshi-jagran-manch-demands-regulatory-clearance-for-local-production-of-sputnik-101619941136996.html>

SJM calls for cheaper drugs, higher vaccine production

Swadeshi Jagran Manch has asked the government to take immediate steps to increase the production of Covid-19 vaccines by allowing more companies to manufacture them. It has sought a reduction in the prices of medicines commonly used in the course of Covid-19 treatment, such as Remdesivir.

SJM also criticised Bill Gates’ recent comment against sharing intellectual property rights on vaccines with developing countries. “This is nothing but yet another manifestation of corporate greed to profit from worst pandemic of the century,” it said.

“The country needs nearly 195 crore doses to cover at least 70% of the population. This cannot be fulfilled by the two companies alone. There is an urgent need to bring more manufactures to start the production. To facilitate the technology transfer, Government has to take measures to overcome the intellectual property barriers including patent and trade secret,” SJM said in a statement.

It urged the government to treat all medical products required to respond to Covid-19 as a “global public good”.

“There is an urgent need to invoke measures like ceiling of the prices of these medicines. The prices of vaccine announced by both companies for the state government procurement and private hospitals are exorbitant and affect the acceleration of vaccination in the country. Unreasonable profit for medicines and

vaccines are unjustifiable in all circumstances, especially in a pandemic,” SJM said.

In the case of medicines required to treat coronavirus infections, the outfit said the government must use safeguards in the Patents Act to bring prices down.

<https://indianexpress.com/article/india/rss-affiliate-calls-for-cheaper-drugs-higher-vaccine-production-7299829/>

Indemnity demand holding up Pfizer jab’s India approval

Pfizer’s insistence that the government should indemnify it against lawsuits in case of adverse affects linked to its jab has become a major hurdle for its Covid-19 vaccine obtaining approval in India. The discussions are essentially stalled over the indemnity issue.

Pfizer NSE 0.40 % has signed an indemnity clause with many countries that are using its vaccine, absolving the company from paying any legal cost in case of an adverse event.

Pfizer’s CEO Albert Bourla said the company was in discussions with the Indian government seeking an “expedited approval pathway” for its Covid-19 vaccine, while announcing the US drugmaker’s donation of medicines worth more than \$70 million (Rs 517 crore) to the country.

However, officials in the government said the demand for indemnity is the major roadblock.

Unlike many other countries, India does not offer any protection against adverse effects such as serious illness or death caused by the vaccine.

“This cannot be given to one company. If it is given to Pfizer then the domestic companies will ask for the same too,” one of the officials said.

The Indian government, while granting emergency licences to Serum Institute of India’s Covishield and Bharat Biotech’s Covaxin, did not accept the vaccine-makers’ demand that they be indemnified



against mishaps. The purchase order executed by the government with both Serum and Bharat Biotech stipulated that the companies would have to inform the authorities immediately in case of reports of any health risks or complications arising from the vaccine.

Considering the extraordinary situation and the need to develop vaccines in a short time span amid the pandemic, several nations have shifted at least a part of the potential liabilities to the government. These include the US, the UK, Canada and Singapore, as well as the EU. WHO's Covax initiative has also taken similar steps. The UK government has granted Pfizer legal indemnity, protecting it from being sued, for its coronavirus vaccine. The US, too, has granted companies like Pfizer and Moderna immunity from liability if something unintentionally goes wrong with their vaccines.

Vaccine-makers in India have been pushing the government to include an indemnity clause in purchase agreement. Serum earlier said the government should indemnify vaccine makers against all lawsuits. "Company shall be liable for all adversities as per CDSO/Drugs and Cosmetics Act/DCGI policy/approval. The liability clause remains the same as for

other vaccination programmes," said the official cited above.

The US government had invoked the Public Readiness and Emergency Preparedness Act (PREP Act), which limits the legal liability for losses relating to the administration of medical countermeasures such as diagnostics, treatments, and vaccines. This was done to "encourage the expeditious development and deployment of medical countermeasures during a public health emergency".

In South Africa, Pfizer had sought indemnity protection against civil claims. It had also asked the government to put up sovereign assets as collateral. South Africa did not agree to these terms. However, it agreed to other terms of indemnity. In Latin America, health activists had accessed the contract between Pfizer and the Dominican Republic which said that since the vaccines were developed within a short span of time, there could be long-term side effects. According to the document, the liability in such a case will not rest with the company. Pfizer will also not be held legally responsible for renegeing on its supply commitments.



<https://economictimes.indiatimes.com/industry/healthcare/biotech/pharmaceuticals/indemnity-demand-holding-up-pfizer-jabs-india-approval/articleshow/82422985.cms?from=mdr>

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Pictorial Glimpses



Swadeshi Activities

Universal Access to Patent Free Vaccines and Medicines (UAVM)

Pictorial Glimpses

