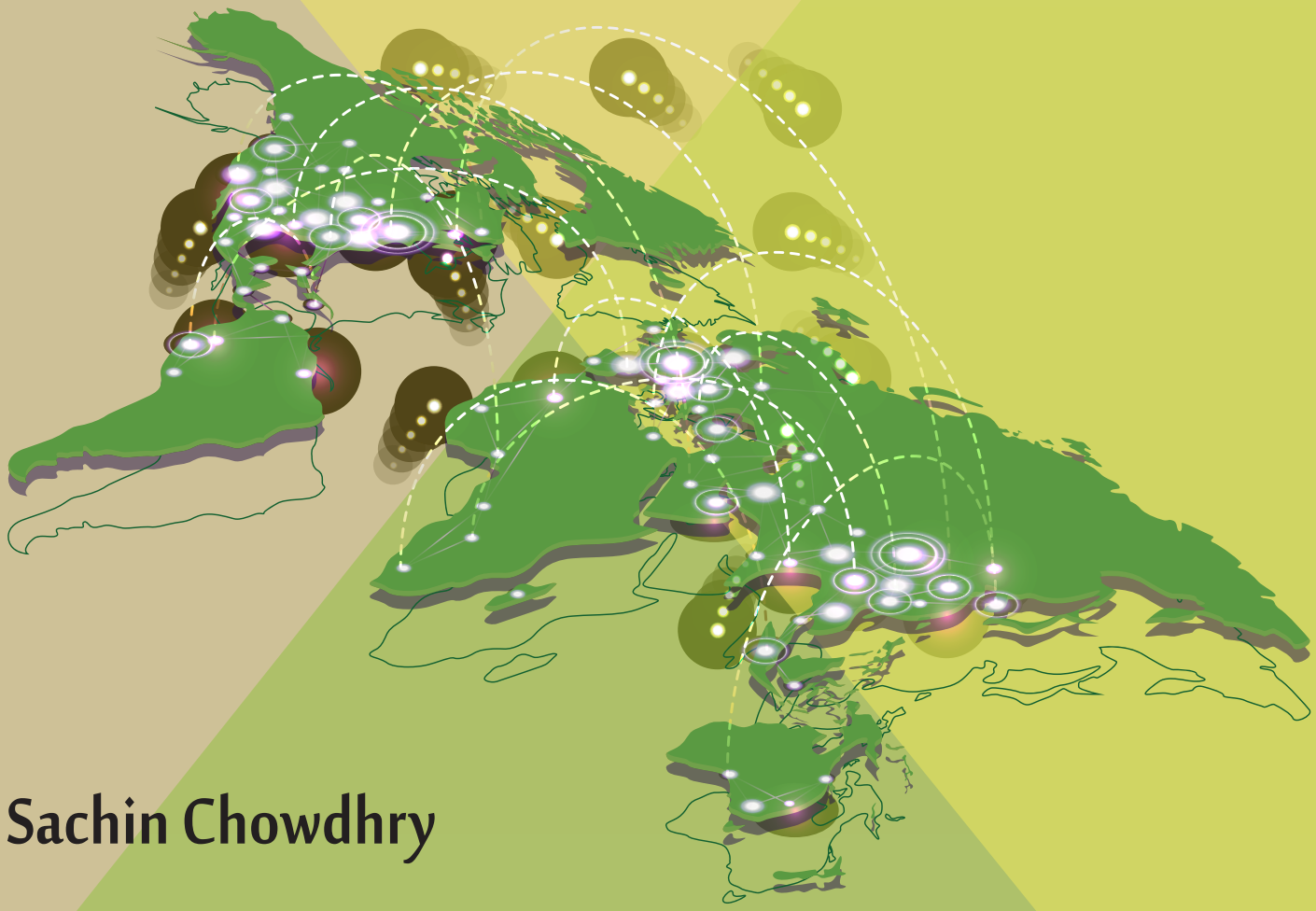
Management of Pandemics



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GANDHIJI'S TALISMAN

"I will give you a talisman. Whenever you are in doubt or when the self becomes too much with you, apply the following test:

Recall the face of the poorest and the weakest man whom you may have seen and ask yourself if the step you contemplate is going to be of any use to him.

Will he gain anything by it? Will it restore him to a control over his own life and destiny? In other words, will it lead to Swaraj for the hungry and spiritually starving millions?

Then you will find your doubts and your self melting away"

150 YEARS OF CELEBRATING THE MAHATMA

Mohandas Karamchand Gandhi

MANAGEMENT OF PANDEMICS

Theme Paper for the

Sixty Fourth Members' Annual Conference 2020

Sachin Chowdhry

INDIAN INSTITUTE OF PUBLIC ADMINISTRATION

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FOREWORD

This year has been marked by an event, which has probably changed the world forever. COVID-19 pandemic caused massive disruptions in almost all the counties of the world. Many reasons can be attributed to this, but the lack of preparedness for meeting such a challenge on the part of almost all the countries has emerged as a matter of serious concern. That is despite the fact that there is global level consensus for putting systems and processes in place to tackle any such event. Warnings have also been given from time to time by the experts, virologists, scientific community as well as the international agencies like World Health Organisation, tasked for looking after health concerns at the global level.

The good thing has been that there has been humanitarian approach where individuals and organizations have risen to the occasion. The governments have made concerted efforts to take care of all the citizens, especially the most vulnerable sections. The global cooperation is being received from the highest quarters in each country.

It was in the background of the pandemic that the Executive Council, the Governing Body of IIPA decided 'Management of Pandemics' to be the topic for this year's theme paper, which may provide insight into the level of preparedness of the country for public health security and serve as a policy input for the government. A relevant topic is chosen every year for the theme paper. This paper is presented in the Members' Annual Conference. Local and Regional Branches of IIPA organize the prelude Conference on the same topic and deliberate on it.

This year's paper has been prepared by Dr. Sachin Chowdhry, who has tried to cover the aspects which are critical from the policy perspective. I complement him for the efforts.

I am grateful to Dr. C. Chandramouli, the earlier Chairman and Dr. Jitendra Singh, Hon'ble Minister, Government of India and present Chairman, IIPA for being the driving force and providing guidance and support for all creative and innovative activities at IIPA.

Surendra Nath Tripathi
Director
Indian Institute of Public Administration

ACKNOWLEDGEMENTS

The Member's Annual Conference at IIPA is an annual event to deliberate on issues of importance. A theme paper on the relevant issue from the Public Administration and Public policy perspective is integral part of this Conference. This year the COVID-19 pandemic has affected all and many policy relevant issues cropped up. So it was apt that the Executive Council, the Governing Body of IIPA, chose "Management of Pandemics" as the topic for the conference.

I am grateful to Shri S.N. Tripathi, Director, IIPA for entrusting this responsibility to me and also for his constant guidance. I am also thankful to Shri Amitabh Ranjan, Registrar, Shri H.C. Yadav, Librarian in-charge and staff, IIPA for the necessary administrative and academic support. I also take this opportunity to express my gratitude to friends and colleagues at IIPA for the moral support in completing the task.

Finally, I wish to acknowledge the support received from the Mrs. Neelam Handa, Mr. Anand Singh and Mr. Naveen Pratap Singh whose contributions helped me in completing this paper.

Sachin Chowdhry

(Sachin Chowdhry)

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ABSTRACT

COVID-19 pandemic has affected more than 27 million persons across more than 200 countries and has claimed more than a million persons' lives. The pandemic exposed vulnerabilities of the countries of the world. The countries like United States, Britain, France, Germany which have better medical facilities, access to resources and skilled manpower succumbed to the tyranny of this virus. All major economies including India have reported decline in growth rate and poor countries have been worst affected.

Each country tried to find an effective strategy. Lockdowns and changed social behaviour became a preferred way to contain the virus till the time the scientific community could find either medicines or the vaccine for it. But this led to loss of employment, slowed economies and disturbed societies. India also had lockdowns. Industries had to be shut down. Thus the pandemic emerged as a 'wicked problem' from the policy perspective.

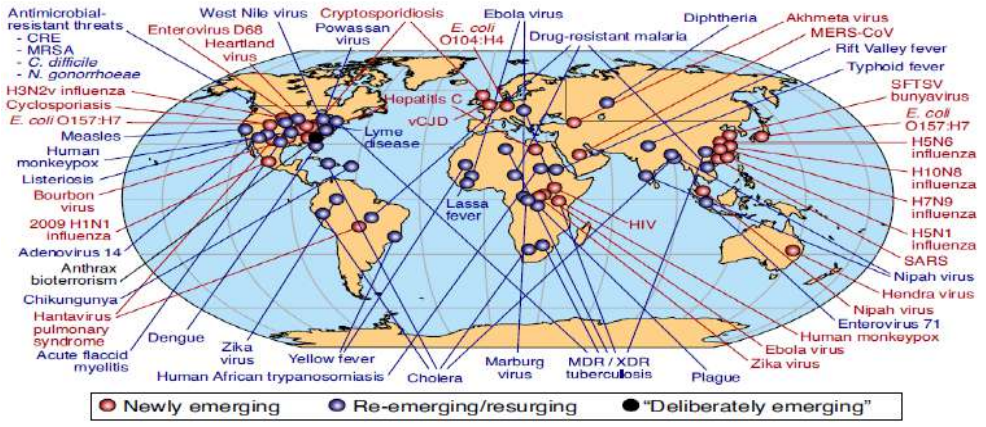
The governments world over took several measures covering all sectors ranging from augmenting health facilities, providing citizens food security, creating avenues for employment, facilitating enterprises, etc. so that they can resume their businesses, but finding solutions to wicked problems is a herculean task. Looking at the frequency at which such incidents are occurring, we need to adapt to new realities and plan for the future as well, accommodating the possibilities of similar or other disruptions.

So, this paper is an attempt to find medium and long term measures which may help the country in overcoming the shortcomings in systems and planning through the study of the impact of COVID-19 on health sector, socio economic consequences and capacities of various institutions in their responses, so that we can plan for future and be in a position to respond much more effectively whenever there is such disruption.

1. BACKGROUND

Global attention to pandemics has come in the wake of current ongoing crisis which has affected almost the entire planet and there have been massive disruptions in all sectors in most of the countries of the world. A virus named COVID-19 seems to have changed the world forever. COVID-19 has been categorized as a pandemic by the World Health Organization (WHO). As per definition given by WHO "a pandemic is the worldwide spread of a new disease". An epidemic has potential to become a pandemic if not checked properly. Pandemics are not new to the World. There have been various diseases which have affected the humankind at large scale with devastating effects since time immemorial. A list of major recorded epidemics pandemics can be seen in Annexure - 1.

Figure 1.1: Global examples of emerging and re-emerging diseases



C. difficile: Clostridium difficile; CRE: carbapenem-resistant Enterobacteriaceae; E. coli: Escherichia coli; MDR: multidrug-resistant [tuberculosis]; MERS-CoV: Middle East respiratory syndrome coronavirus; MRSA: meticillin-resistant Staphylococcus aureus; N. gonorrhoeae; Neisseria gonorrhoeae; SFTSV: severe fever with thrombocytopenia syndrome virus; XDR: extensively drug-resistant [tuberculosis].

Source: United States National Institute of Health, National Institute for Allergies and Infectious Diseases

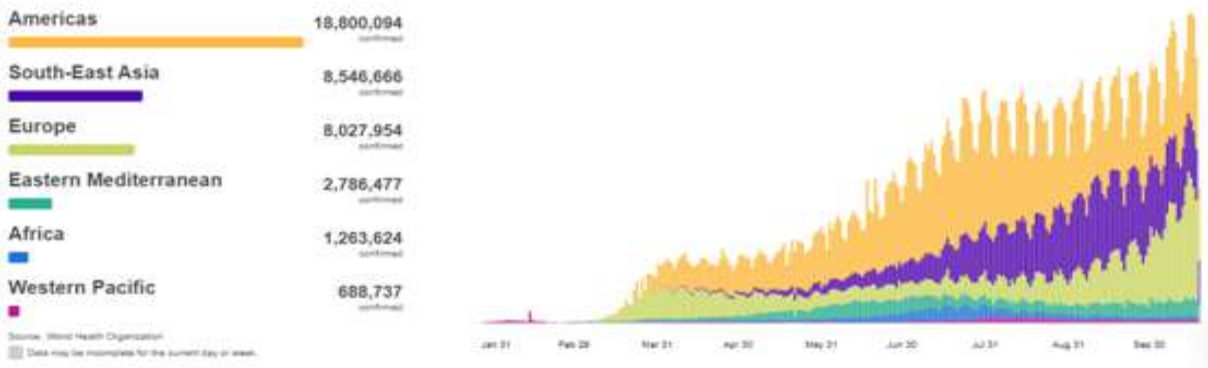
However, the frequency of such incidents is increasing as we are developing. In the last two decades, world has been affected by eight major epidemics/pandemics. In fact, as per the Global Preparedness Monitoring Board (GPMB), between 2011 and 2018, WHO tracked 1483 epidemic events in 172 countries of epidemic-prone diseases such as Influenza, Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), Ebola, Zika, plague, Yellow Fever and others.

Figure 1.2: Epidemic threats since 2000

Source: WHO

COVID-19 is an infectious disease caused by a new type of virus. The disease is claimed to have originated in Wuhan, China in December 2019 and has since spread globally. On March 11, 2020, the WHO declared the COVID-19 to be a global pandemic. International Committee on Taxonomy of Viruses (ICTV) named the virus as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (Gorbalenya et al., 2020). In India, a laboratory confirmed 2019-nCoV case of a patient, a student returning from Wuhan, with stable condition, in Kerala on 30th January 2020. Globally, as on 17 October 2020, there have been 39,023,292 confirmed cases of COVID-19 as per the WHO Covid-19 dashboard, including 1,099,586 deaths, reported to WHO.

Figure 1.3: Situation by WHO Region



Source: WHO Coronavirus Disease (COVID-19) Dashboard (October 20, 2020)

For quite some time, communicable disease experts have been warning of this kind of scenario. Scientists say new diseases will jump from animals unless humans change the way they live. Dr. Aaron Bernstein, Director of the Center for Climate, Health and Global Environment at Harvard University said that "we knew

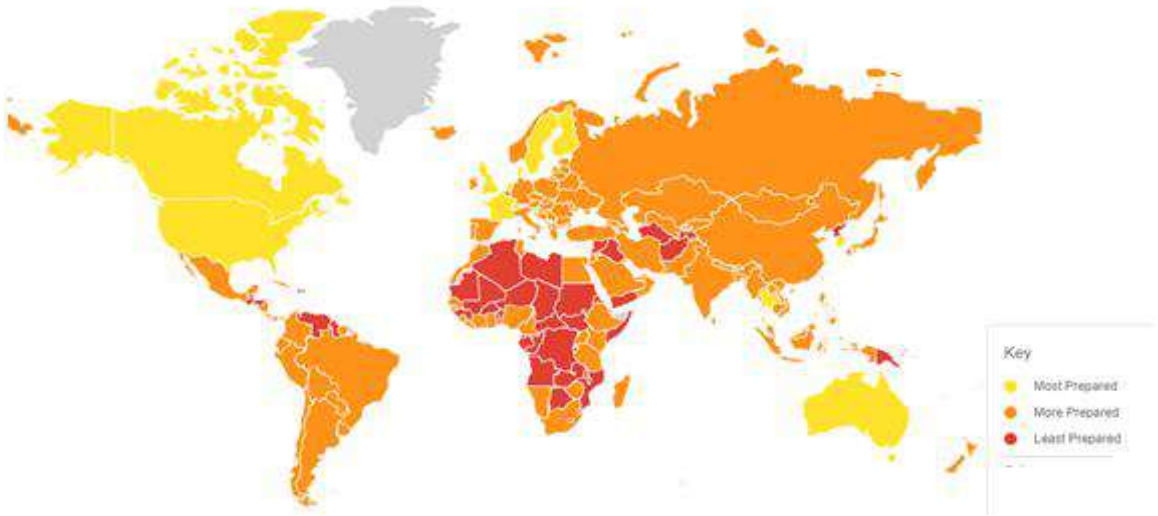
before this happened that two-thirds, if not three-quarters, of emerging infections were occurring because of the spillover of pathogens from wild animals into people". He said that the primary reason for the crossover was the change in how people engaged with nature, such as rapid deforestation and the global wildlife trade (Crow, 2020). Some Scientists have also warned of double pandemic, i.e. another pandemic hitting us while we are dealing with one pandemic.

2. COVID-19: A HEALTH CRISIS

COVID-19, when it struck, was a radical uncertainty and caught nations off guards. Different countries responded differently. The response of the policy makers was as per their perception of the ground realities as well as the advice they received from the WHO and other global agencies and from experts within their own country as they understood it better and knew about their level of preparedness to meet such exigencies. So some countries chose to go for 'lockdowns' as a measure to check the spread of the virus and to prepare for meeting the challenges, few opted for basic advisories like social distancing, wearing masks and washing hands and aiming for 'herd immunity' in the population. China apparently could control the spread of the virus through isolation of the patients and active surveillance.

However, the Virus is spreading even now and the numbers of cases are rising. Immediately after the pandemic broke out, the realization set in that no country in the world was prepared to handle a pandemic. While radical uncertainties are difficult to plan for, it is also true that very few countries have the necessary infrastructure. Global Health Security Index (GHS), which assesses the global health security capabilities in 195 countries, had indicated in 2019 that 'collectively, international preparedness for epidemics and pandemics remains very weak'. (The criteria for the index are given in the Annexure-2) The map below gives us a fairly good idea about the regions or countries which are particularly vulnerable.

Figure 2.1: GHS Index Map



Source: Global Health Security Index, 2019

The average overall GHS Index score is 40.2 out of a possible 100. While high-income countries report an average score of 51.9, the Index shows that collectively, international preparedness for epidemics and pandemics remains very weak. Its findings were:

1. National health security is fundamentally weak around the world. No country is fully prepared for epidemics or pandemics, and every country has important gaps to address.
2. Countries are not prepared for a globally catastrophic biological event.

3. There is little evidence that most countries have tested important health security capacities or shown that they would be functional in a crisis.
4. Most countries have not allocated funding from national budgets to fill identified preparedness gaps.
5. More than half of countries face major political and security risks that could undermine national capability to counter biological threats.
6. Most countries lack foundational health systems capacities vital for epidemic and pandemic response.
7. Coordination and training are inadequate among veterinary, wildlife, and public health professionals and policymakers.

Commission on a Global Health Risk Framework for Future (2016)[1] observed that preparations for the threat of infectious diseases turning into potential pandemics are crowded out by more visible and immediate priorities. It lamented the fact that global agencies such as WHO and the rest of the UN system have lacked the focus and capacity to provide the required international support and coordination. It had warned about the consequent impact of the pandemics on the societies and economies. Improving country compliance with international health and security norms is essential.

2.1 Containing Virus

Now there are evidences that some countries managed it better and some very badly. The success or failure depended on the health infrastructure, systems and their level of preparedness. South Korea and Japan managed the COVID -19 better as reflected by the reported death rates. Taiwan and Singapore could keep the disease almost entirely under control, at least till now. They all had been affected by SARS in 2002 and H1N1 in 2009 and used their experiences in managing COVID-19. New Zealand on the other hand can be said to have learnt from the experiences of these countries.

Japan relied on convincing people to take care, stay away from crowded places, wear masks and wash their hands and it seems that the people complied, which can be explained by the country's low infection rate and less number of deaths. Some experts have attributed the people's compliance to the cultural values of the nation where people have been wearing masks since the days of the 1919 flu pandemic. Japan also has a strong 'track and trace' system through a nationwide network of public health centres since 1950s when it was struck by tuberculosis. WHO commended the 'Japan Model', where the state of emergency did not make staying home compulsory, but rather encouraged. The nationwide campaign launched by the government advised people to avoid 'three Cs'-

- closed spaces with poor ventilation
- crowded places with many people
- close contact settings

In New Zealand, Prime Minister Jacinda Arden imposed harshest regulations, closing the borders entirely to almost all non-citizens or residents, total nationwide lockdown with only essential services running and everyone told to stay at home. Experts have described this approach as 'throwing everything at it at the start and aim for total elimination'. The policy had high levels of public support – polls showed that more than 80% of people backed the government's actions (Jones, 2020).

WHO Director General remarked on Oct. 2, 2020 that "what we've learned in every region of the world is that with good leadership, clear and comprehensive strategies and quick responsive action from the general population, its never too late to turn the tide".[2]

[1] The Commission was conceived in the backdrop of the Ebola outbreak and was tasked with to set out a framework of institutions, policy and finance that would be resilient to a wide range of infectious diseases. Its objective was to set out a framework of institutions, policy, and finance that would be resilient to a wide range of such potential threats, whether known—such as influenzas, coronaviruses, and haemorrhagic fevers—or as yet unknown. 'Daily media press briefing' on Oct 2, 2020

[2] 'Daily media press briefing' on Oct 2, 2020

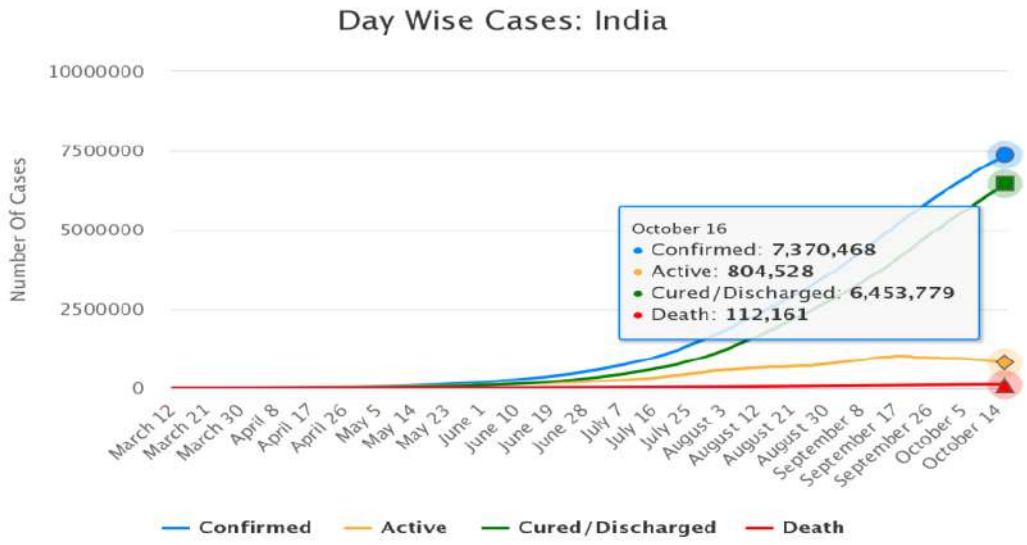
2.2 India's initial response to COVID-19

The Government of India also imposed one of the harshest lockdowns from March 24, 2020 and gradually opened up in phases. The result was that the cases had a gradual increase, but now the country stands second after USA. It is a diverse country and situations differ from state to state. Kerala state got the first patient.

The country used the period of lockdown to augment its capacities. In the first week of February, only 14 laboratories were testing for COVID-19. By the end of March, India had 106 Virus Research & Diagnostic Laboratories (VRDLs), which anchored COVID-19 diagnosis in the country. Gradually the capacities were built up.

- At the start of the pandemic, the testing capacity and protective gear were meager, which are now in access to the extent that exports of those items are now permitted.
- There were 1,105 testing labs in the country comprising 788 in the public sector and 317 private labs as on July 6
- "The per day testing capacity which was around 1.5 lakh on May 25 is more than three lakh per day now," it was in thousands in the beginning
- Rs 190 crore has been sanctioned for augmentation of healthcare facilities in the eight Northeastern states, especially for the management of infectious diseases like COVID-19.

Figure 2.2: Spread of COVID-19 in India



Source: Ministry of Health and Family Welfare, Government of India (As on: October 16, 2020, 08:00 IST (IST))

Disaster Management Act, 2005 was invoked along with the Epidemics Diseases Act 1897 to ensure a nation-wide concerted efforts.

2.3 Kerala's response to COVID-19

Kerala reported the first positive case of COVID-19 on January 30, 2020. The state put all its experience of NIPAH outbreak in 2019 behind its response. It used innovative approaches to quickly deploy resources in coordination with all the stakeholders. Active surveillance, setting up of district control rooms for monitoring, capacity building of frontline health workers, risk communication and strong community engagement, and addressing the psychological needs of the vulnerable population were put into motion to check the spread of this disease.

A high level committee was set up consisting of the Chief Minister, Health Minister, Chief Secretary and the Principal Secretary Health. It took important policy decisions and monitored, coordinated and guided

the actions in the field. The state control room of National Health Mission became active along with the support from Directorate of Health Services and Directorate of Medical Education. All this helped in contact tracing, quarantine, isolation, hospitalization, and infection prevention and control. WTO lauded the high level political and administrative commitment in the state and their capacity to engage communities in the process. The high level literacy in the state helped the matters.

Box 2.1: Some key steps taken by the Kerala government

- Longer quarantine of 28 days initially,
- Thousands of shelters for migrant workers,
- Establishment of COVID care centres in all the districts to accommodate non-residents like tourists, people in transit etc.
- Providing tele-medicine through portal e-sanjeevani for tele consultation across the state,
- *Ottakalla oppamundu* for providing psycho-social support. Mental health professionals including psychiatrists, psychiatric social workers, clinical psychologists and counselors were deployed to provide support to people in quarantine.
- Counseling service for frontline workers.
- Took measurers to address the special needs of mentally-ill patients, children with special needs and elderly people living alone.
- An awareness campaign 'Break the Chain' was launched to promote the importance of hand hygiene, physical distancing and cough etiquette.
- Hand washing stations were installed in strategic location.
- Kerala Arogyann portal was launched by the Department of Health and family Welfare.
- COVID Jagratha portal provided comprehensive information about COVID-19.

Communities were also engaged by the government in this endeavour very effectively. They contributed significantly:

- Kudumbashree formed close to 1.9 lakh WhatsApp groups with 22 lakh neighbored groups to educate on key safety measures as advised by the government,
- Community kitchens managed by Kudumbasree and supported by Local Self Government Department provided free meals to the labourers, people in quarantine, destitute and other needy persons.

2.4 Present Status

The magnitude of the problem has been such that all countries are trying to find ways to overcome it. Technologically advanced countries are investing and encouraging private companies to engage in research and find treatment for the disease at the earliest. There are two ways, one to find appropriate medicines and the other to find the right vaccine. The only problem remains in this is that of time, as the whole process entails minimum time-period. Shortening the period of processes due to political reasons may not be safe for the population.

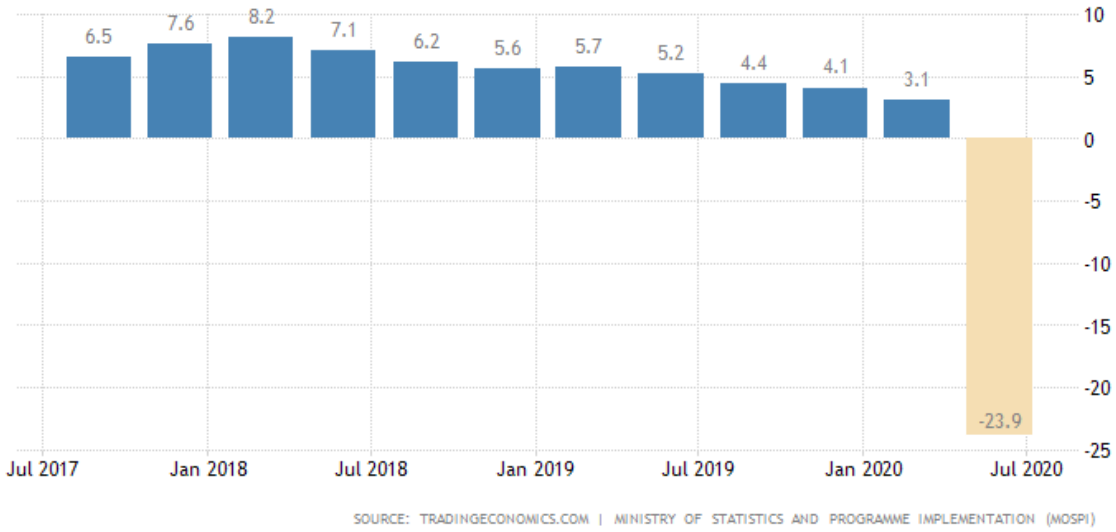
In the meantime, alliances and partnerships are being forged for a global level network of scientists, laboratories, funding agencies, private companies, charitable trusts and international organizations like WHO, IMF, WB etc. to ensure the delivery of medicines or vaccines to all parts of the world on humanitarian grounds, especially the poor countries.

3. IMPACT ON ECONOMY

The lockdown to contain the spread of the disease, led to slowing down of the economy as enterprises and offices were closed. An analysis by Victoria Fan and others estimated the expected yearly cost of pandemic influenza at roughly $500 billion, i.e. 0.6 percent of global income (Bloom et al, 2018). There is already loss of billions of dollars the world over during this pandemic.

IMF report says that 'the Indian economy shrank 23.9% year-on-year in the second quarter of 2020, much more terrible than market conjectures of a 18.3% drop. It is the greatest compression on record, as India forced a Covid lockdown in late March and extended it a few times, stopping most financial exercises. In any case, India remains the second most noticeably awful influenced nation in the world by the pandemic. Construction (-50.3%), hotels and transportation (-47%) and manufacturing (-39.3%) recorded the biggest falls'. Recently IMF projected that India's GDP contracted by 10.3% in 2020, which is the slowest among BRICS countries.

Figure 3.1: Decline in GDP growth rate



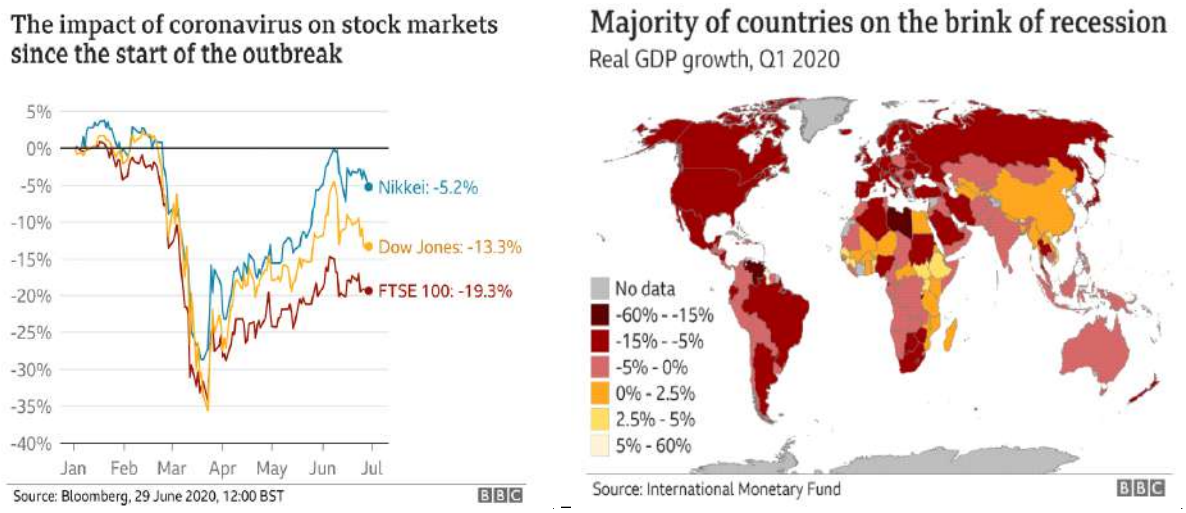
India was not the only country which suffered due to the pandemic. Many countries had imposed varying levels of lockdowns which had impact on their economies.

The June 2020 Global Economic Prospects describes both the immediate and near-term outlook for the impact of the pandemic and the long-term damage it has dealt to prospects for growth. The baseline forecast envisions a 5.2 percent contraction in global GDP in 2020, using market exchange rate weights—the deepest global recession in decades, despite the extraordinary efforts of governments to counter the downturn with fiscal and monetary policy support. Over the longer horizon, the deep recessions triggered by the pandemic are expected to leave lasting scars through lower investment, an erosion of human capital through lost work and schooling, and fragmentation of global trade and supply linkages (World Bank, 2020a). Global markets crashed steeply (Fig. 3.2).

In such a scenario the worst hit would be poor population. World Bank highlights that the progress in poverty reduction was slowing even before the COVID-19 crisis. New global poverty data for 2017 show that 52 million people rose out of poverty between 2015 and 2017. Yet despite this progress, the rate of reduction slowed to less than half a percentage point per year between 2015 and 2017. Global poverty had dropped at the rate of around 1 percentage point per year between 1990 and 2015.

The convergence of the COVID-19 pandemic with the pressures of conflict and climate change will put the goal of ending poverty by 2030 beyond reach without swift, significant and substantial policy action (World Bank,2020b). By 2030, the global poverty rate could be about 7%.

Figure 3.2: The impact of pandemic on global economy



Exceptional times call for exceptional actions. The IMF is responding to the coronavirus crisis with unprecedented speed and magnitude of financial assistance to help countries protect the lives and livelihoods of people, especially the most vulnerable. The Fund is at the center of the global financial safety net – and is willing to deploy its entire lending capacity of around USD 1 trillion at the service of its membership. The following instruments are being used to provide funding to the needy countries.

1. **Emergency financing** – The IMF received numerous calls for emergency financing – from more than 100 countries so far. The Fund has doubled the access to its emergency facilities—the Rapid Credit Facility and Rapid Financing Instrument —allowing it to meet demand of about USD 100 billion in financing. These facilities allow the Fund to rapidly provide emergency assistance without the need to have a full-fledged programme in place and without the more traditional IMF conditionality. Financing is being approved by the IMF's Executive Board at record speed for 76 countries totaling around $31 billion by end-September. The Fund is also working to increase its capacity to provide concessional financing at zero-interest to low-income poorest countries under the Poverty Reduction and Growth Trust (PRGT) facility. The IMF is aiming to raise USD 17 billion in new PRGT resources is very close to meeting its target.
2. **Grants for debt relief** – The IMF Executive Board has offered immediate debt service relief to 29 countries under the IMF's revamped Catastrophe Containment and Relief Trust (CCRT) as part of the Fund's response to help address the impact of the COVID-19 pandemic. This provides grants to the Fund's poorest and most vulnerable members to cover their IMF debt obligations for an initial phase over the next six months and will help them channel more of their scarce financial resources towards vital emergency medical and other relief efforts. The Fund is working to increase the CCRT to USD 1.4 billion to provide two years of grant-based debt relief.
3. **Calls for suspension of debt service –** The IMF Managing Director and the President of the World Bank on March 25 called on official bilateral creditors to suspend debt service payments from the poorest countries. This is a powerful, fast-acting initiative that frees up scarce money that can instead be used to safeguard lives and livelihoods. The G20 responded to this call by agreeing to a suspension of debt service on official bilateral credit under the Debt Service Suspension Initiative (DSSI). At end-September, 2020, 60 percent of eligible countries (44 of 73 countries) had already applied for suspension of official bilateral debt payments. According to G20 creditor data, as of September 8, 2020, the requests received under the DSSI amount to a deferral of around $5 billion of debt service for 2020. The Fund, the World Bank and the G20 have also called for private sector creditors to participate in similar debt relief on comparable terms, which could add a further $7 billion of relief.

4. **Enhancing liquidity** – The Fund has also approved the establishment of a Short-term Liquidity Line (SLL) to further strengthen economic stability and confidence. The facility is a revolving and renewable backstop for member countries with very strong policies and fundamentals in need of short-term moderate balance of payments support.
5. **Adjusting existing lending arrangements** – The Fund is also augmenting existing lending programmes to accommodate urgent new needs arising from the coronavirus, thereby enabling existing resources to be channeled for the necessary spending on medical supplies and equipment and for containment of the outbreak.

The ILO suggested a four-pillar policy framework, with each pillar complementing the others in sharing the weight of the enormous load faced by countries. The four pillars relate to:

(i) stimulating the economy and employment;

(ii) supporting enterprises, jobs and incomes;

(iii) protecting workers in the workplace; and

(iv) relying on social dialogue for solutions (ILO, 2020a).

The ILO standards contain specific guidance on policy measures that emphasize human centred approach which can ensure that workers, employers and governments can maintain decent work while adjusting to the socio-economic consequences of the pandemic.

3.1 Initial response of the Government of India

The Government of India announced 'AatmaNirbharBharat' package in May which match these advisories. The Finance Minister announced relief under the Aatmanirbhar Bharat Abhiyan claimed to be worth ₹20 lakh crore in five tranches, which is equivalent to 10% of India's GDP:

1. Business including MSMEs- The first tranche gave support of ₹300000 crore in terms of collateral free loans to businesses including MSMEs and also to insulate the size and capacity of MSMEs, equity infusion of ₹50000 crore was facilitated. A TDS/TCS rate reduction was also undertaken aimed at providing liquidity of ₹50000 crore. Total announcements made were to benefit MSME, NBFC, real estate and power distribution that summed the overall stimulus given through this tranche to ₹594,500 crore.
2. Poor, including farmers and migrants- To cushion the impact of COVID, second tranche involved measures easing the life of distressed migrants. Government of India promised to bear the cost of ₹3500 crore for supplying food to all migrants who were neither a part of NFSA nor were State card beneficiaries. Street vendors will also benefit from special credit facility. Interest subvention of ₹1500 crore will be provided for MUDRA-Shishu loans. The total relief provided amounted to 310,000 crore.
3. Agriculture- A total of 11 measures were announced supporting the agriculture sector with ₹150,000 crore. A total of ₹100000 crore

The Five pillars of Atmanirbhar Bharat focus on:

- Economy
- Infrastructure
- System
- Vibrant Demography and
- Demand

The Five phases of Atmanirbhar Bharat are:

- **Phase-I**: Businesses including MSMEs
- **Phase-II**: Poor, including migrants and farmers
- **Phase-III**: Agriculture
- **Phase-IV**: New Horizons of Growth
- **Phase-V**: Government Reforms and Enablers

will be supporting farmers to promote farm-gate infrastructure, ₹20000 crore to fishermen through Pradhan Mantri Matsya Sampada Yojana, ₹15000 crore for infrastructural development of animal husbandry.

4. New horizons of growth- To alleviate the impact of COVID, fourth and fifth sub-parts provides a support ₹48,100 crore where the fourth tranche provides a stimulus to coal, minerals, civil aviation sector and defence production. The limits on foreign direct investment are eased in defence manufacturing and allow private sector in coal and mining.
5. Government reforms and enablers- The final tranche focuses on health and education reforms and revitalizing the rural economy.

4. IMPACT ON SOCIETY

The pandemic has also played havoc with the vulnerable sections of the society. While any such crisis affects all segments of the population, it is particularly harsh for people in the most vulnerable situations, like poor population, older persons, persons with disabilities, unemployed youth, mentally disturbed persons and the indigenous peoples. These people also face the problem of fewer employment opportunities, increased xenophobia, etc. UN says that 'if not properly addressed through policy the social crisis created by the COVID-19 pandemic may also increase inequality, exclusion, discrimination and global unemployment in the medium and long term.' Some of the issues confronting these groups especially during an epidemic/pandemic need elaboration.

4.1 Migrant labourers

ILO (2020a) says that the number of workers vulnerable to the lockdown could reach 364 million or more, including those in casual work, self-employment and unprotected regular jobs (lacking social protection coverage). These workers could face cuts in working hours, layoffs, furloughs and reductions in incomes, and for some, this could continue beyond the lockdown. Another joint report by the International Labour Organization (ILO) and the Asian Development Bank (ADB) said "for India, there could be job loss for 4.1 million youth. Construction and agriculture have witnessed the major job losses among seven key sectors" as two-thirds of firm-level apprenticeships and three quarters of internships were completely interrupted during the pandemic.

A World Bank report says that the lockdown in India has impacted the livelihoods of a large proportion of the country's nearly 40 million internal migrants. Around 50,000–60,000 moved from urban centers to rural areas of origin in the span of a few days (World Bank, 2020b). Official data says that in May 2020 the Railways ferried around 40 lakh migrant workers on board 3,060 ''Shramik Special'' trains, while many used different modes to go back to their homes.

The government announced measures to benefit the migrant labours.

- **One Nation One Card**: Migrant workers will be able to access the Public Distribution System (Ration) from any Fair Price Shop in India by March 2021 under the scheme of One Nation One Card.

- **Free food grain Supply to migrants:** Migrant workers who are not beneficiaries under the National Food Security Act ration card or state card will be provided 5 kg of grains per person and 1 kg of chana per family per month for two months.
- **Affordable Rental Housing Complexes (ARHC) for Migrant Workers / Urban Poor:** The migrant labour/urban poor will be provided living facilities at affordable rent under Pradhan Mantri Awas Yojana (PMAY).

4.2 Violence against Children and Women

During the Covid-19 Pandemic children and women faced lot of problems of violence at home. Recession studies show that victims often turn to their friends and family for temporary housing and emotional support. But given the lockdown and the economic crisis, that support network is not within reach, leaving many battered and homeless.

The Hindu reported that there is surging numbers of emergency calls to helplines — with rises of anything between 25% and 300%, dramatic increases in Internet searches for support for those affected by domestic violence, and higher numbers of domestic homicides. The data released by the National Commission for Women (NCW) shows a two-fold increase in gender-based violence from 116 (March 2-8) to 257 (March 23-April 1); domestic violence cases were up to from 30 to 69. These are extremely disturbing trends, which must not be ignored (Scotland, 2020). It apprehended that mass school closures are tending to entrench learning gaps between girls and boys, and putting many more girls at risk of sexual exploitation, early pregnancy and early or forced marriage. It meant that children are unable to report abuse to a trusted teacher. With restrictions on home visits by police and health workers, violence shelters being converted into health facilities, and courts being forced to close, many victims could find themselves trapped and feeling abandoned.

Literature suggests that economic insecurity caused by the disruption of livelihoods correlates with poor coping strategies (like substance misuse), which can increase intimate partner violence and child mistreatment. Rates of violence against women and children are high when family members are in close proximity under conditions of duress for extended periods of time. Community vigilance and support is of essence under such circumstances: Identifying, reaching out and supporting women and girls who survive violence through local mechanisms is key. There is evidence about the efficacy of local governments, Panchayats, self-help groups (SHGs) and frontline health workers — if equipped with the right perspectives — can identify vulnerable women and provide immediate support (Joshi & Singh, 2020).

4.3 Older persons

COVID-19 is particularly vicious for older persons, especially those who have co-morbidity conditions like hypertension, cardiovascular diseases, pulmonary ailments and diabetes. It is difficult for them to support themselves in isolated conditions. The social distancing norms and government advisories have enhanced their isolation. It was reported that many older persons got affected by the virus because the in-charges of several old-age homes had run away leaving these persons to fend for themselves.

In some countries, they also faced age-based discrimination in provision of health care services when there was shortage of medical facilities and the doctors had to take a decision as to whom to treat first. UN says, 'solidarity between generations, combating discrimination against older people, and upholding the right to health, including access to information, care and medical services is key'.

4.4 Divyang persons

Such individuals in general face the problems of accessibility, stigma and discrimination which are aggravated during any crisis. They also are, comparably, more susceptible to infections. Some of them may not be able to follow the health advisories because of their limitations in accessing things on their own. International agencies have exhorted nations to have inclusive policies, so that they are not denied access to anything that they might need. The Government of India has included them in the Pradhan Mantri Garib Kalyan Yojana- the provision of Rs.1000/- ex-gratia payment. However, many more measures may be needed to improve their access to services including medical facilities. Kerala has been able to take care of its divyangs, but a country-wide approach or this particular group may need to be enhanced.

4.5 Stigmatized individuals and communities

Stigma being attached to people who were affected by the virus was also noticed. It is understandable that there is confusion, anxiety, and fear among the public. However, there is need to understand that stigma can undermine social cohesion and prompt possible social isolation of groups, which might contribute to a situation where the virus is more likely to spread. It was seen that media and social media platforms hounded people and communities, with no effective communication from the government to stop or avoid it. This may create problems in controlling a disease outbreak. Stigma can:

- Drive people to hide the illness to avoid discrimination
- Prevent people from seeking health care immediately
- Discourage them from adopting healthy behaviours

5. MANAGING FUTURE PANDEMICS

Any policy resolution of the problem depends to a great extent as to how that problem is structured. From the experience of the COVID-19, it can be said that the threat of a pandemic to public health is a clear problem. However, it is a wicked problem as it goes beyond health and affects many aspects of our society and economy. World economies have come to a virtual standstill, unemployment rates in formal and informal sectors have worsened, and people across the globe are looking towards their respective governments for support. Everything – social interactions, government recommendations, knowledge of the disease – are often changing each day. A robust intervention may be planned provided responsive systems are in place. Some measures are proposed, which may enable better handling of a pandemic.

5.1 Resilient Public Policy Process

The process of policy for mation and implementation are going to face challenging task of responding to emerging radical uncertainties. Pandemics are just such radical uncertainties. They may pose themselves as 'wicked' problem[3] if we do not learn from the experiences and incorporate mechanisms in the policy process to solve the problems.

- We can compare countries and organizations in how they have reacted. Is everyone right? Is everyone wrong?
- However, At this point, the question should be 'is everyone doing the best they can do under the circumstances?'
- There are certainly things that can be done to mitigate any negative effects.
- Important is how the problem is structured

The traditional policy-making regime may be inadequate to find solutions to wicked problems. As the knowledge forms, which would be contextual, it would be difficult to have a universal approach. Evidence from the field could be highly specific, demanding decentralized decision-making. This is what happened when Capt. Amrinder Singh asked for delegation of power in identification of zones for containment purpose.

There would be gradually increasing pressure from the implementing agencies as well who have to face the ethical dilemma of following the orders or responding to situations. As the capacities build up at lower levels, the Centre may feel confident of localizing the decision making. This would also help countering the notion of high handedness of centralized decision-making and to strengthen the democratized polity.

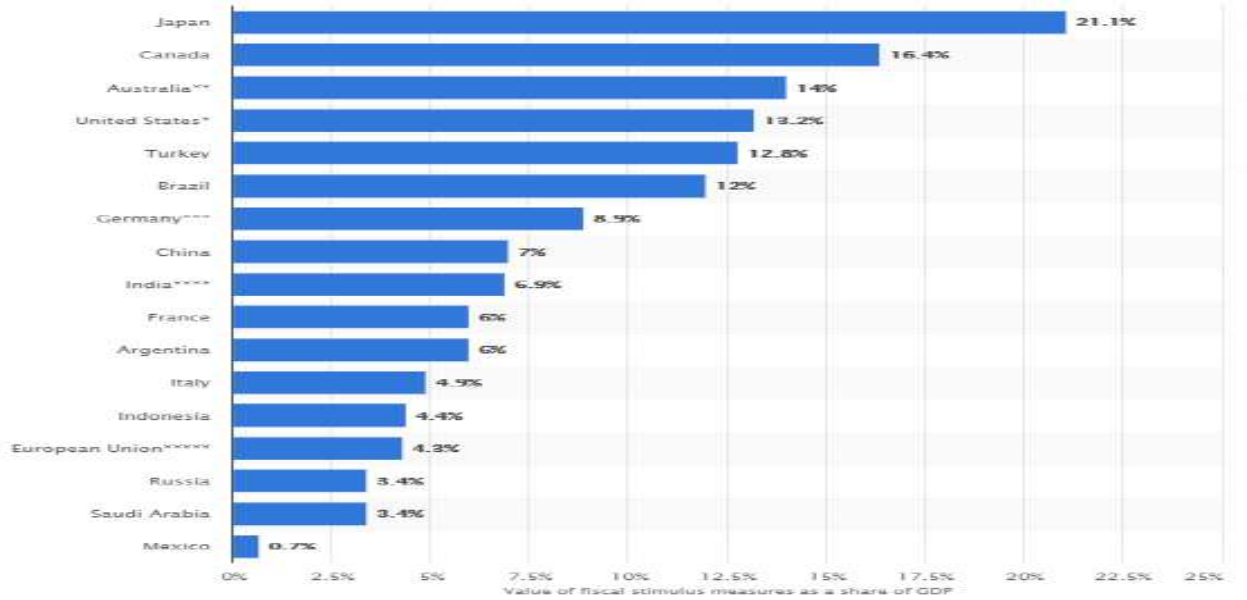
Responding to radical uncertainties needs public sector agencies to act fast, which is possible only when the accountability mechanism is strong at every level. Decentralized decision-making would enable the policy makers to fix responsibilities and provide resilience in the system. Paul Collier (2020) says that 'resilience is all about assigning responsibilities to the multiplicity of entities best equipped to understand how to build the capacity to withstand shocks'.

[3]The 'Wicked Problems' have been described in the literature as the problems that do not have definitive formulation and solutions of such problems manifest themselves in other kind of problems. Moreover, such solutions are not true or false, but good or bad.

A pandemic may cause suffering in many sectors. Industries may close and businesses may collapse, putting pressure on the government for bailing them out. In fact, most of the countries in the world have provided funds not only for commercial enterprises but also for social security. A list of countries in Fig: 5.1-1 reveals that substantial funds have been provided for by the government. Even then these may be inadequate. The IMF and the World Bank have also pitched in. at the same time, there are also reports that many sectors have also tried to take advantage of the situation and raised undue demands.

Government role in providing support to businesses and society is critical. IMF has said that public investment has a central role to play. Increasing public investment in advanced and emerging market economies could help revive economic activity from the sharpest and deepest global economic collapse in contemporary history.

Figure 5.1: Value of COVID-19 fiscal stimulus packages in G20 countries as of October 2020, as a share of GDP



Source: https://www.statista.com/statistics/1107572/covid-19-value-g20-stimulus-packages-share-gdp/

Increasing public investment by 1 percent of GDP could strengthen confidence in the recovery and boost GDP by 2.7 percent, private investment by 10 percent, and employment by 1.2 percent if investments are of high quality and if existing public and private debt burdens do not weaken the response of the private sector to the stimulus.

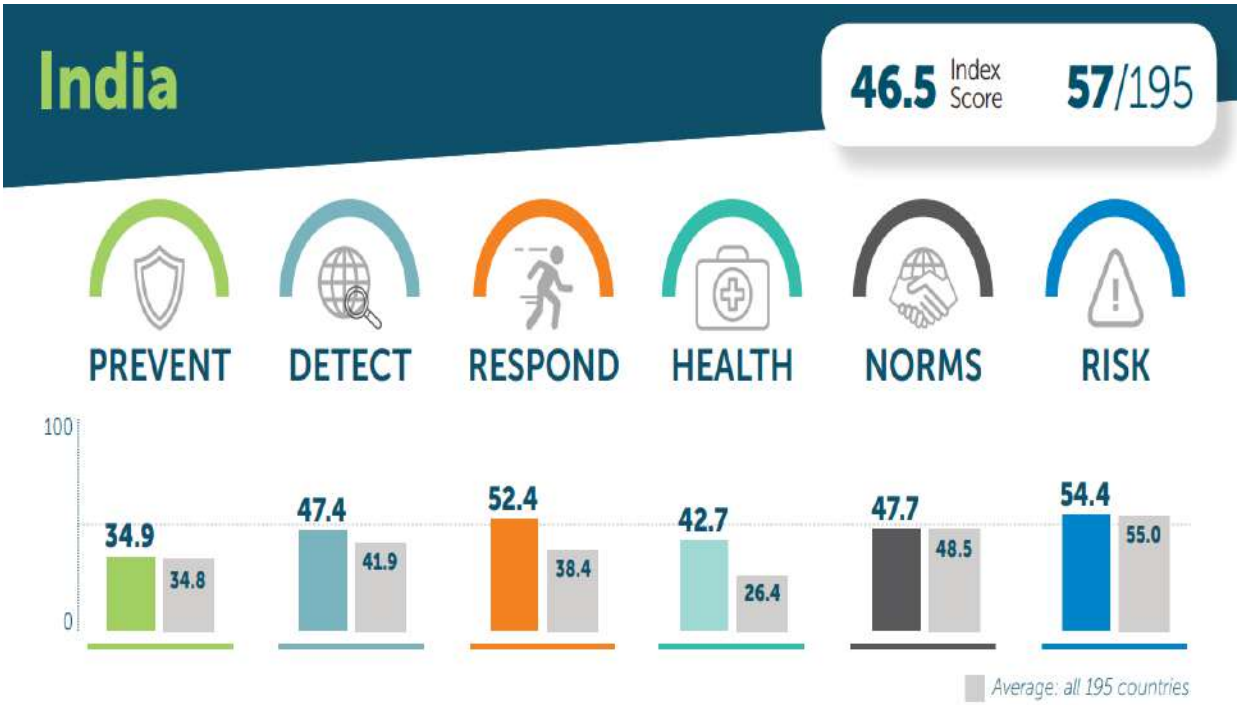
In view of the warning from experts about imminent threat of pathogens from time to time, it is important that the appropriate reforms are carried out so that sustainability in the various sectors is ensured and these can absorb any future shocks to the extent possible. Collier (2020) cites the example of Swiss authorities who are prepared not just for a health shock, but for whatever might cause disruption to the supplies of essential services. He notes that Swiss planning is designed to devolve responsibility for resilience throughout the economy, with the predominant role played by private firms.

5.2 Robust Public Health System

The COVID-19 exposed the vulnerabilities of all the countries, rich or poor, medically advanced or resource scarced. However, to respond effectively it is essential that requisite systems and processes are in place.

As can be seen (Fig. 5.2), India has better than average systems and capabilities, though its prevention capabilities are not very strong. India has put in place systems which are part of internationally agreed protocols.

Figure 5.2: India's Health Security Status



Source: Report on Global Health Security Index 2019

5.2.1 Institutional Arrangements for Managing Pandemics/Epidemics

India has integrated Disease Surveillance Programme (IDSP), which is implemented by National Centre for Disease Control (NCDC) which comes under the Directorate General of Health Services. It is now covered under the National Health Mission (WHO). The key objectives of the programme is to strengthen/maintain decentralized laboratory base IT enabled disease surveillance system for epidemic prone diseases to monitor disease trends and to detect and respond to outbreaks in early rising phase through trained Rapid Response Teams (RRTs).

Since November 2007, IDSP has been reporting outbreaks every week and on an average, 30-40 outbreaks are reported per week (Varshney, 2020). A study conducted by the scientists of NCDC, National Institute of Virology and Indian Council of Medical Research (ICMR) analyzed the outbreaks in 2017 and noted that causes of fevers in patients could not be known in as much as one-third to one-fourth of the cases.

However IDSP can be said to be the primary source of information about any outbreak in the country, as about 90% districts in the country report weekly surveillance data through portal. The weekly reporting of outbreaks is significant as it is shared with all key stakeholders including the Prime Minister's Office. It would be pertinent to note here that IDSP centre had made the alert on same day for Nipah virus in Kerala, when it was discovered by the doctors.

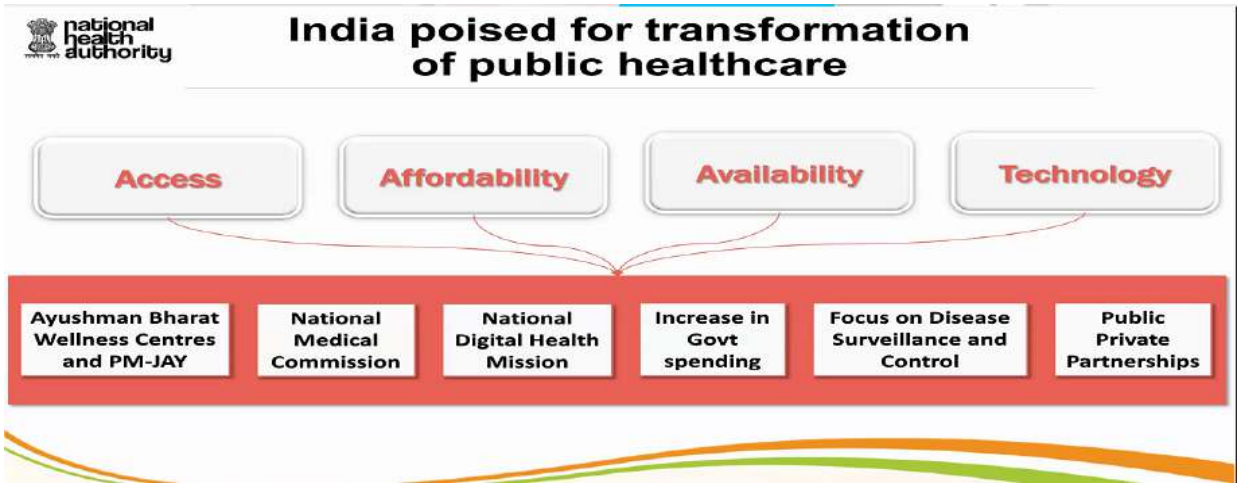
5.2.2 Strategic Health Operations Centre (SHOC)

SHOC is functioning since 2013 to act as a command centre to manage disease outbreaks, public health emergencies or any disaster situation. It uses latest information & communication technologies to strengthen disease surveillance and response.

Despite these systems, efficacy of tracking and tracing was not uniform throughout the country. This implies that capacities need to be built at the ground level to energize the system. Government of India has proposed a comprehensive healthcare system.

The complete architecture which is right now in nascent stage, if effective, may prove to be a transformation from earlier days.

Figure 5.3: Planned Indian Health Care Architecture



Source: National Heath Authority, India

5.3 Strengthening Cooperative federalism

India is a big country with 130 crores population. When the lockdown was imposed in March 2020, nobody was sure as how it would be accepted by this huge population. Surprisingly, it turned out to be one of the most effective lockdowns world-wide. Even WHO commended the efforts. People by and large compiled with the advisories issued by the government. This efficacy can be attributed to full cooperation tendered by all the state governments across the country whether they belonged to the ruling party at the Centre or the opposition parties.

The states accepted the leadership role of the Union government. Many reasons can be attributed for this. For example, the kind of information that is needed for such a task could be better accessed by the Central Government. It had linkages with the WHO, IMF, World Bank and similar other institutions whose roles are critical to tackling various issues arising from time to time. It could be advisories from WHO, collaboration with laboratories in other countries, aid packages with the IMF and the Worked Bank, etc. Besides that, many state governments did not have the capacities to intervene on their own. They looked for guidance towards the Centre, which could suggest or take decisions based on the country-wide data evidence, which was now being collected as per standards being applied elsewhere in the world.

At the same time, the Centre also can be credited with taking steps to forge cooperation not only between the Centre and the states but also among the states. The Prime Minister interacted five times between March 24, 2020 to May 11, 2020. He accepted that `the Centre and states have been able to work as a team in the fight against COVID-19'. Many more meetings were held thereafter. During all these interactions suggestions were sought from the Chief Ministers on diverse issues relating to the pandemic. The issues at different points of time were what steps need to be taken to control the spread of the virus, health preparedness, supplies of medicines and protective kits, how to restart the economy, how to take care of the migrant labours, elderly and other vulnerable groups, etc. This reflected the maturity and cooperative attitude in the centre-State relations. The frank exchanges led to improving the strategies as and when required. Often there were also divergent opinions on issues, which were considered.

Picture 5.1: PM holding meeting with the Chief Ministers

Source: ANI

The Prime Minister has often talked about in favour of cooperative federalism. The NITI Aayog has been constituted to actualize the goal of cooperative federalism. It focuses on soliciting joint focus on the national development agenda by the centre and states and advocacy of state perspectives with Central Ministries. It was this spirit of cooperative federalism that led to smooth distribution of medicines and protective kits to states which were in short supply. More supplies were ensured to the states which were worse affected. There was no news of any complain or conflict in this regard by any of the states.

It would be important to reiterate here that a rigid and uniform approach may not be feasible in a diverse country like India. For example, the socio-economic context of Assam is entirely different from that of Maharashtra, so guidelines may need to be flexible to accommodate such differences. It was highlighted by Mr. Amrinder Singh, CM of Punjab that zoning (red, green and orange) decisions be left to the states as the district administration is in a better position to identify the areas which should be classified as containment zones and which may be kept open. Till then it was being done by the Ministry of Home Affairs. Thankfully all such contentions issues were resolved barring few like opening of the restaurants by the Kerala government before the MHA allowed such openings.

The Centre may play the role of knowledge supplier and provide the guidance but the actual implementation be left to the states which have better understanding of the ground realities in their territorial jurisdictions. There should also be sufficient scope for states to take proactive actions on their own. It happened in the case of Assam, where the government procured the PPE kits on its own from the Chinese suppliers as there was shortage and their quota from the central supplies was much less than their demand. The Centre would also need to ensure the financial resources as states face resource crunch, more so due to lower economic activities.

In fact, there is also need to plan in terms of pandemic management in urban and rural areas. Whereas the urban areas are dense, population in rural areas is scattered. Urban areas are much more prone to infectious diseases, because people have to go to crowded places, use public transport for commute, waste management problem in cities, etc. which compromise the social distancing norms and enhance vulnerabilities. They also receive tourists, people in transit and migrant labours who might bring disease with them. Lee et.al (2020) noted that in 2018, 55% of the world's population resided in urban areas and emerging infectious diseases are either originating or spreading in urban areas, as happened in the case of SARS in 2003 and Zika virus disease in the Americas,. In India also the worst affected areas have been cities. All major cities like Mumbai, Delhi, Bengaluru, Chennai and Jaipur have huge numbers affected by the COVID-19 virus.

Cities are important hubs of travel and trade. A spread in these areas would result in adverse effect on the economy and consequently on the society. The capacities need to be built in them to deal with outbreaks and other health emergencies. District administration and municipalities have a good understanding of the local socio-economic and cultural milieu, and the resources available. They can be effective in engaging the citizens and civil society organizations in planning and implementation of needed interventions. Most countries have national level pandemic plans in place, while very few have municipal level plans. It is very important that municipal plans reflect national level planning and that all municipal response activities are consistent with the national strategic objectives, laws, and policies (WHO, 2020a).

The capacity building efforts may focus on planning and preparing for health emergencies, tools and techniques of 'tracking and tracing', data collection and training the manpower engaged in healthcare sector. Having an assessment and evaluation tool that is suited for urban settings might also be useful for preparedness planning. Lee et.al (2020) emphasize that 'urbanization has changed the way that people and communities live, work and interact, and the need to strengthen systems and local capacities to prevent the spread of infectious diseases is urgent.

Similarly, the efforts in rural areas may focus on ensuring access to primary health care for the population and building linkages with secondary and tertiary healthcare so that in case of need patients can be transported there. Community/panchayat leaders may be roped in to facilitate effective functioning of grass root workers like ASHA volunteers and helping in data collection and updation.

5.4 Mainstreaming pandemic and disaster management into development planning

National Institute of Disaster Management and WHO India came together in June 2020 to discuss the way ahead to recovery planning. They emphasized the need to rethink approaches and mainstream COVID-19 response into development planning across sectors. This process needs to be the integral part of the planning process to ensure – infection prevention and control measures, addressing outbreak in densely populated areas, waste management, innovative technologies, gender based violence and psychological support etc. Some of the important key messages that emerged from the webinar organized by NIDM and WHO India that can be generalized for the future epidemics or pandemics were –

- There is a need for strengthening collaboration, command, control, and communication systems for efficient, prompt, and graded response and recovery.
- Technology cannot replace or make up for other public policy measures, but it does have an increasingly critical role to play in emergency responses. Covid-19 presented an excellent opportunity to reflect on the legal plausibility, ethical soundness, and effectiveness to use emerging technologies to inform evidence-based public health interventions.
- There is a need for prioritizing the epidemic/pandemic prevention and control in informal settlements, to assess the community risk perception, and thought process to enable community-based public health emergency preparedness and risk informed policy making in future.
- Water, sanitation and hygiene (WASH)[4] is vital to any epidemic/pandemic response and recovery. Best practices for safely managing health-care waste should be followed, including assigning responsibility and adequate human and material resources for safe management and disposal of wastes.
- Multi-hazard preparedness with a focus on health needs to be integrated across sectors. Risk assessments and risk preparedness should emerge as a culture for next generations to enable better management of disasters and public health emergencies.
- Documentation of best practices, creating knowledge platform for lessons-learning will promote an inclusive, participatory and well-informed preparedness strategies.
- There is need for continuing such types of collaboration through training initiatives with a focus on health system strengthening and emergency preparedness.

[4]The main objective of WASH programmes in disasters is to reduce faeco-oral transmission of disease and exposure to disease-bearing vectors.

NIDM, under the Disaster Management Act 2005, is mandated with human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management. There is already the provision of National Disaster Management Authority (NDMA), as the apex body, to lay down the policies, plans and guidelines for Disaster Management to ensure timely and effective response to disasters, to prevent the outbreak of epidemic. Towards this, it has the following responsibilities:-

- Lay down policies on disaster management ;
- Approve the National Plan;
- Approve plans prepared by the Ministries or Departments of the Government of India in accordance with the National Plan;
- Lay down guidelines to be followed by the State Authorities in drawing up the State Plan;
- Lay down guidelines to be followed by the different Ministries or Departments of the Government of India for the Purpose of integrating the measures for prevention of disaster or the mitigation of its effects in their development plans and projects;
- Coordinate the enforcement and implementation of the policy and plans for disaster management;
- Recommend provision of funds for the purpose of mitigation;
- Provide such support to other countries affected by major disasters as may be determined by the Central Government; and
- Take such other measures for the prevention of disaster, or the mitigation, or preparedness and capacity building for dealing with threatening disaster situations or disasters as it may consider necessary.

During the COVID-19 pandemic, the Epidemic Diseases Act, 1897 has been invoked. However, it is a very old Act and has outlived its utility. Its necessary features may be incorporated in the Disaster Management Act and this Act may be scrapped (NDMA, 2015).

5.5 Effective community engagement

From all the primary evidences it is clear that to contain the spread of infectious diseases, a change in social behavior is sine qua non. Wearing mask, social distancing and washing hands is an effective way in epidemic/pandemic situations. Forcing it authoritatively may be counter-productive in the long run. However, societal compliance can be gained more effectively by engaging with the communities. People are willing to help if given the opportunity. In the UK, about one million people volunteered to help the pandemic response and highly localized mutual aid groups have sprung up all over the world with citizens helping one another with simple tasks such as checking on well being during lockdowns (Marston et al, 2020).

Communities are more homogeneous groups and share many common values. They are also aware about the ground situation in their areas and can be relied upon for help in various interventions as they can customize the responses as per the requirement in their areas. Grassroots movements were central in responding to the HIV/AIDS epidemic by improving uptake of HIV testing and counseling, negotiating access to treatment, helping lower drug prices and reducing stigma (Gregson et al, 2013).

Apparently, the mechanisms for community participation need to be region specific. Meaningful relationships between the communities, the policy makers and the health service providers need to be nurtured to ensure sustainable and inclusive participation.

In fact community engagement may be more than just risk communication. In Sierra Leone, Social Mobilization Action Consortium trained 2500 volunteers during Ebola outbreak in 2014, to implement the community led Ebola Action approach. In this approach, the volunteers did body mapping to identify key symptoms of Ebola and danger discussion. The initiative resulted in significant reduction in unsafe burials and early reporting of symptoms (Gillespie et al, 2016)

Focus must turn on community participation, which has been completely lacking in India's Covid-19 responses so far, except in few states like Kerala, West Bengal and Karnataka. Involving the community in decisions about their own health and wellbeing may make a difference. People banging the thalis or lighting a

diya at the exhortation of the PM were attempts to sensitize and bond the people, but effective engagement was not attempted. In that context, Kerala showed better strategy.

Picture 5.2: Kudumbashree members contributions

https://pib.gov.in/PressReleasePage.aspx?PRID=1665209)

Another area which was not paid attention to by the govt. was the stigmatization attached with communities. In a crisis it is essential that people are not afraid of being identified. Steps to make affected people comfortable ought to be the part of SOPs.

Box 5.1: Steps for community participation in the pandemic response

Invest in coproduction

- Fund dedicated staff and spaces to bring the public and policy makers together
- Create spaces where people can take part on their own terms (eg, avoid bureaucratic formalities or technical jargon)
- Move beyond simply gathering views and instead build dialogue and reflection to genuinely codesign responses
- Invest not only for this emergency but also for long-term preparedness

Work with community groups

Build on their expertise and networks

Use their capacity to mobilise their wider communities

Commit to diversity

Capture a broad range of knowledge and experiences

Avoid one-size-fits-all approaches to involvement

Consciously include the most marginalized

Be responsive and transparent

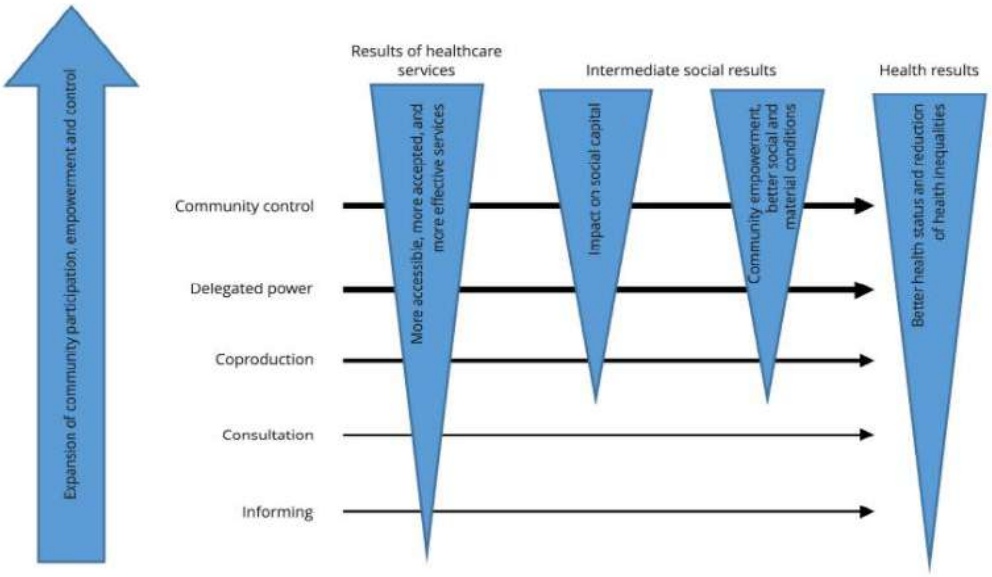
Show people that their concerns and ideas are heard and acted upon

Collaborate to review outcomes on diverse groups and make improvements

Source: Marston et al (2013)

Popay (2010) proposed a model of participation, differentiated according to its objectives, consists of four approaches: informing; consultation; coproduction; and community control. According to this model the most basic levels of participation, such as informing or listening, are able to promote results in healthcare terms but broader results can be achieved with coproduction and community control.

Figure 5.4: Model of participation



Source: Popay (2010)

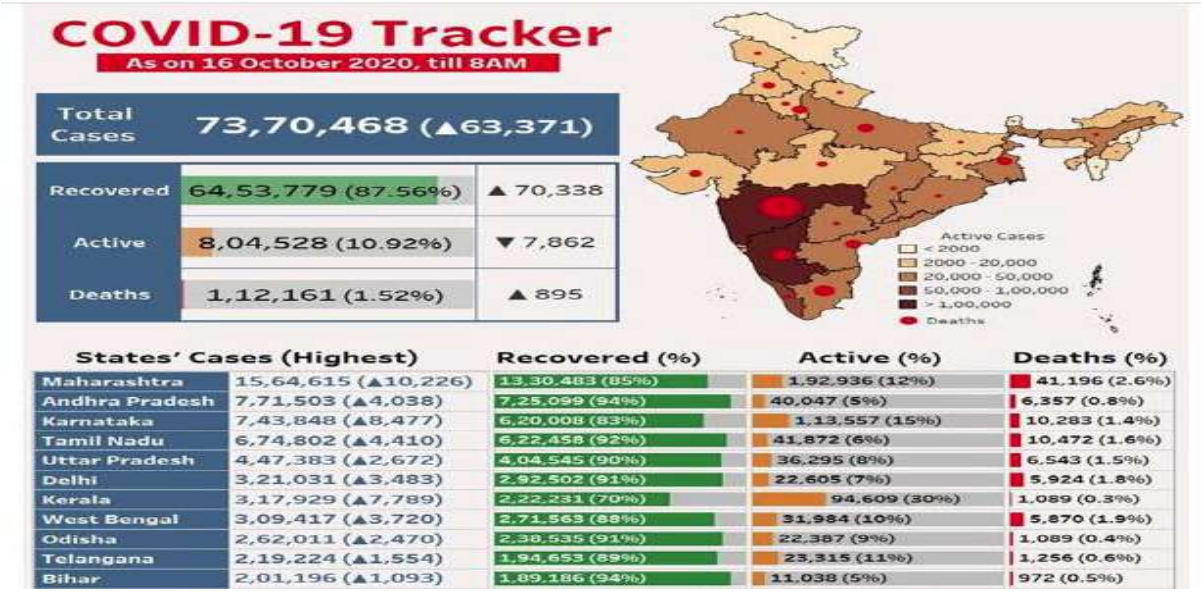
Marston argues that 'institutional cultures that support coproduction must be created in political and health systems because mechanisms to ensure citizen participation are essential for high-quality, inclusive disaster response and preparedness, and these can be called upon again in future emergencies'. There are evidences that all societies have community groups that can co-create better pandemic response and health services and such public participation will reveal policy gaps and the potential negative consequences of any response—and identify ways to address these together.

5.6 Building data collection infrastructure and knowledge formation

Surveillance and contact tracing became critical in managing the COVID-19. They had been so in the past too in managing diseases like influenza and NIPAH. This requires developing the infrastructure till the local level that enables continuous data collection and updation. India faced a lot of criticism regarding the quality of data about COVID-19. At the same time, Kerala could control the pandemic in the state based on the data about arrivals and locations of people coming from outside the state. South Korea and Taiwan were also successful, as their health functionaries had access to data about people. Dr. Gaya Gamheiwage of WHO said that "the major epidemics we have seen this century highlighted the need for a system that quickly transforms scientific knowledge into action on the ground".

The Govt. of India launched Aarogya Setu App to collect such data. There is need to design an architecture that enables compiling a comprehensive data which could be used for providing various health services. National Digital Health Mission (NDHM) announced by the Prime Minister on August 15, 2020, is a step in that direction. However, there would be different data set, which would need data integration as well. Real time data would also be useful. This capability has now been demonstrated.

Figure 5.5: COVID updates



Source: https://pib.gov.in/PressReleasePage.aspx?PRID=1665209 accessed on Oct. 20, 2020

Meanwhile some critical issues relating to data need to be resolved:

(i) Responsible use of Data

A word of caution is important here that the data and analytics leaders must apply data ethics while collecting, using and sharing data. In this context, it would be important that appropriate cyber security laws are laid down. Moreover, fears would need to be allayed that such data is not used for other purposes like citizen surveillance. China has a very intensive programme for such surveillance through advanced technologies and Artificial Intelligence, which has attracted wide-spread criticism.

Data sharing needs to be aligned with core ethical values and priorities to safeguard against data misuse. This may be done through limiting the numbers of people who have access to the data, but does not stand in the way of data access by those who need it. Discarding the information, once it has served its purpose may be a good strategy. The Government of India allayed the fears about the data collected through Aarogya Setu app by clarifying that it would be anonymous and be discarded after fixed number of days. Revisiting the norms for data collection and dissemination may be made part of the design/planning as evolving and newer technologies may make the existing procedures/processes redundant. Thus the data sets integrated as per requirement need to be governed and managed in a responsible and trustworthy manner. So that they can be used for research, analysis and knowledge formation.

(ii) Ownership of Data

Another important issue in data is that of the ownership, as to who controls the data. We have seen that different types of data are collected by different agencies during COVID-19. These agencies may not always be government and may impose a cost on sharing the data. Collaborations have been forged among governments and non-government agencies for data collection, sharing and researches.

In future such collaborations are likely to increase. A lot of research institutions, private pharmaceutical companies and data analytics companies have been roped in the present pandemic management who sink a lot of investments in the knowledge formation. These might want to recover their costs. Modalities need to be worked out about sharing and use of information with such agencies. This might emerge as a problem and which may be compounded by the fact that the data may belong to different territorial jurisdictions covering many countries. A legally binding protocol may be needed in such a situation.

(iii) Data Manipulation

There is need to ensure transparency in the data collection and reporting. There are already allegations about data manipulation. Many countries criticised China for hiding the actual numbers relating to COVID-19. On October 11-12, 2020, Trump administration included India also in the list of countries which are not reporting data correctly. Similarly, scientists have reported pressure on them to manipulate data to look good. There may be different motives. This may require inter-agency collaborations as well as cooperation among governments in the larger public interest.

5.7 Caring for the Vulnerable Sections of the Society

"The crisis highlights the need for urgent action to cushion the pandemic's health and economic consequences, protect vulnerable populations, and set the stage for a lasting recovery."

Strategic interventions need to be made to protect the poorest and the most vulnerable. There are households who live from hand to mouth, wage earners, migrant workers, small farmers, children, *divyangs*, women, elderly and self-employed, who may not have the resources to cope with the lockdowns and quarantines needed to contain the spread of the epidemic. They are affected by food insecurity, malnutrition, law & order problems, and violence & crimes. So the first line of response has to ensure social protection and provide social assistance programmes. Cash transfers and public works programmes have been found to be effective in many countries. There are different opinions as to whether support should be targeted to the neediest, or a more blanket approach should be adopted. During the Ebola crisis, community-centric approaches buttressed by national programmes were found to be effective. World Bank Group also supports approach of social protection, safety net and community driven development.

World Bank (2020a) says "*eight out of 10 'new poor' will be in middle-income countries". "The pandemic and global recession may cause over 1.4% of the world's population to fall into extreme poverty," said World Bank Group President David Malpass. "In order to reverse this serious setback to development progress and poverty reduction, countries will need to prepare for a different economy post-COVID, by allowing capital, labor, skills, and innovation to move into new businesses and sectors. World Bank Group support—across IBRD, IDA, IFC and MIGA—will help developing countries resume growth and respond to the health, social, and economic impacts of COVID-19 as they work toward a sustainable and inclusive recovery.*"

5.7.1 The integrated approach of WBG

i. Expand existing social protection delivery systems which include:
   a. Targeted income and potentially food support for vulnerable households.
   b. Social insurance programmes such as unemployment insurance.

ii. Behavior change and social care services. This includes:
   a. Programmes to assist pandemic control – hand washing, social distancing, protective gear usage, identifying symptoms and management of cases;
   b. Support to minimize potential negative consequences of social distancing – deterioration of mental health, increase in intimate partner and intra-family violence; and
   c. Interventions to support child welfare and learning during the pandemic – nutrition, early childhood stimulation, support to foster learning at home, and return-to-school messaging.

iii. Support to communities and local governments through:
   a. Provision of emergency public goods such as water supply, temporary health clinic extensions, repurposing of public facilities for health needs, public hand-washing and sanitation stations;
   b. Support to municipalities to keep essential services running where their revenues have declined dramatically; and

c. Ensuring adequate food supply by repurposing marketplaces to meet minimum health and security standards, supporting food banks, and strengthening safe food distribution networks.

iv. Support employment and productivity for vulnerable households, informal businesses and micro-enterprises. programmes leverage community structures, including bottom of the pyramid financiers

a. Labor-intensive public works projects

b. Sustainable natural resource management initiatives

v. Improve delivery systems

a. For expanded coverage, better digital delivery, and greater resilience for future shocks

b. Citizen engagement channels to support adaptable targeting and accountability.

The World Bank has planned to support a more diversified, affordable and equitable education service that can ensure continuity and acceleration of learning. It is also emphasizing on jobs as well as improved skills and employability through:

- Mitigating skills losses in the early crisis stages and promoting new skills development in the recovery through multiplatform remote learning with private sector participation.
- Supporting employment and employability programmes in the relief and restructuring stages, followed by support for jobs for the future in the recovery.

The Government of India has also planned on almost similar lines. For the vulnerable and poor sections Pradhan Mantri Garib Kalyan Yojana has benefitted many.

Box 5.2: Pradhan Mantri Garib Kalyan Package

- Rs. 1.70 Lakh Crore relief package under Pradhan Mantri Garib Kalyan Yojana for the poor to help them fight the battle against Corona Virus:
- Insurance cover of Rs 50 Lakh per health worker
- 80 crore poor people given benefit of 5 kg wheat or rice per person for next 3 months
- 1 kg pulses for each household for free every month for the next 3 months
- 20 crore women Jan Dhan account holders get Rs 500 per month for next 3 months
- Gas cylinders, free of cost, provided to 8 crore poor families for the next 3 months
- Increase in MNREGA wage to Rs 202 a day from Rs 182 to benefit 13.62 crore families
- Ex-gratia of Rs 1,000 to 3 crore poor senior citizen, poor widows and poor Divyang
- Front-loaded Rs 2,000 paid to farmers under existing PM-KISAN to benefit 8.7 crore farmers
- Building and Construction Workers Welfare Fund allowed to be used to provide relief to workers
- 24% of monthly wages to be credited into their PF accounts for next three months for wage-earners below Rs 15,000 p.m. in businesses having less than 100 workers
- Five crore workers registered under Employee Provident Fund EPF to get non-refundable advance of 75% of the amount or three months of the wages, whichever is lower, from their accounts
- Limit of collateral free lending to be increased from Rs 10 to Rs 20 lakhs for Women Self Help Groups supporting 6.85 crore households.
- District Mineral Fund (DMF) to be used for supplementing and augmenting facilities of medical testing, screening etc.

5.8 Building and strengthening linkages with international governance framework.

Assessing the impacts of the COVID-19 crisis on societies, economies and vulnerable groups is fundamental to inform and tailor the responses of governments and partners to recover from the crisis and ensure that no one is left behind in this effort. The public health security by nature belongs to the category of Global Public Goods. So countries have come together and formed partnerships to face the challenges against any such incidents.

As an independent monitoring and advocacy body, the Global Preparedness Monitoring Board (GPMB) urges political action to prepare for and mitigate the effects of global health emergencies. Co-convened in May 2018 by the World Bank Group and the World Health Organization, the Board builds on the work of the Global Health Crises Task Force and Panel, created by the United Nations Secretary-General in the wake of the 2014-2016 Ebola epidemic. The Board works independently of all parties, including its co-conveners, to provide the most frank assessments and recommendations possible. The goals of the Board are to:

- assess the world's ability to protect itself from health emergencies;
- identify critical gaps to preparedness across multiple perspectives; and
- advocate for preparedness activities with national and international leaders and decision-makers.

The report had identified indicators also for each of the actions to measure performance.

Box 5.3: Actions for preparing for health emergencies

The GPMB calls for seven urgent actions to prepare the world for health emergencies:

1. Heads of government must commit and invest.
2. Countries and regional organizations must lead by example.
3. All countries must build strong systems.
4. Countries, donors and multilateral institutions must be prepared for the worst.
5. Financing institutions must link preparedness with financial risk planning
6. Development assistance funders must create incentives and increase funding for preparedness
7. The United Nations must strengthen coordination mechanisms.

Source: Global Preparedness Monitoring Board (2019)

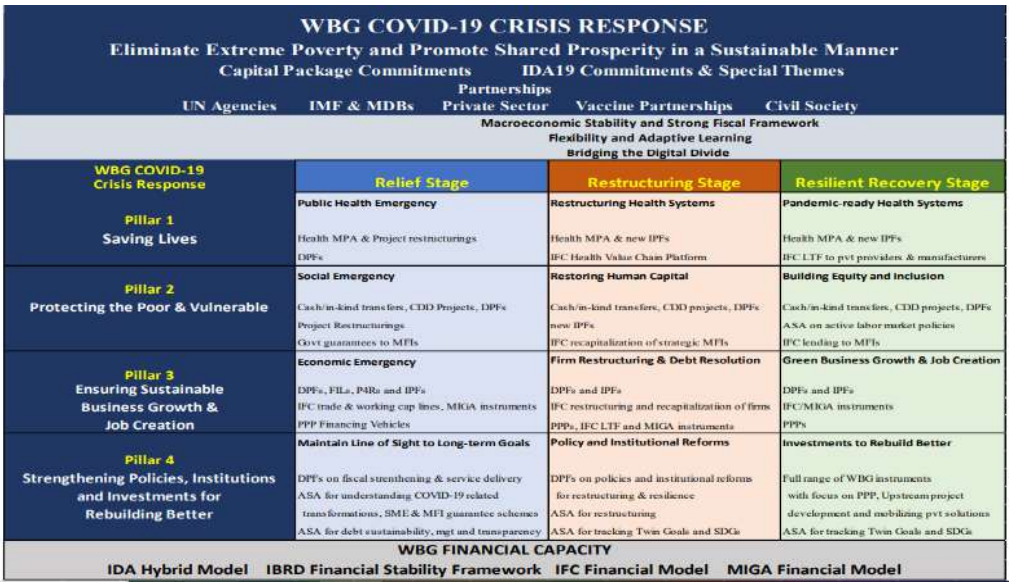
It is important to mention here that the United Nations has mobilized the full capacity of the UN system through its 131 country teams serving 162 countries and territories, to support national authorities in developing public health preparedness and response plans to the COVID-19 crisis.

Similarly, in India, the World Bank is providing one of the largest ever health sector project with a $1 billion emergency package that will procure testing kits, ventilators, medicines, and personal protective equipment, as well as set up new isolation wards, upgrade existing wards, and expand intensive care units. Disease surveillance will be upgraded to a world-class system. The funds will help strengthen preparedness for disease outbreaks, revamp infectious disease hospitals, and strengthen a network of high containment biosafety laboratories so that India's health system is prepared to cope with health emergencies in the future.

The project will cover all states and scale up efforts to limit human-to-human and animal-to-human transmission. Additional funds have also been made available to accelerate India's COVID-19 Social Protection Response Program.

All countries have adopted the binding International Health Regulations (IHR (2005), a treaty requiring governments to develop national core capacities to detect, assess, report and respond to health threats, as well as to report any "public health emergency of international concern" to WHO and to take corresponding action. World Bank Group has prepared a strategy for responding to the crisis.A brief approach is given in Annexure 5.

Figure 5.6: Crisis response framework



Source: World Bank Group, 2020

Recognizing the shared threat of a global health catastrophe, national leaders have undertaken political actions to advance preparedness. Political bodies, such as the G7, G20, G77 and several regional intergovernmental organizations such as the African Union have adopted political commitments for action on various aspects of health and health emergencies, including funding and linkages to health systems strengthening and universal health coverage.

Multilateral institutions and donors have acted to prepare for the worst pandemic challenges. At the global level, in addition to the IHR (2005) and further recommendations for their improvement adopted in 2009 and 2016, health leaders have developed the Pandemic Influenza Preparedness (PIP) Framework to address virus-sharing and benefit-sharing concerns arising from the 2006 H5N1 outbreak. Such collaborations would also be necessary for distribution of vaccines for the diseases. For COVID-19, many non-government agencies have also come forward to provide support.

In 2017 Germany, India, Japan, Norway, the Bill & Melinda Gates Foundation, the Wellcome Trust and the World Economic Forum founded the Coalition for Epidemic Preparedness Innovations (CEPI) to facilitate focused support for vaccine development to combat major health epidemic/pandemic threats. India demonstrated leadership when it called a meeting of SAARC nations to chalk out a shared strategy. It also committed resources for it to be shared by all member countries.

GPMB acknowledged that the political will, financial investment and health system improvements led to good results. Recent improvements in India's health system helped it identify and contain the deadly Nipah virus diagnosed in Kerala in May 2018. At the same time building internationally set standards can be said to be work in progress. India may have to increase health sector spending to achieve the desired goals.

5.9 Supporting innovation

Crisis can be turned into opportunity. History has shown that crisis inspires innovation. COVID-19 led to a lot many innovations. The pandemic has enhanced the receptibility of such innovations among the people and the government. The governments world over, which have been feeling their hands tied because of unknown nature of the virus and their inability to tackle this, are turning to anyone whosoever can help in overcoming various shortages. They supported innovations. The urgency of the humanitarian situation attracted people and organizations to find solutions to myriad problems emerging because of the pandemic. Christy Wyskiel, Executive Director of Johns Hopkins Technology Ventures observed that "rather than waiting for every development detail to line up for a grant to come in, innovators are coming together and offering their unique skills in unique collaborations".

Innovation has been a strategy of the government in India. It exhorted entrepreneurs, companies and people in general to come forward and give shape to ideas which could help any sector affected by the pandemic, be it health, MSME, education or any other sector. In the last six months, there have been many innovations which even the world has noticed. When the crisis started early this year, there was acute shortage of protective gear for medical and paramedic staff, ventilators for patients and, mask and sanitizers for all. No country in the World had surplus. China, which was affected first and is a major supplier of these items, had imported such items from wherever it could.

In such a situation many small and big businessmen took the challenge and worked on providing essentials like masks, sanitizers, ventilators, PPE Kits etc. Pharma industry also pitched in. for example, Mr. Anand Mahindra, Chairman, Mahindra & Mahindra collaborated with Skan Ray to manufacture SKanRay/Mahindra Ventilator at a price of Rs. 7500/- as compared to sophisticated machines that cost anywhere between Rs. 5 lakh and Rs. 10 lakh . His company worked on an automated version of the Big Valve Mask Ventilator. Many garment manufacturing companies started making masks and PPE Kits. Breweries started making sanitizers.

The government support was critical; Skanray had the capacity to produce 5000 ventilators in 8-12 weeks. But on a call from NITI Aayog on March 15, 2020, the company ramped up its capacities to 30000. For this the company shifted some of its production to Bharat Electronics Limited with the help from officials of Ministry of Health and the DRDO. The government departments acted with speed, issued directions, smoothened over supply chain disruptions and ensured supply from the defence provides. The company in turn shared its patents with BEL engineers. (Chitra, 2020)

The result of the political will and outcome oriented administrative actions was that many challenges were overcome. The price of sanitizer was brought down from Rs. 1200 per litre during the early days of the COVID to Rs. 160 per litre in June, 2020. Mr. Nitin Gadkari, Minister for Micro, Small & Medium Enterprises addressing the members of the Indo-American Chapter of Commerce informed that in June 2020 the country was surplus in PPEs and had given NOC for exports and exporting it.

Various Government Ministries/Departments viz. Ministry of Human Resource Development (MHRD), Department of Science and Technology (DST), Department of Bio-technology (DBT), NITI Aayog and Ministry of Electronics and Information Technology (MeitY) already have schemes for promotion of innovation, which may further be expanded.

5.9.1 Promoting Innovations in Individuals, Startups and MSMEs (PRISM)

5.9.1.1 India Innovation Growth Programme 2.0

The India Innovation Growth Programme (IIGP) 2.0 is a unique tripartite initiative of the Department of Science and Technology (DST), Government of India, Lockheed Martin and Tata Trusts. Supporting the Government of India's missions of "Start-up India" and "Make in India", IIGP 2.0 enhances the Indian innovation ecosystem by enabling innovators and entrepreneurs through the stages of ideation, innovation and acceleration, to develop technology-based solutions for tomorrow.

5.9.1.2 Innovation Promotion

Ministry of Electronics and Information Technology (MeitY) has taken various initiatives and measures to improve innovation-led ecosystem with a Technology Incubation and Development of Entrepreneurs (TIDE) scheme, Centre of Excellences in IoT/ FinTech space, technology and theme based incubation centres and programmes to promote technology incubation and also to support researchers, start-ups and MSMEs protect IPRs nationally and internationally.

5.9.1.3 The INVENT Program

INVENT is designed to create a platform to support inclusive innovation solutions, both technological and business process oriented, that have a positive social and economic impact on people in the lower income segments, also known as the Bottom of the Pyramid (BoP). The INVENT is basically about Inclusive Innovations and will address challenges and barriers across the inclusive innovation lifecycle, for the benefit

of up to 1 million poor people at the bottom of the economic pyramid in the 8 low income states of India (UP, MP, Bihar, Chhattisgarh, Jharkhand, Rajasthan, Orissa and West Bengal).

This programme aims at supporting and capacity building of the existing incubators to identify, pilot and fund inclusive innovations (technological as well as business) for benefit of people in 8 Low Income States (LIS).

5.9.1.4 Health Sector Innovations

Corosure

Corosure IIT Delhi became the first academic institute to have obtained the ICMR approval for a real-time PCR-ba sed diagnostic assay-- a method to detect COVID-19. IIT Delhi had granted licenses to 10 companies to manufacture Corosure. With a base price of Rs 399, the kit claims to be just as accurate as the regular test kit. It has made it affordable for a large population in the country.


CoronaOven

CoronaOven Log 9 Materials, a Bengaluru-headquartered nanotechnology start-up, has come up with first-of-its-kind a product named CoronaOven that makes use of UV-C light (having a wavelength of 253.7 nm) in combination with significant design parameters. The device disinfects surfaces (of various objects, personal protective equipment, etc.) from germs including bacteria and viruses. This unique multi-focal UV disinfection chamber claims to sanitise any surface within 4 minutes.

Mylab Discovery Solutions, Pune developed the country's first **indigenous RT-PCR based molecular diagnostic test** that has been approved by the Central Drug Standard Control Organisation (CDSCO). This test detects COVID-19 infection in 2.5 hours as opposed to 7 hours by conventional methods, while maintaining robustness in rooting out false positives.

RespirAID is a portable breathing support system developed by Biodesign Innovation Labs with an aim to meet the shortage of ventilators in Indian hospitals and globally. It uses a ventilation strategy called Intermittent Positive airway pressure that can moderate essential respiratory paramete rs. This makes it suitable for patients who are at severe risk of lung collapse.


RespirAID

RespirAID is supported by the Department of Biotechnology's BIRAC and Department of Science and Technology's Nidhi Prayas Programme. Startup India, NITI Ayog and Invest India are also providing support to this initiative for connections with suppliers and custom clearances.

5.9.1.5 Other sector innovations

Besides the health sector, innovations were seen in other sectors also which have been affected by the pandemic. Schools and colleges were closed due to lockdown and subsequently safety measures. They embraced teaching online. Several web-based platforms like Zoom, Webex, Microsoft-team etc., started being used by teachers and students. Similarly, business enterprises which had to close their offices for the same reason started "Work from Home" (WFH). Corporations and authorities around the world had no other option but to provide flexible working conditions including WFH. In fact more than 3 billion people worldwide, excluding the essential workers like defence and healthcare officials started working from home. In India, even leading PSUs and the government sector that previously never accepted the idea of WFH have embraced it (Deorah, 2020).

A Global Work-from-Home Experience Survey estimated that 56% of the U.S. workforce holds a job that is compatible (at least partially) with remote work. Currently, only 3.6% of the employee workforce works at home half-time or more. Data from 2016 shows that 43% of the workforce works at home at least some of the time. The estimate is that 25-30% of the workforce will be working-from-home multiple days a week by the end of 2021 (Global Workplace Analytics, 2020). So, is it going to be the new normal? TCS announced it is working towards a model called 25/25 where only 25 per cent employees will work from office by 2025.

Innovation is at the heart of UNDP for establishing resilient and sustainable systems for health. Supporting countries to harness innovations is central to UNDP's approach. It views innovation as a critical driver to do development differently and better. It is about identifying more effective solutions that add value for the people affected by development challenges.

UNDP's investments in innovation can be mapped across four interconnected pillars:

i. Mission-driven innovation

Mission-driven innovation tackles complex development issues through concrete and measurable "missions" that are ambitious and foster multi-disciplinary collaboration. They motivate and unite diverse groups in society to work towards a big goal over time, that often transcends electoral cycles.

ii. Improvement-oriented innovation

Driving new agile ways of working to improve the efficiency and effectiveness of development programmes, both within UNDP and with the partner countries. This includes experimenting with new capacities, tools and regulations that often lead to more cost, time and resource efficiencies in programme, policy and operation design and services.

iii. Bottom-up solutions

Leveraging local collective intelligence about successful solutions to drive systems change and organizational learning. UNDP plays a key role in connecting, promoting and mainstreaming cutting edge ideas to decision-makers for large scale impact.

iv. Anticipatory innovation

Addressing potential future risks and liabilities by designing experiments to explore them today. This is particularly relevant for frontier technologies and their impact on economies, on human freedom and our well-being.

Source: *Innovation for Resilient and Sustainable Systems for Health*

Alongside, the technology driven innovations, social innovations and social entrepreneurship also gathered steam during the COVID-19 spread. While financial growth is important, companies are realizing that the general public is now emphasizing their contributions to society. Young educated population has a growing sense of responsibility. Social entrepreneurship has gathered momentum as the social entrepreneurs realize that the livelihood of almost half of world's workforce is under threat due to ongoing COVID-19 and which may result in social chaos. Social enterprises can be sustainable and even profitable. According to British Council, social cooperatives in Kenya account for 45% of the country's GDP (Mediawire, 2020). There are many social enterprises in India and some of them are supported by the government. The Government of Telengana launched Kakatiya Hub for Social Innovation way back in 2017 to function like a rural incubator to encourage entrepreneurship at the grassroot level. The governments at the state levels may have to lend institutionalized support to such actions.

5.10 Effective communication strategy

A pandemic demands careful communication of public health messages to diverse audiences. Good communication during a pandemic lets people know what they should do, i.e. expected behavior and practices, allays their fears and apprehensions, and cautions them about future adversities. Gaps in the scientific knowledge about the new pathogens may create panic situation in the population. An "infodemic" of misinformation and rumours may spread more quickly than the outbreak of the new disease.[5] This contributes to negative effects including stigmatization and discrimination of people from areas affected by the outbreak. There is need for collective solidarity and clear, actionable information to support communities and people affected by any new outbreak. In the initial days of lockdown in India everybody panicked. There were long queues outside shops and a tendency to store as much as possible was visible.

[5]WHO says that "An infodemic is an overabundance of information, both online and offline. It includes deliberate attempts to disseminate wrong information to undermine the public health response and advance alternative agendas of groups or individuals".

Vraga and Jacobsen (2020) suggest that the groups involved in health policy research, advocacy, implementation and enforcement must be aware of three key challenges:

(i) Information overload

(ii) Information uncertainty

(iii) Misinformation

According to them, these challenges can be countered by accurately communicating core messages to specific audiences, being transparent about the evidence base for recommendations and being open about the likelihood of guidelines changing as scientific discoveries are made.

WHO (2020b) concedes that misinformation has caused immense harm during outbreaks and the stakes are higher in a digitized world, where misinformation and mixed messages overwhelm individuals and communities. WHO's risk communication guidelines, based on the experience of SARS which made it clear that suppressing or limiting information (as China did when the disease first broke in Guangdong), emphasize the principles of transparency and timelines in information. Transparency is considered key to building trust between the population and the government.

To its credit, the Government of India did hold the daily press conferences represented by Jt. Secretary in the Ministry of Health, Jt. Secretary in the Ministry of Home, representatives of ICMR and experts. They briefed the media about the evolving situation, level of preparedness, measures being taken to tackle the crisis and other relevant issues. The Prime Minister too addressed the nation through television when he felt it necessary. This was in a way informing the country based on evidence. However, there is a view that the country did not have a crisis communication strategy that led to stigma, fear and poor health-seeking behavior (Mehra, 2020). In fact the Central Government approached the Supreme Court with a request that media outlets in the "larger interest of Justice" should only publish or telecast anything on COVID-19 after ascertaining the factual position from the government. The Ministry of Home's contention was that "any deliberate or inaccurate" reporting by the media, particularly web portals had a "serious and inevitable potential of causing panic in larger section of the society" (Rajagopal, 2020). The Court observed that "we expect the media (print, electronic or social) to maintain a strong sense of responsibility and ensure that unverified news capable of causing panic is not disseminated". This judgement led to the daily media briefing by the body headed by the Jt. Secretary in the Ministry of Health.

However, there are some issues which need to be resolved to be ready for future. Many a times advisories were not backed by the explanation of the rationale (Abraham, 2020). It may be recalled that on the call of the Prime Minister people banged plates, blew conches, etc. to make sound as he had suggested. In the process, the social distancing norms were violated as people came together and some of them also walked on the streets. People made their interpretation as the rationale was not explained to them. Sometimes the communication was not clear. This was one of the reasons that the migrant labours who had waited during the first lockdown started moving back to their homes on foot or bicycle or whatever they could manage even if their homes were too far. They did not know as to what would happen next. Rumour mongering on the social media added to the woes of all. Despite these the lockdown in India has been by and large effective and commended by WHO too. One reason can be attributed to the trust the people have in the Prime Minister. The district administration and the municipalities in the cities and the Panchayats in the rural areas can be very effective in dealing with the information gaps. They are more in touch with the local level issues and better suited to customize the central communication as per requirement of the area. Kerala was able to manage as the district administration in each affected district communicated proactively with the population and the civil society groups like Kudumbshree.

Box 5.4: Sample Pandemic Communications Response Plan at local level

STEP 1: Designate a communications coordinator

STEP 2: Designate a spokesperson

STEP 3: Identify communication needs

A. Identify target audiences
B. Identify communications goals
C. Determine key messages
D. Determine targeted messages per audience
E. Identify materials needed

STEP 4: Create a communications plan

A. Determine information dissemination channels
B. Identify media and communications resources
C. Prepare first announcement
D. Establish update procedures
E. Prepare talking points

STEP 5: Monitor information flow and public response

Source: WHO 2020a

In the information age, it is necessary that we have professionals managing the communication. India has a cadre of information service officers. It would be good, if they are attached with each Ministry to plan for their strategic communication. There are some ministries in which there officers have been posted but arrangement has not been institutionalized. At the same time their regular capacity building would be required as the technology is constantly changing the face of communication.

Box 5.5: Five Lessons for Communicating

1. **Build trust:** People need information from sources with expertise and they need to hear from trusted public health experts at regular intervals. If incorrect information is shared, experts need to correct the record quickly to ensure that trust is maintained. And when too much time passes between communications, people tend to fill the void with inaccurate information from unreliable sources. Be honest about what you know – and don't know – in a crisis.
2. **Have one set of messages:** All spokespeople must be on the same page. This is crucial so that people know exactly what to do to reduce the spread of the virus. Otherwise, people make up their own minds about how to behave – which won't slow the spread of disease.
3. **Counter myths and misinformation:** Ignoring rumors and hoping that they dissipate on their own is a poor course of action, especially in a crisis. Create a system to dispel myths and correct the record by sharing the clear, accurate messages that experts have agreed on.
4. **Promote action:** In an unprecedented crisis, some people just don't know what to do and why to do it. Being anxious right now is completely normal, but we need to balance that with the ability to act to prevent paralysis. Giving them concrete things to do calms anxiety and promotes a restored sense of control. We've already seen some people change social norms, such as avoiding hugs and handshakes upon greeting. Our trusted leaders need to role model this behavior and talk about what else people can do to protect themselves such as vigorous hand-washing, avoiding public events and settings and keeping your distance from others, especially older people who are particularly at risk for complications.
5. **Be empathetic:** We are all in this together and we need communication that reflects this. The unknowns are scary, but helping people understand that they need to take action for the greater good can help foster community.

Source: Krenn (2020)

5.11 Inter-sectoral coordination

When we try to look at managing pandemics from a broader perspective, there are enough evidences to indicate that the way we have been interacting with the nature is one of the major reasons for the emergence of pandemics. Nearly 70 per cent of emerging infectious diseases in humans are of zoometric origin and nearly 1.7 million undiscovered viruses may exist in wildlife (Brulliard, 2020). Agricultural intensification, deforestation, global wildlife trade and urbanization are all links of a chain and the virus can spread easily through international travel of an increasingly globalised population.

As a pandemic is not only a health crisis, but affects many other sectors of economy and society, it is important that a mechanism is devised to achieve inter-sector coordination to tackle the emerging crisis. There is already a scheme for this, which aims at 'One Health' approach through collaboration with Ministry of Agriculture, Cooperation & Farmers Welfare for development of technical guidelines for animal components of rabies control. The scheme also envisages collaboration with Wildlife Institute of India for prevention and control of Zoonotic diseases in India.[6]

However, it would be necessary to expand the scope of achieving its convergence with programmes of many other ministries. Urbanization and deforestation have been identified to be major reasons or contributing factors in increasing the possibilities of greater contacts with wildlife, thus enhancing the possibilities of new diseases cropping up. So they also ought to be part of collaboration. Ministry of Finance is by default an important stakeholder, which may have to fund certain activities.

While a macro policy perspective would be necessary, a trigger mechanism may be devised to alert all the stakeholders. India has many systems in place in accordance with agreements arrived at in international organizations like WHO, IMF, World Bank, etc. What needs to be insured is appropriate implementation. Glimpses of this have been seen during the present crisis.

5.12 Capacity building of systems and employees at every level

Capacity building is the process of developing competencies in an organization so that it can perform more efficiently in a pro-active and sustainable manner. However, the concept goes much beyond training the staff only. At the individual level, the focus is on the process of changing attitudes and behaviours and knowledge enhancement. At the institutional level, the capacity building efforts look at improving the processes, introducing necessary reforms and adapt to changes. At the systemic level, the organizations have to respond to external challenges, remaining competitive and forming alliances, so the capacity building efforts would need different type of approaches. It is equally important to note that capacity building strategies would differ from country to country. That is why capacity assessment is an integral part of capacity development programmes.

The present crisis has shown that massive capacity building efforts are needed in the health sector all over the World. UNDP has identified eight focus areas for capacity development for strengthening national systems for health. The approach ensures that capacity gaps are identified and fed into prioritized capacity development plans. These areas are:

1. Programme management for health
2. Financial management for sustainable health policies and programmes
3. Health information systems
4. Health products procurement and supply chain management
5. Law, rights and policy support, to reduce inequalities, promote human rights, and create enabling legal, regulatory and policy environments for universal health coverage
6. Innovation for Resilient and Sustainable Systems for Health

[6]WHO in 1959 defined that Zoonoses are "those diseases and infections which are naturally transmitted between vertebrate animals and man".

7. Solar for health
8. Non-communicable diseases

India launched many health related online training programmes which were pursued by many within the country as well as outside. However, there has to be a constant effort to include many more sectors which would be crucial for any such crisis in future.

6. CONCLUSION: TURNING CRISIS INTO OPPORTUNITY

The pandemic has caused disruptions all over the country in almost all the sectors. It is time that we learn from the experience so that another outbreak of similar nature does not have the repercussions of the type that we have now because of COVID-19. While it is apparent that public health spending needs to be enhanced to establish public health infrastructure including the systems to track and monitor the benchmarked performances, it needs to be ensured that healthcare facilities are affordable and accessible to everyone, whosoever needs it.

The Government of India identified this moment as the right one to find the efficacy and scientific basis of traditional systems of medicines like Ayurvedic, Unani, Siddha and Homeopathy. The practitioners were given permissions for trial to administer the medicines and practices to patients who volunteered for the same. The administrative machinery was reinvigorated to get speedy approvals and remove hurdles in starting the trials. These systems of medicines have for long been rejected for want of evidence. The move seems to have paid off. Recently, the Minister of Health announced Ayurvedic protocol as permissible for the treatment of COVID- 19 patients. He claimed that the protocol was based on the results of the trial.

Similarly, agriculture sector reforms were carried out to ensure long-term sustained growth. The government claimed that the structural reforms carried out through three statutes would free the farmers from the clutches of the mandis and help them in selling their produces where they can get better prices. The reforms also bring in the private sector to support 'one India, one agriculture market'.

The definition of Micro, Small and Medium Enterprises.(MSMEs) has been changed to enable them to grow. The previous definition incentivized the MSMEs from scaling up. The distinction between the manufacturing and services sectors has also been done away with to facilitate credit access to them. Aatmanirbhar Bharat package announced by the government would not only benefit the MSMEs, but would also give impetus to entrepreneurship under Start up India and Make in India.

The government carried out the labour reforms, which may help the MSMEs also. The State Governments of Uttar Pradesh and Gujarat proposed blanket bans on most of the labour laws to attract foreign and domestic investment. Some other state governments also seem to be contemplating labour reforms in their states.

In view of the experts' warning of pandemics hitting the world any time, it is critical that we learn to live with the motto of '*Jaan bhi, Jahaan bhi*'.

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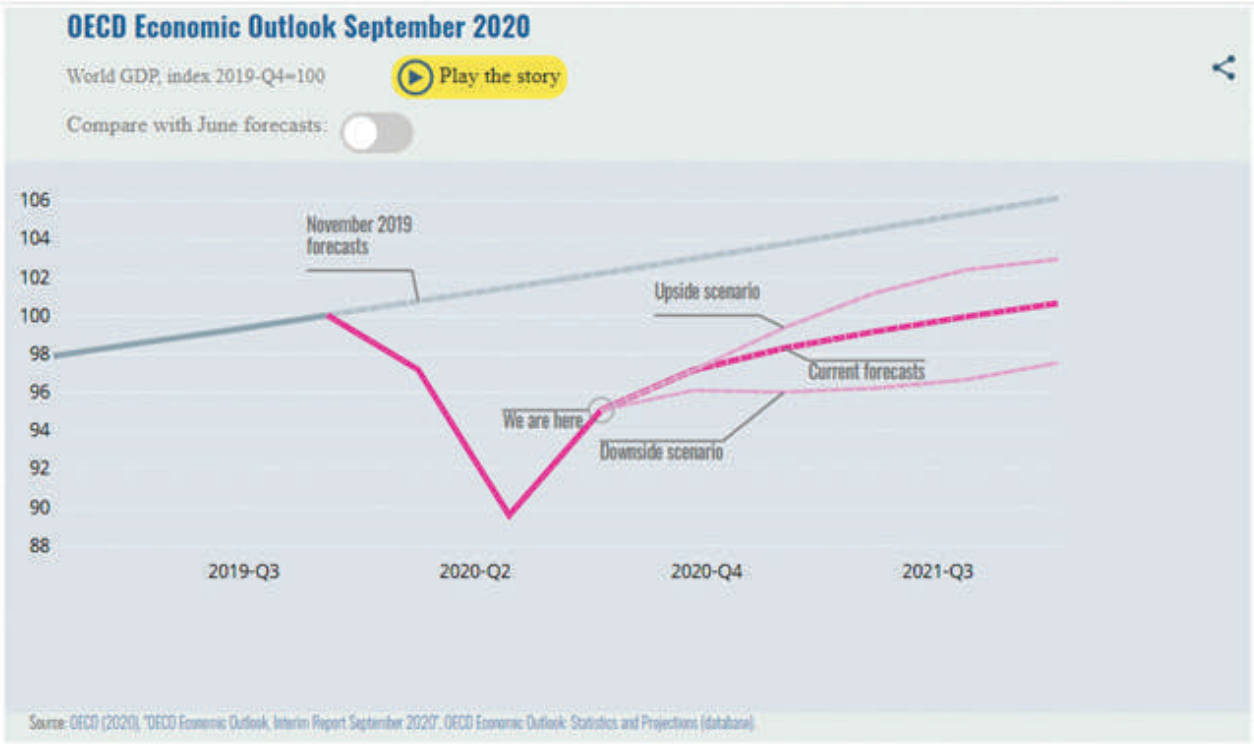
ANNEXURES

Annexure 1: History of Pandemics

Sl. No.	Name	Time period	Death toll
1.	Antonine Plague	165-180	5M
2.	Japanese smallpox epidemic	735-737	1M
3.	Plague of Justinian	541-542	30-50M
4.	Black Death	1347-1351	200M
5.	New World Smallpox Outbreak	1520 – onwards	56M
6.	Great Plague of London	1665	100,000
7.	Italian plague	1629-1631	1M
8.	Cholera Pandemics 1-6	1817-1923	1M+
9.	Third Plague	1885	12M (China and India)
10.	Yellow Fever	Late 1800s	100,000-150,000 (U.S.)
11.	Russian Flu	1889-1890	1M
12.	Spanish Flu	1918-1919	40-50M
13.	Asian Flu	1957-1958	1.1M
14.	Hong Kong Flu	1968-1970	1M
15.	HIV/AIDS	1981-present	25-35M
16.	SARS	2002-2003	770
17.	Swine Flu	2009-2010	200,000
18.	Ebola	2014-2016	11,000
19.	MERS	2015-Present	850
20.	COVID-19	2019-Present	1M

Source: https://www.visualcapitalist.com/history-of-pandemics-deadliest/

Annexure 2: World Economic Outlook



Annexure 3: Criteria for constructing Global Health Security Index

The 140 GHS Index questions are organized across six categories:

1. PREVENTION
Prevention of the emergence or release of pathogens

2. DETECTION AND REPORTING
Early detection and reporting for epidemics of potential international concern

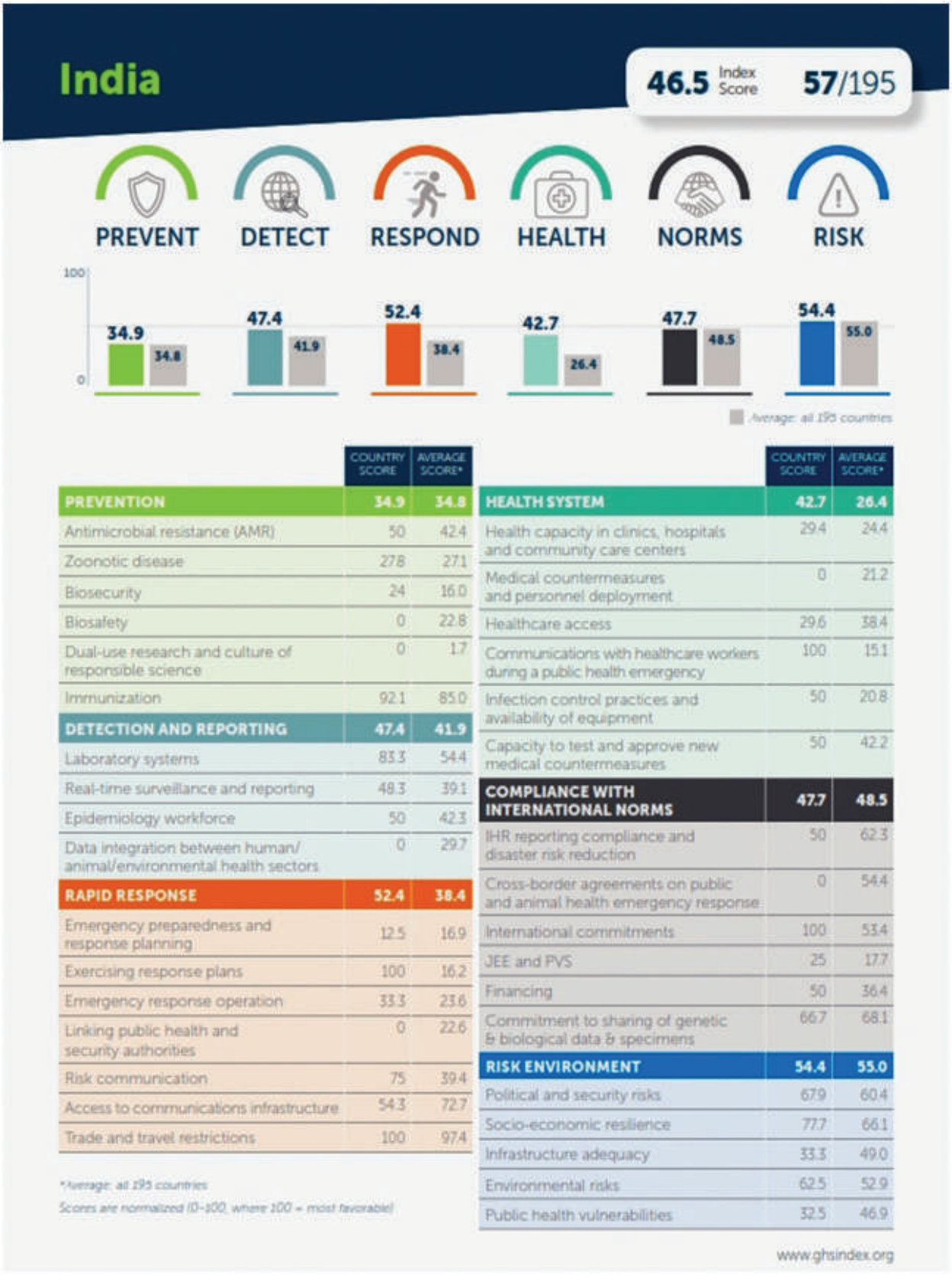
3. RAPID RESPONSE
Rapid response to and mitigation of the spread of an epidemic

4. HEALTH SYSTEM
Sufficient and robust health system to treat the sick and protect health workers

5. COMPLIANCE WITH INTERNATIONAL NORMS
Commitments to improving national capacity, financing plans to address gaps, and adhering to global norms

6. RISK ENVIRONMENT
Overall risk environment and country vulnerability to biological threats

Annexure 4: Summary page: Global Health Security Index, India



	COUNTRY SCORE	AVERAGE SCORE*
PREVENTION	**34.9**	**34.8**
Antimicrobial resistance (AMR)	50	42.4
Zoonotic disease	27.8	27.1
Biosecurity	24	16.0
Biosafety	0	22.8
Dual-use research and culture of responsible science	0	1.7
Immunization	92.1	85.0
DETECTION AND REPORTING	**47.4**	**41.9**
Laboratory systems	83.3	54.4
Real-time surveillance and reporting	48.3	39.1
Epidemiology workforce	50	42.3
Data integration between human/animal/environmental health sectors	0	29.7
RAPID RESPONSE	**52.4**	**38.4**
Emergency preparedness and response planning	12.5	16.9
Exercising response plans	100	16.2
Emergency response operation	33.3	23.6
Linking public health and security authorities	0	22.6
Risk communication	75	39.4
Access to communications infrastructure	54.3	72.7
Trade and travel restrictions	100	97.4

	COUNTRY SCORE	AVERAGE SCORE*
HEALTH SYSTEM	**42.7**	**26.4**
Health capacity in clinics, hospitals and community care centers	29.4	24.4
Medical countermeasures and personnel deployment	0	21.2
Healthcare access	29.6	38.4
Communications with healthcare workers during a public health emergency	100	15.1
Infection control practices and availability of equipment	50	20.8
Capacity to test and approve new medical countermeasures	50	42.2
COMPLIANCE WITH INTERNATIONAL NORMS	**47.7**	**48.5**
IHR reporting compliance and disaster risk reduction	50	62.3
Cross-border agreements on public and animal health emergency response	0	54.4
International commitments	100	53.4
JEE and PVS	25	17.7
Financing	50	36.4
Commitment to sharing of genetic & biological data & specimens	66.7	68.1
RISK ENVIRONMENT	**54.4**	**55.0**
Political and security risks	67.9	60.4
Socio-economic resilience	77.7	66.1
Infrastructure adequacy	33.3	49.0
Environmental risks	62.5	52.9
Public health vulnerabilities	32.5	46.9

*Average: all 195 countries

Scores are normalized (0-100, where 100 = most favorable)

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Annexure 5: WBG COVID-19 Crisis Response-Scaling up Selectively for Impact

Box 1. WBG COVID-19 Crisis Response – Scaling up Selectively for Impact

The comparative advantage of the World Bank Group comes from the powerful combination of country depth and global breadth, public and private sector instruments and relationships, multisector knowledge and practitioner expertise, and the ability to mobilize and leverage financing. This provides the Bank with the capability to respond to multidimensional crises such as COVID-19. At the same time, the WBG's resources are limited and it is committed to serve all clients. Therefore, its crisis response must focus on scaling up selectively for impact. Core principles guide this process, fighting poverty and promoting shared prosperity, sustainability, inclusion, fair burden-sharing, transparency, governance and respect for the rule of law.

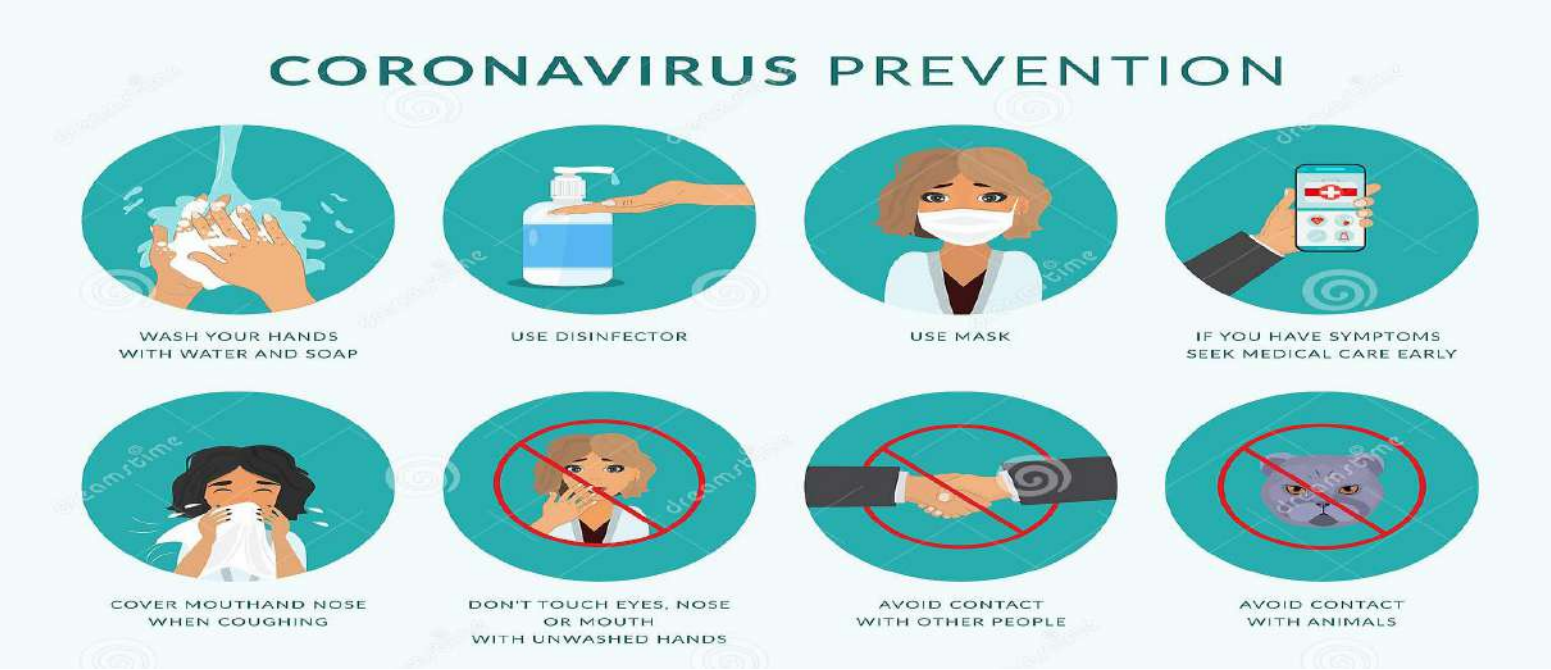
In responding to the COVID-19 crisis, the initial response has focused on **saving lives by helping countries fight the pandemic** – a fire that must be put out. Selectively scaling up for fighting the pandemic involves operating through partnerships, for example, with organizations equipped to work at the community level in FCSs. It also means ensuring that countries have enough resources to overcome the pandemic and not slide back before the curve is flattened.

The next priority is **to protect the poor and vulnerable impacted by the social and economic crisis set off by the pandemic**. Selectively scaling up to protect the poor and vulnerable operates through catalytic effects, for example, by helping countries expand existing social protection delivery systems to reach excluded groups or the newly poor. Governments can use these enhanced systems to channel not only the Bank's support, but also their own funds and/or other donor support, with due consideration of inclusion.

Shared prosperity in the COVID-19 context prioritizes **securing the foundations of the economy during the immediate crisis, restructuring firms and sectors, and promoting sustainable growth and job creation in the recovery**. Here, selectively scaling up takes on a different form, particularly in the emergency relief phase, where incremental approaches are unlikely to have lasting impact. The WBG can help countries scale up through public-private joint interventions that can channel resources at larger scale, leveraging public and private sector resources as well as Bank and IFC financing and advisory products. To be effective, however, governments will need to have the resources to extend such approaches to cover a critical mass of firms, sectors and financial institutions.

With an eye on the future recovery, in the relief and restructuring stages, the WBG can help **scale up impact of its health, social and economic responses through policy-based lending to support a limited and feasible set of policy actions**. In some countries, however, this quick-disbursing support, even when combined with that of the IMF and MDBs, may not be adequate – particularly in countries where COVID-19 is causing a major increase in debt vulnerabilities or a significant reduction in creditworthiness. In such contexts, effective scaling up may require broader international action such as debt relief (for LICs) or credit enhancements (for MICs).

Finally, as countries transition to recovery, sectors across the economy will need support to recover and build resilience in a transformed world. In this context, the **WBG approach to selectivity and scaling up will transition towards pre-crisis modalities based on country partnership frameworks and shaped by a limited set of focus areas likely to require new approaches**.


CORONAVIRUS PREVENTION
WASH YOUR HANDS WITH WATER AND SOAP
USE DISINFECTOR
USE MASK
IF YOU HAVE SYMPTOMS SEEK MEDICAL CARE EARLY
COVER MOUTHAND NOSE WHEN COUGHING
DON'T TOUCH EYES, NOSE OR MOUTH WITH UNWASHED HANDS
AVOID CONTACT WITH OTHER PEOPLE
AVOID CONTACT WITH ANIMALS

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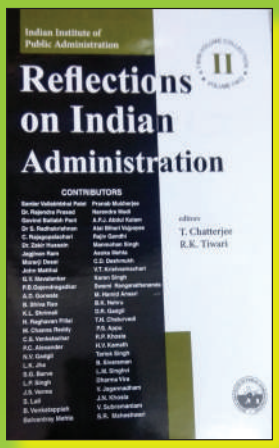

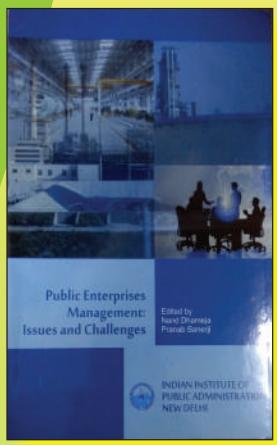

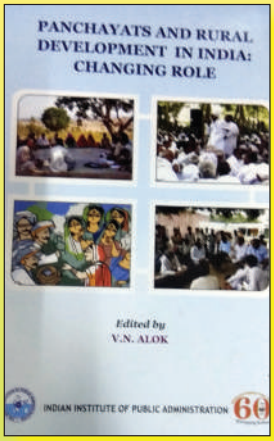

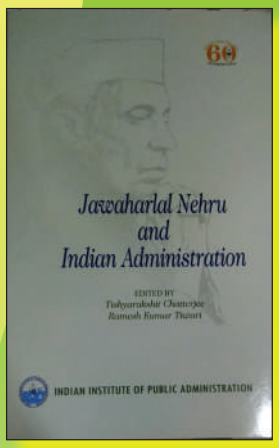

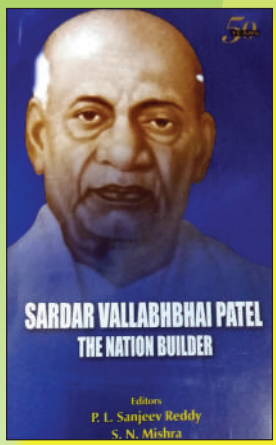

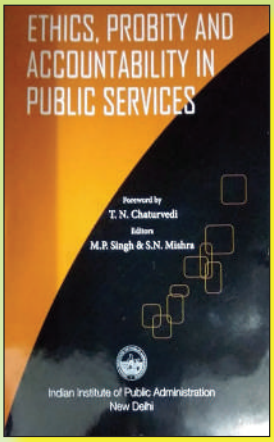

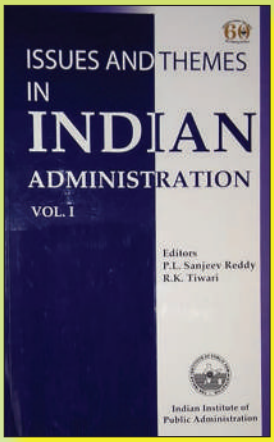

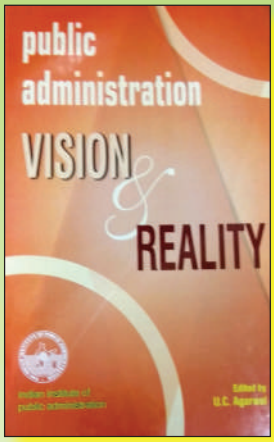

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