

IMPACT OF COVID-19 ON DIFFERENT SECTORS & SOCIO-ECONOMIC ASPECTS OF THE STATE OF ODISHA: ULTIMATE USE OF DESIGN THINKING

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ABSTRACT

The COVID-19 pandemic had a significant impact on the socio-economic aspects of the state of Odisha. The agriculture sector had received a jolt, with substantial crop loss and decline in demand for agricultural products. The industry sector has also been considerably affected, with many businesses forced to close or operate at reduced capacity. There has been a decline in tourism and other service industries.

The pandemic had adversely impacted on the state economy. The state GDP was contracted by 5.3% in 2020-21 which is lower than contraction experienced at all India Level @ 6.6%. Odisha economy made remarkable upsurge post-pandemic growing @ 11.5%. During Covid, unemployment continued to adversely impact the socio-economic condition of the poor and vulnerable. The state government has taken laudable initiative to mitigate the impact of the pandemic providing financial assistance to business and individuals together with increasing expenditure on health care.

Impact of COVID-19 on different sectors and socio-economic aspects of the state of Odisha:

- **Agriculture:** The agriculture sector has been particularly ravaged by the pandemic, with crop loss and decline in demand for agricultural products. The state's agriculture sector is heavily dependent on migrant labor. The lockdown and travel restrictions made it difficult for migrant workers to return to the state thus resulted in shortage of labor in the agricultural sector leading to severe crop loss. The decline in demand for agricultural products has also seriously affected the sector. The Agriculture & allied sector exhibited contraction of 3.37 percent in 2021-22 due to the impact of Covid & multiple natural calamities like heavy rain, unseasonal cyclone, cyclonic storm 'Yaas' followed by flood water inundation, cyclone 'Gulab', 'Jawaad' in December 2021 & January 2022 brought colossal damage to paddy & other vegetable crops in the state.
- **Industry:** The industry sector has also been affected by the pandemic, with many business enterprises being forced to close or operate at reduced capacity. The manufacturing sector was considerably affected, as many business enterprises were unable to operate due to the

frequent lockdowns and travel restrictions. The mining sector was gravely affected since the demand for minerals declined due to the slowdown in economic activity.

- **Services:** The services sector was less affected by the pandemic than the agriculture and industry sectors. However, there was a decline in tourism and other service industries. The tourism sector was grossly affected by the pandemic since people were reluctant to travel at the risk of infection. Other service industries i.e hospitality and transportation sectors, have also been affected by the pandemic. The Industry & Services sector contracted by 8.83 percent & 3.18 percent during 2021 respectively.
- **Economy:** The state economy has grown at 7.1 percent per annum during 2012-13 to 2019-20. The decline in growth rate for 2020-21 is attributed to the catastrophic impact of Covid-19 on state economy. The pandemic has also exacerbated existing inequalities in the state, with the poor and vulnerable being disproportionately affected.
- The state government has taken a number of measures to mitigate the impact of the pandemic i.e: Providing financial assistance to business enterprises and individuals, Increasing spending on health care, Relaxing lockdown restrictions & Promoting e-commerce and other digital platforms. However, the pandemic caused incalculable loss of human lives & had a lasting impact on every possible province of human life in the society.
- A global pandemic puts enormous stress on governments and healthcare services. s. These challenges bring together a blend of product design, experience design, and service design problems that are desperate for a solution, and design thinking can help.

Keywords: Covid 19 Pandemic, Gross Domestic Product, Socio-Economic impact, Design Thinking

INTRODUCTION

COVID-19: Impact, Response & Challenges

The whole world was seized by an unprecedented crisis caused due to an invisible virus that had stalled the human civilization. It has wreaked havoc all over the world in the form of a disastrous pandemic & the frailties of humans to combat it have been exposed giving an insuperable challenge to our scientific & technological advancements. The resilience & resolve of the human to face the challenges have been inspiring & more challenging. "Corona will one day be conquered but the colossal damage it has unleashed will take time to heal & repair".

The COVID-19 Pandemic, a once in a century global crisis in 2020-a unique recession where 90 percent of the countries experienced a contraction in GDP & Per-capita income. The world endured a year of unexpected onslaught by the novel COVID-19 virus-SARS-CoV-2 first identified in Wuhan city of China in December 2019 which has posed an intractable challenge for policy making globally & nationally. Due to exponential rise in number of cases being witnessed daily, the World Health Organization (WHO) declared this outbreak as pandemic on March 11, 2020, within three months of its occurrence. The pandemic accounted for more than 5.2 million deaths in 220 countries across the globe. The pandemic & associated lockdown measures led to stringent shut down of significant portion of the global economy thereby triggering a global

recession.

The Governor of Odisha Professor Ganeshi Lal in his address to Odisha Legislative Assembly on 18th February, 2021 highlighted that “the World has been witnessing an unprecedented crisis since 2020 for COVID-19 Pandemic has ravaged at a global scale leading to colossal damage in respect of public health, economies, social & mental well-being of the communities across the globe”. Covid-19 is treated as a hazard that is contagious with sudden onset & spread with high speed across the humanity through catenation process. (GoI NRDM, 2020) It has affected more than 220 countries and millions of people with frightening morbidity and mortality proportions. Prioritizing equity, strengthening the public healthcare system, and advancing preparedness thus became imperative during such exigency.

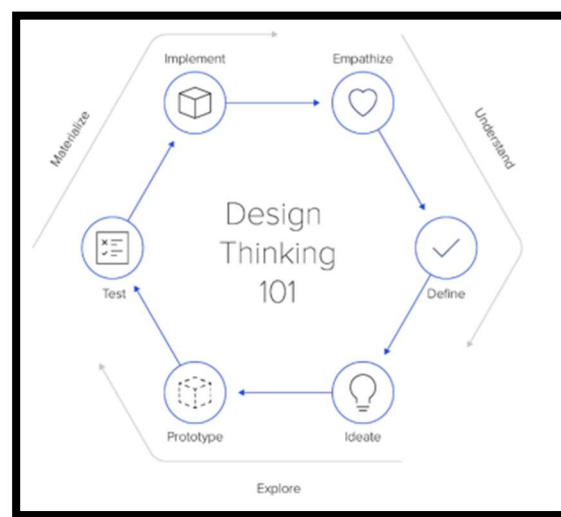
The design thinking process consists of five stages: empathize, define, ideate, prototype, and test. Each step needs to be given appropriate resources and the proper duration to create an end product that reliably meets user needs. Information Clarity, Consistency, and Distribution The flow of information is essential to curbing a pandemic. While the virus responsible for the COVID-19 pandemic was spreading, it took authorities several weeks to consolidate their messaging and make it consistent. With advanced technology, the distribution of information isn't the problem. It's transmitting the right information to the right people at the right time. In times of crisis, there is an acute need for standardized, consistent, and effective information design. Principle four from the Nielsen Norman Group's 10 Usability Heuristics for User Interface Design states: “Users should not have to wonder whether different words, situations, or actions mean the same thing.” To contain the outbreak, the UK government quickly moved to design clear, consistent messaging, taking advantage of the rule of three: “Stay at home. Protect the NHS. Save lives.” It was widely distributed via the internet and media. People received texts, got emails, and saw posters on the street, all of which has proved to be very effective.

Both globally and locally, 2020-21 has been a year of inescapable disaster. It set in as a health pandemic, spread & affected all sections of the population causing disaster in the economy. Thus, inherent to the crisis there was a dichotomy between health & human lives on the one hand & the economy & livelihoods of the people on the other. Specifically, containment measures necessary to manage the pandemic & save lives, limited human interactions thereby restricted economic activities exacerbated its impact on the livelihoods. Thus strengthening, or at least, reviving the economic fundamentals has been enormously daunting. Though shut down & lockdowns lowered economic activities, there have been a positive effect in reducing the number of cumulative deaths. It was expedient for production & distribution of pandemic strain vaccine & anti-viral medication & above all decreasing the burden on healthcare services as well as critical infrastructure. Implementing lockdowns earlier in the pandemic & using them more intensely led to economic recovery & reduction of mortality rate as well.

Design Thinking in Healthcare

Test, Trace, and Treat In the battle to contain the contagion, employing the test, trace, and treat approach is unavoidable. Widespread testing and contact tracing are needed to identify and alert

people who have come into contact with a person infected with the coronavirus. Putting into practice the user-centered design process, designers could brainstorm new ideas with the “how might we” method. It would require us to accept that we don’t currently know the answer and foster a collaborative approach to solving it. IDEO calls it “challenge mapping,” which is very similar to the 5 Whys method for problem-solving (developed at Toyota in the 1930s). COVID-19: For example, currently, home test kits are not reliable for testing for novel coronavirus infection. But the steps in the design thinking process could be applied to make them ready for the next one. Under empathizing and defining, we can understand the problem; with ideation and prototyping, we can explore the most cost-effective way to make them; and with testing and implementation, we can refine and deliver an effective solution. In this way, millions of home test kits could be designed, prototyped, and tested.



LITERATURE REVIEW

Agriculture

The agriculture sector is the fulcrum of the Odisha economy, accounting for about 22.5 percent of the state's GDP. The COVID-19 pandemic significantly impacted on the agriculture sector, disrupting the supply chain and leading to lower prices for crops and livestock. The pandemic had also led to an increase in the cost of inputs, such as fertilizers and pesticides.

A study by Mahanish Panda (2021) found that the COVID-19 pandemic had a negative impact on the agricultural sector in Odisha. The study found that the pandemic led to a decline in crop yields, an increase in input prices, and a decrease in demand for agricultural products. The study also found that the pandemic had a negative impact on the livelihoods of farmers and agricultural laborers.

Tourism

The tourism sector is another important sector of the Odisha economy, contributing about 8% of the state's GDP. A study by Deepak Kumar Jena et al. (2021) found that the COVID-19 pandemic

had a tremendous negative impact on the tourism sector in Odisha. The study revealed that the pandemic led to a decline in tourist arrivals, a decrease in tourist spending, and an increase in the unemployment rate among tourism workers that impacted the state economy.

Manufacturing

The manufacturing sector is also a paramount sector of the Odisha economy, contributing about 12% of the state's GDP. A study by Suman Saha et al. (2020) found that the COVID-19 pandemic had a negative impact on the manufacturing sector in Odisha since business have been forced to shut down or operate at much reduced capacity. The pandemic has also led to a decline in demand for manufactured goods, for people were impelled to incur less expenditure.

The study found that the pandemic led to a decline in manufacturing output, a decrease in employment in the manufacturing sector, and an increase in the unemployment rate. The study also found that the pandemic had an adverse impact on the state economy.

Employment

A study by Alok Agrawal et al. (2020) found that the COVID-19 pandemic had a significant negative impact on employment in Odisha. Frequent lockdown and other restrictions have led to job losses, especially in the informal sector. The study found that the pandemic led to a decline in employment, an increase in the unemployment rate, and a decrease in wages.

Poverty

The COVID-19 pandemic has led to an increase in poverty in the form of job losses and substantial decline in income. A study by the National Sample Survey Organization (NSSO) found that the poverty rate in Odisha increased from 22.8% in 2019-20 to 26.7% in 2020-21. The study also found that the pandemic had a colossal impact on the poor. The pandemic also had a negative impact on access to food, since many people were unable to afford to buy food due to financial stringency.

Mental Health

The pandemic has led to stress, anxiety, and depression, especially among people directly afflicted by the virus thus leading to an increase in domestic violence and child abuse.

A study by the Indian Council of Medical Research (ICMR) found that the prevalence of mental health disorders in Odisha increased from 13.4% in 2019 to 20.2% in 2020. The study also found that the pandemic had a disproportionate impact on women, with the prevalence of mental health disorders among women increasing from 16.3% to 24.3%.

POLICY RESPONSE OF GOVERNMENT OF INDIA FOR ECONOMIC RECOVERY

The pandemic induced lockdowns led to local, regional & global disruptions affecting economic activity & a demand shock by way of disruption in the labour market that affected household income. The Pradhan Mantri Garib Kalyan Yojana (PMGKY) meant to secure food security through Public Distribution System, Direct Benefit Transfer to widow pensioners & women,

additional funds under MGNREGS to generate employment opportunities & debt moratoria as well as liquidity support for business were primarily meant to ameliorate the household economy. The Govt of India initiated a number of multi-sectoral supply related structural reforms pre-eminently focused on strengthening the potentials of primary & secondary sectors of the economy to provide gainful employment opportunities for the people employed in the primary sector & providing expanded opportunities for formal employment with enhanced income, income stability & social security provisions in the secondary sector. Productivity linked incentive schemes have been implemented in key sectors to make Indian manufacturers globally competitive, attract investment in the core competency & emerging technology, enhance exports & above all, to make India an integral part of the global supply chain. All these reforms are intended to bolster the productive capacity of the economy & create wealth & jobs especially at the bottom of the pyramid to invigorate inclusive growth & sustained demand generation in the economy. The policy package was meant to make the regulatory environment conducive for ease of doing business with reasonable, transparent & time bound procedures for doing business.

Emergence of COVID-19 in Odisha

Odisha declared the Pandemic as State Disaster on 13 March 2020 under the Disaster Management Act, 2005. The state started Lock Down on 21 March 2020 to prevent contamination of the disease. The first confirmed case of Covid-19 in Odisha was detected on 16 March 2020. The very low and insignificant death rate exemplified the astounding success of the government in keeping the fatality rate at a lower level in spite of a very high positive case trend.

COVID-19 IN ODISHA: A COMPARATIVE PERSPECTIVE

Odisha performed remarkably well both in terms of recovery rate and mortality rate compared to global and national perspective. Analysis of Covid-19 cases in Odisha in a comparative framework reveals that against the number of confirmed cases per million population, the recovery rate is significantly higher, and the fatality rate is commendably lower in the state as compared to the situation at the all-India level.

The recovery rate in Odisha was estimated at 96.43 per cent which was much higher in comparison to the global context (66.44 per cent) and in the context of India (93.07). The mortality rate in Odisha at 0.49 per cent compares very favourably with those for India (1.47) and the world (2.43).

Source- statedashboard.odisha.gov.in

State's Response

The Chief Minister, Odisha, Shri Naveen Patnaik iterated that "a new dimension in our experience of disasters has been added-COVID-19. Globally most of the countries have been severely affected by this pandemic in multiple waves. Return to normalcy is still a challenge. Nobody is able to predict how many more variants or waves of infection humanity will have to face before we are able to successfully control the virus. Our State has been affected by two waves so far. While other

states had to grapple with oxygen shortage, our Government has been able to successfully manage the oxygen logistics for our hospitals & we have even provided to other states saving many lives. We have now focused on vaccination & mobilizing all possible resources to vaccinate & protect our people at the earliest. We must continue to learn to deal with disasters & keep improving our systems & adapting to the impact of climatic changes. It is a matter of survival of society & we will have no stone unturned to make our state strong & capable in this regard. The Pandemic has created a unique situation where the lives & livelihoods of the people are at stake. In spite of all the challenges, we are quite confident that we will emerge victorious in this crisis with the cooperation of the people of the state & carry forward the good work for the transformation of Odisha.”(Odisha Review, Government of Odisha, June-July 2021: XXV-XXVI).

Covid Management

The government promptly enforced restrictions on congregations of people, closure of all educational institutions, cinema halls, gyms etc. as also government offices other than those directly providing essential public services, cancellation of conferences etc., regulation of socio-religious gatherings including funerals, and appealing all to follow Covid appropriate behaviour.

DIGITALISATION

The whole world has transitioned to digital economy that makes it possible for people to experience digital transfer of funds & do most of the things without having to cluster together, battle traffic, pack in trains & spend hours commuting. The software revolution created a new world in which there is increasingly little distinction between the digital & material economy. Mobile revolution brought new vision conquering time & distance. The smart phone now connects most of the world to the internet. Ravi Agrawala in his book ‘India Connected’ is of the opinion that the mobile revolution has accelerated modernization in places like India. Survey of American & European firms reveal that most intend to permanently shift some of their jobs off site, with a conviction to maintain productivity by way of giving workers more flexibility & reduction in office space cost. In a modern service-oriented economy, most developed countries devise new work model for the people to perform most of their work remotely & come to office only for meeting, presentation & brainstorming sessions. The jobs that pandemic has transformed the fastest are in medicine. Patients don’t visit doctor’s office, wait & return with routine examination & prescription. The pandemic has opened the door to much broader transformation.

APPLE CEO Tim Cook said that his company’s greatest contribution to mankind will be about health through the increasingly sophisticated medical use of products like the Apple watch. A study published by MIT technology Review finds that millions of US jobs could be increasingly assisted by technology to reduce health risk posed by human interaction & safeguard productivity in a time of crisis. Some jobs will go but overall productivity will rise generating greater wealth. Everyone’s quality of life could improve. The movement to digital life is broad, fast & real. (ZAKARIA, 2020)

MIGRANT MANAGEMENT

During April-September 2020, 8, 53, 777 migrants returned to Odisha (the maximum from three states i.e. Gujarat, Tamil Nadu and Kerala). The government arranged for their segregated accommodation with free food and other amenities in designated panchayats and Block level Covid-19 camps to prevent the virus from spreading to the non-migrant locals. The state adopted a 'decentralized approach' to management of Covid-19 delegating Sarpanches in Gram Panchayats the powers of District Collectors in their respective jurisdictions and involving them to take care of the home migrants in local quarantine centers. This decentralized community-based approach offered significant insight into national level strategy that reduced the case load despite the huge influx of migrants. It also explored the efficacy of pandemic resilient mechanism adopted by the rural local self-governance in collaboration with the community-based organizations, especially the Self Help Groups. The health infrastructure & the communication network in tribal dominated areas were in shambles. More than 85 percent of households in the State depend on the public health system since private hospitals are limited & are available in major urban areas. Tertiary care facilities are sparse & distantly located making it difficult to deliver the critical need-based services required by the people. (Article "Decentralized Management of COVID-19 Pandemic by rural local bodies –The Odisha Experience" by Amita Patra published in Jharkhand journal of Development & Management Studies" March, 2021)

Budgetary Allocation- Intervention of State Government

The Odisha Government, soon after declaring Covid-19 a state disaster, on 13 March 2020 approved an amount of Rs.200 crore package to deal with the public health challenges by augmenting the Public Health Response Fund to combat the rigours of the virus. A package of Rs.2200 crore was announced by the government on 27 March, 2020 providing additional wage to deal with the impact of the Covid-19 on the economically weaker sections of society. The Government approved Rs.17000 crore Special Livelihood Intervention Plan on 30 May 2020 to generate employment and boost income opportunities in agriculture, fisheries and animal husbandry, forestry, handlooms, and handicrafts sectors. and flower cultivation.

(Odisha Economic Survey, 2020-21). A new initiative was taken by the Government as "Urban Wage Employment Initiative-MUKTA" in order to provide wage employment opportunity to the urban poor especially the unorganized workers & migrant labourers who have lost their livelihoods due to pandemic. Budget provision has been made for INR 1353 crore to provide assured free health services to all the people including annual health coverage of Rs 5 lakh per family & another 5 lakh for women member of the family to cover 95 lakh economically vulnerable families in the state under Biju Swasthya Kalyan Yojana. (Government of Odisha Finance Department, General Budget, 2022-23)

A comprehensive advance planning, aggressive contact tracing, vigorous testing drive, efficient management of lakhs of migrant returnees, efficacious public engagement, productive use of social capital, personalized and innovative management approach, experimenting a two-pronged strategy of evolving and utilizing physical infrastructure & human resource potential, and

above all strict enforcement of Covid-19 measures of lockdown, shutdown, & other Covid appropriate behaviour have helped in preventing the spread of disease & from being more fatal for human lives.

The World Health Organization has aptly applauded the state's effective governance mechanism and community- based management strategies that have helped in keeping the positive caseload low in Odisha (WHO, 2020).

7. Lives and Livelihoods

The dichotomy between lives & livelihoods remained as grave concern of State Governments to make a conscious & informed choice of preference. Saving human lives demanded imposition of stringent restrictions & observance of Covid appropriate behaviour. which led to closure of factory/manufacturing establishments and Micro, Small & Medium Industries, decline of informal sector activities and the resultant massive reverse migration and increase in joblessness and loss of livelihoods as well. With large population of the state living in rural areas & return of a large chunk of migrants engaged in informal sector outside the state for their livelihoods was an insuperable challenge for the State Government in order to secure their livelihoods during the Pandemic. With a view to restoring rural livelihoods, reviving rural enterprises, and rehabilitating skilled and semi-skilled returnee migrant workers, the Odisha Government, under the aegis of Panchayati Raj Department, designed a special composite integrated Covid-19 assistance package (CAP) comprising four elements: The four components are:

A. Easy start up finances up to Rs.50, 000 with a low interest rate for the rural enterprises, working capital support to Nano and Micro enterprises (small eateries, vegetable retail shops, tea shops, bakeries, tailoring, welding, automobile mechanic shops etc.) B. One-time financial assistance up to Rs.1.5 lakh to the existing enterprise groups and producers' groups. C. Individual assistance up to Rs.20, 000 to enterprises and livelihoods run by vulnerable households and persons with disabilities, PVTGs, widows, destitute, single woman, elderly and persons with chronic illness. D. Funding support up to one lakh rupees as start up support to skilled and semi-skilled returnee migrants for taking up tailoring, jewelry, catering, carpentry, mobile sales, services etc. Additionally, a Rs.17,000 crore package was provided for creating employment opportunity and income generating activities for the home migrants with the prime objectives to contain the spread of Covid-19 and to create employment opportunities for returnee migrants and vulnerable people in rural areas.

IMPACT OF COVID ON ECONOMY

The outbreak of COVID-19 gravely imperilled the economy across the world. Abrupt imposition of complete lock-down for more than two months in the initial phase and the concomitant stoppage of all economic activities, except supply of essential goods and services, resulted in heavy financial loss to the producers, traders, investors, employers and workers made the people to languish in abject financial stringency. In an emergency like Covid-19, global supply chains made the people

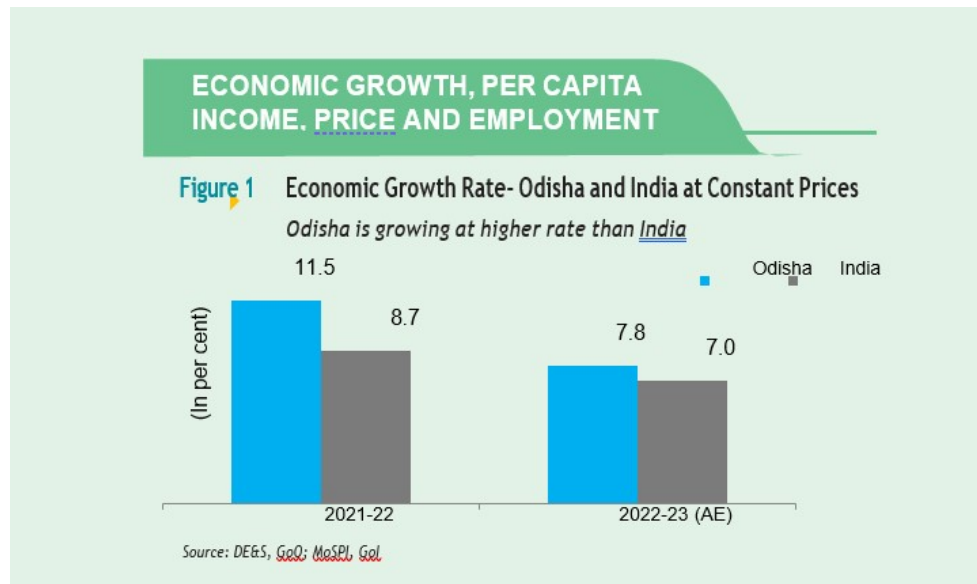
vulnerable to critical shortages of medical products. Covid-19 & the consequential lockdowns caused economic indicators to slump more dramatically than at any time.

VITALITY OF DIGITAL ECONOMY

Many Governments from the European Union to Japan to India affirmed to pursue greater self-sufficiency or at least to make the system of globally supply chain more resilient. French President Emmanuel Macron announced his new post pandemic goal to achieve the independence of France in technology & industry. Joe Biden released 400 Billion Dollar 'Buy American plan'. Almost no country has enacted new tariffs in response to virus since most of the countries looked for ways to boost growth. Globalization has flourished because of the economic fact that is easier for different countries to specialize in certain areas. Even in Germany, around seventy percent of its economic output & its jobs are in services. The fastest growing service in many places is localized & regulated healthcare facilities. But the paradigm shift in global economics in recent years has been the rise of the digital economy. Digital products dominate many industries.

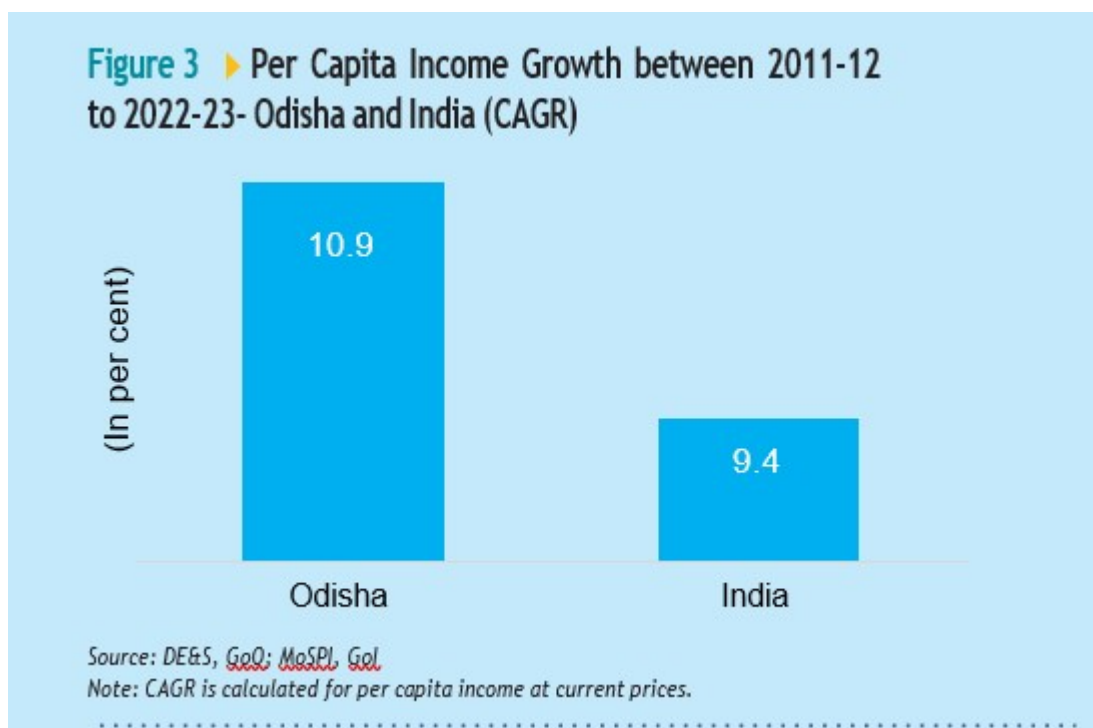
Economist Susan Lund & Laura Tyson state that globalization is not in fact retreating, it is just changing forms. Even as globalization goes digital, its traditional form is making new inroads in emerging markets, especially in Asia. The global economy has massively expanded, adding millions of new consumers & producers. Disrupting global commerce & impoverishing the trading partner would be more costly than any possible gain from victory. Almost all the Economists observe that the country owes most of its economic aspects to three fundamental factors ie to switch from communist economics to a more market-based approach, a high saving rates that enables large capital investment & rising productivity.

China is the only developed country to have ranked in the top twenty-five markets for Foreign Direct Investment (FDI) every year since 1998. Despite all presumptions, Europe will come out of the crisis stronger, more unified & determined to play an independent role in the world. The pandemic perfectly illustrates the risks & opportunities in an interconnected world. (ZAKARIA FAREED, Ten Lessons for a post pandemic world: 2020).



While the economic growth rate of Odisha is 11.5 percent, the national level growth rate is 7.8 percent in 2020-21. Similarly the growth rate of Odisha is 8.7 percent while the growth rate at national level is 7 percent in 2022-23. Thus after Covid, the growth rate of Odisha surged more than that of national level in 2021-22 & 2022-23.

Source Odisha Economic Survey 2022-23:1



The Per Capita Income growth between 2011-12 to 2022-23: Odisha Economic Survey 2022-23:2- PCI of Odisha is 10.9percent while at National level it is 9.4 percent.

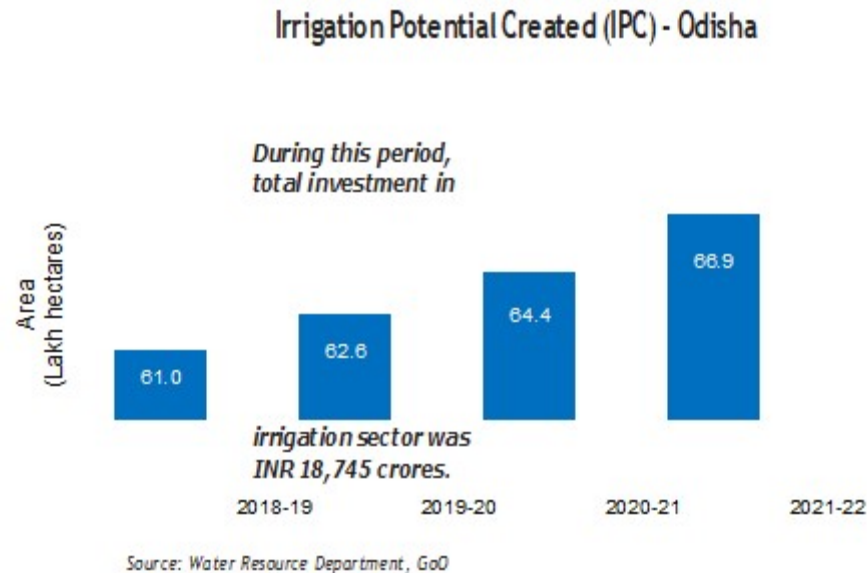
Agriculture

Agriculture & Allied activities constitute the main source of livelihood for a major section of population in Odisha. The pandemic has devitalizing impact on the agriculture sector at all levels from field operations to marketing. The cessations of agricultural labourers were constrained, and transport facilities remained shut down until mid-May 2020, harvest operations were done manually with local labour at higher wages along with costlier transportation charges. Cessation of hotels, catering and vegetable processing enterprises, the bulk consumers of vegetables led to a sharp decline in vegetable demand and product wastage. Most vegetable crops, marked by their highly seasonal nature, were greatly affected by COVID-19 because of transportation restrictions & lack of adequate storage facilities. Farmers in general had to spend more on wages and transport and were forced to sell at cast-off prices causing substantial losses in crop income. Reduced geographical mobility of labourers due to non-availability of transport facility and their reluctance to move long distances adversely affected agricultural operations. The occurrence of flood like situations in some places, long dry spells in the pre-panic stage in some other locations and pest attack in some of the districts of the state during the second half of the kharif season considerably affected the production and productivity of the kharif crops and thus, agriculture sector brought about regressively to its negative growth. Livestock trading and markets have been shuttered in many places for being considered to be a potential carrier of Covid-19. The producers of perishables, such as milk, poultry, and flowers, received a jolt. (Odisha Economic Survey, 2021-22)

The sector contributes around 22.5 percent in GSVA in 2022-23. Due to impact of COVID & other natural calamities, Odisha's GSDP is estimated to decline by 4.92 percent compared to a decline of 7.7 percent at national level. (Odisha Economic Survey 2022-23:27)

The existing Agricultural Policy, 2020 made a paradigm shift with its orientation towards market linkage & expected to bring a substantial change in farmers income. In the state of Odisha, since many farm households derive the bulk of their income from other sources, improving the ease of doing business in rural areas will generate more employment. It is required to create a large manufacturing base to generate ample opportunity & pull surplus labour from agriculture. This can be achieved through rapid industrialization. A higher output should ideally result in higher income for households engaged in farming. But market realities & subsistence farming do not make many such households significantly better off even after a bumper crop. (News Item in editorial "Improving Farm Support" published in 'The Business Standard' on 8 October 2021.

In order to address the twin challenges of climate change & malnutrition,³⁵ new indigenously developed crop varieties with special traits like drought tolerant, disease resistant & biofortified food crops with higher nutrient content like protein, iron & zinc have been released by the Prime Minister to empower the farmers to adopt climate resilient technologies to enhance their income, conserve water & protect the natural ecosystem. (News item "PM release 35 crops with special traits" published in 'The Times of India' on 29 September, 2021)



Odisha Economic Survey 2022-23:6

Over the years the Government has taken laudable initiatives for developing irrigation facilities & improving access to credit, providing quality seeds & farm equipment & enhancing farmers income. In the light of agriculture sector vulnerability to climate change, numerous initiatives were implemented & dedicated institutions were set up to facilitate bio-diversity management & actively promoting eco-tourism in Odisha. (Odisha Economic Survey 2022-23:26)*

SUGGESTION:

1. To encourage cooperative irrigation infrastructure managed by farmers to lessen the burden on the farmers & stabilize the economy.
2. To facilitate pre-sowing activities, input handling & marketing at the farm gate level to ensure better prices & livelihood opportunities for the farmers.
3. To adopt long term diversified crops which would be a sustainable approach to combat unforeseen crisis & enhance the scope of export to other states as well.
4. To devise a specific scheme to encourage vegetable farmers, focusing on production, storage & marketing of vegetables & applicable to allied sectors like fruits, poultry, fishery & dairy.
5. To adopt multi-cropping & inter-cropping in place of monoculture to make agriculture economically viable & environmentally sustainable.

6. To lay emphasis on localized food processing units & their integration with wider value chain for a robust agriculture in the state.
7. To promote agriculture & allied activities through Farmer Production Organizations at panchayat level with the intervention of NABARD in facilitating these local level institutions for production, processing, storing, packaging, marketing & availing credit.
8. To empower the farmers with modern technology to eradicate poverty & malnutrition. It is required to coordinate with Researchers. Agriculture entrepreneurs & agriculture industry to accomplish these objectives.

INDUSTRY

The industry sector is the largest sector with a 42 per cent contribution to the GSVA in 2021-22. In view of impending COVID-19 Pandemic, mining, manufacturing, and construction operations were stalled during most part of the year due to the Covid mandated transport and other restrictions and difficulties in getting raw material supplies and manpower. In the case of pharmaceuticals, many had to extend their production capabilities to produce masks, sanitizers, and other pharma cleaning and hygiene products to minimize the adverse impact. (Odisha Economic Survey, 2020-21 of Government of Odisha).

In view of the outbreak of COVID-19 pandemic, there has been disruption in industrial production due to shut down of communication, non-availability of raw materials & labour which impeded the process of output. From February 2020 to January 2021, 58 renowned Companies evinced interest in investment in industries in Odisha with proposed investment worth 25000 crore to create targeted employment opportunity for 58,698 persons. It was promised to provide conducive environment for the investors for harnessing the natural resources of the state but the impact of COVID marred the prospect of such endeavor. There is uncertainty in the execution of the projects due to delay in establishment of infrastructure & non-availability of raw materials as well as absence of labour force. Impact of COVID in industrial sector has jeopardized the hope of the unemployed persons for employment. (Translated Article “Silpayanaku CoronaMada” published in editorial of ‘The Samaj’ on 4 July, 2021)

As a result of such adverse circumstances, growth rate of GSVA in industry sector plummeted to -8.83 per cent in 2020-21. The state’s Industrial Policy and labour laws were amended to revive various sectors. Several manufacturing operations restarted after unlocking of the economy & business conditions have gradually returned to normalcy.

MSME sector which provides maximum employment opportunities to rural poor were adversely affected due to the COVID-19.

A Budget Estimate of INR 40000 Lakh has been made during the year 2021-21 to invigorate Micro Small & Medium Enterprises in the State. (Activity Report 2020-21 of MSME Department, Government of Odisha). Altogether 53 lakh MSME units have been set up with an investment of 25656 crore for generating employment to 1.9 million person. (Odisha Economic Survey, 2022-23:13).

SUGGESTION:

1. Since MSMEs in the state are informal both in labour & production processes & for most of the workers have no formal skill or access to the benefits of the Government, it was thus imperative to build up an entrepreneurial environment focusing on business infrastructure to large scale employment opportunities.
2. To prepare a Block/ Tahsil level product/service mapping of MSMEs to improve product quality & enhance market access in both domestic & global sphere.
3. To preserve & encourage traditional skills & crafts of the micro enterprises at household level, ways to enhance enterprises' access to a broader market must be evolved as an important policy mechanism.
4. To mitigate the financial burden of the Micro enterprises, State Government should pursue with Govt of India for 1-3 per cent subvention on GST for small & medium enterprises & complete GST write off for the micro enterprises & above all a concession on power tariff, surface transportation of inputs or finished products till economy is restored.
5. Since MSME Steel Sector in Odisha is languishing for scarcity of iron ore, Merchant mines are profiting due to escalation of prices of iron ore. Several Sponge units have been closed due to scarcity of raw materials & thousands of jobs are in peril. Thus, it is expedient to exercise the right of pre-emption in respect of the standalone lessees to utilize the minerals raised from the leases within the state which can save industry doing real value addition in the state & generate more state revenue as well as employment opportunity for the local youth.

During economic crisis due to COVID-19, management of these industries contributed to protect the livelihoods of almost 10 lakh families by endearing direct & indirect employment opportunities.

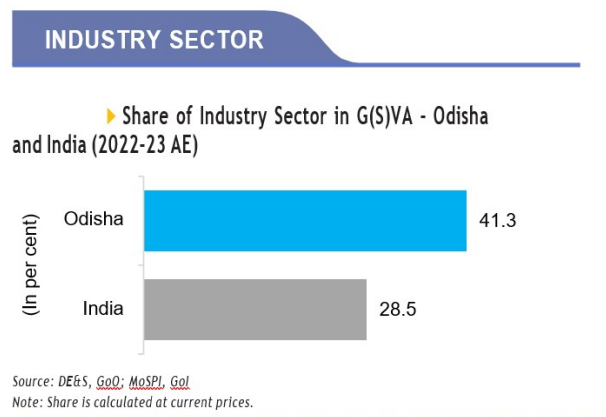
*Utilization of CSR Fund of the companies:

The Companies have also utilized their Corporate Social Responsibility (CSR) fund for the establishment of Covid Hospitals in the state. Some companies also elicited co-operation in providing Covid Care Centers, Oxygen cylinders & Ventilators. Two 650 bedded Special COVID hospitals have been set up out of CSR fund of Odisha Mining Corporation. The financial assistance of some big companies like Rourkela Steel Plant, Jindal Stainless steel, IMFA, Vedant, Jindal Steel & Power immensely contributed to combat the impending Covid-19 in the state. Besides revenue generation, these companies secured the livelihoods of many families & managements of Covid in the state. It would be pragmatic to reserve certain percentage of mineral resources & steel for the functioning of these industries, to encourage brownfield expansion for augmentation of state revenue, creation of more employment opportunities & socio-economic progress of the state.

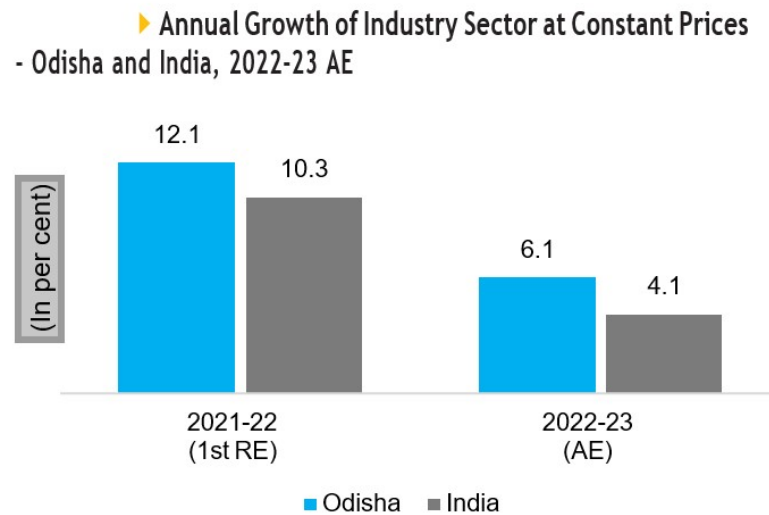
Despite availability of abundant mineral resources & raw materials, our state has not attracted for investment in Automobiles, Electronics & other industries. Modern technology on Steel

industry like production of hydrogen gas will substantially reduce the effect of use of coal, gas, automation mining operation on environment & will increase in production of steel. Permission & approval of the investment proposal should be accorded within a specific timeline for expediting creation of infrastructure & production as well. This will indubitably create an enabling environment for industry based economic progress, reduce the dependence on agriculture for employment & help economic progress in the service sector. With the support of Companies established industries in the state for production of steel & mineral resources, Odisha will be one of the pioneer states in steel power. (Article translated version of Akshaya Kumar Sahoo ‘Covid SankatMukabilare SilpaKhetrara Bhumika’ published in odia daily ‘The Samaj’, on 6 March,2021). Despite industrial disruption & global economic slowdown due to Covid-19 pandemic, Odisha could garner INR 12000 crore investment during the lockdown period due to the investment friendly policies & governance framework.

”(Extracts from the news item ‘Odisha, the New Manufacturing Hub of India’ published in the odia daily ‘The Sambad’ on 30 November, 2021)

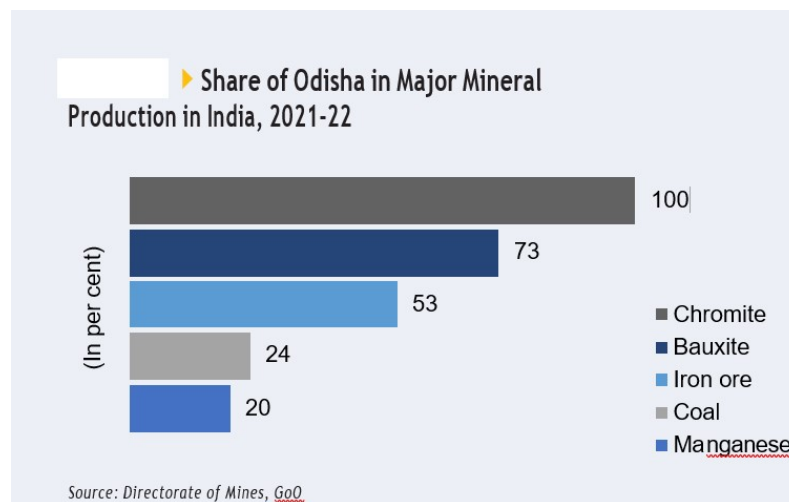


While the share of industry sector in GS(V)A is 41.3 percent in Odisha, the share of industry at National level is 28.5percent. (Odisha Economic Survey 2022-23:9)



Source: DE&S, GoO, and MOSPI, GoI

(Odisha Economic Survey 2022-23:9)



(Odisha Economic Survey 2022-23:10)

The 41.3percent share of industry in overall GSVA in 2022-23 is attributed to Mining (10.2%),Manufacturing(22.6%),Electricity & other utility services. (2.9%)& Construction(5.6%).The State has persistently created an enabling environment for investors across different market segments. The Industrial Policy Resolution 2022 enables timely approval of industrial projects, online single window clearance. dedicated investors facilitation & best in class incentives for identified priority & thrust sector & robust industrial infrastructure development.(Source-Odisha Economic Survey, 2022-23)

Services

The services sector, which accounted for 41.88 per cent of the GSVA in 2020-21 and nearly one

third of the state's employment is a leading sector of the economy. The growth of this sector has been severely constrained due to mobility restrictions on its customers as well as workers. Lockdown measures weighed heavily on the activities in tourism, travel, hotels and restaurants, transport, and communication sub-sector within the service sector. Services sector activity started easing in September after the government lifted some restrictions, but demand continued to remain very low

Economic Growth

The Covid-19 surge took an unprecedented toll on the state economy by creating both supply and demand shocks. Contraction in economic activity and government measures to minimize the adverse impact stemming from the Covid-19 pandemic, with frequent lockdowns, weak demand conditions and the temporary suspension of company operations led to shutdown of business, industries, and services. The 'locking, unlocking, relocking down' of the economy to control the disease spread has brought uncertainty and created disincentive for the producers and investors. Subsequent easing of restrictions and growth stimulating measures implemented by the government could revive the economy. Both Gross State Value Added and Gross State Domestic Product collapsed in 2020-21.

Economic growth: Despite the impending economic shock created by the global pandemic, India is witnessing a V-shaped recovery with stable macro-economic situation coupled with stable currency, enabling current account & encouraging signs in the manufacturing sector output. India is reaping the lockdown dividend from the preventive measures adopted at the onset of the pandemic. The strategy was motivated by the noble prize-winning research in Hansen & Sargent (2001) that recommends a policy focused on minimizing losses in a worst-case scenario when uncertainty is very high. A public investment programme revolved around the National Infrastructure pipeline is likely to accelerate the demand push & hasten the recovery. So, the state government shall have to enhance tax collection as per the regulation of FRBM Act & financial deficit should be limited to 3 percent of Gross State Domestic Product (GSDP). Besides the loan burden for the FY 2021-22 & 2022-23 should be limited to maximum within 25 percent.

Since the rigors of Covid has relapsed with new variants, the state government should devise a comprehensive, holistic & realistic perspective plan for five years based on 15th Finance Commission in order to resuscitate economic growth. (Extract from translated version news item" Corona Madare Arthaniti Asthira" published in daily 'The Samaj' on 7 October 2021)

The Reserve Bank Governor Shri Shaktikanta Das has observed that the process of economic recovery in the country has set in the post pandemic period. The pandemic has tremendously impacted the lives & Livelihoods of the people as well as the economy of the country. The post pandemic period requires a vibrant economy for which maximum investment is required in healthcare, creation of infrastructure, digital economy & education. This will generate employment in small cities & will perpetuate economic growth. Enhancement in private investment will increase the demand for Goods & Services, which will accelerate the growth of the economy. It is expedient to strengthen digital economy to sustain economic growth. (Translated

version of news item “Sara Duniare Sudhara Heuchi - Shaktikant: published in odia daily ‘The Sambad’ on 23 September, 2021). The Finance Minister of Government of India Nirmala Sitharaman has affirmed that Indian economy is in a sustained path of recovery & 17 percent rise in gross direct tax collections is an encouraging signal for reorientation of the economy.

The Poor and the Informal Sector category of people are more vulnerable because of their limited access to health services, meagre savings and lack of insurance, excessive dependence on low paid-agriculture and service sectors, micro and family enterprises and urban informal service sector . Restriction on trade and commerce disrupted the supply chain and the consequential influence on the prices and hence the income of the producers has led to severe economic stress on the business and the consumers. Ban/restriction on social and religious activities, closure of tourist destination points, restrictions on event management and micro entertainment unit led to loss of livelihoods for lakhs of workers.(Odisha Economic Survey 2020-21&2022-23)

As per the observation of Researchers of Ajim Premji University, due to pandemic in 2020, almost 2300 lakh people come down to below wage earnings of Rs 375 per head & poverty ratio in the villages was increased @ 15 percent in rural areas & that of 20 percent in urban areas. Due to the impact of Covid, economic inequality has been widened that brought forth social injustice. It is expedient to devise strategies to remove such economic inequality in order to provide social justice & bring economic parity by way of introducing poverty amelioration programmes to enhance the purchasing power of the people reeling under deprivation. (Translated version from the Article of Nilamadhab Mohanty “Corona Mahamari Ebam Sadharan Nagarikanka Arthika Abastha” published in odia daily ‘The SAMAJ’ on 15 September 2021)

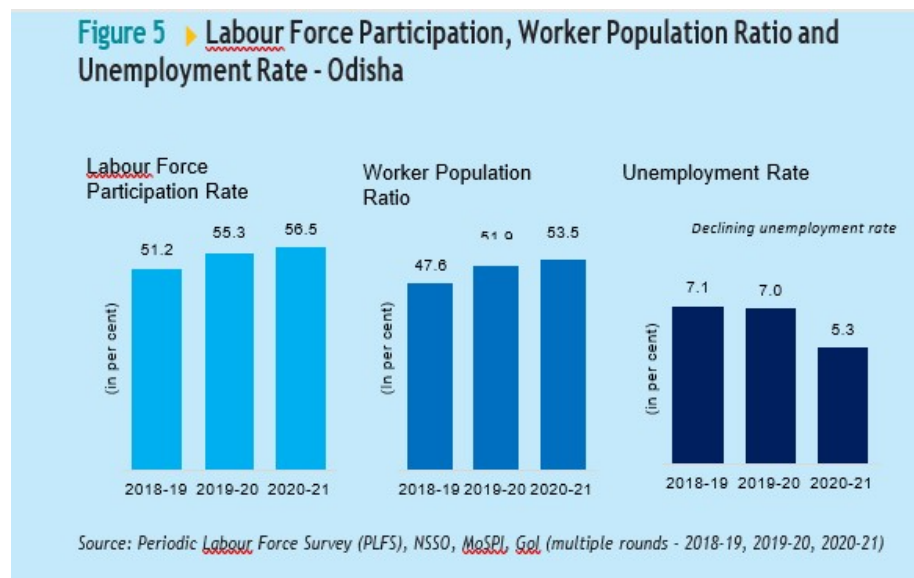
Employment

The magnitude of job loss became widespread and has been more acute among vulnerable groups. Very few have returned to their old job, some were engaged in different jobs even with lesser income than before. Women including those running sole proprietary home parlour work economically suffered severely during Covid times.

In our country with 90 percent of the work force, approximately 41 to 45 crore work in unorganized sector. In view of the pandemic, many workers became jobless & struggled for existence. The research findings of Ajim Premji Foundation of Bangalore reveal that the per capita income of workers have been substantially reduced, many more have lost their jobs & salaried persons are forced to earn their livelihood on daily wages because of Covid. This has seriously affected the livelihoods of the labourers, women, tribals, & other vulnerable who struggled hard to arrange food, avail healthcare facilities & other basic needs for their family. The intervention of Government was required to provide adequate employment opportunities by way of allocation of more resources for creation of income generating assets & enhancement of wage rate keeping with the rising price index to enable these distressed family to live a dignified living. (Translated version from the Article of Nilamadhab Mohanty “Corona Mahamari Ebam Sadharan Nsgarinkaka Aarthika Abastha” published in odia daily ‘The Samaj’ on 15 September 2021).

Full recovery has manifested for both male and females did not manifest immediately in a V-shaped manner but took a longer time. This is consistent with women being primary caretakers during a health shock in the family. (News item 'Employment Saw V-Shaped Recovery After Covid': Ex-CEA written by Shiva Rajora & published in The Business Standard 21.08.2023:6)

- The Odisha Government's effort to manage the livelihood crisis was remarkable during Covid 19 pandemic as it led to a higher decline in the unemployment rate compared to other states, as per the recent study by Indian Institute of Public Health (IIPH), Bhubaneswar and Johns Hopkins University, USA.
- The unemployment rate in Odisha has increased to 13.10 pc in March 2020, and 23.80 pc in April 2020 due to imposition of the nationwide lockdown. According to Professor of IIPH Sarit Kr Rout, people were provided employment through MGNREGA. The government introduced a slew of measures like urban wage employment (UWE) for the urban poor and employment support to the women self help groups(WSHGs) besides increasing the wage rate by Rs 50/-.
- The study also found that the lockdown had little impact on female unemployment rate. Women members provided employment opportunities through WSHGs. (News article 'Unemployment In Odisha was lowest during Covid: Study' by Hemant Kr. Rout @ Bhubaneswar, published in the Indian Express on 29-11-23, P 4)



Odisha Economic Survey 2022-23, Government of Odisha

Education

The pandemic brought a kind of academic crisis. Digital forms of teaching and learning are beset with difficulties of inaccessibility in remote areas and problems in adapting to technology. The possibility of the students getting distracted by social media or other sites, due to isolation and lack

of interaction with peers and teachers could prove prohibitive for a poor students to afford to buy a smart phone. Above all, on-line assessments are laden with inherent problems of adjudging knowledge and skill.

A UNESCO Report (29) estimates that nationwide closure of educational institutions has affected over 63.3 percent of the enrolled learners (about 11 crore) across 129 countries where in India it is 32 crore. When the educational institutions in our state were closed in the wake of COVID-19, many private & technical institutions carried on teaching in online mode. Since neither the teachers nor the students had any previous exposure to digital approach to learning, this has adversely affected accessing, preparing & engaging with the courses in a systematic & incremental manner. The digital divide has resulted in a learning divide challenging the equity objective of the Higher Education programme of the Government of Odisha. (Odisha Economic Survey-2021-22). Out of 15 lakh educational institutions in the country, computer facility is available only in 39 percent of schools.. In the age of Information & Technology, Computer & Internet facility have become the basis of education & learning. Since there is apprehension of relapse of Covid in different variants in the world, it becomes imperative to articulate strategy to bridge the gap between the rich & poor students providing adequate infrastructure facilities in regard to computer & internet in every school in rural India to impart proper learning to all students. (Editorial translated odia version “OnlineSiksharaBiparita Diga” published in india daily ‘The Samaj’ on 21 August, 2021)

With the rise in enrolment, better availability of textbooks & increased access to digital device, school education in rural India seems to be back on recovery path. The Annual Status of Education Report (ASER-2021) indicates that the Government run school system responds better to pandemic disruptions than the private institutions. As education shifted to digital online mode since March 2020, digital divide became a grave concern. (Article of Manash Gohain’-“School education in Rural India on recovery path’ published in Times of India on 18 November 2021). Educational disruption due to prolonged closure of schools across the globe not only has alarming effects on learning but also poses a threat to gender equality as revealed from a study of UNESCO. The global study titled “When schools shut; Gendered impacts of COVID-19 school closures” brings to light that girls & boys, young women & men were affected differently by school closures. At the peak of the Pandemic, the students lost access to education as well as myriad benefits of attending school opined by Stefani Giannini, UNESCO Assistant Director General for Education. Boys participation in learning was limited to income generating activities. Girls faced difficulties in engaging in remote learning modalities in many contexts because of limited access to internet enabled devices, lack of digital skills & cultural norms restricting their use of technological device.(Extract from news item “Prolonged School Closures Pose Threat to Gender Equality: Study published in The Hindu on 22 November,2021). Vinay Umarji in the article ‘US sees biggest drop in international students’ published in ‘The Business Standard’ on 16 November,2021 has observed that with the COVID-19 pandemic impacting foreign education, there is 15 percent decrease in the number of international students in the US in the academic year 2020-21 as against a decline of 1.8 percent in 2019-20. Despite the Global pandemic, 62000 VISAs have been issued

by US Embassy to Indian students which shows that United States remains the attractive estimation of choice for Indian students looking for study abroad.

SUGGESTIONS:

1. To make digital teaching learning process effective in imparting training to the teachers & to provide access to the learners to technology.
- 2 To train the teachers on delivering courses online & developing an e-content under the World Bank Assisted Odisha Higher Education Programme for Equity & Excellence. (OHEPEE)
3. To make investment in infrastructure to prepare institutions for online teachings for all the state Universities, Autonomous Colleges & cluster of colleges in certain geographical areas.
4. To invigorate the Virtual Tutorial Project (VTP), an initiative of the Government to ensure equity to bridge the gap between the actual & desired availability of teachers at various level of education & to make it possible for the students to avail the best teacher in a particular subject as well..

Social Impact

Covid- 19 has comprehensive negative societal and psychological effects far beyond the narrow economic impacts disrupting economic activities, jobs, income, education, and investment. The Covid-19 experienced ostensibly a grim picture & brought to a kind of ‘Existential crises. The casual labourers and the self-employed in both agriculture and non-agriculture activities were worst affected. Students without smart phone and internet access trailed behind the students learnt in digital mode. The Covid- 19 experience has increased the peoples’ level of confidence in the government initiative to tackle a health crisis and any emergency. But it should establish ‘prioritizing equity’.

Covid- 19 pandemic is a transnational crisis of multiple dimensions affecting health and hygiene, polity and governance, society, and economy as well. These grim realities have bearings on formulation of important policy implications for the state. Stringent restrictions on all the three modes of transport taught humanity the necessity and practicability of a new way of life with minimum wants and merits of self-sufficiency in all possible spheres for survival. The Covid experience also taught mankind the imperatives of saving for the future which is supposed to boost the habit of thrift among the people to make a remarkable impact on capital formation, a pre-requisite of economic development.

*COMBATING AN INTRACTABLE CHALLENGE

Professor Ganeshi Lal, Hon’ble Governor of Odisha in his message on Independence Day-2021 published in the August issue, 2021 of Odisha Review has iterated on the impact of COVID-19 & interventions of the state Government that COVID-19 has severely impacted lives & livelihoods of the people across the globe. Severe strain in our socio-economic, educational agricultural & healthcare sectors have been noticed & the whole world is witnessing unprecedented challenges to humanity. The state has successfully contained the spread of pandemic strategically preparing

& following effective governance measures in active participation with Panchayati Raj Institutions & community-based response systems. Setting up COVID care facilities, effective monitoring system & successful vaccination programmes are some of the most significant steps taken by the Government to combat the pandemic.

Hon'ble Chief Minister, Shree Naveen Patnaik in his message on the occasion of Independence Day-2021 published in the August issue, 2021 of Odisha Review has affirmed that "COVID-19 Pandemic has created a deep impact on the lives & livelihoods of our people. The pandemic has a deep impact on the earnings of the poor people. The Chief Minister reiterates that 'Every life is important for me' & Healthy Odisha-happy Odisha is our mission." Since economy & health are interlinked, the State Government is committed to facilitate better health services to the people of Odisha.

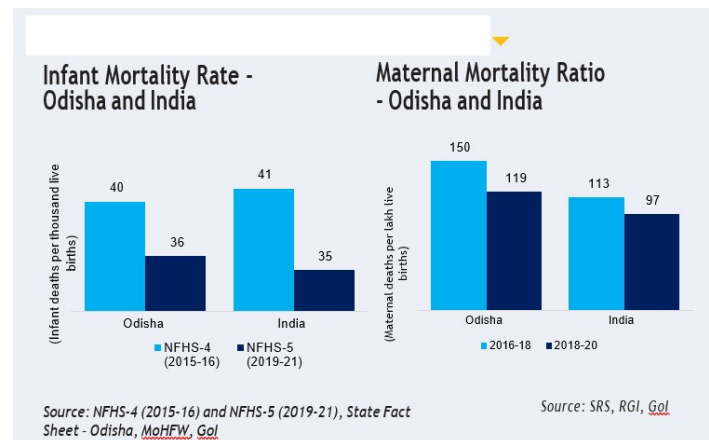
HEALTH

It is expedient to make a paradigm shift in the healthcare system. Establishing and operationalizing a health disaster management system to create an array of health professionals to provide curative care and a pool of grassroots level health functionaries to give preventive guidance and inculcate awareness among the people to deal with COVID-19 like devastating health emergencies will be a pragmatic approach. Emphasis should be given to strengthen Primary Health Centers (PHC) at GP/village level making provision of admissible & adequate number of health care personnel, number of beds, diagnostics facilities, intensive care units, & improving the quality of supply chain management to provide essential health service delivery in rural areas. There should be more functional autonomy & devolution of responsibilities on the institutions of local self-governments to address the specific health issues of each locality. The private corporate hospitals offering tertiary care services should be brought under comprehensive government regulation to serve public purposes. Emergency healthcare provisioning in times of health crisis necessitates dedicated public engagement, multi-sectoral partnerships, coordinated and integrated action involving the state, involvement of people and people's representatives to make a kind of social movement.

The state should act to upgrade the system to be more responsive investing more in public health and effecting a system upgradation in terms of both human resources and basic structures with equipment. Identification and care centric management strategies that focus on extensive and intensive testing, detection, isolation and quarantines, therapeutics, contact tracing, and delimited-demarcated movement restrictions are supposed to be more effective in containing disease spread involving infliction of comparatively lower socio-cultural and economic costs. The Covid-19 experience establishes the pre-eminence of primary care providers like ASHA, ANM, nurses, doctors and even dedicated SHG members, panchayat representatives and village level frontline workers. Public health spending should be enhanced from the current level of 1.3 percent of the GSDP to 2.5 percent of GSDP with more than 65 percent expenditure on primary health care as envisioned in the National Health Policy, 2017.

Vaccination

- In article 'Strengthening Vaccine Trust' written by Brian Wahl & Neeraj Ghaywan published in 'The Hindu' on 8 November, 2021, the authors observed that acceptance of COVID vaccines in India is among the highest in the world. Individuals can stand in the way of the success of an immunization campaign. The Covid-19 vaccines used in India are safe & effective especially in preventing severe outcomes. An effective response to any health emergency requires a multi-disciplinary approach. So, creatives & public health experts must work together to bolster vaccination confidence. Vaccines bring hope of returning to normalcy & creative approaches rooted in evidence can help build confidence.
- Shri Amar Patnaik, Ex- Comptroller & Auditor General in his article "Kebala Jogan Nunhe, Bitaran Madhya Aawhana" published in 'The Samaj' on 1 June 2021 highlighted that besides Covaxin & Covishield, Government has accorded permission to SPUTNIK-V of Russia for emergency use. It will be prudent to diversify the domestic production of vaccines. Since Covaxin is a domestic product, Government may encourage production of other indigenous vaccines based on Indian Council for Medical Research (ICMR) norm. Due to less tele density (40-60) & non-availability of dedicated internet facilities, people from interior pockets will be deprived of timely vaccination for being not able to login in CoWIN. The Government of India should procure vaccines approved by WHO from global market & ensure distribution proportionately among those not vaccinated & people across all states.
- Ranjit Shahani in his article 'Don't undermine the very innovation eco-system that helped in Covid crises' published in 'The Times of India' on 3 December, 2021 has iterated that Fighting the pandemic has taught three important lessons: 1. A strong innovation eco-system backed by Intellectual Property Rights (IPR) 2. Unhindered access to Pathogen genome sequence to enable the researchers to identify & understand pathogen 3. Agile regulatory authorities. Vaccines are the most potent weapon against virus. The bio-pharmaceutical innovation eco-system supported by strong IPR has delivered quick solution to respond to the Covid Pandemic.
- The Prime Minister in his inaugural address in the first Global Innovative Summit of the Pharmaceuticals observed that India must ramp up production of requisite ingredients for vaccines & medicines. The country has a large pool of scientists with potential to take the Pharmaceutical industry to greater heights. These resources should be harnessed to 'Discover & Make in India'. The global trust earned by the Indian healthcare sector has acclaimed the country being called the Pharmacy of the world. During the initial phase of Pandemic, the country exported lifesaving medicines & medical equipment to over 150 countries & more than 65 million doses of Covid -19 vaccines to nearly hundred countries in 2021. He envisioned creating an ecosystem for innovation that made India a leader in drug discovery & innovative medical device. (News item published in the 'The Hindu' on 19 November, 2021)



Source: Odisha Economic Survey 2022-23

Supply of Oxygen:-

Shashanka Sekhar Patnaik in his translated article 'Amlajan Sankatara Samadhan' published in Odia daily 'The Samaj' on 28 May, 2021 has considered availability of oxygen as panacea for Covid afflicted persons. Due to contagion of SARS Covid-2, patients suffered from Pneumonia & Hypoxemia or want of oxygen in blood which has turned fatal for life. The different nature of the virus & variants has posed a potential threat for human existence. The limited health infrastructure & facilities should be substantially improved to combat this imminent challenge. The Hospitals in the Gram Panchayats & Blocks of the country should be well equipped with adequate oxygen & health infrastructure & Medical officers to address this challenge. Centralized piped distribution system of oxygen is available in big hospitals. A regulated distribution of oxygen would suffice the availability of oxygen in due time. For regulating smooth movement of oxygen tankers, arrangement should be made in form of green corridor on national & state highways & for movement through sea route & airways. A comprehensive plan should be devised to bring long-term solutions to the problem of production, transportation, proper & timely distribution of oxygen to the hospitals for the patients. Centralized distribution of oxygen at Hospital, conservation of more oxygen & misuse of oxygen should be avoided. Establishment of Pressure Swing Absorption Plant for production of oxygen in the big hospitals near the Industrial oxygen production unit would make the hospitals self-reliant & will save many precious lives.

ECONOMY

Odisha economy should be reinvented with high growth at remarkable pace to make greater investment in public healthcare facilities to provide better healthcare for all to fight any emergency in future. Rural industrialization should be invigorated through Panchayati Raj institutions for generating more employment opportunities for the rural poor to enhance their per capita income on sustainable manner.

The Reserve Bank Governor Shri Shaktikanta Das has observed that spill over from

imminent shift in monetary policy by major Global Central Banks & a possible leap in infection from the Omicron variants of Corona virus could make a perceptible dent in the Indian economic process of recovery. The Indian economy that is well positioned in the path of recovery cannot be immune from global spill over or possible surge of infection from new mutations including the Omicron variants. So, fortifying our macro-economic fundamentals, making our financial market & institutions resilient & sound, putting in place credible & consistent policies will assume the highest priority during such exigencies. Though global economies were reaching pre-pandemic level, the recurrence of Covid-19 waves in many parts of the world including the appearance of Omicron variants, stubborn inflation & headwind of elevated energy & commodity prices as well as continuing supply bottlenecks cast a shadow on the outlook. Given the evolving growth inflation dynamics across the countries, monetary policy is reaching an inflection point keeping financial markets insecure. Economic recovery that has been interrupted by the second wave of pandemic was not yet strong enough to be self-sustaining & durable. It is imperative to keep inflation aligned with the target while focusing on a robust growth recovery. Price stability remains the cardinal principle for monetary policy as it fosters growth & stability. (News item 'Outlook clouded by Omicron, says RBI' published in 'The Hindu' on 9 December, 2021).

Claudio Borio, the head of the Bank for International Settlement observed that the Omicron variant shows policy makers & financial markets to calibrate their policies carefully since it could exacerbate supply chain bottlenecks in the short run.

LIVELIHOOD SECURITY

Since economic activities in rural area received a setback due to pandemic, purchasing power of the people was severely affected & for closure of industries like IT & MSME & non-availability of workforce, livelihood & employment of the people was challenging. So, it was expedient to take all out steps to improve livelihood & boost economy by way of intensifying two CSP flagship programmes Mahatma Gandhi National Rural Employment Guarantee Act & National Rural Livelihood Mission. Strategy should be devised by Panchayats for higher spending in generating employment & livelihoods for the most vulnerable sections. Assets grounded under different schemes must be converted into livelihood security.

*The wage rate of the job seekers under MGNREGA should be commensurate with the notified wage rate of the State Government & timely payment of wages to the jobseekers not beyond 15 days of preparation of Muster rolls must be ensured in order to arrest distress migration providing adequate employment opportunities. Provision of funds to be made for providing additional 100 days of work to those completed the entitled 100 days under MGNREGA across all districts to enhance their purchasing power to generate employment opportunities for reduction of poverty in rural area.

*There should be mapping of the skills acquired by the migrant workers by the rural local bodies which will create need-based employment opportunities at Gram Panchayat level.

* Policy should be formulated to reduce the gender gap & minimize the disproportionate

impact on the vulnerable section of women.

*Public & Private Partnership (PPP) Model in decentralized management of healthcare system should be invigorated.

*Plan should be devised scientifically to provide continuous works in every village to provide greater avenue of employment.

Alternative Livelihood option:

Shri Kanistha Kishore Sahoo in his article translated version “Corona kaliaan Bikalpa Bruti” published in daily the Samaj” on 31 July,2021 has observed that since the economy of a large number of people shattered due to loss of employment opportunities & they struggled for sustenance of their families, the author suggested for alternative livelihood options like adoption of affiliated business with different agencies/companies to generate marketability of the products like handicrafts, artefacts, ornaments, terracotta materials, dresses to enable them to derive reasonable market price. Persons having land and assured irrigation facility can take up vegetable cultivation preferably in organic manner to reap better harvest & garner much profit. Enlightened persons having expertise in different activities can impart training on art, music, yoga & counselling on different issues online as personal trainer or can act as resource person for discussion online on education, health, skill development, impact of Covid & steps to be taken to combat it. Above all the writers, poets also can prepare e-books & sale through agency like Amazon or Flipcart to derive income. Keeping in view the recurrence of Pandemic with multiple variants & consequential economic downturn, it would be a positive approach for every person to adopt alternative livelihood option on sustainable basis for their livelihood security to meet any emergency.

*A.M.Jeegish in his article ‘Street Vendors feel Vulnerable after Covid, Despite Govt Loan Published in The Hindu on 15.10.2023 observes that PM SVANidhi has helped street vendors to get bank loans. The Urban Development Ministry envision the aim of the PM SVANidhi loan was to help the street vendors restart their business after Covid-19. Earlier banks were not ready to provide loans despite strict directive from both the center and the state. The Govt. should constitute welfare boards for street vendors. “The issue is the approach of the governments to be changed towards the poor to secure livelihoods.

Impact on Women

The Covid pandemic has adversely affected the socio-economic condition of women. Due to constant shut down & lock down across the globe, people were compelled to maintain their lives in solitary confinement at home. In last two decades, women participate in economic activities & support the family income. Most of the women engaged in Self Help Groups failed to ensure marketability of their products & suffered economic distress. The unemployment rate of women sharply declined. The women who struggled hard for existence & have lost their self- confidence to earn their livelihood since Covid in different variants have relapsed. Loss of livelihood seriously affected their mental health. It was thus necessary to provide adequate income generating activities

& effectively ensure more women participation to restore their confidence & earn their livelihoods. The widow headed family suffered miserably due to loss of employment of the mother to rear & foster their children. Covid has adversely affected the women & women headed family who reel under abject poverty. Kanika Datta in her article 'Women in the post-pandemic workplace' published in 'The Business Standard' on 9 December, 2021 has observed that economic disruptions has never been good for the cause of gender equality. The impact showed up almost immediately in terms of overall employment but also on the disproportionate impact on women employment. Women bear the brunt of jobloss during lockdown. According to the Centre for Monitoring Indian Economist Mahesh Vyas,' When men were restored in most of their jobs, women unfortunately suffered 49 percent job losses. Absence of economic security, uncertainty in employment, apprehension of loss of job have jeopardized their mental stability & social security. Government should make provision of more funds in Gender Budget to provide ample employment opportunities& enhance their purchasing power in order to elevate their economic condition to enable them to maintain a dignified living.

Impact on Ecology

In the translated news article 'Jalabayu Parivartan O' COVID-19' of Ashutosh Debata, Rtd. Director,C.E.S,Forest& Environment Department, Govt. of Odisha published in daily 'The Samaj' on 21 April,2021, it is observed that in the wake of Covid, there is change in lifestyle of the people. The developed countries have affirmed to ensure Carbon neutrality by 2050-60.

Suggestion

Despite varied Covid preventive methods, it is required to adopt a uniform system to combat Covid pandemic. The developed countries should share the strategy & technological skill for providing healthcare facilities, protection of environment, sanitation & carbon emission to maintain a uniform standard of intervention by the developing countries. It is the need of the hour to perpetuate climate resilience to neutralize the disastrous effect of Covid. It is required to address these challenges by way of cohesion of Science, Information & Technology. Moreover, the developed countries should import entrepreneurial research-oriented goods &skills in respect of education, health, energy & environment to usher in true globalization concept which will pave the way for solution of adverse effect of pandemic. This is high time to concentrate on preservation of the environment & upgradation of ecological balance.

Relapsing COVID with multiple variants likeOMICRON

Shankar Aiyar in his editorial in 'The Indian Express' on 28 November, 2021 has elaborately discussed about the "Covid variant OMICRON that shakes up smug the world". When the world thought it was safe to go back to normalcy to exhale fear & inhale hope, a new variant of concern B.1.1.569 christened as OMICRON discovered in South Africa, triggered a wave of apprehension across the entire world. The key factors of concern are transmission ability, lethality & vaccine efficacy. The characteristics of OMICRON have alarmed for having large number of mutations

than witnessed in other variants. WHO iterated that the concern was how the variant may affect diagnostics, therapeutics & vaccines, the virus mutating between vaccinated & unvaccinated folks has shaken the smugness of the developed world. The services sector which accounts for two third of economy cannot approach normalcy without deploying vaccines globally to control the pandemic. There was an urgent need for an objective mechanism for vaccine recognition across the world & to scale up output & availability of vaccines. India cannot afford another episode of human & economic distress. New studies reveal weakening in the potency of the vaccines. The European Union has placed a nine-month expiry on vaccine efficacy. Thus, India initiated for a booster shot.

Tedros Adhanom Ghebreyesus, the Director General, WHO observed that the new Covid-19 variant Omicron has a large number of mutations, some of which are concerning for which it has become expedient to speed up our efforts to deliver on vaccine equity & protect the most vulnerable everywhere. World Health Organization advised countries to invigorate surveillance, sequencing & assess the risk of importation to protect against the virus & prevent spread of Omicron. Comprehensive & tailored public health & social measures to prevent transmission was articulated. In the news in editorial in 'The Times of India' on 11 November, 2021 it was observed by WHO that Germany saw nearly 40,000 new cases & the country contemplates to impose strict restrictions to check the surge. The President Emmanuel Macron of France announced a top up dose would be necessary for people to retain the potency of their vaccine. The Europe Director of WHO Dr Hans Kluge said that Europe was once again back as the epicenter of the pandemic. The Chief Scientist of WHO Soumya Swaminathan observed that the Omicron variant could become dominant because it is highly transmissible. She urged the countries to boost healthcare capacities & vaccinate their population & ensure more equity in distribution of Covid vaccines & conducting test. Joe Biden, the President of America observed that 'We are going to fight the variants with science & speed not chaos & confusion. One of the creators of the Oxford-Astra Zeneca vaccine said that future pandemics could be even more lethal than Covid-19 so the lessons learnt from the pandemic must not be squandered & the world should be prepared for the next viral onslaught. Gilbert, a Professor of Vaccinology at the University of Oxford said that the world should be well prepared for the next virus & urged the Governments to reaffirm their commitment to research & pandemic preparedness. (News item 'Future Pandemic could be more lethal: AZ vax scientist' published in 'The Times of India' on 7 December 2021)

Exemplary Achievements:

- ASHA worker aged about 45 years named Matilda Kulu of Bargaon Block of Sundargarh district of state of Odisha has found place in the Forbes India W-Power 2021 list for fighting Covid, superstition & rendering unstinted service to the people of the district. Kulu explained that when the country shutdown after the Covid outbreak & people remained indoors, it became our duty to take people with symptoms for Covid test, ensure taking medicine & isolating themselves. Our primary responsibility was to vaccinate all. Apart from creating awareness among villagers on health services, she served the pregnant & lactating mothers, antenatal & postnatal check up,

immunization, sanitization, promoting hygiene & empowering all for adopting the Covid portfolio diligently during Covid. (News item 'ASHA worker fought Covid, superstition to enter Forbes Power list' published in 'Sunday Express' on 28 November, 2021. (To be deleted)

***Retrospection of Covid variants**

In the News article "NewOMICRON Variant EG. S 'Not A Threat', Say Expert" published in The Times of India dated 13.08.2023:9 Durgeshnandan Jha has observed that: The emergence of EG.5, an Omicron variant which has been declared a 'VA-riant of interest' by the World Health Organization (WHO) is not likely to pose a severe pandemic threat in India NK Arora is of the opinion that EG.5 was detected in India in May – June 2023 and there hasn't been any significant change in the incidence rate of Covid-19 or hospitalization on account of this sub-variant. The government is concerned about a potential surge in cases due to EG.5 variant. Public health risk posed by EG.5 is evaluated as low at global level. While EG.5 has shown increased prevalence, growth advantage, and immune escape properties, there have been no reported changes in disease severity to date.

While declaring Covid as no longer a Public Health Emergency of International Concern (PHEIC), WHO observed that the viral illness has now an established & ongoing health issue instead. WHO declared in May, 2023 that Covid is no longer a global health emergency but has warned that the virus will continue to circulate and mutate, causing occasional spikes in infections, hospitalization & deaths. (News item WHO: 'Global Covid Cases up 80% as new OMICRON Subvariant rises' published in the Times of India dt 12.08.2023).

Tedros Adhanom Ghebreyesus, the Chief of WHO observed that 'The risk remains of a more dangerous variant emerging that could cause sudden incidents and deaths.

*Mortality rates after the pandemic have been lower than expected, and long-term effects of Covid are not impacting lives as much as feared. (Extract of article 'Mortality Rate After COVID is Lower Than Expected' written by Mayur Setty published in the Times of India on 12.08.2023.)

***Global Initiative in G-20 SUMMIT**

India, in collaboration with the World Health Organization launched the Global initiative on Digital health as part of the ongoing G-20 summit in Gandhinagar. The first such global initiative is aimed at data convergence, interface of health platforms and investments in the digital space around the globe. Digital health innovation and solutions would aid universal health convergence and improve health care service delivery. The summit affirmed to garner support for setting up a climate and health initiative in India, in collaboration with the Asian Development Bank and the launch of patient and healthcare workforce mobility portal.

Warning that many countries are not testing enough for Covid-19 and new SARS-COV-2 variants may emerge, Tedros Adhanom Ghebreyesus, Director-General of the world Health Organization (WHO) said that testing and vigilance were vital in continuing the fight against the

virus to see how the virus is evolving “While Covid is now behind us and India did its best during the time, we can expect new and more variants to emerge. Dr Ghebreyesus observed during his visit to the Health and Wellness Center at Adraj Moti village in Gandhinagar. He highlighted the need for countries to invest in strengthening their primary healthcare centers, emphasizing that 80% of healthcare needs can be met at these centers, and outbreaks can be detected and prevented. (Extract of the article ‘Continue COVID-19 Testing To Check Emergence of new virus variants’: WHO Chiefwritten by Bindu Shajan Perrappadanpu in the Indian Express on 17.08.2023.)

Moumita Koley & Isamael Rafols in the article ‘India’s Health Research is not aligned with its disease burden’ has observed that the Covid 19 pandemic has highlighted the significance of tailoring health research to the specific needs of individual countries. But India’s investment in healthcare research is limited with a misalignment between funded research areas & health challenges due to their significant market demandthat also drives private investments

Kavita Bajeli-Datt in her article ‘Covid Data Underreported as Patients Skip Test’ published in the Indian Express on 02.09.2023 :10 has observed as follows:

As the threat of a new Covid variant BA.2.86 or Pirola looms globally, a survey reveals thatnew covid variants like Pirola with over 35 mutations rise worldwide, it is imperative to follow Covid appropriate behaviour. Covid-19 cases have witnessed a surge in various countries, especially in the US, UK and China, triggering fresh concern about its resurgence. Though WHO has declared Covid-19 no longer a global threat, Pirola, as well as EG.5.1 or Eris, are causing a higher rate of infections across multiple regions globally. According to Dr Rajeev Jaya Devan, Co-chairman of the National Indian Medical Association Covid Task force, “Young and healthy people might see it only as a common cold, but the story could be different for elderly people and those with co- morbidities. The study confirms that the second infection was more severe in one third of the cases. It has been established that a greater number of infections leads to poorer health.

K.Srinath Reddy I,Professor of Public Health, PHFI, in his article ‘Omicronies & Covid’s other pals,’ published in the Times of India on 30.08.2023 has observed that surge in infections in various countries from Omicron sub variants is not of undue concern giving low severity & hospitalization. Even though most of the people worldwide have stopped paying attention to covid, scientists continue to track new forms of the SARS coV-2 virus. Public health agencies watch verily for evidence of increased virulence, which signals a potential threat of a severe pandemic re- emerging.Since the virus remains a part of our eco system, it is teaching us to adapt even as it keeps changing form to retain its spiked foothold among humans.

Global experts are debating whether the SARS coV-2 virus will settle into a predictable seasonal pattern of endemicity.

Scientists affirm that these can evade the protection offered by vaccination or previous infections, at least in terms of causing severe disease. The emergency of these new variants and the measures taken elsewhere in the world should be a reminder to the Indian policy establishment

that there is a veritable need for the health surveillance and analysis machinery developed during the pandemic.

(Extract from the news item 'A Covid uptik' published in the Business Standard'on 08.09.2323:11)

Findings:

- Health: 1. Adhering to Covid appropriate behavior like wearing mask, hand sanitization & isolation.
- 2. Creation of health infrastructure, appointment of required Specialized Medical officers, dedicated health functionaries , provision of oxygen & Ventilators, well equipped ICU with modern apparatus & lifesaving drugs in Hospitals under NIRAMAYA for proper Covid management
- 3. Ensuring both doses of vaccines to all categories prioritizing persons over 40 years, Adults ,persons with disability, children & women.
- 4. Filling up vacant post of Doctors & posting of Specialist in Cardiology, Pediatric, Gynae ,Pulmonologist for treatment of Lungs to be posted in each District & Sub-Divisional headquarters.
- 5. Setting up Oxygen plant in each district headquarter for production of more oxygen to cater to the need of the people during emergency & surplus oxygen to be provided to other states on payment.
- 6. To develop a transparent & consumer centric system App to enable the people to trace availability of Covid beds & oxygen for treatment of the persons affected in Covid.
- 7. Coverage of all Covid patients under Biju Swasthya Kalyan Yojana excepting categories of Higher Income Groups & bearing the total expenditure out of Odisha Treatment funds including senior citizens of all categories, contractual employees, outsourced employees & health functionaries in the field.
- 8. Dissemination of all information relating to Covid patients to their relatives & the status of Covid & responsibility of the people through broadcasting, social media & news papers.
- 9. Since socio-economic disasters like Covid creates multiple effects even after recovery of the patients, they suffer from nerve weakness & mental imbalance within six month of recovery. Since these category of patients are susceptible to further affliction by the virus, they should be kept in close vigil & empowered to adopt Covid protocol to prevent them from being affected & to be a carrier of the virus for the community.
- 10. Since mankind fought this epidemic & will continue its endeavor to prevent its rigour with the ethics of science & untiring efforts of scientists, Government should make an Epidemic Budget in the light of Budgets like Nutrition, Gender & Agriculture & make

adequate provision of fund for science education & scientific research to create a congenial environment for recruitment of Scientists in the state.

- 11. Since the duration of the pandemic depends on virus, contagion & vaccination & above all the efficacy of vaccine to prevent new variants, it is expedient for production of adequate vaccines for vaccination of all the categories of people of the world & initiating booster dose to those have taken two doses of vaccines.
- 12. Since, no drug or vaccine has yet been discovered for elimination of the virus & for the pandemic has been accepted as a recurring phenomenon due to its presence with different variants & frequency, provision should be made for regular vaccination in each year till effective drug or vaccine is invented for all category of people.
- 13. Regular mass health checkup of all cured Covid patients to be conducted in each PHC /CHC with RTPCR test to ascertain the status of the virus in those patients to prevent any contagion in the community.
- 14. Deterrent action should be taken against black-market of unauthorized drugs & vaccines & medical functionaries & officers involved in exploitation to the patients under the provision of IPC/Government Servant Conduct Rules, 1959.
- 15. As per the research findings of Centre for Community Medicines, AIIMS, pollution inside house is more detrimental than pollution outside. The emission during cooking at home affects the lungs of 50 percent persons above 20 years thus leading to Tuberculosis.. Since children & persons of the households remained inside their home during lockdown & shutdown for more than one & half year, there is apprehension of health hazards among family members of the country. Thus, it is expedient to prevent internal pollution by using natural incenses, mosquito net restricting smoking inside home & making provision for exhaust fan & clear ventilation in the house to rid of any disease concomitant to affliction of lungs & respiratory disorder.
- 16. For sound mental health, everybody should conduct yoga & Pranayam & meditation.
- 17. Creation of a portal for payment of Covid death compensation @ 50,000/ each to be paid to the next kith & kin of the deceased as per the direction of the Supreme Court which directed all the states to furnish to the Central Government the particulars related to the claims & disbursement of Covid compensation by way of adopting a uniform & simplified process across the country for registration of claims & expeditious disbursement of compensation through DBT.

CONCLUSION

The saying of American Novelist Ernst Hemingway 'But Man is not made for defeat: A man can be destroyed but cannot be defeated.' 'is relevant in this context.. Mankind ever wins & will win this time, be not disappointed.' This time will pass away. Pandemic will be defeated. CORONA has brought a dichotomy between survival & extinction, Restructuring or annihilation. The virus is

invisible but its rigour is catastrophic. Its new form variant predicts its recurrence with deleterious effect. CORONA appeared as a catalyst that perpetrated colossal loss of human lives & sabotaged the citadel of socio-economic structure of the world. But on the other hand, such eventuality brought forth myriad of possibilities. The countries like Germany, New Zealand, Finland, Denmark, Iceland & Taiwan led by women leaders successfully made Covid management in their countries. The gravity of the pollution was substantially reduced & mankind affirmed to bring climate resilience. This pandemic opened vistas for rationalization among nature, mankind & creatures for creating a healthy universe. It has made conscious to all the people to think of their future & save money for sustenance of their family at the time of exigency. The people even the capitalist world realized to preserve the sublimity of nature that has bestowed plethora of treasure to be harnessed for survival of mankind & progress of the world. It has accentuated the globalization process to reinvent & revitalize the economy & rebuild the world with new innovations, enterprises for economic resurgence. At large, mankind learnt to live with such Pandemic in renewed vigour against such formidable challenge.

Every disaster brings in its wake tremendous opportunities for mankind to identify & imbibe the positive message in it. It is the need of hour to introspect, reinvent & rejuvenation of the existential system. At micro level, the virus does not differentiate & discriminate between man & man, divided by caste, creed, colour, political boundary, ideology & religion, on the way pronouncing the fact that all human beings are one & inter-connected. It makes us understand the mystery of life & make life attuned to the sublimity of whole creation. This eventuality has created opportunity for self introspection, self-sculpturing, self development, self realization & embarked on an expedition from ego centrism to geo-centrism, from illusion to illumination, & from sense gratification to self-realization. The human being a part of the nature must learn to live in syn with the nature which is a symphony of harmony, any deviation, disruption proves detrimental to grand sacred universe. Now the pandemic has brought home lessons before the mankind to live & love nature & opened its vulnerability to a great extent. Any disaster will not visit the earth once again to teach us few lessons, if we make use of what we have learnt from this Corona created eventualities. (Extract from the Article 'Lessons From The Human Race in Time of COVID-19' written by Professor Ganeshi Lal, in his book 'ASUSTHA PRUTHIBIRA PRARTHANA & ANYANYA RACHANA: 2020).

*The Prime Minister of India addressing the G20 Health Minister's meet in Gandhi Nagar of Gujarat on 18th August, 2023 iterated that the world must be ready to prevent, prepare & respond to the next global health emergency & urged upon opening innovations for the public in general. He underlined that the Covid19 pandemic has reminded us that health should be the center of our decisions. Time showed the value of international cooperation whether in medicine & vaccine deliveries or bringing our people back home. Under the vaccine Maitree initiative, India delivered 300 million vaccine doses to more than hundred countries including many in the Global South. There is a need to bolster global health system to anticipate, prepare & respond to future health emergencies together as a world as interconnected today. 'Let us open our innovation for the good of the public, avoid duplication of funding, & facilitate equitable availability of technology. This

initiative will allow countries in the global south to bridge the gap in health care delivery & will enable to achieve the goal of Universal Health Coverage. India is following a holistic & inclusive approach'.*Global initiatives on global health will bring together various digital health initiatives on a common platform. Let us open our innovations for public good.'

*The Director General of World Health Organization Dr Tedros Ghebreyesus in the meeting of G-20 said that Covid 19 is no longer a health emergency of the world, it is still a Global Health Threat & a new variant of Corona Virus is under scanner. (News item 'Covid 19 still a global threat, new variant under scanner, published in The Business Standard dt 19.08.2023)

*In the article 'Infusing public health into Indian Medical Education' written by Soham. D.Bhaduri published in The Hindu on 09.10.2022, the author observes that Covid 19 entails that this fact leaves the libraries & academia & manifests as tangible policy measures that help consolidate public health in the country. Some experts have advocated the establishment of public health departments in medical schools inspired by the Covid 19 pandemic community medicine. Medical Doctors are the most influential player in public health policy since they imbibe disciplinary public health thinking. Medical Curriculum reform in India have laid stress on inculcating clinical empathy, early clinical exposure & ritualistically greater community exposure. Representation of Experts other than Doctors & from fields allied to public health is essential in the refurbished community medicine & public health departments.

In the case of the novel coronavirus, the world is deeply interconnected, that most countries were unprepared by the pandemic & that in its wake many of them including the world's richest nations shut down their societies & economies in a manner unprecedented in human history. The Covid-19 pandemic could persist, but even if it is eradicated, new outbreaks of other diseases are almost certain to occur in future. From death & horror came science, modernity & growth. The Pandemic provoked a spirit of societal introspection. Science has progressed enormously since the early twentieth century. In 2015 Bill Gates warned that if anything kills over 10 million people in the next few decades, it is most likely to be a highly infectious virus. Joshua Lederberg, the Biologist who was awarded Nobel Prize for his work on bacterial genetics said 'Human beings continued economic & scientific advancement, the greatest threat to every other plant & animal species. Climate change can be mitigated & its most harmful effects can be averted through aggressive & pragmatic policies. With regard to economic development, we could approach the process differently retaining traditional ingredients like growth, openness & innovation while putting new emphasis on security, resilience & anti-fragility. Many countries like Germany, to South Korea to New Zealand emerged from their lockdown with strong system of testing & tracing. But during Covid the America's medical emergency system crashed. Great Britain having superb high end medical capabilities also performed miserably in confronting the pandemic. Germany, Denmark & Finland handled the pandemic most effectively. Covid-19 was the first pandemic of the post-war era that demonstrated how globalization could be a potent vector of disease. Journey from the Ottoman and Russian empires, Europe and most of all, India battle ground of the emerging science of mass vaccination and intrusive imperial approaches to public

sanitation and hygiene(Ghost of pandemic past: Book Review by Kanika Dutta, Business Standard on 29-11-2023, P- 9)

The liberalization of markets over the last decades has produced growth & innovation but has also produced an impoverished public sector, rising inequality, a trend towards monopoly & a political system that has been bought by the rich & powerful. New trend-pandemic fears & protectionism will compound deeper structural shifts like demographic decline & secular stagnation. Tax policies can be geared to help workers more & capital less. More investment should be made in science & Technology, education & environmental resilience. The challenge is to make it possible for citizens to face the environment of global competitions & technological dynamism. With the pandemic much of the progress of the world would be reversed. It might erase many of the gains made by the developing countries over the last quarter century & return us to a world of great & widening global inequality. The most essential inequality between the richest & poorest human is growing at a rapid rate. The glaring inequality that infectious disease creates between the healthy & ill. There should be an essential form of equality we strive for. The crisis is by nature global affecting all countries, rich & poor. Environmental problems require collective wisdom. Climate change is of course the shining example of a global challenge because it could threaten human survival itself & cannot be solved without sustained cooperation among all especially between the biggest polluters, the US & China. Economic development is creating ever greater risks. In the world of slow growth, increasing natural disasters & rising inequality, it is imperative to make massive investments to equip people with the skills & security in an age of bewildering change. A pandemic that initially drove countries apart could prove to be the catalyst for a long sought closer union, to calibrate global governance, agreements among sovereign nations to work together to solve common problems & to determine the parameters to usher in an environmentally resilient, economically enriched & educationally distinguished globe through technology, economic realities, & biological imperatives for a benign world for survival.

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