# **JDC** Research Committee

The Environmental, Economic and Social Scenario During and After the CODID-19 Catastrophe

> **Jogamaya Devi College** Interdisciplinary Volume 2

2022



# The Environmental, Economic and Social Scenario During and After the COVID-19 Catastrophe

# Part I

Jogamaya Devi College Interdisciplinary Volume 2

Jogamaya Devi College Kolkata 2022

## Kolkata Jogamaya Devi College 92, Shyama Prasad Mukherjee Road, Kolkata 700026 and 5A, Rajeswar Dasgupta Road, Kolkata 700026

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# FROM THE RESEARCH COMMITTEE, JOGAMAYA DEVI COLLEGE

It is a pleasure to announce the publication of our new electronic volume, titled "The environmental, economic and social scenario during and after the COVID 19 catastrophe". This is the second peerreviewed electronic interdisciplinary volume published by the Research Committee, Jogamaya Devi College – after the two issues of the first volume that were published in June 2020 and December 2020. The present volume is therefore designated as the **Jogamaya Devi College Interdisciplinary Volume 2, 2022**.

The successful implementation of this work is the result of the relentless efforts of our esteemed members, **Dr. Paramita Bandyopadhyay**, **Dr. Debopam Acharya** and **Dr. Kaushik Kiran Ghosh**, who are the editors of this volume.

The Research Committee gratefully acknowledges the invaluable guidance and cooperation of our respected Principal, **Dr. Srabani Sarkar**, who is the ex-officio publisher of all our publications. So far we have been able to publish five electronic books under her able leadership and supervision.

We are fortunate to receive the guidance and active cooperation of the distinguished academicians and environmentalists, **Dr. Satarupa Bandyopadhyay**, Associate Professor, Dept. of Economics, Bethune College, **Dr. Susmita Mukherjee**, Associate Professor, Dept. of History, Shyamaprasad College, **Prof. Swapan K. Pramanik**, Retired Vice Chancellor, Vidyasagar University, **Dr. Indrani Das**, Associate Professor of Botany, S.A. Jaipuria College, and **Mr. Biswajit Mukhopadhyay**, noted environmentalist, columnist and Retired Chief Law Officer, West Bengal Pollution Control Board. In spite of their extremely busy schedules, they have spent much of their valuable time to extend their helps to us. The Research Committee, Jogamaya Devi College will be grateful to them forever, and expects their help and support in its future academic endeavours.

Finally, we thank all our esteemed colleagues for their continued encouragements and support, and hope that this humble effort of ours will be able to satisfy the readers like its predecessors.

Sushree Chakraborty and Bhaskar Ghosh, Joint Convenors, Research Committee, Jogamaya Devi College

# FROM PRINCIPAL'S DESK

COVID-19, the very word that kept mankind crippled for nearly 2 years, seems to be over or at least checked. The world is trying to be back to normal, in a different way though. Driven by human instinct, we have started preparing balance sheet of human life during pandemic.

College E-book, that is published by Jogamaya Devi College Research Committee each year, too, is themed on environmental, social and economical changes due to this catastrophe this year.

On behalf of Jogamaya Devi College, I express my thanks to the Research Committee, it's convenor, editors and contributors for their effort to make the timely publication of the book easy.

Regards

Principal

# FROM THE EDITORS' DESK

It is probably safe to acknowledge that the novel coronavirus (COVID-19) has created an unprecedented loss to lives and livelihoods around the world and the 'New Normal' has set in with the signs of the shared living practices like the use of face mask, social distancing, online schooling, etc. Since the emergence of COVID-19, no country has been spared from its impact and had a devastating effect on global healthcare systems with an undulating effect on every aspect of human life. Social distancing, self-isolation, border shutdowns and travel restrictions though helped to diminish greater suffering and death caused by the outbreak but have also ignited uncertainties of a looming economic crisis and recession. Restricted human interactions have ended with a reduction in workforce across all economic sectors along with the impact on migrants, health, poverty, job losses, informal sector, environment, and so forth. Schools have closed down, and the requirements for commodities and manufactured products have declined. On the contrary, the need for medical supplies has significantly increased. The societal brunt was awful too with job losses, mental illness, increased domestic violence and crime. Despite all the social and economic hardships, commotion, and improbability brought by the pandemic, there was however, an immediate positive consequence in terms of improved air quality, cleaner waterways and wildlife. However, consistency of such positive impact is conditional upon post-COVID and people's habits and future policies associated to the environment.

In an attempt to understand the consequences of COVID-19, Research Committee of Jogamaya Devi College have launched their topic entitled "*The Environmental, Economic and Social Scenario During and After the COVID-19 Catastrophe*" and invited the teachers, researchers and research scholars of our college and other institutions to address their eclectic thoughts for the JDC Interdisciplinary Volume 2, 2022. We are glad to announce the acceptance of five diverse and insightful manuscripts, structurally composed by eminent teachers and researchers of our colleges and other academic institutions. All the articles are well researched and delve deeply into the critical tendencies of the topic, and reviewed by scholarly academicians from various interdisciplinary fields.

According to the report published by the National Crime Research Bureau (NCRB), in India, a woman is subjected to domestic violence every 4.4 minutes and a crime is recorded against women in every 1.7 minutes. The data represented on violence against women is always deficient due to the dominance of orthodox social norms, stigma and disgrace that is placed on survivors of domestic or sexual violence as well as constraints imposed by the pandemic. Domestic violence has increased globally during the outbreak of COVID-19, fuelled by economic uncertainties and job losses. Asmita Ghosh and Ranjini Ghosh, authors of the first article of this volume, have attempted to raise exactly this important social issue in their article titled *THE SHADOW PANDEMIC: GENDER VIOLENCE SURGES* AS UNEMPLOYMENT PEAKS. In the first part of their article the authors tried to integrate the relationship between unemployment and gender violence. Further, authors have attempted to explore

the connection between unemployment and higher incidence of gender-based violence during COVID catastrophe. The authors are hopeful and thus they recommended few measures to alleviate the incidents of gender violence that augmented under the shades of COVID.

Dr. Shrabonee Basu in her article titled *IMPACT OF COVID-19 ON HOSPITALITY, TOURISM AND AVIATION SECTORS*, has attempted to explain how the pandemic has adversely collapsed these closely related sectors, Worldwide. Subsequently the author has tried to identify how the crisis has affected these sectors in India. Her article also highlights diversified solutions and ways to emerge out of this sudden economic slump that incurred these industries and sectors. Various sectors such as tourism and aviation which depend upon the confluence of people are one of the worst hits due to COVID-19 and its adverse consequences. Further, the author has critically discussed about the optimistic outcome of vaccination process in India among all the people, its dissemination but the subtle policies of discrimination constituted by certain Western authorities and countries may impede the proliferation of such industries.

Gender-based violence is already a global crisis, has exaggerated since the rampage of COVID-19. In a response to 'flatten the curve' governments have enforced several restrictions that have left *many women trapped with their abusers, isolated from support network and social contact. In her* article titled *COVID-19 THROUGH THE GENDER LENS*, Dr. Suchismita Raypaul has tried to illuminate those aspects. The author throws light on how increased economic uncertainty has further restricted many women's ability to go away from abusive situations. Dr. Raypaul also illuminated problematic social issues like child marriage, female genital mutilation and human trafficking which become rampant and pervasive due to the impact of COVID-driven socio-economic instability in India. The author justifiedly highlighted vulnerable and perilous condition of woman and other oppressed groups in an enlightening manner. At the end, the author also discussed about various remedial measures that need to be ensured by Government and appellate authorities in order to protect human rights and to prevent such social atrocities.

The review titled *THE SCIENCE AND POLITICS OF COVID-19 VACCINE*, contributed by Dr. Swagata Ray starts with the covid 19 vaccine development strategies adopted and its fast track production. Next the author attempts to outline the usefulness of each vaccine, their impending restrictions and coverage. She has done an elaborate discussion on the ethical issues associated with vaccines development and distribution. Finally the challenges that the world faced with vaccine hesitancy and the various ways by which they were overcame has been dealt with.

It is our pleasure to declare that despite some technical impediments, we have been finally succeeded to publish one article in Bengali also in this current volume. Pertinent to the present volume, Rahul Roy has presented a unique collage of two catastrophic disaster namely COVID-19 and the cyclone Amphan respectively occurred at the same time that upend economic and social resources. The author in his article aptly discusses various contemporary issues and social problems that have appeared to mankind due to the pandemic and natural disaster. The author portrays various insightful questions regarding the 'New Normal' and its aftermath and searches for their probable answers in an interesting and futuristic manner. The author painstakingly attempts to show the transformative socio-political and economic scenario in the post covid world, the existence of mankind and the

position of humanitarian values after COVID-19 in his article titled ''অতিমারী, প্রকৃতির রোষ ও ত্রাণ – মানবিকতার এক খোঁজ".

The successful publication of this present volume within the stipulated time is the effective result of the unstinted perseverance and enormous efforts from all members and groups. The present volume has emerged, overcoming all hurdles, owing to the incessant assistance and active co-operation on the part of our highly esteemed reviewers. We express our sincere gratitude to our noted reviewers who actively took the toil of going through all the articles and incorporated their valuable and critical opinions within the stipulated time in spite of all the odds. We remain indebted to our revered Principal Madam for her continuous encouragement, generous guidance and precious advice regarding many perspectives of the journal. We wholeheartedly acknowledge the generous assistance and painstaking labor of the members of Research Committee, Jogamaya Devi College that they undertook for the completion of the present volume. We would like to thank our colleague, Mr. Indranil Adhikary, Assistant Professor, Department of English for editing the language and helping the authors to make necessary rectifications.

We sincerely hope that this present volume will initiate a spirit of inclusiveness and critical inquiry which will help scholars, researchers and students alike to enrich their knowledge and wisdom and encourage them to participate in similar pursuits with interest and academic vigor. Finally, we would like to express our sincere thanks to all the teachers, colleagues, staffs and stakeholders of Jogamaya Devi College for their continuous encouragement and valued suggestions which facilitated the successful completion of the work.

Paramita Bandyopadhyay Debopam Acharya and Kaushik Kiran Ghosh (Members of the Editorial Team)

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# The Shadow Pandemic: Gender violence surges as unemployment peaks

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Abstract: UN Women data suggests that 1 in every 3 women worldwide are subject to physical or sexual violence at the hands of an intimate partner and emerging data and reports from those on the front lines, show that all types of violence against women and girls, particularly domestic violence, have increased during Covid-19. Incidents of gender violence that sprung under the shades of Covid, is the Shadow Pandemic that we will be studying in this paper. Quarantine has been an effective measure for controlling contagious diseases since the Middle Ages and as the COVID-19 pandemic deepens, economic and social stress coupled with restricted movement and social isolation, has led to an exponential increase in gender violence. The drastic alteration of day-to-day life and mounting pressure on the governments due to the rampant rise in covid has led to the divergence of relief and response resources for victims of gender violence to provide immediate covid relief. Even though quarantining has had a positive effect on reducing covid, it has led to the risk of losing jobs, economic vulnerabilities, and psychological health issues. A report by the International Labour Organization, estimated 33 million increases in global unemployment with unemployment percentage points rising to 6.5% and job losses in relative terms were higher for women (5%) than for men. Economic dependence has increased the risk of gender violence besides making it extremely difficult to abandon the perpetrators; along with this the pressures and feeling of inadequacy of the male members to be sole breadwinner of the family is also an added reason for increased violence against women. In this paper we attempt to study the relationship between unemployment and gender violence and how an increase in unemployment leads to higher incidence of gender-based violence and provide measures to mitigate this ongoing Shadow Pandemic.

**Keywords:** Shadow Pandemic, gender violence, unemployment, COVID-19, domestic violence, intimate partner violence

#### 1. Introduction

The United Nations defines violence against women as "any act of gender-based violence that results in, or is likely to result in, physical, sexual, or mental harm or suffering to women, including threats of such acts, coercion, or arbitrary deprivation of liberty whether occurring in public or private life". The onset of 2020 coupled with the raging pandemic that forced governments worldwide to put their countries into lockdown saw a malignant rise in gender-based violence with emergency helplines worldwide receiving distressing calls of rising domestic violence. Another massive repercussion of this pandemic has been unemployment, with more than 200 million people being unemployed by next year as estimated by UN Labour experts. Just like any other crises, the impact of COVID-19 was not gender-less; a report by the International Labour Organization, estimated 33 million increases in global unemployment with unemployment percentage points rising to 6.5% and job losses in relative terms were higher for women (5%) than for men (3.9%) in the year 2020. Women in the poor and marginalized sector of the society are not only at a higher risk of infections but also have a higher risk of unemployment and gender-violence. A great proportionate of women have also been forced out of the labour market due to added domestic responsibilities, a consequence of the imposed lockdown which has led to the re-traditionalization of gender roles, risking the undoing of the progress made in the female labour market in the past decades.

UN Women data suggests that 1 in every 3 women worldwide are subject to physical or sexual violence at the hands of an intimate partner and emerging data and reports from those on the front lines, show that all types of violence against women and girls, particularly domestic violence, have increased during Covid-19. The raging pandemic serves as perfect cover for the storm that brews behind closed doors and increased isolation due to the enforced lockdown has forced women to confine themselves with their violent partners closing them off from the help and shelter of the outside world. The situation further worsened when domestic shelters and helplines were repurposed to accommodate the rising infections as the healthcare system had already been pushed to its tipping point. The added economic insecurity that has risen due to severe unemployment has also made it very difficult for women to leave the shackles of their abusive partners and they also face a greater threat of sexual exploitation and trafficking. All of this coupled with the already existing difficulty in recording cases of gender-violence as most women are not very forthcoming due to fear as well as trauma of their circumstances with data suggesting that less than 40% of women who experience violence, or any sort of crime actually report it to the authorities has also further exacerbated the worsening situation. Even prior to the pandemic, domestic violence was one of the greatest human rights violations and this has drastically increased during the period of COVID-19 with the threat to the physical, sexual, mental and emotional well-being of women and young girls being more imminent than ever. The attitude of law in most countries pertaining to violence against women remains to be lacking with 1 in 4 countries having "no laws specifically protecting women from domestic violence". The isolation has also led to several unforeseen disruptions with the restricted access to phones, helplines or social services like police or hospitals especially in the case of the female faction of the population as mentioned by Phumzile Mlambo-Ngcunka, Executive Director for UN Women in her statement, "These disruptions may also be comprising the care and support that survivor need, like clinical management of rape, and mental health and psycho-social support. They also fuel impunity for the perpetrators".

The relationship between unemployment and gender-violence is a tale as old as time with recurrent suggestions of increasing gender-violence during periods of global recessions. For example, the British newspaper The Independent in 1993 recounted a statement of a police officer saying how high unemployment and financial problems in the country had led to an increase in calls of help due to domestic violence. Similarly, in 2008 during the Global Financial Crisis, the Attorney General of England and Wales in an interview for The Guardian stated how "domestic violence will spread as recession deepens" as the economic and financial pressures take its toll on the suffering families. There are several previous works which have attempted to establish a concrete relationship between unemployment and gender-based violence. The Household Bargaining Model that emerged in economics suggests that job loss alters the balance of bargaining power within the couple by modifying their outside options (Anderberg et al. 2016, Aizer 2010). In this model, female unemployment decreases 'bargaining power' thus increasing violence whereas male unemployment decreases it. This result is completely reversed by the Male-Backlash Model that emerged in

sociology which states that job loss can challenge gender stereotypes by lowering the relative earnings of the man, and domestic violence can emerge as a manifestation of 'male backlash' (Macmillan & Gartner, 1999). In this model, male unemployment increases gender-violence as it challenges the 'breadwinner' identity of the society while female unemployment by relatively raising the male's earnings decreases the incidence of violence. Even though there hasn't yet been a proper deterministic framework that establishes the relation between these two variables, evidence no matter how limited and inconclusive suggests that every time that unemployment has risen the problem of genderviolence has reared its ugly head. The situation worsens in cases of contagious health crises due to the adage of an imposed lockdown which as stated earlier, increases frustrations thus accelerating the incidence of violence both at home and outside. The rise of gender-based violence often also arises from the social conception of patriarchal masculinity which propagates the idea of the kind of power and control that a man should possess, and this power and control is often exerted in the form of oppressing women. In times of a crises such as a pandemic, the need for power and control surges as all the uncertainty is fuelled with the well-blended mixture of financial instability and forced cohabitation due to quarantine and this need for control and power ultimately manifests itself in the form of intimate-partner violence or sexual violence against women at home or outside.

Violence against women is not only taxing on the victims but it is taxing on the economy as well. Previously estimated the global cost of violence against women stood at USD 1.5 trillion approximately which has only then increased during the pandemic and will continue to do so as both society and economy reel with the aftermath of it. To prevent violence against women, it is necessary to take extensive measures to provide economic and social support. This Shadow Pandemic needs to be dealt with immediately and effectively with measures embedded in the form of economic support that acknowledges the gravity of the situation. Grassroot women's organisations along with psychosocial helpline systems have always been on the forefront in fighting this heinous violation of human rights and the government should aid them in this battle in the form of stimulus packages that not only provide social support but economic support as well. In this paper, we take a look at the extensive literature of gender violence and how many academicians have attempted to establish its relation with unemployment and suggest some measures to prevent it.

## 2. Research Objective

Given existing background, our sole research premise is: Unemployment during the COVID19 pandemic has led to an increase in violence against women.

## 3. Data and Methodology

Since it is a review paper, as a data source we have used existing reports, research articles and literature on the topic. For our methodology, we have conducted an extensive study and analysis of the existing literature and drawn conclusion regarding our research premise.

## 4. Literature Review & Analysis

Research conducted by the UN Women research has found that violence against women and girls has intensified since the outbreak of COVID-19. Worldwide stay-at-home orders increases sexual harassment and other forms of violence against women creating dreadful consequences and in order to control this gender violence especially against women, the estimates of "Measuring the Shadow Pandemic: Violence against Women during COVID-19", were generated by UN Women based on Rapid Gender Assessment Surveys on the impacts of COVID-19. They mainly focused on primary areas of concern that is economic activities and resources such as employment and income, unpaid domestic and care work, access to goods and services, and social protection and relief measures. The RGAs conducted were specifically focused on VAW and COVID-19 in 13 countries with the support of Bill Gates and Melinda Gates Foundation, covering all regions with the aim of understanding the extent of the shadow pandemic and women's safety, both in home or outside and to look into their mental as well as emotional well-being. Based on the pooled data, 45% women are exposed directly or indirectly to VAW since the onset of pandemic. Since the pandemic began, 23% reported verbal abuse and denial of basic resources, 16% reported sexual harassment and 15% reported physical abuse, which may have been the result of lockdowns, curfews and social distancing which were imposed to curb the spread of the pandemic. Women living with children were more likely to report having experienced violence or to know someone who has since COVID-19. During the pandemic a lot of women felt more unsafe at home with some women specifically reporting that they were harmed by another family member and 35% of were being physically abused by others in the household. In addition to violence at home, many women also faced similar issues outside the boundaries of the four walls of their home. Violence and sexual harassment in public spaces reduces women's and girls' freedom of movement, ability to go out for schools, workplaces and public life. VAW also correlates with the issue food insecurity for women; a survey on gender-based violence conducted by the World Bank in Indonesia, found that on average, 4 in 10 women (38%) are likely to be food insecure. Women aged less than 50 years have a higher likelihood to be food insecure (39-42%) than those who aged 50-59 years (34%) and 60+ years (33%). Similarly, women living with children are more likely to be food insecure than those without (42% and 32%, respectively). Results of the study show how the COVID-19 pandemic has aggravated violence, "revealing connections between violence, food insecurity and consequences on women's mental health".

New IMF staff research (Ouedraogo & Stenzel 2021) suggests that a major threat to economic development is any kind of violence against women with a "1 percent increase in violence against women is connected with a 9 percent lower level of economic activity". Globally the most threatening place for women is their own households and this pandemic has made the violence even worse. The number of reported cases of gender violence in Nigeria and Croatia escalated to 130 and 228 percent respectively during the first five months of 2020 compared to that of 2019. Initially, women from less abusive homes are likely to work fewer hours when they do work but in the prevalence of high levels of domestic violence in the household, the number of women in the workforce decreases drastically. These curtail women's acquisition of education and efficiency which ultimately results in "less public investment overall as more public resources are channelled to health and judicial services". They use survey data from US Agency for International Development's Demographic and Health Survey from 1980s to the present comprising of 18 sub-Saharan African countries, with 224 districts and more

than 440,000 women and compare it with satellite data on night-time lights from the US National Oceanic and Atmospheric Administration. The survey data alone showed that more than 30 percent of women have encountered some form of violence. Based on their analysis, they found that lower economic activity leads to higher level of violence against women and girls which makes it harder for them to maintain a job resulting in a conspicuous drop in female employment. If sub-Saharan African countries can manage to reduce the level of gender violence closer to the world average of 23 percent, then it would gain 30 percent long term GDP. Their research also found that domestic violence is more dangerous in countries lacking protective laws and in countries with heavy energy-based industries as they are "more likely to crowd out women-centred jobs" leading to diminished economic power for women. Countries should strengthen laws and protections against domestic violence which can prevent violence against women, and encourage women's participation in the workforce. Improving education opportunities for girls is an important step in the longer term. As the gender education gap reduces, women and girls can enjoy more socio-economic freedom and have more decision-making power than men.

Bhalotra et al. (2021) uses administrative data from Brazil to analyse the role that unemployment plays in accelerating the incidence of gender violence. "Research by economists on causes has been framed around the power imbalance within couples, with several studies investigating whether domestic violence can be reduced by empowering women i.e., providing women with cash transfers, skills training or jobs." and in their paper they attempt to determine the cause behind the violence and if unemployment compensation can help alleviate it. They have used data from court registers for Brazil containing every domestic violence case for 2009-2018 i.e., pre-pandemic and linked both the plaintiff and defendant to administrative data containing longitudinal employment records. Along with this, they use two extra measures i.e., "the use of domestic violence public shelters and notifications of domestic violence submitted by state health providers." The key findings from their investigation denotes that job losses for both men and women exacerbate the incidence of domestic violence. The findings hold true for all measures of domestic violence that they have considered in their methodology. Using the judicial data, they estimate a 30% increase of the baseline mean in domestic violence following unemployment. The effects of unemployment as seen in their analysis are pervasive across all characteristics i.e., "distribution of perpetrator age, education, baseline income, baseline domestic violence rates, the gender pay gap, population size, GDP per capita and the share of workers in the informal sector." The investigative findings show that the relevant mechanism for the perpetration of domestic violence turns out to be income shock of unemployment which leads to stress and also the resulting exposure associated with the time shock of unemployment. Their research proposes that job loss for either partner is a significant shock to the household income thus disturbing the prevalent equilibrium in the household. The tight budget leads to renegotiation of allocation of resources which becomes a substantial ground for conflict and the added exposure to each other as unemployment forces them to stay at home together for longer periods of time provides an increased opportunity for domestic violence. This coupled with the stress of income uncertainty and the feeling of worthlessness that stem from the job loss further fuels the fire that is domestic violence. Their paper also suggests unemployment compensation for the prevention of domestic violence and exploits the "experimental variation in access to cash benefits generated by unemployment insurance (UI) eligibility rules in Brazil" to analyse the efficacy of unemployment compensation in prevention of domestic violence. Evidence suggests that "compensating unemployed

men for income loss reduces domestic violence perpetration, the fact that unemployment benefits lead to longer duration of unemployment frustrates their potential." Their work on unemployment compensation implies that prolonged unemployment leads to the benefits of compensation being offset by exposure effects of domestic violence. Thus, unemployment compensation is more effective as a measure to mitigate violence if it is backed by some sort of policy that ensures return to work. Even though their analysis period is prepandemic; it extends well enough into the pandemic itself as the pandemic has led to widespread unemployment and lockdowns have forced people to cohabitate and evidence from their study backs the sudden upsurge in gender-violence worldwide.

Macmillan & Gartner (1999) examined the direct and conditional effects of female unemployment on spousal violence. Their paper argued that employment plays a pivotal role in establishing gender identities and relations and tread it as a symbolic instead of socioeconomic resource. Treating employment as symbolic lies in the premise that a man's ability to work has always been a crucial part in constructing masculinity and this helps to shed light on the complex relations between gender identities and spousal violence. They argue that one can understand the symbolic nature of employment if marriages are viewed as exchange relationships between the partners that have been "culturally defined by principles of equity and status expectations." Employment of one partner when treated as a means to attain economic resources independent of the employment status of the other overlooks these principles and expectations. They refer to previous works where the employment of both spouses has serious implications in spousal violence. Exchange theory implies that in a relationship with atypical consistencies in status where the female occupies a higher cultural, psychosocial, economic resource than that of the male, makes the disadvantaged (here, man) more likely to employ coercion in the relationship (Molm 1997). Research on masculinity and gender identities show that female employment has a detrimental effect on the husband's mental health as they deal with the loss of the role of 'sole breadwinners'; gendered-division of labour where the men are supposed to work outside and women at home are primary gender constructs and the notions of masculinity are strongly dependent on the belief of being a good provider and breadwinner (Kessler & McRae 1982, Thoits 1992, Connell 1995). However, it is crucial to understand that masculinity is always constructed with reference to femininity, thus in relationships where only the female is employed the risk of violence increases as marriage is viewed as the "hierarchal relationship maintained through socially sanctioned authority and ultimately based on covert force." According to them, the inconsistencies in empirical research on spousal violence may have risen due to the conflation of the various forms of intimate-partner violence. Spousal violence can manifest itself into "common-couple violence" which is based on the premise that marital violence is a form of conflict resolution or as "patriarchal terrorism" which is systemic and a play for social control (Johnson 1995). They use the data of The Violence Against Women Survey conducted by Statistics Canada in 1993 consisting of 12,300 women, 18 years of age or older living in ten provinces of Canada.

Their analysis depends on data on "spousal violence from the 8,461 women with current legal or common-law spouses." Their investigation provides evidence that "the effect of one partner's employment is conditioned by the employment status of other partner." Female participation in labour force lowers the risks of spousal violence as long as the male is also employed but the risk increases if the male is unemployed. Their research establishes the primary significance of employment as a

status measure between husbands and wives bound in a marital relationship defined by "gender expectations of male authority and female dependence".

Anderberg et al. (2013) aims to examine the impact of unemployment on domestic violence both theoretically and empirically by combining "high-quality individual-level data on intimate partner violence from the British Crime Survey (BCS) with local labour market data at the Police Force Area (PFA) level from the UK's Annual Population Survey (APS)". They use a simple game-theoretic model to analyse the effect of change in unemployment to the degree of domestic violence. The model assumes that higher unemployment loads more "idiosyncratic labour-income risk onto individuals, and depicts marriage as a non-market institution that allows couples to partially diversify income risk, by drawing on their pooled income and sharing consumption". In equilibrium, a male with a violent inclination can either hide or disclose his real nature depending upon his own and his partner's future earnings "as determined by unemployment risks and potential wages". Primary result is that an increased unemployment among male decreases partner violence, but increased female unemployment leads to increased domestic abuse. They discover that male and female unemployment have opposite effects on domestic violence. If a male has high unemployment risk, then he would tend to be non-violent because of his low future earnings, and any violence would be a strong reason for his wife to leave. On the contrary, when a female has a high unemployment risk, then she would be less inclined to leave her partner even if she faces any kind of violence because her future earnings would be low. "1 percent increase in the male unemployment rate causes a decline in the incidence of physical abuse against women of around 3 percent". The paper also contributes to "a small but growing literature in economics on domestic violence" and is divided into three parts. Firstly, it analyses the relationship between the "economic status of women and their exposure to domestic violence" by testing a simple model whose key forecast of the model is that as woman's real wage increases, her bargaining powers will also increase and this leads to a decrease in the level of violence by improving her options outside (Aizer 2010). Secondly it explores the effects of public policy on domestic violence and finds that "mandatory arrest laws" have the contradictory effect of increasing "intimate partner homicides" (Iyen Gar 2009). Finally, it concentrates on "male motives for violence". Previous works argue that intimate partner violence represents expressive behaviour that is triggered by "payoff-irrelevant emotional shocks"; some males use violence to show their anger and disaffection with their marriage and partners' behaviour with respect to domestic violence is transferred from parents to children (Card & Dahl 2011, Bloch & Rao 2002, Pollak 2004). "Latent abusive males" who have lost their jobs may refrain from offensive actions, to avoid divorce and "loss of spousal insurance" but when women are unemployed, their economic dependency on their partners may stop them from leaving their partners which leads to an increased risk of intimate partner violence. Therefore, policies must be designed to intensify women's employment security and this could demonstrate an important feature to domestic violence reduction.

Mtengwane & Khumalo (2020) try to explore the link between economically vulnerable women and gender-violence using a case study based on South Africa. They argue that structural socioeconomic differences act as major propellant for violence against women.

Statistics provide evidence that "more than 30 percent of women in South Africa bear gender-based violence in the form of harassment, rape, and domestic violence". In South Africa, particularly black

African women have a higher unemployment rate than men and also in some cases women are employed but earn less than men which can be associated with "the unpaid normative duties of childrearing and household maintenance". Therefore, they are unable to protect themselves from exploitation or report abuse, as they fail to use their "independent social and economic existence" outside the control of their partner. A distinct social class and income link is associated with this COVID-19 pandemic. Gender-based violence is more common among less educated women than those with higher education. Moreover, wealth or income is a prime factor of gender-based violence, higher the wealth or income, lower the gender-based violence. To overcome the economic vulnerability that subjects women to gender-based violence, more planned and significant action should be taken to support in securing the basic necessities of women and girls, as more women are moving away from the "nurturing and child-rearing" role which can be attributed to the high cost of living.

Aizer (2010) analyses the impact of gender-wage gap on domestic violence in the United States by employing an economic theory of bargaining incorporating violence based on the premise that "an increase in woman's relative wage increases her bargaining power and lowers levels of violence by improving her outside option." She uses administrative data of female hospitalisations for assault and analyses the impact of wage gap as a "function of local demand for female and male labour" on spousal violence. The key findings from her analysis shows a 9% decrease in domestic violence (during non-working hours) explained by a decline in the gender-wage gap between 1990 and 2003. Her study stands in contradiction to the "malebacklash" model in sociology and model of exposure reduction in criminology which claim that a rise in female wages increases domestic violence as gender constructs are threatened and increased female labour force participation decreases violence due to reduced exposure to violent partners, respectively.

Bowlus & Seitz (2006) in their paper present a model of domestic violence in an attempt to determine "who abuses, who is abused, and how women respond to abuse via employment and divorce." Their paper aims to study the behaviour of men and women in abusive marriages primarily the cause behind men committing the abuse and women choosing to stay in the abusive marriage. They also attempt to study the link between domestic violence and employment. They use data from the 1993 Violence Against Women Survey conducted by Statistics Canada. In the model, domestic violence serves two purposes for men i.e., men may prefer to abuse directly or employ abuse as a device to influence their wife's behaviour. Women make their employment decisions considering "how their behaviour influences the likelihood of experiencing abuse in the future." The key findings of their analysis revealed three things. First, women in abusive marriages have a significantly higher chance of divorcing their husbands compared to women who aren't. Second, men who observe domestic abuse in their childhood have a 1.9-5.3 times higher chance to commit it. Third, employment reduces the likelihood of a man abusing his in marriages where the wife is under 30. From various policy experiments they draw the insight that women who work prior to facing abuse in a marriage are more likely to not face abuse in a marriage while employment for women already in abusive marriages does not help alleviate the abuse. In such cases, policies to help women end the marriage instead of working on the marriage are more efficient in mitigating violence. They also find that policies that help "re-socializing men from violent homes" are more prudent in reducing incidence of domestic violence within marriages.

Wadsworth et al. (2014) in their research find that even though domestic violence in Britain did not increase during recession both male and female have experienced different type of risks of unemployment and these have inverse effects on the level of physical assault. A survey of British Crime Survey (BCS) states that around "6% of the female population of working age" reveals some form of domestic abuse in any year. According to their data, "93% of suspects in domestic violence court cases are men, and 70% of victims are women". The rate of domestic violence fluctuates with the "economic cycle" and violent situations in the home can take place with an increase in unemployment. This paper suggests that when there are "significant gender differences" high unemployment rate among men is linked with fall in domestic assault, but high unemployment rate among women is linked with high rate in domestic assault. They show the pattern of unemployment rates for men and women in England and Wales since 2005. In 2008, unemployment rate went up for men and women but more so for men and after 2009, unemployment rate for men remains higher than that for women and rates of reported domestic violence fell in a period of decline in the economy when unemployment was rising. They hypothesise that a relationship has both costs and benefits and it is when the costs outweigh the benefits that the relationship fails. The impact of unemployment causes both the costs and benefits of partnerships. If unemployment is low, "potential income gains from a partnership are raised" but higher unemployment lowers "the gains from a partnership". For men, higher risk of unemployment leads to increase in physical violence in the home since the contribution of the man is decreased to the partnership while higher risk of unemployment for women, lowers their contribution and women continue to stay in an abusive relationship which increases domestic violence.

Chin (2012) in her paper attempts to examine the effect of female labour force participation on domestic violence in India by "exploiting the exogenous variations in rural women's working status driven by rainfall shocks and the rice-wheat dichotomy." The paper is based on the theory that rainfall shocks lead to "a regional variation in demand for female labour, depending on the choice of crop, which leads to an exogenous change in female labour force participation." The investigative analysis yields evidence that increased female labour force participation leads to a reduced incidence of spousal violence and this is primarily driven by a strong exposure reduction. Any suggestive effects of backlash or extraction on female employment are dominated by the exposure reduction while there is no evidence of bargaining effect. Her study is an insight into the fact that cultures play a very important role in the efficiency of economic policies and it is very important to take into account how cultural factors react with economic factors especially when formulating policies on gender-equality.

Tur-Prats (2017) introduces a gender-identity approach to analyse the causal link between unemployment and intimate-partner violence. Her study suggests the aetiology of intimate partner violence as "a way to reinstate the loss of utility generated by what some men perceive as an insult". The research focuses on stem and nuclear family types and argues that a stem family fostered the belief of both men and women as providers since the co-residence of the young wife with other women in the family meant the burden of household work was shared freeing up time for work outside. However, in the case of nuclear family the entire burden of household falls on the wife fostering the cultural norm of men as breadwinners binding the women to the domestic sphere. She hypothesises that local gender-identity norms determine "the individual's reaction to changes in gender gap in unemployment" and uses four cross-sectional surveys conducted in Spain on violence against women in the years 1999, 2002, 2006 and 2011. The results from the analysis are consistent with her gender-identity explanation. Investigative findings suggests that a decrease in female unemployment relative to male unemployment increases the incidence of gender violence in nuclear families, however this is neutralised in families with a "stem family prevalence in the past."

## 5. Conclusion

Economic insecurity that arises due to the pandemic and a rise in gender violence doesn't just refer to income insecurity but to an overall developmental insecurity for women that ranges from food insecurity to educational insecurity. Estimates suggest that an additional 11 million girls will drop out of school during COVID and if the previous crises are any indication many will not return. This will further widen the education gender gap thus leading to a marked decline in their earnings accompanied with the rise of teenage pregnancies and child marriage. This lack in education and a considerable depreciation of income ability further fuels the repetitive cycle that is gender violence. During the 2008 Financial Crisis, government funds were diverted to facilitate financial bailouts which culminated in massive cutbacks on social security services heavily impacting women. This lack of social security is going to prevalent during the pandemic as well as more and more resources are being diverted to control and mitigate the spread of the infection. The dire consequences of the pandemic are going to exist long after it has subsided especially for women who are going face challenges in work force participation and income. This is evident from the recent Ebola outbreak, where quarantining led to a considerable decline in female economic activity leading to rise in food insecurity and poverty gap and while male employment rebounded quickly after the outbreak it wasn't the same for the female labour force. To summarise, an increase in unemployment facilitates a return to traditional gender roles where men are preferred in the hiring process when there are limited jobs and women are tasked with domestic care and household chores.

When battling the plague that is gender-violence the saying "prevention is better than cure" should be followed by the governments around the world. Economic relief measures administered should be pro-active and provide a proper financial as well as social support to enable the victims to leave their abusers. The VAW RGAs conducted by UN Women suggests some need for actions. These include women's voices and rights reflected in pandemic responses along with equal representation in COVID-19 task forces; strengthened social and health support for women. To address gender norms, some prevention initiatives can include creating awareness and influence social norms through media, and the providing economic and livelihoods support to women and households. Apart from all of these, "gender statistics and sex-disaggregated data" should also be collected regularly, including measuring the impacts of COVID-19 and short- and long-term violence against women. The government should initiate 'economic support packages' which includes direct cash-transfers which means that women who are poor and lack of money, they can have direct access to cash, so that they can afford day to day necessities during this pandemic. Improving unemployment benefits by providing temporary income and improving family and child benefits for vulnerable women and their families. Stimulus funding for businesses owned by women or any sector or industries where female workers are more and enacting laws and policies that guarantee equal pay for work provide a good incentive for women to take part in the labour force. Social security for the female workers in the informal works and paid leave to essential workers with childcare services will help alleviate the burden of financial insecurity and overwhelming domestic burden that women have been facing in this pandemic.

COVID-19 is already proving to be a test with the world facing not only facing economic but emotional shocks as well. Violence in this pandemic has emerged from the shadows taking a toll on the daily lives of women. It is our responsibility as a civilization to ensure the safety of everyone that lives in our society. The economic, social and psychological effects of the pandemic will reign for a long time even after the pandemic is over and it is an immediate necessity that we prevent it from getting worse for the women of our world and ensure that the progress that has been made in empowering women in the past decades doesn't go to waste.

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# Impact of Covid 19 on hospitality, tourism and aviation

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Abstract: Covid 19 has posed numerous challenges to the world, impacting the economy and healthcare systems globally. Its fallout on hospitality, travel and tourism and the closely related aviation sector has been no less devastating. Hospitality, tourism and travel and their close associate the aviation sector are to a large extent part of the service industry worldwide. They feed on each other. The more people travel, the more it means business for the hospitality sector. Tourists are also an important market for airlines. A large percentage of airline customers travel for tourism and account for a significant share of the aviation industry's total revenue. But the Covid 19 pandemic changed all these dynamics. The pandemic engulfed the world in a matter of weeks and curtailed the mobility of people world over. As a consequence, the hospitality and tourism operations of many countries were virtually shut down. Both international and domestic travel came to a standstill, forcing airlines to shut down.

In this article, as a first step, an attempt has been made to explain how the pandemic has impacted these sectors, globally. Subsequently, the article has tried to pinpoint how the crisis has affected these sectors in India. Lastly, an attempt has been made to suggest ways to come out of this crisis and give a much-needed shot in the arms to these sectors through collaborative endeavours of all the stakeholders. With global vaccination gaining ground there is light at the end of the tunnel. In India also there will be a turn around with the large majority of the adult population getting fully vaccinated and the under 18 population also getting a share of the jab and the rollout of the booster doses.

Keywords: COVID19-impact, Travel, Hospitality, Tourism, Aviation, Vaccine.

### 1. Introduction

On December 31, 2019, the first case of the deadly corona virus (COVID-19) was reported in Wuhan, Hubei, China (World Health Organization, 2020). The deadly virus was transmitted to the whole world giving rise to an unprecedented situation, leaving in its wake a trail of death and devastation. As the pandemic spread across the globe, it had severe impact on the economy and healthcare systems world over. Its fallout on hospitality, tourism and the aviation sector globally were no less calamitous. As one country after another went in for extended lockdowns, many businesses were completely shut down or stringent measures were announced for conducting business activities in selected sectors only. As a consequence, the hospitality and tourism sectors, along with the aviation sector, were particularly hard-hit.

It is no secret that the hospitality sector is to a large extent dependent on tourism, both domestic and international, for its survival and growth. The tourism industry is responsible for travel arrangements for tourists, but necessary services such as accommodation and food are provided by the hospitality industry. More tourists imply more business for the hospitality industry. Irrespective of their purpose for travel (business or leisure) all tourists require basic services. Therefore, first and foremost, the tourism industry needs the hospitality industry to sustain itself. Simply put, the two go hand in hand,

and depend on each other for survival. The relationship between tourism and aviation also needs to be synergic for economic development. Tourists constitute important clients for airlines. Tourism and aviation industry feed on each other. The more people want to travel to far-away destinations, the greater the demand for air travel. A large percentage of airlines customers travel for tourism, and account for a significant share of the aviation industry's total revenue.

But the COVID-19 pandemic changed all these dynamics. In the recent history of mankind, no other virus has wreaked so much havoc as the SARS-COV-2. Even the Spanish flu of 1918 which was caused by the H1N1 virus, and was in reality the influenza pandemic, was perhaps less deadly than the COVID-19 pandemic as far as mortality was concerned, considering the fact that medical science was far less advanced nearly 100 years back. Like COVID -19, Spanish flu also had economic ramifications. There was lowering of GDP, no doubt. But not much research has been undertaken about the economic fallout of the Spanish flu (Sharma et al. 2021). So, its impact on various sectors of the economy also cannot be properly assessed. Some studies have been carried out on its effect on the labour force and the demographics of the day, especially in India. But no comparison can be made on this basis on its impact in various sectors of the economy in the post-First World War era. Unlike today, service sectors like hospitality, tourism and aviation had largely an inconsequential role to play in a colonial economy. So, drawing a comparison would be redundant. COVID-19, on the other hand, had left its profoundly detrimental impact on the global economy, especially the service sector, which includes the hospitality, tourism and aviation industry.

# 2. IMPACT OF COVID-19 ON THE HOSPITALITY SECTOR

COVID-19 has confronted the hospitality industry with an unprecedented challenge. Strategies to flatten the COVID-19 curve such as community lockdowns, social distancing, stay-at-home orders, travel and mobility restrictions have resulted in temporary closure of many businesses related to hospitality. Almost all restaurants were asked to limit their operations to only take-outs whenever the caseloads were exponentially high. Restrictions placed on travel and stay-at-home orders issued by the government also led to sharp decline in occupancy of hotels, resulting in concomitant fall in revenues (Gursoy and Chi 2020).

In recent times, the hospitality industry has become very important to the global economy. The hospitality industry involves a large number of customers and employees and also high exposure to both national and international guests, which dramatically increases the potential for exposure to and spreading of infections. Thus, the COVID-19 pandemic has laid bare the industry's vulnerability. The COVID-19 pandemic is an ongoing event and as such it is necessary to deeply analyse the impact of this public health crisis on the hospitality industry.

According to Schroeder and Pennington (2014) public health-related crises are always covered by the media in a negative light. Thus, forcing the government of the day to opt for knee-jerk reactions. The COVID-19 pandemic also forced many countries, including India (lockdown started from March 2020) to go in for complete closedown. Thus, travel restrictions took effect across the globe in 2020,

creating an economic crisis of unprecedented magnitude. In a world which is increasingly dependent on the service sector for economic growth, the study of the impact of the pandemic on the hospitality industry is thus of crucial importance. Of equal significance is the study of ways to mitigate this crisis.

A report by the World Association of Investment Promotion Agencies (IPAs) of May 2020 stated that sectors like hotels and restaurants and other travel and tourism-related services were among the top five vulnerable sectors during the crisis of COVID-19. IPAs reported that hotels and restaurants were affected by the pandemic by around 84% followed by other travel and tourism related services by around 65%. Since February 2020, US hotels have lost in excess of \$46 billion, and 4.8 million hospitality and leisure jobs have been lost (Shapoval et al.2021). In Israel, the lodging industry is losing \$142 million a month, according to the Israel Hotel Association (Shapoval et al 2021). In Sweden the average lodging occupancy rate dropped 34% from August 2014 to August 2020, resulting in a financial loss of 1.6 billion Swedish kroner (\$182 million USD) (Shapoval et al 2020) and the US lodging occupancy rate also showed a considerable decline.

Even in the European Union, the pandemic has revealed the vulnerability of countries with deeply service-based economies such as Italy, Spain, Greece and Portugal where a large loss in GDP is forecasted. This reflects the negative relationship between an epidemic disease (health sector) and the tourism and hospitality sector. So public strategies to help the hospitality industry recover from the devastating effects of the COVID -19 pandemic are needed.

The hospitality industry also needs to respond to the substantial challenges they face by making changes to their operations in the COVID-19 business environment. Ensuring employees' and customers' health and safety should be their top priority. They have to also make concerted efforts to enhance customer's willingness to patronize their business.

A large portion of individuals are not willing to dine at a restaurant immediately. The same is true for staying at hotels. Customers in general still do not feel comfortable to dine in at a sit-down restaurant, travel to a destination and stay at a hotel, especially after the third wave of the pandemic, driven by the Omicron variant in countries like India.

Since the breakeven point in the hospitality industry is relatively high due to high operating costs, the survival of many hospitality businesses heavily depends on increasing the demand for their services and products. Thus, it is very important to figure out what will make customers return. This also requires extensive research efforts.

Preliminary findings also suggest that around one-third of restaurant customers and around 40% of the hotel customers are willing to pay more for increased safety precautions. While customers expect hospitality businesses to implement more rigorous safety/cleaning procedures, a portion of them are willing to pay for those added safety measures (Gursoy et al 2020).

Preliminary findings also indicate that a large proportion of restaurant customers (64.71 %) and the majority of hotel customers (70.42 %) believe that the use of various technologies in service delivery will be necessary in the COVID-19 environment in order to minimize human-to-human contact

(examples service robots, contactless payment such as Apply pay or contactless bankcards, digital menus that can be viewed on personal mobile devices via QR codes, contactless digital payment, keyless entry, touchless elevators, etc) (Gursoy et al 2020).

These findings strongly suggest that technology integration and adoption into hospitality operations will likely be integral in the near future. Recent developments in artificial intelligence (AI) and social service robot technologies have enabled the use of AI technologies in service delivery and the COVID-19 pandemic may precipitate the popularity of such technology for public safety reasons.

In India, the pandemic has also cast its evil spell on the hospitality sector. The Federation of Hotel and Restaurant Associations of India (FHRAI) estimates that over 20-30% of establishments in the organized sector comprising around 60,000 hotels and 5 lakh restaurants have already shut shop since the outbreak of the pandemic. Experts suggest that domestic hotel companies had to face a weak Q4 FY 2020 (fourth quarter, Financial Year 2020) and a weaker Q1 FY2021(first quarter, Financial Year 2021). In fact, FHRAI has estimated that the hotel industry has faced a loss of Rs 1.3 trillion in revenue in FY 2021 (Business Standard 2021). Things were beginning to look up after the second wave of the pandemic was over by July-August 2021. There was revenge travel among a large section of the population, resulting in hopes of the hospitality sector making a turnaround. But the third wave of the pandemic in the country, triggered by the Omicron variant of the virus again dashed the hope of the hospitality sector.

With several curbs being imposed on year-end celebrations (2021) in closed or open spaces in many of the states, the hotel industry has taken a further hit. It all has come at a time when the hospitality sector was steadily inching towards some normalcy. The earnings in the New Year would have given the sector a much-needed breather. Hotels were also seeing above normal bookings over the past few months, an outcome of pent-up demand. But, according to FHRAI booking cancellations for Christmas and New Year celebrations, along with those of weddings and planned events have so far resulted in a loss of around Rs 200 crore in the hospitality industry.

# **3. IMPACT OF COVID-19 ON THE TOURISM SECTOR**

The COVID-19 pandemic spread its deadly tentacles all over the world in a matter of weeks, threatening the health and lives of millions of people worldwide. It affected the mobile, relatively affluent communities of East Asia, Europe and North America. As a result, the tourism operation of many countries was virtually shut down and international travel all but ceased. If that was not enough, in some countries domestic travel also came to a standstill. In fact, air and sea travel (especially in the form of mega ship cruises) has been highlighted as one of the main causes behind the rapid and global spread of the pandemic (Baum T and Hai N.T.T. 2020).

The COVID-19 pandemic has imposed restrictions on the way we live, on the choices we make as a free individual. It has curtailed our personal mobility as far as access to travel is concerned, both locally and further afield. It has perforce curbed our right to be tourists. Before the pandemic hit us, we lived in a mobile world and considered ourselves to be global travellers if we had the means and

affluence to do so. But the COVID-19 pandemic with its enforced lockdowns brought an abrupt end to our mobility. In response to this pandemic, governments all over the world enacted laws and regulations that would have been unthinkable earlier. As "social distancing" became the watchword, the travel and tourism industry bore the brunt of this new norm.

The COVID-19 pandemic led to the closing of national borders in most countries of the world, stretching from the continents of Europe, North America, Asia to Australia and South America. National borders in most countries have been shut to most travellers including leisure, business and pilgrimage tourists. In some instances, especially in Europe, it also involved reinstating borders which were removed many years ago, for example within the Schengen area. Many countries, including Australia, New Zealand and China closed their borders completely to non-nationals and non-residents (Baum T and Hai N.T.T. 2020).

The tourism sector, along with the hospitality sector, is regarded as the most dynamic sector in today's global economy. It had generated about 10.3% of global GDP and provided 330 million jobs in 2019 directly and indirectly (World Travel and Tourism Council, 2019). Such a large and positive impact on the global economy was experienced despite its survival from the crisis and disasters at various times in the past. Incidentally, the primary form of crisis that affect the tourism sector are armed conflicts, environmental hazards, natural disasters and pandemics. The COVID-19 pandemic has left the tourism sector with unprecedented challenges by limiting the demand side through restrictions imposed on the freedom of movement and ever-growing fear of infection.

But compared to 2020, when severe restrictions were imposed all over the world, sounding the deathknell for the travel and tourism sector, there was a marginal improvement in 2021. This improvement, however, was not uniform all over the world. According to data provided by World Tourism Organisation (UNWTO) for 2021, international tourism experienced a growth of 4%. But it remained far below the pre-pandemic level. Nearly 415 million tourist arrivals were noted globally in 2021 compared to 400 million in 2020. There was an increase of 15 million international tourists in 2021 when compared to 2020. However, international arrivals were still 72% below the pre-pandemic year of 2019 (when international tourist arrival was nearly 1.47 billion), according to preliminary estimates of UNWTO. So, it follows that 2020 was the worst year on record for tourism (Barometer UNWTO 2022).

The moderate uplift in demand in 2021 was driven by increased traveller confidence amid rapid progress on vaccinations and the easing of entry restrictions in many destinations. UNWTO has also noted that international tourism rebounded moderately during the second half of 2021. According to limited data, international arrivals in December 2021 were 65% below 2019 levels. The full impact of the Omicron variant and surge in COVID-19 cases is yet to be ascertained.

Thus, the pace of recovery remains slow and uneven across world regions due to varying degrees of mobility restrictions, vaccination rates and traveller confidence.

Europe and the Americas recorded the strongest results in 2021 compared to 2020 (+19% and +17% respectively), but still both 63% below pre-pandemic levels. By sub-region, the Caribbean saw the

best performance (+63% above 2020, though 37% below 2019). North America (+17%) and Central Eastern Europe (+18%) also climbed above 2020 levels. But in the Middle East arrivals declined 24% compared to 2020 and 79% over 2019. In Asia and the Pacific arrivals were still 65% below 2020 levels and 94% when compared to pre-pandemic days as many destinations remained closed to non-essential travel (Barometer UNWTO 2022).

The economic contribution of tourism in 2021 (measured in tourism direct gross domestic product) is estimated at US\$1.9 trillion, above the US\$1.6 trillion in 2020, but still well below the prepandemic value of US\$3.5 trillion. Export revenues from international tourism could exceed US\$700 billion in 2021, a small improvement over 2020 due to higher spending per trip, but less than half the US\$1.7 trillion recorded in 2019 (Barometer UNWTO 2022).

As far as the outlook for 2022 goes, according to the latest UNWTO Panel of Experts, most tourism professionals (61%) see better prospects for 2022. While 58% expect a rebound in 2022, mostly during the third quarter, 42% point to a potential rebound only in 2023. A majority of experts (64%) now expect international arrivals to return to 2019 levels only in 2024 or later.

The UNWTO Confidence Index shows a slight decline for January-April 2022. Experts believe that only a rapid and more widespread vaccination roll-out, followed by a major lifting of travel restrictions, and more coordination and clearer information on travel protocols can help in the effective recovery of international tourism. UNWTO scenarios indicate that international tourist arrivals could grow by 30% to 78% in 2022 compared to 2021. However, this would still be 50% to 63% below pre-pandemic levels.

The recent rise in COVID-19 cases, triggered by the Omicron variant, are set to disrupt the recovery and affect confidence through early 2022 as some countries have once again reintroduced stringent travel bans. At the same time, the vaccination roll-out remains uneven and many destinations still have their borders completely closed, mostly in Asia and the Pacific. A challenging economic environment could put additional pressure on the effective recovery of international tourism. Surge in oil prices, increase in inflation, potential rise in interest rates, high debt volumes and the continued disruption in supply chains would further aggravate the situation. But, the ongoing tourism recovery in many markets, mostly in Europe and the Americas, coupled with the widespread vaccination rollout and a major coordinated lifting of travel restrictions, could help to restore consumer confidence and accelerate the recovery of international tourism in 2022.

The recovery of the tourism sector is not merely dependent on international tourism, domestic tourism can also play an important role, especially in countries like India. According to experts, domestic tourism and travel to destinations close to home can also give a major shot in the arms to this sector. The thrust should be on open-air activities, nature-based products and rural tourism. These are the major travel trends that will continue shaping tourism in 2022.

In India, the scene has been far from encouraging as far as the travel and tourism sector is concerned in the pandemic period. In 2020, approximately 6.33 million international tourists and non-resident Indians arrived in India, down from about 18 million in 2019. In April of 2020 when India was reeling under the impact of a nationwide lockdown, tourist arrivals in the country reached a record low of 2820. In December 2021, the tourist arrivals in the country reached the figure of 303799 (trading economics.com).

The tourism sector in India is estimated to have directly contributed 2.7% to the GDP and 6.7% to the employment of the country in 2019-20. According to the National Council of Applied Economic Research (NCAER)'s study published in September 2021; a significant number of jobs were lost in the tourism sector since the lockdown in early 2020. The study estimated that 14.5 million jobs were lost during the first quarter of 2020-21, 5.2 million during the second quarter and 1.8 million jobs were lost during the third quarter as compared to an estimated 34.8 million (direct) jobs in 2019-20. This is attributed to the decline in the number of tourists, both domestic and foreign.

Going by the data accessed from the Ministry of Tourism's website, it is noted that Foreign Tourists Arrivals (FTA) in 2020 is lowest since 2003. In 2020, the FTA dropped to 27.4 lakhs, a decrease of almost 75% as compared to 2019, when it recorded a high of 109.3 lakhs, the highest in the last three decades. In 2021, the FTA is at 11.08 lakhs according to the provisional data for 11 months upto November 2021. There was optimism all around that figure might gradually pick up but with the spread of the Omicron variant of the corona virus in December 2021, these hopes were dashed. In the wake of the spread of this new variant, travel restrictions were once again imposed globally and the fallout in our country was calamitous.

Since March 2020, the trend in month-wise FTA has also witnessed a sharp drop. In March 2020, the FTA dropped to one-third, from 9.78 lakhs in2019 to 3.28 lakhs in 2020. At the same time, in the months of April, May and June when the average FTA in each month was over 7 lakhs in 2019, there was less than 5000 FTA in April and May 2020, and less than 10,000 FTA in June. This was when the nationwide lockdown was at its peak and severe travel restrictions were imposed.

Since April 2020, the FTA in a month crossed one lakh for the first time in March 2021 after almost a year. However, the second wave of the pandemic resulted in a drop in FTA between April and June 2021. Since then, the FTA has been increasing and crossed 2.5 lakhs in November 2021. The Indian government has eased the international travel restrictions since October 2021 which may have resulted in this increase. From October 15, 2021, the Home Ministry began granting fresh Tourist Visas to foreigners coming to India through chartered flights. Since November 15, 2021, the grant of visas was extended to those entering India through other flights as well. But the new Omicron variant might undo the gradual increase in FTA witnessed during September and November 2021.

India's Foreign Exchange Earnings (FEE) from Tourism also dropped considerably with the start of the pandemic. The FEE from tourism in India in 2020 was Rs 50,136 crores. The FEE in 2020 was less than 1/4<sup>th</sup> of the same in 2019.

The pandemic has thus been a major setback for the tourism industry worldwide and in India. Years of progress and investment in the sector seem to have been undone in the last two years. There is no doubt that it will take at least another two to three years for this sector to recover, provided there are no more restrictions by countries around the world.

The Indian Government has told parliament that it has initiated measures to give a boost to the sector, considering this sector is the worst hit by the pandemic, impacting all its geographical segments – inbound, outbound and domestic and almost all tourist verticals – leisure, adventure, heritage, cruise, corporate and niche segment. The government is actively encouraging domestic tourism. The government has also announced financial support for Travel and Tourism Stakeholders (TTS) and Registered Tourist Guides under which over 11,000 registered tourist guides and other tourism and travel stakeholders will receive financial support in the form of loans from various nationalized and private banks. The government has also announced a scheme for free visas to the first 5 lakh tourists. Finally, one should also take into account the fact that tourism is a major sector which employs many women and young people, especially in developing countries like India. So, to mitigate the crisis generated by the pandemic in this sector, the United Nations Conference on Trade and Development (UNCTAD) has come out with a report in June 2021. This report recommended formulation of policies considering the following dimensions (Pavithra, K.M. 2021)

- \*Confidence of travellers should be restored, and vaccination plays a significant role to ensure this.
- \*Socio-economic impact on the livelihoods of those involved in the sector must be mitigated.
- $\circ$  \*Long-term implications of the pandemic need to be considered.

### 4. IMPACT OF COVID-19 ON THE AVIATION SECTOR

The impact of COVID-19 was not only evident in the hospitality and tourism sector but also in the airline and transport sectors. The aviation sector has been particularly hard hit. Before the COVID-19 pandemic, top tourist destinations faced so many visitors that the situation of over-tourism had occurred. The tourism and hospitality sector were affected by the onset of COVID-19 as domestic and international visitors began cancelling scheduled trips. With the progression of COVID-19, almost all countries started restrictions on their borders crossing as part of response to the challenges posed by the pandemic. The staff of airlines and transport companies across the globe have been asked to take paid or unpaid leave as well as to accept reduced wages. As the pandemic rose to its peak, nearly 30 airlines, including German Airways and Thai Airways have filed for bankruptcy. Many careers such as Indigo and Emirates had to cut salaries and dismiss the services of their employees (The Indian Express, 2020). In 2020, the airline revenue worldwide is down by 44%. (The Economic Times, 2020).

It would not be an exaggeration to say that the COVID-19 pandemic is estimated to have caused the largest global recession since the severe worldwide economic depression in the 1930s, known in History as The Great Depression, with millions of people falling into extreme poverty.

Across all industries, the aviation sector is probably among the hardest hit. If one makes a comparison in terms of reduction in the number of flights worldwide in 2020 with the figures in 2019, and analyses the data month wise, it can be clearly noted that from February 2020 there was rapid decline. In February 2020 there was a reduction of 7.8%, in March 14.5%, in April 65.9%, in May 68.9%, in June 64.1%, in July 53.8%, in August 48.3%, in September 47.5%, in October 46.4% and in

November 46% when compared to the corresponding figure in the year 2019. (Data source: https://www.oag.com/coronavirus-airline-schedule-data).

Given the gradual public awareness that air transportation is instrumental as a medium for the spread of COVID-19, between March 2020 and May 2020, airlines began to implement a wide range of flight suspensions. Flight suspensions, initially, had a strong impact on the number of international and domestic flights, equally. May 2020 can probably be considered the month with the least number of flights in the recent history of aviation. Afterwards, many airlines began to re-open domestic flights – mainly due to initial successes in fighting the first wave of the pandemic and also due to the starting summer (vacation) season in the Northern hemisphere.

In the long run, the impact of COVID-19 on the global air transport system seems to be more profound on the international market. (Sun and Zhang 2021). Such a shift from international to domestic transportation brings challenges to airlines, particularly regarding aircraft usage, which can make the aircraft fleet a decisive factor for airline survival (Sun and Zhang 2021).

Cargo flights were not affected significantly, given the need to transport medical equipment and other critical goods across borders. Consequently, the global networks of FedEx and DHL seem to have survived the pandemic rather unaffected.

In any study of the impact of COVID-19 on the aviation sector one has to be extremely cautious. Most of the studies rely on the number of flights rather than the actual number of passengers on board. (i.e., the load factor). In fact, it has been reported that some airlines were flying empty aircraft, in order to not lose their slots at airports which suffered from slot constraints. The off-schedule flights for conducting take-home missions of people stranded in other international destinations often had a load factor close to 100%. (Sun and Zhang 2021). Accordingly, the analysis based on the number of flights alone has limited room for interpretation for fully understanding the effects of COVID-19 on air transportation as a system (Sun and Zhang 2021).

But whatever methods of analysis may be used there can be no denying the fact that COVID-19 pandemic has posed a tremendous challenge to the aviation sector. The issue of airline finances is a matter of particular concern. Airlines have a particularly high capital cost, e.g., the typical airline has cash to cover only around two months of revenue loss (International Air Transport Association 2020) so airlines face high risk of survival in the COVID-19 period.

For governments there are two major reasons for making an airline survive: the preservation of essential connectivity and preventing unemployment by protecting millions of jobs in directly and indirectly affected industries. This kind of support is given to selected national operators in each country, which often enjoyed preferential treatment before COVID-19. While these motivations seem reasonable for each individual government, given that aviation is seen as a key strategic sector, they lead to trouble in the global context – the magnitude, skewed distribution, and different types of financial aid, lead to concerns regarding the competition between airlines; which will have long-term effects on the international air transportation market in the future (Sun and Zhang 2021).

The airline industry is always fast to request a bailout. But these bailouts often prove more harmful. A case in point was our very own national career, Air India. Some studies suggest that letting airlines go through bankruptcy is a better option. In pre-COVID-19 times, airlines might have secured financial aids from the private sectors (banks or investors); yet, throughout COVID-19, these private investors have become extremely cautious, due to the uncertainty of the economic future of aviation (Sun and Zhang 2021). So, the only option left for airlines is to seek government grants in the form of direct wage subsidies, tax relief, loans, etc.

The post COVID-19 era may see certain new developments in the aviation sector in the form of emergence of super long –haul flights and reducing hub operations. Travel bubbles are also very much an option in the future of aviation. In September 2020, Japan announced plans to create a travel bubble with five other Asian countries (Cambodia, Laos, Malaysia, Myanmar and Taiwan. This concept of travel bubble was first carried out by three Baltic states -Estonia, Latvia and Lithuania. With the COVID-19 pandemic and subsequent nationwide lockdowns upending the tourism and hospitality industries, governments all over the world started establishing travel bubbles (air bubbles or corona corridors) between countries, allowing citizens to travel freely between specified nations without having the need to undergo on-arrival quarantine (The Indian Express, August 11, 2020).

India had such an arrangement with the US, the UK, Germany, France and Kuwait in the months following the start of the pandemic and there were no commercial flights on these routes. The air bubble agreement was applicable with 10 countries, which included Afghanistan, Bahrain, Qatar, UAE, Maldives, not to mention, the US, the UK, Germany and France, till September 13, 2020 (Ministry of Civil Aviation, Government of India).

With the emergence of the third wave in the country, triggered by the Omicron variant of the corona virus, India had suspended all scheduled international passenger flights till January 31, 2021. The Indian government also finalized an air bubble agreement with Saudia Arabia which came into operation from January 1, 2022. India had entered into air bubble agreement with 35 countries. These include: Afghanistan, Australia, Bahrain, Bangladesh, Bhutan, Canada, Ethiopia, Finland, France, Germany, Iraq, Japan, Kazakhstan, Kenya, Kuwait, Maldives, Mauritius, Nepal, Netherlands, Nigeria, Oman, Qatar, Russia, Rwanda, Saudi Arabia, Seychelles, Singapore, Sri Lanka, Switzerland, Tanzania, Ukraine, United Arab Emirates (UAE), United Kingdom (UK), United States of America (USA) and Uzbekistan (Livemint 2021).

In January 2022, an average of 50,000 passengers departed India on a daily basis, while 36,000 arrived. All of this was on the 300 or so flights operated in the international sector, either under an air bubble agreement or the Vande Bharat Mission (Joshi 2022). The Vande Bharat Mission was a mission initiated by the Indian government to get Indians back from across the world in the pandemic period.

But the air bubble arrangement also had its fair share of criticism as under this system only those countries that the government has chosen to sign "air travel bubble" agreements with are able to run flights, and even those are limited according to the government's reciprocal agreements. In addition, the agreements are meant to be only "end to end", i.e., not valid for onward travel to a third country,

meaning that travellers often have to break their journeys at multiple points to travel to a destination to which India doesn't permit a direct flight (The Hindu, November 14, 2021).

But all these makeshift arrangements have hardly benefited the Indian Aviation sector. The Indian airlines industry's attempt to combat with COVID-19 and its after effects are undoubtedly daunting and can have a long-drawn impact. The sustainability and survival of airlines warrants for turnaround changes in their strategies and business model to strengthen their financial stamina. Overcapacity, intense competition and high operating cost are the major factors affecting airlines performance in a country like India. To overcome the present challenge of the pandemic crisis, optimal utilization of resources, cooperation rather than competition, and cost optimization seem to be the possible way outs for sustaining with commercially viable take-off on rough terrain (Agrawal 2021).

Air cargo business despite of being a least preferred choice of airlines compared to passenger business, has an important role to play in the airline's profitability. Accommodating the cargo business in the existing business model can be an effective step towards improved performance. In the present scenario where there has been a significant decline in passenger traffic, cargo business can be used as a rescue mechanism for cash-strapped airlines to somehow minimize their losses. Passenger aircrafts world over have opted for these business and Indian careers like Indigo and SpiceJet have also done the same.

With a reduction in the Passenger Load Factor (PLF), the operational viability of airlines will be challenged. In the given situation, bailout package, particularly waivers of interest charges pertaining to lockdown period, reduced landing and parking charges, ATF taxes, seems essential for the stability of the sector (Agrawal 2021).

Many airlines of our country may be moving towards insolvency as zero revenue coupled with spiralling fixed expenses, rising prices of aviation fuel have put a severe drain on the cash reserve of airlines. Thus, sustainability of airlines will be to a large extent dependent on their revenue strategies and operating models which should focus on minimizing losses rather than maximizing profit. The Low-Cost Careers can play a leading role here, and with travel picking up, especially in the domestic sector, the aviation sector may get the much-needed shot in the arms. This will generate a ray of hope in the days to come.

The Indian government also has to be a key player to bring this ailing sector back to its feet. In fact, the recent acquisition of Air India by the Tata group is also, in a way, a step in the right direction. Leading private players are much better equipped to handle the hard-hit aviation sector.

# 5. Conclusion

The coming months may end the dark days of the hospitality, tourism and the aviation sector. Many epidemiologists are optimist that the corona virus is fast losing its sting. The Omicron variant of the virus was much milder compared to the earlier variants. A large majority of the global population is also fully vaccinated, especially in the developed countries of the world, not to mention that many of

them have also received the booster dose. In India 75% of the eligible population of the country is fully vaccinated and 95% of the eligible population has received at least one dose (according to data provided by the Government of India, February 16, 2022). India has also started the roll out of the precautionary dose for frontline workers and those above the age of 60 with co-morbidities. This has brought nearly the majority of the country under the protection of vaccine coverage thus considerably eliminating the threat of death or severe disease, leading to hospitalization or I.C.U. admission. This has freed our population from fear psychosis and they are once again picking up the threads of day-to-day living. Desire for recreation and leisure activities have also increased. Consequently, the travel and tourism sectors along with the related hospitality and aviation sectors are expected to rise from the doldrums. If the Omicron variant indeed proves to be the tail end of the corona pandemic than world over there is cause for optimism. In the coming years with encouragement and sops from the government of the day, these important sectors, which are a part of the service industry, are bound to make a turnaround.

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## **COVID-19 through the Gender Lens**

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**Abstract**: The Covid-19 Pandemic has overwhelmed the entire world, and India also has borne the brunt of the same. The spread was so colossal that the World Health Organization (WHO) had to declare it as a Pandemic. The only way to control and defeat this mammoth Pandemic was to make people follow social distancing and also to restrain them from moving out just to avoid social connection.

But in case of a society social distancing presents the dangers of increasing social rejection, and extreme individualism, and also a loss of sense of community. It prevents people from effective socialization which is a fundamental human need.

These measures carried a strong psychological message which is a fear of others. The alarming rate of contamination and death from the virus contributed to establishing panic and even paranoia among many. But social interaction is supposed to be a basic human need such as food, shelter, sleep. If we cannot find ways to maintain physical and emotional connections, it may make people feel that being isolated and distance maintaining is safe, but this tendency is not desirable for a healthy society, such an atmosphere would make it more difficult to build social bonding and it could be the unfortunate future for next generation.

Isolation, restricted movement and stay at home measures to control the spread of the infection have a particularly acute impact on women. The chances of women and their children being exposed to violence is dramatically increased, as family members spend more times in closed contacts and household stress intensified.

Even in the 21st century crimes against women have been on the rise. This very truth is very much surprising and shameful at the same time. In a patriarchal society like India there is a dominating thought that men are superior and stronger than women. So, they have every right to oppress women through physical and verbal oppression one such oppression is Domestic Violence which makes a multiple rise with the implementation of Lock Down. The Covid-19 Lock every people in their home without considering their age, sex, cast, nation.

But crime cannot persist in civilian society. Laws must be there to protect women from violence. This are Protection of Women from domestic violence Act 2005 and section 498A of the Indian penal code deals with the same issue. But the issue is glooming day by day because until unless we rectify our behaviour our attitude, our prospective towards women, it is not possible for any law o control the situation. Gender issue is somewhat neglected not only in India but also in the whole world and for that reason domestic violence is terrifying day by day.

**Keywords:** COVID-19, Domestic violence, Feminism, Economic insecurity, Quarantine, Social isolation.

#### 1. Introduction

Covid-19 has shaken the world by grasping innumerable lives worldwide since December 2019 and it is taking toll over the health sector. The concern regarding economic impacts of this pandemic followed from soaring unemployment and dwindling investments is taking the centre stage for the discussions. Amongst these mounting losses pertaining to the health and the economic sectors, MS.Jayati G., a renowned economist, is of opinion that more damage has been done to the economy

in only two days of lockdown than by demonetisation. Under this crude situation the urge to discuss gender inequality may raise the eyebrows of the academicians. They may opine that Gender is given a side issue in pandemic situation. The truth, however is that women constitute almost half of the nation's population but still apparently the deteriorating condition of the women is not so explicit like the death tolls and economic losses which catch our attention in numerical values. This article is dedicated to the women who are facing and also struggling with domestic violence, amidst the lockdown in the face of the pandemic.

# 2. Background of COVID-19:

Coronavirus is a large family of Viruses belonging to SARS category that causes illness akin to the pneumonia symptoms. In December 2019, the disease was discovered in Wuhan, China and had since spread around the world causing an unprecedented health crisis due to its highly contagious nature. When China placed a series of cities under lockdown in January to blunt the spread of COVID-19 experts wanted those other countries may not be able to implement the same policies but over the past few weeks cities, states and countries around the world have similarly restricted people's movement in order to stop the spread of the virus.

Nowadays countries around the world try to slow the spread of COVID 19 with Lockdowns, quarantines and stay at home orders, beside these measures, travelling restrictions are also implemented. Amongst this situation the people may think their life within a cage. But one thing to remember here is that COVID-19 has not been produced in a vacuum. It is part of our world now. A World that rests on imbalanced socio-political-economic structures which amplify the impact of COVID-19 crisis especially the most vulnerable group. IN case of women who are just spreading their wings in another sky. Whatever be their nature of job the existence of another sky makes them proud, confident. But under the lockdown system all of them are staying at home within the four walls with all the family members and children.

# 3. The year 2020

The year 2020 marked 110 years of International Women's Day celebration. This year was supposed to be a turning point. A New Beginning for century's long struggle. It was also 25<sup>th</sup> year of Beijing platform which proclaims to bring gender equality. Instead, Feminism has been locked down and the progress of achieving gender equality seems to be slowing down. The Pandemic has been declared a disaster for gender justice.

Another sphere, in which its impact will be most felt that of marriage, family and the household. Today in spite of the double burden women prefer to do a job because that will also enable them to find another space. But during COVID as they have to stay in home, it becomes incredibly difficult situation for them. In the one hand, it is not safe for them to leave the house and it is not safe to stay in the house. But previously we are accustomed with the popular saying like '**Home sweet home'**.

With this lockdown this "me space" has collapsed. As couples are working from home and spending days with all together, facing most people into prolonged home confinement those with abusive partners and family members face a great danger of domestic violence.

Domestic violence is an indoor crime which usually happens in an intimate relationship such as dating, marriage, cohabitation or a familial relationship and hence it is also termed as intimate partner violence. In India 70% of women are victims of domestic violence. According to World Health Organization one in every three women across the globe experience physical and sexual violence in their lifetime, and at least 30 percent of all women in relationship have experience physical or sexual violence by their partners. Across the world, more specifically in India the instances of domestic violence of women and children have increased by 100 percent. The increasing amount of time spent at home on account of the crisis have further worsened the situation which is explained in detail in the following sections. Firstly the link between Economic insecurity and poverty related stress. It is true that economic insecurity was there but from March 2020 onwards the prevalence of anxiety and depression increased. Stress unresolved often results in violence.

Secondly the link between quarantine and social isolation. These are mainly the results of Covid -19 protocol which emphasize on social distancing but the basis of any Healthy relationship is close relationship. Quarantine is the case when like isolation the infected person have to separate themselves from healthy individuals around them. Self isolation and quarantine increase the physical space between them to slow or prevent the spread of virus. The immediate effect of this social isolation is the feeling of Lonely which also results in Domestic Violence.

Increasing Domestic Violence is also accompanied with another factor that is reduced health service activities. All the health care professionals and physicians are well aware of the fact that the sufferer of Domestic Violence needs firstly proper medical attention. At the same time, they are also aware of the fact that they may face police complications if the situation demands. For this reason, generally everybody including the health professionals try to avoid the case of Domestic violence so there is a frail link between domestic violence cases and medical assistance.

Next another reason for the rising trend of Domestic Violence is the inability of women to move from the situation because on account of Lockdown they have to confine themselves within the four walls and this incident made the situation more worse.

Last but not the least there is a direct link between Covid -19 related lockdown and the spread of Virus. While Covid -19 related lockdown may have decreased the spread of a deadly virus but they appeared to have created an ideal environment for increase of Domestic Violence. Extra stress in the Covid -19 Pandemic caused by less income make a silent epidemic of intimate partner violence.

# 4. Depicting the COVID 19 crisis: The Rise of Intimate Terrorism

The COVID-19 has become one of the world's most famous pandemic, it is a profound shock for our societies and economies, and also for the womenfolk as they are at the central of the social system,

but there is also a shadow pandemic which is playing an important role in the form of gender discrimination, gender violence etc. Even in normal times, one in three women around the world have suffered domestic violence and 38 percent of all murders of women are committed by intimate partner. With confinement we have seen an increase of more than 30 percent in calls to helplines in some countries as lockdown for 4billion.people build pressure. The lockdown trend post COVID 19 has further aggravated the crisis. In the popular Newspaper **THE INDIAN EXPRESS** the news headline goes like this 'A New COVID-19 crisis is Domestic abuse rises world-wide'. The mounting data suggests that domestic abuse is acting like an opportunistic infection flourishing in the conditions created by Pandemic.

A new phrase arrived like **Lockdown an Intimate Terrorism**. It is perpetrated all over the world as a follow up to the lockdown mandate. The women and children have no other way but to bear with the situation. From Bazile to Germany, from Italy to China it has been spread like fire. The whole world is now flowing with the pandemic of COVID 19 and the Shadow pandemic of Domestic Violence. In Spain, the emergency number of domestic violence received 18% more calls in the first two weeks of the lockdown phase. Such is the case with other European countries also.

Apart from its Patriarchal background, the reason for this upsurge in India happens firstly with sharing of small space. Now a days we believe in Personal space, personal identity, under this ambiance all the members in the same periphery makes it very much difficult to bear with. With the space problem there is also an issue of insecurity like loss of job, reduced income, limited resources all these factors make the problem doubly compound. To release the frustration usually we try it with the soft targets because it is easy to hit them. Last but not the least in addition to adult victims of family violence children and pet are also there.

In addition to physical violence, common tools of abusive relationship include isolation from friends, family and employment constant surveillance, strict detailed rules of behaviour etc.

Even though statistics shows that COVID-19 affects men more than women. Yet through increased abuse in the short run and systematic economic discrimination in the long run, women will bear a higher cost on their health as well as in their economic independence.

According to the Medical news today there are currently no official figures in medicating the effect of Covid-19 and Domestic Violence. But still it has been found that before the Pandemic, survivors were often able to escape violent situations by going to a shelter which is now absolutely impossible. So, they have to stay at home, do all the household duties and besides they are subjugated to mental anguish and heightened coercion and control tactics all of which effect their health and mental peace also. One important point to note here is that according to Vegans in the journal of Medical News today that stress, job loss and other Covid-19 pressure do not cause abuse.

Domestic violence is a pattern of power and control not just an individual act of physical violence. Experts suggest, "Violence gets amplified in relationships where there is a clear power dynamic. Unequal relationship exists whenever patriarchy and hierarchy kick in" says Ranjana Kumari, director for the centre of Social Research. In the current environment, the collateral damage of the epidemic seems higher than the damage caused by the epidemic itself. In developing country like India, which is characterized by patriarchal society, the pandemic has clearly worsened the already existing inequality amidst the lockdown. In case of India, at the time of COVID-19 when women were already shouldering higher proportions of the domestic burden during lockdown but are also facing domestic violence at the backdoor. It is a very burning issue here that since mid-March the U.S National Domestic Violence Hotline has received over 2,000 calls from Individuals citing the Corona Virus lockdown as a factor in their abuse "Because of the lockdown women are not able to reach out to the police at the same time they do not even want to go down to the police station because they are afraid that once their husband comes out of the police station he will again torture her and she cannot even move out due to COVID-19 lockdown. A detailed study by Ms. Radha Iyengar at Harvard University reveals that punitive action in case of domestic violence have worsened the situation and actually increased partner homicide.

Women fail to take into use the existing laws such as Domestic violence act of 2005 or Criminal Amendment Act 2013 to report the cases of abuse because of the fear of being stigmatized, and now in this pandemic environment the collateral damage of the epidemic seems higher than the damage caused by the epidemic itself. Everyone is at home due to the lockdown and women are scared to reach out for her.

Thus, given the situation if we analyse further the vicious circle of domestic violence once the tension will get high. The fact is that Violence against women is a violation of basic human right. It is shameful for the states that fail to prevent it and in fact perpetuate it. It must be eliminated through political movement and by legal and civil action in all sectors of society.

Moreover, With the lockdown while most urban professionals are working from home perhaps with reduced work expectation, women's labour has increased as they are expected to do the double role all the times.

To make matters worse, the lockdown also cuts down the most of the formal and informal support system for women. In developing countries women often have one smartphone owned by the husband. In fact, according to the report of UNO every 29 women out of 100 have access to Internet in India. The situation become much more worse when there are constant patrolling of their private talk or in private matter. Besides, the COVID-19 also curtails many women's jobs because they may regard as secondary bread winner of the family. In Developing economies like India, informal works makes up to 70 percent of women's employment and the informal jobs are the first to disappear in times of economic uncertainty. In fact, new research shows that the sectors that have been most affected by the COVID-19 crisis so far are those with high levels of women workers. Employment is not simply a marker of money but also crucial to their mental health.

# 5. COVID-19, however, is not the first pandemic which brought women's vulnerable condition to the fore

In the famous journal the **Lancet**, it has been written that unfortunately, we are not aware of any gender analysis as the outbreak by global health crisis but to recognize that the disease outbreaks affect men and women differently is a fundamental step to understanding the primary and secondary effects of health emergency on different individuals and communities, and for creating effective equitable policies and interventions.

During the Zika virus outbreak, there was a difference in power between men and women. The women did not have any autonomy over their sexual and reproductive lives which was compounded by their inadequate access to health care. Besides the burden of insufficient financial resources inhibit them to travel to hospitals for check-ups, and also for their children, despite doing most of the community vector control activities.

In this context we can mention one of the opinion piece which was co-signed by *Martin Chungong* chair of the IGC global board and Secretary General of the Inter parliamentary Union, and the International Gender champions in his opinion in times of crisis gender equality is a goal that is often temporarily put on hold. Gendered Dimensions tend to be regarded as secondary but this is not correct. The Ebola outbreak in 2014, Zika in 2015-16, SARS, Swine flu, and bird flu all had deep and long-lasting negative effects on Gender equality. Most of the Experts in this context are of opinion that COVID -19 pandemic must be gender sensitive and responsive We must not overlook the women and children as the fragile groups, whose needs can be overlooked. WHO is committed to using a gender lens to continuously evaluate and improve their response efforts.

# 6. The Issue of Gender and Long-term strategy regarding Health System and Domestic Violence.

Though Gender is not an important concern especially in developing country like India but there is an urgent need to strengthen the health system of women. There have been a few impact studies based on gender but these have not translated into policy measure. But unless we learn how to deal with this crisis, we cannot frame policies that will benefit women.

Taking into mind all these sufferings the WHO Executive Board made the decision to include women in decision making so that the Nation can have adequate women's voice in framing the National Gender policy.

So, there are a few steps suggested here to bridge the gap and these are firstly it must ensure women's participation in shaping policies and interventions. In case of Indian Women, it is mostly needed that they have to improve their immune system so that they can fight with any type of virus particularly with this COVID-19 and if they can make a sound health it is obvious, they can face any sort of calamity be it external or internal. But it is quite shocking to find that the gender impact is considerably neglected especially in India. In India and undoubtedly in many parts of the world women are generally at the front row like almost all nurses are women. They deal with COVID19

affected people but little thought has been given for them how to build their immunity, how to protect them but they are the first line of defence against the virus.

In this context we can take an example of Kerala's Health Minister K.K. Shailaja when she got, the news of the outbreak of coronavirus in Wuhan, CHINA. Since there were students from Kerala there, she immediately took the action for their return and testing. This saved the life of many a person from the Corona virus in time but Kerala is an exception.

Thirdly, from now we must speak Publicly about the need to make home safe for all and highlight support services available to victims of domestic violence. Media also have the responsibility to ensure the voice of the women. Quarantine measures taken around the world will increase the stress and financial difficulties.

It is time to consider women as a specific target group for awareness campaigns. Time to give them place for give their voice, make them an active agent in the Decision-making process and in this way, India will be gender sensitive.

These steps will have long lasting Implication's in framing the Gendered responsive policies. In fact, COVID-19 is also a chance to challenge harmful gender roles and response and it highlight the importance of keeping gender equality on the agenda of our own workplace.

These are some initial thoughts to safeguard the soft targets of our society.

We must convince the victim that she is not at all responsible for this violent situation. It is our Patriarchal system which is playing the most important role here. hidden truth is that the COVID19 has a tremendous gendered impact in Indian society. Because in this society the prevailing notion is that man is supposed to be the main bread earner of the family. This notion decreases the rate of participation of women in the workforce and confine them in the domestic sphere. And the man on the other hand, start thinking that they are playing a far more pivotal role by earning money and they eventually end by demeaning the household work. This is in short, the bases of patriarchy in Indian society which multiplies in the lockdown period with the sentiments of insecurity aggression etc. We have to break this glass house with a strong fight.

# 7. Laws Relating to Domestic Violence In India

There are also some laws which deal with the issue of Domestic Violence in India and these are firstly The Protection of women from Domestic violence act of 2005 which aim to eliminate the deep-rooted social evils of domestic violence from Indian society. Under this law it is not necessary that only the wife shall be protected but it also includes the couple who are living in relationship or even a brother and sister living as a family.

The *Second law* is section 498A which was introduced in 1983. It discusses cruelty by husband. It includes both the physical cruelty and mental cruelty also. The provision, further expressly talks about

suicide or even injury. Creating a situation driving the woman to commit suicide is also one of the ingredients of cruelty. This has had an impact on the suicide that used to take place further this law reduces the case of dowry.

In short these are the legal protective shields for the women in Indian society.

## 8. Conclusion Post-Covid Society

In this article the phenomena of COVID-19, the Lockdown all these are described and lastly it focus on the topic that how COVID-19 had put shackles in Indian women eventually which led to Domestic Violence.

Eventually, the lockdown will end and as per the forecast of World Economic forum a mental health crisis will just begin. In fact, as per the statistics cases of mental illness have increased by 20% in India since the country went into lockdown. Moreover, the forecast goes on like this a new epidemic is emerging. According to the survey conducted by Indian Psychiatry society within a week of the start of lockdown the number of reported cases of mental illness in India rise by 20%. In the weeks and month ahead, India will suffer from a massive mental and health crisis due to unemployment. Economic hardship, economic hardship and domestic violence. While this will affect most of the population it will disproportionately affect the poor, most vulnerable and marginalized group. But problem cannot be the end. Some positive suggestions must be there in a society like India, where this vice is deeply embedded, awareness to prevent it must be developed from the grass root. Sensitization campaigns must be made. Platforms must be there where women can share their problems, their opinions and suggestions for a way out.

In fact, the COVID 19 has some silver lining. If we can conqueror the virus, it teaches us to make a new look towards the family, towards our health system, change in attitude towards service towards education etc. So, we to adopt ourselves with the New me.

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#### The Science and Politics of Covid-19 Vaccine

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Abstract: The story of vaccines began with the long history of infectious diseases in human and the early use of smallpox material to provide immunity to it. Now they are our best hope of ending the Covid-19 pandemic and returning the world to normalcy; to open up economies and send the children back to school. With co-operation between international organizations like World Health Organisation (WHO), Coalition for Epidemic Preparedness Innovations (CEPI), etc., researchers around the world worked aggressively around the clock to develop a vaccine against SARS COV 2. By this fast-trackproduction, the time of vaccine development was reduced from 10 or15 years to nearly 1.5 years. Various platforms like RNA, DNA, non-replicating viral vector and inactive vaccines were looked at for the development of the Covid-19 vaccine. Lead developers are distributed across 19 countries, those in the forefront being UK and US along with China, Russia, Sweden, Germany and India. Emergency used authorization or accelerated approval was granted by National Regulators of each country, in India, it was granted to Covishield and Covaxin. With the availability of the vaccine the next aspect that had to be dealt with was public hesitancy. Peoples' confidence, conveniency and complacency had to be established in the vaccine. The most trusted source of information was provided by the international bodies (eg,WHO), by the national health authorities followed by the health care providers, structural awareness campaigns and through transparent information about the safety and efficacy to develop the vaccine acceptability. With the development of public trust, the next tremendous challenge is making enough of them for the world's population. Multilateral initiatives such as COVAX, the strong international coordination and cooperation between vaccine developers, regulators, policy makers, funders, public health bodies and Government is required to ensure production in sufficient quantities and equitable distribution to all affected areas, particularly low resource regions. Lastly the ethical values need to be reconsidered, since the wealthy countries including Australia, Canada, US struck deals with manufacturers to provide their countries with doses more than enough for their population. The bidding wars over vaccines lead to inequitable distribution and ultimately fail to eliminate the risk of new outbreak. The pandemic is far from being completely tackled and all these need to be considered for a better future.

Key Words: Covishield, Covaxin, CoWIN, Variants of Concern, vaccine policy

#### 1. Introduction

The Corona virus (SARS-CoV-2) disease 2019 first identified in Wuhan China in December 2019 spread quickly to become a global pandemic affecting 406 million as on 31<sup>st</sup> Jan 2022, with more than 57lakh death worldwide. The origin of Corona Virus can be traced back to SARS-CoV which caused severe acute respiratory syndrome (SARS) first reported from Guangdong Province in China in November 2002 (Zhao et al 2020). India is among the 3 countries that have crossed the 5lakh death after US (9.1lakh) and Brazil (6.6lakh) though WHO's estimate of Covid-related deaths for India is nearly 10 times higher than official records. Covid 19 has been assigned to severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) and the illness has caused a spectrum of clinical manifestations ranging from asymptomatic, minor flu like symptoms to acute respiratory distress syndrome (ARDS)

pneumonia, multiple organ failure and eventually death in a short period of time. Risk factors that contribute to severity include age (65 and above) and general health status including those with hypertension, cardiovascular disease, diabetes, and a weakened immune system.

Besides the initial symptoms, long Covid, a term devised by patients to describe the lingering symptoms they experience well after an initial bout of COVID-19. The symptoms vary widely, but some of the most common are fatigue, shortness of breath, cognitive dysfunction (also called brain fog) and post-exertional malaise, in which even minor physical activity leads to lasting exhaustion. Between one-fifth and one-third of those with long COVID remain ill at least 12 weeks after a diagnosis of COVID-19, and a significant number continue to experience symptoms many months later. It has been reported in children and teenagers too (Nature 2022).

Genome sequence analysis of SARS-CoV-2 showed 90% similarity between bat SL-CoVZXC21 and bat SL-CoVZC45 suggesting it to be the most likely link between SARS-CoV-2 and human (Lu et al. 2020). Person to person transmission occurred even before any symptoms developed. The infectiousness level of SARS-CoV-2 is much higher than other corona viruses probably due to rapid viral shedding which begins 2 to 3 days before appearance of symptoms, incubation time and binding strength to its receptor Angiotensin converting enzyme 2 (ACE2). The viral load decreases significantly after 8 days of developing the onset of symptoms. (He et al. 2020). Since individuals who are asymptomatic spread the virus and caused the pandemic within weeks, thus prevention precautions such as quarantine and isolation are difficult to achieve. This evidence leads to the belief that a vaccine is an extremely important goal to prevent future spread of this disease. To develop a safe and effective vaccine it is critical that pre-clinical and clinical trials are done with vigilance to avoid severe adverse effects. Co-operation between international organisations such as WHO, CEPI, GAVI, the vaccine Alliance and Bill and Melinda Gates Foundation (BMGF) among others is essential to ensure adequate funding for vaccines and a collaborative response to the pandemic. Vaccine development has typically taken up to 10 to 15 years but with fast tracking it got reduced to 1-1.5 years thus potentially raising concerns over public acceptance as well as concerns regarding anti-vaxxers. (Sharma et al., 2020).

So far, India has reported 42.4 million covid cases and more than 0.5 million deaths. India started vaccination on 16<sup>th</sup> January 2021, at the end of 278 days it had administered more than a billion jabs. From a sluggish start India massively ramped up the vaccination drive with more than 61000 public and private health facilities offering the jab. (BBC, April 2021) As of 3<sup>rd</sup> February 2022, India has administered over 1.68 billion doses overall including 1<sup>st</sup> and 2<sup>nd</sup> doses. Logistical problems and supply bottle necks, vaccine hesitancy and a debilitating 2<sup>nd</sup> wave of Covid 19 had made roll out harder. The country is also delivering vaccines by drone to far flung villages in North-East and to the eastern archipelago of Andamans and Nicobar.

This review summarises the covid 19 vaccination development, outlines the efficacy of each vaccine, their potential limitations and coverage. The ethical concerns surrounding vaccines development and the challenges associated with the vaccine production and distribution and hesitancy.

# 2. How was it possible to develop and approve COVID-19 vaccines so rapidly?

Several factors contributed to the speed with which successful COVID-19 vaccine candidates were able to be developed and tested. These include:

- SARS-CoV-2 is genetically close to various other coronaviruses that have been the subject of previous investigation in the past decade, so vaccine R&D did not start from a zero base, even for the newer technological platforms (e.g., mRNA and non-replicating viral vectors).
- Development was facilitated by extensive knowledge gained with previous vaccines, coupled with unprecedented levels of engagement and collaboration among researchers internationally.
- A large number of vaccine candidates have been and are continuing to be developed and tested in parallel, using a variety of different platforms, increasing the chances that one or more would prove successful.
- Some vaccine candidates (and two of the products already authorised) rely on a novel messenger ribonucleic acid (mRNA) platform, which allows them to be developed, modified, and manufactured more rapidly than vaccines using traditional platforms.
- Governments invested heavily both in R&D and in manufacturing capacity, the latter to enable the production of large quantities of vaccine before the results of the phase III trials were available, and in many cases potentially absorbing the full financial risks of R&D failure.
- The scale and severity of COVID-19 underscored the urgency of vaccine
- development. This drove intensive investment and faster development processes, via for example running trials in parallel that in other circumstances would be conducted sequentially and by combining trial phases I and II, to assess safety and immune responses.
- The combination of the high prevalence of COVID-19 in many locations and rapid clinical trial recruitment accelerated the demonstration of efficacy in preventing symptomatic infection.

Besides the use of emergency procedures, other factors that helped to accelerate the process of approval included:

- National regulatory agencies engaging with COVID-19 vaccine developers, and supporting the research and development effort indirectly, in some cases by providing early scientific advice on the most appropriate study designs for generating robust data.
- Regulatory review being expedited via a process known as "rolling review", whereby developers submit tranches of data incrementally as they become available rather than waiting to assemble a complete dossier before submission.

## 3. Vaccine development

The 1<sup>st</sup> phase of vaccine development is an explanatory stage involving basic laboratory bench research and computational modelling to identify natural or synthetic antigens that can be used

as a vaccine candidate, which might help to prevent or treat a disease. The 2<sup>nd</sup> phase comprises pre-clinical studies which involve cell culture or tissue culture systems and trials on an animal model to assess the safety of the candidate vaccines and its immunogenicity.

Once safety, immunogenicity and efficacy are demonstrated on animals, progress is made to human clinical trials which test for safety and immunogenicity in small groups than larger groups over 3 phases.

Phase I Safety: this is the first stage where the vaccine is administered to humans, a small number of healthy and immunocompetent individuals are selected to primarily test for safety, appropriate dose and to check for secondary effects.

Phase II Expanded safety: vaccine is given to hundreds of people split into different groups by demographics and again tested primarily for safety, appropriate dosage and interval between doses and check for secondary effect.

Phase III Efficacy: large scale trial given to thousands of people to evaluate efficacy.

Once the human clinical trials are completed and the safety and clinical efficacy has been determined then the vaccine will move for Review and Approval. (Sharma, 2021) (Fig 1)

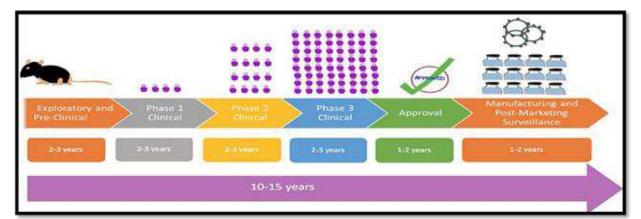


Fig 1. Flow chart showing traditional process of vaccine development. (Sharma, 2021)

Review and Approval: Regulatory bodies like Food and Drug Administration (FDA) of the USA or European Medicine Agency in European Union (EU) must review the results from clinical trial and decide if the vaccine is fit to be approved. It may take 1 to 2 years, but vaccines may be approved for emergency use in a pandemic. India's two vaccines, Covishield (the Oxford Astra Zeneca vaccine) and Covaxin (developed by Bharat Biotech in collaboration with the Indian Council of Medical Research (ICMR) and National Institute of Virology (NIV) were under emergency used authorization, and they were given approval based on limited data from ongoing clinical trials, and the manufacturers had to submit safety and adverse events data to the regulator every 15 days. On 28th Jan 2022 the drug regulatory body, DCGI granted regular

marketing authorization to the two drugs for use in adults with certain conditions, but all vaccinations were to be recorded on the CoWIN platform.

Manufacturing and post-marketing surveillance. This is done after the vaccine is marketed for public use and monitored for general effectiveness within the population.

Since the clinical trials of the vaccines were produced by different companies at different locations on different populations, they cannot be compared directly for the relative efficacies due to variation in ethnicities as well as variants of the virus. Experts are of the opinion in this case a vaccine efficacy of 67% is enough to slow down the spread of the pandemic. On the other hand, vaccine efficacy is a poor indicator of transmissibility as asymptomatic people can be highly infectious. (Sharma, 2021)

## 4. Various platforms for Covid -19 vaccine development

Due to sharing of the SARS CoV2 genetic sequence data on January 10, 2020, by GISAID, leading global pharmaceutical companies, in turn, vocalized their commitment to produce vaccines for Covid-19 by Mar 19, 2020. After almost one year of that, somewhere in February 2021, 66 pharmaceutical companies were found undertaking clinical research. Their valuable efforts brought them to different phases of the trials. Many Covid - 19 vaccines under the Phase III trials have claimed to demonstrate their efficacy up to 95% against the infection due to Covid - 19. However, some challenges are encountered by these candidate vaccines due to B.1.351(501Y.V20) (South Africa) and B.1.1.7 (United Kingdom) variants of Covid - 19 virus.

The focus of these vaccines is the primary antigen of Covid - 19 that is the spike protein and its variants (Dai and Gao, 2021). Recently a few vaccines producing organizations, aggressively focusing on the mRNA (nucleoside-modified) & DNA technologies, viral vectors (non-replicating), proteomics (peptides and recombinant proteins), live attenuated viruses and inactivated viruses (Sharma, 2021).

Among all the vaccines candidates, 11 got approved by at least one national regulatory authority and got ready to use by January 2021 in accordance with all the safety and efficacy criteria propounded by WHO and other authorities. These included two RNA vaccines (the Pfizer – BioNTech and the Moderna), four Inactivated Conventional vaccines (the BIBP – CorV, Covaxin, CoronaVac, & CoviVac), four Viral Vector vaccines (the Sputnik Vaccine, the Oxford – AstraZeneca vaccine, the Convidicea &the Johnson & Johnson vaccine), and Peptidevaccine-1 (the Epi Vac Corona). Based on priorities for the high-risk groups of infection and transmission, elderliness, healthcare workers, taskforce, distribution phase plans were devised and adopted by many countries to implement the vaccination program in parts.

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Platform	Candidates in clinical trials and phase <sup>a</sup>	Type of candidate vaccine	Target antigen	Single/ multiple dose	Speed <sup>b</sup>	Immune response	Advantages	Disadvantages
DNA	Inovio Pharmaceuticals - phase 1/2	DNA plasmid vaccine with electroporation	Spike protein	Multiple	Fast	Both humoral and cellular	-Electroporation generates a robust immune response -Made using genetic sequence and does not need to be cultured	-Although deemed to be safe, electroporation can be complicated and potentially problematic, -No DNA based vaccine has been previously produced
RNA	Moderna/NIAID - phase 3	Lipid nanoparticle [LNP]- encapsulated mRNA	Spike protein	Multiple	Fast	Both humoral and cellular	-Made using genetic sequence and does not need to be cultured	-LNP is temperature sensitive -Ability to manufacture large scale unknown -No RNA based vaccine has been produced before
	BioNTech/Fosun Pharma/Pfizer - phase 3	3 LNP-mRNAs	Spike protein					
Non-replicating viral vector	AstraZeneca/ University of Oxford - phase 3	AZD1222	Spike protein	Single	Medium	Both humoral and cellular	-Can be manufactured large scale -Safe and effective immunologically as shown with Ebola	-Pre-existing immunity could hamper clinical use and reduce immune response
	CanSino Biological Inc./Beijing Institute of Biotechnology - phase 2	Adenovirus type 5 vector	Spike protein					
Inactivated	Wuhan Institute of Biological Products/Sinopharm - phase 3	Inactivated	Whole virus	Multiple	Medium	Mostly humoral	-Pathogen is killed and hence, no risk of reversion	-Risk of vaccine-enhanced disease -Usually produce a week immune response
	Beijing Institute of Biological Products/Sinopharm - phase 3		Whole virus					
	Sinovac - phase 3	Inactivated + aluminum adjuvant	Whole virus			Mostly humoral - aluminum adjuvant enhances response more robust		

#### Table 1: Various platforms for Covid 19 vaccine development (Sharma et al., 2020).

<sup>8</sup>Phase for vaccine development is as of August 20th, 2020. <sup>8</sup>Speed refers to how quickly a vaccine candidate is able to progress through different stages of vaccine development considering the nature of the platform being utilized. Adapted from the WHO COVID-19 Vaccine R&D Landscape (28) and others (29–31). Candidates listed in red are part of Operation Warp Speed to accelerate vaccine development and production.

A total of 11 billion Covid 19 vaccines doses were produced and delivered to countries globally in 2021, which is twice the volume of the total global vaccine market in the pre-Covid year 2019 for routine immunisation. Sinovac and Sinopharm, the two inactivated Chinese vaccines, corner the largest volume (2.3 and 2.1billion doses) and India's Serum Institute of India stood at 1.5 billion doses according to UNICEF's year review.

Inactivated Virus Vaccines: Certain virus particles grown in culture media are killed through either heat or radiation or chemicals or formaldehyde and used in these vaccines. Hence, these inactivated virus fragments can't manifest as the disease but stimulate or trigger a systemic immune response (Barbara et al. 2014). Covaxin, India's indigenous Covid - 19 vaccine by Bharat Biotech, is developed in collaboration with the Indian Council of Medical Research (ICMR) - National Institute of Virology (NIV). The vaccine is developed using Whole Virion Inactivated Vero Cell derived platform technology. Inactivated vaccines do not replicate and are therefore unlikely to revert and cause pathological effects (Bharat Biotech, 2021). Numerous vaccines for diseases such as Seasonal Influenza, Polio, Pertussis, Rabies, and Japanese Encephalitis use the same technology to develop inactivated vaccines with a safe

track record of > 300 million doses of supplies to date. It is a well-established and time-tested platform in the world of vaccine technology, though a weakened protection may result due to structural deformity in the immunological epitopes caused during inactivation (Chanda 2022).

Live-attenuated Vaccines: produced by developing genetically weakened versions of the wild type virus. These weakened viruses replicate in the recipient to generate an immune response but do not cause disease. The virus is genetically modified or grown in an adverse condition so that the virulence is lose but creates a strong and lasting immune response. They hopefully stimulate both humoral and cellular immunity. This is used for Rota Virus vaccine, MMR vaccine, chicken pox vaccine, BCG vaccine against TB. But this may not be suitable for people whose immune system doesn't work, as the weakened virus might cause disease in them.

Recombinant protein vaccines: Like CORBEVAXTM, it's a proven well-established platform. These are composed of viral proteins that have been expressed in one of various systems include insects, mammalian cells, yeast cells and plants. Recombinant Covid 19 vaccines in development include recombinant spike protein vaccines, recombinant receptor binding domain (RBD) vaccines and virus like particle vaccine.

Adenovirus Vector Vaccines: These viral vector vaccines (non-replicating) use an adenovirus shell containing DNA as a vector that encodes for a spike protein of the Covid - 19 virus. These vectors in the vaccines, however, remain non-replicating, it means that they do not give rise to new viruses, but indeed only manufacture the antigen protein that provokes an immune response as the virus does. The Oxford- Astra Zeneca COVID -19 vaccine, codenamed AZD - 1222 (sold under the brand names Covishield and Vaxzevria among others) vaccine also makes use of a viral vector made using a weakened strain of the common cold virus (adenovirus), which contains genetic material similar to that of SARS CoV 2. Upon administration, the body's defences recognize the spike protein and prepare antibodies to evade out the infection.

DNA based vaccines: It consists of plasmid DNA that contain mammalian expression promoters and the target gene, so that the target protein is expressed in the vaccine recipient. Large quantities of stable plasmid can be generated in Escherichia coli which is a major production advantage. But DNA vaccines are often of low immunogenicity and needs special delivery devices like electroporators and it must reach the nucleus to be transcribed into a mRNA to generate proteins to stimulate an immune response. DNA vaccine in combination with other vaccine as prime or booster dose increases the magnitude of humoral and cell mediated immune response (Chanda 2022).

RNA based Vaccines: The technology used by the first vaccine for SARS COV 2 produced by Moderna, an American Company based in Cambridge Massachusetts. On introduction to a tissue, RNA in the vaccines act as a messenger RNA (mRNA) upon ribosomes of the cells to translate the proteins in sequence (forensic) which, in turn initiates adaptive immune response mechanism that induces a cognition to the body for identifying and destroying the incidental foreign bodies like pathogen or virus or cancer cells. However, nonetheless, in these messenger RNA, the nucleotides are highly prone to modify to achieve the target proteins production. The

delivery of the mRNA to the tissues is done through a coformulation of the molecules into nano particles made up of lipid that safeguard the mRNA in the vaccine while getting absorbed into the cells thus, the desirable immunological properties with an outstanding safety profile is achieved with the unmet flexibility of such genetic vaccines (Reichmuth et al. 2016). Moreover, the mRNA vaccines are capable of inducing a balanced immune response comprising both cellular and humoral immunity while not subject to MHC haplotype restriction according to in situ protein expression. Further, the foreign mRNA in vaccines seems to be an intrinsically safe vector as it carries a minimal and only transient genetic information that may not interact with the genome. Because any protein may be expressed from mRNA without the need to adjust the natural production process, mRNA vaccines also may offer a maximum flexibility with respect to development. Its low production cost is another advantage also.

On January 28th 2021, the Indian drug regulatory authority, Central Drugs Standard Control Organisations approved two clinical trials to access intranasal vaccine against covid 19, BBV 154 which scientists say is among the first to have shown promise that it might block both infection and transmission. The vaccine produced by India's Bharat Biotech was developed by scientists at Washington University School of medicine, St Louis. The vaccine was developed by inserting a key protein which SARS CoV-2 uses to enter human cells- inside an adenovirus that causes common cold, after tweaking the virus to render it unable to cause illness. It has been observed in animal studies to induce immunity that protects both the upper and lower respiratory tracts from SARS-CoV-2. Intranasal vaccines are easier to administer in mass immunisation campaigns (Hassan et al 2020).

## 5. Challenges due to newly emergent variant

Several SARS-CoV-2 variants that are concerning for their potential for immune escape have been identified worldwide (Table 2). SARS-CoV-2 variant that meets the definition of a Variants of concern, identified to cause significant community transmission or multiple COVID-19 clusters, in multiple countries with increasing relative prevalence alongside increasing number of cases over time, or other apparent epidemiological impacts to suggest an emerging risk to global public health. Through a comparative assessment, it has been demonstrated to be associated with one or more of the following changes at a degree of global public health significance:

- $\circ$  Increase in transmissibility or detrimental change in COVID-19 epidemiology, OR
- Increase in virulence or change in clinical disease presentation, OR
- Decrease in effectiveness of public health and social measures or available diagnostics, vaccines, therapeutics.

WHO label	Pango lineage	GISAID clade	Next strain clade	Additional amino acid changes monitored	Earliest documented samples	Date of designation
Alpha	B.1.1.7	GRY	20I (V1)	+S:484K +S:452R	United	18-Dec-2020
					Kingdom,	
					Sep-2020	

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Beta	B.1.351	GH/501Y.V2	20H (V2)	+S:L18F	South Africa, May-2020	18-Dec-2020
Gamma	P.1	GR/501Y.V3	20J (V3)	+S:681H	Brazil, Nov-2020	11-Jan-2021
Delta	B.1.617.2	G/478K.V1	21A, 21I, 21J	+S:417N +S:484K	India, Oct-2020	VOI: 4-Apr- 2021 VOC: 11May- 2021
Omicron	B.1.1.529	GRA	21K, 21L 21M	+S:R346K	First reported from Botswana, Multiple countries, Nov-2021	VUM: 24-Nov- 2021 VOC: 26-Nov- 2021

Table 2: Different variants of Covid 19. (WHO webpage)

# **5.1 COVID-19 vaccine's effectiveness against Delta variant They are as follows:**

- Two doses of the Pfizer-BioNTech vaccine were 88% effective 2 weeks after the second dose.
- $\circ$  Two doses of the AstraZeneca vaccine available in the UK were 60% effective.
- Both vaccines are only 33% effective 3 weeks after the first dose.
- India is using the Serum Institute of India's Covishield, (with a 12 16-week gap between two doses) Bharat Biotech's Covaxin (two doses 4-6 weeks apart) and Russian Sputnik V vaccine (single dose) for its inoculation drive.
- For the first time, researchers have shown that such 'mix and match' regimens are highly effective at preventing COVID-19 roughly matching or even exceeding the performance of mRNA vaccines.(Callaway 2021)

The Omicron variant already detected in more than 15 countries, has more than 32 mutations in spike, it is using almost a different spike to engage ACE2 in the membrane of human cell. Beta had 3 mutations in the receptor-binding protein (RBD), delta variant had 2 while omicron has 15. Studies suggest Omicron has a replication advantage over the Delta variant and evades infection- and vaccine-induced humoral immunity to a greater extent than prior variants. Omicron appears to be associated with less severe disease than other variants, but this estimate is more uncertain. However, unpublished *in vitro* studies that suggest preferential replication of Omicron in nasal epithelial cells and bronchial tissue compared with Delta provide potential support for a transmission advantage for Omicron over Delta. A technical advisory group established by the WHO said on 11<sup>th</sup> January 2022, that current COVID-19 vaccines may need to be updated to ensure they are effective against new variants like Omicron. (WHO 2021)

#### 5.2 Role of booster vaccination

Although COVID-19 vaccines remain effective in preventing severe disease recent data suggest their effectiveness at preventing infection or severe illness wanes over time, especially in

people ages 65 years and older. The recent emergence of the Omicron variant further emphasizes the importance of vaccination, boosters, and prevention efforts needed to protect against COVID-19. Data from clinical trials showed that a booster shot increased the immune response in trial participants who finished a Pfizer-BioNTech or Moderna primary series 6 months earlier or who received a J&J/Janssen single-dose vaccine 2 months earlier. Any FDA-approved or authorized COVID-19 vaccine (Pfizer-BioNTech, Moderna, or Janssen) can be used for booster dose, regardless of vaccine received for primary series.

In India, the booster shot - dubbed a "precaution dose" by Prime Minister Narendra Modi - will be the same vaccine that was given to a person for their first and second doses which will began from January 10,2022, after 9 months from administering the 2<sup>nd</sup> dose. India has been mainly administering two locally manufactured vaccines, Covishield and Covaxin since its vaccination drive began in January 2021.India's Bharat Biotech on January 12th, 2022 communicated that a booster shot of its Covaxin COVID-19 vaccine administered six months after the last of two doses neutralises both the Omicron and Delta variants of the coronavirus. The study was conducted at the Emory Vaccine Centre in Atlanta based on blood serum collected from 13 individuals, 28 days after their booster shot. It was sponsored by Bharat Biotech's partner Ocugen Inc.

Worldwide scientists have agreed that mRNA vaccines followed by a protein-based vaccine are the best boosters available. In UK, the government are offering Pfizer-BioNTech or Moderna vaccine as booster dose after two doses of the Oxford – AstraZeneca vaccine. Rather than focussing on a programme that gives an additional dose of the same vaccine that people have got before, this is the time for India to research and figure out which vaccines would work as the best boosters. mRNA vaccines are still not available in India. But Serum Institute is making a local version of Novavax called Covovax, a protein-based vaccine.

## 6. The ethics of vaccine distribution

With the introduction of seemingly safe and effective vaccines against the novel coronavirus, ethical debate has shifted to the question of what should be a fair and equitable way to distribute a limited supply of vaccines. The ethical framework prioritises frontline and essential workers, people at high risk of severe disease or death, and people at high risk of infection. Following are the main points for consideration.

## 6.1 Vaccine distribution should be global

During the COVID-19 pandemic, only a limited number of countries possess capacity to manufacture vaccines on their own against the virus. Mathematical analysis study for vaccine distribution showed, in the first scenario, a vaccine against the SARS-CoV-2 virus that is 80% effective became available in mid-March 2020 and was distributed to high-income nations first, with the result that 33% of deaths are averted; in the second, it was distributed to all countries proportional to their populations, resulting in 61% of deaths averted. If wealthier nations do

not join forces to help their global neighbours, our future world may resemble the first scenario. A purely pragmatic reason for framing the distribution of vaccines against the SARS-CoV-2 virus at the global level is that governments from around the world, in partnership with philanthropic groups and consortiums, will be needed to bring a vaccine to market. Over the past decade, private companies have gradually retreated from investing in vaccines designed to combat emerging infectious diseases due to poor return on investment, a barrage of lawsuits and government control over pricing. Moreover, the sheer number of doses required to contain the novel coronavirus exceeds the capability of any single manufacturer or nation. Practically speaking, to reach the more than 8 billion people around the globe, we will need to enlist not only national governments, but scaled-up global governance bodies to ensure the necessary organisation, institutions, and tools to make and distribute a future vaccine effectively and efficiently to everyone who needs it. In addition to pragmatic considerations, we should distribute vaccines globally because during global health emergencies, national governments have cross-border responsibilities. Cross-border responsibilities can be defended even on narrowly nationalistic grounds since infectious diseases do not respect borders. Failing to contain the spread of disease anywhere potentially puts people everywhere at risk. For example, if it takes years before low- and middle-income countries (LMICs) gain access to vaccines, the SARS-CoV-2 virus could develop strains that render some vaccines ineffective, prolonging the pandemic. At a minimum, this suggests that prudent governments have self-interested reasons to release vaccines to other countries after vaccinating those within their borders (Jacker et al, 2021).

On 21 September 2020, 64% of the world's population in more than 156 countries (including 64 high-income nations) had joined COVAX, the international partnership that aims to distribute vaccines against the SARS-CoV-2 virus. Yet the Trump administration refused to join. According to a senior US government official, the US government believed it could opt out of global vaccine alliances, such as COVAX, because the US had enough coronavirus vaccine candidates in advanced clinical trials to succeed on its own. Across the globe, wealthy nations have secured more than 2 billion doses of potential future vaccines against the novel coronavirus using advance purchase agreements, which are legally binding contracts in which a government obtains priority access to potential future vaccines (Rauhala and Ysmeen, 2020). USA paid for twice of its population; UK paid for four times while Canada paid for five times of its population.

In the USA, 80% of covid19 related deaths occurred among people aged 65 years and above. During pandemic, deficiencies at elder care facilities were reported across USA and Europe including inadequate deficiency in infection prevention, control and monitoring programmes. The critical point to notice is people at high risk of severe disease or death and those at high risk of infection tend to cluster disproportionately among the most disadvantaged subgroup within a population. One reason is the social determinants of health other include the adverse effects of systemic racism and historic injustices such as colonialism as was seen in the UK against the Black Asian and minority ethnic communities (BAME). The BAME community demonstrated higher rates of infection and more severe complications and death compared to

the general population. Liu et al claims that we ought to prioritise people in low-income countries because they generally lack the capacity to access treatment if they are critically ill.

The 3<sup>rd</sup> ethical value guiding global vaccine distributions is the utilitarian value of saving the most lives. For example, during COVID 19 pandemic ventilators save more lives if distributed to younger healthy people, however, with vaccine the logic of saving the most is turned on its head. A final value guiding distribution is narrow social utility which indicates a person's short-term value to society during a public health crisis or other emergency. One such example is during WWII Penicillin was first given to soldiers who had contacted syphilis and could return to battle over soldiers who sustained war time injuries and could not return to battle. Safeguarding society's essential function requires prioritising people who can perform essential function and they were the people who performs the task of fighting disease and saving lives.

As on Jan 25<sup>th</sup>, 2022, more than 4.77 billion people worldwide have received a dose of a Covid-19 vaccine, equal to about 62.2 percent of the world population. This map shows the stark gap between vaccination programs in different countries (Fig 2).

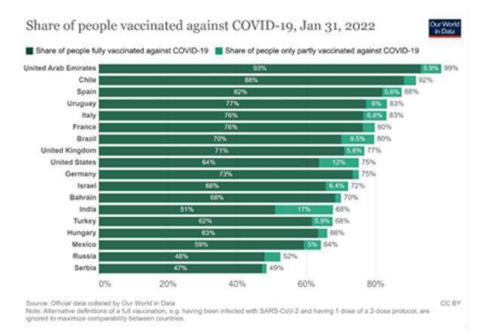


Figure 2: Share of vaccinated people

Vaccination rates continue to lag in low-income countries, where only 10 percent of the population has received at least one dose of a vaccine. In high- and upper-middle-income countries, 78 percent of the population has received at least one dose.

#### 7. Covid 19 vaccine acceptance and hesitancy, enhancing private trust

Vaccine hesitancy has become a major obstacle worldwide and WHO cited it as a top 10 global health threat in 2019. With covid 19 vaccines the accelerated nature of development led to

perceptions that corners are being cut regarding safety assessment and misinformation about SARS-COV-2 infection was responsible for this hesitancy (Julio and Shana 2021). Confidence, complacency, convenience, risk calculations and collective responsibility are the main drives for vaccine hesitancy.

In the first part of 2020, our own doctors were a bit cautious regarding the efficacy of the swiftly developed vaccine, but once they got convinced and were the first to get vaccinated, people started to trust. Doctors and front-line health workers interacted, identified concerns, educated patients on vaccine benefits and risks and dealt with misconceptions. Messages on posters, billboards, digital billboards at important locations highlighting vaccine efficacy and safety delivery were very effective for addressing any remaining hesitancy. The highest positive response came from China, South Korea and Singapore whereas the lowest was from Russia (30.4%). It was shown the acceptance rate was higher in low-middle income countries compared to high income countries (Machingaidze and Wiysonge, 2021). India's vaccine drive is one of the largest and the fastest ever, the main reasons being our proactive government's strong political will shown from top to bottom, high power committees were set up in 2020 to charter road maps for vaccine R&D, manufacturing and phased delivery. India's Universal Immunisation programme is apparently one of world's most extensive public health programme. Consistent investments were made over the year to build a robust health system and deliver health servers to the remotest locations of the country. It is incredible that 150 crores of vaccines were deployed in a record period in India.

To maintain public trust in vaccines it is important that full transparency in all aspects of vaccine development is available. Another concern is that when clinical trials are being done on comparatively small groups of people and fast-tracked from one phase to the next there is a risk of masking side effects that could be detected if tested on a larger population. It is also important to consider the demographic considerations in the design of clinical trials on different races, varying age groups and those with co-morbidities may lead to unforeseen outcomes. Post marketing surveillance is also of great importance as this will provide the necessary vigilance as to the effectiveness of the vaccine and its adverse effects. Even vaccines developed following the traditional timeline can be at risk as noted in Philippines where French Dengue Vaccine Dengvaxia was administered, and it resulted in over 500 deaths particularly in uninfected school going children. (Thomas and Yoon 2019). The situation behind acceptance and hesitancy is made more complex as new SARS COV2 variants emerge, it adds further to the complexity. Researchers and pharmaceutical should be as forthcoming as possible with data, acknowledging the uncertainties that remain. With the availability of smart phones access to internet and social media has increased worldwide, although it is a great tool for selfeducation it is also an alarming source of misinformation and inconsistent complicated scientific information. Here comes the role of Government which should be transparent about the response programs and vaccine availability. Reporting of adverse events after immunisation is a key component of monitoring the implementation of vaccination programs. Misinformation from a Government authority, like 'pandemic will end on May 16th, 2020' was absurd and results in loss of faith in official narratives.

So, the following three findings have been identified:

- Visibility: Strategies to improve vaccination efforts need consistent, clear and transparent messaging that directly addresses confusion and misinformation.
- Relatability: Messengers are most effective when they are seen as part of the community, and the messages must convey the direct benefits of vaccination for individuals and their families. Encouraging people who receive the vaccine to share an update or involving community leaders in public health advocacy can increase the numbers of those willing to be vaccinated.
- Equity: Messaging and implementation strategies must recognize and address social determinants of health, including reducing barriers to access.

As on November 17, 2021, Adar Poonawalla of Serum Institute tweeted, 'the vaccine industry has worked tirelessly to provide enough stocks for the nation. Today there are over 200 million doses available with states. I urge all adults to get vaccinated as soon as possible. Vaccine hesitancy is now the greatest threat in overcoming this pandemic'. But with the rise in omicron there has been a sharp fall in the vaccine hesitancy in our country. The scenario around the world is still interesting, each country trying to overcome this hesitancy in innovative ways. Singapore is now charging unjabbed patients for Covid treatment, on the grounds that they make up a sizeable majority of those who require intensive in-patient care and disproportionately contribute to the strain on our healthcare resources. In November 2021, Austria – which had one of western Europe's lowest Covid vaccination rates – announced a "lockdown for the unvaccinated": a stay-at-home order for those with no proof of immunisation, with fines of Euro 500 for those who defied it. Even that was apparently not enough; it is set to become the first EU country to make the jabs obligatory, as of February 2022. In Germany, the new chancellor, Olaf Scholz, is also pushing to make vaccination mandatory, despite resistance from coalition partners. Italy has opted to make it mandatory for anyone over 50. Greece is pondering a similar move. In France, President Macron has vowed to "piss off" the unvaccinated by making their lives as difficult as possible: by banning them from cafés, restaurants, entertainment venues and long-distance transport. Many nations, from Canada to Ukraine, require all public sector workers to be vaccinated; in the US, all those employed by companies with more than 100 workers must have vaccines or recent tests. New Orleans even offered events in which health providers partnered with bars and restaurants to provide participants with a free drink along with their vaccine. During the panel, both mayors also endorsed programs in which professional sports teams offer special seating and discounted or free tickets to vaccinated individuals, as the Dodgers and the New York Mets and New York Yankees have done.

In my concluding remarks I too state the obvious, we must learn to live cautiously with Covid. As a country I have no doubt that we have done the best in facing the pandemic even compared to the affluent West. Covid has changed, it's like any other disease, doctors and nurses are returning to work in five days after testing positive. We must remember to stay with social distancing and masking up keeping in mind the possibility of further waves. As suggested by Dr Devi Shetty we should not go for mass testing but only when doctors advise, we should remove all lockdowns, school starting from kindergarten to higher education should open soon with all the safety precautions. Hospitals should be encouraged to connect all beds to a central oxygen system, hospitals should equalise graduate and postgraduate seats in clinical areas and should start a nursing and paramedical school considering the great contribution of them during the pandemic. It's also the time to address the livelihoods of millions of people who lost jobs, their life's savings when their business closed. Its time our government presses the play button so that children can laugh and play once again in school and smile comes back on people's face.

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My love for biology was inculcated quite early during my school days which culminated in a doctorate in Plant Biotechnology from the Department of Botany, University of Calcutta. Since 1997, I am teaching at Jogamaya Devi College, Department of Botany and my areas of interest are Genetics and Cell Biology. With the introduction of the post-graduation degree courses of Vidyasagar University (Distance) at JDC since 2008 and University of Calcutta since 2014, I got the bigger opportunity to interact and teach my postgraduate students these niches, hoping to pass on the same love 

# অতিমারী, প্রকৃতির রোষ ও ত্রাণ – মানবিকতার এক খোঁজ

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প্রবন্ধসার (Abstract): করোনাভাইরাস। বিশ্বজোড়া সংক্রমণ। কম-বেশি প্রায় ২১৩টি দেশ কোভিড-১৯'এ আক্রান্ত। মৃত্যুমিছিল। লকডাউন। এই সংক্ষিপ্তসার লেখার সময় পৃথিবীতে কোভিড আক্রান্তের সংখ্যা প্রায় ২৪ কোটি মানুষ। মৃতের সংখ্যা ৫০ লক্ষের কিছু কম। [বিশ্ব স্বাস্থ্য সংস্থা, ১৯.১০.২১] গত চব্বিশ ঘণ্টায় আমাদের দেশে কোভিড আক্রান্তের সংখ্যা ১৭৫৬১ জন (রাজ্যে ৮৩৩ জন); দেশে মৃতের সংখ্যা ১৬০ জন (রাজ্যে ১৪ জন)। [এই সময়, ২২.১০.২১] বিপর্যস্ত স্বাভাবিক জনজীবন। কলকারখানা, অফিস-আদালত, শিক্ষা প্রতিষ্ঠান প্রায় বন্ধ। শিল্পোৎপাদন কমেছে। যানবাহন চলাচলও অত্যন্ত কম। সোশ্যাল ডিসট্যান্সিং বজায় রেখে ভিড় এড়ানো হচ্ছে। মুখে মুখোশ। এক অনিশ্চিত পরিস্থিতি। শারীরিক, সামাজিক, মানসিক, আর্থিক সব দিক থেকে মানুষ বেহাল।

লকডাউন ও পরবর্তী সরকারি সিদ্ধান্ত বিকাশশীল দেশের আর্থ-সামাজিক ব্যবস্থার ওপর গভীর প্রভাব ফেলেছে। অর্থনীতিবিদরা বলছেন, লকডাউনের জন্য পৃথিবীর সর্বত্র আর্থিক ভারসাম্য নষ্ট হয়েছে। যে সব দেশের অর্থনীতি পরিষেবা ও পর্যটন ব্যবসা-নির্ভর, তাদের জিডিপি বৃদ্ধিহার সব চেয়ে বেশি ধাক্কা খাবে। অন্যদিকে, লকডাউনে দূষণ কমেছে। আকাশ সুনীল। বাতাস নির্মল। নদীর জল স্বচ্ছ। বন্যপ্রাণীরা আগে যেখানে যেত না, সেখানে স্বচ্ছন্দে ঘোরাফেরা করেছে।

কোভিড সংক্রমণের মধ্যেই দেখা দিল ভয়ঙ্কর ঘূর্ণিঝড় আমফান। আমফানের তাণ্ডবে সুন্দরবনের এক বিস্তীর্ণ অঞ্চলের মানুষ সম্পূর্ণ ধ্বস্ত। বেঁচে থাকার ন্যূনতম রসদটুকুও তাদের নেই। প্রশাসনিক ত্রাণ প্রথমদিকে অপ্রতুল। আশার কথা, বেশ কিছু মানুষ এদের পাশে দাঁড়ালেন। যাঁর যা সামর্থ্য তা নিয়ে। একদিকে কোভিড-১৯'এর মারণ-সংক্রমণ, অন্যদিকে আমফানের তাণ্ডব – বড় অস্থির এ'সময়ের যাপন-কাহিনির কিছু টুকরো ছবির কোলাজ এই মিতায়তন রচনা।

হঠাৎ মানবসভ্যতায় হাজির হওয়া প্রাণঘাতী এই ভাইরাসের প্রাথমিক আক্রমণ কাটিয়ে ক্রমশ পৃথিবীর নানা দেশসহ ভারতবর্ষও পুরনো চেনা ছন্দে ফিরতে চাইছে। কিন্তু বিশেষজ্ঞরা বলছেন, আগামী বেশ কিছুদিন ভাইরাস ঘটিত এই অসুখটি সঙ্গে নিয়েই আমাদের চলতে হবে। আমাদের যাপন আর আগের মতো হবে না। তাই একে বলা হচ্ছে নিউ নর্মাল। চলছে টিকাকরণ। এই নিউ নর্মাল জীবনযাত্রা কেমন হবে তা নিয়েও কিন্তু চলছে নানান চর্চা, গবেষণা, যেমন - আমাদের অর্থনীতি কেমন চলবে, আমাদের সামাজিক যোগাযোগ, সামাজিক ব্যবহার কেমন হবে, পাশাপাশি আমাদের নিজস্ব জীবনযাপন - ঠিক কী কী করলে, কীভাবে চললে আমরা এই করোনাময় পৃথিবীতে করোনাকে সঙ্গে নিয়ে চলতে পারব, বেঁচে থাকতে পারব।

অতীতেও বহুবার অতিমারী পৃথিবীতে প্রচুর মানুমের প্রাণ নিয়েছে। সে বিবরণ ধরা আছে সাহিত্য-ইতিহাসের পাতায়, চলচ্চিত্রে। মারী নিয়ে ঘর করে তাকে জয়ও করেছে মানুষ। তাই সবার মনে প্রশ্ন আর সব অতিমারীর মতো এই কালবেলা কবে কীভাবে শেষ হবে! প্রশ্নটা সহজ। কিন্তু উত্তরটা?

বীজশব্দঃ কোভিড-১৯, লকডাউন, আমফান, ত্রাণ, জিডিপি, নিউ নর্মাল।

#### ১. মুখপাত

করোনাভাইরাস এর সংক্রমণে প্রায় গোটা পৃথিবী। এখনও চলছে মৃত্যুমিছিল। এই ভাইরাস আরও যাতে ছড়িয়ে না পড়ে তার জন্য বেশির ভাগ দেশ লকডাউনের পথে হেঁটেছে। লকডাউনে হাজারো নিয়মের গেরো। যা ছিল না। নতুন যাপনবিধি। শুরুতে হাঁসফাস। পরে খানিক মেনে নেওয়া। মানিয়ে নেওয়া। কী ভাবে চলবে আগামী দিনগুলো? দুশ্চিন্তা যে যায় না। লকডাউন ও পরবর্তী সরকারি সিদ্ধান্ত বিকাশশীল দেশের আর্থ-সামাজিক ব্যবস্থার ওপর গভীর প্রভাব ফেলেছে। অর্থনীতিবিদরা বলছেন, কোভিড-১৯ লকডাউনের জন্য পৃথিবীর সর্বত্র আর্থিক ভারসাম্য নষ্ট হয়েছে। এর ফলে জিডিপি (Gross Domestic Product) বেশ কমে যাবে। গবেষকরা দেখেছেন যে, মাঝারি মানের কোভিড-১৯ এর প্রভাবে দেশ বিশেষে জিডিপি বৃদ্ধিহার ৩--৬% নেমে আসবে, বিশেষ করে যাদের অর্থনীতি পরিষেবা ও পর্যটন ব্যবসা-নির্ভর।

আর্থিক বিপন্নতার এই প্রভাব দেখা দিচ্ছে পরিবেশ রক্ষার ওপর। *ইওরোপিয়ান ইউনিয়ন* (EU) তাদের সকল রকম জলবায়ু পরিবর্তন সংক্রান্ত কর্মসূচি বন্ধ রেখেছিল বিগত বছরে লকডাউনের সময়। চেকঞ্লোভাকিয়া-র সরকারও *ইওরোপিয়ান ইউনিয়ন* এর সমস্ত রকম জলবায়ু পরিবর্তন সংক্রান্ত কর্মসূচি বন্ধ রাখার আওয়াজ তুলেছিল। ব্রাজিল এর Federal Environmental Agency তাদের পরিবেশ-বিধির বেশ কিছু শিথিল করেছিল। এমনকী তাদের আমাজন বৃষ্টি অরণ্যের সংরক্ষণের বিধিতেও ছাড় দিয়েছিল। আর কোলের ছেলেটাও জানে, এ'সমস্ত কাজ পৃথিবী জুড়ে পরিবেশ ও বন্যপ্রাণী সংরক্ষণের কাজটিকেই আরও সংকটে ফেলে।

অতি আশংকার বিষয়, পৃথিবীর বেশ কিছু বনাঞ্চলে লকডাউনে নির্বিচারে বৃক্ষচ্ছেদন ও বন্যপ্রাণী হত্যা বেড়েছে। ৱাজিল এর আমাজন অরণ্যে বিগত বছরের প্রথম তিন মাসে ২০১৯ সালের প্রথম তিন মাসের তুলনায় প্রায় ৫০% বৃক্ষচ্ছেদন বেশি হয়েছে। United Nations World Tourism Organization জানাচ্ছে যে, লকডাউনের ফলে বিগত বছরে পর্যটন ব্যবসায় ভয়ানক মন্দা গেছে। বহু লক্ষ মানুষ জীবিকা হারিয়েছে। ফলে আফ্রিকার জঙ্গলে চোরা শিকার বেশ বেড়েছে। প্রকৃতি-পর্যটন (ecotourism) থেকে যে রাজস্ব আসত, তা অনেকটাই কমে গেছে এখানে। লকডাউনে ক্যামোডিয়া-র স্থানীয় প্রকৃতি-পর্যটন খুবই মার থেয়েছে। ফলে এখানকার অতি বিপন্ন প্রাণীর তালিকাভুক্ত বৃহৎ সারস পাথির চোরা শিকার বেড়েছে। ভারতের গা-লাগোয়া বাংলাদেশের সুন্দরবনে পর্যটন থেকে বছরে বেশ ভালরকম আয় হয়। বিগত বছরে লকডাউনে এই আয় অত্যন্ত কমে আসায় এখানকার বাঘের চোরা শিকার বেড়েছে। একটি *রয়্যাল* বেঙ্গল টাইগার মারার জন্য চোরাশিকারীরা প্রায় ৯.৬৩ লক্ষ টাকা দর দিচ্ছে। এত দামের কারণ একটাই। খুব সহজেই বাঘের দেহের নানা অঙ্গ বিক্রি হয়ে যায়। লকডাউনে পৃথিবীর বিভিন্ন বন্ডুমি এবং বনভূমি লাগোয়া অঞ্চলে প্রকৃতি-পর্যটন সহ অন্যান্য ব্যবসায় মন্দা দেখা দেওয়ায় রুণ্টি-রুজিতে টান পড়েছে। ফলে চোরা শিকার এবং বনজ সম্পদের চোরা ব্যবসাই সেখানকার মানুষের আয়ের লাভজনক বিকল্প হয়ে উঠেছে। অন্যদিকে, লকডাউনের ফলে পরিবেশের সরাসরি কিছু উন্নতিও খালি চোখেই দেখা গেছে। ভারত, চিন সহ পৃথিবীতে নানান দেশের বাতাসের গুণমান ভাল হয়েছে। লকডাউনে কলকারখানা, যানবাহন, অফিস-আদালত, শিক্ষা প্রতিষ্ঠান দীর্ঘদিন বন্ধ রাখা হয়েছে। বহু মানুষের কাজ গেছে। কপালের ভাঁজ ক্রমশ চওড়া। ত্রাণ বিতর্ক। গণমাধ্যমে buzz word পরিযায়ী শ্রমিক। যেখানে যেটুকু সম্বল ছিল কুড়িয়ে বাড়িয়ে গোটা গেরস্তালি তুলে নিয়ে ঘরে ফেরার পালা। পথে অবর্ণনীয় কষ্ট। অর্ধাহার, বা অনাহার। এমনকী মৃত্যুও। বেশ কিছু জায়গায় জুটেছে রাষ্ট্রীয় উদাসীনতা, লাঞ্ছনা। আবার একই সঙ্গে পাওনা বেশ কিছু মানবিক মুখ। যাঁরা স্বচ্ছাসেবী সংস্থার হয়ে বা একেবারেই নিজেদের অতি সীমিত সামর্থ্য নিয়েও বিপন্ন মানুষের পাশে সাধ্যমতো ছুটে যাচ্ছেন আজও। এরকম অনেকই নাম-জানা সংস্থা বা চেনামুখ আছে। এমনই কিছু মানুষের দেখা মেলে হুগলি জেলার চন্দননগরে সব্রজের অভিযান লকডাউনের শুরু থেকেই আজ অদি ত্রাণশিবির চালাচ্ছে। মানবিক এ'কাজে পাশে পেয়েছে বেশ কিছু মরমি মানুষ ও বিভিন্ন বন্ধু-স্বেচ্ছাসেবী সংস্থাকে। তবে আবারও মনে করিয়ে দেওয়া হচ্ছে যে, একা সবুজের অভিযানই কেবল এ'কাজে সামিল না, অন্যান্য স্বেচ্ছাসেবী সংস্থা বা ব্যক্তিবিশেষও আছেন, যাঁরা নিজেদের সাধ্যমতো চেষ্টা করেছেন মানুষের পাশে দাঁড়াতে।

## ২. যদি বন্ধু হও, যদি বাড়াও হাত

নিজেদের এক চিলতে সবুজ মাঠে **সবুজের অভিযান** ও কয়েকটি স্বেচ্ছাসেবী সংস্থা মিলে ২৮.০৩.২০২০ থেকেই খুলেছে ত্রাণশিবির। করোনা-বিপর্যন্ত বেশ কিছু পড়শি মানুষ গুটিগুটি পায়ে সকাল থেকেই হাজির ত্রাণশিবিরে। এদের দিন চলে কায়িক পরিশ্রমে। দিন-আনা-দিন-খাওয়া এই মানুষেরা হঠাৎ করে কাজ হারিয়েছে। কে নেই সেখানে! মুটে-মজদুর থেকে হকার, নির্মাণ কর্মী থেকে ভ্যান চালক, টোটো-অটো চালক থেকে রিকশা চালক, ভিখারি থেকে ধোপা, নাপিত, বন্ধ স্থানীয় কল-কারখানার শ্রমিক, ভিনরাজ্যের পরিযায়ী শ্রমিক থেকে মৃৎশিল্পী। পুজোআচ্চা প্রায় বন্ধ, তাই বন্ধ মূর্তি বেচাকেনা। টান পড়েছে পেটে। ফলে মৃৎশিল্পীরা ত্রাণের জন্য বেরিয়ে পড়েছে পথে। মৌলবি, পুরোহিতরাও দূরে নেই। হন্যে হয়ে সবাই ঘুরছে সামান্য চাল-আলুর খোঁজে। বিশেষ-চাহিদা-সম্পন্ন শিশু ও বয়স্করাও আজ ত্রাণ শিবিরের দোরগোড়ায়। এই সহ-নাগরিকদের কথা রাষ্ট্র ভাবছে তো! গৃহশিক্ষক, সাংস্কৃতিক কর্মিদেরও ত্রাণের দরকার। ক্যান্সার আক্রান্ড রোগী চিকিৎসা করাবে, না পেটের জ্বালা মেটাবে, সেই চিন্তায় পাগল। সমাজের সমন্ত প্রান্তিক মানুষ বিপন্ন। এরই মধ্যে চন্দননগরের এক অংশে দেখা দেয় সাম্প্রদায়িক সমস্যা। আক্রান্ত হয় কিছু মানুষ। বিপর্যন্ত হয় তাদের ঘর-গেরস্তালি। তারাও আসে ত্রাণ নিতে। স্বাধীনতার পরে খাদ্যের জন্য হাহাকার পশ্চিমবন্ধের মানুষ অনেক দেখেছে ও সহ্য করেছে। কিন্তু আজ পরিস্থিতি অন্য, অনিশ্চয়তায় ভরা।

এরই মধ্যে সবুজের অভিযানের ত্রাণশিবির থেকে বিশেষ চাহিদা সম্পন্ন প্রায় সাড়ে চারশো জন মানুষ ত্রাণ নিয়েছে। এখানে উল্লেখ্য, এই সাড়ে চারশো জন বিশেষ চাহিদা সম্পন্ন মানুষের মধ্যে মাত্র ১২৬ জনের সরকারি প্রতিবন্ধী-শংসাপত্র আছে। এই ১২৬ জন সরকারি ত্রাণ পেয়েছে। কিন্তু বাকিরা? উত্তর মেলেনি। লক্ষণীয়, সমাজের বিভিন্ন পেশার মানুষ ত্রাণের জন্য একই সারিতে দাঁড়িয়েছে। সামাজিক শ্রেণিভেদ আপাতত শিকেয়। এ ঘটনা মনে করাচ্ছে এই রাজ্যে ১৯৫৯ সালে খাদ্য-আন্দোলনের দিনগুলিতে বেঁচে থাকার ন্যূনতম রসদ জোগাড়ের জন্য একযোগে সকলের আকুলিবিকুলি। লকডাউনের প্রথম দফায় সবুজের অভিযান থেকে এরকম পাঁচ হাজারেরও বেশি মানুষ বাঁচার জন্য ত্রাণ পেতে মরিয়া।

প্রথম দফার লকডাউনে ভদ্রেশ্বর পুরসভা ও চন্দননগর পুরনিগম এর বিস্তৃত এলাকা গণ্ডিনিয়ন্ত্রিত (containment zone) ছিল। স্বাভাবিকভাবেই অন্য মানুষ সেখানে যেতে না পারায় গরিব মানুষেরা খুবই অসুবিধায় পড়েছিল। সবুজের অভিযান স্থানীয় প্রশাসনের অনুমতি নিয়ে অসুবিধায় পড়া তালিকাভুক্ত মানুষের কাছে গাড়ি করে ত্রাণ নিয়ে যায়।

এখানেই শেষ না। ইতোমধ্যে সবুজের অভিযানের সদস্যরা পৌঁছে গেছে চন্দননগর সংশোধনাগারে কয়েদিদের সাহায্য করার জন্য। এরাই আবার পৌঁছল মানকুণ্ডু মানসিক হাসপাতালে, যেখানে প্রায় ৫০ জন মানসিক রোগী আছে। কোভিডে বিপন্ন তৃতীয় লিঙ্গের মানুষ; সমাজে যারা হিজড়ে নামে পরিচিত। সবুজের অভিযান থেকে প্রায় চল্লিশ জন হিজড়ে ত্রাণ পেয়ে বলে গেল, তাদের কথা কেউ যে ভাবছে, এটাই অনেক বড় পাওনা। সবুজের অভিযান এর পক্ষ থেকে বিশেষ চাহিদা সম্পন্ন নাগরিক ও শিশুদের বিশেষ বন্দোবস্তের মাধ্যমে ত্রাণ দেবার জন্য কলকাতা হাইকোর্টের মাননীয় প্রধান বিচারপতি, কেন্দ্র ও রাজ্যের সাংবিধানিক প্রধানদের কাছে আবেদন জানানো হয়েছিল। উত্তর আসেনি। ৪১ বছর আগে পরিযায়ী শ্রমিকদের সুরক্ষার জন্য আইন তৈরি হয়। কিন্তু কেন্দ্র-রাজ্য কেউই কথা কি রাখলা! ওরা আজও নিরন্ন মানুযের সারিতে দাঁড়িয়ে।

শেওড়াফুলির গড়বাগানে যৌনপল্লির মেয়েরা লকডাউনে রোজগারহীন। অত্যন্ত অসহায় অবস্থায় তারা রয়েছে। সেই কারণে তাদের হাতে কিছু খাবার তুলে দেওয়ার তাগিদ অনুভব করেছিলেন হিন্দমোটরের গৃহবধূ, চাকুরিজীবী এবং কলেজ ছাত্রীদের একটি সংস্থা *আত্মজা। দুর্বার সমন্বয় কমিটি,* শেওড়াফুলি'র মাধ্যমে এই কাজটি করায় উদ্যোগী হওয়ার পর *আত্মজা*-র পক্ষে শর্বরী হালদার যোগাযোগ করেন সবুজের অভিযানের সঙ্গে। সবুজের অভিযান তখুনি সিদ্ধান্ত নেয় এই উদ্যোগে সামিল হবার। বিগত ৯ জুন, ২০২০ শেওড়াফুলি'তে সর্বতোভাবে সহায়তার হাত বাড়িয়ে দেয় *আত্মজা-*র দিকে।

সবুজের অভিযানের লক্ষ্য ছিল একটাই, অতিমারী বা আমফান - জীবিকা খোয়ানো বিপন্ন অসহায় মুখের পাশে দাঁড়ানো। এখানে উল্লেখ্য, বিগত বছরে প্রথম দফায় অতিমারী-আমফানের জোড়া ফলায় ধ্বস্ত মানুষের ত্রাণ নেবার যে মরিয়া হুড়োহুড়ি দেখা গেছে, এ'বছর দ্বিতীয় দফার লকডাউন বা কঠোর আত্মশাসনের বেলায় সেই ভিড় অনেক সংযত, সেই মরিয়াভাব অনেক কম। কারণ হিসেবে মনে হয়, বিগত বছরে লকডাউনের গুরুতে প্রশাসনিক প্রস্তুতি ততটা ছিল না। পরে রেশনে চাল-গমের পরিমাণ বাড়ে, গণ্ডিনিয়ন্ত্রিত এলাকার সংখ্যা কমে, টিকাকরণ গুরু হয়, মানুষের মনের ভয়ও কাটে, জীবনের স্বাভাবিক ছন্দ ফিরতে থাকে। ত্রাণশিবির খোলা বা ত্রাণ-কর্মসূচির মধ্য দিয়ে একটা বিষয় কিন্তু স্পষ্ট হল যে, কিছু মানুষ এখনও মানুষের কথা ভাবে -- *মানুষ বড় কাঁদছে, তুমি মানুষ হয়ে পাশে দাঁড়াও।* বিপন্ন মানুষের জন্য মানবিক বোধ যতটা জাগল, যারা ভর'অতিমারীর মধ্যে নিজের জীবন বাজি রেখে ঝাঁপাল, তারাও কিন্তু অতি সাধারণ মানুষ। এখানে বলা দরকার যে, অতীতে কলকাতা সহ বঙ্গের মানুষ অনেক মহামারী দেখেছে। মানুষ এটাও দেখেছে যে, তখনকার বিখ্যাত সব ব্যক্তিত্ব যেমন, রবীন্দ্রনাথ ঠাকুর, অবনীন্দ্রনাথ ঠাকুর, বিবেকানন্দ, ভগিনী নিবেদিতা, আচার্য প্রফুল্ল চন্দ্র রায় প্রমুখ প্রত্যেকে মানবিক কারণে আর্ত মানুষের পাশে দাঁড়িয়েছিলেন।

ভারতবর্ষে ১৮৯৮ থেকে ১৯১১ খ্রিষ্টাব্দের মধ্যে প্লেগ ভয়াবহ রূপ নেয়। ১৯১১ সালে কলকাতা-সহ নানা জায়গায় ক্রমাগত ছড়িয়ে পড়ে প্লেগ। দেখা গেল প্লেগ'এ আক্রান্ত হওয়ার কয়েক ঘণ্টার মধ্যেই মানুষ মারা যাচ্ছে। শহর জুড়ে ছড়িয়ে পড়ে আতঙ্ক। সবাইকে কীভাবে চিকিৎসা পরিষেবা দেওয়া যাবে? ভীষণই চিন্তিত রবীন্দ্রনাথ। জোড়াসাঁকোর সদস্যদের জন্য তো বটেই, প্লেগ আক্রান্ত অন্য মানুষগুলোর জন্যও। বাড়িতে দুজন মেথরও প্লেগ-আক্রান্ত। রবীন্দ্রনাথ শুরু করে দিলেন প্লেগের হাসপাতাল তৈরির কাজ। রবীন্দ্রনাথ, অবনীন্দ্রনাথের সঙ্গে এই মহতী কাজে যোগ দিলেন ভগিনী নিবেদিতাও। কলকাতার নাগরিকদের সচেতন করতে ঠাকুরবাড়ির প্রায় সব সদস্যকে সঙ্গে নিয়ে রবীন্দ্রনাথ উদ্যোগী হলেন। অবনীন্দ্রনাথ ঠাকুর ও রানী চন্দ *জোড়াসাঁকোর ধারে* বই'তে লিখছেন-

সেই সময়ে কলকাতায় লাগল প্লেগ। চারদিকে মহামারী চলছে, ঘরে ঘরে লোক মরে শেষ হয়ে যাচ্ছে। রবিকাকা এবং আমরা এবাড়ির সবাই মিলে চাঁদা তুলে প্লেগ হাসপাতাল খুলেছি, চুন বিলি করছি। রবিকাকা ও সিস্টার নিবেদিতা পাড়ায় পাড়ায় ইঙ্গস্পেকশনে যেতেন। নার্স ডাক্তার সব রাখা হয়েছিল।

ভগিনি নিবেদিতা *ক্যালকাটা নোটস্* এ লিখছেন- *A few great Hindu families, notably the Tagores, stood firm, in the hope of allaying the agitation.* (আনন্দবাজার পত্রিকা, ০৮.০৫.২০২০) প্লেগ নিরাময়ে ঠাকুরবাড়ির এই গুরুত্বপূর্ণ উদ্যোগের মধ্যেই অবনীন্দ্রনাথ ঠাকুরের শিশুকন্যা প্লেগে আক্রান্ত হয়ে মারা যায়।

 ৬ধু প্লেগ নয়, কলেরা বা ইনফ্লুয়েঞ্জার মতো মহামারীতেও রবীন্দ্রনাথ সক্রিয় ভূমিকা নেন। ১৯০৭ সালের ২৪ নভেম্বর মহামারী কলেরায় কবির কনিষ্ঠ পুত্র শমীন্দ্রনাথ মারা যায়। রবীন্দ্রনাথ তাঁর জীবদ্দশায় প্লেগ, কলেরা, ম্যালেরিয়া, ওটিবসন্ত'র মতো প্রাণঘাতী রোগে বহু মানুষের মৃত্যু দেখেছেন। কবির ব্যক্তিজীবনে ও সাহিত্যে -- তাঁর চিঠিপত্র, প্রবন্ধ, কবিতা, গল্প, উপন্যাসে তাই প্রাসঙ্গিকভাবে এসেছে *মহামারী।* একজন সক্রিয় জনস্বাস্থ্যকর্মী হিসেবেও তাঁর ভূমিকা ছিল গুরুত্বপূর্ণ। ১৯১৫ সালে বঙ্গে কলেরা মারাত্মক আকার নেয়। *ওলাউঠার বিস্তার* নামক প্রবন্ধে তিনি বিভিন্ন দেশে এ'রোগের বিস্তার নিয়ে আলোচনা করেন। তাঁর *দুর্বুদ্ধি, দিদি* ছোটগল্পেও কলেরায় আক্রান্ত হয়ে মারা যাবার কথা আছে। রবীন্দ্রনাথের *অভিসার* কবিতায় রাজনর্তকী বাসবদন্তা'র গুটিবসন্ত হয়েছিল। *পুরাতন ভূত্য* কবিতায় ভূত্য কেষ্টা'র মৃত্যুও হয়েছিল গুটিবসন্তে আক্রান্ত মনিবকে আপ্রাণ সেবাযত্নে সুস্থ করে তোলার পর নিজেই সেই ছোঁয়াচে রোগে আক্রান্ত হয়ে। তাঁর বিখ্যাত *চতুরঙ্গ* উপন্যাসে জগমোহনের মৃত্যুর বিবরণীতে রবীন্দ্রনাথ প্লেগের অন্ত্রেমাৰ আক্রান্থ চিবের্যার জানিয়েছেন। *চতুরঙ্গ* উপন্যাসের জ্যাঠামশাই প্রতিবেশীদের কাছে পরিচিত *নান্তিক* হিসেবে। যখন প্লেগের আক্রমণে সবাই দিশেহারা হয়ে নিরাপদ জায়গায় চলে যাচ্ছে, তখন তিনি অসহায় চামারদের দায়িত্ব নিয়ে নিজের বাড়িতে প্লে মারা গেলেন। এর কয়েক বছর বাদে ইনফ্লুয়েঞ্জা মহামারীর রূপ ধরলে রবীন্দ্রনাথ কবিরাজের ভূমিকা পালন করেন। শান্তিনিকেতনে এই ফ্লু যাতে না ছড়ায়, সেজন্য তিনি প্রত্যেককে *পঞ্চতিক্ত* পাচন খাইয়েছিলেন।

১৮৯৮ এর ১৭ এপ্রিল কলকাতায় প্রথম প্লেগে মৃত্যু হয় কাপালিটোলা লেন'এ। পরে দাবানলের মতো সংক্রমণ ছড়িয়ে পড়ে বেনিয়াপুকুর, বড়বাজার, কুমারটুলি ও শ্যামপুকুর অঞ্চলে। এ'সময় অসুস্থ বিবেকানন্দ দার্জিলিং'এ ছিলেন। ৩০ মার্চ গিয়েছেন সেখানে সাময়িক বিশ্রাম নিতে। ২৯ এপ্রিল ব্রহ্মানন্দ তাঁকে একটি চিঠিতে জানালেন কলকাতার কথা। বিচলিত স্বামীজী কলকাতায় ফিরে এলেন ৩ মে। ফেরার পরদিন থেকেই ঝাঁপিয়ে পড়লেন সেবাব্রতে। ৩ মে বেলুড়মঠে যে ঘোষণাপত্র তৈরি করলেন তার মূলকথা ছিল রামকৃষ্ণ মিশন একদিকে আর্তের সেবা করবে, অন্যদিকে যতটা সম্ভব সংক্রমণ রোখার চেষ্টা করবে। এই সেবাকাজের দরকারে সেদিন তিনি বহু কাক্ষিত বেলুড় মঠের জমি বিক্রি করতেও রাজি ছিলেন। বিবেকানন্দের সঙ্গে আর্ত মানুষের সেবায় সদ্য আগত মার্গারেট সহ (তখনও তিনি নিবেদিতা হয়ে ওঠেননি) সেদিন সবাই নেমে এসেছিলেন পথে। নিজেদের স্বাস্থ্য নিয়ে তাঁরা ভাবেননি। সন্তানমেহে বুকে তুলে নিয়েছেন অসুস্থ শিশুদের। সাফাইকর্মিরা ধর্মঘট করলে নিজেরাই করেছেন সাফাইকাজ। ভিনদেশি মার্গারেট ঝাঁটা হাতে রাস্তা পরিষ্কার করেছেন। এ সময় মানুষের মনোবল বাড়াতে ও কর্মিদের উৎসাহ দিতে স্বামীজী নিজে গরিব বস্তিতে এসে থাকতেন। বাড়ি গিয়ে এঁরা বোঝানোর চেষ্টা করেছেন স্বাস্থ্য রক্ষার জন্য কী করা উচিত। এই পরম্পরা থেমে যায়নি। কোভিড অতিমারীতেও সেই পরম্পরা সমানে চলেছে।

## ৩. আমি ঝড়ের কাছে রেখে গেলাম আমার ঠিকানা - সুন্দরবনে আমফান-এ আক্রান্তদের পাশে

বর্তমান প্রজন্ম অনেক কিছু দেখলেও অতিমারী দেখেনি। অতিমারীতে মানুষ শুধু যে অসুখে মারা গেল, এমনতো না। প্রায় সব কাজকর্ম বন্ধ হয়ে যাওয়াতে দেখা দিল চরম আর্থিক দুর্দশা। এরই সাথে সারা দেশে করোনা অতিমারীর মধ্যেই পশ্চিমবঙ্গের বঙ্গোপসাগর উপকূলবর্তী অঞ্চলে ২০ মে, ২০২০, আছড়ে পড়ল এক বিধ্বংসী ঘূর্ণিঝড় - *আমফান।* উত্তর চব্বিশ পরগনার ৬টি ব্লক ও দক্ষিণ চব্বিশ পরগণার ১৩টি ব্লক নিয়ে সুন্দরবন গঠিত। যেখানে বর্তমানে ৫০ লক্ষেরও বেশি মানুষ বাস করেন। এখানে ১০২টি দ্বীপ আছে, যার মধ্যে ৫৪টিতে মানুষ বাস করে। আমফানে সব ব্লকগুলো কমবেশি ক্ষতিগ্রন্ত। সবচেয়ে বেশি ক্ষতি হয়েছে দক্ষিণের দিকে। একে ঝড়ের দাপট, তার উপরে বন্যার জলের তোড়ে বাড়িঘর ধুয়েমুছে সাফ। এর আগে আয়লা, বুলবুল প্রভৃতি ঝড় এখানে অনেক ক্ষতি করেছে, কিন্তু এবারের ক্ষতি সবচেয়ে বেশি। পশ্চিমবঙ্গের সহৃদয় অনেক মানুষ এখানকার মানুষের পাশে দাঁড়িয়েছে। মাসখানেক ধরে পশ্চিমবঙ্গের বিভিন্ন প্রান্ত থেকে বিভিন্ন সংস্থা, এনজিও, ক্লাব, বারোয়ারি, এমনকী ব্যক্তিগত উদ্যোগে বহু মানুষ তাঁদের সাধ্য মতো চাল, ডাল, তেল, নুন, চিঁড়ে, মুড়ি, বিস্কুট, ত্রিপল, মশারি, স্যানিটারি ন্যাপকিন, ওষুধ, ব্লিচিং পাউডার, টর্চ, বই, খাতা, কলম সহ নানান রোজকার দরকারি জিনিস নিয়ে হাজির হয়েছে মানুষের পাশে। করোনা পরিস্থিতিতে ত্রাণ-সামগ্রীতে যোগ হয়েছে মাস্ক ও স্যানিটাইজারও। এটা সত্যিই প্রশংসার দাবি রাখে। পশ্চিমবঙ্গে আমফানে ক্ষয়ক্ষতির পরিমাণ টাকার মূল্যে প্রায় এক লক্ষ কোটি টাকা। ক্ষতিগ্রস্ত জেলাগুলি হল **দক্ষিণ ও** উত্তর ২৪ পরগনা, পূর্ব ও পশ্চিম মেদিনীপুর, কলকাতা, হাওড়া ও হুগলি। ২০০৯ সালের আয়লার থেকেও বিধ্বংসী আমফান তছনছ করে দিল প্রায় গোটা সুন্দরবন। সুন্দরবনে প্রায় ১৪০ কিলোমিটার বাঁধ ভেঙে বহু এলাকা জলমগ্ন। অনেক জায়গায় নদী বাঁধ ভেঙে গোটা গ্রাম জলে ডুবে আছে। আমফানের ঠিক পরেই অমাবস্যার ভরা কটাল বিপন্নতা আরও বাড়ায়। বাড়িঘর, চাধের খেত, গবাদি পশু নষ্ট হয়ে বিপন্ন বহু মানুষের জীবন। ক্ষয়ক্ষতি প্রচুর। পাশাপাশি বনদগুরের তথ্য অনুযায়ী সুন্দরবনের প্রায় ১৬০০ বর্গ কিলোমিটার ম্যানগ্রোভ অরণ্যও ক্ষতিগ্রস্ত। ঘূর্ণিঝড়ের পূর্বাভাস ছিল। স্থানীয় প্রশাসন ও বিপর্যয় মোকাবিলা দপ্তর বেশ কিছু মানুষকে সরিয়ে নেয় কাছাকাছি নিরাপদ জায়গায়। কিন্তু বাঁধের ধারে যাদের বাস, তাদের মাথাগোঁজার ঠাঁই বলতে এক চিলতে ঘর। এই দুর্যোগের পর সেগুলির অস্তিত্ব থায় নেই। ভিটেমাটি, পোষা ছাগল বা মুরগির টান ফেলে সবাই অন্য নিরাপদ জায়গায় চলে যেতেও চায় না। আমফানের মতো এক একটা প্রাকৃতিক দুর্যোগ এই মানুষগুলোকে দাঁড় করিয়ে দেয় নতুন জীবনযুদ্ধের সামনে। শূন্য থেকে শুরু করতে হয় সব কিছু।

এরকম পরিস্থিতিতে সরকারি উদ্যোগ ছাড়াও বহু অ-সরকারি স্বেচ্ছাসেবী সংস্থা বাড়িয়েছে সহযোগিতার হাত। খাবার ছাড়াও পুকুর সংস্কার ও চাষের জমি থেকে নোনা জল পাম্প করে বের করে দেবার উদ্যোগও নিয়েছে কিছু সংস্থা। চিকিৎসা শিবিরেরও আয়োজন করেছে অনেকে। লকডাউনের মধ্যেও বাইরে থেকে বহু মানুষ ত্রাণ নিয়ে একাধিকবার সুন্দরবনে ছুটে গেছেন এদের পাশে দাঁড়াতে। সবসময় হয়তো যথাযথ স্বাস্থ্যবিধি মেনে চলা সম্ভব হয়নি। ত্রাণের অসম বন্টন নিয়েও ক্ষোভ আছে। ভিন রাজ্য থেকে আসা পরিযায়ী শ্রমিকরা, যারা স্থানীয় স্কুল বা ফ্লাড সেন্টারগুলিতে আশ্রয় নিয়েছিল, তাদের পক্ষেও যথাযথভাবে কোয়ারান্টাইনে থাকা সম্ভব হয়নি। করোনাভাইরাস সংক্রমণ এবং আমফান এই দু'এ মিলে পরিস্থিতি অত্যন্ত জটিল। মানুষের নিজেদের অস্তিত্ব টিকিয়ে রাখা আর স্বাস্থ্যবিধি মেনে চলা, এই দুইয়ের দ্বন্দ্বে সুন্দরবনবাসী নাকাল।

#### ৩.১. দক্ষিণ চব্বিশ পরগনার মৌসুনি দ্বীপে

সবুজের অভিযান ও পরিবেশ আকাদেমির সদস্যরা বিগত ১ জুন, ২০২০ বিভিন্ন স্বেচ্ছাসেবী সংগঠনের সাহায্য নিয়ে উত্তর চব্বিশ পরগনার মৌসুনি দ্বীপে সাধ্যমতো ত্রাণ নিয়ে পৌঁছল। নদী-সমুদ্রে ঘেরা মৌসুনি দ্বীপ আমফান ঘূর্ণিঝড়ের আঘাতে বিধ্বস্ত। মানুষ আছে, আবরণ নেই। হাঁড়ি আছে, চাল নেই। জীবন থমকে গেছে। তবুও ওরা বাঁচতে চায়। মৌসুনি দ্বীপের সব থেকে ক্ষতিগ্রস্ত এলাকা বালিয়ারা, কুসুমতলা ও বাগডাঙা মৌজা। ত্রাণ দরকার কম করে তিন হাজার পরিবারের। কিন্তু ত্রাণ দেওয়া সম্ভব হয়েছে মাত্র তিনশো পরিবারকে। কারণ সাধ থাকলেও সাধ্য সীমিত। ফেরার পথে মৌসুনি দ্বীপের বাসিন্দাদের আর্তি আবার আসার জন্য। কিন্তু সুন্দরবন জুড়ে অভাবের সাম্রাজ্যকে ভাঙার ক্ষমতা সামান্য স্বেচ্ছাসেবী সংস্থার নেই। ওদের আর্তি আর আকাশভরা মেঘকে সাক্ষী রেখে ফেরা হল আবারও সুন্দরবনের পথে পা বাড়ানোর ইচ্ছেকে বুকে নিয়ে। ধ্বংসস্তৃপ সুন্দরবনে কেবল বেঁচে থাকার অদম্য ইচ্ছাকে সঙ্গে নিয়ে বিপন্ন এই মানুযেরা জীবনযুদ্ধ চালাচ্ছে। প্রতিটি গ্রামে বিলাপের ধ্বনি আর হাহাকার। সাতরঙা পৃথিবী এদের কাছে অচেনা। ফিরে আসার সময়ে বাচ্চাকে কোলে নিয়ে এক মহিলার আর্তি- *আমরা বাঁচতে চাই।* বেঁচে থাকার এই অদম্য ইচ্ছাই ওদের বাঁচিয়ে রাখবে।

## ৩.২ দক্ষিণ চব্বিশ পরগনার কুমিরমারি এবং ছোট মোল্লাখালি দ্বীপে

বহু মানুষের সাহায্য, ভালবাসা নিয়ে আবারও সুন্দরবনের পথে পা বাড়াল সবুজের অভিযান, পরিবেশ আকাদেমি সহ বেশ কয়েকটি স্বেচ্ছাসেবী সংস্থা। ১ জুন মৌসুনি দ্বীপে ত্রাণ পৌঁছোনোর ১৪ দিনের মাথায় ১৪ জুন, ২০২০-তে গন্তব্যস্থল কুমিরমারি এবং ছোট মোল্লাখালি দ্বীপ। আষাঢ়ে মেঘকে সঙ্গী করেই দ্বীপে পোঁছে দেখা গেল অসহায় নিরম্ন মুখের সারি। ঘূর্ণিঝড় আমফান ওদের জীবন-জীবিকা কেড়ে নিয়েছে। মাঠে চাষ নেই। গ্রামের ভিতরের পুকুরগুলো ভরে গেছে নোনা জলে। পথের দু'ধারে ছড়িয়ে ভাঙা ঘর-বাড়ির চিহ্ন। বিদ্যালয় বন্ধ। খাতা-বই-কলম-পেন্সিল সবই ভেসে গেছে। জলের তোড়ে রাস্তা ভেঙে গেছে। তার মধ্য দিয়েই স্বেচ্ছাসেবী সংস্থার সদস্য-সদস্যারা ছোট মোল্লাখালি আর কুমিরমারিতে মানুযের হাতে ত্রাণ তুলে দেবার কাজ শেষ করল। দু'টি গ্রাম জুড়েই ভয়াবহ বিপন্নতার ছবি, আর হাহাকার। কবে কীভাবে আবার এরা মাথা তুলে দাঁড়াতে পারবে সে নিশ্চয়তা কোথায়? বর্তমানে এরা নিঃস্ব, অসহায়। পড়ন্ত বেলায় ফেরার পালা এক অচেনা আঁধারে ডুবে যাওয়া সুন্দরবনকে পিছনে ফেলে। ২০০৯ থেকে পরপর আয়লা, বুলবুল আর আমফানের তাণ্ডব সুন্দরবনকে করেছে ধ্বস্ত, বিপন্ন। কেড়েছে তার সৌন্দর্য। ফেরার সময় ওখানকার মহিলাদের বারংবার অনুরোধ আবার আসার জন্য। নিশ্চিত করে কথা দেওয়া যায়নি। তবে, চেষ্টা জারি রয়েছে এই মানুযগুলের হাতে যথাসাধ্য হাত রাখার।

ত্রাণ নিয়েও একটা দিক ভাবার আছে। প্রতিদিন নানা ধরনের খাবারের আলাদা প্লাস্টিক প্যাকেট একটি বড় প্লাস্টিক প্যাকেটের মধ্যে পুরে ত্রাণ দেওয়া হছে। ফলে রোজ এই অঞ্চল অগুন্তি প্লাস্টিক প্যাকেটে ভরে যাচ্ছে। যে পরিমাণ টাকার ত্রাণ বিপন্ন এই মানুষদের হাতে দেওয়া হচ্ছে, সেই পরিমাণ টাকা তাদের হাতে দিলে সেই টাকায় তারা স্থানীয় বাজার থেকে দরকারি জিনিসপত্র কিনতে পারত। টাকাটা স্থানীয় বাজারে হাত ঘুরত। ছোট, স্থানীয় দোকানিদের বিক্রিবাটা চালু থাকত। পরিবেশ দূষণকারী এত প্লাস্টিকের স্তুপও ওখানে হত না। কিছু সংস্থা অবশ্য অন্যভাবে কাজ করেছে। কেউ ঘর তৈরির চালা কিছু মানুষের জন্য করে দিয়েছে। এর দরকারি কাঁচামাল স্থানীয় বাজার থেকেই কেনা হয়েছে।

#### 8. কোভিড-১৯ ও জলবায়ু পরিবর্তন

ধীরে হলেও পৃথিবী এখন কোভিড-১৯ এর প্রাথমিক ধাক্কা কাটিয়ে **নিউ নর্মাল** অবস্থায় ফেরার চেষ্টা করছে। আর এটাই বোধ হয় সাম্প্রতিক অতীতে অতিমারী থেকে জলবায়ু পরিবর্তন পর্যন্ত ফিরে দেখারও এক বিরাট সুযোগ। এই অতিমারী কিন্তু দেরিতে হলেও, বিভিন্ন বিষয়ে বিশেষজ্ঞদের দেওয়া চেতাবনির ওপরে আস্থা কিছুটা ফেরাল। বিশেষ করে সেই সব বিজ্ঞানীরা, যাঁরা বারবার অতি সংক্রামক রোগের প্রাদুর্ভাব নিয়ে সমস্ত শ্রেণির মানুষকে সাবধান করেছিলেন। প্রতিটি দেশের সরকারকে স্বাস্থ্য পরিষেবায় আরও বেশি টাকা ঢালতে বলেছিলেন। ২০১৯ সালের সেপ্টেম্বর মাসে, যখন কোভিড-১৯ এর সংক্রমণ শুরু হয়নি, **বিশ্ব স্বাস্থ্য সংস্থা** এক প্রতিবেদনে জানিয়েছিল যে, বছরে স্বাস্থ্য ব্যবস্থার উন্নতিতে যদি ৩.৪ বিলিয়ন মার্কিন ডলার খরচ করা হয়, এটি একদিকে যেমন অগুন্তি মানুষের প্রাণ বাঁচাবে, অন্যদিকে তেমন তিরিশ বিলিয়ন মার্কিন ডলারেরও বেশি মূল্যের সমান স্বাস্থ্য পরিষেবা-জনিত লাভ হবে। ওই মাসেই *Global Commission on Adaptation* জলবায়ু পরিবর্তন রুখতে ১.৮ ট্রিলিয়ন মার্কিন ডলার লগ্নির সুপারিশ করে। এর ফলে মানুষ সামাজিক, আর্থিক ও পরিবেশগত ৭.১ ট্রিলিয়ন মার্কিন ডলার সমান মূল্যের উপকার পাবে। কিন্তু স্বাস্থ্য পরিষেবা ব্যবস্থা বা জলবায়ু পরিবর্তন রোধ কর্মসূচি, কোনওটিতেই বিশেষজ্ঞদের চেতাবনিকে খুব গুরুত্ব দেওয়া হয়নি। ফলও মিলেছে হাতেনাতে।

এটা মাথায় রাখা জরুরি যে, অতিমারী এবং জলবায়ু পরিবর্তন – দু'টিরই প্রাণীদেহের ওপর প্রভাব সুস্পষ্ট। আর এর সঙ্গে আর্থ-সামাজিক প্রভাব তো আছেই। অতিমারী এবং জলবায়ু পরিবর্তন দুটিই পৃথিবীর চাহিদা-জোগান ব্যবস্থাকে ধাক্কা দেবার ক্ষমতা রাখে। মানুষের রুটি-রুজির পথ বন্ধ হয়। জনস্বাস্থ্য, মনোস্বাস্থ্য, জনশিক্ষা, শক্তি সরবরাহ, গণপরিবহন – সব কিছুই ভয়ানক বিপর্যন্ত হয়। এরই মধ্যে দেখা গেছে যে যেখানে জনস্বাস্থ্য পরিষেবা দুর্বল, সেখানে কোভিড-১৯ সংক্রমণে মানুষের মৃত্যুহার বেশি।

অতিমারী ও জলবায়ু পরিবর্তন এ'দুটির চরিত্রগত তফাত আছে। মানুষের অস্তিত্বের কাছে কোভিড-১৯ অতিমারী এক সুস্পষ্ট সরাসরি বিপদ। আবার এটিও খুবই সত্যি যে, কোনও একটি মাত্র নির্দিষ্ট পদ্ধতি হাতে এলেই (ভ্যাকসিন) তা দিয়ে এই নোভেল করোনা ভাইরাস SARS-CoV-2 -কে রুখে দেওয়া যায়। মানুষ অনেকটাই বিপদ মুক্ত হয়। পক্ষান্তরে জলবায়ু পরিবর্তনের প্রভাব ধীর ও ক্রমবর্ধমান। এর প্রভাব পৃথিবীতে এমন ভাবে ছড়ায় যা কোন একটি কার্য-কারণ সূত্রে গাঁথা নয়। অতিমারীর প্রভাব কিছুদিন বা কয়েক সপ্তাহের মধ্যে বোঝা যায়। কিন্তু জলবায়ু পরিবর্তনের প্রভাব কিছুদিন বা কয়েক সপ্তাহের মধ্যে বোঝা যায়। কিন্তু জলবায়ু পরিবর্তনের প্রভাব কিছুদিন বা কয়েক সপ্তাহের মধ্যে বোঝা যায়। কিন্তু জলবায়ু পরিবর্তনের প্রভাব বুঝতে বেশ সময় লাগে। আর যখন এর প্রভাব স্পষ্ট বোঝা যাবে, তখন একে রোখার চেষ্টা করলে তা অনেকটাই দেরি হয়ে যাবে। কারণ জলবায়ু পরিবর্তন রুখে দেবার কোনও ভ্যাকসিন হয় না। তাই জলবায়ু পরিবর্তন কেন হয় এবং কী তার প্রভাব, এ'দুটিকে গুরুত্ব দিয়ে বিশ্লেষণ করা দরকার। একে যদি যথেষ্ট গুরুত্ব না দেওয়া হয়, তাহলে যে কোনও জনকল্যাণমুখী কর্মসূচিও ভেস্তে যেতে পারে। জলবায়ু পরিবর্তন রুখতে গেলে সামগ্রিক ভাবনা-চিন্তা মাথায় নিয়েই মাঠে নামতে হবে। কারণ এটি এক অদৃশ্য, প্রাণঘাতী বিপদ বিশেষ।

পৃথিবী জুড়ে জলবায়ু পরিবর্তন এমন আর্থিক ক্ষতি করে চলেছে যা হিসেব করা কঠিন। বিভিন্ন গণমাধ্যমে কম-বেশি জানা যাচ্ছে যে এটি ক্রমশ ঘটে চলেছে। তা সত্ত্বেও একে রোখার ব্যাপারে বেশির ভাগ রাষ্ট্র শোচনীয় ভাবে কী উদাসীন ও প্রস্তুতিবিহীন ! জলবায়ু পরিবর্তন অত্যন্ত চতুরভাবে পৃথিবীর বিভিন্ন রাষ্ট্রকে নিজেদের মধ্যে দোষারোপ করার ফাঁদে ফেলেছে। আমেরিকা এ'ব্যাপারে সব চেয়ে এগিয়ে, হাতে হাত রেখে একসাথে কাজ করার বদলে।

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জলবায়ু পরিবর্তনের ফলে পৃথিবী ক্রমশ ঊষ্ণ হলে ম্যালেরিয়া, ডেঙ্গু প্রভৃতি রোগের প্রকোপ বাড়বে। এই রোগগুলি ঊষ্ণ আবহাওয়ায় বাড়ে। বন্যপ্রাণীদের আবাসস্থল যত কমে আসবে, ততই সরাসরি মানুষ ও বন্য পশুর সংস্পর্শে আসার ঘটনা বাড়বে। এ'থেকে বিভিন্ন রোগ ছড়াবে। একথা এখন প্রায় সবারই জানা যে, কোভিড-১৯ এর প্রাদুর্ভাব zoonotic, অর্থাৎ এক অতি ছোঁয়াচে ভাইরাস (pathogen) না-মানুষী প্রাণী (non-human animal) থেকে এটি মানুষের শরীরে ছড়ায়।

কিছুদিন আগে ভারতবর্ষের মনিপুর রাজ্যের মাননীয় উচ্চ আদালত জীববৈচিত্র্য কমে আসার কারণে নানান ছোঁয়াচে রোগের বাড়বাড়ন্ত হচ্ছে বলে জানিয়েছেন। করোনাভাইরাসের প্রাদুর্ভাবের কারণ যে ব্যাপক বাস্তুতান্ত্রিক বিপর্যয়ের ফল, বিভিন্ন বিশেষজ্ঞ মহল থেকে তা স্পষ্ট বলা হচ্ছে। মনিপুরের মহামান্য উচ্চ আদালত ১১ জুন, ২০২০ তারিখে জনস্বার্থ সম্পর্কিত এক মামলার রায়ে স্পষ্ট উল্লেখ করেছেন -- বনভূমি ধ্বংস এবং বনভূমিতে মানুষের অবৈধ প্রবেশের ফলে বিভিন্ন বনজ প্রজাতি বাস্তচ্যুত হচ্ছে। এই বিষয়টিই কোভিড-১৯ এর মতো নানান রোগ ছড়িয়ে পড়ার প্রধান কারণ। কোভিড-১৯ কে গ্রিস দেশের ম্যাসিডন প্রদেশের সেনাবাহিনীর অগ্রগমন এর সঙ্গে তুলনা করে মহামান্য উচ্চ আদালত বলেছেন যে, যদিও এই মুহূর্তে সকলের লক্ষ্য কোভিড-১৯ এর প্রতিষেধক আবিষ্কার করা, কিন্তু এটাও খতিয়ে দেখা দরকার যে, অতীতে মানুষ কী কী ভুল করেছে। মহামান্য উচ্চ আদালত তাঁর রায়ে স্পষ্ট বলেছেন -- বর্তমান কোভিড-১৯ প্রাদুর্ভাবের নানান কার্য-কারণ তত্ত্বের মধ্যে, অতি গুরুত্বপূর্ণ যে কারণটির প্রতি কোনও একটি দেশ নির্বিশেষে পৃথিবীর সকলের নজর দেওয়া দরকার, তা হল প্রকৃতি ও পরিবেশের অপবিত্রকেরণ ('....desecration of nature and the environment') হণ্ড মে, ২০২০ তারিখে জনস্বার্থ সম্পর্কিত এই মামলাটি করে Manipur Valley Village Reserve Forest Rights Protection Association নামে এক স্বেচ্ছাসেবী সংস্থা।

## ৫. বিকল্পের খোঁজে

এই পরিস্থিতিতে পরিবেশ, বন্যপ্রাণী ও কর্মহীন বনবাসী মানুষকে রক্ষা করতে বিকল্প সবুজ জীবিকার পথ ভাবতে হবে। যেমন - জৈব চাম, ছোট জায়গায় জলজ উদ্ভিদ ও প্রাণীর চাম (acquaculture), বংশপরম্পরায় চলে আসা হাতের কাজ, ছোট ঋণদান-সংস্থা এবং গোষ্ঠীভিত্তিক সংগঠনগুলির আর্থিক সাহায্যে ছোটখাটো ব্যবসার সুযোগ সৃষ্টি -- বনবাসী এই মানুষদের অতিমারী বা যে কোনও গভীর সংকটের সময়ে বাঁচার পথ দেখাবে। বনাঞ্চলে বনসৃজন কর্মসূচি আরও বেশি করে হাতে নিতে হবে। এতে কার্বন বেচা-কেনা বাড়বে। আর এ'থেকে যে অর্থ আসবে, ছোট ঋণদান-সংস্থাগুলির মাধ্যমে ন্যায্যভাবে সেই অর্থকে স্থানীয় জনগোষ্ঠীর বিকল্প সবুজ কর্মসংস্থানের কাজে লাগাতে হবে। এ'মুহূর্তে এটি অতি প্রয়োজন। সুচিন্তিত কর্মসূচির সাহায্যে লকডাউন বা কঠোর আত্মনিয়ন্ত্রণের সময়ে বনবাসী মানুষদের আর্থিক দুশ্চিন্তা দূর করতে না পারলে একদিকে যেমন বন্যপ্রাণের অপূরণীয় ক্ষতি হয়ে যাবে, অন্যদিকে অতিমারীর বিরুদ্ধে যুদ্ধটাও আরও কঠিন হবে। বর্তমানের সংকট কাটাতে এবং ভবিষ্যতের অমঙ্গল আশঙ্কা দূর করতে প্রাতিষ্ঠানিক ও ব্যক্তি-স্তরে চাই বহুপাক্ষিক (multilateral) কর্মসূচি ও উদ্যোগ। একে অপরকে দোষ দিয়ে নয়, হাতে হাত মিলিয়ে জলবায়ু পরিবর্তনজনিত কুপ্রভাব ও অতিমারীকে রুখতে হবে। চটজলদি কর্মসূচি তথা লাভের দিকে না তাকিয়ে পরিবেশ, সমাজ ও অর্থনীতির দীর্ঘমেয়াদী কর্মসূচি এবং টেকসই উন্নতির কথা ভাবতে হবে। অতিমারীর এই সময়ে পৃথিবীর বিভিন্ন দেশ *সবুজ পুনরুদ্ধার পরিকল্পনা* (Green recovery plans) হাতে নিয়েছে তাদের সামাজিক, আর্থিক ও পরিবেশগত মজবুতির জন্য। এই পরিকল্পনা *GREAT* (Green, Resilient, and Equitable Action for Transformation) নামে পরিচিত। কোভিড-১৯ এর প্রভাব কাটিয়ে উঠতে বিভিন্ন রাষ্ট্রনায়ক এই পরিকল্পনা হাতে নিচ্ছেন। এর ফলে জাতি, বর্ণ, ধর্ম, লিঙ্গ নির্বিশেষে দেশের সকল মানুষ উপকৃত হবে। ন্যায্য আর্থিক পাওনা মিলবে। সর্বোপরি, জলবায়ু পরিবর্তন রুথে দেবার বিষয়ে বিভিন্ন কর্মসূচি নেওয়া যাবে। এই অতিমারী শেখাল যে, ব্যক্তি ও সমাজ একসঙ্গে কাজ করলে যে কোনও সংকট কাটিয়ে ওঠা সম্ভব। এত শিক্ষার পরেও প্রশ্লেটা কিন্তু থেকেই যায়, সত্যিই কি কোনও শিক্ষা হল? পরের কোন বড় মাপের সংকট কাটাতে হাতে হাত রেখে এগোনো যাবে তো?

#### ৬. কী আছে শেষে

এখন সবার মনেই প্রশ্ন, পৃথিবীর নানান দেশে করোনাভাইরাস প্রতিষেধক টিকাকরণ তো চলছে, তাহলে কোভিড-১৯ কবে কীভাবে পৃথিবী থেকে দূর হবে? বা আদৌ হবে তো? জন্স হপকিন্স মেডিক্যাল কলেজের মেডিসিন বিভাগের ঐতিহাসিক-গবেষক ডঃ জেরেমি গ্রিন এর মতে, মানুষ যখন এই প্রশ্ন করে, তখন ধরে নিতে হবে যে তারা সামাজিক ভাবে এই রোগের শেষ দেখতে চাইছে। দু'ভাবে এ'রোগ নির্মূল হতে পারে। এক, চিকিৎসা-বিজ্ঞান এর প্রতিষেধক বার করে মৃত্যুমিছিল রোধ করল। আর দুই, চিকিৎসা-বিজ্ঞান একে নির্মূল করার আগে এই অতিমারী সামাজিক ভাবেই হয়তো শেষ হল। কীরকম? দীর্ঘদিন মানুষ অতিমারী সংক্রান্ত কড়াকড়ি মেনে এতটাই দেহে-মনে ক্লান্ত হয়ে যাবে যে, নিজেরাই ঘোষণা করবে অনেক হয়েছে, আর না, এবার অতিমারী শেষ। বা অতিমারীর আতঙ্ক নিয়েই ঘর করতে শিখবে, যদিও তখনও করোনাভাইরাসের আক্রমণে মানুষ মারা যাচ্ছে। মানুষের এক ধরনের মানসিক ও সামাজিক অবসাদ এবং আর্থিক বিপন্নতাজনিত হতাশা থেকেই এমনটি ঘটতে পারে বলে জানাচ্ছেন বেশ কিছু বিশিষ্ট মানুষ, যেমন – হার্ভার্ড বিশ্ববিদ্যালয়ের ইতিহাসবিদ অ্যালান ব্রান্ডট, ইয়েল বিশ্ববিদ্যালয়ের ঐতিহাসিক নাওমি রজার্স প্রমুখ। মানুষ এ'সময় ধ্যাততেরি বলে যা-হবার-হবে মনোভাব নিয়ে স্বাভাবিক জীবনে ফিরতে চাইবে। ভারত সহ অনেক দেশেই এখন এটা দেখা যাচ্ছে। মানুষ যেন অনেকটাই বেপরোয়া। কোভিড-বিধি মেনে চলার লক্ষণ বেশ কম। মুখে মাস্ক নেই বেশির ভাগ মানুষের। সোশ্যাল ডিসট্যান্সিং শিকেয়। লকডাউনের অনেক কড়াকড়ি অবশ্য সরকারি ভাবে শিথিল হয়েছে। কিন্তু বেশ কিছু কোভিড-স্বাস্থ্যবিধি এখনও চালু। লকডাউনে মানুষের আর্থিক বিপন্নতাও অতিমারীর আতঙ্ককে সামাজিক ভাবে ঝেড়ে ফেলতে সাহস জুগিয়েছে। তাই শেষ কথা কে বলবে? কবে শেষ হবে এই অতিমারী? বিগত ২৪ অক্টোবর, ২০২১, বার্লিন'এ এক স্বাস্থ্য সম্মেলনে *বিশ্ব স্বাস্থ্য সংস্থা*-র প্রধান তেদ্রোস আধানম ঘেব্রিয়েসাস বলেছেন, *এই অতিমারী চট করে* যাবার না। শেষ হতে এখনও অনেক দেরি। প্রতি সপ্তাহে পঞ্চাশ হাজার মানুষ মারা যাচ্ছে। সহজে করোনা আমাদের *পিছু ছাড়বে না।* (এই সময়, কলকাতা, ২৬.১০.২১)

এরই মধ্যে চিন, রাশিয়া, ব্রিটেন সহ পৃথিবীর বেশ কয়েকটি দেশে করোনা-আক্রান্ত মানুষের সংখ্যা বাড়তে শুরু করেছে। ঘের্রিয়েসাস বার্লিন'এ বলেছেন, *করোনা রুখতে টিকা সহ দরকারি চিকিৎসা ব্যবস্থা সবই আমাদের হাতে আছে। তা* সত্ত্বেও এর যথাযথ ব্যবহার করতে পারিনি। আমরা ঠিকমতো করোনা-বিধি মেনে চলেছি কি? এ'নিয়ে একটা কথাই বলব, পৃথিবীর মানুষ যখন সত্যিই চাইবেন, একমাত্র তখনই এই অতিমারী নির্মূল হবে।

*বিশ্ব স্বাস্থ্য সংস্থা*-র প্রধানের মতে টিকাকরণেও ব্যাপক বৈষম্য দেখা গেছে। উন্নতদেশের মানুষ প্রায় সবাই কমবেশি টিকা পেয়েছে। কিন্তু গোটা আফ্রিকা মহাদেশের সাপেক্ষে ৯৯ শতাংশ মানুষ নয়। (ডাউন টু আর্থ, ১-১৫ অক্টোবর, ২০২১) পৃথিবীর সব দেশ, বিশেষ করে গরিব দেশগুলি হাতে পর্যাপ্ত টিকা পেলে এই অতিমারী অনেক আগেই শেষ হত। কিন্তু তা না হবার ফল ভুগতে হচ্ছে। পৃথিবীর বেশ কিছু দেশ নিজেদের চল্লিশ শতাংশ নাগরিককে টিকা দিয়েছে। কিন্তু আফ্রিকায় এমন অনেক দেশ আছে, যেখানে পাঁচ শতাংশেরও কম মানুষ টিকা পেয়েছে বলে ঘেরিয়েসাস জানাচ্ছেন। এই বৈষম্য না মিটলে করোনা দূর হবে না। (এই সময়, কলকাতা, ২৬.১০.২১) উন্নতদেশ এখন বুস্টার ডোজের কথা বলছে। অথচ এমন অনেক গরিব দেশ রয়েছে, যেখানে মানুষেরা একটি ডোজও পায়নি। বিগত অক্টোবর মাসের মাঝামাঝি *বিশ্ব স্বাস্থ্য সংস্থা-*র প্রধান জানান যে, প্রতিশ্রুত ১ বিলিয়ন ডোজ কোভিড-১৯ টিকার মধ্যে পৃথিবী জুড়ে মাত্র ১২০ মিলিয়ন মানুষের টিকাকরণের ওষুধ *COVAX* উদ্যমের মাধ্যমে দেওয়া হয়েছে। একই সপ্তাহে মার্কিন থ্রেসিভেন্ট জো বিডেনও বলেছিলেন যে, তাঁর দেশ আগে প্রতিশ্রুত ৫০০ মিলিয়ন ডোজের উপরে অতিরিক্ত আরও ৫০০ মিলিয়ন ডোজ দেবে। কিন্তু পৃথিবী জুড়ে এটাই চরম সত্য যে, ধনী দেশগুলো বিপুল পরিমাণ ভ্যাকসিন কিনে মজুত করে রেখেছে। তাড়াতাড়ি ব্যবহার না করলে এগুলোর মেয়াদ শেষ হয়ে যাবে। পরে প্রায় এরকম ২৪০ মিলিয়ন ডোজ টিকা ফেলে দেওয়া ছাড়া গতি থাকবে না। (ডাউন টু আর্থ, ১-১৫ অক্টোবর, ২০২১)

*বিশ্ব স্বাস্থ্য সংস্থা*-র চেতাবনি আগামীদিনে করোনা ফের ভয়াবহ হতে পারে। চিন, রাশিয়া সহ কিছু দেশ থেকে সে ইঙ্গিত এর মধ্যেই পাওয়া গেছে। ডেল্টার সাব-ভ্যারিয়েন্ট AY.4.2 নতুন করে রাশিয়াকে ভোগাচ্ছে। সেখানে দৈনিক মৃত্যুহার হাজার পেরিয়েছে। চিনের রাজধানী বেজিং'এও নতুন করে বেশ কয়েকজন কোভিড আক্রান্তের হদিশ মিলেছে। (এই সময়, কলকাতা, ২৬.১০.২১) আসলে এই অতিমারীর সঙ্গে মানুষের এটা এমন এক লড়াই যেখানে চকিতে কোন জয় আসবে না। এই অতিমারীকে যথাযথ বিশ্লেষণ করে সকলের টিকাকরণ সহ যথাযথ কোভিড-বিধি মেনে একে পৃথিবী থেকে নির্মূল করা বেশ সময়ের ব্যাপার।

#### দেশনায়ক প্রবন্ধে রবীন্দ্রনাথ লিখেছিলেন-

এ কথা আমাদিগকে মনে রাখিতে হইবে, ম্যালেরিয়া-প্লেগ-দুর্ভিক্ষ কেবল উপলক্ষমাত্র, তাহারা বাহ্য লক্ষণমাত্র -- মূল ব্যাধি দেশের মজ্জার মধ্যে প্রবেশ করিয়াছে। আমরা এতদিন একভাবে চলিয়া আসিতেছিলাম -- আমাদের হাটে বাটে গ্রামে পল্লীতে আমরা একভাবে বাঁচিবার ব্যবস্থা করিয়াছিলাম, আমাদের সে ব্যবস্থা বহুকালের পুরাতন। তাহার পরে আজ বাহিরের সংঘাতে আমাদের অবস্থান্তর ঘটিয়াছে। এই নৃতন অবস্থার সহিত এখনো আমরা সম্পূর্ণ আপস করিয়া লইতে পারি নাই; এক জায়গায় মিলাইয়া লইতে গিয়া আর-এক জায়গায় অঘটন ঘটিতেছে। যদি এই নৃতনের সহিত আমরা কোনোদিন সামঞ্জস্য করিয়া লইতে না পারি তবে আমাদিগকে মরিতেই হইবে। পৃথিবীতে যে সকল জাতি মরিয়াছে তাহারা এমনি করিয়াই মরিয়াছে। (পৃষ্ঠা ২৬১, রবীন্দ্র-রচনাবলী, ত্রয়োদশ খণ্ড, প্রবন্ধ, নভেম্বর ১৯৯০, পশ্চিমবঙ্গ সরকার)

সামাজিক জীব মানুষের সংঘবদ্ধতাই জীবন। অথচ কোভিড পরিস্থিতিতে *নিউ নর্মাল* যাপনে সামাজিক দূরত্ব বজায় রাখা ও যথাযথ স্বাস্থ্যবিধি মানাই সবচেয়ে গুরুত্বপূর্ণ। দেশ-দশ-ভবিষ্যৎ প্রজন্মের স্বার্থে নতুন এই পরিস্থিতিকে মেনে নিতেই হবে। কতকাল আগের রবীন্দ্রনাথের উপর্যুক্ত চেতাবনি এই মহামারীর সময়ে আরও একবার প্রাসঙ্গিক হয়ে উঠেছে।

**ঋণ:** পশ্চিমবঙ্গ দূষণ নিয়ন্ত্রণ পর্ষদের অবসরপ্রাপ্ত মুখ্য আইনাধিকারিক শ্রী বিশ্বজিৎ মুখোপাধ্যায়ের সাহায্য ছাড়া এই লেখা আমার পক্ষে সম্ভব হত না। তাঁকে জানাই অশেষ কৃতজ্ঞতা।

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**শ্রী রাহুল রায়** শিক্ষক, পরিবেশ কর্মী ও প্রাবন্ধিক

সম্পাদক -- 'প্রতীতি' এবং 'সবুজ ইস্তাহার' পত্রিকা।

# The Environmental, Economic and Social Scenario During and After the CODID-19 Catastrophe

We are facing a global crisis in every sphere of life in this 'Covid-19 Pandemic' situation. It is a human, economic and social crisis. The socio-economic disaster has posed an unprecedented stress to young work-force. Consequences are an increase in the poverty level, reduced opportunities in job market, increase in domestic violence, accelerated Economic Downturn, and an unwanted fear of being infected with Corona virus. The crisis would turn out to be more critical. However, irrespective of social status, religion, caste and creed, each and every person of our society put hands together to overcome the gloomy situation. With the cumulative effort of everyone, we have created a success story during the pandemic which has now been portrayed

in the present volume.

JDC Research Committee