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Comments and contributions are sought from academicians, lawyers, students and professionals. These should be sent to the Editor at the following address:

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Message from the Vice Chancellor

The NUJS Journal of Regulatory Studies has been conceived as a premier journal for publication of research in the field of law and public policy. In an increasingly data driven world, public policy oriented research centred on thorough theoretical concepts with the analysis of empirical data is imperative. This journal aims to provide a platform for innovative researchers whose data driven research creates knowledge that is conducive to the creation of long term strategies and goals for policymakers in India and abroad. The Centre for Regulatory Studies, Governance and Public Policy (CRSGPP) actively engages stakeholders for the formulation, analysis and oversight of public policy. This journal reflects the ethos of CRSGPP and reflects its commitment to democratic values, academic excellence and legal research of contemporary relevance. The Journal presently publishes articles on issues of national and international relevance in consonance with the aforementioned objectives. I hope that CRSGPP continues to enlighten the legal fraternity, policymakers as well as members of the public as it continues its journey of excellence and innovation.

-Prof. (Dr) N.K. Chakrabarti

Editor's Note

The NUJS Journal of Regulatory Studies started its journey in 2016 to promote legal research focusing on policy formulation. In 2019, the journal gets a new dimension with the priority inclusion of cutting edge empirical research papers from across Asia.

The new board of editors accompanied by a robust peer review team gives the journal the much needed international status. Additionally, the new shape of this open access online journal authorizes the access of the entire edition as a single file.

The journal explores through its research papers the various challenges and highlights various human rights issues. The platform of NUJS Journal of Regulatory Studies provides the young minds to find solutions beyond convention and also gives the right impetus to the centre to explore avenues to recommend such policy formulation to the concerned forum.

I am really thankful to the authors for such vivid contribution. I also take this opportunity to thank the esteemed members of the Advisory Board, Editorial Board, Peer Reviewers and my entire team who has worked relentlessly to finish the work in time.

-Dr. Shambhu Prasad Chakrabarty
Head and Research Fellow

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Editor's Note

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COVID-19 AND THE ROLE OF TRANSNATIONAL INTELLECTUAL PROPERTY: A REQUIRED PAUSE ON INNOVATION AND COMPETITION FOR VACCINE EQUITY

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This is a working paper because developing global awareness of international law and domestic law limitations are of urgent public interest. High mortality has been recorded in less developing countries and developing countries with a deadly virus and mutations in circulation. Four COVID-19 variants are ravaging our society at the moment. With a choice of granted vaccines developed in the northern hemisphere, we had an opportunity to eradicate or at least control SARS-COV-2 disease. Despite that, we are still locked in international trade and competition issues to make the vaccines available globally. There are plenty of arguments regarding manufacturing, distribution, lack of talent pool locally, and the World Health Organisation initiative that depends on vaccine donations to supply developing and less developed countries. Nonetheless, with the variations of the original virus rapidly evolving, this window of opportunity is becoming smaller by the day. This working paper intends to present some historical background for legal actions and public policies in situations like this pandemic where economics are not the priority.

This working paper is organised by historical references to mRNA technologies, addressing manufacturing and distribution arguments, a brief explanation of clinical trials, a look into drug projects and the incentive for funding, a study on the incentive for patenting subject-matter already funded by taxpayers via collaborations and contracts, and the connection of all these elements with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) an international treaty that abides all member-States including on article 27 (2). This working paper does not intend to find a solution but to show alternatives to start looking into resolving regulatory issues and legal gaps that are in place.

I. Concerning vaccine manufacturing and distribution, a step before vaccines grant

The argument of shortage of raw materials is a deceptive one. There was no shortage of raw materials for vaccines production but a sustainable and massive investment to monopolise these raw materials to few sources in selected countries. For instance, the supply chain for *Pfizer*® was duly impacted by a lack of quality of raw materials, with a culmination

of high demand for these organic matter allied to the delays in clinical trials.[1] On December 21st, 2020, the European Medicines Agency (EMA) approved a conditional marketing authorisation for *COMINARTY* produced by *Pfizer*® and *BioNTech SE*.[2] Ten days prior to that date, *Pfizer/BioNTech* had been approved by the Food and Drug Administration (FDA) for individuals over 16 years of age for emergency use only. The situation was fluid in the United States until the pandemic spread throughout the whole country when an emergency was identified.[3]

The argument of insufficient production capacity is a result of a myriad of clinical trials, devoid of satisfactory evidence-based medicine, that slowed down global management for vaccine distribution.[4] Clinical trials are part of the drug patent process and a mandatory risk enterprise for pharmaceutical production. The main goal of a well-designed, diversified clinical trial is to attest efficacy and safety in adverse conditions of drugs used in humans, in this case, the SARS-COV-2 or COVID-19 vaccines. A well-conducted clinical trial contributes to a better decision-making process for healthcare professionals, such as doctors, nurses, researchers and scientists, in advising governments. Educating the public and bringing broad awareness of the possible side effects in the life of drug development is a must. Clinical trial results are of global concern because the results may change the rules and procedures to access drugs, nationally and internationally, affecting local healthcare systems and future innovation to manage a problem like a pandemic.

The argument of the highly complex manufacturing process is partially acceptable. One of the reasons for this argument to be acceptable, in terms, is that it avoids the fact that since the 1970s, there are experiments with genetic engineering, gene-splicing techniques and gene transfer vectors.[5] The mRNA technique is not novel many scientists around the globe have been exposed to the concept. Basically, it delivers a synthetic ribonucleic acid (RNA) as a messenger that teaches the human body the knowledge to produce almost any protein or antibodies inside and outside cells.[6]

[1] See, The Wall Street Journal, available at https://www.wsj.com/articles/pfizer-slashed-its-covid-19-vaccine-rollout-target-after-facing-supply-chain-obstacles-11607027787

[2] See, European Medicines Agency, available at https://www.ema.europa.eu/en/news/ema-recommends-first-covid-19-vaccine-authorisation-eu

[3] Educational websites have been the major source for the public at large to be educated at light speed. See, https://www.precisionvaccinations.com/vaccines/biontech-pfizer-covid-19-vaccine. But compare with Pfizer website for COVID- 19 vaccine available at https://www.cvdvaccine.com/ and https://www.pfizer.com/products/product-detail/pfizer-biontech-covid-19-vaccine

[4] See Nature, Editorial, Evidence-based medicine: how COVID can drive positive change, available at https://www.nature.com/articles/d41586-021-01255-w

[5] See, Fritjof Capra, The Hidden Connections, (First Anchor Books, 2002), page 158-159.

[6] See, Karikó K, Buckstein M, Ni H, Weissman D. Suppression of RNA recognition by Toll-like receptors:

It has been a prior art since 1989, with studies on the RNA correlation to oncogenicity well publicised in the scientific community.[7]

II. mRNA technique, a quick historical background

Drew Weissman's interest in the human immune response to pathogens allied to the pioneering Kathlin Karibó research resulted in a paper entitled "Suppression of RNA recognition by toll-receptors: the impact nucleoside modification and the evolutionary origin of RNA".[8] Therefore, the highly complex manufacturing process has been well-known and used in selected projects since some time ago, according to Weissman and Karibó.[9] However, the use of mRNA technology to develop future vaccines, not necessarily for COVID-19 only, was always a possibility. Therefore, sharing the mRNA know-how was a question of business strategy. For example, management strategies should consider logistic infrastructure globally or choosing a partner for large-scale vaccine manufacturing outside of Europe for rapid transportation and distribution to countries in the southern hemisphere. After all, SARS-COV-2 or COVID-19 spread it from South to North.

One must bear in mind that mRNA technology was not the only vaccine in the race for an effective solution. Other vaccines using traditional methods were also in the pipeline for the World Health Organisation (WHO) approval process, namely the vaccine pre-qualification (PQ), such as Janssen – Cilag International,[10] Oxford-AstraZeneca[11], COVIDSHIELD[12], BIBP/Sinopharm[13], and

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the impact of nucleoside modification and the evolutionary origin of RNA. Immunity. 2005 Aug;23(2):165-75. doi: 10.1016/j.immuni.2005.06.008. PMID: 16111635. https://pubmed.ncbi.nlm.nih.gov/16111635/
See also, Jackson, N.A.C., Kester, K.E., Casimiro, D. *et al.* The promise of mRNA vaccines: a biotech and industrial perspective. *npj Vaccines* **5,** 11 (2020). https://doi.org/10.1038/s41541-020-0159-8

[7] See, Raymond V, Atwater JA, Verma IM. Removal of an mRNA destabilizing element correlates with the increased oncogenicity of proto-oncogene fos. Oncogene Res. 1989;5(1):1-12. PMID: 2506502, available at <https://pubmed.ncbi.nlm.nih.gov/2506502/>

[8] See, Karikó K, Buckstein M, Ni H, Weissman D. Suppression of RNA recognition by Toll-like receptors: the impact of nucleoside modification and the evolutionary origin of RNA. Immunity. 2005 Aug;23(2):165-75. doi: 10.1016/j.immuni.2005.06.008. PMID: 16111635, available at Karikó K, Buckstein M, Ni H, Weissman D. Suppression of RNA recognition by Toll-like receptors: the impact of nucleoside modification and the evolutionary origin of RNA. Immunity. 2005 Aug;23(2):165-75, available at <https://pubmed.ncbi.nlm.nih.gov/16111635/ >

[9] See, Damian Garde and Donald Saltzman, The story of mRNA: from a loose idea to a tool that may help curb Covid" November 10, 2020, available at< https://www.statnews.com/2020/11/10/the-story-of-mrna-how-a-once-dismissed-idea-became-a-leading-technology-in-the-covid-vaccine-race/>

[10] See, The World Health Organisation, Pre-Qualification of Medical Products, available at https://extranet.who.int/pqweb/vaccines/who-recommendation-janssen-cilag-international-nv-belgium-covid-19-vaccine-ad26cov2-s

[11] See, The World Health Organisation, Pre-Qualification of Medical Products, available at https://extranet.who.int/pqweb/vaccines/covid-19-vaccine-chadox1-s-recombinant

[12] See, The World Health organisation, Pre-Qualification of Medical Products, available at https://extranet.who.int/pqweb/vaccines/covid-19-vaccine-chadox1-s-recombinant-covishield

[13] See, The World Health Organisation, Pre-Qualification of Medical Products, available at

Sinovac/CoronaVac.[14] Pre-qualification vaccine participation in the WHO assessment includes any manufacturer that has met the mandatory suitability (PSPQ) and has also received marketing authorisation from the national regulatory authority (NRA) of the country of manufacture for compliance with the local regulatory authority, which must be included in the World Health Organisation list.[15] Options to contain this virus were available.

In clinical trials, mRNA technology was more effective and safer against SARS-COV-2 or COVID-19. Therefore, there is tremendous public interest and an abundance of peer-reviewed literature on mRNA technology. One cannot forget that a cycle for approval of any medicine prior to COVID-19 would be measured in years. Consequently, it is a remarkable event that we have so many vaccines approved through four phases of clinical trials in two of the most conservative agencies for therapeutics safety in the world, namely the Food and Drug Administration and European Medicines Agency, in less than a year.[16]

III. IP Rights for Collaboration and contracts

Generally, an investment for a drug development is high and uncertain. There are so many stages of approval that the risk is part of the drug process. This is due to the marketing approval stage for new drugs approval, which could be delayed in years or show a failed project. The investment for a new drug in the United States is around U$ 2 billion dollars.[17] As the emergency in the United States took shape, *Operation Warp Speed* focused on COVID-19 vaccines or effective treatment, with a budget approved by the U.S. Congress of U$ 19 billion dollars.[18] Five of the seven major private pharmaceutical manufacturers established in the United States accepted this advanced funding for research and clinical trials.[19]

https://extranet.who.int/pqweb/vaccines/covid-19-vaccine-chadox1-s-recombinant

[14] See, The World Health Organisation, Pre-Qualification of Medical Products, available at https://extranet.who.int/pqweb/vaccines/who-recommendation-sinovac-covid-19-vaccine-vero-cell-inactivated-coronavac

[15] See, the World Health Organisation, Pre-Qualification of Medical Products, Vaccines, available at https://extranet.who.int/pqweb/vaccines/procedures-fees-who-prequalification

[16] See, Centers for Disease Control and Prevention, COVID-19, Science Brie: COVID-19 Vaccines and Vaccination, Summary of Recent Changes, available at https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/fully-vaccinated-people.html

And European Medicines Agency, available at https://www.ema.europa.eu/en/human-regulatory/overview/public-health-threats/coronavirus-disease-covid-19/covid-19-latest-updates

[17] See, Congressional Budget Office, Non-Partisan Analysis for the U.S.Congress, Research and Development in the Pharmaceutical Industry, April 2021, available at https://www.cbo.gov/publication/57126

[18] See, Congressional Budget Office, Research and Development in the Pharmaceutical Industry, April 2021, https://www.cbo.gov/publication/57126

[19] See, Congressional Budget Office, Research and Development in the Pharmaceutical Industry, April 2021, https://www.cbo.gov/publication/57126

With this substantial financial support, COVID-19 manufacturers and biotechnology companies will not require more financial advancement to cope with risk and high investment. Nonetheless, the most in need are those perishing by a lack of vaccine equality because the distribution of these vaccines is unsatisfactory. Regardless of the politics of this matter, health is still a high moral compass that we all aim to reach by having compassion for others, in short, solidarity. A highly infectious disease can spread anywhere in a globalised world because it is airborne and human transmissible. Again, it is convenient to remember that the COVID-19 mutates very rapidly. Four variants are in circulation as the latest notice, so governments should donate extra vaccine doses and advocate solid support for the Covid-19 Vaccines Global Access COVAX initiative[20] to protect those fully vaccinated. If not for the protection of others, at least consider their own population that is at risk of being re-infected.

If all are not safe, no jurisdiction will be safe. This human and financial investment of unprecedented collaboration to get a vaccine granted in a record time would be a stroke of misfortune if a new wave of this virus, re-invigorated by mutations, contaminate and take more lives. Thus, it seems natural to advocate for a global vaccination rapidly and effectively.

Again, a swiftly licensing pool would hardly be a hurdle for patentees' profit because the funding has been advanced in a lump sum. Therefore, to raise an argument of a profitable outcome when such an amount of money has been at the industry's disposal may appear insensitive. Besides, the argument of lack of skilled talent to repurpose facilities seems hardly acceptable as a scientific fact but rather as a business strategy for convenience to keep vaccine manufacturing under control.

As we have noted, mRNA technology is not new. For instance, Australia can produce locally with the Monash Institute of Pharmaceutical Sciences (MIPS). The leading investigator, Professor Colin Pouton and his team have produced mRNA, and their project is active with a fund incentive recently apportioned to the leading research facility from the Victoria government.[21] MIPS has produced three mRNA candidates in Australia, which potentially could be distributed to the whole region of Australasian

[20] See, The World Health Organisation, COVAX, available at https://www.who.int/initiatives/act-accelerator/covax

[21] See, Monash University, Pharmacy and Pharmaceutical Sciences, Colin Pouton, available at https://research.monash.edu/en/persons/colin-pouton and see also https://research.monash.edu/en/projects/a-safe-effective-and-rapidly-tuneable-sars-cov-2-vaccine. See also, Yarra Murray Atfield, Victoria announces 50 m to fund mRNA COVID vaccine production in Australia, available at https://www.abc.net.au/news/2021-04-21/victoria-to-develop-mrna-covid19-vaccine-facilities/100083372

and South Asia. Hypothetically, that part of the mRNA production would support the logistics of manufacturing and distributing COVID-19 vaccines by India in a record time than organising vaccine distribution based in the northern hemisphere. A fast approach is necessary, otherwise, a resurgence of this virus will be inevitable.[22]

IV. Waiving IP rights will not scale or speed up vaccine manufacturing and distribution

Waiving IP rights is necessary to bring all stakeholders to the table to collaborate on the standstill on technology transfer and capacity building. Waiving IP rights is not a solution to the problem. It is a strategy to solve a problem created by patenting these life-saving vaccines in the first place. Moreover, it is an opportunity to show support for our global community since vaccine nationalism created segregation through access to vaccines and medical therapy. For instance, two of the world most significant producers of generics, India and South Africa, were left outside of this innovative and competitive group of countries. There are political issues of concern, as well.

Economist Jayati Ghosh called out her government for a series of missteps in the vaccine distribution. However, she notes that raw materials prohibition to be exported to India delayed vaccine production for other countries that depended on Indian vaccine production.[23] As a result, it becomes a policy of vaccine apartheid, in which Ghosh suggests that without a global chain of resources being produced around the world to speed up distribution, all countries will be affected by the recession due to the virus.

Economic indicators may convince countries with advanced technology to think about global health as an asset to avoid an economic crisis for all, including their own. Countries and regions that have applied a strict foreign policy of monopolising raw materials such as the European Union and the United States to support a stock-piling vaccine policy may be under mercantilism policy advice, which worked in the past with colonialism. European countries used mercantilist policies in the past for the exploitation of metals, such as Portugal and Spain. We live in modern times, and such policy has no room to survive in pandemic times.

Having a monopolistic approach to life-saving therapies and vaccines proves to be an inefficient health access strategy. Indeed, it

[22] See, World Health Organisation, Regional Office from Africa, available at https://www.afro.who.int/news/vaccine-supply-crunch-adds-risk-covid-19-resurgence

[23] See, Jayati Ghosh, at Covid-19 in India, profits before people, available at https://www.socialeurope.eu/covid-19-in-india-profits-before-people
See also, DW documentary, Does a vaccine spell the end of the coronavirus pandemic? Available at https://youtu.be/ExcB9ISbccg

implies not saving lives by choice. One does not need a human rights advocate to understand that this policy is unfair and unjust. In the past, such policy was tested for HIV therapies, resulting in an immoral profit for drug companies from the access to HIV life-saving medicines.

A recent paper authored by John Aubrey Douglass[24] explores the influence of the Bayh-Dole Act on federal funded therapies in the United States against price control, plus a positive reform after the 1980s that produced a legislation pro-patent policy inside universities. Douglass says:

"At the same time, the emergence of "vaccine nationalism", in which nations and drug makers prioritize control of IP and production of vaccines for their own populations, is testing the ability of the world to effectively respond to the virus as it mutates."[25]

V. Patent Policy, the untouchables

Anyone who espouses the idea of patent untouchability or playing with patents is playing with fire is counting on our ignorance to have forgotten what an incentive the Bayh-Dole Act, 1980 was for patents. It was enacted to foster collaboration between basic research and advanced the American universities' role in negotiating licensing strategies with pharmaceutic companies and biotechnology enterprises. In addition, science as a component of the economic cycle in the United States was incorporated under a conservative government as an economic asset. Not to mention the tax credits for the private sector to invest in basic research, so taxpayers would have the best of two worlds – cutting edge technology and competitive access to these products.[26]

Humbolt philosophy of access to science to all and protection from private interests gave the Reagan administration a profit-orientated university-private sector alliance. The Bayh-Dole Act produced legislative variations worldwide in the United Kingdom, Japan, France, Germany, Austria, Denmark, Norway, Portugal, Spain, and Finland.[27] Douglass called our attention to the Lisbon Strategy establishing the European Research Area and the Horizon Europe program, a funding program spearheaded by the European Commission.[28] The Horizon Europe program has a budget of € 95.5. billion dollars for four main missions, including health and innovation, so there is no surprise that some research institutes in Europe are eager to get their share of this magnificent apport of

[24] See, The University of California at Berkeley, Goldman School of Public Policy, Center for Studies in High Education, John Aubrey Douglass, available at https://cshe.berkeley.edu/publications/federally-funded-research-bayh-dole-act-and-covid-vaccine-race-john-aubrey-douglass

[25] See, The European Commission, Horizon Europe, Strategic Plan, page 4 available at

[26] See, ibid.

[27] See, ibid.

[28] See, ibid.

money. In case there is doubt that this strategy applies to healthcare, the Horizon Europe 2021-2024 stated that:

"Horizon Europe will act as a synergetic force across the EU funding programmes.5 Through the programme, special attention will be given to ensuring vibrant cooperation between **universities, scientific communities and industry, including small and medium enterprises**, and citizens and their representatives, in order to bridge gaps between territories, generations and regional cultures, especially caring for the needs of the young in shaping Europe's future."[29]

In other words, Horizon Europe is the copycat of the Bayh-Dole Act on steroids. Now European pharmaceutical, biotechnology industries and universities are partners, in which research centres will act as a one-stop brain talent repository for both sectors, which erodes the walls between basic research and applied research, although some may be unconvinced:

"CLUSTER 1 (Health) will increase Europe's autonomy in delivering health care by contributing to safer, trusted, more effective and efficient, affordable and cost-effective tools, technologies and digital solutions for improved (personalised) health promotion and disease prevention, diagnosis, treatment and monitoring for better health outcomes and well-being, **by integrating people in the design and decision-making, based on expected health outcomes and potential risks involved.** It will also contribute to a health-related industry in the EU that is more competitive and sustainable, ensuring European leadership in breakthrough health technologies and open strategic autonomy in essential medical supplies and digital technologies, contributing to job creation and economic growth, in particular Small and Medium-sized Enterprises (SMEs)." [30]

It is rather challenging to see technology transfer from any technology cluster in Europe for manufacturing purposes to less developed or developing countries to occur in a time frame to save lives. However, the whole point of deploying *integration of health policies,* as a European Union plan, may impact every aspect of technology transfer outside of the EU. Because individual European Union countries in their policy strategy will have limited incentive to export raw materials (like reagents for mRNA vaccines) to non-European countries or to

[29] See, The European Commission, Horizon Europe, Strategic Plan, page 7 available at https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/ec_rtd_horizon-europe-strategic-plan-2021-24.pdf

[30] See, The European Commission, Horizon Europe, Strategic Plan, pages 10, 17, 19, 34, 37, 38, 41, 42, 53, 64, 66 (valorisation of intellectual property), 75, available at https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/ec_rtd_horizon-europe-strategic-plan-2021-24.pdf

have an incentive to promote technology transfer to countries in need outside of the European Union bloc.

No economic incentive means, in short, loss of lives.

VI. PATENT OFFICES, and TRIPS article 27 (2) exclusion of patentability

It is expected that basic research is conducted to support and improve public policies for the common good of our society so that an informed government may influence stakeholders in the economic sector to produce commercial research for global consumers. Governments should be monitoring prices for medicine, especially the ones that are life-saving drugs.

We should not think about entrepreneurship and competition or profit from high prices for licenses to manufacture life-saving therapies worldwide in the current situation.

One would expect more vaccine diplomacy in times of pandemic, not, conversely, less. At the global level, these economic elements of innovation, technology transfer, and competition are enshrined in the multilateral agreement, The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs). But why is an absence of advocacy for TRIPS, article 27 (2), to be used in situations such as the SARS-COV-2 pandemic? Why TRIPs article 27 (2) sits idle in times like this?

The TRIPs, article 27 (2) states that:

"Section 5: patents

Article27

Patentable Subject Matter

2. Members *may exclude from patentability inventions*, the prevention within their territory of the commercial exploitation of which is necessary **to protect ordre public or morality,** including to **protect human**, animal or plant life or **health** or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law.

3. Members may **also exclude** from patentability:

(a) diagnostic, therapeutic and surgical methods for the treatment of humans or animals;

(b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement."

Since most jurisdictions have ratified TRIPs, article 27 (2) should have been operational and meaningful. Nonetheless, the truth is far from it. Article 27 (2) has been not useful for the HIV outbreak, and there were no efforts to articulate a specific meaning attributed to *ordre public* or public policy. For instance, SARS-CoV was contained relatively fast after its discovery in 2002, so *ordre public* was not applicable, or at least it would be controversial to restrict the scope and use of IPRs for a contained virus.[31] However, this is not the case with this current pandemic. There is no guarantee that this airborne infection will not return to re-infect populations with many mutations and variables. So, in protecting the *ordre public* or morality to save human lives, this article 27 (2) is a piece of useless knowledge if not used with urgency now. There is an argument to be made that TRIPs does not offer any operational means to permit article 27 (2) to work for States that ratified the agreement. In The United Nations Compendium of International Agreements on Transfer of Technology: Selected Instruments (UNCTAD 2001), or *Compendium,* this management gap is stated as:

"Though the TRIPS Agreement expressly refers to transfer of technology, concerns have been expressed **about the lack of mechanisms in the Agreement to operationalize it**, and the need to develop this concept further in future negotiations has been indicated."[32]

If we have a general meaning for the *ordre public*, it is a flexible interpretation of the principle applicable by choice of the member-States, or in other others, its application is subjective. Subjective means here an unclear set of rules to attribute the circumstances in which it will be operational. For that matter, the *ordre public* lacks purpose for a situation that requires utmost urgency in the COVID-19 case.

COVID-19 virus is an excellent example of a circumstance to be included in Article 27 (2). An airborne disease with a rapid mutation that has decimated individuals regardless of their gender, citizenship, or age would be eligible for such use in the last two years. People are dying of this disease for no access to vaccines because vaccine diplomacy is not working to full effectiveness. Regarding vaccine diplomacy, one does not consider the efficacy standard of the many available vaccines but just access to any vaccine.

A question of public policy or *ordre public* must involve the patentability of subject-matter. Whether the subject-matter is eligible

[31] See, Center for Control Disease Prevention, SARS-CoV available at https://www.cdc.gov/sars/index.html

[32] See, UNCTAD, Compendium, 2001 available at <https://unctad.org/system/files/official-document/psiteipcm5.en.pdf> Cross-reference to Correa, footnote 3.

for an incentive such as to have a grant as a patent or not is the issue for public policy in our treaties and international instruments. In this case, whether it is good public policy to have incentive for basic research via patentability of life-threatening diseases in our public universities and institutes or to re-think incentives for an invention such as a vaccine that saves lives should be the preoccupation of any global, regional, or domestic policymaker.

One would say that implementing a definition of public policy applicable for TRIPs article 27 (2) will help member-States define their economic risks of offering patentability to any biotechnology subject-matter. Including a situation such as a COVID-19 pandemic would be a logical circumstance to avoid patentability instead of an opportunity for pure commercialisation of products. It seems a no-brainer.

We are not witnessing a first-time event for a race for patent exclusivity in an innovative environment such as the biotechnology industry. In 2000, the Human Genomic project and the private-owned Celera Genomics agreed to publish the human genomic map for science and future research instead of working on opposite sides: one side for commercialisation and the other for the public release of the results the future of the human genomic map research.[33]

Patent eligibility is a major problem for patent examiners and patent offices around the world. As patent attorneys specialised in therapeutics and biotechnology medicine recognise, building a strategy for biotechnology clients depends on domestic patent law and international patent law. Shopping for friendly jurisdictions with broad patent eligibility for patent applicants is one of the strategies, so there is a pressing need to have domestic law, including jurisprudence to consider the eligibility and limits for patentable subject-matter. However, with a flexible scope for patent applications domestically and TRIPs article 27 (2) with no specific meaning for the *ordre public,* there is no incentive for domestic patent law to review the scope and patent breadth. Considering this reality, patent examiners have little room to interpret the law in a restrictive sense, but rather the examination process must follow what is available within their domestic jurisdiction.

One of the busiest patent offices in the world has one of the broadest acceptance for interpretation of patent claims, which results

[33] See, Nature, How Diplomacy helped to end the race to sequence the human genome, Editorial, available at <https://www.nature.com/articles/d41586-020-01849-w >. Understanding how we have got to this biotechnology competition to patent biotechnology technologies, one must go back to 1975 Asilomar Conference, see a detailed account on biotechlogy history on Fritjof Capra, The Hidden Connections, (Anchor Books, 2002), pages 158-162.

in a friendly acceptance of claimed subject-matter. However, for the European Patent Office (EPO), the interpretation of a patent claim depends on the wording used in the written claims described for the invention, according to article 53 on Exceptions of Patentability,[34] which the patent examiner must interpret with cross-reference to other Rules and EPO articles and with the limitations on EPO international search.[35]

Coincidentally, the EPO, article 53, refers generally to *ordre public* stated at the TRIPs, article 27 (2). Nonetheless, with no attribution to the meaning of *ordre public*, there is no clear guidance for patent examiners but the domestic law, free to create a novel meaning according to the economics of the moment.

VII. Conclusion

Legal tools are available to improve access to information, technology transfer, changing patent policy, and activating supply chains globally. Moreover, using an international agreement as TRIPs for forging trust among States in situations such as a pandemic allows a more significant collaborative effort among many stakeholders disenfranchised from technology clusters. Transparency and trust are of utmost emergency to avoid theories of insufficient evidence and chaotic vaccine hesitance in our communities. With TRIPs, an agreement of binding nature, we have an excellent instrument to put to the test on article 27 (2). If SARS-COV-2 and its mutations are not controlled at a reasonable pace, it will get worse before it gets better.

With no generics availability for high-end medicines, especially vaccines, patentability for life-saving therapeutics sends a message of mistrust to those who have no access to it and a great deal of lack of morality and a deficient bioethics protocol in our patent system. Thus, becoming more of an intention to achieve vaccine diplomacy but no real intention to act upon it. Moreover, in these times of digital inclusion, communications are instantaneous. Therefore, witnessing deaths in less and

[34] See, the European Patent Office, article 53, available at < https://www.epo.org/law-practice/legal-texts/html/epc/2020/e/ar53.html >

[35] To understand the complexity of the European Patent Office patent application rules for therapeutic use, one has to read the parameters of EPO international search. See, "2. Subject-matter which the ISA is not required to search and examine Art. 17(2)(a)(i) and Art. 34(4)(a)(i) together with Rules 39 and 67.1 are the equivalents of Art. 52(2), (3) and 53(b), (c) EPC concerning the exclusion from patentability of non-technical inventions, programs for computers, methods of doing business, medical methods and the exception to patentability for plant or animal varieties or essentially biological processes for the production of plants and animals, respectively. Since the PCT procedure does not lead to a grant, subject-matter which would be excluded from patentability under the EPC is identified as subject-matter for which the ISA and/or the IPEA is not required to carry out search and international preliminary examination. The criteria applied for the decision not to perform an international search are the same as for the European procedure. This means that the discretion of an ISA not to search subject-matter set forth in Rule 39.1 is exercised by the EPO as ISA only to the extent that such subject-matter is not searched under the provisions of the EPC. For subject-matter which the ISA is not required to search under Art. 17(2)(a)(i) and where, as a consequence, an incomplete search report will be issued, the restriction."

developing countries daily for a lethal virus with a vaccine available is appalling.

It negates the very first principles of the Charter of The United Nations, which advocates for security and peace for all States. To achieve peace and security, we need global health, not by elective priority to nationals, but for all. It shows a lack of justice to withhold nations from therapies regardless of the economic bracket. It is to our mutual benefit to quell SARS-COV-2 variations before they spread out to more populations everywhere. Sitting comfortably in front of any digital media, watching others in despair, and waiting for vaccine diplomacy to come from somewhere else, is not an option. It is time to revert economics as a sole leading component for public health policy in life-saving therapies and re-assess broad patentability eligibility to include proper bioethics principles in our patent laws. TRIPs agreement is a tool, for that matter. That will be a welcome support to re-open negotiations for international agreements such as TRIPs and discuss our options on patentability issues.

A REVIEW OF THE GLOBAL ELDERLY RIGHTS FRAMEWORK AND THE PROSPECTIVE ROLES OF CONSTITUTIONAL COURTS IN AUGMENTING ELDERLY RIGHTS IN THE INDIAN JURIDICAL CONTEXT

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Abstract

Elderly persons play an instrumental role in not only fostering inclusive growth but also creating strong value chains that augment social cohesion. They promote intergenerational equity and facilitate the promotion, preservation, and dissemination of traditional knowledge. However, despite playing such critical roles, the elderly population, especially the poor elderly, become victims of income and health insecurity. Although many of the international legal instruments bestow plenary rights on elderly people, in reality, they have very few remedies to exhaust. The paper attempts to revisit the global elderly rights framework and strives to know whether the existing international normative safeguards are sufficient to promote elderly rights and whether constitutional courts in the Indian juridical context have any thoughtful role to play in consolidating the rights framework. The main argument that resonates across the length and breadth of the paper is that the implementation and monitoring of laws and policies governing elderly rights are weak and that there is an impending need to revamp the implementation and monitoring framework through the purposive role of constitutional courts. In light of the prevailing facts and the normative findings, the paper proposes that the constitutional courts in India must invoke their review and epistolary jurisdictions to ensure effective implementation and monitoring of elderly rights at the municipal level. It employs analytical and descriptive approaches to thematically correlate existing frameworks and to reach apriori generalisations.

Keywords: Elderly rights, Constitutional courts, Judicial review, Epistolary jurisdiction, National human rights institutions

I. Introduction

Elderly persons[1] play an instrumental role in not only fostering inclusive growth but also creating strong value chains that augment social cohesion. They promote intergenerational equity and facilitate the promotion, preservation, and dissemination of traditional knowledge.[2] However, despite playing such critical roles, the elderly population, especially the poor elderly, become victims of insecurity. In fact, many of them suffer from social and economic insecurity and a substantial number of them do not have sufficient health protection. The

[1] For the purposes of this article, the terms 'elderly persons', 'aged people', 'senior citizens', 'older persons' have been interchangeably used.

[2] Usha Dixit & V. C. Goyal, *Traditional Knowledge from and for Elderly*, 10 IJTK 429, 430 (2011). According to the authors, traditional knowledge includes critical information about resources, practices, techniques and technologies that are critical to the survival of mankind across generations.

laws and policies guiding the elderly appear inappropriate in addressing the multi-faceted issues facing them. In addition, a considerable number of the aged population, irrespective of their social, economic, and cultural backgrounds are exposed to various kinds of abuse (primarily in the hands of their children or relatives) that mainly include physical abuse (including sexual abuse), emotional abuse and psychological abuse. Further, a few of them are subject to torture.[3] Furthermore, some of them are even susceptible to crimes.

The conspicuous lack of an overwhelming international or even a regional convention on the rights of elderly persons further exacerbates their problems and concerns and makes them vulnerable to abuse and mistreatment.[4] Although a bundle of elderly rights operates at the international and regional levels by virtue of some of the overarching international and regional human rights instruments and many of the rights find expressions in municipal human rights laws, aged persons have only a few remedies to exhaust. Many states that ratify the human rights treaties fail to induce compliance and tend to perpetrate even worse behavior.[5] In addition, on several occasions states fail to enforce their human rights obligations[6] of *respect-protect-fulfil*, leading to a situation wherein elderly persons become victims of social and economic injustice so much so that they cannot even apply their rights to establish themselves as victims of such injustice. Further, because of the states' inability to implement the rights envisaged under various global and regional instruments, elderly persons generally are unable to explore the truth (behind their victimization) in order to access substantive justice through courts and other forums. Furthermore, they can hardly exercise their basic right to reparations.

In the absence of forward-looking administrative systems, there are hardly any remedies against violations of elderly rights. Municipal administrative systems that embody national and local administrative rules, governance ethics, implementation and monitoring frameworks, administrative adjudication mechanisms, etc., seemingly fail to complement the rights framework created through the international and regional

[3] Dorota Smetanová, *Domestic Violence against Seniors in the Slovak Republic* in VIOLENCE AGAINST THE ELDERLY CHALLENGES – RESEARCH – ACTION 251 (Katarzyna Jagielska et al., eds., 2015).

[4] Diego Rodriguez-Pinzón & Claudia Martin, *The International Human Rights Status of Elderly Persons*, 18 AM. UNIV. INT. LAW REV. 915, 917 (2003).

[5] Ryan M. Welch, *National Human Rights Institutions: Domestic Implementation of International Human Rights Law*, 16 J. HUM. RIGHTS 96, 97 (2017).

[6] In the absence of an overwhelming international executive agency to oversee the implementation of human rights, the states are endowed with the non-derogable responsibility to ensure the enforcement of human rights obligations.

instruments. One possible explanation behind such failure is the incapacity of the national human rights organizations and institutions, which are supposedly dedicated to the causes of ensuring compliance, mobilization and legalization,[7] to protect and promote human rights. Another probable explanation behind the failure may be attributed to states' unwillingness to embrace a rights-based approach to growth and development.[8] It is needless to mention here that such an approach would help these states integrate the broad normative human rights principles into national policies, strategies and maneuvers that promote inclusive growth.[9]

Even global administrative law (which embodies principles, rules and administrative norms created and practised by supra-national institutions)[10] seems unfit to ensure implementation, enforcement and monitoring of human rights obligations, especially in the context of elderly individuals. Since global administrative law is based largely on globalized principles focusing on a range of institutions, norm-creating bodies and dispute settlement mechanisms that are largely endorsed by agencies such as the International Monetary Fund and the World Bank, etc., the law fails to cater to the principles of diversity and pluralism.[11] Further, to gain authority (and in a restricted sense, legitimacy), it may unnecessarily juridify the political processes and the prevailing values through the transnational and international dispute settlement bodies.[12] Furthermore, global administrative law may relegate developing countries to an inferior position because the law seemingly frustrates the sovereign equality principles; under the law, powerful nations would have a clear strategic advantage over weak nations.[13] Debatably, the law is linked inextricably to imperial institutions and contemporary international law and may therefore defeat the causes of justice and democracy, especially from the point of view of third world countries.[14] Consequently, global administrative law does not provide an immediate answer to the question of enforcement of human rights at the municipal level. On the contrary, the law can *stricto sensu* have adverse effects on fundamental

[7] Welch, *supra* note 5, at 97.
[8] Savitri Goonesekere, *National Implementation of International Human Rights, Social Inclusion and the Empowerment of People* https://www.un.org/esa/socdev/egms/docs/2013/EmpowermentPolicies/National%20Implementation%20of%20International%20Human%20Rights.pdf (last visited May 15, 2021).
[9] *Id*.
[10] Benedict Kingsbury & Megan Donaldson, *Global Administrative Law* (September 06, 2016), https://www.iilj.org/wp-content/uploads/2016/08/EPIL_Global_Administrative_Law.pdf (last visited May 15, 2021).
[11] Carol Harlow, *Global Administrative Law: The Quest for Principles and Values*, 17 EJIL 187, 188 (2006).
[12] *Id*. at 208.
[13] Nico Krisch & Benedict Kingsbury, *Introduction: Global Governance and Global Administrative Law in the International Legal Order*, 17 EJIL 1, 11 (2006).
[14] B. S. Chimni, *Co-option and Resistance: Two Faces of Global Administrative Law*, 37 INT'L L. & POLITICS 799, 800 (2006).

freedoms and individual rights because it strikes at the very root of self-rule and local autonomy.[15]

Resultantly, with both municipal and global administrative law having limited applications, the elderly population has only a few remedies to exhaust in the event of a violation of their basic rights. This seems to frustrate the common law principle *ubi jus ibi remedium* that was recognized formally in *Mathew Ashby v. William White*[16] and that had consolidated over the years through the rulings of various courts and quasi-judicial bodies.

In addition to the implementation and monitoring gaps caused largely because of the failure of the municipal and global administrative law, the world is struggling badly with the issue of active population aging and the issue of the aging workforce. At the international level, the issue of population aging worsens the problems faced by elderly people. The world is witnessing an exceptional challenge in terms of population growth and if UN figures are believed, the world population is going to increase to 1548.9 million (from the current 702.9 million) by 2050.**[17]** In the face of this challenge posed by population aging, we are faced with a crucial question. Do we have the requisite systems and processes in place to address active population aging?

Because of the implementation gaps coupled with the issues caused by population aging, the elderly population, especially the poor elderly, are exposed to a number of vulnerabilities. Even in developed countries, the situation is not commendable. Japan, for example, is a classic example in this regard. In conjunction with the international normative framework governing elderly rights, Japan has passed quite a few laws.[18] However, there seem to be striking implementation gaps.[19] Similarly, in Italy, which boasts of having one of the best healthcare infrastructures across the world, the elderly rights framework is not in a stable state; elderly people need to depend on foreign migrants, especially women, for

[15] *Supra*, note 10.
[16] (1703) 92 ER 126.
[17] UNITED NATIONS, DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS, POPULATION DIVISION, WORLD POPULATION AGEING 2019 5 (2020).

[18] Japan has the fourth highest number (about 35.58 million) and the highest percentage (28% approximately) of elderly persons in the world. Japan also has the highest old-age dependency ratio and life expectancy (at birth). Arguably, Japan has one of the highest number of laws and policies that strive to promote elderly care and support. Some of the laws include the National Pension Act, 1959, the Employment Insurance Act, 1974, the Public Assistance Law, 1950, the Social Welfare Service Act, 1951, etc. Some of the policies (especially governing elderly healthcare) include Active 80 Health Plan, 1988, The Healthy Japan 21, etc.
[19] Staff Reporter, *Japan's Pension System Inadequate in Aging Society, Council Warns*, THE JAPAN TIMES (June 4, 2019), https://www.japantimes.co.jp/news/2019/06/04/business/financial-markets/japans-pension-system-inadequate-aging-society-council-warns/ (last visited May 17, 2020).

household services (mainly as caregivers).[20] Cases of elder abuse are also on the rise in Italy.[21] In developing countries such as India, the situation is far worse. India has only one law, the Maintenance and Welfare of Parents and Senior Citizens Act (hereinafter referred to as the MWPSC Act) 2007, and a few policies to support the plight of the elderly population. However, because of conspicuous implementation gaps, the law and the policies have been inapt in attending to the causes of the aged population.

The first part of the article introduces the matter and discusses the (in)effectiveness of administrative law, both global and local, in the implementation and monitoring of the laws and policies promoting the elderly rights framework. The second part strives to revisit the various normative safeguards protecting elderly individuals at the international level. The penultimate part focuses on the prospective roles of constitutional courts in India in fostering elderly rights. It refers to a few case laws adjudicated by the highest constitutional courts in India to argue that the courts must act as custodians of the principles of the rule of law and access to justice. The article concludes by saying that one effective way of implementing the global elderly rights framework in the Indian juridical context is through judicial activism.

II. The global normative framework guiding elderly rights jurisprudence

Despite the fact that there is no overarching international instrument governing the rights and privileges of aged individuals, a few global, regional and local human rights instruments (particularly those concerning economic and social rights) recognize the aged persons' rights to social protection and social security. Seemingly, one of the main human rights instruments (operating at the international level) that officially recognize the relevance of social security was the Universal Declaration of Human Rights (UDHR), 1948. Article 22 of the UDHR mandates that all members of the society are entitled to social security rights and are allowed to enjoy economic, cultural and social rights that are indispensable for promoting their personality and ensuring their dignity. A bare reading of Article 22 of the Declaration indicates that an individual's right to social security is entwined with certain social, economic and cultural rights, the realization of which is compulsory for the holistic physical, mental and psychological development of an individual. The contemplation of Article 22 is augmented by Article 25(1) of the Declaration that

[20] Daniela Del Boca & Alessandra Venturini, *Migration in Italy is Backing the Old Age Welfare*, IZA, Discussion Paper No. 8328, 18 (2014).

[21] Licia Boccaletti, *Introduction to Elder Abuse in Italy* (January 2014), http://www.combatingelderabuse.eu/wp-content/themes/Visionpress/docs/Presentation_kick_off_ITALY.pdf (last visited May 17, 2021).

mandates the right to social security in case of old age and the right to a decent standard of living. Apart from the UDHR, other international human rights instruments such as the International Covenant on Economic, Social and Cultural Rights (ICESCR), 1966 also support social protection and social security of all, including the elderly. Article 9 of ICESCR embodies the right to social security and social insurance. Apart from the ICESCR, Article 7 of the International Covenant on Civil and Political Rights (ICCPR), 1966, read with the provisions of the Torture Convention, 1984, protects the elderly people from torture and coercive medical or scientific experimentation. In addition, the equal protection clause under Article 26 of the ICCPR encapsulates social security rights. In *Brooks case*,[22] the Human Rights Committee had held that the scope of Article 26 is wide and that it forbids both *de facto* and *de jure* discrimination in any field that is *inter alia* protected and regulated by the state machinery.[23] The Committee had also held that the economic right to social security could be read in the broader ambit of civil and political rights. The reasoning of the Committee in *Brook's case* became a precedent for the determination of the second-generation economic and social rights through the first-generation civil and political rights.

Among the regional instruments, the European Social Charter (ESC), 1961 bestows a non-derogable obligation on member states to achieve conditions wherein the rights of the elderly individuals to social assistance and security may be protected. The ESC, through Article 23, creates an obligation on the states to undertake measures to guarantee all-inclusive social protection of the elderly persons. The said stipulation (Article 23) obligates states to create enabling circumstances and conditions in which the aged population may realize their potential and may lead a dignified and healthy life. Apart from Article 23, Article 12, read with Article 27(1)(b) of ESC, entitles everyone, including the aged persons, to social security. Further, Article 13 of the Charter stipulates the right to medical and social assistance. In the perspective of the European Union (EU), the Treaty on the Functioning of the European Union (TFEU),[24] 2007 recognizes the right to social protection and social security (though not exclusively for the elderly population). Various provisions of the TFEU, especially under the title 'social policy,' supplement the causes of social protection and security in accordance with the provisions of the ESC.

[22] Brooks v. Netherlands, U.N. GAOR Hm. Rts. Comm., 39th Sess., Supp. No. 40, U.N. Doc. A/42/40 (1987).

[23] Rodriguez-Pinzón & Martin, *supra* note 4, at 923-924.

[24] The treaty, which was passed in Lisbon, strives to consolidate the operational and structural bases of the EU.

In addition, the Charter of Fundamental Rights (CFR) of the EU, 2000, which achieved a binding effect subsequent to the passage of the Treaty of Lisbon in 2007, acts as a beacon to other human rights instruments for the aged population. By virtue of Article 25, the CFR obligates States Parties to the Charter to respect and recognize elderly rights so that they may lead an independent and dignified life and may take part in the social and cultural life. Further, Article 34(1) of the CFR stipulates that the EU recognizes and respects elderly peoples' rights to social services and social security to that extend protection during old age.

Apart from the European system, the African system and the inter-American system also strive to promote elderly rights. Of remarkable mention is Article 4(5) of the American Convention of Human Rights (ACHR), 1969 that stipulates that no person aged 70 years or more shall be subject to capital punishment. The Additional Protocol to the ACHR in the Area of Economic, Social and Cultural Rights through Article 17 extends social protection to the elderly population. Article 17 read with Article 9(1)[25] of the Protocol bestows an obligation on States Parties to (1) embark on programmes that may provide them the prospect of engaging themselves in productive work tailored to their needs and capabilities (2) arrange for appropriate facilities in terms of food, medicines, etc., to those elderly people who are unable to take care of themselves (3) promote institutions that may augment the quality of life of the elderly population. Article 18(4) of the African Charter of Human and Peoples' Right (also known as the Banjul Charter), 1981, states that the elderly population shall have the right to special measures of protection in conjunction with their moral and physical requirements. Last but not least, the Andean Charter, 2002 through Articles 46 and 47, strive not only to protect the elderly population against all forms of violence but also to promote social security. The said provisions also obligate member states to ensure the participation of the elderly people in the decision-making process.

Barring from the important provisions envisaged under the aforementioned international and regional legal instruments on rights (especially elderly rights), a few International Labour Organization (ILO) conventions and recommendations vouch for social security, especially in the context of income protection.[26] The ILO instruments'

[25] Art. 9(1) of the Protocol envisages the right to social security for the aged. The right also percolates to dependents, in the event of death of an elderly beneficiary.

[26] While the ILO Conventions are binding in nature, the Recommendations have persuasive value and morally obligate states to adopt the requisite

focus is mainly on revamping the social security framework through income security, which is achieved through either social insurance or social assistance or both. One of the earliest ILO instruments on income security is the Income Security Recommendation, 1944 (Recommendation No. 67).[27] The main objective of the instrument (from the perspective of income security for the aged population) is to vouch for income security schemes that may relieve want and preclude destitution through the restoration of income that may be lost because of inability to work during old age. Recommendation 67 also determines the threshold age that would allow an elderly person to have access to social security benefits.[28] Further, it attempts to achieve income security through both social assistance and social insurance.[29]

The most important among all ILO instruments is the Social Security (Minimum Standards) Convention,[30] 1952 (No. 102), which is dedicated to the cause of social security. The Convention identifies certain benefits, viz., Sickness Benefits, Medical Benefits, Old-age Benefits, Unemployment Benefits, Survivor's Benefits, Maternity Benefits, Family Benefits, Invalidity Benefits and Employment Injury Benefits for the design and implementation of programmes, policies and laws on social security. Further, Articles 25 to 30 (Part V) of the Convention obligates member states to provide old-age benefits to certain classes of elderly people contemplated under Articles 27 and 28 of the Convention. Furthermore, Article 26 of the Convention sets the age of receiving old-age benefits at 65 or higher. The 1952 Convention was followed by the 1967 Convention (No. 128) on Invalidity, Old-age and Survivors' Benefits. Articles 14 to 19 (Part III) of the 1967 Convention augments the old-age benefits contemplated under Part V of the 1952 Convention. The provisions of the 1967 Convention are consolidated by the Invalidity, Old-Age and Survivors' Benefits Recommendation (No. 131), 1967, which mandates not only the types of contingencies that are covered but also the benefits that aged individuals are entitled to. Further,

frameworks suggested in the respective recommendations.

[27] The 1944 Recommendation draws heavily from the Old-Age Insurance (Industry) Convention (No. 35), 1933, Old-Age Insurance (Agriculture) Convention (No. 36), 1933 and the Invalidity, Old-Age and Survivors' Insurance Recommendation (No. 43), 1933. While the first two instruments are outdated and are no longer in force, the last instrument, i.e., Invalidity, Old-Age and Survivors' Insurance Recommendation was withdrawn.

[28] The age when an elderly individual becomes incapable of rendering effective work is considered as the threshold, according to Recommendation 12 of the instrument.

[29] Recommendations 5 through 27 deal with social insurance whereas 28 through 30 deal with social assistance indicating *inter alia* that ILO wanted the member states to focus more on social insurance to ensure income security for the elderly population.

[30] The Convention, which entered into force on 27th April, 1955, provided (through annexure) a classification of 99 economic activities based on international labour standards.

Recommendation 131 also envisages a strong system of calculating benefits, including special benefits. Overall, both the aforementioned Conventions help in rationalizing and harmonizing income security policies and laws relating to the aged population. They are dynamic instruments,[31] which envisage that benefits must be reviewed and adjusted from time to time in view of the changing socioeconomic needs of the beneficiaries.[32]

The latest instrument of the ILO is the Social Protection Floors Recommendation (No. 202) of 2012.[33] The instrument provides efficacious guidance to member states to create, maintain, execute, and screen social protection floors, which are municipally determined social security guarantees that help in reversing poverty, vulnerability and exclusion, and to supplement the national social security frameworks. Further, the Recommendation alludes to the measures that member states may adopt to ensure effective design and implementation of the social protection floors. Furthermore, it assures access to income security and basic healthcare, the two fundamental requirements for a dignified and secured life during old age.[34] Overall, although the instrument fails to identify elderly individuals as a vulnerable group requiring substantive protection and also refrains from defining critical expressions such as active age, old-age, etc.,[35] it creates an onus on nation-states to ensure old-age benefits in the form of basic income security for the elderly population at a defined (nationally) minimum level.[36]

The Sustainable Development Goals (SDGs)[37] also endeavour to protect elderly individuals. The Goals relating to the eradication of poverty (Goal 1), achievement of gender equality (Goal 5) and reduction of inequalities (Goal 10) are intricately linked to the causes and requirements of the aged population. Of special mention is Goal 3, which obligates nations to ensure healthy lives and the well-being of all. Further, Goal 8 of the SDGs asks states to promote work

[31] In 2002, the ILO had confirmed that both the 1952 and 1967 Conventions are fully operational instruments. For details see: Krzysztof Hagemejer & Valérie Schmitt, *Providing Social Security in Old Age: The International Labour Organization View* in SOCIAL PROTECTION FOR OLDER PERSONS SOCIAL PENSIONS IN ASIA 138 (Wening Handayani & Babken Babajanian eds., 2012).

[32] ILO, WORLD SOCIAL PROTECTION REPORT 2014/15: BUILDING ECONOMIC RECOVERY, INCLUSIVE DEVELOPMENT AND SOCIAL JUSTICE: BUILDING ECONOMIC RECOVERY, INCLUSIVE DEVELOPMENT AND SOCIAL JUSTICE 91 (2014).

[33] It was adopted by 185 member states and was later endorsed by the UN.

[34] INTERNATIONAL LABOUR OFFICE, SOCIAL PROTECTION DEPARTMENT, SOCIAL PROTECTION FOR OLDER PERSONS: KEY POLICY TRENDS AND STATISTICS 1 (2014).

[35] Tineke Dijkhoff, *The ILO Social Protection Floors Recommendation and its Relevance in the European Context*, 21 EJSS 351, 358 (2019).

[36] Paragraph 5(d) read with Paragraph 9(2) of the Recommendation.

[37] SDGs are in a way extensions of Millennium Development Goals (MDGs). While the MDGs had nine goals, the SDGs embody 17 Goals that are more holistic and pragmatic. The Goals are supposed to be realized by 2030.

for people across ages; this Goal is primarily relevant because many elderly people prefer to continue work post their retirement.[38] In addition to the Goals mentioned above, Goal 16 of the SDGs, which strives to "promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels," tries to create a broader platform through which elderly rights may be effectively promoted and protected. Goal 16 of the SDGs not only points out that holistic justice should be made available to all it also tries to uphold and develop a robust mechanism to address concerns relating to violation of the principles of substantive justice. A purposive interpretation of Goal 16 indicates that it is the pious obligation of the states to expressly include the disadvantaged people (which include elderly persons) so as to ensure the interplay of the rule of law and access to justice.[39]

The Madrid International Plan of Action on Aging (MIPAA), which was adopted by the UN in 2002 during the Second World Assembly on Aging, is yet another instrument that attempts to consolidate the elderly care and support framework. [40] The main objectives of the Madrid Plan are to (1) promoting the causes of social protection and social security (2) addressing the discrimination faced by elderly people (3) creating a normative framework to promote the life and living and the dignity of the elderly population (4) bridging intergenerational gaps. The Plan lays down recommendations based on three priority areas, viz., Older Persons and Development, Ensuring Enabling and Supportive Environments and Advancing Health and Wellbeing into Old Age.[41]

Surprisingly, despite the aforementioned ILO conventions and recommendations, the mandated rights mentioned under the global and regional human rights instruments, the universal objectives under the SDGs, and the interplay of MIPAA/RIS, quite a few nations have not yet embraced any social security policy or law for the aged population at all. In terms of income security, the situation is worse; a policy paper published by ILO in 2014 indicates that only 3.3 percent of the global GDP is spent towards the income security of the elderly population.[42] It further confirms that, internationally, the right to social security (in terms of income security)

[38] HelpAge International, *Sustainable Development Goals* (2015), https://www.helpage.org/what-we-do/post2015-process/ (last visited May 17, 2020).

[39] OECD & Open Society Foundations, *Leveraging the SDGs for Inclusive Growth: Delivering Access to Justice for All* (July 11 2018), https://namati.org/wp-content/uploads/2017/06/delivering-access-to-justice-for-all.pdf (last visited Oct. 28, 2020).

[40] It was adopted in two parts, a Political Declaration (Part 1) comprising 19 Articles and a Plan of Action on Aging (Part 2) comprising recommended actions based on three priority areas.

[41] Rodriguez-Pinzón & Martin, *supra* note 4, at 949.

[42] INTERNATIONAL LABOUR OFFICE, *supra* note 34, at 5.

in old age is largely frustrated, and that substantial inequalities exist; only 42.2 per cent of the working-age population is covered by laws that support old-age pension coverage (through either contributory or non-contributory schemes).[43] Furthermore, it states that only a little more than half of the elderly population (about 51.5 percent) who are above the statutory pensionable age (which is generally 65, although in some countries the age is 60) receive an old-age pension.[44]

In terms of social security against abuse, there are only a few countries that have policies and laws addressing the subject in light of the stipulations envisaged under the MIPAA. Studies indicate that, across jurisdictions, cases of violence and abuse against elderly individuals are on the rise, indicating further that legal and policy interventions are required to address the issue.

If we do an intelligent skimming of all the global and regional instruments, policies and initiatives, we observe that only fractional attention is accorded by these global and regional instruments, policies and initiatives to augment elderly care and to vouch for the protection and reinforcement of elderly rights. This lack of generous attention explains why there is a need to reexamine elderly concerns and issues. The global community is yet to adopt an over-arching Convention on Elderly Persons, although the UNGA has lately undertaken an initiative to seek advice from the member states regarding the viability of drawing up a global convention on the rights of older persons.

III. The prospective role of constitutional courts in augmenting elderly rights jurisprudence in India

There is no denying the fact that the dignity of elderly individuals is inviolable and, therefore, must be respected and protected. However, their right to live with dignity will only be ensured if they are provided with the requisite facilities and care. It is no new knowledge that the implementation of laws and policies governing elderly rights in India is weak. Debatably, the roles of the municipal human rights institutions[45] such as the National Human Rights Commission (NHRC) and the State Human Rights

[43] *Id* at 11.
[44] *Id* at 13.

[45] The competence and responsibility of such national institutions, composition, the methods of operation, etc., are determined by the Paris Principles that was adopted by the UN General Assembly (UNGA) (vide UNGA Resolution 48/134) in December 1993. According to the Paris Principles, the main competence of a national human rights institution shall be the protection and promotion of human rights. The primary responsibilities of such institutions shall include (a) addressing any situation wherein human rights are violated (b) ensuring harmonization of municipal and international norms governing human rights (c) cooperating and liaising with the UN and other global, regional and national human rights agencies and institutions for the protection of human rights, etc.

Commissions[46] that are responsible for the protection and promotion of elderly rights have not been promising. Questionably, one of the major shortcomings of the NHRC and the State Commissions is that they are conservative and prioritize a complaint-based approach over a policy-based one.[47] In addition, since the NHRC and the State Commissions lack *de facto* authority to take any direct action and to punish perpetrators of abuse and crimes,[48] they seem to shy away from performing the critical review functions.[49] One of the major structural infirmities that these Commissions suffer from is that their recommendations cannot be enforced.[50] Another operational limitation is lack of adequate manpower; while the Commissions receive thousands of complaints every year, they hardly have sufficient staff to effectively address the complaints.[51] The Commissions are also bureaucratic in appeal, especially because they comprise government officers, including retired officers.[52]

In view of the Commissions' ineffectiveness in enforcing human rights obligations, it becomes imperative for the constitutional courts, the guardians of the constitution,[53] to take on themselves the non-derogable responsibility of ensuring the implementation of elderly rights bestowed on them by virtue various international and municipal laws. Constitutional courts do play a critical role in effectuating the supremacy of constitutional norms.[54] Through the expansion of their judicial powers, these courts tend to redefine the contours of democratic government and to recast policy-making.[55] Constitutional courts act not only as authoritative interpreters but also as trustees of the prevailing constitutional order.[56] As authoritative interpreters, they construct, deconstruct and reconstruct norms and as trustees, they have the final say in assigning the operative meaning to an emerging constitutional norm.[57] Constitutional courts

[46] The NHRC and the State Human Rights Commissions were constituted by virtue of Sections 3 and 21 of the Protection of Human Rights Act, 1993 (Act 10 of 1994), respectively.

[47] Monika Mayrhofer et al., *International Human Rights Protection: The Role of National Human Rights Institutions - a Case Study* (2016), https://fp7-frame.eu/wp-content/uploads/2016/08/Deliverable-4.3.pdf (last visited May 17, 2021).

[48] Manickavasagam Bhoothalingam, *Effective Role of Human Rights Commission in India* in HUMAN RIGHTS IN INDIA: ISSUES AND CHALLENGES 94 (C. Subramanian and M. Sugirtha eds., 2016).

[49] *Supra* note 47.

[50] Mandeep Tiwana, *Needed: More Effective Human Rights Commissions in India*, https://www.humanrightsinitiative.org/publications/nl/articles/india/needed_more_effective_hr_comm_india.pdf (last visited May 17, 2021).

[51] *Id*.

[52] *Id*.

[53] Kim Lane Scheppele, *Guardians of the Constitution: Constitutional Court Presidents and the Struggle for the Rule of Law in Post-Soviet Europe*, 154 U. PA. L. REV. 1757, 1757 (2006).

[54] Lee Epstein, *The Role of Constitutional Courts in the Establishment and Maintenance of Democratic Systems of Government* (2001) http://epstein.wustl.edu/research/conferencepapers.2000APSA.pdf (last visited May 17, 2021).

[55] *Id*.

[56] Alec Stone Sweet, *Constitutional Courts* in COMPARATIVE CONSTITUTIONAL LAW 822 (Michel Rosenfeld and Andras Sajo eds., 2012).

[57] *Id*. at 827.

also tend to self-consciously address and shape the participation of social groups and institutions, including national human rights institutions, in the regulatory processes.[58] In addition, these courts play a progressive role in promoting multi-level governance and in making sure the implementation of policies and laws.[59] Further, they function as regulatory watchdogs and use regulatory tools in adjudication; these tools help the courts to determine the (un)justified or (un)reasonable nature of laws that tend to frustrate fundamental rights.[60] Therefore, in these courts, judges are better informed about the actual import and impact of a legislation.[61]

In the Indian constitutional perspective, these courts, by virtue of their jurisdictional and institutional segregation from other courts,[62] enjoy a unique status. The judgments that they render are also of a *sui generis* nature. Moreover, these courts have redefined the parameters of fundamental rights jurisprudence and have fostered a *rights revolution*.[63] Through their power of judicial review, both *ex ante* and *ex post*, they have helped in reversing injustice and in promoting the principles of the rule of law. In fact, their power of judicial review has downplayed the principles of parliamentary sovereignty and has put fundamental rights on the priority list.[64] It has encouraged popular sovereignty and has mitigated the principal-agent problem, allowing constitutional courts to monitor, signal and coordinate government actions.[65] It has enabled people to control their government and has obligated the government to obey court orders.[66] In addition, the review power of constitutional courts has also allowed them to adopt an institutional approach in addressing the fetters created by usurping governments.[67] The power has unequivocally authorized constitutional courts to walk that extra mile and even conduct an abstract review, which allows them to examine the *vires* of a statutory/constitutional law even in the absence of a dispute.[68] In a way, judicial review has helped in promoting new constitutionalism (that had emerged as a dogma in many democracies, including Western European democracies, sometime in the 1950s).[69] In the Indian judicial context,

[58] Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245, 2252 (2001).
[59] Carlo Panara, *Multi-Level Governance as a Constitutional Principle in the Legal System of the European Union*, 16 HKJU-CCPA 705, 723-724 (2016).
[60] Patricia Popelier, *Preliminary Comments on the Role of Courts as Regulatory Watchdogs*, 6 LEGISPRUDENCE 257, 262 (2012).
[61] *Id.*, at 267.
[62] Scheppele, *supra* note 53, at 1764.
[63] Marco Dani, *National Constitutional Courts in the European Constitutional Democracy: A Reply to Jan Komárek*, 15 I•CON 785, 791 (2017).
[64] Sweet, *supra* note 56, at 816.
[65] David S. Law, *A Theory of Judicial Power and Judicial Review*, 97 GEO. L.J. 723, 730 (2008).
[66] *Id*.
[67] *Id*., at 732.
[68] Scheppele, *supra* note 53, at 1763.
[69] Sweet, *supra* note 56 at 816. According to the author, the Western European model of judicial review, which draws inspiration from the works of

the power of judicial review has repeatedly been upheld by the review courts, especially by the Supreme Court. In *Minerva Mills v. Union of India*,[70] for example, a constitution bench of the Supreme Court had held that the judiciary is independently and constitutionally vested with the power of judicial review to determine the legality of executive actions. The Court further noted that the principles of the rule of law would be violated if constitutional courts were not allowed to exercise review powers.

Another way through which the constitutional courts in India have promoted the rights jurisprudence is by invoking the epistolary jurisdiction, a social invention made by Late Justice P. N. Bhagwati, which extended the *locus standi* rule in constitutional matters.[71] Epistolary jurisdiction allows any public-spirited person to bring a matter (in the form of public interest litigation or social action litigation) before the constitutional courts whenever state machineries violate the fundamental rights of vulnerable individuals and social groups.[72] It also empowers constitutional courts to take *suo motu* cognizance and necessary action in cases where the state machineries are *prima facie* accused of violating human rights.[73] Further, epistolary activism is not affected, generally, by technical irregularities and constitutional courts may proceed with matters departing from the rules of procedure and evidence required in adversarial proceedings.[74]

That constitutional courts can augment elderly rights in India was proven correct in *Ashwani Kumar v. the Union of India*,[75] wherein the Supreme Court had pulled up the states for its non-compliance to the normative framework created by virtue of the MWPSC Act. It had observed that an elderly person's right to social security must be protected and that aged persons must live with dignity. In the given case, the Apex Court had passed several directives asking the states to implement the stipulations under the MWPSC Act, especially the ones relating to old-age homes,[76] geriatric and medical care,[77] publicity to the provisions of the Act,[78] etc. It had also directed the Central government to issue suitable guidelines to the state governments[79] and to overhaul the old-

Hans Kelsen, empowers constitutional courts to review legislation even before they are enforced. In fact, the power of *abstract review* differentiates constitutional; courts from other ordinary litigation courts.

[70] AIR 1980 SC 1789.

[71] Upendra Baxi, *Taking Suffering Seriously: Social Action Litigation in the Supreme Court of India*, 4 TWLS 107, 119 (1985).

[72] *Id*.

[73] Amanulah, *Constitutional Jurisdiction of Public Interest Litigation Assuring Access to Justice in India*, 55 J. RES. SOC. P. 1, 2 (2018).

[74] *Id.*, at 3.

[75] Ashwani Kumar v. Union of India & Ors, Writ Petition (C) No. 193 OF 2016 (India).

[76] Sec. 19, MWPSC Act.

[77] Sec. 20, MWPSC Act.

[78] Sec. 21, MWPSC Act.

[79] Sec. 30 of the MWPSC Act empowers the Central government to issue necessary directions to the states for the implementation of the provisions of the Act.

age programmes and schemes, including the ones relating to income security. Apart from the interventions of the Indian Supreme Court in elderly matters, the respective High Courts had also invoked their supervisory jurisdictions to revamp the elderly care and support framework. For example, in *Sunny Paul v. NCT of Delhi*,[80] the Delhi High Court had observed that elderly parents have the right to evict their adult children from property if the children are abusive. Similarly, in *Dattatrey Shivaji Mane v. Lilabai Shivaji Mane*,[81] the Bombay High Court had upheld the right of a senior citizen to dispossess her abusive son from the tenement that she owned. In the said case, the Court had defended the eviction order passed by the Maintenance Tribunal by virtue of its powers stipulated under Section 4 of the MWPSC Act. The court decisions attest beyond any reasonable doubt that constitutional courts play the roles of guardians by ensuring the effective implementation of rights, including elderly rights.

The saga of judicial populism and judicial democracy that the Supreme Court of India had adopted in the post-emergency period is continuing and the constitutional courts have become the last resort for the underprivileged and oppressed persons and social groups.[82] They can now intervene in matters wherein administrative high-handedness, lawlessness and repression bring miseries to such underprivileged and oppressed persons and groups.[83] By virtue of judicial review and epistolary jurisdiction, they have liberalized the *locus standi* rule and have promoted social action litigation, which is both judge-induced and judge-led.[84] Last but not the least, they have started taking sufferings (of common people) seriously,[85] indicating that the plight of the elderly individuals is being addressed (*albeit* on a lesser scale) gradually. Overall, by virtue of their autonomy and sovereign nature, these courts have started shedding passivity in addressing the issues of violations of elderly rights or the ineffective implementation of the elderly laws and policies. They are seemingly not embracing a high deferential standard because too much deference may frustrate the core purpose of dispensation of socioeconomic justice and may embolden the legislative and administrative apparatus to use their discretionary powers in an unrestrained manner.[86]

Sec. 31 further empowers the Central government to conduct periodic reviews and to monitor the effective application of the Act.

[80] Sunny Paul & Anr. v. State NCT of Delhi and Ors., 2017 SCC OnLine Del 7451 (India).

[81] Dattatrey Shivaji Mane v. Lilabai Shivaji Mane & Ors., W.P. NO.10611/2018. (India).

[82] Baxi, *supra* note 71, at 107.

[83] *Id.*, at 108.

[84] *Id.*, at 111.

[85] *Id.,* at 132.

[86] Popelier, *supra* note 60, at 257.

IV. Conclusion

Shockingly, regardless of the contribution of the older individuals in promoting development and in supporting the consolidation of traditional knowledge systems, they do not get due regard and consideration, and their privileges and freedoms are to a great extent unprotected. They become victims of social injustice and are subjected to discrimination, which is generally the outcome of an intricate process wherein a person, a group, or a category of people is/are differentiated on assumed/real characteristics or/and specific beliefs.[87] The appalling conditions of the aged persons in India bear testimony to India's inability to abide by the *respect-protect-fulfil* requirement mandated under International Human Rights laws. At the municipal level, the NHRC and the State Commissions have also not done too much to protect and promote the elderly rights framework in India. Overall, despite the formal complaint registration procedure mandated under various human rights instruments and the respective additional protocols that empower the municipal constitutional courts to create laws and standards (keeping in background the requirement of inclusive growth and development) for the effective implementation of the rights framework,[88] constitutional courts in India have certainly fallen short of enforcing human rights obligations. This is despite the fact that no privative clause (clauses in a legislation that disempower superior courts to review the legality of administrative actions) may affect the inherent powers of the courts to exercise their supervisory jurisdiction and to adopt a purposive interpretation to (in)validate the *reasonableness simpliciter* of legislative and administrative actions.

The underlying argument of the present essay is that the implementation, execution and monitoring framework *vis-à-vis* elderly laws and policies in India is weak and that there is an imminent need to restore the framework through the purposive role of constitutional courts. The decision of the Apex Court in *Ashwani Kumar's case*[89] is sufficient evidence that in the absence of strong normative safeguards, the purposive role of constitutional courts in creating norms is the most crucial requirement. Their powers of norm creation (especially when there is a conspicuous dearth of constitutional or statutory law) and of intervention[90] are plenary.

[87] Wim JA van den Heuvel, *Discrimination against Older People*, 22 REV. CLIN. GERONTOL. 293, 294 (2012).

[88] Welch, *supra* note 5, at 100.

[89] *Supra*, note 75.

[90] If a certain provision (constitutional or statutory) suffers from manifest arbitrariness or if the rule-making or rule-adjudicatory bodies fail to ensure justice or if administrative rule-making bodies fail to exercise discretion, constitutional courts can intervene.

While constitutional courts in India have started taking human sufferings seriously and have pledged to address state tyranny and state-induced injustices,[91] they are still to tread on a truly activist path. Therefore, it is ripe time that they invoke their review and epistolary jurisdictions to ensure effective implementation, execution and monitoring of elderly rights at the municipal level. Human rights laws are *emanation*[92] of judicial activism, and only a predominantly active judiciary may address the multifarious issues facing the elderly population in India. Concludingly, it may be said that the role of constitutional courts both as *positive and negative legislators*[93] would probably go a long way in augmenting the elderly rights jurisprudence in India not only through annulment of laws that frustrate the holistic rubric of the constitution but also through the progressive creation and effectuation of new norms.

[91] *Supra* note 71, at 132.
[92] Amartish Kaur, *Protection of Human Rights in India: A Review*, 2 JAMIA L. J. 22, 25 (2017).
[93] Sweet, *supra* note 56 at 819.

ROLE OF ASSISTIVE TECHNOLOGY IN IMPLEMENTING THE EDUCATIONAL RIGHTS OF PERSONS WITH DISABILITIES

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Abstract

Education is that weapon which is essential for the full development of human personality and to the strengthening of respect for human rights and fundamental freedom. Right to education has been recognised as a basic human right by the international instruments relating to human rights, noteworthy being "Article 26 of the Universal Declaration of Human Rights, 1948, Article 13 of the International Covenant on Economic, Social and Cultural Rights, 1966, the Convention on the Rights of Child, 1989." So far as the Indian legislative scenario is concerned, the supreme law i.e the Constitution of India has provided for educational rights in the form of Fundamental Rights, Directive Principles of State Policy and Fundamental Duties. Apart from these provisions, relevant statutes that have guaranteed educational rights to the persons with disabilities are Rehabilitation Council of India Act, 1992, Rights of Persons with Disabilities Act, 2016 and the Right of Children to Free and Compulsory Education Act, 2009.

Assistive technology is the term used to include assistive products or devices and related services. Assistive devices may be numerous and depend on the nature of impairment. For mobility, assistive devices may be walking stick, crutch, wheelchair, artificial legs or hands, standing frame etc.; for vision, eyeglasses, magnifier, braille systems etc., for hearing, hearing aid, hearing loops etc.; so on and so forth. Access to assistive technology is regarded as a precondition to achieve equal opportunities, enjoying human rights and living with dignity. Hence assistive technologies play a crucial role even to implement the educational rights of persons with disabilities,

This paper seeks to analyse the meaning of persons with disabilities, various international and national legislative schemes of educational rights of disabled persons, meaning and different types of assistive technologies, how these assistive products help to exercise the educational rights of these special persons and it would conclude with the suggestions of the author.

Keywords: Assistive technology, assistive products, educational rights, persons with disabilities.

I. Prelude

"An important development in modern special education is the advent of assistive and adaptive technologies that teachers can use to help their students learn and achieve at the highest levels possible. The vast majority of students with special needs do not have cognitive impairments. Many of these students can learn and perform as well as those without disabilities when given adjustments to certain aspects of their environment to accommodate for various physical disabilities. And educators can make

many simple accommodations for students with cognitive disabilities to similarly help maximize their learning in the inclusive class room. Simple adjustments in the depth of information and how that information is presented can greatly aid a student who has difficulty with traditional teaching and assessment techniques." [1]

II. Notion of disability

WHO defines disabilities as *"Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Thus, disability is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which he or she lives."* [2]

The Planning Commission of India defines a disabled person to mean a person who is:

i. blind;
ii. deaf;
iii. having orthopaedic disability; or
iv. having neurological disorder;
v. mentally retarded.

The definition includes any person who is unable to ensure himself/herself, wholly or partly, the necessities of a normal individual or social life including work, as a result of deficiency in his/her physical or mental capability.

The Convention on Rights of Persons with Disabilities in its Article 1 has stated that "Persons with disabilities" include those who have long-term physical, mental, intellectual or sensory impairment which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.[3]

The Rights of Persons with Disabilities Act, 2016 in its section 2(s) defines ***'person with disability'*** which means, "a person with a long term physical, mental, intellectual or sensory impairment which, in interaction with barriers, hinders his full and effective participation in society with others." [4]

The Act also defines '***person with benchmark disability'*** that means. "a person with not less than forty percent of a specified disability where specified disability has not been defined in measurable terms and includes a

[1] Available at http://online.uwsuper.edu/articles/assistive-technology-in-special-education.aspx visited on 29.05.2021 8 at 5.18 p.m.

[2] Definitions of Disabilities available at https://www.disabled-world.com/definitions/disability-definitions.php visited on 29.05.2021 at 3.10 p.m.

[3] Article 1, U.N Convention on Rights of Persons with Disabilities, 2006.

[4] Section 2(s), The Rights of Persons with Disabilities Act, 2016.

person with disabilitywhere specified disability has been defined in measurable terms, as certified by the certifying authority." [5]

Under section 2(zc) ***"Specified Disability"*** means the disabilities as specified in the Schedule.[6]

III. Educational rights in international legal regime

Right to education has been recognised as a basic human right by the International instruments relating to human rights. **Article 26** to the **Universal Declaration of Human Rights, 1948** states that:

1. *"Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible on the basis of merit.*
2. *Education shall be discoed to the full development of human personality and to the strengthening of respect for human rights and fundamental freedom.*
3. *Parent has a prior right to choose the kind of education that shall be given to their children."* [7]

Article 13 of the **International Covenant on Economic, Social and Cultural Rights, 1966** says that "the State parties shall recognize the right to education of everyone with a view to free and compulsory primary education, higher education shall be equally accessible to all on basis of capacity, fundamental education shall be encouraged among people who have not received primary education." [8] **Article 14** lays emphasis on "the State party to secure free and compulsory primary education to all by working out a plan of action to that effect and effectively implement it within a reasonable time".[9]

The **Convention on the Rights of the Child**, "adopted by the U.N General Assembly on 20th November, 1989, is a set of international standards and measures to protect and promote the well-being of children in society."[10]

Article 2 "obligates the State parties not to make any discrimination among children for full enjoyment of their rights on the basis of disability." [11]

[5] Section 2(r), ibid.
[6] Section 2(zc), ibid.
[7] Article 26, Universal Declaration of Human Rights, 1948.
[8] Article 13, International Covenant on Economic, Social and Cultural Rights, 1966.
[9] Article 14, ibid.
[10]
[11] Article 2, The Convention on tge Rights of Child, 1989.

Article 23 of the Convention lays down that, "the State Parties shall recognize that a mentally and physically disabled child should enjoy a full and decent life, in conditions which ensure dignity, promote self-reliance and facilitate the child's active participation in the community. The Article further recognizes the duties of State Parties to recognize the right of the disabled child to special care and shall encourage and ensure the extension, subject to available resources, to the eligible child and those responsible for his or her care, of assistance for which application is made and which is appropriate to the child's condition." [12]

The Convention on the Rights of Persons with Disability in its **Article 1** has laid down the purpose of the Convention. "as to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity".[13]

The Convention in its Article 24 has said for the recognition by the State Parties the educational rights of the persons with disabilities. "State Parties shall ensure an inclusive education system at all levels and lifelong learning directed to:

a. The full development of human potential and sense of dignity and self-worth, and the strengthening of respect for human rights, fundamental freedoms and human diversity;
b. The development by persons with disabilities of their personality, talents and creativity, as well as their mental and physical abilities, to their fullest potential;
c. Enabling persons with disabilities to participate effectively in a free society."[14]

In realizing the educational rights "the State Parties shall ensure that:

a. Persons with disabilities are not excluded from the general education system on the basis of disability, and that children with disabilities are not excluded from free and compulsory primary education, or from secondary education, on basis of disability;
b. Persons with disabilities can access an inclusive, quality and free primary education and secondary education on an equal basis with othersin the communities in which they live;
c. Reasonable accommodation of the individual's requirements is provided;

[12] Article 23, ibid.
[13] Article 1, the Convention on Rights of Persons with Disabilities, 2006.
[14] Article 24(1), ibid.

d. Persons with disabilities receive the support required, within the general education system, to facilitate their effective education;
e. Effective individualized support measures are provided in environments that maximize academic and social development, consistent with the goal of full inclusion."[15]

IV. Recognition of educational rights in India

1. Indian constitutional provisions

a. Fundamental rights

Part III of the Constitution has enumerated certain fundamental rights of which some are given to all persons and some to the citizens only. One such vital right is the right to life and personal liberty which is given to all person irrespective of each and every thing. Article 21 states that "No person shall be deprived of life or personal liberty except according to procedure established by law".[16] Article 21 is so sacrosanct that it has been declared to be the basic structure of the Indian Constitution by our Apex Judiciary. The terms 'life' and 'personal liberty' have been interpreted several times and the scopes or ambits of these two words have been widely amplified by our Judiciary. Judiciary has recognized several rights within the purview of the right to life. Now the term life includes Right to live with human dignity, right to education, right to healthy environment, right to shelter, right to privacy, right to speedy trial, right to get legal aid, right against handcuffing, right against torture so on and so forth. One of the vital rights which have been included in the right to life is Right to get education. One of the main facets of socio-economic justice is the education. Without imparting education rendering of socio-economic justice would not be a fruitful one. Rendering of socio-economic justice is one of the main goals of our Constitution as enshrined in the preamble to the Constitution.

In ***Mohini Jain v. State of Karnataka***[17], which is popularly known as Capitation Fee Case, the Supreme Court held that, "every citizen has a right to education under the Constitution. The capitation fee brings a clear class bias, which enables the rich to take admissions whereas the poor have to withdraw due to financial inability. Such a treatment is patently unreasonable, unfair and unjust".[18]

In ***Unni Krishnan J.P v. State of Andhra Pradesh***[19]**,** the Supreme Court recognised a fundamental right to education in the right to

[15] Article 24(2), ibid.
[16] Article 21, Constitution of India.
[17] AIR 1992 SC 1858.
[18] Mamta Rao, Constitutional Law, Eastern Book Company, Lucknow, 2nd Edition, 2021 p. 125.
[19] AIR 1993 SC 2178.

life under Article 21. Taking help from Articles 41 and 45, it held that. "every child/citizen of this country has a right to free education until he completes the age of fourteen years. Thereafter his right to education is subject to the limits of economic capacity and development of the State." [20]

In this way our Apex Court has given the right to education, the status of Fundamental Right within the meaning and ambit of the word 'life' under Article 21 of the Indian Constitution.

In 2002, the 86th Amendment of the Constitution took place which is vital from the point of view of 'Education'. Right to Education has been added as a Fundamental Right in Art.21A which provides that, "the State shall provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may, by law, determine." [21] Article 21A has been inserted with a view to implement the directive contained in Article 45. In other words it may also be said that the Directive Principle of State Policy contained in Article 45 has got the status of a Fundamental Right virtue of Article 21A.

b. Directive principles of state policy

Part IV of the Constitution has laid down certain directives or dictates or policies which have been given by the Constitution to the State and the State shall keep in its mind these dictates while making laws or formulating policies in order to make India a welfare nation. Article 45 which is the dictate in the aspect of education initially run as *"The State shall endeavour to provide, within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years."*[22]

Since this directive has been implemented by insertion of article 21A, Article 45 was required to be amended. Therefore by the 86th Amendment of the Constitution in 2002 Article 45 has been amended and presently the Article provides "*The State shall endeavour to provide early childhood care and education for all children until they complete the age of six years*."[23]

c. Fundamental duties

Part IVA of the Constitution consisting of only one article has laid down the Fundamental Duties of the citizens of India which has been inserted in the Constitution by virtue of 42nd Amendment of the Constitution

[20] V.N Shukla, Constitution of India, Eastern Book Company, Lucknow, 12th Edition Reprinted, 2016, p.211.
[21] Article 21A, Constitution of India.
[22] Article 45, Constitution of India as it stood before the Constitution (86th Amendment) Act, 2002.
[23] Article 45, Constitution of India as presently stands after the Constitution (86th Amendment) Act, 2002.

in 1976. When in 1976 Article 51A was inserted, it laid down ten Fundamental Duties which are to be obeyed by the citizens of our country only. But now by virtue of 86th Amendment of the Constitution, as clause (k) has been inserted to it, presently the article lays down eleven Fundamental duties of the citizens.

Article 51A(k), "lays down that it shall be the duty of every citizen of India who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years." [24]

d. Other legislative initiatives in India

i. Rights of Persons with Disabilities Act, 2016

This Act has been enacted by the Parliament of our country with a view to give effect to the various principles of empowerment of persons with disabilitieslaid down in the United Nations Convention on the Rights of Persons with Disabilities adopted by the General assembly on 13th December, 2006 and India being a signatory to this Convention.

Section 3 of the Act has ensured equality and non-discrimination in almost every aspect to the persons with disabilities for their full enjoyment of dignified life, respect and integrity.

Chapter III of the Act has laid down the provisions relating to education. They are:

- Section 16 has laid down the duties of educational institutions. The section runs as under:

  "The Appropriate Governments and Local Authorities shall endeavour that all educational institutions funded or recognized by them provide inclusive education to the children with disabilities and towards that end shall:

  i. admit them without discrimination and provide education and opportunities for sports and recreation activities equally with others;
  ii. make building, campus and various facilities accessible;
  iii. provide reasonable accommodation according to the individual's requirements;
  iv. provide necessary support individualized or otherwise in environments that maximize academic and social development consistent with the goal of full inclusion;
  v. ensure that the education to persons who are blind or deaf or both is

[24] Article 51A, ibid.

imparted in the most appropriate languages and modes and means of communication;

vi. detect specific learning disabilities in children at the earliest and take suitable pedagogical and other measures to overcome them;

vii. monitor participation, progress in terms of attainment levels and completion of education in respect of every student with disability;

viii. provide transportation facilities to the children with disabilities and also the attendant of the children with disabilities having high support needs."[25]

- Section 17 mandates the Appropriate Government and local authorities to take specific measures to promote and facilitate inclusive education such as:
  - *"Conducting survey of school going children in every five years for identifying children with disabilities, ascertaining their special needs and the extent to which these are being met;*
  - *Establish adequate number of teacher training institutions;*
  - *Train and employ teachers, including teachers with disability who are qualified in sign language and Braille and also teachers who are trained in teaching children with intellectual disability;*
  - *Train professionals and staff to support inclusive education at all levels of school education;*
  - *Establish adequate number of resource centres to support educational institutions at all levels of school education;*
  - *Provide books, other learning materials and appropriate assistive devices to students with benchmark disabilities free of cost up to the age of eighteen years;*
  - *Provide scholarships in appropriate cases to students with benchmark disability;*
  - *Make suitable modifications in the curriculum and examination system;*
  - *Promote research to improve learning; and*
  - *Any other measures as required."* [26]
- "Section 18 obliges the appropriate government and local authorities to take measures to promote, protect and ensure participation of persons with disabilities in adult education and continuing education programmes equally with others." [27]

[25] Section 16, Rights of Persons with Disabilities Act, 2016.

[26] Section 17, ibid.

[27] Section 18, ibid.

ii. Right of Children to Free and Compulsory Education Act, 2009

This Act has been enacted to provide free and compulsory education to all children of the age of six to fourteen years with a view to implement the directive contained in Article 45 of the Indian Constitution before the 86th Amendment of the Constitution in 2002. The provisions relating to education of child with disability were not there when the Act came into being. Subsequently such provisions have been included by virtue of the Right of Children to Free and Compulsory Education (Amendment) Act, 2012.

In its section 2(d) child belonging to disadvantaged group means and includes child with disability[28]. Section 2(ee) states that, "child with disability includes a child with 'disability' as defined in section 2(i) of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995; a child, being a person with disability as defined in clause (j) of section 2 of the National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999; and a child with "severe disability" as defined in clause (o) of section 2 of the National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999." [29]

It has been stated in sub section 3 of the Right of Children to Free and Compulsory Education Act, 2009 that a child with disability as stated in section 2(ee) of the Act, "shall have the same right to pursue free and compulsory elementary education under the provisions of Chapter V of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 and a child with multiple disabilities may opt for home-based education." [30]

V. Concept of assistive technology

Assistive technology. "is an umbrella term that includes assistive, adaptive and rehabilitative devices for people with disabilities and also includes the process used in selecting, locating and using them."[31]

An **Assistive Device,** "is any **device** that helps someone to do something that they might not otherwise be able to do well or at all. Generally the term is used for devices that help people to overcome a handicap such as mobility, vision, mental, dexterity or hearing loss."[32]

[28] Section 2(d), the Right of Children to Free and Compulsory Education Act, 2009.
[29] Section 2(ee), Ibid.
[30] Section 2(ee) (A), Ibid.
[31] Duke Web Accessibility, Available at: https://web.accessibility.duke.edu/learn/assistive-technology, at 8pm
[32] Bausch, M. E., Mittler, J. E., Hasselbring, T. S., & Cross, D. P. (2005). The Assistive Technology Act of 2004: What does it say and What does it mean? *Physical Disabilities: Education and Related Services*, *Special Report*, 59–67. Available at https://files.eric.ed.gov/fulltext/EJ842007.pdf visited on 29.05.2021 at 8 p.m.

In **Assistive Technology Act,** 1998 of USA, it has been defined as *"Any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified or customized, that is used to increase, maintain or improve functional capabilities of individuals with disabilities. AT service is directly assisting an individual with a disability in the selection, acquisition, or use of an assistive technology device."*[33]

Some examples of assistive devices[34]

CATEGORY	**PRODUCT EXAMPLES**
Mobility	"Walking stick, crutch, walking frame, manual and powered wheel-chair, tricycle Artificial leg or hand, leg or hand splint, clubfoot brace Corner chair, supportive seat, standing frame Adapted cutlery and cooking utensils, dressing stick, shower seat, toilet seat, toilet frame, feeding robot"[35].
Vision	"Eyeglasses, magnifier, magnifying software for computer White cane, GPS-based navigation device Braille systems for reading and writing, screen reader for computer, talking book player, audio recorder and player Braille chess, balls that emit sound."[36]
Hearing	"Headphone, hearing aid Amplified telephone, hearing loop."[37]
Communication	"Communication cards with texts, communication board with letters, symbols or pictures Electronic communication device with recorded

[33] Available at https://www.parentcenterhub.org/ata/ visited on 29.05.2021 at 4.15 p.m.
[34] Assistive Technology for Children with Disabilities: Creating Opportunities for Education, Inclusion and Participation available at http://www.unicef.org accessed on 29.05.2021 at 5.00 p.m.
[35] ibid
[36] Ibid
[37] Ibid

	or synthetic speech."[38]
Cognition	"Task lists, picture schedule and calendar , picture based instructions Timer, manual or automatic reminder , smartphone with adapted task lists, schedules, calendars and audio recorder Adapted toys and games."[39]

a. Benefits of assistive technology in education

Assistive technology provides, "creative solutions that enable individuals with disabilities to be more independent, productive, and included in society and community life. Technology and inclusion go hand in hand. Without technology supports and accommodations, many significantly disabled students cannot take full advantage of their education. Without the opportunities for interactions found in inclusive settings, students cannot truly demonstrate their abilities." [40]

Assistive technology, "enables students with disabilities to compensate for the impairments they experience. This specialized technology promotes independence and decreases the need for other educational supports. Specialized technologies allow teachers to customize instruction while giving more time to the entire class and provide other students with an enriching educational experience". [41]

Some of the major benefits of Assistive technology in education are as follows:

1. It gives them self-confidence – Learning disabilities often causes lack of self-confidence. If the sufferer struggles with this disability daily then it may bring a sense of failure in him. But with the help of assistive technology he would be able to overcome the disability and he will feel more positive and will learn with more and more enthusiasm.
2. Students can better reach their potential – It is often thought that the children with disabilities are not as intelligent as other peers in the group which is not at all true. They may have higher level of IQs than the others.

[38] Ibid
[39] Ibid
[40] Benefits of Assistive Technology available at http://www.csun.edu/~hfdss006/conf/2002/proceedings/16.htm accessed on 29.03.2020 at 2.28 p.m.
[41] The Benefits of Assistive Technology in Schools available at http://www.brighthubeducation.com/special-ed-law/73643-the-benefits-of-assistive-technology-in-schools/ accessed on 29.03.2020 at 12.41 p.m.

With the help of assistive technology they would overcome the barrier and can answer to what the teacher has asked for. So their potential can be easily reached.

3. It helps them to be more independent – Children with limited mobility in hands are often assigned with note taker in the classroom or in examination hall so that the writing would be legible to the teachers or examiners. But if the speech recognition software or live scribe pens are used then there is no requirement of note taker and it would make the child more independent.
4. It makes the curriculum available to all – Children with low or no vision are not able to see the content of the textbook or what the teacher is writing on the board. But assistive technology gives teachers the ability to convert material so that it becomes accessible to everyone. There is a software that enlarges the portions of the text or a programme that reads out the contents of the text so that visually challenged children's disability can be impaired.
5. Assistive technology can boost engagement among users – Children often feel disheartened and do not want to participate in the subject like Maths when they think that they cannot do. Through assistive technology they can participate in solving the maths in the form of game software and hence their engagement is boosted up.

VI. Suggestions

After this short study the following suggestions may be put forward:

- First and foremost the provisions pertaining to assistive technology contained in the Convention on the rights of Child, 1989 and the Convention on the Rights of Persons with Disability are required to be implemented in Indian scenario;
- Assistive technology for children is needed to be included in disability strategies and plans of action;
- All aspect priority must be given to ensure that the products of assistive technology should reach the children in need of such;
- Adequate funding is required to improve the availability and affordability of assistive technology for children with disabilities;
- Increase awareness and understanding about assistive technology for children with disabilities.

VII. Parting note

In the modern era education plays a pivotal role in shaping the character, nature and future of a child. A child who is disabled in

some way or the other due to any physical deformity cannot be made the subject of segregation from the others since their deformities are not in their hands. The new Act of 2016 has said for inclusive education which has been defined in, "its section 2(m) as a system of education wherein students with and without disability learn together and the system of teaching and learning is suitably adapted to meet the learning needs of different types of students with disabilities." For the purposes of imparting education to children with disabilities assistive technology help a lot and make it easier for them to learn and take the lessons very easily. Here one of the most important things that deserve a mention is that the cost of these essential assistive technology is required to be reduced and the availability to be increased so that these can be bought and used easily.

CLIMATE CHANGE MANAGEMENT AND ITS IMPACT ON POLICY- CONSTITUTIONAL PERSPECTIVES OF CLIMATE CHANGES

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Abstract

Climate change is referred as major ecological problem in the current scenario. With the booming effect of urbanization using modern technologies it affects the ecological balance between the earth and the atmosphere. As we know all the levels of earth atmosphere are connected through chains so if the chain got disrupted then it will lead to serious threat towards the environment. Now a reader can ask how come the urbanization affects the ecological balance? The answer is quite simple as we are using newly invented machines in our day to day life, various industries has been established by deforesting the land we never thought that by cutting down plants we're creating graveyard of our own lives. As Jagdish Chandra Bose said that "All around us, the plants are communicating. We just don't notice it." It's clearly depicts that human beings are running towards technology but they also should maintain proper ecological balance by planting trees. As a result of soil erosion and deforestation it causes serious threat towards the atmosphere. Moreover emission of carbon and soot from industrial sectors is increasing day by day which led to cause disruption in the atmosphere and pollution level become high. So in order to curb the demand for climate change management is of utmost necessary. Apart from certain constitutional remedies will be provided in order to protect environment & climate changes.

Keywords: Climate Change, Constitution, management, carbon emissions, environment

I. Introduction

Climate change is one of the most important worldwide environmental concerns confronting civilization, affecting food production, natural ecosystems, freshwater supply, health, and other sectors. The earth's climate system has altered on both regional and international dimensions since the pre-industrial period, according to the most current scientific evaluations. As a result of anthropogenic activities, our country faces a serious threat from high levels of industrial effluents such as carbon monoxide and petroleum in the atmosphere. With respect to recent World Bank report, (*India*, n.d.) India is already experienced a high warming climate as the temperature raises from 4°C from southern parts of India which affects the agriculture, forestry. As India mostly depend on food crops, agriculture, and therefore serious threat of climate changes affects the atmosphere. As agriculture plays a key role in the economic growth therefore global warming is needed to curb down, therefore certain management policies are needed along with Laws and regulations have been enacted to protect the environment, as well as laws

solely focusing on the punitive aspect. Because the nation acknowledged the need for legislative changes, the legislation's objective has shifted from punitive to preventive.[1] In view of the above, this paper examines the effect of climate change on India and its implications for different policies. The article would cover socioeconomic issues as well as legal backgrounds. The paper will concentrate on climate change and its effect on the environment, using World Bank reports to improve the aspects, and a suitable legal structure will be adapted.

II. Overview of climate change

Climate change currently affects every country on every continent. It is wrecking national economies and killing lives, costing families, communities, and countries dearly today and in the future. Using technical and societal improvements, limit global mean temperature rise to two degrees Celsius over pre-industrial levels. Major communications technology changes will increase the likelihood that global warming will not reach this level. [2]

Climate change is described as "a change in the climate, directly or indirectly attributed to human activity and which changes global atmospheric composition, and added to the natural climate variability observed in relation to the comparison. "The UN Climate Change Framework Convention (UNFCCC) provides a summary of the causes of climate change for the parties involved. [3]

In short: the rise in the world's average temperatures is a result of climate change or global warming, which has largely detrimental impact on global ecosystems. [4] The overuse of natural resources and rising emissions have already caused damage to people's lives as a result of climate change. The current state of human health and security can only be worse if global average temperatures rise. [5]

In addition, billions of people, especially in poor countries, are predicted to be in serious shortages of water and food over the following decades, as well as to suffer higher health and life hazards as a result of the detrimental consequences caused by climate change.[6] At 2020 alone, around 250 million people are expected to be in danger of water shortages in Africa. The impact on residents in underdeveloped nations of climate change is predicted to be far-reaching due to a lack of infrastructure to adapt efficiently. This article seeks to look legally, scientifically and economically at the impacts of climate change on India.

III. Climate change and India

In the foreseeable future, South Asia, and particularly India, is due to its varied topography, one of the key sectors affected by climate change.(Puthucherril, 2012) In the

next few of decades, an increase in the world's average temperature can only volatilize the India monsoon. These include nourishment, susceptibility to disease and loss of income and livelihood effects are bad.(Saha & Talwar, 2010). The changes in rainfall in India are predicted to overwhelm a number of locations and leave others free to drink. Agricultural water levels and agricultural water levels.[7] Approximately 63 million people are projected to affect food adequacy by 2050s, with a two°C-2.5°C temperature increase above pre-industrial levels. Natural calamities, such the 2013 flood and landslides of Uttarakhand, the Chennai 2015 flood and the drought in 2016 have already affected the area. A 2°C rise by the 2040s would also have an effect on crop production in South Asia, reducing crop output by 12%. Melting glaciers and snow depletion pose a major threat to India's stable water supply. Reduced food supply would cause significant health problems, especially among women and children. The poor would be the most affected since they were previously heavily reliant on rain-fed agriculture.[8]

a. Chennai floods

"Multiple torrential rain falls occurring in the city of Chennai in the period November-December 2015 have affected over four million people with cost-effective damage in the coastal areas of Chennai, Kancheepuram, Tiruvallur," Reviewed. [9] Chennai floods were triggered by rising global temperatures, a record of one day's rainfall for one month average, breaking a 100-year-old record, according to the Deputy Director General of the Center for Science and the Environment.[10]

IV. Various other impacts of climate change

The significance of rainy season during the circumstances in our country India cannot be sufficient: oversized parets of agriculture which has been depend on rainy season; as a result share markets show alteration in coming of the rainy seasons. In this context, adaptation ways are of key significance. Adaptation to climate change, shortly place, involves the adjustment of practices, processes and structures to cut back the negative effects of modification whereas at the same time taking advantage of any opportunities associated with climate change.

The average surface temperature can rise by certain temperature. There will be limited modifications within the percentage of heavy rain anticipated in the month of June & July which has been shifted throughout other months are expected.

Since the effect of global warming results in weather changes as a result agriculture, plants get dried up. Due to rise in temperature especially in southern region it also affects health. In my next two limbs I will conclude

how the agriculture and health related problems arises due to warming of atmosphere. Two of the most important features that have been takes place due to climate changes are agriculture and health.

a. Agriculture

Agriculture is the source of getting food for farmers by selling them and also it is benefited for the buyers too. Due to the adversity of temperature and shortage or increase of rainfall and also the shifts in precipitation results in damaged of fertile crops and a question arises with respect to the vulnerability of fertile lands in Maharashtra as due to cyclonic activity which comes due to the rising of sea levels (Arabian Sea).Recent agricultural departments stated that rising of temperature of 2 °C results in decrease in growth of pearl millet in Rajasthan. Even an increase in greenhouse gas ends up in the atmosphere would be benefited for Madhya Pradesh, wherever soybean is grownup on 77 % of all agricultural land. Soybean yields may go up by virtually 50% if the greenhouse gas concentration within the atmosphere doubles. However, if this increase in greenhouse gas is amid a rise in temperature, of course, then soybean yields may truly decrease. If the utmost and minimum temperatures go up by 1° C and 5° C, the gain in yield comes right down to 35%. Changes at intervals the soil, pests and weeds brought about through weather alternate will even have an adverse result on agriculture in India. For example, the number of wetness at intervals the soil is also plagued by modifications in components that embody Precipitation, run-off and evaporation. Natural organic process beneath improved greenhouse gas may shows a boom, appointed exclusive nutrients don't seem to be powerfully proscribing. The material possession quantity and frequency of downfall and sample of winds may furthermore alter the severity, frequency, and amount of eating away.

Therefore Crop diversification, more effective water usage, and enhanced soil management practices, as well as the growth of drought-resistant crops, can all help to mitigate some of the negative effects. [11]

b. Health

Weather and temperature are going together in one way as our environment get’s disturbed due to ecological balance as a result our health get’s affected due to toxicity present in the environment. According to the mandate of World Health Organization [12] it has been updated that ecological shift in the environment can lead to mental stress, diarrhea, malaria, dust allergies.

Therefore Improvements to weather forecasting hydro-meteorological systems and installation of flood-prevention systems can help people to get out of their way prior to a disaster. Building codes must be strictly

followed to ensure that homes and utilities are not jeopardized. [13]

c. Air- borne infectious diseases

Air Pollution causes serious threat towards environment, before starting the chapter; authors inquired a question towards readers that newly machines causes various emissions towards atmosphere can lead to environment degradation? As air pollution causes serious risk towards health. Higher level of air pollution can lead to asthma, tuberculosis, respiration problems.

d. Sea-level rise

The coastal environment would be affected by an increase in sea level and temperature. Increased flooding makes heavily populated parts of mega-delta the most susceptible. The alterations in Godavari, Indus, Mahanadi and Krishna's coastal deltas can displace millions. Projected rise in sea levels can harm aquaculture and worsen the declining productivity of fish already. More threats will also occur as coastal waves and cycles rise in frequency and intensity. [14] If a one-meter sea level rise were to take place today, it would displace 7 million persons in India. [15] Even more will be displaced in the future. Roughly 35% of Bangladesh's land was submerged by an increase of one meter. The costs of wall building in areas at risk from rising seas were estimated at $107 billion for 1989. [16] This could be a small proportion of developed nations' GDP, although such actions might involve a very large proportion of their GDP, even by scaling their coastlines, Bangladesh for instance. Who is paying for such a wall in Bangladesh or India? Since these countries are unlikely to pay for protection measures, in Bangladesh millions of people are displaced and many will spill into India. [17] The sea level changes can be of two types: I the mean sea level changes; and (ii) the drastic sea level changes. An examination of past sea level measurements, collected by tide gauge measurements in numerous ports around the world, revealed an average sea level rise over the past century of 1 to 2 mm/year. In general, these shifts are due to global warming. Different impacts of global warming, such as the loss of sea ice, ocean temperature growth and volume expansion, may lead to an increase in global seabed. [18] There have been no patterns over the last century in recent studies of cyclones in the Bay of Bengal.[19]Wind stress plays a major role in coastal regions than the reciprocal barometric effects. Most previous studies in India have been focused on numerical modelling of certain events using input cyclone track and cyclone pressure drop. The storm surge model is powered by the wind fields, calculated with the cyclone parameters. An analysis of past tide gauge data was used to evaluate the sea-level rise along India's coast. The analysis showed an increase in the level of marine resources of

slightly less than 1 mm/year among the stations in Mumbai, Visakhapatnam and Kochi; however, the analyses for Chennai demonstrated a decrease rate. These calculations must be adjusted by subtracting vertical land movements' measurements that are currently unavailable in order to achieve a net maritime increase. [20]

V. Government programmes for climate change adaptation

1. Coalition for Disaster Resilient Infrastructure (CDRI)

The PM of our country initiated these schemes in the month of September, 2019 for the minimization of financial and economical losses succumbs by the policy makers & governments. It also protects vulnerable people living disaster-prone areas.

2. Clean Energy initiative

In the year 2019, India has initiated a scheme under the Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya) for harnessing good quality of clean energy. or the conservation and development of water resources for the agriculture sector***, with these schemes which have been initiated*** for ***the protection of lakes, rivers, ponds*** as well as it also address eradication of poverty.

3. Kyoto Protocol

The Kyoto Protocol is the first legally binding agreement to mandate countries to minimise emissions of greenhouse gases. The Kyoto Protocol was negotiated in 1997 and came into effect on 16 February 2005. [21] With the exception of the United States, most countries, except the U.S. and Canada, have ratified the Treaty. The key goal of the Treaty is to stabilise atmospheric level of greenhouse gas. [22]

VI. Legal framework on climate change management

No concrete legislation has been in place in India to address the impact of climate change. The Air Act provides for air pollution prevention, control and reduction. The main aim of the Air Act is to maintain air quality by controlling greenhouse gas emissions. Parliament also adopted the 1974 (hereinafter Water Act), Prevention and Control of Pollution, before the Air Act. Similar requirements are provided for both the Water and Air Act in order to achieve their objectives.

The Air Act is also known as the Air (Prelude and Regulation of Pollution) Act. The EPA is intended to address the holes in the central environmental law of India. The rules laid down in the EPA also set emission requirements and general emission standards for particular industries. The central government also approved the Rules for

ozone-depleting chemicals (Regulation and Control) 2000 in the exercise of its competences in accordance with Sections 6, 8 and 25 of the EPO. There is still a lack of a comprehensive legal framework focusing on climate change in India.The number of climatic cases that hit the courts is nevertheless considerably lower. [23]

VII. Climate change litigation in india

a. Constitutional framework

According to Article 47 [24] of the Indian Constitution, it is the primary responsibility of a state to enhance public health, increase the nutrition level, and the standard of living of its people. The terms ecology and climate were added to the Indian Constitution for the first time after the 42nd Amendment, under Article 48A and Article 51A (g). Article 49A, which means directive principles of state policy, was applied to Section IV of the Constitution.

b. Constitutional law and policies

Climate change, if unabated, would have a direct and indirect impact on the freedoms guaranteed by Article 21 of the Indian Constitution. The existence of substantial hazards from climatic infractions should be required to seek the Court's authority in accordance with Article 32. Environmental regulation was initiated during the colonial period by land laws which have since been expanded to cover widespread regulation in such areas as water, the climate, the landscape, biodiversity and the Environment Act 1986. In India, the government has adopted measures to fight and safeguard the environment against climate change. The policies are addressed below. In addition to traditional emission prevention and control techniques, the National Pollution Abatement Policy of 1992 promotes the use of economic tools. The policy sets forth the principles that may be used in all decision-making phases to include environmental considerations: Principle of polluter pays; source pollution control; public participation in decision making; use of the best available technology

India has a set of governmental policies on environmental safety, the National Policy on Polluter Abatement in 1992 and the National Conservation Strategy and Environmental and Development Policy Statements in 1992, in addition to the Constitutional Mandate. It defines the basic features of India's response to climate change, including compliance with the reciprocal but differentiated commitments of various countries. The policy follows the guiding principles outlined below in order to incorporate the best technologies available in the world. The most vulnerable areas in India to climate change are water sources, forests, coastal areas, agriculture, and health.

c. Legal provisions in other legislation

Environmental protection and economic development are divided by industrialization. In the form of sustainable development, a workable solution is found between the two. The purpose is to foster economic growth and at the same time to minimize pollution and improve ecological balance. This is incredibly crucial for a developing country like India. While the legal idea in this millennium is to safeguard and preserve the environment and economic growth policies, India has over 200 environmental safety legislation before and after independence.

1. Forest Conservation Act 1980

The Central Government created the Forest Conservation Act in 1980, in response to India's significant deforestation and associated environmental deterioration. The objective of this Act was to preserve and maintain forests. The law limit the capacity of the State to deforest and to utilize forests in non-forestry applications. The Statute, as revised in 1988, requires the central government's approval to use forest land for non-forest reasons before a reserved forest State uses it, assigns forest property to a particular individual/corporation or sells forestry for replanting purposes. The centre is advised by a consultative group created under the Act.

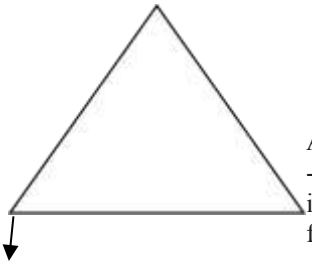
2. The Air Prevention and Control of Pollution Act, 1981

The framework of the Air Act is identical to its predecessor, the Water Act of 1974. The 1981 Act for the Prevention and Control of Air Pollution extended to include the control of air pollution the competence of central and state boards established under the Water Law, and states where there were no boards for water pollution were required to create air pollution control boards.

The intention of this Act is to ensure that air pollution is prevented and regulated and that air pollution reduced, boards are created to achieve the aforementioned goals, authorities and functions are conferred, and topics related to such boards are allocated. The biggest sources of air pollution are industrial emissions from thermal, cement, oil, chemical, vehicle exhaust systems, residential fuel burning and other carbonates, natural causes such as dust storms and forestry fires.

VIII. Inter-relations of various articles

ARTICLE-51 (a)-(g): Duty of every citizen to every citizen to protect and improve for forest, wildlife, environment



ARTICLE-48 Animal husbandry, cow's calf, draught animals, from slaughter

From all these relations of articles it has been observed that ARTICLE-51 (a)-(g) is broader in nature.

MC MEHTA CASE- PUBLIC TRUST DOCTRINE

PUBLIC TRUST DOCTRINE comes from Roman laws which stated that Article 21 of Indian Constitution it has been stated that right to life include right to healthy environment. Concept of right to life has been broadening over here with the recent judicial decisions. So with respect of this doctrine authors would like stated MC MEHTA Vs. KAMALNATH [25] where supreme court stated that natural sources of water therefore river, lakes can't be sacrificed by changing the course of direction. Over here the span resort in HP was near the river Beas, government of HP has been held liable for giving lease to fragile ecosystem land for general public use. So it is a violation of Article 21 [26] of the constitution as fundamental right includes right to free enjoyment o fresh air& water.

IX. Judicial prouncements

1. **Subhash Kumar V State of Bihar [27]**

The petitioner was a businessman who had filed a PIL claimed against two iron ore steel companies for creating health risk by dumping surplus wastes from the industries in the Bokaro River. In this case it has been observed that right to life U/A 21 of the constitution as fundamental right include right to free enjoyment of pollution environment for the safety of the people.

2. **Rural Litigation and Environment Kendra Dehradun V State of UP (Dehradun Valley Case) [28]**

There was no PIL filed in this case Rural Litigation and Environment Kendra but they wrote the letter addressing to Supreme Court of India alleging the illegal mining of limestone causes damage to fragile ecosystem of Mussorie. Whereas Supreme Court of India treated the letter as PIL U/A 42 of the constitution and directed respondents for early stoppage of limestone mining and they should send the report within the limited time frame as it affects right to free enjoyment of pollution environment for the safety of the people.

X. Conclusions

For doing business in India, environmental compliance has become important. As a consequence, India has a remarkable section with stricter environmental standards and enforcement. Awareness of self-regulation is the new Legal Guidelines, while severely punished for misrepresents or deletions, and offering to be recognized and unavailable for environmental crimes. It was made mandatory by the proactive role of the judiciary, mainly NGT. The decommissioning of financial institutions by using SPCBs ensures that heavy fines are imposed on violators, notices of closure are issued and other such rigorous steps are on the agenda. It is common practise to invoke the "deep pocket principle" &"Ultimate mam status rule." Environmental risk assessment and management is important to business in India. Inadvertently, regulations are revised. An environmental risk is not a technical issue now, but must be seen from the public viewpoint and from the expectations of the network. Building on NGT directives, the CPCB has developed environmental compensation calculation components for environmental abuses entirely based on factors such as the commercial area pollution index, time variety, size and proximity of the industry. Recently, the NGT has prohibited industry expansion in polluted and/or water-scarce areas. Electrical mobility is recognized in many ways. Weather financing is also needed to help adapt and mitigate climate trade tasks.

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BOOK REVIEW

VILLAGE DISPUTES AND THEIR RESOLUTIONS IN INDIA: PROBLEMS, CHALLENGES AND SOLUTIONS BY DR. DAVIS PRADHAN CMI, KARNATAKA LAW JOURNAL PUBLICATIONS, BANGALORE, 2017

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This book is an outcome of extensive research that has been conducted both through empirical data as well doctrinal analysis of existing literature on the subject matter of dispute resolution. The book revolves around an interesting and not much legally researched area of village and traditional dispute resolution mechanisms. The research aims to culminate the different modes of traditional dispute resolution mechanisms and their nature across various states in India. The empirical research brings insight into the present scenario of the traditional dispute resolution mechanisms by laying down the features of the different villages that have been studied and their indigenous mechanism of dispute resolution that is intrinsic to *their* system of resolution. The author has brought about a parallel comparison with the existing legal and judicial systems of resolution of disputes in India that have legislative backing. This research brings about an interesting synergy between the traditional and ancient dispute resolution systems with the present dispute resolution systems including that of the major tribes in India. This extensive and vast research covers a large subject area that factors in multitude of ways of dispute resolution, its benefits, problems, nature of disputes adjudicated as well its legal dimensions. By tracing the journey from the ancient period to the present, the author has remarkably put forth the *Indian way* of dispute resolution and this work thus, sheerly contributes to the much needed and sought after indigenous dispute resolutions at the world platform. This research also culls out beautifully the richness in the dispute resolution tradition in India noting that this out of court settlement is not a new addition to the Indian diaspora and its legal regime, but a practice dating back to ages. The subject-matter of village dispute mechanism is often not given the due importance it needs and this research has shed off that and magnified the glory that resides in the tradition related dispute resolution mechanism.

The author has divided the chapters into primarily six chapters that have been further

sub-divided into various parts. These chapters include a holistic idea of the village dispute mechanisms in India and the significance of the Gram Nyalaya Act 2008 with the legal parallels on other mechanisms of dispute resolution. While the first chapter on introduction and methodology lays out the prelude to the research, the second chapter portrays the dispute resolution mechanism of ancient India from the Vedic period to the post *Smriti* period including the Mughal era and the British era. The third chapter is the most resourceful since it provides the entire spectrum of the villages under study, nature of the disputes and the modes of resolution mechanism. The chapter looks at the interior dynamics of resolution with focus on tribal areas of Maharashtra, Andhra Pradesh, Orissa and coastal areas of Orissa and Tamil Nadu. It has also looked at 13 parallel judicial systems like Devta Institutions in Himachal Pradesh, Kangaroo courts in Orissa and Bihar, Dharmasthala in Karnataka, etc. The tribal dispute resolution mechanisms that have found mention in the work are Adi, Angamis, Anals, Bodos, Chothe, Garos, Misings, Maring, Moyon and many more. Chapter 4 explains the formal and alternative dispute resolution mechanism in India by elaborating through differentiations the court centered and non-court centered litigation strategies mostly in use in India. The second part of the chapter critically assesses the rural population's access to justice through the traditional resolution mechanisms. Chapters 5 and 6 introduces and explains the Act of 2008 in depth and with empirical data brings forth the illustrations of its effectiveness. To the authors realization through this research, these institutions are designed exclusively as extensions of the formal court system and hence the solution that the author has for the mechanism is the Nyaya Swaraj Gram Adhiniyam that ensures effective delivery of justice and accessibility of justice to the rural populace is made much more convenient.

The most important portions of this book that weaves together the story and gives the essence of this research can be identified as Part I on the 'Profile, Nature Of Disputes And Mode Of Dispute Resolution Mechanisms Of Villages In India- An Empirical Study', Part II delving into 'Dispute Resolution: Parallel Judicial Systems Existing In The Villages Of India Today- Problems, Challenges And Prospects', Part III on 'Dispute Resolution Among The Major Tribes In India' and Chapter 5 on Dispute Resolution In The Villages Of India: The Gram Nyayalaya Act 2008- A Critical Analysis'. A cumulative reading of these enables the readers to understand the points of arguments that the author puts forth and thus the recommendations laid out.

Overall, this book gives an elaborate explanation of the village dispute resolution mechanism in India that is surely a

contribution to the alternative dispute resolution jurisprudence and intrigues into a much needed area of discussion something that mostly misses the legal discourse.

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