



PRECAUTIONARY PRINCIPLE: COVID AND REOPENING

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ABSTRACT

India saw the pandemic in its worst form last year, i.e., 2021 during the Delta wave of the Covid19 pandemic. The reason why that happened was the unavailability of vaccine and more importantly the fact that after the first wave of the pandemic people started to assume that there would not be any other wave and dropped taking almost all the precautions that were in place. The country saw large gathering in elections, markets, marriages, religious festivals etc. Delta emerged in India and resulted in a havoc and deleted on an average a member of the infected family. Then came a period of respite but not for long. In the month of January and February this year, we saw the Omicron wave, not even after a gap of a year from Delta wave, which according to the data available was more transmissible but milder than delta. Till date people are dying because of the Omicron infection but the wave is surely in its lowest trajectory. However, what is going to happen few months from now or in near future is totally uncertain. Uncertainty always calls for precautionary action and thus this paper provides to assist the policymakers and implementers to apply precautionary principle as directed by the existing laws and practices. It takes the help from European Laws to interpret Indian Laws and also brings out similarities with the United States precautionary action with the Indian counterpart. It advocates for cost effective balancing between lives and livelihood, reopening and safe reopening and mentions innovations that are cost effective which are becoming popular abroad to counter the pandemic and its future waves if any.

I. INTRODUCTION

India just saw the third wave of the pandemic which ran wild due to the emergence of a new variant which was more contagious than the deadlier Delta wave which happened in March-June last year.¹ The most prominent of questions asked are whether there will be a new variant or not? If there is, whether that will be deadlier or not? When I write this article a new sub-lineage of Omicron is showing evidences of being much more transmissible than the

¹ Bindu SajanPerappadan, "Omicron in community transmission in India, has become dominant in multiple metros: INSACOG" *The Hindu*, January 23,2022, available at <https://www.thehindu.com/news/national/omicron-in-community-transmission-stage-in-india-dominant-in-multiple-metros-insacog/article38313131.ece> (Last Visited on Jan 30,2022). See also <https://www.thehindu.com/sci-tech/science/omicron-epidemic-third-wave-or-new-pandemic/article38190636.ece>, <https://www.economist.com/asia/2022/02/17/indias-omicron-wave-recedes-but-not-the-risk-of-premature-death>,

present variant, known as BA.2.² What we can conclude is that there is no scientific certainty that there will be for sure a deadlier variant or there will be for sure no deadlier variant in future. Does that mean everyone, after the end of the current wave, should start behaving normally as they were before the pandemic or, as we have experienced, should behave as if we were between the waves which in reality or practice more akin to the behaviors before the pandemic. This takes us to the recent question posed to the government of many nations and also India and its states whether they should open schools, colleges, other educational institutions for the continuation of the academic process in the physical mode. Also that hotels, restaurants, bars, cinema halls should be open for public and air-conditioned railway coaches and buses shall start running in their full capacity. This is where policy and law play a major role in regulating the conduct of people or even to direct the behavior of people balancing the protection of life and health of the majority of people and the economy of a nation so that the invaluable lives and livelihood attached to economic activity are not lost due to inaction on the part of the state. This article will find the policy and the law relating to such reopening so that lives and livelihood are both taken care of in the best and affordable manner.

II. POLICY AND LAW: INFORM THE ACTIONS

The executive organs of the state are faced with the question that require to be addressed which is “*Whether there is a policy which can assist the state in regulating and managing this pandemic that can also inform laws for its application?*” Or “*Is there a law which can inform the policy for regulating and managing this pandemic?*” Therefore, if the answer is yes for both the above questions then there is a political and a legal solution to minimize if not eradicate the effects or even the cost of the pandemic driven by loss of life, education, health services and businesses and even tourism, hospitality which are the most affected sectors by this pandemic. When we say minimize and not eradicate it is very clear that eradication of the pandemic is subject to the eradication of the Sars-CoV2 disease from any and every place in the planet which seems to be a talk of a late future. Variants of the virus have developed in so many different parts of the world that it is impossible to say with certainty that a later variant cannot emerge from a place which hasn’t been a contributing country or region yet, apart from variants such as Delta from India, Omicron from South Africa or other variants of interest and concerns as named by the WHO.³

² WHO, Statement on Omicron sublineage BA.2, *Newsletter*, available at <https://www.who.int/news/item/22-02-2022-statement-on-omicron-sublineage-ba.2> (Last Visited on February 20, 2022)

³ WHO, Variants of Concern (VOC), Variants of Interest (VOI), Variants under Monitoring (VUM), WHO Activities, available at <https://www.who.int/en/activities/tracking-SARS-CoV-2-variants/>

Can we act under such uncertainty in such a way which does not endanger the lives, education and the economy of a nation? Shall we open schools and other academic institutions, hotels, restaurants air-conditioned buses, air-conditioned railways coaches, which is not to be equated as an office or a private shopping mall because there the number of people and the time period of exposure is still very limited? It is also a fact that all these institutions, buildings, transport vehicles and railway coaches are closed spaces where outside air circulation is limited. It is also a fact that opening of windows in buildings generally invites the pollutants, most importantly in cities, of the outer environment and remain in circulation if the building doesn't have proper ventilation mechanism inbuilt. So closed spaces are not good for protection from the covid infection from the infected ones and opening of the windows adds pollutants to the air in circulation inside those institutions. It's a double whammy.⁴*What shall be an action in this case in view of the uncertainty revolving around the emergence of newer variants? Is lockdown the only solution? Is only the mask mandate apt for these problems? Is there a principle that guides us for action in such uncertainty?*

Let us consider the second question above before we come to the first one. The answer to the second question about a law which can inform the policy is in the affirmative. It is the precautionary principle. The principle is stated as: -

“Where there are threats of serious or irreversible nature lack of scientific certainty shall not be used as a reason to postpone cost-effective measures to prevent environmental degradation.”⁵

This is the wording of the principle as defined in the Rio Declaration of 1992.⁶ Why this principle is important in the present context can be seen from one of the origins among the various debated origins of the principle. That is its origin in a specific application of the principle in a dispute in the European region between United Kingdom and one of the EU institutions.⁷ It is relevant because the decision involves the matter of disease transmission between animals to humans which stands true also for the spread of Covid19. The export from the United Kingdom of bovine meat was banned rather the import by rest of the EU States on the reason that it can re-enter other EU States via import from other countries to

⁴ Maria Neira, “Air Pollution and Covid, WHO Science in 5”, Episode 56, WHO available at <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/media-resources/science-in-5/episode-56---air-pollution-covid-19>

⁵ Principle 15, Rio Declaration, UNCED, 1992

⁶*Id.*

⁷*United Kingdom of Great Britain and Northern Ireland v Commission of the European Communities*, Case C-180/96, European Court Reports 1998 I-02265, ECLI identifier: ECLI:EU:C:1998:192, available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:61996CJ0180&from=EN> (Last Visited January 20, 2022)

which United Kingdom would export the bovine meat.⁸ The decision was made in the environment of uncertainty of whether there would be serious risk or not together with the fact that public health jurisprudence of EU incorporated the principle of precaution.⁹ Therefore public health as an area incorporates the principle of precaution and it is no argument that the principle shall remain in the environmental jurisprudence alone.¹⁰ So what is clear is that the precautionary principle is very much part of the public health in addition to the environmental law jurisprudence. India has recognized the precautionary principle as the law of the land.¹¹ It has also received a policy recognition.¹² It has also received a statutory recognition.¹³

III. MANAGEMENT: THE MEANING

A. From the Communication on Precautionary Principle

The behavior of governments and the people of India in this pandemic is declared and directed under the Disaster Management Act and by the Disaster Management Authority created under the Act.¹⁴ The pandemic and the spread of the infectious virus as a public health emergency is controlled under the said Act.¹⁵ Therefore, emphasis shall also be put on the meaning of management as it is aim of the Act. It doesn't and shouldn't mean only those cases where disaster has already taken place and what is left is to reduce the of losses of the already happened disaster.¹⁶ Let us take the help of Communication on the Precautionary Principle of the European Union in order to understand what actually management shall mean in the case of risks.¹⁷ It says: -

“4. The precautionary principle should be considered within a structured approach to the analysis of risk which comprises three elements: risk assessment, risk management, risk communication. The precautionary principle is particularly

⁸*Id.*

⁹*Id.* para 100 at page 2298

¹⁰*Id.* para 99 at page 2298, “Where there is uncertainty as to the existence or extent of risks to human health, the institutions may take protective measures without having to wait until the reality and seriousness of those risks become fully apparent”.

¹¹*Vellore Citizens Welfare Forum v. Union of India*, AIR 1996 SC 2715

¹² Environmental Policy of India, 2006

¹³ National Green Tribunal Act, 2010, Section 20

¹⁴ The Disaster Management Act, 2005, (Act 53 of 2005) available at https://ndma.gov.in/sites/default/files/PDF/DM_act2005.pdf (Last Visited on Feb 22, 2022). See also, Section 3 of the Act.

¹⁵*Id.*, Section 2(d)

¹⁶*Id.*, Section 2(e) the definition includes “threat of any disaster” which can be equated with risk.

¹⁷ Commission of the EUROPEAN COMMUNITIES, Communication from the Commission on Precautionary Principle, Brussels, February 2, 2000, COM(2000), available at <https://op.europa.eu/en/publication-detail/-/publication/21676661-a79f-4153-b984-aeb28f07c80a/language-en> (Last Visited on February 20, 2022)

relevant to the management of risk. The precautionary principle, which is essentially used by decision-makers in the management of risk, should not be confused with the element of caution that scientists apply in their assessment of scientific data.”¹⁸

It further states that application of the principle as a risk management is to be undertaken when scientific uncertainty fails to provide a full assessment of the risk because of which the decision-makers consider that the available standard of protection of environment or humans may jeopardize the health of both.¹⁹ It is jurisprudentially clear from the above illustration that management as an action also incorporates the precautionary element in cases of risk.

B. From the CODEX and Food Safety

The “Codex Alimentarius Commission” was formed jointly by the FAO and the WHO which can be said to be the result of the *Codex Alimentarius Europaeus* formed in 1958. In 1961 the *Council of the Codex Europaeus* passed a resolution that its working shall be taken over by the FAO and WHO and in the 11th Conference of the FAO the Commission was formed.²⁰ The Codex is the “collection of internationally adopted food standards” which aim at protecting human health and is “intended to guide and promote the elaboration of definitions and requirements to assist in their harmonization”.²¹ India is the member of the Codex Alimentarius Commission since 1964.²² The 27th edition of the manual in its Seventh Section contains the working principle for risk analysis adopted in the year 2003 to be applied in the framework of the Codex and the definition of risk analysis and its elements relating to food safety adopted in 1997 among other things.²³ It mentions that risk analysis is composed of three elements i.e. risk assessment, risk management and risk communication.²⁴ It also states as follows:

“Precaution is an inherent element of risk analysis. Many sources of uncertainty exist in the process of risk assessment and risk management of food related hazards to human health. The degree of uncertainty and variability in the available scientific information should be explicitly considered in the risk analysis.”²⁵

¹⁸*Id.* para 4 at page 2

¹⁹*Id.*

²⁰See <http://www.fao.org/fao-who-codexalimentarius/about-codex/history/en/> (Last Visited on February 20, 2022)

²¹FAO and WHO, Codex Alimentarius Commission: Procedural Manual 27th Edition, Rome,2019, para 1 page 21.

²²See <http://www.fao.org/fao-who-codexalimentarius/about-codex/members/en/>(Last Visited on February 20, 2022)

²³*Supra* note 21 at page 121.

²⁴*Id.* para 5 at page 121.

²⁵*Id.* para 11 at page 122.

The European Parliament in the year 2002 passed a regulation, No. 178/2002, laying down the “general principles and requirements of food law” which established the “European Food Safety Authority”.²⁶ The Regulation states that it is for providing the basis “for the assurance of a high level of protection of human health” by a strong science based procedures and efficient organizational arrangements for “decision making” in matters for food safety.²⁷ Further, for the purposes mentioned above, it lays down the general principle and that it shall apply to all stages of production, processing and distribution of food.²⁸ Then under Article 7, with the heading “precautionary principle” it states as follows:-

“1. In specific circumstances where, following an assessment of available information, the possibility of harmful effects on health is identified but scientific uncertainty persists, provisional risk management measures necessary to ensure the high level of health protection chosen in the Community may be adopted, pending further scientific information for a more comprehensive risk assessment.”²⁹

The year 2006 saw the enactment of the Food Safety Act in India.³⁰ One of main contribution of this act is the establishment of the food authority popularly known as the FSSAI.³¹ However, apart from this, it importantly provides in its preamble that it establishes the authority “to lay down science based standards for articles of food and to regulate” its “manufacture, storage, distribution and sale purchase and to ensure safe and wholesome food for human consumption”.³² Section 18 of the Food Safety Act incorporates Article 7 of the EU Regulation, No. 178/2002, even though its marginal note doesn’t mention specifically that it’s the precautionary principle which has been incorporated. Clause (c) of Section 18 states as follows: -

*“(c)where in any specific circumstances, on the basis of assessment of available information, the possibility of harmful effects on health is identified but **scientific uncertainty** persists, provisional **risk management** measures necessary to ensure appropriate level of health protection may be adopted, pending further scientific information for a more comprehensive risk assessment.”³³*

²⁶ See <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002R0178&qid=1572287272009&from=EN>

²⁷ *Id.* Article 1 para 1.

²⁸ *Id.*, Article 5 para 1.

²⁹ *Id.*, Article 7 para 1.

³⁰ Food Safety and Standards Act, 2006, available at <https://www.fssai.gov.in/upload/uploadfiles/files/FOOD-ACT.pdf> (Last Visited on February 20, 2022)

³¹ *Id.*, Section 4.

³² *Id.*, Preamble to the Act.

³³ *Id.*, Section 18(c)

The Disaster Management Act no doubt is very much concerned with the public health and therefore empowers various authorities to prevent the consequences of any disaster. Public Health and food safety principles and standards are also correlated which stands proved by the preceding paragraphs where management of risk is called for in both the areas. Additionally, one can also see the National Health Policy Document, which is directly regulating the health sector of the country, substantiates this fact further.³⁴ It is interesting to note that it incorporates the Food Safety Act which is a clear indication that the principles mentioned in the act will also apply to policies undertaken by health department.³⁵ It shall not be surprising that it also incorporates the Health Impact Assessment to be undertaken by departments not only limited to health sector but others as well.³⁶ The environmental law jurisprudence has always read the Environmental Impact Assessment as a part of the precautionary principle which directly points that impact assessment includes precautionary standards.³⁷ Lastly the Universal Immunization included in the health policy cannot but be a precautionary element of the policy.³⁸ Therefore precautionary principle is an essential part of management of risk and also an essential part of public health jurisprudence.

IV. COVID TRANSMISSION AND SPREAD INDOORS OR IN CLOSED SPACES

It is known to all that the popular precautions with regard to covid transmission are wearing face masks, social distancing and also hand washing and sanitizing. However, it should also be known that these precautions were never taken away but still we have seen many covid waves, large and small, national and regional, universal and even local. Is there something else that needs to be done in order to foresee that such waves are nipped in the bud or is not let to have deleterious effects on public health and cause paralyzing effects on the economy. With vaccination the problem is again of breakthrough infection, waning of protection and also the uncertainty of the future variant's capacity to evade vaccine constructed immunity popularly known as immune escape.³⁹

³⁴ Government of India, National Health Policy, 2017(Ministry of Health and Family Welfare), available at https://www.nhp.gov.in/nhpfiles/national_health_policy_2017.pdf (Last Visited on February 20,2022)

³⁵ *Id.* para 14.3 at page 23

³⁶ *Id.* para 3.2 at page 7

³⁷ See *S. Jagannath v. Union of India*, AIR 1997 SC 811; See also dissenting opinion of J. Bharucha in *Narmada BachaoAndolan v. Union of India*, AIR 2000 SC 3751

³⁸ *Supra* note 34 para 4.4 at page 12

³⁹ Timothy A. Bates et. al., "Antibody Response and Variant Cross-Neutralization After SARS-CoV-2 Breakthrough Infection", *JAM MED ASSOC*, Volume 327, Number 2, January 11, 2022,(doi:10.1001/jama.2021.22898) available at <https://jamanetwork.com/journals/jama/fullarticle/2787447>(Last Visited March 2, 2022). See also Victoria Hall

So what we can conclude under these circumstances is that there has to be a multi-modal approach towards preventing the infection waves as it affects not only the health of the people but the economy of the nation as a whole because of the nature of the stringent restriction that are placed during those waves in the form of lockdowns and weekend curfews. For example, for the decision to open schools, colleges, coaching institutes, gyms, cinema halls, restaurants etc. it is very difficult to supervise whether masks are correctly and religiously being worn by the members inside those closed arenas and social distancing will also see the same fate. It is also proved that the threat of transmission in the open-air outside is very less as compared to indoor in a closed environment.⁴⁰ It will not be a suitable thing to say that we can limit indoor gathering because that will never happen and that has its own drawbacks. So, what policy shall guide the action in these cases. Precaution is the answer but what kind of precautions shall be undertaken? The precautionary principle says that in cases of uncertainty cost effective alternative strategies shall be undertaken and then we can go ahead with the action and it does not ask for stalling the whole process.

A. CDC Guidelines

The Centre for Disease Control and Prevention is one of the major operating components of the Department of Health and Human Services of United States of America.⁴¹ Let us embark on what the CDC Guidelines say about precautions with regard to covid with respect to indoor management to minimize covid transmission. The CDC recommends a layered approach to reduce the exposures to the virus which includes a multi mitigation strategy. It talks about physical distancing, face masks, hand hygiene and vaccination but importantly it also talks about ventilation improvements.⁴² It notes that viral particles of covid spreads between people more readily indoor than outdoors and suggests that protective ventilation practices and interventions can reduce the airborne concentration of particles in the indoor air and therefore reduce the overall viral dose to occupants of the spaces.⁴³ Activities such as

et. al., Protection against SARS-CoV-2 after Covid-19 Vaccination and Previous Infection, *N Engl J Med*, February 16, 2022 (doi: 10.1056/NEJMoa2118691) available at <https://www.nejm.org/doi/pdf/10.1056/NEJMoa2118691?articleTools=true> (Last Visited March 2, 2022)

⁴⁰ B. R. Rowe et al., Simple quantitative assessment of the outdoor versus indoor airborne transmission of viruses and COVID-19, *Environ. Res.*, Volume 198, Number 111189, July 2021, (doi.org/10.1016/j.envres.2021.111189) available at <https://www.sciencedirect.com/science/article/pii/S0013935121004837> (Last Visited March 2, 2022)

⁴¹ For details see

https://www.cdc.gov/about/organization/cio.htm?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fabout%2Forganization%2Findex.html (Last Modified on May 7, 2021)

⁴² See <https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html> (Last Modified on June 2, 2021)

⁴³ *Id.*

exercising which can lead to heavy breathing, shouting and singing may also increase the risk, especially indoors.⁴⁴

For the above aim at hand it suggests “tools in the mitigation toolbox” to contribute towards reduction of risk of transmission.⁴⁵ It after referring to an article suggests certain measures for the HVAC systems installed in buildings.⁴⁶ HVACs are Heating Ventilation and Air Conditioning equipment which are attached to building and they through there terminals and distribution systems provide heated, conditioned and ventilated and filtered air to be circulated inside the buildings.⁴⁷ It also claims that enhancing outdoor air ventilation, in case where outdoor air is not polluted, or enhancing filtration with a well-functioning HVAC system should complement other public health measures by removing and diluting virus from indoor air, thereby lowering exposure to COVID-19.⁴⁸ It is suggested to reduce recirculation of the air by increasing outdoor air ventilation by operating on as high as possible outdoor air supply.⁴⁹ it further suggests filtration as another strategy to remove virus and other particles from indoor air and recommends a filter rated by the Minimum Efficiency Reporting Value (MERV, ranging from 1 to 16), based on the fraction of particles removed from air passing through it under standard conditions and finally suggests using MERV 13 or higher rated filters based on their ability to filter out virus-sized particles.⁵⁰ It also suggests using UVGI, Ultra Violet Germicidal Irradiation technology, particularly in high-risk spaces such as waiting rooms, prisons and shelters.⁵¹ This system uses ultraviolet (UV) energy to kill viral, bacterial, and fungal organisms and are fixed at a height above people, called Upper Room UVGI, which produce UV-C energy, which has shorter wavelengths than more penetrating

⁴⁴ Public Health Ontario, “Heating, Ventilation and Air Conditioning (HVAC) Systems in Buildings and COVID-19”, page 1-2, March 2021, available at <https://www.publichealthontario.ca/-/media/documents/ncov/ipac/2020/09/covid-19-hvac-systems-in-buildings.pdf?la=en> (Last Visited on February 2, 2022)

⁴⁵ *Supra*. note 40

⁴⁶ Lawrence J. Schoen, “Guidance for Building Operations During the COVID-19 Pandemic”, *ASHRAE JOURNAL*, May 2020, available at https://www.ashrae.org/file%20library/technical%20resources/ashrae%20journal/2020journaldocuments/72-74_ieq_schoen.pdf (Last Visited on February 2, 2022)

⁴⁷ See <https://xp20.ashrae.org/terminology/index.php?term=HVAC&submit=Search> (Last Visited on February 2, 2022)

⁴⁸ *Supra*. note 44

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Supra* note 46 at page 73

UV-A and UV-B rays and pose less risk to human health.⁵² Lastly they also suggest to consider portable room air cleaners with HEPA filters to remove by filtering viral particle from the indoor air.⁵³ One such cost effective and “do it yourself” capable innovation is Corsi-Rosenthal Covid Cube.

B. Corsi-Rosenthal Cube

The Corsi-Rosenthal Cube/Box is the brainchild of two, Richard Corsi and Jim Rosenthal, one is Dean of the Engineering School at UC Davis and also an environmental engineer and the other one the owner of Tex-Air Filters, so is an air purifier manufacturer.⁵⁴ They have provided a low cost, easy to assemble and effective, capable of being made at home, DIY, air purifier to be used in places of gathering in order to reduce the viral particles from the indoor air. The combined cost of assembling the purifier is about 70 to 120 dollars designed to last for 6 months and that they are being used in homes, schools and university campuses across United States of America.⁵⁵ The Corsi-Rosenthal Cube is made up of four MERV13 rated filters which are taped together to form the four sides of a box leaving the bottom and the top. A 20-inch box fan is fixed on top side of the box and joined with a duct tape attaching it to the filters thereby sealing the system so that air is drawn in through the filters and is moved up and then out of the box. The fan’s cardboard box doesn’t go waste as it is repurposed to make the bottom of the cube and to create a cardboard “shroud” on the fan to further improve efficiency and reduce back-flow of air.⁵⁶ It is also said that this new air purifier filters at least 90% of COVID-carrying particles.⁵⁷ Such is the popularity of this cube that the well-known company, 3M, which finds its place in the Fortune 500 list started to market filters made by it

⁵² See CDC, “Upper-Room Ultraviolet Germicidal Irradiation”, available at <https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation/uvgi.html> (Last Modified April 9,2021)

⁵³ *Id.*

⁵⁴ Adam Rogers, “Could a Janky, Jury-Rigged Air Purifier Help Fight Covid-19? Indoor-air experts think: Sure, maybe. Why the hell not? We convinced the CEO of an air filter company to give it a try”, *Wired*, AUGUST 6, 2020, available at <https://www.wired.com/story/could-a-janky-jury-rigged-air-purifier-help-fight-covid-19/> (Last Visited on February 2,2022)

⁵⁵ University of California San Diego, “Build Your Own Air Filter System”, *Blink*, available at <https://blink.ucsd.edu/safety/resources/public-health/covid-19/diy-air-filter.html>. See also Clean Air Crew, DIY box fan air filters Corsi-Rosenthal box, available at <https://cleanaircrew.org/box-fan-filters/> (Last Visited on February 2,2022)

⁵⁶ Brown University School of Public Health, “School of Public Health Builds and Installs Corsi-Rosenthal Air Cleaners”, November 1, 2021, available at <https://www.brown.edu/academics/public-health/news/2021/11/school-public-health-builds-and-installs-corsi-rosenthal-air-cleaners>

⁵⁷ Jonathan Lapook, “New air purifiers filter at least 90% of COVID-carrying particles, researchers say”, *Cbsnews*, October 7,2021, available at <https://www.cbsnews.com/news/covid-air-purifiers-particles/>

to be used for creation of the cubes.⁵⁸ The Company also recognizes the increased usefulness of such DIY technology.⁵⁹ The California State's Health Department in their latest guidelines for covid management though indoor air management has specifically named and mentioned that the Corsi-Rosenthal Cube should be used in addition to upgrading the HVACs and air ventilation through natural air by opening of the windows and allowing cross draft of air.⁶⁰

V. STATUS OF LAW AND POLICY IN INDIA

In the preceding paragraphs it has been already stated that precautionary principle finds itself in law and policy of environmental adjudication. It has also been summarized as to why the principle can also be applied in the area of public health risk assessment and management in India by the example of disaster management and public health policy of India. The next search should be whether we also have precautionary applications as like the example of CDC guidelines. The parallel example is given below.

A comprehensive building Code, The National Building Code of India (NBC), is a central government instrument which provides guidelines for regulating the building construction activities in India. It is to be used as a Model Code and to be adopted by all agencies involved in building construction works whether they be the Public Works Departments, other government construction departments, local bodies or even private construction agencies.⁶¹ Importantly, it also discusses air conditioning, heating and mechanical ventilation for buildings.⁶² The objective of installing air conditioning, heating and mechanical ventilation is said to provide comfortable conditions without compromising the health and safety of occupants and shall aim towards controlling and optimizing air quality, air movement among other things.⁶³ It also discusses Indoor Air Quality and states that poor quality air may result in sick building syndrome and severe and recurring discomforts such as nausea, headaches,

⁵⁸ See https://www.3m.com/3M/en_US/company-us/about-3m/history/ (Last Visited February 2, 2022)

⁵⁹ 3M Scientists, "This Corsi-Rosenthal box movement is legit", *3M News Centre*, (Feb 24, 2022), available at <https://news.3m.com/2022-02-24-3M-scientists-This-Corsi-Rosenthal-box-movement-is-legit> (Last Visited on February 2, 2022)

⁶⁰ California Department of Public Health, "COVID-19 and Improving Indoor Air Quality in Schools", February 10, 2022, available at https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/COVID-19-and-Improving-Indoor-Air-Quality-in-Schools.aspx?TSPD_101_R0=087ed344cfab20006eb52a929d40cb3c98366ccc1be687f64bf3676cabf959051ac4771ff (Last Visited on February 22, 2022)

⁶¹ Bureau of Indian Standards, National Building Code of India 2016, available at <https://www.bis.gov.in/index.php/standards/technical-department/national-building-code/> (Last Visited on February 2, 2022)

⁶² *Id.*, Section 3, Part B, Volume 2, Page 7

⁶³ *Id.* para 4.1.1-4.1.2 at page 12

cold, dry mucous, inflamed membrane eye, nose and throat irritation drowsiness, fatigue, dry skinned respiratory problems.⁶⁴ It also provides the “air quality measurement standard” where it says that CO₂ concentration below 1000ppm shall be required and if outdoor air is polluted then the indoor air shall have 700ppm less concentration of CO₂ than outdoor air.⁶⁵ Further, it states that the components of acceptable indoor air quality does not only mean taking care of any specific process or system but also contamination source control with proper ventilation and adequate filtration.⁶⁶ It, also talks about fungus and bacteria as contaminants of indoor air which are directed to be controlled by humidity management.⁶⁷ Based on air quality, air movement and air change per hour requirements it list five different types of HVAC which can be installed in building to ensure the requirements discussed above.⁶⁸ Apart from the specialized application of HVACs to Health Care Facility it also provides its application in office buildings, hotel rooms, restaurants, cafeteria, bars, night clubs, departmental store and theatres and auditorium.⁶⁹ However, important is to note that educational institutions which will include schools, university and college campuses have been also discussed separately where it mentions about proper ventilation to ensure prevention of the spread of diseases.⁷⁰

VI. CONCLUSION

The Omicron induced wave is in its receding territory and the country is going to open full swing and one of the biggest universities in terms of student intake i.e., the University of Delhi has completely reopened. The object of this paper was to inform the government that tweaking the already in place regulations regarding indoor air quality management can aid “leaps and bounds” in restricting the spread of the disease not only induced by the Sars-CoV2/Covid19 but also protect the generations from effects of polluted air which is circulating in the big cities and which has not even spared the areas which are adjacent to the big cities. HVACs and Air Purifiers are known to prevent the transmission of the virus except of the close contact of person infected. It will not require a thorough research to find the fact that many of our schools, colleges, other educational institutions and coaching institutes have no such ventilation and filtration systems in place and the object of re-igniting the knowledge of the students and scholars may result in a health hazard which may go out of the hands of

⁶⁴*Id.* para 6.3 at page 20

⁶⁵*Id.* para 6.3.1 at page 20

⁶⁶*Id.* para 6.3.2 at page 20-22

⁶⁷*Id.* para 6.3.2 at page 22

⁶⁸*Id.* para 7.2.1-7.2.1.1 at page 24

⁶⁹*Id.* para 7.3.1-7.3.5 at page 39-40

⁷⁰*Id.* para 7.3.6 at page 40

the governments to control it. We have seen the devastating effects of the virus in the three wave and even today, when I am writing this paper, loss of lives is a reality in India because of the virus even when the virus is popularized as “mild”. Recently the Chief Justice of Supreme Court of India made a statement that he was still feeling the effects of his Omicron infection weeks after getting the infection. The HVACs together with Corsi-Rosenthal Cube can be a game changer for restricting the spread of the Covid indoors be it schools, colleges, restaurants, hotels, railways and transport coaches and vehicles. If the policy around the world is to “live with the covid” then adequate safeguards are must in the situation of uncertainty and this is called for as the precautionary principle is the policy and the law of the land of the country. It must not be forgotten that the principle is meant to guide actions and not inactions. Nationwide or Statewide Lockdowns or even weekend lockdowns are popularly being said to be an aspect of precautionary principle but in the real sense they are actually not based on precautionary principle. It is because precautionary principle is based on the uncertainty of harm and not where harm is necessarily the outcome. Secondly, precautionary principle is not believed to be an obstruction in activities but it ensures alternate mechanism are put in place that activities can still go on. Thirdly, the principle requires a detailed impact assessment of such actions and that actions has to be chosen keeping in mind the cost and benefits of the action. Lockdowns in general are devastating to education, livelihood and therefore to the current and future economic strength of a nation. A declaration of saving lives in itself is not a complete impact assessment of any action. All that can be said is that lockdown may be called as preventive rather than precautionary action. In the end it is necessary to observe and deliberate on a recent catastrophe which is unfolding in Hong Kong which is seeing its deadliest wave of Covid19 pandemic and it is reported in news that it is seeing the oxygen shortage which became the talk of the Indian nation during the Delta wave last year.⁷¹ Therefore, uncertainty is writ large and thus precautionary actions shall not just appear on paper but should also become a reality in practice.

⁷¹ Lilian Chenget.al.,”Hong Kong now has the world’s highest Covid-19 death rate. What happened, and how can this be fixed?” *South China Morning Post*, March 5,2022, available at https://www.scmp.com/news/hong-kong/health-environment/article/3169331/hong-kong-now-has-worlds-highest-covid-19-death?module=perpetual_scroll_0&pgtype=article&campaign=3169331(Last Visited March 5,2022)