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Environmental Law and Innovative Approaches to Environmental Degradation

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ABSTRACT

The paper analyses legal framework and innovative approaches to environmental degradation and better health. The issue of Environmental Damage came to the fore on the international agenda for the first time with the Stockholm Conference in 1972. The conference was attended by the then Prime Minister Mrs. Indira Gandhi. After the Conference significant changes were made in the Constitution of India to accommodate provisions regarding the deteriorating Environment in the Directive Principles of State Policy and Fundamental Duties. Various legislations like The Air (Prevention and Control of Pollution) Act, 1981, The Water (Prevention and Control of Pollution) Act, 1974, the Environment Protection Act, 1986 were also enacted. Several principles like the Polluter Pays Principle, Precautionary Principle were also incorporated as provisions.

In this new age of technology, nanotechnology and other innovative techniques are increasingly being used to combat rampant environmental degradation and resultant deteriorating health. Also as the recently held COP24 at Poland reiterated global environmental issues that the world is facing, the delegates at the conference discussed at length about the existential crisis due to man-made disasters at global scale. The paper focuses on various innovations made in recent times to combat environmental degradation and promote better health in the Indian as well as Global scenario.

Keywords: Stockholm Conference, Polluter Pays Principle, Precautionary Principle, Nanotechnology, COP24

I. INTRODUCTION

In Atharvaveda, it has been said that “Man’s paradise is on earth; this living world is the beloved place of all; It has the blessings of nature’s bounties; live in a lovely spirit”. Environmental degradation is the deterioration of the environment through depletion of natural resources like air, soil and water; the destruction of ecosystem and natural habitat; wildlife extinction; and pollution. It is analogous with any change to the environment perceivable as undesirable². In more scientific terms it can be expressed by the equation $I=PAT$, where I

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denotes environmental impact (environmental degradation) is caused by the combination of an human population (P) which is already huge and is continuously increasing, continually increasing per capita affluence (A), and the application of resource-depleting and polluting technology (T)³. Right to Health means the most attainable levels of physical, mental and reproductive health that every human being is entitled to. Health has been much regarded as the basic and fundamental human right by the international community under international human rights law. In contrast to all the other human rights, the right to health creates a responsibility upon the states to make sure that the right to health is respected, protected and fulfilled, and is duly entitled to all its citizens⁴ The Indian Constitution lays down the structure of safeguard and conservation of environment in absence of which life cannot be relished. The issue of Environmental Damage came to the fore on the international platform for the first time with the Stockholm Conference in 1972⁵. The conference was attended by the then Prime Minister Mrs. Indira Gandhi⁶. After the Conference significant changes were made in the Indian Constitution to accommodate necessary provisions regarding the deteriorating Environment in the Directive Principles of State Policy and Fundamental Duties⁷. Various legislations like The Air (Prevention and Control of Pollution) Act, 1981, The Water (Prevention and Control of Pollution) Act, 1974, the Environment Protection Act, 1986 were also enacted. Several principles like the Polluter Pays Principle, Precautionary Principle were also incorporated as provisions⁸.

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² Johnson, D.L., S.H. Ambrose, T.J. Bassett, M.L. Bowen, D.E. Crumme, J.S. Isaacson, D.N. Johnson, P. Lamb, M. Saul, and A.E. Winter-Nelson. 1997. *Meanings of environmental terms*. *Journal of Environmental Quality*

³ Chertow, M.R., *The IPAT equation and its variant*, *Journal of Industrial Ecology*

⁴ Aart Hendriks, *The Right to Health in National and International Jurisprudence*, *European Journal of Health Law* 5 (1998).

⁵Sustainable Development Goals Knowledge Platform, *United Nations Conference on the Human Environment (Stockholm Conference)*, Available at <https://sustainabledevelopment.un.org/milestones/humanenvironment> accessed 17-01-2020

⁶ Richard Black, *Stockholm: Birth of the green generation*, (June 4, 2012), British Broadcasting Corporation Available at <https://www.bbc.com/news/science-environment-18315205>

⁷ S.C. SHASTRI, *ENVIRONMENTAL LAW* (Eastern Book Company, 2018)

⁸ Ms. Moulika Arabhi, *Law And Policies Pertaining to Environment*, CEL, WWF-INDIA & NATIONAL LAW UNIVERSITY DELHI, (November, 2011), http://awsassets.wwfindia.org/downloads/course_2_block_2_1.pdf

II. LEGAL FRAMEWORK OF PREVENTION OF ENVIRONMENTAL DEGRADATION IN INDIA

The compelling necessity for protection of environment from environmental degradation and sustainable use of natural resources is mirrored in the Constitutional structure of India and also in India's international obligations. The Indian Constitution casts a fundamental duty on every citizen of India "to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures."⁹ The Constitution also lays down that the "State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country"¹⁰

Numerous environment protection legislations existed in the pre-Independence era. However, the real efforts for formulating a robust framework came only after the UN Conference on the Human Environment (Stockholm, 1972)¹¹. Following the Conference, the National Council for Environmental Policy and Planning was established in 1972 within the Department of Science and Technology to establish a supervisory body to take care of environmental issues¹². This Council later culminated into a full-fledged ministry which came to be known as Ministry of Environment and Forests (MoEF)¹³.

MoEF was set up in 1985, which today is the supreme administrative body in India for regulating environmental conservation and lays down the legal as well as regulatory structure for the same¹⁴. Since the 1970s, a number of environment legislations have been put in place. The MoEF along with the Pollution Control Boards ("CPCB", ie, "Central Pollution Control Board" and "SPCBs", ie, "State Pollution Control Boards") together form the regulatory plus administrative core of the sector¹⁵.

Some of the central legislations for environment conservation are as follows:

- The Air (Prevention and Control of Pollution) Act, 1981
- The Environment Protection Act, 1986
- The National Green Tribunal Act, 2010

⁹ INDIA CONST. art.51 A

¹⁰ INDIA CONST art 48 A

¹¹ Supra at 7

¹² B. P. Pal, *Indian National Committee on Environmental Planning and Coordination*, 6 Environmental Conservation 256–256 (1979).

¹³ Sanjeev Khagram, *Dams and Development*, New York, Cornell University Press (2004)

¹⁴ *About the Ministry*, Ministry of Environment, Forest and Climate Change, (Jan 11, 2020 10:00 A.M.), <http://envfor.nic.in/about-ministry/about-ministry>

¹⁵ *The legal and regulatory framework for environmental protection in India*, Ministry of Environment, Forest and Climate Change, (Jan 11, 2019, 10:00 A.M.), <http://envfor.nic.in/divisions/ic/wssd/doc2/ch2.html>

- The Water (Prevention and Control of Pollution) Act, 1974
- The Hazardous Waste Management Regulations¹⁶,

The Indian Constitution is not passive but a dynamic living document which progressively develops with time. The particular provisions on environment safeguard in the Constitution are also an outcome of this progressive nature and potential for development of the fundamental law of the land¹⁷. The Preamble to the Constitution envisages a socialist form of society and guarantees dignity of human beings.¹⁸ Pollution free environment and decent standard of living is intrinsic in this. The Environment (Protection) Act, 1986 lays down the definition of environment as “environment includes water, air and land and the interrelationship which exists among and between air, water and land and human beings, other living creatures, plants, micro-organism and property”.¹⁹

The Chapter on Fundamental Duties of the Constitution expressly lays down a duty on every citizen of India to protect the environment. Article 51-A (g), says that “It shall be duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures.”²⁰

The Directive Principles of State Policy of the Constitution are focussed on building a Welfare State. Healthy environment is also one of the fundamental elements of Welfare State²¹. Article 47 provides that the “State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health”²² as among its primary duties. The development of public health also includes the safeguard and development of environment in absence of which public health cannot be guaranteed. Article 48 pertains to the organization of agriculture and animal husbandry.²³ It directs the State to “take steps to organize agriculture and animal husbandry on modern and scientific lines”. In particular, it should take steps for “preserving and improving the breeds and prohibiting the slaughter of cows and calves and other cattles”. Article 48 -A of the constitution says that “the state shall endeavor to protect and improve the environment and to safeguard the forests and wild life of the country”.²⁴

The Indian Constitution under part III envisages certain fundamental rights which are

¹⁶ Ibid

¹⁷ Supra at 14

¹⁸ INDIA CONST. preamble

¹⁹ The Environment Protection Act, 1986, (No. 29 of 1986 dated 23rd May 1986), § 2

²⁰ INDIAN CONST. art 51 A

²¹ Supra at 14

²² INDIAN CONST art 47

²³ INDIAN CONST. art 48

²⁴ INDIAN CONST. art 48A

indispensable for the wholesome development of every human being and to which a person is inherently entitled by virtue of being a human being. Right to wholesome and salubrious environment is a right without which development of individual as well as realisation of his or her full potential is not possible. Articles 14, 19 and 21 of Part III have been employed for environmental protection²⁵.

Article 21 of the Constitution states that, “no person shall be deprived of his life or personal liberty except according to procedure established by law”²⁶. Article 21 has obtained a very broad construal from time to time after the decision of the Apex Court in *Maneka Gandhi vs. Union of India*²⁷. Article 21 of the Constitution recognises the Fundamental Right to Life, the right to healthy and safe environment, free of threat of disease and infection is inherent in it, this right is an essential feature of human dignity, which is the constitutional core of the right to life. The Right To Live in a Healthy Environment as a right allied with Article 21 first came to be recognized in the case of *Rural Litigation and Entitlement Kendra vs. State*²⁸ (Popularly known as *Dehradun Quarrying Case*). This case involved issues relating to environment and ecological imbalance. In this case, the Apex Court held that illegal mining in the region should be stopped under the Environment (Protection) Act, 1986. Subsequently, the Apex Court treated the Right to Live in Pollution Free Environment as implied in Fundamental Right to Life recognized under Article 21 of the Constitution

Excessive noise is also a form of pollution. Article 19 (1) (a) read with Article 21 recognizes the Right to Decent Environment and Right to Live Peacefully. The Hon’ble High Court of Kerala held that freedom of speech guaranteed under article 19 (1)(a) does not comprise freedom to use sound amplifiers or loud speakers. Therefore, noise pollution produced by the loud speakers can be checked under Article 19 (1) (a) of the constitution.²⁹

Article 19 (1) (g) of the Constitution confers fundamental right “to practice any profession or to carry on any occupation, trade or business” on every citizen, albeit subject to certain “reasonable restrictions”.³⁰ One such reasonable restriction is forbidding any activity that can jeopardize the health of general public.³¹ Therefore, preventions from environmental deterioration are intrinsic in this. The Apex Court, while deciding the matter involving carrying

²⁵ Supra at 14

²⁶ INDIAN CONST. art 21

²⁷ *Maneka Gandhi vs. Union of India*, (AIR 1978 SC 597)

²⁸ *Rural Litigation and Entitlement Kendra vs. State*, AIR 1988 SC 2187

²⁹ *PA Jacob vs. The Superintendent of Police Kottayam*, AIR 1993 Ker 1

³⁰ INDIAN CONST. art 19 cl. 1

³¹ INDIAN CONST. art 19 cl. 2

on trade of liquor³², held that, “if there is a conflict between environmental protection and right to freedom to carry out trade and occupation, the courts shall employ an approach that balances environmental interests with the fundamental rights to carry on any occupations”.

Public Interest Litigation under Article 32 and 226 of the constitution of India resulted in an upsurge of environmental litigation. The landmark cases concerning the issue, decided by the Supreme Court include case of the installation of safeguard at a chlorine plant in Delhi³³, shutting of limestone quarries in the Dehradun region³⁴, etc. In Vellore Citizens Welfare Forum vs. Union of India³⁵, the Court observed that “the Precautionary Principle” and “the Polluter Pays Principle” are vital features of “Sustainable Development.”

At grassroot level, the Constitution has empowered the Panchayats to take actions for environmental protection such as such as soil conservation, forestry, water management, promotion of ecological aspect and protection of the environment

III. INNOVATIVE APPROACHES TO ENVIRONMENTAL DEGRADATION

(A) COP24: INNOVATION IN THE POLISH PAVILLION

Innovation is the buzzword of the UN global climate conference - COP24 in Katowice³⁶. It was also the leading theme in the Polish Pavilion on Wednesday and the leitmotif of the keynote speech delivered by Sławomir Mazurek, Undersecretary of State at the Polish Ministry of the Environment.³⁷

In his address, the special guest emphasised how Polish companies have been recently trying to surpass each other to grow and implement environmentally friendly alternatives.

Although technical advancement has led to environmental degradation, it also gives hope for its steady restoration. It is because innovativeness that we can now enjoy such objects as biodegradable bags, automatic light switches or electric vehicles. Companies and institutions from around the world stress their concern for the environment, using it as an element of their positive image and brand equity. Both, private entities as well as public institutions have been continuously increasing expenditures on developing innovative solutions, which can be later used in production and use of concrete commodities.³⁸

³² *Cooverjee B. Bharucha Vs Excise commissioner*, Ajmer (1954, SC 220)

³³ *M.C. Mehta V. Union of India*, AIR 1988 SC 1037

³⁴ *Supra* at 14

³⁵ *Vellore Citizens Welfare Forum vs. Union of India* (1996) 5 SCC 647

³⁶ Available at <https://cop24.gov.pl/> accessed 19-01-2020

³⁷ *Of Innovations in Polish Pavillion*, Available at <https://cop24.gov.pl/news/news-details/news/of-innovations-in-the-polish-pavilion/> accessed 19-01-2020

³⁸ *Ibid*

For eons, Poland has been financing innovativeness aimed at environment preservation and attaining climate neutrality. Subsequent governmental projects are being implemented, such as “Clean Air”, “Electromobility Development Plan” and “Forest Coal Farms”. Polish entrepreneurs are also progressively enthusiastic to use state-of-the-art technologies to increase production, while at the same time reducing its environmental impact.

And innovativeness in the public and private sector was the leitmotif of the Polish Pavilion’s third day. In this special zone located within the facilities of the UN global climate summit – COP24, experts, scientists and representatives of industry organisations from Poland and abroad shared ideas and opinions, each day discussing different aspects of the broadly defined climate security³⁹

The debate’s first part was inaugurated with a speech delivered by Sławomir Mazurek, the Undersecretary of State, Ministry of the Environment, who discussed how Polish companies and public institutions have been taking advantage of the technological breakthrough. He also stressed that latest technological solutions allow COP24 conference to meet environmental standards.⁴⁰

Further thematic blocks were devoted to innovations in such sectors as hydropower industry, wind power industry or waste management. Central role that local governments and NGOs play in the modernisation of the country, also at the local level, was highlighted. The attendees were encouraged to join Smart Growth Operational Programme, which will allot over PLN 6 billion to innovative entrepreneurs and scientific bodies.⁴¹

At the end of the day, Polish producers presented their hitherto achievements in using innovations for production and management. Each subsequent day in the Polish Pavilion was devoted to different subject matter: forests, the issue of sustainable development of cities, financing climate policy, air quality and human dimension of climate change. The Pavilion will be functioning throughout the whole UN climate summit – COP24 in Katowice.

IV. INNOVATIVE TECHNIQUES TO RESTRICT ENVIRONMENTAL DEGRADATION: A CASE STUDY ON THE PERUVIAN LAKE EL CASCAJO

El Cascajo, an ecological system of 123 acres in Chancay district, located to the north of Lima, initiated its rejuvenation process back in the year 2010 with two brainchildren that Peruvian Scientist Marino Morikawa devised by means of his personal financial resources. The scientist

³⁹ Supra at 24

⁴⁰ Supra at 24

⁴¹ Supra at 24

embarked on a journey to find a technique to decontaminate and cleanse the wetlands without the use of chemicals. His first and foremost invention was a micro nano bubbling system, which entails trapping and paralyzing viruses and bacteria, causing them to evaporate with the help of bubbles, ten thousand times smaller than those in soda. He also devised biological filters to trap inorganic pollutants, like minerals and heavy metals that stick to surface and are broken down by bacteria. In merely a span of fifteen days, the method proved to be a massive success and brought about restoration of the wetlands, a procedure which would otherwise have taken six months in the laboratory. By the year 2013, about 60% of the wetlands was repopulated by migratory birds that use El Cascajo as a layover on their route from Canada to Patagonia.⁴²

Now, Morikawa has facilitated recuperation of 30 habitations on a global scale, and plans to further recover two ecosystems that are emblematic in Peru. The first, slated for 2018, is the restoration of Lake Titicaca, the biggest lake in South America, located four thousand meters (13,115 feet) above the mean sea level between Peru and Bolivia. The subsequent assignment targets to rejuvenate the Huacachina lagoon near the southern city of Ica, where water stopped percolating naturally in the 1980s. Morikawa, acknowledged for revival of polluted wetlands in North Lima with the use of nanotechnology, now aims to rejuvenate and cleanse Lake Titicaca and the Huacachina lagoon, an oasis in the South of Lima⁴³

V. CONCLUSION

The knowledge of constitutional provisions aimed at eradicating environmental degradation is need of the hour to bring about greater public participation, environmental education, environmental awareness, and sensitize the people to preserve environment and ecology. Also people at all levels must be educated about the importance of environment conservation so that they are able to develop innovative techniques to conserve and preserve the environment.

⁴² *Recovering Polluted Wetlands In Peru Using Nanotechnologies*, Available at <http://www.ideassonline.org/>, accessed 19-01-2020

⁴³ Living in Peru, *Peruvian Scientist planning to clean up Lake Titicaca* (July 7, 2016) Available at <http://www.peruthisweek.com/news-clean-up-lake-titicaca-109918/> accessed 19- 01-2020