

INTERNATIONAL JOURNAL FOR LEGAL RESEARCH AND ANALYSIS



Open Access, Refereed Journal Multi-Disciplinary
Peer Reviewed

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LAW FROM MARGINS: WOMEN'S GRASSROOTS LEADERSHIP AND ENVIRONMENTAL JUSTICE UNDER INDIA'S LEGAL FRAMEWORK

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Introduction: Women's Voices in Environmental Governance:

The term environmental justice emerged as a concept in the United States in the early 1980s. The term has two distinct uses. The first and more common usage describes a social movement in the United States whose focus is on the fair distribution of environmental benefits and burdens. Secondly, it is used to define an interdisciplinary body of social science literature that includes theories of the environment, theories of justice, environmental law and governance, environmental policy and planning, development, sustainability, and political ecology.¹ As defined by the environmental protection agency (EPA), environmental justice is the fair treatment and meaningful involvement of all people regardless of race, ethnicity, income, national origin or educational level with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no population, due to policy or economic disempowerment, is forced to bear a disproportionate burden of the negative human health or environmental impacts of pollution or other environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies.² Numerous studies confirm the benefits of women's environmental leadership in NGOs and at the grassroots community level. For example, research on forestry conservation programmes in India showed that greater representation of women led to more equitable benefit sharing and improved conservation outcomes, with an 11% forest cover increase in the study areas.³ Women are making significant contributions to environmental leadership efforts around the world, but their efforts frequently go underappreciated and understudied.⁴ At the political level, compared to

¹ Schlosberg, David (2007) *Defining Environmental Justice: Theories, Movements, and Nature*, Oxford University Press.

² Environmental Protection Agency, 1998, p.2

³ Agarwal, B. (2009), "Gender and forest conservation: The impact of women's participation in community forest governance", *Ecological Economics*, Vol. 68/11, pp. 2785-2799, <https://doi.org/10.1016/J.ECOLECON.2009.04.025>.

⁴ Jeffs, N. (1 February 2022). Why women's leadership is key to climate action. World Economic Forum. <https://www.weforum.org/agenda/2022/02/women-gender-equality-climate-change-leadership/>

men in similar leadership roles, women leaders have different responses to environmental issues.⁵ As evidenced by a 2019 study by Mavisakalyan and Tarverdi (2019), women parliamentarians in governments from several countries around the world passed more aggressive climate policies. The results of these female leaders' decision-making to prioritize climate action strategies led to lower carbon dioxide emissions.⁶ The article offers an analysis of secondary sources. These sources include a variety of books written by scholars, research reports, journals, relevant publications, daily newspapers and relevant websites. They have all been analyzed to demonstrate the real link between women's leadership in environmental justice.

Historical Context: Women's Roles in India's Environmental Movements:

An environmental movement can be defined as a social or political movement, for conservation of environment or for the improvement of the state of the environment. The environmental movements favour the sustainable management of natural resources for the lives of the people of that region especially women who are linked to the forests and land. These movements are also referred to as green and conservation movements. Generally, environmentalists favour the sustainable management of natural resources as well as the protection of the environment via changes in public policy and individual behaviour. Environmental movement covers broad and different areas of institutional oppression. Such oppression may include consumptions of ecosystems and natural resources into waste. It also includes pollution of air and water, weak infrastructure, exposure of organic life to toxic and several other focuses.⁷ A lot of studies on women and environment have shown that women is very close to nature and they are significant actors in natural resource management and they are major contributors to environmental rehabilitation and conservation.

The Interdependence of women with nature can be evolved from the following observations:

- (i) Women are having base and skills for natural resource management
- (ii) They are better managers for natural resources.
- (iii) They have sensitiveness towards Environmental

⁵ Strumskyte, S., Sara Ramos Magaña, S., & Bendig, H. (2022). Women's leadership in environmental action. OECD Environment Working Papers. <https://dx.doi.org/10.1787/f0038d22-en>

⁶ Mavisakalyan, A., & Tarverdi, Y. (2019). Gender and climate change: Do female parliamentarians make difference?. *European Journal of Political Economy*, 56, 151-164.

⁷ The role of women in the early environmental movement in India by Rekha Pande p.155-156(Narratives of Environmental Challenges in Brazil and India chapter 12)

- (iv) They have high ecological consciousness.⁸

At the community level, when making resource-management decisions and risk management assessments when compared to men, women often prioritize the welfare and well-being of their families and communities.⁹ Having more women in science and on research boards could accelerate the fight against climate change with mitigation strategies. Women in research and development positions have proven more effective at scientific research, compared to men who appear to be more efficient at the technology development aspects.¹⁰ The traditional knowledge and connection to land that Indigenous women possess are invaluable for environmental decision-making and resource management.¹¹ Indigenous women embody relationships and responsibilities for protecting the land, waters, environment, and natural resources, which are important for adapting to and mitigating climate change.¹² The origin of environment protection in India dates back to Bishnoi's movement, chipko movement, Appiko movement, Silent valley movement, Narmada Bachao Andolan movement, Navadanya movement.

1. Bishnoi's movement:

The direct concern of Indian women with environment protection can be traced long back to 1731 A D. The movement took place in Khejarli, Marwar region of Rajasthan when the Maharaj of that area Abhay singh ordered his soldier to cut down the Khejri trees of the region which were worshipped by the bishnoi's. The villagers under the leadership of Amrita Devi protested against the order as she hugged the tree, as a new form of dissent. Amrita Devi and her three daughters were beheaded for disobeying royal order. Just before her martyrdom, Amrita Devi declared, "If a tree is saved even at the cost of one's head, it's worth".¹³ Maharaja stopped order as 363 Bishnois lost their lives in non violent method for protection of trees. They are upholding eco friendly principles still by saving water by traditional water harvesting

⁸ ROLE OF WOMEN IN ENVIRONMENT CONSERVATION *Dr. P. Mago, 1Dr. I. Gunwal

⁹ Jeffs, N. (1 February 2022). Why women's leadership is key to climate action. World Economic Forum. <https://www.weforum.org/agenda/2022/02/women-gender-equality-climate-change-leadership/>

¹⁰ Le Loarne-Lemaire, S., Bertrand, G., Razgallah, M., Maalaoui, A., & Kallmuenzer, A. (2021). Women in innovation processes as a solution to climate change: A systematic literature review and an agenda for future research. *Technological Forecasting and Social Change*, 164, 120440.

¹¹ Kermaal, N. (2016). Métis women's environmental knowledge and the recognition of Métis rights. In N. Kermaal & I. Altamirano-Jiménez, I. (Eds.), *Living on the land: Indigenous women's understanding of place*, 107-137. Athabasca University Press.

¹² Altamirano-Jiménez, I., & Kermaal, N. (2016). Introduction: Indigenous women and knowledge. In N. Kermaal & I. Altamirano-Jiménez (Eds.), *Living on the land: Indigenous women's understanding of place* (pp. 3-18). Athabasca University Press.

¹³ Moksha (2014). 'Bishnoi Communication for Perfect Life, Death and Enlightenment: An Ecological Perspective', *Scientific Journal of International Research*, 1(2):91-114.

system, indigenous cultivation method for local areas and not killing any animals. Even today, after many generations, Bishnois continue to protect the trees and animals. The Bishnois believe in the sanctity of God's creatures. One can spot a Bishnoi village easily as being more green and abundant in wildlife. The population of black buck, which is on the list of endangered species, is found to be in greater number in Bishnoi villages than outside. The recent resentment of Bishnois over killing of blackbucks by a well-known Bollywood actor, Salman Khan and his fun-loving party has to be understood against this background.

For the Bishnoi women environmental protection, linked to their survival extends to their animals and is a religion. They treat the animals like their own children. Mangi Devi Bishnoi, forty-five years old, a housewife from one of the villages said in an interview, "These baby deer's are my life and they are like my own children, 'I feed them milk and food and ensure they are given proper care and attention in the house like all my family members. Roshini Bishnoi, aged twenty-one, a student in one of the villages told in an interview, "I have grown up with these little deer's. they are like my brother or sister. My parents have never differentiated between a baby deer and me. We are one family and it is in our religion to protect them. It is our responsibility to keep them healthy and help them grow. We play with them and we communicate with each other, they understand our language"¹⁴

The Bishnois community, protect flora and fauna and they consider deer as a sacred animal of the community and they give special attention. They are very exemplary in environmental protection to whom conservation is a religion which they have adopted. Thus Bishnois movement laid the foundation of environment protection movement in India. This movement started by Amrita Bai in 1700 A D was revived by Bachni Devi and Gaura Devi of Uttar Pradesh in 1972.

2. Chipko Movement:

The chipko movement, launched to protect Himalayan forest from destruction, has its roots in the pre-independence days. The term chipko means to hug in hindi. The movement was named after the practice hugging trees to prevent them from being cut down. Chipko movement was started in 1973 at Garhwal division of Uttar Pradesh specifically Chamoli district. The incident raised in Mandal village in Chamoli district, where the government allotted a forest patch to a

¹⁴ The role of women in the early environmental movement in India by Rekha Pande p.155-156(Narratives of Environmental Challenges in Brazil and India chapter 12)

private sports goods company, ignoring the needs of the local villagers who depended on those forests for fuel, fodder, and timber. The denial of forest rights to local communities sparked orange and mobilization. The iconic moment in the movement's history came on March 26, 1974, in the village of Reni, when Gaura Devi, a local woman, led a group of 27 women to confront a team of loggers sent by a private contractor. In a powerful act of non-violent resistance, the women encircled the trees with their bodies, challenging the axe men to cut them down first. Again in 1977 a large number of rural women saved the Adwani Forest under the leadership of Bachchni Devi. The movement began with the government refusal to supply ash tree to the Dasholi Gram Swarajya Mandal (DGSM), (workers' cooperative) for processing plant of forest produces in Chamoli District. Instead government gave green signal for Simon Company to cut ash trees for production of sporting goods. The DGSM organised protest against government decision to promote Simon Company instead of villagers. This boosted the Chipko protest. Women formed Mahila Mandal for the protection of forest as they understand the forest degradation has more direct impact on their lives. For poor men of the area development opportunities by the Simon Company are new avenues for reduce the dependence on women, by works on hotel, and construction works. But women want to preserve the status quo and protect environment through forest protection of Garhwali Hills as it is the question of their survival.¹⁵

Chipko movement has had six demands - only one of which is complete stoppage of commercial cutting of trees. The other demands include:

1. On the basis of minimum needs of the people, a reorganization of traditional rights should take place
2. Arid forest should be made green with people's participation and increased tree cultivation
3. Village communities should be formed to manage forests.
4. Forest related home based industries should be developed and the raw materials, money and technique for it should be given priority in afforestation.¹⁶

The Chipko Movement succeeded in influencing national forest policy. In 1980, Prime Minister Indira Gandhi imposed a 15-year ban on tree felling in the Himalayan region. The

¹⁵ Jain, Shobhita (1984). 'Women and People's Ecological Movement: A Case Study of Womens' Role in the Chipko Movement in Uttar Pradesh,' Economic and Political Weekly, 19(41): 1788-1794.

¹⁶ The role of women in the early environmental movement in India by Rekha Pande p.155-156(Narratives of Environmental Challenges in Brazil and India chapter 12).

movement also encouraged the Indian government to review its forest policies and consider community-based forest management approaches. Furthermore, the movement catalysed the strengthening of the Forest Conservation Act of 1980, which centralized forest governance and placed restrictions on the diversion of forest land for non-forestry purposes without prior approval. The momentum generated by Chipko also encouraged the adoption of social forestry programs and joint forest management schemes, which aimed to involve local communities in afforestation and conservation efforts.¹⁷

3. Appiko Movement:

The appiko movement started in the year 1983 in the Uttara Kannada and Shimoga district of Karnataka. The movement started against tree felling and commercialization of natural forests. The clear felling of natural resources has led to severe soil erosion and drying up of perennial water resources. Moved by the destruction of essential ecological processes, the youth of Saklani village in Sirsi launched a movement. This movement is known as Appiko Chaluvali.

Appiko movement is an important environment conservation movement in Karnataka, to protect Western Ghats forest. Appiko movement was initiated by Panduranga Hegde. In September 1983, men, women and children of Saklani (a village in Western Ghats) "hugged the trees" in Kalase forest.¹⁸ This movement was against government policy to open forest for industrial development. The members of Mahila Mandal include Adivasi women joined for protection of rainforest by writing down to the government for halting of woodcutting. The village women conducted awareness programmes through foot marches, slideshows, folk dance, street plays, and dramas. The objective of the Appiko Movement is three-fold—to protect the existing forest cover, to regenerate trees in denuded lands and, last but not least, to utilize forest wealth with due consideration to conservation. All these objectives are implemented through ideally established Parisara Samrakshna Kendras.¹⁹

The Appiko Movement forced the government to change its forest policy. Some specific changes include ban on clear felling, no further issuing of concessions to logging companies, and moratorium on felling of green trees in the tropical rainforest of the Western Ghats.

¹⁷ The Chipko Movement: A Grassroots Environmental Revolution in India by Nikesh Sharma ISSN: 2792-8268 Volume: 41, Apr-2025

¹⁸ Ghanashyam, B. (2008). NREGA –Bringing Hope to Small Farmers. Retrieved From <http://indiatoday.intoday.in/articlePrint.jsp?aid=76360>.

¹⁹ Mondal, Puja (2015). Appiko Movement in India (Useful Notes). Retrieved From <http://www.yourarticlelibrary.com/essay/appiko-movement-in-india-usefulnotes/32985/>.

4. Silent valley movement:

Silent valley is an evergreen tropical forest in the Palakkad district of Kerala. In the leadership of Sugutha Kumari along with others in order to protect the Silent valley from being destroyed by Hydroelectric power project of the Kerala State Electricity Board. Silent Valley is one of the important biodiversity hotspot in Southern end of Western Ghats in Kerala. The Silent Valley Movement was against the decision of Kerala Government to construct a dam for hydroelectric power project in the Silent Valley forest.²⁰ The Malayalam poet and environmentalist, Sugutha Kumari was the prominent leader in this movement. Despite the offer of employment and development in the area, people, especially women opposed the hydro-electricity project.

Almost all the political parties of Kerala demanded the implementation of the project. On October 1976, a National Committee on Environment Planning and Co-ordination (NCEPC) set up a task force, chaired by Zafar Futehally, to study the ecological problems that could be precipitated by the project. State argued that the area submerged by the dam is only 1022 hectares, of which 150 ha is grass lands. It also argued that only 10 percent of the ecosystem will be damaged, while ecological safeguards will protect the rest.²¹ The State Government enacted —The Silent Valley Protected Area (Protection of Ecological Balance) Ordinance, 1978 (31 of 1978). This ordinance was repealed by the Kerala Legislature in March 1979 with the enactment of the Silent Valley Environmental Protection Act, —the Silent Valley Protected Area (Protection of Ecological Balance) Act, 1979.²²

Above all, Mrs. Indira Gandhi, who became the Prime Minister in 1980, played a critical role in asking the State Government to halt further work until the Central and State Governments could explore the implications of the proposed project and the alternatives that were available. In January 1981, bowing to the unrelenting public pressure, Indira Gandhi declared that the Silent Valley will be protected. A committee under the chairmanship of Prof.M.G.K.Menon was set up to look into the ecological implications of the project. In November, 1983, the Silent Valley was called off and in 1985, Prime Minister Rajiv Gandhi formally inaugurated the Silent

²⁰ Rohith, P. (2012). The Silent Valley and its discontents: literary environmentalism and the ecological discourse in Kerala (1975-1984). (Doctoral Thesis) University of Hyderabad

²¹ Silent Valley Movement In Kerala: A Study On The Contributions Of Kerala Sastra Sahitya Parishad IJRSS Volume 6, Issue 3 ISSN: 2249-2496, 2016.

²² Rohith, P. (2012). The Silent Valley and its discontents: literary environmentalism and the ecological discourse in Kerala (1975-1984). (Doctoral Thesis) University of Hyderabad

Valley National Park.²³

5. Narmada Bachao Andolan:

India's Narmada Bachao Andolan (NBA) is an environment movement against the building of a number of dams along the Narmada River funded by World Bank. The NBA spread to three states Gujarat, Maharashtra, and Madhya Pradesh as the construction of Sardar Sarovar Dam affect the environment and settlement of people of these areas. The Sardar Sarovar Project (“SSP”) in the state of Gujarat includes the most controversial large dam. The government claimed that the Sardar Sarovar dam alone would irrigate almost 1.8 million hectares of land in Gujarat and an additional 73,000 hectares in the dry neighboring state of Rajasthan, in addition to providing potable water to over 8,000 Gujarati villages and 135 urban centers.²⁴ In response, local opponents, environmental activists, and professionals from the academic, scientific, and cultural worlds founded a cluster of non-governmental organizations (“NGOs”). These NGOs gained strength in the late 1980s when they allied to form the Narmada Bachao Andolan (“NBA”), or the Save Narmada Movement. Led by the legendary activist Medha Patkar, the NBA employed creative means of resistance to mobilize opposition to the Sardar Sarovar Project. On the national front, the NBA opposed the dam and proposed various development alternatives, including decentralized methods of water harvesting.²⁵

Other women have also played central roles in the campaign. The NBA’s struggle against the Maheshwar Dam in Madhya Pradesh state, 61 for instance, has been led by the Narmada Shakti Dal, a separate women’s organization within the NBA that was set up on March 8, 1988—International Women’s Day—and is comprised of female villagers from Maheshwar. Alongside Medha Patkar, social activist Baba Amte provided moral leadership to the cause to preserve the Narmada River. In May 1990, a massive NBA five-day dharna (sit-in) at then-Prime Minister V. P. Singh’s residence in New Delhi forced the Prime Minister to agree to “reconsider” the project.

²³ Chengappa, R. (2009). 1976-Silent Valley movements: The genesis of green. Retrieved From <http://indiatoday.intoday.in/story/1976-Silent+valley+movement:+The+genesis+of+green/176360.html>.

²⁴ Balakrishnan Rajagopal, The Role of Law in Counter-hegemonic Globalization and Global Legal Pluralism: Lessons from the Narmada Valley Struggle in India, 18 LEIDEN J. INT’L L. 345, 355 (2005).

²⁵ The Story of Narmada Bachao Andolan: Human Rights in the Global Economy and the Struggle Against the World Bank Smita Narula, December 2008, New York University School Of Law Public Law & Legal Theory Research Paper Series Working Paper No. 08-62.

6. Navadanya movement:

Navadanya began in 1987 as a program of the Research Foundation for science, Technology and Ecology (RFSTE), a participatory research initiative to provide direction and support to environmental activism. Navadanya is a movement and organization established by Vandana Shiva aims to safeguard and protect India's biodiversity and food legacy. Based on the ideology of Vasudhaiv kutumbam, the movement tries to protect the native seeds, grains, agricultural knowledge. Navdanya means nine crops that represent India's collective source of food security. The movement has grown tremendously, resulting in the establishment of 122 community seed banks in India and the conversion of a staggering 5,000,000 farmers to organic farming.

They are strongly campaigning against Genetically Modified Seeds and actively participating in biodiversity conservation.²⁶ Mostly the members of Navdanya Movement are women farmers from various parts of country.²⁷ In contrast to the long history of women's labor, in the farms, being devalued and overlooked, the organization acknowledges women as farmers, this characterizes the most distinctive feature of Navdanya farms. Shiva's "Women for Diversity" goal, which advocates for women's sovereignty and condemns India's history of female feticide, includes empowering women by giving them access to farm labor and decent remuneration.²⁸ Shiva claims that women are disempowered when they are forced out of agriculture, and food security suffers as a result. Food systems developed by women rely on biodiversity rather than chemicals and they produce food that is superior in quality, nutrition, and taste.²⁹

Legal Frameworks and Environmental Justice: Challenges and Opportunities:

The Environment (Protection) Act 1986 -

This Act was enacted in the aftermath of the Bhopal gas tragedy in 1984 claiming more than 3000 lives. The Statement of Objects and Reasons of this Act refers to the decisions taken at

²⁶ Shiva, Vandana, Barker, Debbie & Lokhart, Caroline (2011). The GMO Emperor has no Clothe. A Global Citizens Report on the State of GMOs - False Promises, Failed Technologies. Synthesis Report Published by Navdanya International.

²⁷ Navdanya. <http://www.navdanya.org/earthuniversity>.

²⁸ Tauranac, M. (2018, December 4). A Visit to Vandana Shiva's Navdanya Biodiversity Farm: A Photo Essay. Retrieved from Food Print: <https://foodprint.org/blog/a-visit-to-vandanashivas-navdanya-biodiversity-farm-a-photo-essay/>

²⁹ BBC World Trust. (2004, June 10). Dr Vandana Shiva: Empowering women. Retrieved from <https://likeawhisper.files.wordpress.com/2009/03/empoweringwomen.pdf>

the Stockholm Conference in June 1972 and expresses concern about the decline in environmental quality, increasing pollution, loss of vegetal cover and biological diversity, excessive concentrations of harmful chemicals in the ambient atmosphere, growing risks of environmental accidents and threats of life system.

According to this Act environment includes ‘water, air and land and the interrelationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro organism and property’. It defines hazardous substance as ‘any substance or preparation which, by reasons of its chemical or physiochemical properties or handling, is liable to cause harm to human beings, other living creatures, plants, micro-organism, property or the environment’

This Act gives the following powers to the central government:

- (a) coordination of actions of the state governments, officers and other authorities under the Act or any other law which is relatable to the objects of the Act;
- (b) planning and execution of a nation-wide programme for the prevention, control and abatement of environmental pollution;
- (c) laying down standards for the quality of environment in its various aspects;
- (d) laying down standards for emission or discharge of environmental pollutants from various sources;
- (e) restriction of areas in which any industry, operations or processes or class of industries, operations or processes shall not be carried out subject to certain safeguards;
- (f) laying down procedures and safeguards for the prevention of accidents which may cause environmental pollution and remedial measures for such accidents;
- (g) examination of such manufacturing processes, materials and substances as are likely to cause environmental pollution;
- (h) carrying out and sponsoring investigations and research relating to problems of environmental pollution;
- (i) inspection of any premises, plant, equipment, machinery, manufacturing or other processes, materials or substances and giving, by order, of such directions to such authorities, officers or persons as it may consider to take steps for the prevention, control and abatement of environmental pollution;
- (j) establishment or recognition of environmental laboratories and institutions;

- (k) collection and dissemination of information in respect of matters relating to environmental pollution; and
- (l) preparation of manuals, codes or guides relating to the prevention, control and abatement of environmental pollution.

The central government may constitute an authority or authorities for the purpose of exercising such of the powers and functions under this Act.

The central government may make rules covering the following matters:

- (i) The standards of quality of air, water or soil for various areas and purposes;
- (ii) The maximum allowable limits of concentration of various environmental pollutants (including noise) for different areas;
- (iii) The procedures and safeguards for the handling of hazardous substances;
- (iv) The prohibitions and restrictions on the handling of hazardous substances in different areas; and
- (v) The prohibitions and restrictions on the location of industries and the carrying on the process and operation in different areas and;
- (vi) The procedures and safeguards for the prevention of accidents which may cause environmental pollution and for providing for remedial measures for such accidents.

The Environment (Protection) Act is a comprehensive piece of legislation. Under this Act, Environment Protection Rules were announced in 1986. Schedule VI contains specification of standards of different types. Hazardous Wastes (Management and Handling) Rules 1989; Manufacture, Storage, and Import of Hazardous Chemicals, Rules 1989, Chemical Accident (Emergency Planning, Preparedness and Response) Rules, 1996; Bio-medical Waste (Management and Handling) Rules, 1998 were framed using the powers given in this Act. Under Rule 14 of the E.P. Rules 1986, the government evolved guidelines for submission of yearly environmental audit/statement by units requiring consent under the Water Act, Air Act and authorization under Hazardous Wastes (Management and Handling) Rules¹¹. However, submission of an environmental statement by polluting units seeking consent under the Water Act 1974 or the Air Act, 1981 or both and authorization under the Hazardous Wastes Rules, 1989 to the concerned SPCBs was made mandatory only in 1992.

Khan (1998) notes that the definition of environmental pollutant in this Act does not include heat energy, sound and nuclear radiation or even pollution caused by deforestation and unrestricted development. This Act gives wide range of powers to the central government.

Padia (1996) suggests a suitable entry in the Concurrent List in respect of environmental pollution by specially referring to air, water and land pollution in all forms, prevention of hazards to human beings, other living creatures, plants, microorganism and property.

The National Environment Tribunal Act 1995 –

The aim of the Act is to provide for strict liability for damages arising out of any accident occurring while handling any hazardous substance and for the establishment of a National Environment Tribunal for effective and expeditious disposal of cases arising from such accident, with a view to giving relief and compensation or damages to persons, property and the environment and for matters connected therewith or incidental thereto. It cites the decision reached at the U.N. Conference on Environment and Development held at Rio de Janeiro in June 1992 which called upon the countries to develop national laws regarding liability and compensation for the victims of pollution and other environmental damages.

The Water (Prevention and Control of Pollution) Act, 1974 –

The first important environmental law enacted by Parliament is the Water (Prevention and Control of Pollution) Act, 1974. As water is a state subject and as 12 states had passed the enabling resolutions, the Government of India, in pursuance of clause 19 of Article 252, passed this legislation. It defines pollution 'such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or it is likely to create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or of aquatic organisms'.

This Act paved the way for the creation of Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs). The main function of the CPCB 'shall be to promote cleanliness of streams and wells in different areas of the states'. The term stream includes river, watercourse, inland water, subterranean waters, and sea or tidal waters to such extent or such point a state government may specify in this behalf.

The Board may perform functions such as

- (a) lay down, modify or annul in consultation with the state government concerned, the standards for a stream or well;

- (b) plan and cause to be executed a nationwide programme for the prevention, control and abatement of water pollution;
- (c) collect, compile and publish technical and statistical data relating to water pollution and the measures devised for its effective prevention and control and prepare manuals, codes or guides relating to treatment and disposal of sewage and trade effluents and disseminate information connected therewith;
- (d) advise the central government on any matter concerning the prevention and control of water pollution;
- (e) coordinate the activities of the SPCBs and provide technical assistance and guidance to the SPCBs; and
- (f) carry out and sponsor investigation and research relating to problems of water pollution and prevention, control or abatement of water pollution.

The SPCBs have similar functions within their areas. The Act gives powers to the SPCBs to take samples of effluents from any source and lays down the procedure to be followed in connection therewith. It gives power of entry and inspection into the premises of the polluters' premises. It prohibits any poisonous, noxious or polluting matter to enter into any stream, or well or sewer or land. Consent of the Board is required to 'establish or take any steps to establish any industry, operation or process or any treatment and disposal system or any extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land; or bring into use any new or altered outlet for the discharge of sewage; or begin to make any new discharge of sewage'. Any person who is not granted the consent may, within 30 days from the date on which the order is communicated to him, prefer an appeal to the appellate authority constituted by the state government.

The SPCBs have the powers to carry out certain works stipulated in the consent order if the person fails to meet the conditions and to make application to courts for restraining apprehended pollution of water in streams or wells. In the event of accident or other unforeseen act or event, resulting in the discharge or likely discharge of polluting matter into a stream or well or sewer or land, the person in charge of such a place is required to intimate the occurrence of such an accident, act or event to the SPCB. Both central government and state governments are given the powers to make rules in consultation with their respective Boards.

Chapter VII of the Act prescribes penalties for

- (a) failures to comply with the SPCBs directions restraining or prohibiting the discharge of polluting matter into the stream, well or land;
- (b) failures to comply with court's decision to restrain discharge of effluent on application by the SPCBs,
- (c) failures to comply with SPCB's directions for closure, prohibition or regulation of any industry, operation or process or the stoppage or regulation or supply of electricity, water or any other service.

The penalties for non-compliance are imprisonment from 18 months to 6 years with a fine for the first contravention and additional fine upto Rs.5000 per day till the failure continues. For non-compliance with effluent standards prescribed by SPCBs, the penalties are imprisonment from 18 months to 6 years and fine. For making new outlets and thus discharging effluent without consent of the SPCBs, the penalties are imprisonment from 2 to 6 years and fine for the first contravention and imprisonment from 2 to 7 years and fine after the first conviction. Dwivedi (1977) points out that this Act left many grey areas that were difficult to administer. This Act does not cover groundwater contamination. Municipalities which are primarily responsible for treating residential wastes remain free from direct liability⁹. It allows the government agencies too much flexibility. For example the Act states that the head of a polluting unit would not be punished 'if he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent it'. This Act does not give the victims the right to go to the courts to punish the erring units; charges can be brought to courts only by the Boards. The penalties for non-compliance with the standards or directions are independent of the extent of violations.

The Boards are expected to depend largely on government grants for their operations. As it was found that the Boards were overburdened and underfunded, the Water Cess (Prevention and Control of Pollution) Act, 1977 was enacted. Even after revisions in 1992, the rates of water cess varied between 1.50 paise to 5.00 paise for kilolitre for various uses. These rates are too low compared with the opportunity costs of water. Many SPCBs raise large proportion of their revenues from the consent fees.

The nodal agency for implementing various legislations relating to environmental protection at the centre is the MoEF. Besides giving directions to the CPCB on matters relating to prevention

and control of pollution, the MoEF is responsible for designing and implementing a wide range of programmes relating to environmental protection. The Annual Report of the MoEF for 1996-97 states that ‘the focus of various programmes of the Ministry and its associated organisations, aimed at prevention and control of pollution is on issues such as promotion of clean and low waste technologies, waste minimization, reuse or recycling, improvement of water quality, environmental audit, natural resource accounting, development of mass based standards, institutional and human resource development etc. The whole issue of pollution prevention and control is dealt with a combination of command and control methods as well voluntary regulations, fiscal measures, promotion of awareness, involvement of public etc’ (p.63). Based on the environmental laws and directions given by the Supreme Court, the central government has created a number of authorities for designing, implementing and monitoring its environmental programmes. At the state level, most states have set up Departments of Environments and the SPCBs.

The CPCB and the SPCBs are responsible for implementing legislations relating to prevention and control of pollution. Pollution arises both from point sources, for example, factories and non-point sources, for example, automobiles. Source-specific effluent and emission standards have been fixed for polluting point sources. For non - point sources, as monitoring of pollution generation is very difficult, indirect measures of pollution prevention control such as catalytic converters in automobile engine for new cars, led-free petrol, fuel with low sulfur content, periodic inspection of vehicles etc. are being adopted. In addition, ambient standards for air and water have been laid down and are being regularly monitored by the CPCB with the support of the SPCBs.³⁰

Mehta, Mundle and Sankar (1993/1997) find that despite the legislative and administrative efforts and fiscal incentives for pollution control, ‘ambient standards of air and water pollution continue to be routinely exceeded and in some places quality has distinctly deteriorated’. Hence, though standards have been laid down for ambient air and water quality, actual enforcement relates mostly to source standards laid down for individual polluters, factories, transport vehicles and so on. Furthermore, the ambient and source standards are laid down independently, unrelated in terms of the volume of pollution generating activities. Hence, it is quite conceivable that the quality of the environment could continue to deteriorate despite of

³⁰ According to the Annual Report of MoEF for 1997 – 98

high degree of compliance among individual polluters.

In enforcing the effluent standards, the SPCBs should follow guidelines such as treatment of the wastewater with the best available technology, minimisation of the discharge of wastes into the environment by recycling and reuse of waste materials as far as practicable, removal of colour and unpleasant odour as far as practicable and the assimilative capacity of the receiving bodies.

Poor enforcement of the laws/rules occurs due to the following reasons. First, the pollution control authorities do not have reliable information regarding the quantities of effluents/emissions/solid wastes and their characteristics. There is information asymmetry: the polluters know more about the sources, magnitudes and concentrations of pollutants as well as the costs of controlling pollution than the regulators. It is very difficult and perhaps there is no motivation on the part of the regulated agencies to acquire and process the information from thousands of units dispersed in their regions. Second, the regulators face budget constraints. Most SPCBs do not have adequate technical facilities and skilled manpower for monitoring the polluting units and filing charges against the units violating the standards. Third, the fines are fixed in nominal terms and are independent of the extent of violations. Penalties such as imprisonment of officials, stoppage of water and electricity and closure of units can impose hardships on the affected firms, but in a weak enforcement regime with principal agent problem collusion between regulators and regulated units are possible. Dispute settlement by going to the courts is a cumbersome process and involves considerable delays. This situation creates an opportunity to indulge in rent-seeking activities.

Recommendations For Active Participation Of Women In Environmental Protection:

The organisation for Economic Co-operation and Development (OECD) 2015 Recommendation of the Council on Gender Equality in Public Life offers a whole-of-government policy approach that can also be applied to gender gaps in environmental public governance.

The OECD Toolkit for Mainstreaming and Implementing Gender Equality (2018), which serves as practical guidance for implementing the Recommendation, highlights relevant good

practices such as defining clear institutional roles and responsibilities to advance gender equality, establishing independent recourse and appeal mechanisms, enhancing management and executive accountability, and integrating leadership training programmes for female civil servants.

Many countries promote women's leadership in public governance, though mostly through across-government initiatives not specific to individual ministries. In Germany for instance, public authorities, social institutions or municipalities have equal opportunity officers who deal with the promotion and implementation of equal rights and gender equality. This practice extends to the German Federal Environment Agency, whose equal opportunity team campaigns for more women in public leadership positions and advocates for flexible working conditions for employees with family responsibilities. As a result of these efforts, gender parity was achieved at the department management level in 2016³¹

Various non-governmental initiatives aim at further developing women's leadership in environmental negotiations. WEDO's Women Delegates Negotiations Training, aimed primarily towards first-time negotiators from Least Developed Countries, builds leadership skills through knowledge and capacity building on technical issues related to UN climate negotiations³². Similarly, the European Capacity Building Initiative (ecbi) has developed a mentorship programme together with WEDO to support women climate negotiators from developing countries³³.

The following actions help to boost the role of women in civil society in protecting the environment:

- Recognising and involving local women as sustainability actors can amplify the impact of women's leadership in the broader community. For instance, while the Mexican government tends to support eco-tourism and sustainable fishing, benefits have often accrued to male-dominated industries. Women-led grassroots organisations have

³¹ Umweltbundesamt (2021), Wir setzen uns für die Gleichstellung der Geschlechter ein!, <https://www.umweltbundesamt.de/das-uba/das-uba-als-arbeitgeber/warum-uba/wir-setzen-uns-fuer-die-gleichstellung-der#daten-und-fakten-gleichstellung-im-uba> (accessed on 9 December 2021).

³² Women Delegates Fund, WEDO (2021), Women Delegates Online Negotiations Training, <https://wedo.org/women-delegates-online-negotiations-training/> (accessed on 13 December 2021).

³³ IIED (2020), Mentoring women to become climate leaders through a joint initiative, <https://www.iied.org/mentoring-women-become-climate-leaders-through-joint-initiative> (accessed on 13 December 2021).

transformed local waste management and plastics recycling, improving the sanitary conditions of the area and the health of both the local natural environment and population. National and state-level recognition as important actors in the design and implementation of a new state waste management system was paramount to the women-led movement's success³⁴.

- Training and micro-finance for environmental community leaders. Programmes such as the Women's Earth Alliance Accelerator identify leaders in the farming sector in India and offer training on sustainable agriculture practices. Participants are supported to design their own action plans and receive seed grants to launch community-specific projects addressing climate change and food security³⁵.
- Developing networks of like-minded women environmentalists can foster women's access to leadership and decision-making positions. Women's Environmental Leadership Australia (WELA), a platform for mentoring and employment opportunities, connects women from different backgrounds, including indigenous women, with experienced environmentalists³⁶.

Conclusion and Way Forward: Strengthening Women's Role in Environmental Law and Governance:

When the economy is being liberalised and globalised the environmental policy must also change. As the resources are limited and the central, state and local governments face severe budget constraints, cost benefit analysis of environmental laws and regulations should be made mandatory. The government can also provide an enabling environment to community based organizations to participate in the management of local commons and in the enforcement of environmental laws and rules. The government must make a transparent and conscious assessment of the trade off between efficiency and equity in the matter of environmental policy. Addressing the gender-environment nexus requires considering how gender equality and women's empowerment as leaders and decision-makers can help advance environmental goals. Governments should consider a holistic framework that takes into account conflicting

³⁴ UNEP and World Water Alliance (2019), World Water Quality Alliance launched to tackle global water crisis, <https://www.unep.org/news-and-stories/press-release/world-water-quality-alliance-launched-tackle-global-water-crisis> (accessed on 13 December 2021).

³⁵ Women's Earth Alliance (n.d.), Grassroots Indian women leaders improving food and economic security - Womens Earth Alliance, <https://womensearthalliance.org/programs/women-food-climate-change-training/> (accessed on 13 December 2021).

³⁶ WELA (2021), Women's Environmental Leadership Australia, <https://wela.org.au/about-our-organisation/> (accessed on 13 December 2021).

objectives, complementarities and spill over effects, as presented in *Gender and the Environment: Building Evidence and Policies to Achieve the SDGs*³⁷.

Support for women's environmental leadership should start with policy action to address gender discrimination, social norms, and behaviours, from harassment to gender stereotyping, that sustain pervasive leadership gaps³⁸.

Governments could also consider the following measures:

- a) Training, mentoring and coaching initiatives to promote women's environmental leadership within existing training programmes.
- b) Partnering with educational and vocational training institutions and the private sector to scale up programmes that support women's environmental leadership and leverage their impact.
- c) Financing initiatives that support women's green entrepreneurship and women's environmental leadership in the civil society sector.
- d) Applying a gender lens to environmental regulations and to public procurement for green infrastructure projects to promote women-led companies.
- e) Protective measures to foster the establishment and operation of civil society institutions dedicated to sustainability goals, especially for female environmental activists wherever aggression is detected.

³⁷ OECD (2021), *Gender and the Environment: Building Evidence and Policies to Achieve the SDGs*, OECD Publishing, Paris, <https://dx.doi.org/10.1787/3d32ca39-en>.

³⁸ Ciminelli, G., C. Schwellnus and B. Stadler (2021), "Sticky floors or glass ceilings? The role of human capital, working time flexibility and discrimination in the gender wage gap", OECD Economics Department Working Papers, No. 1668, OECD Publishing, Paris, <https://dx.doi.org/10.1787/02ef3235-en>.