

INTERFACE OF ENVIRONMENTAL JUSTICE FOR NATURAL AND ENERGY RESOURCES PROPERTY RIGHTS TO CONSERVE SOIL HEALTH: A LEGAL OVERVIEW OF CASE STUDIES

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ABSTRACT

Applying the classical theory of ‘Doctrine of Public Trust’ – that is natural resources either owned by no one (res nullius) or by everyone in common (res communes) is to understand the sovereignty of resources. The nature of ‘the State or the central government or the Federal state property’ concerning the ownership, extension or to occupy natural resources as a frontier is vested in the capital interest as per the authority or investors’ high-ticket value or an asset; Natural Resources recognition and stakeholders’ possession over these, while availing the right to property is mostly controversial in the periphery of national jurisdiction. Category of citizens decide the value and price of the property rights of the environmental resources. Supporting the recognition of some forms of community property rights depends upon the charges of value and profits over natural resources. The invested price is bargained to extract, explore, and exploit the sources of nature that are available as organic and inorganic, as renewable, and non-renewable, as bio-degradable and bio-non-degradable. The investment in harnessing all sorts of energies that are strategically a value ladder of advancement of human existence and civilization based on the natural elements of stratosphere and atmosphere. The connection between property rights and natural resources is not just coercion of the maximum by way of investment, but it is also a matter of law and rights as the most common of the commonest depends upon the charged position of high tickets that make money from natural resources as investors by way of return stocks. In the pretext of investment law, most of the low-ticket

entities such as commoners' privacy and dependency both get at stake, because natural resources as value ladders are treated as private property by private entities. In view of this present scenario of the environmental aspirations and mismanagement, the accountability and liability are at risk to pay back security, safety, and protection not only to the local, indigenous, landless, rural and the most affected ones, but also to maintain the habitat of natural experience with environmental justice and protection.

Keywords: state property, ownership, investors, natural resources rights, citizens, environmental aspirations, mismanagement, private property, private entities, environmental justice, and protection.

1.1. INTRODUCTION

Human rights and environment are a valuable sourcebook that explores the uncharted territory that lies between environmental and human rights legislation. Human beings can ensure fundamental equality and adequate conditions of life in environment that permits a life of dignity and well-being, only when United Nations 17 SDGs and the Subcontinent India 19 SDGs mission of "Earth Forward in Environment Sustainable Governance"ⁱ create dialogues by way of critiques and discourses on forums in order to contribute to building an empowered world, interconnected communities, flourishing ecosystems, and innovative business approaches towards responsible governance, the scope of data technologies, and the power of policies.

While in Europe an emerging necessity for revisioning of the Helsinki Conventionsⁱⁱ got updated in 1992, then in 2014 in purview of the geopolitical changes and emerging environmental challenges in the Baltic Sea region, including inland waters as well as the water of the sea itself and the seabed. Despite the measures taken in the whole catchment area of the Baltic Sea to reduce land-air and sea pollution; the non-committed stakeholders, traders and fiefdoms have been found engaged transboundary or in their respective regions in lots of environmental illegal nuisances. Some of the disputed case studies are a showcase of overexploitation and counter-use of bye-laws for the currently enforced conventions to protect

ecological process as per the convention on the protection of the Marine Environment of the Baltic Sea Area that got signed in 1974 by all Baltic Sea coastal countries. Moreover, the purpose is to take a review of the regulated markets that are conditioned per se the regulation of tenancy relationship and the ceiling on holdings that attempts to rationalize the soil, water, and land – man relationship. To understand how consolidated, dynamic, environmental approach towards the reorganization of operations and progress are in effective regulation through legislative measures to facilitate proper land use and land management.

The paper attempts to explore ‘tensions and nuisances that emerge between the concessionary rights which are medium-tickets of corporations and investors over natural resources and rights of residents.’ⁱⁱⁱ

‘In brief, corporations shall be automatically liable for the illegal conduct of any agent or employee/s; as such, there is strict liability. It does not matter whether the employee is acting on behalf of the corporation or not – the key circumstance is whether the corporation obtains a financial benefit, directly or indirectly.’^{iv}

Environmental programmes in emerging contemporary climate action and climate change include the life-safety of natural resources and their protection concerning farm lands, free farm land holdings, highlands and green grasslands or arid zones, fallow/wastelands, co-operative farming etc.

Soil degradation means decline in quality and quantity of soil! Soil fertility depends upon soil nutrients and soil health is an anthropogenic question in environmental law and in the environmentally sustainable development goals and governance for climate action and for climate protection^v. While reasoning on cross-cultural perspective regarding environmental problems both in the areas of India and Germany, certain issues constitute a major inquiry for soil health and socio-economic justice of the protected, reserved, or unprotected areas of natural resources that gives life and breath to all living beings, besides help ‘Nature’ to sustain living being’s life^{vi}.

Since post-independence of India, the real coordinated efforts have been in process for changing the economic conditions of the peasants through legislative measures to remove impediments to the progress of the agrarian sector, that first started with the First Plan from which agricultural legislation was part of a purposeful national effort to bring social and economic justice. Hence four categories of agrarian legislations mainly restructured to change the agrarian structure that also touched the periphery of the private law in context of equality and prosperity^{vii}. They are: (1) The abolition of the intermediaries (2) Tenancy Reforms (3) Ceilings of land Holdings (4) The laws relating to ‘Bhoo-daan’ (Land-Gift) and ‘Gram-daan’ (a movement started by Acharya Vinoba Bhave in 1950s to collect donations of land for distribution among the landless)^{viii}.

In India Ministry of Agriculture and Irrigation has been consciously undertaking a study of all the existing enactments and acts that falls in the purview of the state and central governments to ensure crop protection relating to the entry of pests and diseases from one state to another uniform model legislation governing the increasing groundwater over-exploitation, entrusting a policy to maintain small and minor irrigation works, to integrate the programme inter alia regarding on-farm developments in command area of irrigation projects^{ix}.

To conserve habitats, biological diversity, and the sustainable use of marine resources, the major focus of the study lies on these queries - How far have the legal contracting parties ensured monitoring and assessment of the catchment areas? To what level are the water quality objectives followed? how does soil health get affected if non-discriminatory operations and transmission of electricity or hydro power are regularised or regulated? How to prevent white-collar crimes that are related to the illegal exploitation of green incentives?

Thus, development perspective to retain sustainable goals problematizes the attention towards the below given queries –

How far have Farmers been provided with soil health security while holding farm lands and processing cultivation in pre-harvest and post-harvest times? If they have been provided any such security on account of conscious-raising and capacity building, have they been able to

avail the optimal use of the provided security? If ownership conditions (of farmers or stakeholders or the state/community owners) have not been guaranteed with Soil Health security and safety from the prevailing soil degradation on account of the soil pollution, that happens as result of agricultural waste, industrial waste, urban waste, and hazardous waste^x, then what kind of conditional clauses have been secured from the critical legal perspective? This research study has undertaken some of the affected environmental issues that have been legally in question for their significant role in ecosystem.

There is an urgent need to reformulate laws after a research and surveillance of the affected conditions created on account of anthropogenic factors. The study will examine the mechanisms of human-created pollution that destroy the natural environment, commit a crime against nature, violate human rights as well^{xi}. Most of all health – both of Soil and of Humans – has seemed to be the subject that bridges gaps between the two fields of environmental protection and socio-ecological justice. The research article raises consciousness to have the best of the productivity and sustainability of Soil Health.

2.1. THE SOCIO-ECONOMIC AND LEGAL REPRESENTATIONS FOR ENERGY AND NATURAL RESOURCES

The population explosion in the developing countries has caused enormous pressure on farm lands and its quality of production, besides high demand with increasing supply at the same time. To satisfy these emerging demands, the conditions have been created to procure modern scientific techniques such as advanced technology, expansion of irrigation facilities, use of chemical fertilizers, pesticides, and insecticides, developing hybrid varieties of seeds, changing agricultural practices, mechanisation of agriculture, varying crop sequences and land ownership and the land tenure. Besides the capitalists' market economic measures of expansion and conversion of agricultural land and forest areas, subsequent large-scale deforestation and poor-scale management changed the natural limits^{xii}. According to the results of an investigation published by the University of Hamburg in December 1975, 50,000 species of plants will be eradicated or seriously threatened. At the other end of the scale 240 species of insects are increasing at an alarming rate. Pesticides no longer have any effect. Many

tropical countries facing the alarming disease of malaria amongst almost more than 30%. The densely populated areas of Africa have been ruined in maintaining ecological balance, so failing in performing protective function. The World Wild Life, International Union for Conservation of Nature, United Nations Environment Programme, Friends of the Earth, Audubon Society, Sierra club, Greenpeace and many other organisations and action-groups fighting losing battles.

The surveys for research studies have exposed that soil degradation occur on ground of procuring direct benefits and indirect benefits. The role of affluent families is to extract maximum ‘indirect benefit’ by way of non-productive use of the Nature’s sources. The chemical, non-biological plants, chemical or extraction of minerals and metal factories or mining industrial areas are the facts and fundraising sources at cheap labour cost with an unsecured zone of encroached rights concerning to property of life, liberty, and labour. Sarcasm on the “intention” is that natural resources property rights, which are exploited for commercial purpose and gains, are considered as bundle of objects with no bundle of rights accrued to their worthwhile existence. To understand the complexity of ‘direct benefit’ is basically a lopsided issue especially considering where the natural resources’ predicament on humanitarian grounds has been endangered^{xiii}. The connotations of ‘direct benefit’ and ‘indirect benefits’ disparities are instrumental to prevailing corruption practices among backward or vulnerable sections of society where everyday livelihood is a major concern, instead to think about their role in sustainable environment governance or to coordinate with major market-sharers of big enterprises in understanding where things are related to job-markets or any sort of nuisance. The ordinary citizen is ignorant of the doctrine of caveat emptor regarding protection of the consumers’ interests provided by the Consumer Protection Act, 1986^{xiv} against exploitation by the producers, manufacturers, stakeholders, investors, proprietors who through their downline management of operators cheat or dupe the innocent by adopting unfair trade practices in market economy^{xv}, subsequently contribute in wholeness or in public interest injury to environment, existence and sustainable development^{xvi}.

Some of the case studies mentioned below reflect how the intent of direct benefits and indirect benefits viciously draw a pattern of malfeasance either for purpose of social development by

tapping natural resources or indiscreetly mishandling the health and wealth of the environment and of public.

Case Study 1 – Groundwater Waste Ownership –

Many natural resources are considered common resources—that is, no one owns them but everyone can use them. Their overuse by some can negatively affect everyone. For example, groundwater in some places is considered a common resource that all farmers can withdraw. But if an individual user only cares about watering his or her own crop, and wants to use as much water as possible from a shared watershed with limited water availability, it can lead to over-extraction, causing all users in the area to suffer shortages^{xvii}. Similar scenarios often ensue when it comes to fishing in the open sea and logging in forests. In 1968, ecologist Garret Hardin explored this social dilemma in his article "The Tragedy of the Commons", published in the journal 'Science' The essay derived its title from the pamphlet by Llyod, which he cites, on the over-grazing of common land. "Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons."^{xviii}

Case Study - 2 - Groundwater Waste And Contamination

Per- and polyfluoroalkyl substances (PFAS) fluorinated organic chemicals are found in Swiss groundwater at almost half of the NAQUA monitoring sites. PFAS concentrations exceeding 0.1 micrograms per litre in groundwater are frequently due to the use of firefighting foams containing PFAS^{xix}. They are used in many commercial, industrial, and household products due to their water and fat-repellent properties as well as their thermal and chemical stability. These include fire suppression foams, waterproofing agents, water and fat-repellent food packaging, non-stick pans, breathable water-repellent clothing, and ski wax. The condition of the groundwater in Switzerland still allows to produce^{xx} enough safe drinking water. However, contamination of groundwater occurs at numerous monitoring sites of the NAQUA, especially in intensively farmed areas. The groundwater is most heavily polluted by nitrate. In addition, at more than half of the NAQUA monitoring sites, residues of artificial, and in some cases persistent, substances are detected in the groundwater, such as degradation products of pesticides. The areas surrounding drinking water wells are increasingly being used or built over

and thus can no longer fulfil their protective function. This also means that the water protection legislation^{xxi} concerning groundwater protection is not being implemented consistently enough.

Case Study -3 - Infringing Intellectual Property Rights in Agriculture

Agriculture discipline or Agriculture as a commercial resource of capitalist economy has generally been excluded from intellectual property protection in India and there has been no such effective legal system for Plant Breeders' Rights or Farmers' Rights^{xxii} even since post-independent India. The Seed Association of India, formed in 1985, has actively promoted the need for plant breeders' rights in the country. With the adoption of the WTO Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs)^{xxiii}, bilateral and multilateral pressure was also exerted on India to establish intellectual property rights in agriculture. There was enormous protest implementing TRIPs by non-governmental organizations and farmers' lobbies in the country^{xxiv}. The Protection of Plant Varieties and Farmers Rights Act (PPVFR), 2001 arose amidst this controversy^{xxv}.

Case Study – 4. – Mismanagement of Irrigation Projects and Property Rights

Mostly irrigation as an indispensable part of extensive and intensive cultivation, comes under the logistical contingency of common-property regimes that is a shared ownership with the help of generating common-pool resources^{xxvi}. In other words, it is to be implied that if CPRs are involved to build human-created resource systems of water. That is contract is there that cost of the shared pool of resources is the liability of all, but suppose one farmer has used being a power player in farm holdings the maximum water, yet the cost of its use shared by all^{xxvii}. That means one's individual use of a unit makes it unavailable to others (irrigation water consumed by one farmer cannot be consumed by someone else because there is open -access of water and infrastructure. So, in this case two ownerships are at mess – private ownership versus state ownership^{xxviii}.

Case Study - 5. Failure in Effective Obligation of Unbundling Electricity Networks –

This case study indeed comes under a different legal perspective about power-supply not only to lands and its inhabitants^{xxix}, but most importantly to serve the public interest zone of irrigation and agricultural projects that are essential parameters for SDGs undertaken by any agency or by any country or by any organization^{xxx}. One of the cases that got to the court in the year 2021 was between Federal Republic of Germany and European Union. The role of European Union Member State's viz-a-viz electricity or power supply sector concerning the ownership and right to property following up national regulatory authorities. Moreover, the member state as the independent transmission operator shares held in the vertical integrated undertaking for managing transmission systems of electricity and natural gas. Thirdly the ordinance regarding vertical integrated undertaking was mandatory to encompass activities carried on outside the European Union by third-country undertakings leading to an extension of the European Union's regulatory power, contrary to international law. Such third-country undertakings would in fact acquire rights and become subject to obligations without operating on the territory of the European Union^{xxxi}.

Case Study - 6 – Criminal Infiltrations in the Green Energy Sector

The criminal activities in producing electricity from renewable sources of power sector have almost swiped the control of state and its regulation, and completely have overtaken the sources of easy profits and controlled the economy of their territories^{xxxii}. In this regard the researcher brings into light the wind-power sector that is medium of nexus^{xxxiii} amongst local officials, entrepreneurs and criminal gangsters, such nexus finally colluding the construction of wind power farms^{xxxiv}. Moreover, the paper aims to track investment pattern and different incentives and prices regulated by market itself that are shared to produce and import green electricity certificate (GSE). This paper is relevant in the context of the research-study area to understand market liquidity, related to white-collar crimes engaged in the illegal exploitation of green incentives, circulates in the estimated accreditation of the starting phases of projects and in the rapid development or in collusion of such sectors.

Case Study -7 – Industrial Waste and Contamination of Soil and Water

Here is the true story of an advocate and activist who filed a lawsuit despite being a target of gender lens and other kinds of pressures to withdraw the charges against the company Pacific Gas & Electric Company in 1966 (in Hinkley, a small southern California community in the Mojave Desert) that used chemical Chromium 6 to prevent rust in the natural gas pumping station^{xxxv}, but its toxic emission and percolation in the undersurface soil of the residential area contaminated the drinking water-supply and the writer and the advocate says “the small community suffered asthma, a complaint of a chronic cough, recurring bronchitis, recurring rashes, unusual joint aches, nosebleeds.”

Case Study – 8 – Leakage of Gas and its Residues causing health- disaster

On November 5th, 2023 due to gas leak at pharma factory^{xxxvi}, scare was triggered nearby the residential area of Dera Bassi. Xylene residue spilled after gas build-up blew off drum’s lid at pharma factory. Hundreds of residents at Saidpur village and GBP Housing Society of Dera Bassi had a sleepless night after accidental leak of xylene residue at a pharmaceutical company’s factory led to eye irritation and teary eyes^{xxxvii}. The leak had taken place at Saurav Chemical Limited when the lid of one of the containers carrying xylene residue blew off to gas accumulation, causing xylene, an organic chemical compound used as a solvent in printing, rubber, and leather industries to spill into the air. Here question is – Despite health and industries departments along with the Punjab Control Board had given clean chit that no such hazardous impact of the emission living near the chemical unit was there, yet later following the xylene leak, factory workers tried to plug it with an ammonia pack, that also got burst, and caused severe pungent smell in the vicinity^{xxxviii}.

Case Study – 9 – The environmental impact of polymer usage

For instance, biodegradable polymers such as polyvinyl alcohol (PVOH/PVA), and polycaprolactone (PCL) are made from petrochemicals that play a significant role in global warming. Thermoplastics are recyclable unlike thermosets, where polymeric fibres are mainly produced using thermoplastics. However, the accumulation of plastics, along with other materials, is becoming a serious problem for all countries in the world. These materials occupy

a significant volume in landfills and dumps today. Recently, the presence of huge amounts of plastic fragments in the oceans has been observed, where a considerable part of them come from the streets, going through the drains with the rain, and then going into the rivers and lakes, and then to the oceans^{xxxix}.

Case Study - 10 - Protecting Biofuel for ecosystem immunity -

The Ordinance on Evidence of a Positive Ecological Balance of Sustainable Biofuels entered into force on April 15 2009. Tax relief or exemption is granted only to suppliers which show evidence prior to their first tax registration that their biofuels meet all the ecological and social minimum standards of the relevant ordinances. Additionally, the Ordinance on the Prevention of Air Pollution regulates certain requirements with respect to fuels and emissions by industries and traffic. This ordinance contains certain definitions relating to fuel substances. Particularly, it sets limits on the amounts of different substances which fuels may contain, and clarifies whether such fuels may be obtained on the market. Any party which commercially imports or sells fuels is required to declare and inform the customs authority and customers respectively of the quality of such fuels^{xl}.

Case Study – 11 – Illegal Nuisance and Environmental Damage –

According to the United States Council on Environmental Quality, “Environment” means man’s total environment system including not only biosphere, but also his interactions with his natural and man-made surroundings^{xli}. An anecdote from the book titled “*The Man-Eater of Malgudi*” (1961) by R.K. Narayan^{xlii}. There were two major characters – Natraj, the printing press owner who rented his upper storey attic kind of room a person Vasu, who as a tenant without information did the trading of dead animal skins. Slowly the disclosure of the reality came to surface that the tenant as a taxidermist, quite qualified in the business of tannery and its trading, and in disguise involved in poaching too. The matter got serious first when unsanitary conditions around the printing press spread foul smell, secondly when the owner Natraj requested Vasu, latter ignored, but continued the same. The inhabitants around that press felt it as a public nuisance and Vasu whom such work was nothing more than a pleasure, finally

taken to task by the owner. So, in this first part of the narration of the story – Vasu sued Natraj. Although Natraj had his lawyer, but as far as he could get Natraj saved from the charge of eviction filed by Vasu. Interesting is Vasu's lawyer grounded the eviction as nuisance from the owner's side, not letting the tenant be at peace. Law of tenancy became the issue of transparency, rather the cause of environmental protection through law. Secondly the environmental law in actual sense a mere a common nuisance which any tom, dick and harry evade or forcefully let not others to think about it unless any such petition is filed. Subsequently, Vasu the taxidermist got relief from the court, while the inhabitants could not ensure the lawyer of Natraj with any actual evidence. The matter was sorted both from the point of view civil and criminal legality – as the owner of the press did not want the case to be prolonged or to be in the clutches of law. The printing-press owner's reason for skipping the clutches of law basically to evade the collateral that could be sought by locals living around the press, that was his unawareness causing political leverage to dissuade proper legal attention to the fact; secondly, he had vicarious liability as joint tort-feasors in the sense of his contributory negligence. And the truth was the respondent Natraj, the printing press owner to save himself from eviction was neither aiding it or abetting it, yet facilitating unconsciously malicious defendant Vasu, the taxidermist to carry on his illegal designs. The case before magistrate if in prosecution by the government prosecutor (had the complaint of public or inhabitants against the nuisance been in the process of trial, then the liability of Principal for the wrongful acts of his agent/s could be an assumption against the joint tort-feasors because the government prosecutor as plaintiff would have prosecuted tort-feasors not only to compensate the legal damage done due to foul smell in neighbouring area, causing infection to health, spreading unhygienic conditions, but also the master would have been impleaded for promoting or cooperating in illegal environmental activities. The punitive measures regarding this tortious act in context of impeaching civil liberties both of humans and animals would have borne majorly by the innocent Natraj against the felicitation of commission of a tort by another criminal taxidermist Vasu.

2.2. - ENVIRONMENTAL PROPERTY RIGHTS FOR NATURAL RESOURCES PROTECTION -

Section (2) of the Environment Protection Act, 1986 provides the definition of various terms in the Act – includes water, air and land, and human beings, other living creatures, plants, micro-organisms, and property. This is as similar as to the Section 1 (2) of the Environment Protection Act 1990 of the United Kingdoms^{xliii}. In the words of Padma Bhushan Awardee, the environmentalist and Dr T.N. Khoshoo (a distinguished Scientist and a world-renowned Geneticist/Plant Breeder took over as Scientist-in-Charge of NBG in the year 1973 and the first Secretary of the Indian Government's newly created Department of Environment, in 1982). - “Environment “means total of all conditions and influences that affect the development of life of all organism”^{xliiv}. Historically the human needs have changed our understanding for environment, which is more now a property that relates to possession – for sales and deed or for an unlimited free use of it to be fenced, ploughed, paved, and polluted. This malleability has forced to bring environment in the purview of protection, prevention, improvement so to conserve ecologically important resources – for example wetlands, and riparian forests. Property rights in natural resources development (NRD) provided benefits to right holders and resulted in a cost burden on the host communities, consisting of human rights abuses, conflicts, and environmental degradation^{xlv}. Gradually, the concepts the concepts of sustainable development, public participation and corporate responsibility have shaped the limits of property rights in NRD. This has resulted in shared benefits for both the property right holders and the host communities^{xlvi}. United Nations conference at Stockholm on the Human Environment held in June 1972 enforced upon all countries of the world to take appropriate steps to protect human environment^{xlvii}. In consequence to the enforcement, constitutionally, The Environment Protection Act of 1986 in India was passed as a protective and progressive socio-economic enactment. This Act puts possible deterrent control over the polluters of environment by making them liable to penal action – that is to make the “polluters pay” to the victim of the environmental pollution and also costs to restore the disturbed ecology and environment Section 16 of the Environment (Protection) Act, 1986 provides that if environmental pollution is caused by the hazardous industrial activities, people responsible for carrying out such activities are liable to be punished with imprisonment or fine or both. If the offence is committed by the Government Departments, the head of such department shall be liable to penal code under section 17 of the Act, 1986. Section 22 of the Act, 1986 provides that jurisdiction of a civil court to entertain any suit or proceeding in respect of anything done,

action taken or order or direction issued under this Act is ousted^{xlviii}. The Supreme Court of India declared that by virtue of the Article 21 of the Indian Constitution, every citizen has a right to be healthy, to have environmental pollution free life and personal liberty^{xlix}. The Article 48 – A w.e.f. 3-1-1977, in Part IV of the Constitution of India containing the Directive Principles of State Policy states that “the state shall endeavour to protect and improve the environment and to safeguard forests and wildlife of the country^l. The Article 51 – A (g) in Part IV – A containing Fundamental Rights which was inserted by the 42nd Amendment Constitution Act, 1976 imposes duty on the Governments and citizens alike to put combined efforts and take appropriate measures for protection and improvement of natural environment and all creatures^{li}. In a strict sense, the observation was submitted that in India, as elsewhere in the world uncontrolled growth and the consequent environmental deterioration are fast assuming menacing proportions and all Indian cities are afflicted with the environmental problems^{lii}. Regarding the environmental pollutants, in the post-independence era of India, it was observed that for purpose of social development the natural resources have got to be tapped, but at the same time one cannot ignore that certain pre-requisites are to be followed to provide with requisite attention and care to the ecology and environment, to prevent depletion of water resources and to keep up these as national assets permanently^{liii}.

2.3. JUDICIAL INTERVENTION FOR PREVENTIVE REMEDIAL MEASURES REGARDING MANAGING OF NATURAL RESOURCES AS NOT PRIVATE PROPERTY TO PRIVATE ENTITIES OR TO THE GOVERNMENT.

According to Section 1 (3) of the U.K. Environment Protection Act, 1990, the term “Pollution” means as follows: - ‘The release into any environmental medium from any process of substances which can cause harm to man or any other living organisms supported by the environment. Thus, causing harm to organism or interference with the ecological system is called “environmental pollution.”

It is to be noted that the Royal Commission on Environmental Pollution in its report (3rd) referred to same as under: -

“The introduction of man into the environment of substances or energy liable to cause hazard to human health, harm to living resources and ecological systems, damage to structure or amenity or interference with legitimate uses of the environment.”^{liv}

Below are some of the “Action Programme on the Environment”^{lv} that got through jurisdiction trials to discern provisions and agreements in public space to explicate implied “environmental effects,” environmental impacts” and “environmental damage” typically including harm to flora, fauna, soil, water, landscape, and any interactions between these factors.

- I. Petitioners sought cancellation of mining lease for excavation of limestone as it posed danger to adjoining land, water resources, pastures, ecology, and environment and sought compensation for damage. The first case of its kind involving issues relating to the environment and ecological balance, based on sustainable development criteria. The Supreme Court had already highlighted the gravity of the problem and the necessity of regulatory measures being undertaken to bring about a proper balance between the conservation of natural resources and the protection of the environment and the ecology on one hand and the need for development and of the industrial growth of the country on the other^{lvi}. In accordance of the mentioned principle, the local inhabitants got relief from further any damage and given protection to safeguard their lives from illegal nuisance happened in guise of white-collar crime through the legal procedures of already prevailing detrimental provisions of corporations’ management that had been granted suo motto permissions to ignore damage to land and its people.
- II. About overexploitation of ground water, there is no infirmity of regulating the water management, especially withdrawal of Ground Water by all Private individuals, hence effects are drastic for environmental health, besides infringement of international standards concerning Ground Water Extraction that states ‘some rights are capable of being granted by holders of the same or higher rights and some only by the state.’ Even the state, having regard to the doctrine of ‘public trust’ may not have any power to grant any right in relation to certain matters e.g. deep underground water^{lvii} and ‘deep underground water belongs to the State in the sense that the doctrine of public trust extends thereto.’ Consequently, the State and its institutions are accountable to the public for protection of Ground Water^{lviii}.

- III. Managing Water surfaces^{lix} and damage occurrences and adverse effects in WFD's Article 8 (4) to alleviate liability^{lx} by way of national power governance^{lxi} - In an emergency of EU Green Deal^{lxii}, European Union has addressed to the binding implications and adverse impacts of hydropower projects, urban water waste treatment plants that are subjected to liability under the EU Environmental Liability Directive^{lxiii} due to the environmental harms and negligence of polluters-pay principle and policy position that has got internalised after the increased loads from the ongoing increase population and the damage is in question with the non-deterioration requirement and Weser-Ruling.^{lxiv} Hence Water framework Directive^{lxv} of EU has to have its sync with ELD to accommodate ecological needs concerning the intermittency of other renewable energy sources, transition to low-carbon energy systems^{lxvi}, environmental and biodiversity trade-offs, seeking alternative water-flows by changing freshwater ecosystems^{lxvii} and controlling the amount of water released through the turbines (including short-term regulation of water levels known as hydro-speaking)^{lxviii}, last but the most significant is content for liability and operating permit for constructing by-passes for fish and fishways to limit further damage.^{lxix}
- IV. Regarding the National Policy on Biofuels, 2018 ["NBP 2018"], promulgated by the Ministry of Petroleum and Natural Gas, Government of India. The NBP 2018 permits use of food grains including damaged grains like wheat and broken rice as feedstock for ethanol production. While the NBP 2018 aims to meet burgeoning energy needs and targets a 20% ethanol blend with petrol by the year 2025- 26, as alleged by the petitioner such a shift might precipitate unforeseen consequences for the masses, particularly a potential food grain shortage, that could leave many citizens starving.... This is especially pertinent in respect of feedstock like industrial waste, agricultural residues, and damaged food grains. Industries that previously relied on these as primary resources may be put in a precarious situation. His apprehensions are rooted in the belief that access to nutritious food is the foremost obligation of the State, and by directing food stuff towards bioethanol production.

The Court further noted that juxtaposing the petitioner's concerns against the holistic benefits of NBP 2018, the intention behind the policy is to create a more sustainable

and self-reliant energy model for the country. By focusing on biofuels, the nation can reduce its dependency on fossil fuels, thereby stabilizing energy costs in the long run and insulating the economy from the volatile global oil market. Moreover, the potential competition for resources such as industrial waste or agricultural residues can spur innovation in sourcing and recycling methods, leading to a more efficient utilization of resources. The worry that farmers might shift their focus to biofuel feedstock at the cost of essential food crops underestimates the checks and balances built-in NBP 2018. By diversifying the energy portfolio, the nation not only reduces its carbon footprint but also stimulates growth in the agricultural and industrial sectors. The job creation potential in bio-refineries, feedstock cultivation, and related research and development sectors, can offset potential job losses in traditional sectors...^{lxx}

2.4 CONCLUSION

In view of the above cited environmental jurisdictions to protect environmental resources through the interplay of complex judicial settings to seek inter-relationship between the surroundings, conditions of the individual and society as they are and as they are felt, Elizabeth Fischer, Professor of Environmental Law, Corpus Christi, University of Oxford elaborates critically legal obligations towards environmental law and nature's protection in these words: "Illustrating epistemic responsibility and legal culture, the creation and operation of environmental law has forced lawyers to reflect upon and develop legal concepts, rules, and principles. This is because environmental law is not confined to the world of contract law in which two parties are legally bound by an agreement—an agreement that manages their legal expectations, obligations, and rights. Legal imagination is needed to develop law to respond to a world of multiple interconnected parties, scientific uncertainty, and socio-political conflict. 'Expanding legal imagination' discusses the growth of international environmental law; considers the differences between nuisance law and criminal law; and explains environmental impact assessments as well as legal standing and access to courts^{lxxi}.

REFERENCE

1. <https://sciencedirect.com> Bromley, 1992, von Benda-Beckmann and von Benda-Beckmann, 1999.

The focus on property rights, as they apply in practice, provides an important “bottom-up” perspective on natural resource governance that is complementary to analyses centred on the relationships between different governmental actors

2. <https://sciencedirect.com> Agrawal & Ribot, 1999. Property rights can prevent ecosystem degradation. ‘Situation Assessment Survey of Farmers’ (SAS), India Today. 2003

An alarming trend has been witnessed in India in recent years with rising rates of farmers committing suicide. Newspapers echoing the ‘crisis in Indian agriculture’ continue to report daily incidents of suicides in various parts of the country. Several different reasons have been put forward as the cause of suicides including: mounting debt of farmers, crop failures due to overuse of pesticides, imbalances of international trade, or social and psychological factors.

3. The Nature’s Guide: Understanding Our Relationship with Nature. CEE North East – Ministry of HRD, Govt. of India. 2001

Nature is our capital. Nature has a capital value. Till date the Nature as a capital has been overexploited at the cost of prosperity and progress. The most standard value is given to money, ignoring the value of nature. The comparative overview is to understand the approaches adopted to screw natural resources or to have maximum extraction of nature's capital in simplistic terms. Secondly the human means persistently encroach the fate of Nature.

4. W. Van Dieren & M. G. W. Hummelinck “Nature’s Price” - The Economics of Mother Earth. Great Britain: Marion Boyars Publishers Ltd.; 1979.

What is even worse, items deducted from nature are entered as assets. The loss inflicted on essential sources of life such as water, some air, forests, and marshes are added to the measure for prosperity which is called the Gross National Product. The price is a measure of the value which people give to goods. And we do accept that goods produced by man have a price, but the man or men cannot see the contrary aspect of enlightenment that matters to God's creation that is Nature and its Natural

Resources and the same man cannot see the 'goods' of nature, obtained free, and satisfying the same needs, also have a price or a value.

5. <https://www.scconline.com/blog/post/2023/10/30/delhi-high-court-change-policy-contrary-group-interests-unconstitutional-legal-news/>

As alleged by the petitioner, the NBP 2018 which permits turning food into fuel is not merely a flawed policy, but also infringes upon the fundamental right to food, enshrined in Article 21 of the Constitution of India, 1950. The decision to channel the surplus grains for ethanol, rather than addressing the pressing malnutrition endemic, is deeply disconcerting. Thus, re-purposing food grains for ethanol production seems to be a departure from the constitutional obligations. Prioritizing ethanol production from rice may inadvertently incentivize farmers to cultivate more rice. Given that rice cultivation is particularly water-intensive in India, this could exacerbate groundwater shortage, a resource essential to human survival. Food grains also serve as a pivotal fodder source for livestock. The principle of food security aims to ensure consistent and reliable access to essential food, fostering an active and healthy life built on the four pillars of availability, accessibility, utilization, and stability of food. Eradication of hunger and malnutrition must be of paramount importance for the Government. Hence, diversion of food sources towards fuel production must not be permitted. The NBP 2018 permits use of food grains including damaged grains like wheat and broken rice as feedstock for ethanol production. While the NBP 2018 aims to meet burgeoning energy needs and targets a 20% ethanol blend with petrol by the year 2025- 26, as alleged by the petitioner such a shift might precipitate unforeseen consequences for the masses, particularly a potential food grain shortage, that could leave many citizens starving....

6. Gilbert Jeremie. *Natural Resources and Human Rights: An Appraisal*. Oxford University Press. 2018.

In this book the author brings forth the framework in the perspective of the potential synergies between international environmental law and human rights when it comes to the protection and conservation of the natural resources. From legal point of three major areas of potential convergence has been considered. They are - It first focuses on the pollution of natural resources and analyses how human rights law offers a potential platform to seek remedies for the victims of pollution.

7. Thomas Sikor Jun He and Guillaume Lestrelin. Property Rights Regimes and Natural Resources: A Conceptual Analysis Revisited. World Development Vol. 93, pp. 337–349, 2017 0305-750X 2017, The Author(s). Published by Elsevier Ltd.

The conceptual framework has profoundly influenced research on natural resource governance, common property, and community resource management. Many researchers have used the conceptual schema and the idea of property as bundles of rights to move beyond simplistic categories of state, private, and common property, and to distinguish different kinds of common property regimes.

8. Ding, Helen, and Peter Veit. Equity and Governance: Reasons Property Rights Are Essential for Healthy Ecosystems. World Resources Institute. Sept. 2016. <https://www.wri.org/insights/3-reasons-property-rights-are-essential-healthy-ecosystems>.

Assigning property rights to resources may help reduce degradation. For example, in the Philippines's Zanjeros irrigation community - Rice farmers in the Philippines, the government granted ownership over the water supply to a farming community. Farmers then established rules governing the use of water, where farmers would withdraw water in rotation under the supervision of another farmer. If conflicts arose, a local court would resolve them. This arrangement—which effectively avoided over exploitation of the local water source—would never have occurred without community property rights.

9. Development on independence of energy regulator. Stek: Netherlands. July 3 2023

The ECJ judgments have played an important role in exposing fundamental flaws in energy law and practice. The ACM has set aside long-standing case law and statutory provisions, and it has become more aware of the exclusive powers conferred on it by EU law. Energy market participants have also become aware of the additional arguments this may provide in legal proceedings. That, in turn, has led to intensified judicial scrutiny – the ACM itself was sent back to the drawing board by the CBB because it had unlawfully followed ministerial instructions.

10. Ramana Anitha. Background Study 4 – Farmers' Rights in India: A Case Study. University of Pune, India. Fridtjof Nansens Institutt the Fridtjof Nansen Institute, Oslo. 2006. <https://www.fni.no>

The International Treaty on Plant Genetic Resources for Food and Agriculture recognizes Farmers' Rights and obliges the countries being Parties to the Treaty to protect and promote these rights. Countries, however, have not yet been able to evolve any consensus on how to define or implement Farmers' Rights. International coordination in this regard is also lacking. These are serious drawbacks that could prevent Farmers' Rights from becoming a realistic and workable mechanism. This report attempts to evolve options for the practical implementation of Farmers' Rights through a case study of India. Over forty stakeholders, including farmers, NGOs, industry, and government representatives in India have been interviewed to explore methods to realize Farmers' Rights.

11. Electricity Regulation in India: An Overview.
<https://uk.practicallaw.thomsonreuters.com>

India is the third-largest producer of electricity in the world. As of 30 September 2020, the total installed power capacity in India is 373.029GW. The overall generation of electricity increased from 1.376 trillion kWh during 2018-19 to 1.389 trillion kWh in 2019-2020. The electricity demand in India is projected to grow together with the increased electrification and economic growth. From time to time, the Government of India (in consultation with the state governments and Central Electricity Authority (CEA) publishes the National Tariff Policy and National Electricity Policy to develop an electricity system based on optimal utilisation of resources such as coal, natural gas, nuclear, hydro, and renewable sources of energy. The Government of India (in consultation with state governments) notified the National Tariff Policy in January 2016 (NTP). In May 2020, the Government of India announced the privatisation of the distribution companies in the union territories (administrative division governed by the Government of India) to improve the operational and financial efficiency of the companies.

12. Florian Thevenon, Chris Carroll, and João Sousa (editors). Plastic Debris in the Ocean: The Characterization of Marine Plastics and their Environmental Impacts, Situation Analysis Report. International Union for Conservation of Nature. Global Marine and Polar Programme Rue Mauverney 28 1196 Gland, Switzerland. <https://www.iucn.org/>.
<https://portals.iucn.org>.

Parties to the Basel Convention in 2008 also adopted the Bali Declaration on “Waste Management for Human Health and Livelihoods.” Here, the declaration encourages States to act to develop waste management practices that further consider health issues surrounding waste production. Because of the known health risks posed by marine debris items that are plastic, there is clear reasoning for marine plastic pollution to be considered in this context.

13. Corcoran, E., et al. *Sick Water? The Central Role of Waste Water in Sustainable Development. – A Rapid Response Management*. UNEP (United Nations Environment Programme), UN-HABITAT, Nairobi, Kenya. 2010.

When considering waste management, it is also important to consider measures to treat waste water as sewage outlets are one of the key sources of marine debris. Waste water can include items such as sanitary towels, tampons, plastic cotton, and wool bud sticks (all of which might have plastic parts), and microplastic items such as plastic fibres from clothes. At the European level for instance the EU Urban Waste Water Treatment Directive requires that all Member States must ensure that sewerage discharges serving populations over 10,000 in coastal areas and 2,000 in estuarine areas must receive secondary treatment prior to discharge (Interwies et al, 2013). In other less developed regions across the world, the Figure 4.3: The 12 Regional Seas participating in UNEP-assisted marine litter activities (UNEP, 2009). 40 situations regarding measures to tackle waste water treatment are certainly less advanced and it is estimated that 90% of all waste water in developing countries is still discharged directly without treatment.

14. Deiana, Claudio; Geraci, Andrea. “Are Wind Turbines a Mafia Windfall? The Unintended Consequences of Green Incentives.” Social Science Research Network (SSRN). ZBW – Leibniz-Informationzentrum Wirtschaft/Leibniz Information Centre for Economics Düsternbrooker Weg 120 24105 Kiel (Germany) <https://www.zbw.eu>
The European Green Deal commits the European Union to becoming climate-neutral by 2050 and to helping companies become world leaders in clean products and green technologies. (1) The ambitious and wide-ranging measures set out in the plan aim at achieving significant reductions in carbon emissions, and a net-zero target will be given legislative force in new climate laws. Since its announcement, the European Commission (EC) has without hesitation started pushing out legislative initiatives. (2)

The European Green Deal is not the first policy supporting investment in green energy. The past twenty years have seen the introduction of several public support schemes to produce electricity from natural renewable sources. The green sector, and particularly wind energy, has registered rapid growth in Western countries since the adoption of the Kyoto Protocol in 1997, often spurred by generous national and supranational support schemes aimed at reducing carbon alternatives.

15. The Water Integrity Network (WIN). www.waterintegritynetwork.net

The Water Integrity Network, formed in 2006, aims to fight corruption in the water sector. It stimulates anti-corruption activities in the water sector locally, nationally, and globally. It promotes solutions'- oriented action and coalition-building between civil society, the private and public sectors, media, and governments. Canal irrigation, tube-well irrigation and wastewater irrigation are identified as three types of irrigation systems with specific governance and corruption risks. In public canal irrigation, the largest risk is related to capital intensive investments, and operation and maintenance by irrigation officials. In tube-well irrigation, corruption risks are mainly related to the regulation of groundwater overdraft. Wastewater irrigation is an informal practice with few corruption risks. However, the lack of formal governance increases health risks related to wastewater use.

16. Towards a Gender and Water Index: Gender Indicator Development for the World Water Development. Barbara von Koppen. International Water Management Institute. <https://assets.publishing.service.gov.uk>

This book is useful to understand in simple terms - Sharing in Water-Related Employment and Other Benefits – The role of water in increasing productivity and profitability in self -employment for men and women as direct benefit users. As an indirect benefit-users they can sought job or wage employment in the state owned or privately owned water-enterprises. Wage employment is generated in farming, cattle rearing, forestry, mines, tourism business etc. While being in service or in integration with these sorts of set up, farmers or natives get to know about the usages of hydro-power, navigation, and other functions of water in the society.

17. Info Curia Case Law. <https://curia.europa.eu>

In Case C-718/18, ACTION for failure to fulfil obligations under Article 258 TFEU, brought on 16 November 2018. European Commission, represented by M. Noll-Ehlers and O. Beynet, acting as Agents (applicant). Federal Republic of Germany, represented initially by J. Möller and T. Henze, acting as Agents, and subsequently by J. Möller and S. Eisenberg, acting as Agents (defendant). And supported by: Kingdom of Sweden, represented initially by C. Meyer-Seitz, A. Falk, H. Shev, J. Lundberg, and H. Eklinder, acting as Agents, and subsequently by C. Meyer-Seitz, H. Shev, and H. Eklinder, acting as Agents (intervene). The Federal Republic of Germany argues that an interpretation of Article 2(21) of Directive 2009/72 and Article 2(20) of Directive 2009/73 as meaning that the concept of a ‘VIU’ covers activities outside the European Union carried on by third-country undertakings is contrary to the obligation to interpret acts of secondary legislation in accordance with primary EU law. Those directives, being based on Article 47(2) and Articles 55 and 95 of the EC Treaty (now Article 53(2) and Articles 62 and 114 TFEU respectively), must seek to facilitate the exercise of freedom of establishment and the provision of services, and to harmonise the rules of the Member States concerning the establishment and functioning of the internal market. However, those provisions of primary law cannot be considered an adequate legal basis for the adoption of provisions which apply to the economic activities of undertakings operating in a third country. In addition, since the activities that third-country undertakings carry on outside the European Union do not have any effect on the internal market, there is no need to impose on those undertakings restrictions on the free movement of capital within the meaning of Article 63 TFEU, or to restrict the freedom of those undertakings and those who work for them to conduct a business, enshrined in Article 15(1) and Article 16 of the Charter of Fundamental Rights of the European Union (‘the Charter’), and the right to property under Article 17(1) of the Charter, which are recognised in Directives 2009/72 and 2009/73, for the purposes of achieving the goal of ensuring the efficient and non-discriminatory operation of transmission systems within the European Union.

18. United Nations Department of Global Communications. Sept. 2023. <https://www.un.org>

The Member States of the United Nations adopted the Sustainable Development Goals (SDGs) by General Assembly resolution A/RES/70/1 of 25 September 2015. The aim of this resolution is to achieve these 17 goals by 2030 with a view towards ending all forms of poverty, fighting inequalities, and tackling climate change while ensuring that no one is left behind.

19. UN India Digital Library. <https://india.un.org/en/sdgs>

The 17 SDGs and 169 targets are part of a transformative agenda - the 2030 Agenda for Sustainable Development adopted by 193 Member States at the UN General Assembly Summit in September 2015, and which came into effect on 1 January 2016. At the core of this global agenda for 2030 is the principle of universality: 'Leave No One Behind'.

20. https://www.wwfindia.org/about_wwf/enablers/sustainable_livelihoods_and_governance_programme/2030_agenda/ National Construction of SDGs. Niti Ayog.

On 1 January 2016, the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development, which was adopted by Countries in September 2015 at an historic UN Summit, came into force. These new Goals apply to all nations who are supposed to achieve the SDGs in the coming 15 years. The SDGs build on the success of the Millennium Development Goals (MDGs) and aim to go further to end all forms of poverty, end poverty and hunger stop climate change and prevent its most devastating effects protect and restore the planet's environment and natural resources, advance equality, education, peace, and healthy living for all people

21. Localising Early Lessons from India 2019. Sustainable Development Goals – Helpdesk. <https://sdghelpdesk.unescap.org/e-library/localising-sdgs-early-lessons-india>.

India is fully committed to the 2030 Agenda, including the Sustainable Development Goals (SDGs). There is a convergence of India's national development goals and agenda of, 'Sabka Saath, Sabka Vikas' or 'Collective Efforts, Inclusive Growth,' with the SDGs.

22. Development Reform Resources - United Nations – United to Reform. <https://reform.un.org/content/development-reform>.

The United Nations Sustainable Development Group (UNSDG) unites the 40 UN funds, programmes, specialized agencies, departments, and offices delivering together

for sustainable development. The UN Secretariat for SDGs helps governments and stakeholders make the SDGs a reality, providing substantive policy support and capacity-building for the goals and their related thematic issues. The Division for Sustainable Development Goals (DSDG) in the United Nations Department of Economic and Social Affairs (UNDESA) acts as the Secretariat for the SDGs.

23. Kapoor, S. P & D. D. Mehta. *Economic Price Income & Development*. Agra: Ram Prasad & Sons; 1965.

Elasticity of supply raises the demand too, that corresponds relatively to the inelasticity of pursuing means and ends, finally adapting to undemocratic reductionist individualistic fragmented positional advantage and unequal bargaining power-structure. If we go further to understand the approach that actually diseased the nature capital is the local prejudices, liberal values, identity-conferring associations, hunger and quest for brands and its populist culture, which no doubt impartially expands the horizon of liberal constitutionalism, cultural imperialism that failed in rationality even by way of philosophical meditations, religious experiences or ethical rules to measure economic principles at the expense of nature and of the environment.

24. Ahmed, Bilal et al. *Destruction of Cell Topography, Morphology, Membrane, Inhibition of Respiration, Biofilm Formation, and Bioactive Molecule Production by Nanoparticles of Ag, ZnO, CuO, TiO₂, and Al₂O₃ toward Beneficial Soil Bacteria*. American Chemical Society, 2022.

Among Nanoparticles, the production of metal and metal oxide NPs (MONPs) due to their wide range of end uses are likely to enhance their probability to enter the environment during the production, use, and disposal. The NPs emerging from sources like industries, sewage wastes, wastewater treatment plants, tannery effluents, and other metal discharging industries are the major cause of nano-pollution that adds considerable amounts of NPs to the terrestrial environment.

25. "Illegal Trafficking in Endangered Plant Species and Varieties." *Environmental Crime: Crime Areas*. Europol. <https://www.europol.europa.eu/publications-events/publications/environmental-crime-in-age-of-climate-change-2022-threat-assessment>.

As a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) since 2015, the EU is obliged to protect roughly 30,000 species of listed plants against over exploitation through international trade. In 2015 Europol supported Operation COBRA III, the largest ever coordinated international law-enforcement operation targeting the illegal trade in endangered species. The operation recovered a huge amount of wildlife contraband, including endangered flora.

26. Parry, L. Martin. Editor. *Climate Change 2007. Impacts Adaptation Vulnerability: Working Groups*. Cambridge University Press. <https://books.google.co.in/books>
Climate Change 2007 – Impacts, Adaptation and Vulnerability provides the most comprehensive and up to-date scientific assessment of the impacts of climate change, the vulnerability of natural and human environments, and the potential for response through adaptation.

27. *Climate Action Plan 2050*. | FAOLEX. Food and Agriculture Organization. <https://www.fao.org>

The Climate Action Plan 2050 is a strategy for modernizing the economy and provides guidance for all areas of action up to 2050 and for upcoming investments, especially for the period up to 2030. The Climate Action Plan 2050 will be regularly updated in accordance with the Paris Agreement

28. U.S. Bureau of Labour Statistics. Environmental Engineers. *Occupational Outlook Handbook*. <https://www.bls.gov/ooh/architecture-and-engineering/environmental-engineers.htm>.

Environmental engineers work on a variety of projects. For example, they may conduct hazardous-waste management studies in which they evaluate a hazard and advise on treating and containing it. They also design systems for municipal and industrial water supplies and wastewater treatment. In government, they may focus on prevention and compliance, such as researching the environmental impact of proposed construction projects or enforcing regulations for disposal of agricultural waste.

ENDNOTES

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^{lxv} WFD, 2000/60/C of the European Parliament and of the Council of 23 October 2000 establishing a framework for community action in the field of water policy 92000 OJ L327/1 (‘WFD’)

^{lxvi} See Beatriz Mayor and others, ‘The Role of large and Small Scale Hydropower for Energy and Water Security in the Spanish Duero Basin’ (2017) 9 Sustainability 1807

^{lxvii} Franz Greimel et al., ‘Hydro-speaking and mitigation’ in Stefan and Jan Sendzimir(eds), Riverine Ecosystem Management (Springer Cham 2018), pp. 95-97

^{lxviii} Antti Iho et al., ‘Rivers under pressure: Interdisciplinary feasibility analysis of sustainable hydropower’ (2022) Environmental Policy Gov 1, 3 -4, pp. 91.

^{lxix} See Valerie Fogleman, ‘The duty to prevent environmental damage in the Environmental Liability Directive; a catalyst for halting the deterioration of water and wildlife’ (2020) 20 ERA Forum 707, 717

^{lxx} [National Policy on Biofuels] Change in policy causing hardship or contrary to group interest does not necessarily render it unconstitutional: Delhi. (respondent 2) on 04-06-2018, and subsequently amended on 15-06-2022. A division bench of Satish Chandra Sharma, CJ., and Sanjeev Narula, J.,<https://www.scconline.com/blog/post/2023/10/30/delhi-high-court-change-policy-contrary-group-interests-unconstitutional-legal-news/>

^{lxxi} Fischer, Elizabeth. Expanding Legal Imagination. Environmental Law: A Very Short Introduction. Oxford Academic. <https://academic.oup.com>