

HUMAN INFLUENCE ON GLOBAL CLIMATE: LEGAL PROTECTION FOR SUSTENANCE OF LIFE ON EARTH

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Abstract

Changes in solar irradiance may have affected global climate, the importance of the climate change issue stems from the impact of changes in climate on human and natural systems. The two most well-known consequences of climate change are an increase in global-mean temperature and a rise in sea level. The primary components of sea-level rise are thermal expansion and the melting of small glaciers. However, there are other changes in climate could be as important, or even so, than changes in the mean climate state. These include changes in precipitation and climate variability, particularly changes in the intensity and/or severity of extreme events such as droughts, floods, or tropical storms.

Physics deals with the structure of matter and how the fundamental constituents of the universe interact. The impact of humans on the environment revolves around the need of physical science to understand how human beings change a natural system, an understanding of global warming and the associated climate change. Hence, physicists will approach numerous troubles from more than one direction. Physicists had to constantly keep attentive to changes, to visualize one factor going on in nature, to discover new phenomena and to document it in order that they will describe it later. Thus studying physics strengthens quantitative reasoning and problem solving skills. The environment is the natural world but with toxic chemicals, spacecraft, and nuclear bombs, humans seem to be moving further and further away from what could be called 'natural' every day. As physics strengthens quantitative reasoning and problem-solving skills, it should be dealt transdisciplinary with Law will surely helps in reducing human influence on global climate and render legal protection for sustenance of life on earth. Hence the paper concentrates on the importance of application of physical principles to environmental problems and the proactive role played by judiciary in different countries in protecting life on earth by adopting policies relating to climate change, enhancing ethical principles by setting regulations and standards for operating industries.

Key Words: Environment Protection, Sustainable Development, Climate Change, Human rights

Introduction:

Human rights express the entitlement of all people to be treated equally, to live their life in safety and freedom, and to be protected by their government. So many of our human rights such as right to life, health, food, and an adequate standard of living, are adversely affected by climate change, it is evidenced by each new extreme weather event and the devastation that ensues such as death and the destruction of crops and property. Without further action, climate change will continue to devastate people and the planet, and human rights will continue to be violated.

The world is an intricate system, stuffed with limits and constraints on what we humans do. Traditionally, physics has developed through remark of natural phenomena of the intricate world and derivation of legal guidelines that describe these phenomena. Naturally, the profound understanding of the earth we stay will assist us to continue to exist in it.

We humans still live on planet Earth. Whether we realise the value of plants and animals or not, whether we minimise the utilisation of natural resources or not but as long as humans live in the environment, the state of the planet has a direct effect on us.

Relation between Climate change and human evolution:

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The relationship between climate change and human evolution has provided discourse amongst scientists for as long as there are queries on the origins of the mammal genus. The rise in climate variability is due to human adaptation. Millions of years, permutations developed by way of our ancestors have characterised by using capacity to the endless dynamical setting where the human lineage had seen a shift toward bipedality, the flexibility to disperse into new habitats and consequently the improvement of stone device technologies, are varied due to climate instability that urged the first homo sapiens to cope up with diverse environments. (Andrea Parravicini & Telmo Pievani, 2016) Climate change also poses a major threat to human life causing threats to physical health and survival, food and water shortages, and loss of property, home, and way of life; with the most vulnerable in our society – like children, the elderly, and marginalised communities are often being the most at risk.

Human conduct is inflicting an enhancement of the greenhouse impact with the aid of drastically growing the atmospheric concentrations of greenhouse gases. Further increase in carbon dioxide concentrations become inevitable as there is increased world-wide use of fossil fuels. Climate change impacts the existence of life by increase in starvation and malnutrition and other disorders impacting growth and development of child, respiratory morbidity and ground-level ozone. (Jeevan Regmi, 2014)

The information is that the earth has experienced massive climate change and huge species die-off through its 4.5 billion-year history, and each time, lifestyles ultimately bounces back. Climate change is more drastic which is not new for the planet. But the earth has never had a species as worrying as the present day Homo sapiens, unfold to each and every nook of the world, irrecoverable use of resources and remodelling the planet through agriculture, mining and deforestation. (Bryan Walsh, 2011) The climate change outcomes are manmade. The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) has stated that the effect of human activities on climate change is unequivocal. It is no longer the scientific enquiry however the challenge now is the timing and magnitude of the abrupt changes in the climate. (IPCC 2007)

Legal Approach to Climate Change in different Countries:

Policy on Climate Crisis in US

Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis aims to undo the most adverse decisions of the Trump administration on public health, the environment, climate change and the credibility of the science community. Executive Order on Tackling the Climate Crisis at Home and Abroad has been enacted by US in 2021. This order firstly asserts the United States' intention to put the climate crisis at the center of the country's foreign policy and national security.

Climate Change Act in UK

The Act provides a long-term framework to improve carbon management, to help the transition to a low carbon economy, encourage investment in low carbon goods and provide an international signal. The Act establishes a legally binding target for the UK to bring all greenhouse gas emissions to net zero by 2050. It also creates 5-yearly 'carbon budgets' as a pathway to meet the long-term target. The Act has now established a legally binding target of at least an 100% cut in GHG emissions by 2050, to be achieved through action in the UK and abroad. The Committee on Climate Change (CCC) - an independent, expert body to advise the government on the level of carbon budgets and on progress in meeting these budgets - submits annual reports to Parliament on progress towards targets and budgets. The government must respond to the reports, ensuring transparency and accountability.

Climate Solutions in Australia

In 2019, the Australian government announced the Climate Solutions Package, an AUD 3.5 billion investment to deliver on Australia's 2030 Paris climate commitments which consolidated a number of existing government programs and policies, and initiated a several new ones.

This Committee is notably tasked to develop policies and programmes, if required, to make India's domestic climate actions compliant with its international obligation, and to function as a National Authority to regulate carbon markets in India, under Article 6.2, Article 6.4 and Article 6.8 of the Paris Agreement in the post-2020 period;

India's Initiative to Climate Change:

India is a country housing a considerable portion of the world's poor, thus making the issue of sustainable development a pressing concern. The current energy scenario for India is one that is heavily dependent on fossil fuels, specifically coal, to meet their energy needs. In light of climate change, India has developed an extensive policy framework with specific targets and objectives to reduce their emissions by increasing their deployment of RE technologies. This originated with policies regarding electricity in the 2000s promoting the proportion of renewable in the energy mix which catalyzed the formation of the NAPCC and their eight missions to achieve development objectives while tackling GHG mitigation and climate change adaptation. Commitments extending to 2020 and 2030 like the Copenhagen Accord and the recent COP21 followed with the goal of reducing emissions by promoting the use of RE. India is endowed with an enormous potential of renewable that include solar, wind, biomass and hydro that are becoming more widespread due to climate change and energy policies. Thus, the pursuit and promotion of RE will provide India with more energy security and independence to meet energy demands and growth in the future while simultaneously reducing their GHG emissions. (Shrimali G, Tirumalachetty S, 2013)

India launched its National Action Plan on Climate Change (NAPCC) on June 30, 2008 which extended till 2017, with an objective of attaining a sustainable improvement direction that enhances both financial and environmental aspirations. The NAPCC's main objective is to advance both India's economic growth and climate change objectives of adaptation and mitigation through the Eight National Missions that are representative of a multifaceted, long term and unified approach for achieving the key objectives in the framework of climate change (Government of India, 2008)

India's position on climate change negotiations will have far reaching implications for the success of global climate cooperation. For an India with commitments, domestic policy may have to be changed to bring more intragenerational equity. Scientists also suggest that bringing in new green technologies and renewable energy is a promising way forward. In this regard the Climate Change Law which is in bill form needs to take the shape of enactment.

Legal Protection of Life on Earth by Judiciary:

Judiciary in almost all the countries has taken up proactive role in prevention of climate change especially due to human intervention and protect life on earth. UN Environment's sixth Global Environment Outlook (2019) calls on decision makers to take immediate action to address pressing environmental issues to achieve the Sustainable Development Goals as well as other Internationally Agreed Environment Goals, such as the Paris Agreement. By bringing together a community of hundreds of scientists, peer reviewers and collaborating institutions and partners, the GEO reports build on sound scientific knowledge to provide governments, local authorities, businesses and individual citizens with the information needed to guide societies to a truly sustainable world by 2050. (American Physical Society)

Efforts to curb greenhouse gas-emissions and the impacts of global warming will fall significantly short without drastic changes in global land use, agriculture and human diets, leading researchers warn in a high-level report commissioned by the United Nations. The IPCC released a summary of the report, which is designed to inform upcoming climate negotiations amidst the worsening global climate crisis.

Developments in climate litigation are being influenced by advancements in the scientific understanding of climate change. Climate attribution science aims to establish the relationship between anthropogenic emissions and specific extreme weather events. Progress in this field is allowing claimants to better pinpoint and quantify the environmental impact of projects, policies and laws.

The cases considered demonstrate that the greatest hurdle for human rights-based climate litigation is not necessarily convincing courts of the dire consequences of climate change and the related impact on an individual's human rights. Rather, the difficulty lies with demonstrating that the courts are an appropriate mechanism through which to address climate change, a challenge which by its very nature requires coordinated nationwide policy-driven responses. Although the decision is not binding on states, it opens the door for further refugee claims to be made on the basis of climate change.

Juliana v US- Department of Human Ecology 2015

In January 2020, the Ninth Circuit Appeal Court dismissed the claim in the high profile *Juliana* litigation in which the plaintiffs, represented by Our Children's Trust, sought relief for governmental action and inaction in regulating carbon dioxide pollution. The action was founded upon the plaintiff's explicit and implicit constitutional rights and the public trust doctrine. Julia Olsen, chief legal counsel of Our Children's Trust has emphasised that the "*Juliana case is far from over*" as the plaintiffs will seek to appeal the decision. (Our Children's Trust, 2020)

Arnold v Mundy

... common public property including the air, running water, sea, fish, and wild beasts is "vested in all the people...in the hands of the sovereign power, to be held, protected, and regulated for the common use and benefit."

Urgenda Foundation v Kingdom of the Netherlands (Urgenda) a case brought by an environmental group and nearly 900 Dutch citizens in 2015, the Dutch Supreme Court mandated that the government achieve a 25% reduction in greenhouse-gas emissions from 1990 levels by the end of 2020 to protect its citizens from the harms of a warming climate system.

In December 2019, the Supreme Court of the Netherlands ruled that the state owes a duty of care to protect its citizens from climate change in accordance with its obligations under the European Convention for the Protection of Human Rights and Fundamental Freedoms (**ECHR**). This was the culmination of a 7-year judicial process, with the nation's highest court ultimately finding that "*climate change threatens human rights*" and that "*in order to ensure adequate protection from the threat of those rights resulting from climate change, it should be possible to invoke those rights against individual states*".

In **Demanda Generaciones Futuras v. Minambiente**, Colombia's Supreme Court ordered the government to implement protective measures to halt deforestation in the Amazon — that case was brought by 25 young Colombians. Like *Juliana*, both cases rested on the idea that the right to life is endangered by threats to the environment. Their success suggests that we can expect to see more suits brought by citizens against their governments, says Knox. Meanwhile, climate activists are watching closely to see how these governments comply with the court-ordered actions.

Re Greenpeace Southeast Asia and Others

In December 2019, the Commission on Human Rights of the Philippines announced that the world's biggest carbon polluters could be held liable for their role in contributing to climate change. The announcement was preceded by a 3-year investigation into whether 47 major fossil fuel firms, including Shell, BP, ExxonMobil and Chevron, should be accountable for the human rights harms caused to Filipino citizens as a result of climate change. The petition prompting the investigation was submitted by Greenpeace Southeast Asia as well as a number of other individuals and organisations.

The Commission ruled that whilst legal responsibility for climate change is not addressed by current international human rights law, major fossil fuel companies are morally obligated to respect human rights, as enunciated in the UN Guiding Principles on Business and Human Rights. These companies are also obligated to invest in clean energy. Further, under the laws of Philippines, the Commission considered that the existing civil and criminal laws of the Philippines provided grounds for action against these companies.

Sacchi et al. v. Argentina et al.

In September 2019, Greta Thunberg and fifteen other children filed a petition against the five highest emitting nations that have ratified the UN Convention of the Rights of the Child (**CRC**), being Brazil, Argentina, France, Turkey and Germany.

The plaintiffs argue that the five countries have violated their rights under the CRC by failing to take adequate government action in reducing greenhouse gas emissions in response to climate change. The petition argued that there are practical problems preventing them from complying with this condition.

Petition of Torres Strait Islanders to the UN Human Rights Committee Alleging Violations Stemming from Australia's Inaction on Climate Change

In May 2019, a group of eight Torres Strait Islanders lodged a complaint with the UN Human Rights Committee against the Australian government for breaching human rights obligations owed under the International Covenant on Civil and Political Rights (**ICCPR**). It is argued that the Australian government's failure to take sufficient action to curb emissions and implement adaptation measures

has violated the right to culture, right to a family and right to life under the ICCPR.(Client Earth, Press Release, 2020)

Family Farmers and Greenpeace Germany v. Germany

In October 2019, the Administrative Court of Berlin dismissed an action by three German families and Greenpeace Germany challenging the government's failure to adhere to a cabinet decision to reduce greenhouse gas emissions by 40% below 1990 levels by 2020, recorded in the Climate Protection Plan, instead finding that the target was not legally binding. Notwithstanding this, the Court held that government climate policy is subject to judicial review and must be compatible with the government's duties to safeguard fundamental rights under the German Constitution – the Grundgesetz.

The plaintiffs alleged the government was bound by the Climate Protection Plan and that their failure to abide by the targets, by only reducing emissions by 32% instead of the specified 40%, violated human rights and breached rights to life and health, occupational freedom and right to property enshrined in the German Constitution. However, the Court found that the government was entitled to wide discretion in determining how to fulfil its constitutional obligations, as long as precautionary measures to protect rights are not wholly unsuitable or inadequate.

The Court noted that in the context of the European Union's target of 40% emissions reductions by 2030 and 20% below 1990 levels by 2020, the German government's 32% reduction was not completely inadequate. Ultimately, the Court held that the plaintiffs had not conclusively demonstrated that the government had violated its obligations by setting inadequate climate protection targets. (Climate Change Laws of the World database)The recent "second wave" of litigation more broadly challenges private entities with claims founded on human rights, corporation law, fraud and misleading conduct and failures to adhere to planning controls and environmental laws.

Milieudéfense et al. v. Royal Dutch Shell plc. (Shell)

In April 2019, the environmental group Milieudéfense/Friends of the Earth Netherlands commenced proceedings against Shell alleging Shell's contributions to climate change violate its duty of care under Dutch law and human rights obligations.

The case was filed in the Hague Court of Appeal. It argues that given the Paris Agreement's goals and the scientific evidence regarding the dangers of climate change, Shell has a duty of care to take action to reduce its greenhouse gas emissions. The duty is said to arise from the Dutch Civil Code as further informed by the ECHR which guarantees rights to life (Article 2) and rights to a private life, family life, home, and correspondence (Article 8). The plaintiffs' argument outlines how Shell's long knowledge of climate change, misleading statements on climate change, and inadequate action to reduce climate change help support a finding of Shell's unlawful endangerment of Dutch citizens and actions constituting hazardous negligence.

The plaintiffs seek a ruling from the court that Shell must reduce its CO2 emissions by 45% by 2030 compared to 2010 levels and to zero by 2050, in line with the Paris Agreement.

A claim has also recently been lodged by environmental groups and local governments in the French courts against Total, which, like the Shell litigation, seeks to force the company to reduce its emissions. The plaintiffs are seeking orders from the court to require Total to acknowledge the climate risks associated with its business activities and align its business with the Paris Agreement.

On 29 March 2019, the Centre for Policy Development in Australia released an update of a 2016 legal opinion by Noel Hutley SC and Sebastian Hartford Davis on how Australian law requires company directors to consider, disclose and respond to climate change.

Complaint against British Petroleum (BP) in respect of violations of the Organization for Economic Cooperation and Development (OECD) Guidelines

In December 2019, ClientEarth filed a complaint against BP's advertising campaign launched under titles "Keep Advancing" and "Possibilities Everywhere" in January 2019. It argues that the campaign is misleading in the way it presents BP's low-carbon energy activities.

The complaint alleges that the campaign breaches the OECD Guidelines for Multinational Enterprises, which require clear, honest, accurate and informative communications between enterprises and the public. ClientEarth argues that the advertising campaign gives a false impression of the relative scale of renewable and low-carbon energy in BP's business, omits full lifecycle emissions for natural gas, claims an inaccurate emissions saving against coal combustion, and asserts

that increases in global primary energy demand are both desirable and inevitable for human progress and development.

Complaint against Australia and New Zealand Banking Group Limited (ANZ) in respect of the Organization for Economic and Development (OECD) Guidelines

On 30 January 2020, Friends of the Earth Australia along with three individuals filed a complaint with the Australian National Contact Point (ANCP) of the OECD against ANZ. The complaint alleges that ANZ has not adhered to the standards of the OECD Guidelines relating to due diligence, disclosure, environment, and consumer interests.

The orders sought include ANZ being required to disclose high risk greenhouse gas emissions resulting from business lending, divest from investing in coal and phase out investment in other fossil fuel industries, commit to the targets in the Paris Agreement and conduct comprehensive climate-related scenario analysis for all sectors it finances. Interestingly, the claimants also request that the ANCP recommend to the Australian government that stronger laws be drafted for emissions and energy reporting.

The People of the State of New York v Exxon Mobil Corporation (Exxon)

In December 2019, the Court found Exxon not guilty of perpetrating a longstanding fraudulent scheme concerning the management of business risks relating to climate change.

The core allegation by the New York Attorney General was that Exxon's publicly disclosed projected climate change costs were inconsistent with internal projections, which had the effect of misleading investors and the investment community. The common law fraud claims were withdrawn during closing remarks, leaving the remaining statutory fraud claims under New York's Martin Act and Executive Act.

Commonwealth of Massachusetts v Exxon:

In October 2019 (before the above decision was handed down), the Commonwealth of Massachusetts Attorney General filed a complaint in Suffolk County Superior Court alleging that Exxon had deceived investors by not disclosing climate change-related risks to its business, and had deceived consumers through greenwashing campaigns and misleading advertisements that failed to disclose the impact of its fossil fuel products on climate change.

Mark McVeigh v Retail Employees Superannuation Pty Ltd (REST)

In July 2018, Mark McVeigh commenced proceedings against REST, one of Australia's largest pension funds with total assets over A\$50 billion and around 2 million members. Mr McVeigh's claim originally centered on REST's failure to adequately disclose its strategy to manage climate change risks, which allegedly prevented Mr McVeigh from making informed judgments about the fund's performance and management, and also breached REST's statutory disclosure requirements.

Many jurisdictions have long incorporated obligations relating to ecological sustainable development in their planning controls. This provides scope for claimants to push for the widest possible interpretation of such obligations so as to address the contributions which individual projects may have on climate change.

Friends of the Earth et al. v. Total

Six non-governmental organisations are suing Total in France, alleging that it failed to adequately assess the threats to human rights and the environment of the Tilenga oil project in Uganda and Tanzania. Under France's Duty of Vigilance Law, French companies must identify and prevent risks to human rights and the environment that could occur as a result of their business practices. The allegation made is that the project's vigilance plan does not properly account for the project's potential life cycle greenhouse gas emissions.

Wildlife of the Central Highlands Inc v VicForests

In the first litigation post the recent Australian bushfires, an interlocutory decision was handed down by the Supreme Court of Victoria on 29 January 2020 arising from the Victorian bushfires. On 28 January 2020, an urgent interim injunction was sought by the Wildlife of the Central Highlands Inc to prevent VicForests (a State government statutory entity) from logging bushfire impacted forests. The plaintiff alleged that the particular forests contained threatened species and in light of the fact that the Commonwealth and State bushfire responses had not yet concluded, it was premature to harvest these forests. The case put by the plaintiff relied upon incorporation of the "precautionary principle" in the

relevant Code of Practice for Timber Production, which it asserted justified a 'wait and see' response, subject to finalisation of the ongoing governmental responses.

In ***Pena and Others vs Government of Colombia*** 25 young people sued the government for failing to honour its commitment to tackling climate change. In April 2018 they won their case, the groundbreaking decision recognising for the first time the Amazon Basin as a subject of rights. (Heinzerling, L., 2008)

In ***Massachusetts v. Environmental Protection Agency***, the Supreme Court confronted the issue of climate change for the first time. The Court held that the Clean Air Act gives the Environmental Protection Agency the authority to regulate greenhouse gases and that the agency may not decline to exercise this authority based either on factors not present in the statute or on inconclusive gestures toward uncertainty in the science of climate change. (Heinzerling, L., 2008)

In ***Greenpeace Southeast Asia and Others vs Carbon Majors*** the largest companies producing crude oil, natural gas, coal, and cement are being held accountable for contributing to global GHG emissions and climate change. This is the first national human rights investigation of its kind and the Commission is expected to deliver a decision in 2019.

The International Bar Association released a model for how to litigate climate change, laying out legal arguments and precedents that might help future plaintiffs. The Heathrow case is the first major ruling based on the Paris agreement and could spur more suits that rely on those obligations. In other parts of the world, plaintiffs are increasingly focusing on seeking damages from polluters themselves.

Conservation Council of Western Australia v. Hatton and Woodside

On December 21, 2020, the Conservation Council of Western Australia (CCWA) filed suit against the former chairman of the Western Australia EPA and the natural gas company Woodside, alleging that the EPA had allowed Woodside to process unlimited amounts of gas at two plants, in violation of the state's Environmental Protection Act. According to news reports, CCWA alleges that the state EPA had previously only allowed the plants to process gas from particular sources. Then, in July 2019, EPA made two decisions allowing the plants to process gas from any source, made under provisions of the Environmental Protection Act that allows minor changes to previous approvals without significant assessment. CCWA alleges that the environmental and climate impacts were major and should have triggered the full consideration of the EPA. According to news reports, Woodside is partnering with Shell, BP, Chevron, and BHP to extract, transport, and process the gas as part of the Burrup Hub project.

Greenpeace et al v. Spain- Spain's Supreme Court

Environmental groups sued Spanish government for greater climate action. On September 15, 2020, Greenpeace Spain, Oxfam Intermón, and Ecologistas en Acción filed suit against the Spanish Government, alleging failure to take adequate action on climate change. The plaintiffs assert that Spain is in violation of Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action. According to plaintiffs, by last December Spain should have approved a National Energy and Climate Plan and Long Term Strategy; and the draft plan is not consistent with the Paris Agreement and IPCC recommendations to keep global warming to 1.5 degrees Celsius. According to news reports, the complaint seeks an order compelling greater climate action.

On December 15, 2020, plaintiffs filed their lawsuit in the Supreme Court, alleging that Spain unlawfully failed to produce a National Energy and Climate Plan with 2030 climate targets, in violation of national law, EU regulations, and their obligations under the Paris Agreement.

Sharma and others v Minister for the Environment

On September 8, 2020, eight young people filed a putative class action in Australia's Federal Court to block a coal project. The lawsuit seeks an injunction to stop the Australian Government from approving an extension of the Whitehaven Vickery coal mine. The plaintiffs claim to represent all people under 18, and argue that Federal Minister Sussan Ley has a common law duty of care for young people. They further assert that digging up and burning coal will exacerbate climate change and harm young people in the future.

O'Donnell v. Commonwealth Federal Court of Australia

On July 22, 2020, Equity Generation Lawyers filed a lawsuit in the Federal Court on behalf of Kathleen (Katta) O'Donnell against the Australian government. The lawsuit alleges that Australia's

economy and reputation in international financial markets will be significantly affected by the adequacy of the Australian government's response to climate change, and that as a result investors who trade in Australian government bonds face material risks from climate change that should be disclosed. The lawsuit further alleges that that government breached its duty of disclosure and misled and deceived investors in failing to disclose such risks.

O'Donnell seeks to represent other holders of and investors in Exchange-traded Australian Government Bonds who have the same interest in the proceeding. She seeks declarations that the Commonwealth has breached the law and an injunction from the Federal Court to prevent further promotion of bonds without informing investors about climate change risks.

Wilfred J v. Ministry of Environment & Forests Application for, inter alia, protection of 'areas likely to be inundated due to rise in sea level consequent upon global warming'. The appellants are persons interested in the protection of environment and ecology. The Appellants are also the registered members of the Fish Workers Welfare Board formed by the Government of Kerala to give assistance to the people in the fishing occupation. This is the benchmark to determine that Appellants are sea-going fishermen. Vizhinjam International Seaport Limited (Respondent No. 3, Hereafter 'the Project Proponent ') formulated a project for development of Vizhinjam International Deep water Multipurpose Sea Port at Vizhinjam in Thiruvananthapuram (Trivandrum) district, in the State of Kerala. This material is sought to be sourced from blasting quarries in Trivandrum and in neighbouring district of Kanyakumari in Tamil Nadu State, possibly falling in Western Ghats region. After hearing the arguments, the Tribunal directs that the matter be listed for arguments on merits.

In re Court on its own motion v. State of Himachal Pradesh & Others

In February 2014, India's National Green Tribunal issued a ruling on its own motion imposing a number of restrictions on activity around the Rohtang Pass, an environmentally sensitive area in the Himalayan state of Himachal Pradesh.

The National Green Tribunal has jurisdiction pursuant to a 2010 statute "over all civil cases where a substantial question relating to environment ... is involved and such question arises out of one or more of seven environmental protection statutes enacted between 1974 and 2002." The court may initiate cases and impose remedies. The court cited a study suggesting that 40% of the glacial retreat could be attributed to Black Carbon impact and concluded that, therefore, Black Carbon emission reduction can address glacial melting. In this case, the court did not assign Himachal Pradesh responsibility for mitigating global warming per se. It did, however, order the government of Himachal Pradesh to undertake sweeping measures to reduce pollution, including random pollution checks, restricting transport in certain areas to compressed natural gas and electric buses, and implementing a reforestation program.

Pandey v. India

Ridhima Pandey, a nine-year-old from the Uttarakhand region, is the named plaintiff in a climate change case filed in March 2017 with the National Green Tribunal of India. Plaintiff's petition argues that the Public Trust Doctrine, India's commitments under the Paris Agreement, and India's existing environmental laws and climate-related policies oblige greater action to mitigate climate change. It also argues that the term "environment," as used in the Environment (Protection) Act 1986, necessarily encompasses the climate. The case was brought pursuant to section 2(m) of the National Green Tribunal Act 2010, which authorizes claims that raise "a substantial question relating to the environment."

Ridhima Pandey Vs Union of India, before the National Green Tribunal at Principal Bench, New Delhi, 2017 the contention applicant is represented by her Legal Guardian and Father, Mr. Dinesh Pandey that the government has failed to take any effective science-based measure, and there is a huge gap in implementation of the environmental legislations. It is submitted that without action by governments around the world to immediately start reducing carbon dioxide (CO₂) emissions and other greenhouse gases (GHGs) that cause climate change, in line with achieving global climate stabilisation, children of today and the future will disproportionately suffer the dangers and catastrophic impacts of climate destabilisation and ocean acidification.

Climate change will make those threats even worse, as floods, drought, storms and other types of extreme weather threaten to disrupt, and over time shrink, the global food supply. Already, more than

10 percent of the world's population remains undernourished, and some authors of the report warned in interviews that food shortages could lead to an increase in cross-border migration.

It is further submitted that such impacts can be averted, minimised and mitigated if effective, science-based measures are taken under the existing environmental legal framework in India, including the following enactments:

- i. Forest (Conservation) Act, 1980 and the rules made thereunder.
- ii. Air (Prevention and Control of Pollution) Act, 1981 and the rules made thereunder.
- iii. Environmental (Protection) Act, 1986 and rules made thereunder.
- iv. Biological Diversity Act, 2002 and rules made thereunder.

In her petition, Ridhima asks the court to order the government to assess industrial projects for climate-related issues, prepare a "carbon budget" to limit carbon dioxide emissions, and create a national climate recovery plan.

The petition notes that India is the third-largest national emitter of greenhouse gases (behind China and the U.S.) and among those countries that are most susceptible to adverse climate change impacts. It identifies 1° degree Celsius or 350ppm of atmospheric carbon dioxide as the critical pair of thresholds for India (and the world) to avoid exceeding for the sake of avoiding severe climatic changes—facts described in the petition as rooted in "the best climate science."

To remedy the alleged injury to the present and future climate, On January 15, 2019, the National Green Tribunal dismissed the case, reasoning that the climate change is already covered in the process of impact assessments under the Environment Protection Act of 1986, and therefore, "There is no reason to presume that Paris Agreement and other international protocols are not reflected in the policies of the Government of India or are not taken into consideration in granting environment clearances."

Conclusion

As the scientific consensus that humans are at least partly responsible for climate change is now firmly established, disputes are increasingly revolving around proving causation, allocating responsibility and jurisdictional arguments as to the role of the courts in 'regulating' climate change. Climate attribution science is essential in resolving such issues, especially as many of the recent studies aim to develop methodologies that link harmful environmental impacts to specific emitters. (Jeremy Moss and Persephone Fraser, 2019)

Increasingly, it can be expected that challenges will be lodged in relation to developments which are likely to generate significant greenhouse gas emissions, particularly in a context where these developments are inconsistent with the goals of the Paris Agreement. As we have seen in Australia with the likes of the *Rocky Hill* decision use international or national policies, laws or regulation to refuse new development that will intensify the climate change problem or conversely, suffer from the future impacts caused by climate change.

While governments continue to bear the brunt of the claims, the trend in bringing claims against major carbon emitting corporations is continuing and is expected to increase in 2020. Cases against other corporates, including financial institutions and investors, are also anticipated to increase as communities and shareholders seek accountability for their role in greenhouse gas mitigation. Increasingly, we expect that adaptation and climate resilience issues may underpin future litigation, particularly in the wake of significant climatic events, such as the recent dreadful Australian bushfires. The recent *VicForests* decision is one such example. 2020 also formally sets the start of the commitments made by nations under the Paris Agreement, which should provide a setting for future litigation across a number of fronts.

Litigation will increasingly be used as a tool to achieve outcomes consistent with a net zero emissions future. Policies relating to climate change fall into the four broad categories first We could reduce our greenhouse gas emissions, an approach that is typically called mitigation, then could increase society's capacity to cope with changes in climate, which is called adaptation further deliberately manipulate the Earth system in ways that might counteract at least some of the effects of increasing greenhouse gas concentrations, this kind of intervention is typically called geoengineering or climate engineering and also expand our knowledge base in ways that help us better understand the climate system, our sensitivity to climate change, and the other three risk-management strategies, which are more proactive.

Research, observations, scientific assessments, and technology development can help reveal risks and opportunities associated with the climate system and support decision making with respect to climate change risk management. Policymakers also have to understand and refine specific risk-management strategies and to thereby increase the effectiveness of risk-management efforts. The establishment of national green tribunal in India is evidence for efforts by India and also the bill on climate change.

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