## **JOURNAL ON ENVIRONMENTAL LAW POLICY AND DEVELOPMENT**

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### JOURNAL ON ENVIRONMENTAL LAW POLICY AND DEVELOPMENT[JELPD]

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### **BETWEEN US**

The pandemonium of nCOVID-19, has altered our lives forever. In the new normal that we are getting used to, the conversations, conferences and discourses in all educational institutions are now online. No guarantee exists that we would be back to the "old normal" soon, where the spontaneity goes with face to face interactions in the academic environment. Amidst this unprecedented gloom, there are a lot of things to cheer and feel happy about. In observing 'social distancing' and staying at home to stay safe, each of us has the most unexpected but very welcome opportunity to reconnect with the members of the family and spend quality time with them. In addition, it has provided a great opportunity to read a lot, turn inwards, reflect, reorganise and rejuvenate our learnings, deepen and sharpen our research skills and abilities. It has enabled me to explore new techniques for teaching and reach out to the student community. It is actually a beginning of the new order that we should engage in online teaching. After over 40 years in this profession and being "digitally differently-abled" this has been a new opportunity to re-invent myself! Further, as a teacher in Environmental Law, the time, at my disposal, has also helped me in accessing trans-disciplinary learning of law, hitherto little explored by me, to enrich my understanding of the subject. I will be sharing that learning with you, in this issue of the Journal, in the Book-Review Section.

Prof. Sairam and his Team, with their indefatigable spirit, have been able to produce yet another winner of a volume of environmental law literature, covering a wide variety of areas on the subject, in this issue. This has been accomplished, despite the existence of abundant scope and space excuse, not to produce one. These Environmental Bravehearts nay, "warriors" are in no way less than the "Corona Warriors", in letter and spirit, in overcoming all odds in meeting the deadline and serve a rich smorgasbord of environmental law learning. I am very proud of their accomplishment and in the demonstration of the true spirit of the Law School- never say die!

> Prof. (Dr.) M. K. Ramesh Professor of Law NLSIU, Bengaluru

### **EDITORIAL**

Challenges to environment protection are rampant and a daunting task. With strengthened global consensus in the protection of environment by the international community, there is a greater requirement for a strength-oriented approach at the grass roots. Urbanization is one of the biggest drivers of land use change which largely occurs with little or no assessment of the environmental impact of future or present land use change. Effects of urbanization are compounded by climate change which also interplays with existing environmental concerns such as air and water pollution, accumulation of untreated waste, encroachment of green belts, water scarcity, leading to higher incidences of heat waves, droughts, cloud burst, riverine floods, rise in temperatures, higher incidence of diseases etc. Land degradation caused on account of improper waste segregation, management and disposal is one of the major problems faced by most developing countries. Despite having in place several legislative and policy measures, the leverage of existing law in regulation of waste-management, municipal, industrial, plastic, construction and bio-medical, is miniscule and requires constant scrutiny.

Centre for Environmental Law, Education, Research and Advocacy [CEERA], National Law School of India University, Bengaluru has been pivotal in organizing various Seminars and Certificate Courses on Environment and allied areas, including Energy Security, Climate Change, Chemical and Hazardous Waste Management, etc. towards enabling a greater dissemination of research and training on national and international legal policies. The Centre has been the steady choice of various ministerial and government departments including Union Public Service Commission, Hindustan Aeronautics Limited and the Central Pollution Control Board for the past two decades towards organizing training programs for their personnel and other regulatory bodies.

Currently, we are undertaking a Three-year Ministry of Environment, Forest & Climate Change -Global Environment Facility project on 'Collaborative Engagement for Research, Training and Development in Handling of Chemical and Hazardous Waste under various Multilateral Environmental Agreements (MEA)', wherein we are required to undertake extensive research and training at the grass-root level on the impact of the MEAs and advise the Ministry on various aspects covered therein. In November 2019, under the aegis of this project, we published the Handbook on Chemical and Hazardous Waste Management and Handling in India.

In pursuit of our objectives, this  $7^{th}$  Volume of the Journal of Environmental Law, Policy and Development, endeavours to provide for the dissemination of legal awareness in one of our core competencies, *viz*. Environmental Law.

In consonance with the Journal's objective, the volume contains ten manuscripts. First, is our article titled *NGT: A Tribunal in Trouble?*. With 2020 marking ten years of the establishment of the National Green Tribunal, an insight into its functioning is imperative. Although to its credit, the NGT has passed a few remarkable orders, the Tribunal seems to have suffered a setback. The Supreme Court and various High Courts have acted in a manner setting the boundary limits for the NGT to function. The authors discuss the path breaking cases relating to *Sterlite Industry* and *the Mantri Techzone* and analysing that the tribunal is indeed in trouble.

A doctrinal research paper by Izuoma Egeruoh-Adindu on *Climate Change Effects and Internal Displacement in Nigeria: Legal and Institutional Challenges*, delves into the issue of internal displacement and migration in Nigeria due to climate change. The author concurs with the existing research that developing countries like Nigeria will bear the greatest cost, as a result of constant emission of greenhouse gases in these regions. The author identifies the need for synergy and expansion of the mandates of the institutional stakeholders to mitigate internal displacements consequent to flood and other natural disasters in Nigeria. Using doctrinal research methodology, the author has underscored the role of law in achieving the aim of the research.

Kudrat-E-Khuda's article on *Interrelationship between Environment and Human Rights: An Overview on Legal Context* explores the inter-relationship between environment and human rights considering the adverse impact on human health due to environmental degradation and vice versa. The article actively encourages implementation of human rights obligations and responsibilities for informing and strengthening the development of overall environmental issues.

Dr. M.P. Chengappa and Nishita Shrivastava's article titled, *Assessment of Climate Action Plans in India: A Perspective of Green Federalism*, explores the concept of Green Federalism with a focus on the grass root levels advocating the bottom to top approach. The author critically analyses the state climate action plans adopted currently, on the touchstone of the federal structure of the country. The authors put forth the idea of 'green federalism' as a last resort to fight climate change and argue for the active involvement of local bodies and people to combat the menace of climate change.

Dr. Shelley Ghosh's article on *Mitigation and Adaptation Strategies of India for Implementing Paris Goals- A Critical Analysis* explores how India aims to implement its mitigation and adaptation strategies as is reported in its Intended Nationally Determined Contribution (INDC) Report submitted to UNFCCC as a part of its commitment to the Paris Agreement. The paper also highlights India's limitations and critically explores the possibility of successful implementation of its INDC post 2020.

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Nishant Kumar and Deepak Kumar's article titled *Role of UN vis-a-vis ASEAN to Combat Transboundary Environmental Damage: A Case Study of Implementation of Good International Practices*, analyses the contribution of the ASEAN, United Nation Organisation (UNO) along with International Court of Justice (ICJ) to the development of consensus and cooperation concerning transboundary environmental harm among ASEAN members.

Amruta Das and Madhusudan Dash have contributed on *Environment, Biodiversity and Intellectual Property Rights: Need for a Harmonious Ecosystem*, wherein they explore the convergence of biodiversity with Intellectual Property Rights, international regulatory standards and India's defense in justifying national obligations vis-à-vis compelling pressure of developed economies.

Ashutosh Raj Anand's article, *Emphasizing Sendai Framework Mandates on Disaster Risk Reduction in the Wake of Covid* – 19, explores the UN World Conference on Disaster Risk Reduction emphasizing the Sendai Framework and attempts to delineate its relevancy in the present crisis and in promoting avowed principles of sustainable development.

Saksham Mahajan and Manas Aggarwal's article on *Bio-Medical Waste Management:* A Social Responsibility and a Legal Necessity, focuses on the need and importance to manage Bio-Medical Waste in a proper and efficient manner as well as the evolution of the legal regime related to management of Bio-Medical Waste in India. The article also provides a comparative study between the Indian legal regime and the legal scenario across the globe with respect to management of Bio-Medical Waste.

P.L. Sundar in his article, *Offshore Wind Energy in India: Legal Regulatory Mechanisms*, provides a comprehensive picture about the policy governing the offshore wind energy sector in India mainly from an environmental aspect and further touches on intricacies of onshore wind energy to draw up similar trends that could be extrapolated. The article also explores the prospective technological developments and practices that are emerging in other economies that could shape the framework in India. The article suggests measures to mitigate or avoid the impact of offshore wind energy technology on the biodiversity and environment and explores the different trends of siting employed in other economies on various factors. It makes a critical observation on the clearances required for wind energy projects and clarifies the categorization of "offshore wind energy" projects.

Prof. (Dr.) M.K. Ramesh has contributed book-reviews on the titles *Nature Conservation* in The New Economy: People, Wildlife and the Law in India and Post-Growth Thinking *in India: Towards Sustainable Egalitarian Alternatives*, that seek to enthrall the reader to plunge into the same.

Prof. *G.B. Reddy* in his Book Review on *Idea and Methods of Research*, succinctly delves into the contours of best practices to research methodology discussed in the book, evoking the curiosity in the minds of readers.

Comprehensively, this volume seeks to deliberate on the novel challenges faced in the protection of the environment and attempts to strengthen regulatory approach towards the same, and CEERA is pleased to publish the same to kindle the readers' interest in the study of Environmental Law.

As the Chief Editor, I commend and express my sincere thanks to the dedicated efforts of the Editorial Advisory Board and Editorial Committee for their effective coordination and their contribution as editors of the transcripts received from the authors.

Prof. (Dr.) Sairam Bhat Professor of Law & Coordinator of CEERA, NLSIU

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### **NGT: A TRIBUNAL IN TROUBLE?**

- Dr. Sairam Bhat\* and Lianne D'Souza\*\*

Keywords: National Green Tribunal, jurisdiction, powers, functions, limitations, administration.

### INTRODUCTION

The year 2011 marked the beginning of a truly historic era for environmental litigation in India as for the first time a quasi-judicial body, with a much wider mandate than that of its predecessors, was created to exclusively handle environment related matters. The National Green Tribunal (NGT), was established under the mandate of the National Green Tribunal Act, 2010 (NGT Act), as "a specialized fast-track body equipped with the necessary expertise to handle environmental disputes, especially those that were only 'civil', involving multi-disciplinary issues in an effective and expeditious manner."<sup>1</sup> The NGT was thus constituted as a judicial saviour that would revive the momentum for environmental litigation and environmental justice in India. Ten years into the NGT Act, much to its credit, the NGT has demonstrated tremendous efforts to espouse the causes for which it was instituted. However, during the recent past, it cannot be denied that several impediments have stood in the way of its effective functioning. Is the green tribunal in trouble? The answer to the same is partially in the affirmative.

<sup>\*</sup> Professor of Law, NLSIU and Coordinator of CEERA, NLSIU.

<sup>\*\*</sup> Research Fellow, CEERA NLSIU.

<sup>1 &#</sup>x27;About the NGT', <a href="https://greentribunal.gov.in/about-us">https://greentribunal.gov.in/about-us</a>> accessed 24 August 2020.

### JUDICIAL AND ADMINISTRATIVE FALLACIES

To many, it may come as a surprise that some of the shortcomings that wrought the NGT may be credited to its own making. The order of the Tribunal in the LG Polymers case, for instance, indicates the inadequate quality of decision making, wherein the Tribunal found the erring company responsible for the environmental damage and consequential loss resulting from the devastating gas leak under both principles of strict and absolute liability.<sup>2</sup> This finding resonates a certain flaw considering the obsolete nature of the doctrine of strict liability in devastations having dire consequences for the environment and health. As laid down in the landmark judgement of M.C. Mehta v. Union of India, situations that involve hazardous and inherently dangerous activities automatically warrant the application of the principle of 'absolute liability';<sup>3</sup> for which reason, the very fact that the NGT even considered the doctrine of strict liability in this case calls for serious introspection by the Tribunal. A green tribunal in India is expected not only to cherish Indian judiciary's remarkable contribution of the absolute liability principle to the environmental jurisprudence, but also to significantly contribute towards its application to industrial accidents which have resulted in loss of life and damages to the environment.

However, the Tribunal seems to be suffering on another account. During its ten years of functioning, the NGT, despite much criticism, is supporting the growing trend of disposing of cases by setting up Committees, which assist the tribunal.<sup>4</sup> In light of the time-bound scheme envisioned by the Act,<sup>5</sup> it would be most appropriate for the Tribunal to expedite cases by disposing them within a strict time frame. Given that the NGT being an expert body itself, the shift of the burden to another expert body or committee, to address the pending case load emphatically dilutes the functions and prominence of the NGT.

<sup>2</sup> See LG Polymers India and Ors. v. Union of India and Ors., (01.06.2020 - NGT) : MANU/ GT/0200/2020 928, 29, 34.

<sup>3</sup> M.C. Mehta v. Union of India, 1987 SCR (1) 819.

<sup>4 &#</sup>x27;NGT's New Approach to Pending Cases Raises Eyebrows', <a href="https://www.thehindu.com/news/cities/Delhi/ngts-new-approach-to-pending-cases-raises-eyebrows/article24787684">https://www.thehindu.com/news/cities/Delhi/ngts-new-approach-to-pending-cases-raises-eyebrows/article24787684</a>. ece> accessed 28 August 2020.

<sup>5</sup> See Rule 18(3), NGT (Practice and Procedure) Rules, 2011. Rule 18(3) - "Every application or appeal shall be heard and decided finally, as far as possible within six months from the date of filing an application or appeal, as the case may be."

Besides this, certain administrative issues also plague the system. For instance, ministerial attempts to transfer cases<sup>6</sup> on arbitrary grounds have made it harder for litigants to knock on the doors of the Tribunal. The case of *The Goa Foundation and Ors.* v. *Ministry of Environment, Forest and Climate Change and Ors.*, where the Bombay High Court struck down a Central Government Notification that had transferred Goa's environment related cases from Pune to Delhi on spurious grounds, is one such striking example.<sup>7</sup>

Similarly, the persistent problems of shortage of manpower, limited number of benches together with staggering number of vacancies by and large stand in the way of expediting the hearing and disposal of cases. As the NGT is the sole adjudicatory body exclusively vested with powers to settle environmental disputes, it is only prudent and reasonably expectable that it be easily accessible to the masses. Accessibility, here, not being limited to financial and procedural convenience but also being construed in terms of territorial or geographical reach, because as the Supreme Court has observed, "the denial of access to justice also takes place when a litigant has to spend too much money, time and effort to approach the adjudicating authority to get justice."<sup>8</sup> Interestingly, the organisational structure of the NGT demonstrates that it was proposed to be set up with five places of sitting *i.e.* the Principal Bench at Delhi along with 4 Zonal benches at Chennai, Pune, Kolkata and Bhopal and 4 Circuit Benches.<sup>9</sup> Unfortunately, due to lack of regular appointments and shortage of personnel, the zonal benches have been rendered virtually non-functional with no regular hearings taking place.<sup>10</sup>

In addition to these structural inadequacies, the picture grows grimmer considering the alarming number of vacancies in the existing benches. The issue of vacancies is not a new one. Indolence towards capacity building has time and again hindered the overall performance of judicial and quasi-judicial institutions. This being stated, the state of affairs in the NGT is rather 'appalling' as even the Apex Court has displayed serious concern for this predicament.<sup>11</sup> Despite the Act expressly mandating a

<sup>6</sup> See Section 4(3), NGT Act, 2010.

<sup>7</sup> The Goa Foundation and Ors v. Ministry of Environment, Forest and Climate Change and Ors, 2018 (1) BomCR 232.

<sup>8</sup> Rojer Mathew v. South Indian Bank Ltd. and Ors. (13.11.2019 - SC): MANU/SC/1563/2019.

<sup>9</sup> Ibid.

<sup>10</sup> See observation of the Supreme Court in Rojer Mathew v. South Indian Bank Ltd. and Ors. (13.11.2019 - SC) : MANU/SC/1563/2019, para 381.

<sup>11</sup> NGT Bar Association (Western Zone) v. Union of India and Ors. (23.07.2020 - SC Order): MANU/SCOR/33625/2020.

minimum of 10 full time judicial members and expert members,<sup>12</sup> the number of vacancies were seven and six respectively.<sup>13</sup> In light of this, the dismay of the Apex Court is unsurprising as the NGT, for a substantial time, has been functioning at less than half of its required capacity. Recently, the Supreme Court has taken proactive measures to meet this dire situation by ordering to expedite the selection process of members to the NGT.<sup>14</sup>

## CLIPPING THE 'WINGS': DEFINING THE JURISDICTIONAL SCOPE OF THE NGT

If structural inadequacies are not concerning enough, Constitutional Courts have also brought to the fore serious limitations of the NGT. As the NGT is a specialized tribunal empowered to deliberate upon a specific category of matters, it would be correct to deduce that its scope is inherently limited by the NGT Act, 2010. Furthermore, the fact that orders from the NGT are directly appealable to the Supreme Court,<sup>15</sup> the NGT is placed on the same footing as that of the High Courts, albeit with the exception of writ jurisdiction.

Interestingly, despite the functioning of the NGT on all 'environmental matters', various High Courts have freely invoked their inherent powers under their plenary jurisdiction<sup>16</sup> and are disposing matters without referring the same to NGT. This position of High Courts entertaining environmental matters under their power is not entirely, inappropriate. However, this only encourages litigants to file claim before the Writ court's, whose remedies are more efficacious than that of the NGT. The High Courts, thus are subverting the expertise of what would have been a more competent forum. Such far-reaching powers of the High Courts, besides transgressing into the domain of specialised tribunals, also tend to undermine the authority of tribunals. As a matter of law, constitutional courts are inherently vested with the power of judicial review, that cannot be abridged or excluded by a statute.<sup>17</sup> This being stated,

<sup>12</sup> Section 4, NGT Act, 2010.

<sup>13</sup> NGT Bar Association (Western Zone) v. Union of India and Ors., (14.08.2020 - SC Order) MANU/SCOR/35233/2020.

<sup>14</sup> NGT Bar Association (Western Zone) v. Union of India and Ors., (14.08.2020 - SC Order) MANU/SCOR/35233/2020.

<sup>15</sup> Section 22, NGT Act, 2010.

<sup>16</sup> The Court on its own motion v. National Highways Authority of India, Nagpur & Ors., 2015 (6) ABR 524.

<sup>17</sup> L. Chandra Kumar v. Union of India and Ors., (1997) SCC(LS) 577.

this power must be used sparingly so as to give full effect to the legislative intent with which special tribunals are established.

### JURISDICTIONAL LIMITATIONS AND THE NGT

The functioning of the NGT has also been marred by jurisdictional limitations. Since the highly embraced 'green court' is a creature of a statute, it derives its powers from its parent statute; more specifically, from the provisions that constitute Chapter III of the NGT Act. The general and presumably circumscribed jurisdiction of NGT is particularly rooted in Section 14 of the Act which empowers the Tribunal to entertain all civil cases which fulfil the twin pre-requisites mentioned thereunder, *i.e.* the case must involve a substantial question relating to the environment and such questions must pertain to the implementation of the specific enactments listed in Schedule I of the Act.<sup>18</sup>

Interestingly, situations have arisen where the limited jurisdiction of the NGT has further been restricted based on technical anomalies. Take the instance of the *Techi Tagi Tara case*, the Court grappled with the issue of the whether the NGT was empowered to pass directions and issue guidelines with respect to the appointment of qualified personnel in the State Pollution Control Boards.<sup>19</sup> Negating the proposition, the Court held that the jurisdiction of the NGT is only limited to matters involving "a substantial question relating to the environment that must arise in a dispute and such question does not amount to an academic question." It further noted that in such cases, it is imperative to have "a claimant raising that dispute which was capable of settlement by the NGT by the grant of some relief which could be in the nature of compensation or restitution of property damaged or restitution of the environment and any other incidental or ancillary relief connected therewith."<sup>20</sup>

Similarly, in the case of *Mantri Techzone Pvt. Ltd.* v. *Forward Foundation and Ors*, the Supreme Court has analysed the question on the right of appeal under Section 22 of the NGT Act and the scope of enquiry in such an appeal. The Court has noted that Section 22 of the NGT Act affords the right of appeal to a party aggrieved by

<sup>18</sup> Section 14, the NGT Act, 2010; Schedule I specifies an exclusive list of 7 statutes in relation to the implementation of which, the NGT shall exercise its jurisdiction.

<sup>19</sup> Techi Tagi Tara v. Rajendra Singh Bhandari, (2018) 11 SCC 734.

<sup>20</sup> *Ibid*.

an order of the NGT on the grounds specified in Section 100 of the Code of Civil Procedure, 1908 (CPC). Section 100 of the CPC entails that an appeal can be filed only where a substantial question of law is involved. The determination of whether a question of law is 'substantial' or not would, in turn, necessitate an examination of its public importance, effect on rights of the parties, and the settled legal position in relation to such a question.<sup>21</sup>

The Supreme Court has also discussed its scope of enquiry in an appeal under Section 22 of the NGT Act. It has observed that the right to appeal granted under this provision does not *ipso facto* permit a party to seek re-appreciation of the factual matrix of the entire matter or the evidence therein, nor does it allow a party to reargue its case in such an appeal. Thus, the Supreme Court has clarified that an appeal under Section 22 of the NGT Act cannot be treated as a matter of right unless it involves a substantial question of law.<sup>22</sup>

### **SCOPE OF REVIEW**

Similar blows to the functioning of the NGT are evident in the limitations placed on its power of 'judicial review' for a tribunal. In the case of *Central India AYUSH Drugs Manufacturers Association and Ors.* v. *State of Maharashtra and Ors.*, the Bombay High Court held that the NGT is not empowered to determine the question of vires of an enactment or rules framed thereunder, in respect of which it has powers to adjudicate.<sup>23</sup> The Court relied on precedents<sup>24</sup> to state "Parliament's intention to limit the power to decide certain specified nature of disputes is apparent. The scheme of NGT Act does not permit National Green Tribunal to decide upon the vires of any of the enactments which confer appellate or other jurisdiction upon it nor empowers it to examine validity of any Rules or Regulations made under these enactments."<sup>25</sup>

<sup>21</sup> Mantri Techzone Pvt. Ltd. v. Forward Foundation and Ors, 2019(4) SCALE 218 937.

<sup>22</sup> Mantri Techzone Pvt. Ltd. v. Forward Foundation and Ors, 2019(4) SCALE 218 938.

<sup>23</sup> Central India AYUSH Drugs Manufacturers Association and Ors v. State of Maharashtra and Ors, AIR 2016 Bom 261.

<sup>24</sup> Alpha Chem and Another v. State of U.P. and Ors, 1991 Supp (1) SCC 518, where the SC held that "the challenge to constitutionality of a statute is maintainable under Article 226 or Article 32 of the Constitution of India and it is not open in proceedings before authorities constituted under a statute itself or even in appeal or revision before the High Court from such proceedings".

<sup>25</sup> Central India AYUSH Drugs Manufacturers Association and Ors. v. State of Maharashtra and Ors., AIR 2016 Bom 261.

Further, in the case of *Tamil Nadu Pollution Control Board* v. *Sterlite Industries Ltd and Ors.*, the Supreme Court has strictly construed that the appellate jurisdiction of the NGT excludes the power of the Tribunal from entertaining matters not expressly provided under Section 16 of the Act.<sup>26</sup> In the instant case, the Supreme Court has vehemently laid down that "if an Appellate Authority under Air Act, 1981 or the Water Act, 1974, is either not yet constituted, or not properly constituted, 'a leapfrog appeal' to the NGT cannot be countenanced."<sup>27</sup> Rather, the permissible remedy against the original order would lie before the first appellate authority. Significantly, the Courts went on to hold that any order passed under Sec. 18 of the Water Act cannot be appealed before the NGT. This view of the court clearly narrows down the scope of the NGT to decide 'all' matter related to environment.

### CONCLUSION

The idea of a special court to cater to environmental concerns in the country is undoubtedly a laudable one. But as far as the powers and functions of the NGT are concerned, there is no denying that the NGT is heavily weighed down by many impediments. Over and above the administrative lacunae, legal constraints also curb the efficient functioning of the Tribunal. It seems that just when the NGT has prepared to soar, its wings have been clipped. To address this predicament, first and foremost, it is incumbent on the responsible authorities to take active capacity building measures. Ensuring quality and integrity in appointments to the NGT, is the key to its success, this will not only expedite hearing and disposal of cases but will also realise the idea of environmental justice in its true sense.

<sup>26</sup> See Section 16, NGT Act, 2010. Section 16 provides for the appellate jurisdiction of the NGT.

<sup>27</sup> Tamil Nadu Pollution Control Board v. Sterlite Industries ltd and Or., AIR 2019 SC 1074. 9 45.

2

### CLIMATE CHANGE EFFECTS AND INTERNAL DISPLACEMENT IN NIGERIA: LEGAL AND INSTITUTIONAL CHALLENGES

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Keywords: Climate Change, Internal Displacement, Disasters, Refugees, Inter-Governmental Panel

### INTRODUCTION

Climate change and environmental degradation are among the drivers of internal displacement and high rate of migration in Nigeria today.<sup>1</sup> Climate change is undoubtedly a global phenomenon. However, its negative effects are advancing more rapidly, visibly and alarmingly than we imagined. Natural events and human activities are believed to be contributing to an increase in average global temperatures. Though, the fifth assessment report of the Intergovernmental Panel on Climate Change (IPCC) in 2014 attributed the major causes of climate change to human activities via anthropogenic greenhouse gas emissions from population growth and increased industrial activities.<sup>2</sup>

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Internal Displacement Monitoring Centre, 'What is Internal Displacement', <a href="http://www.internal-displacement.org/internal-displacement/what-is-internal-displacement/">http://www.internal-displacement.org/internal-displacement/what-is-internal-displacement/</a>> accessed 18 January 2019; Uche Isiugo-Abanihe, 'Migration in Nigeria a Country profile', (IOM, 2016), <a href="https://publications.iom.int/system/files/pdf/mp\_nigeria.pdf">https://publications.iom.int/system/files/pdf/mp\_nigeria.pdf</a>> accessed 18 January 2019.

<sup>2</sup> Summary for Policy Makers Figure (SPM 1.2) states as follows: "Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and

Nigeria is experiencing adverse climate conditions with negative impacts on the welfare of millions of people. Persistent droughts and flooding have sent many out of their homes either temporarily or permanently.<sup>3</sup> Recently, the Internal Displacement Monitoring Centre's second African report on internal displacement revealed that climate change and environmental degradation are the major cause of the natural disasters that lead to displacement and migration in Africa region, which Nigeria is a part of.<sup>4</sup> The report further revealed that by mid-2017, climate change induced disasters resulted in the displacement of over 552, 000 people across 33 African countries.<sup>5</sup> The report therefore underlines the purpose of this research, which includes using the law as a tool to ensure synergy among institutional stake holders so as to mitigate internal displacement and also close the gap in protection of persons whose displacement are a result of natural disasters. However, understanding the perspective of this research will no doubt assist the Nigeria government and institutional Stakeholders to prepare and avert the challenges that comes with climate change such as internal displacement. For a detailed research, the paper has been divided into five parts starting with introduction in part one, conceptual clarification of terms as part two, Climate change and internal displacement in Nigeria: The effects as part three, the role of law as part four and finally recommendations and conclusion.

population growth, and are now higher than ever. This has led to atmospheric concentrations of carbon dioxide, methane and nitrous oxide that are unprecedented in at least the last 800,000 years. Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century"; *See* IPCC, 'Climate Change 2014 Synthesis Report Summary for Policy makers', (IPCC, 2016), <htp://ipcc.ch/pdf/assessment-report/ar5/syr/AR5\_SYR\_FINAL\_SPM.pdf> accessed 3 March 2019.

Vivian Falae, 'Flood in Nigeria: Why did the latest disaster happen?' (*Legit*, 2018) <https:// www.naija.ng/1114394-flood-nigeria-latest-disaster-happen.html#1114394> accessed 26 December 2017; Hembadoon Orsar, 'Benue Flood, 110,000 persons and 24 communities affected' Leadership, (*Makurdi*, 2017), <http://leadership.ng/2017/08/31/benueflood110000-persons-24-community-affected/> accessed 26 December 2017; Richard Davis, 'Nigeria-Thousands Displaced by Flood in Kogi', (*Floodlist*, 2017) <http://floodlist. com/africa/nigeria-floods-kogi-september-2017> accessed 26 December 2019; Richard Davis, 'Nigeria-Deadly Flood hits Niger-State,' (*Floodlist*, 2017) <http://floodlist.com/ africa/nigeria-deadly-floods-hit-niger-state> accessed 26 December 2019.

<sup>4</sup> Sorcha O'Callaghan and Chloe Sydney, 'African Report on Internal Displacement 2017,' (Internal displacement, 2017), <http://www.internal-displacement.org/library/ publications/2017/africa-report-2017> accessed 2 March 2019; See also Esther Yu His Lee, 'Climate change forced Over 1 Million Africans from their homes in 2015,' (Thinkprogress, 2015), <https://thinkprogress.org/africa-climate-internally-displaced-people-318d3eb8a27b/> accessed 3 March 2019.

<sup>5</sup> Ibid.

### **CONCEPTUAL CLARIFICATION OF TERMS**

i. Climate change - Climate change is a change in the climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.<sup>6</sup> The term according to Intergovernmental Panel on Climate Change (IPCC)<sup>7</sup> refers to 'a statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer).<sup>38</sup>

The United Nations Framework Convention on Climate Change (UNFCCC),<sup>9</sup> makes a distinction between climate change attributed to human activities altering the atmosphere composition and climate variability attributable to natural causes. However, environmental scientists have attributed the human activities to constant burning of fossil fuels, such as oil and coal, which emits greenhouse gases into the atmosphere.<sup>10</sup> Agriculture and deforestation are also seen as contributory factors to the proliferation of greenhouse gases which are the major cause of climate change. While natural causes are due to natural internal processes which are in form of persistent changes in the composition of the atmosphere.<sup>11</sup>

<sup>6</sup> United Nations Framework Convention on Climate Change 1992, Article 1 <a href="https://unfccc.int/resource/docs/convkp/conveng.pdf">https://unfccc.int/resource/docs/convkp/conveng.pdf</a>> accessed 18 January 2019.

<sup>7</sup> Intergovernmental Panel on Climate Change, <a href="http://www.ipcc.ch/">http://www.ipcc.ch/</a> accessed 19 January 2019.

<sup>8</sup> Ibid.

<sup>9</sup> Summary for Policy Makers Figure (SPM 1.2) states as follows: "Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and population growth, and are now higher than ever. This has led to atmospheric concentrations of carbon dioxide, methane and nitrous oxide that are unprecedented in at least the last 800,000 years. Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century"; See IPCC, 'Climate Change 2014 Synthesis Report Summary for Policy makers', (*IPCC*, 2016), <a href="http://ipcc.ch/pdf/assessment-report/ar5/syr/AR5\_SYR\_FINAL\_SPM.pdf">http://ipcc.ch/pdf</a>).

<sup>10</sup> World Health Organisation, 'Climate Change and Health,' (*WHO*, 2018) < http://www. who.int/mediacentre/factsheets/fs266/en/ > accessed 23 December 2019.

<sup>11</sup> APM Baeda, 'Working Group One: The Scientific Bases,' (IPCC, 2018) <a href="https://www.ipcc.ch/ipccreports/tar/wg1/518.htm">https://www.ipcc.ch/ipccreports/tar/wg1/518.htm</a> accessed 20 December 2019.

ii. Internal Displacement - Internal displacement refers to the forced movement of people within the country they live in.<sup>12</sup> Accordingly, the African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention), defined internal displacement as the 'involuntary or forced movement, evacuation or relocation of persons or groups of persons within internationally recognized State borders.'<sup>13</sup> Internal displacement is the great tragedy of our time. It may be a resultant effect of violent conflict or natural disasters (environmental/climate change related displacement).<sup>14</sup> However, Internal Displacement Monitoring Center (IDMC) and the Kampala Convention listed climate change/natural disaster and violent conflict<sup>15</sup> as part of the reasons millions of people are forced to flee their homes or places of habitual residence each year.<sup>16</sup> The UN Guiding Principles on Internal Displacement<sup>17</sup> which will be examined later in this work was explicit on the role of national authorities in the protection and assistance of internally displaced persons regardless of the cause of their displacement. These principles underlie IDMC's monitoring and

<sup>12</sup> Internal Displacement Monitoring Centre, 'What is Internal Displacement' (*internal displacement*, 2017) <a href="http://www.internal-displacement.org/internal-displacement/what-is-internal-displacement/">http://www.internal-displacement.org/internal-displacement/</a> accessed 15 January 2018.

<sup>13</sup> African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention) 2009, Article 1 (L) <www.eods.eu/library/AU\_ KAMPALA%20CONVENTION\_2009\_EN.pdf> accessed 15 February 2019.

<sup>14</sup> IDMC, 'Nigeria Midyear Update (January to June 2017)' (*internal displacement*, 2017), <http://internal-displacement.org/countries/nigeria> accessed 3 March 2018; Internal displacement in Nigeria is fuelled by economic, social, political and environmental factors. The drivers of displacement in Nigeria are multi-faceted and not limited to natural disasters and climate change effects. Other cause of internal displacement in Nigeria include; violence perpetrated by the militant armed group Boko Haram and military operations against the group have caused the bulk of internal displacement, inter-communal clashes arising from ethnic and religious tensions also regularly force people from their homes.

<sup>15</sup> The author is aware that violent conflict is a major reason for internal displacement, but for the purpose of this study the author is limited to internal displacement resulting from natural disaster/climate change effects.

<sup>16</sup> African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention) 2009, Article 4(4)(f) <a href="https://au.int/en/treaties/african-union-convention-protection-and-assistance-internally-displaced-persons-africaa-accessed 8 March 2018; Internal Displacement Monitoring Centre, 'Understanding the root causes of displacement: Towards a comprehensive approach to prevention and Solutions,'<a href="http://www.internal-displacement.org/assets/publications/2015/20151208-root-causes-displacement.pdf">http://www.internal-displacement.org/assets/publications/2015/20151208-root-causes-displacement.pdf</a>>

<sup>17</sup> The UN Refugee Agency, 'Guiding Principles on Internal Displacement 1998, Principle 1' <http://www.unhcr.org/protection/idps/43ce1cff2/guiding-principles-internal-displaceme nt.html> accessed 15 June 2019.

analysis of internal displacement situations worldwide.<sup>18</sup> Some of the dangers of internal displacement linked to environmental disasters or climate change include family separation, loss of lives, loss of property, and further exposure to the risk of temporary or permanent displacement.<sup>19</sup> With over 78,000<sup>20</sup> environmentally displaced persons in Nigeria as on June, 2017, mitigating internal displacement resulting from negative effects of climate change in Nigeria is paramount and also the crux of this research.

# CLIMATE CHANGE AND INTERNAL DISPLACEMENT IN NIGERIA: THE EFFECTS

Climate change poses a great threat to the earth and the occupant. It has damaging effects on the earth surface if left unchecked. According to IPCC, 'the effects of climate change already can be seen and members of the current human population are already victims.'<sup>21</sup> Some of the observable effects include; floods, droughts, erosion, heat waves, shrinking of Lake Chad, crop decline and food shortage. In this section, the author will examine some of these climate change effects in Nigeria.

i. *Flood* - Floods are earth's most common and destructive natural disaster.<sup>22</sup> They occur when water overflows or inundates land that is normally dry. This can happen in a multitude of ways. Most common is when rivers or streams overflow their banks, excessive rain, a ruptured dam or levee.<sup>23</sup> In Nigeria, floods

<sup>18</sup> Ibid.

<sup>19</sup> Intergovernmental Panel on Climate Change, <http://www.ipcc.ch/> accessed 19 January 2019.

<sup>20</sup> Internal Displacement Monitoring Centre (IDMC), 'Nigeria Mid-year update 2017 (January to June),' <a href="http://internal-displacement.org/countries/nigeria">http://internal-displacement.org/countries/nigeria</a> accessed 8 March 2019.

<sup>21</sup> Intergovernmental Panel on Climate Change, 'Climate Change 2014: Impacts, Adaptation and Vulnerability,'<http://www.ipcc.ch/report/ar5/wg2/> accessed 26 December 2017; The IPCC in response to the UNFCCC invitation, approved an outline on reduction of impacts of global warming of 1.5C above pre-industrial levels and global greenhouse gas emission pathways, in the context of strengthening the global response to climate change and sustainable development see IPCC, 'Special Report on Global Warming of 1.5 C,' (*IPCC*, 2015) <http://www.ipcc.ch/> accessed 1 March 2018; see also Sarah Zeilinski, 'Eight Ways that Climate Change Hurts Human beings,' (*Smithsonianmag*, 2014) <https://www.smithsonianmag.com/science-nature/eight-ways-climate-change-hurts-humans-180950475/> accessed 26 December 2019.

<sup>22</sup> Christina Nunez, 'Floods, explained,' (*National Geographic*, 2019), <a href="https://www.nationalgeographic.com/environment/natural-disasters/floods/">https://www.nationalgeographic.com/environment/natural-disasters/floods/</a> accessed 30 January 2019.

<sup>23</sup> Ibid.

have has become recurrent, though the degree and seriousness fluctuate. While factors such as rapid urban growth and poor planning contribute to flooding in cities, climate change is said to be number one factor aggravating flooding in Nigeria. This is because it is a major cause of extreme rainfall and storm in the country.<sup>24</sup> In 2012, the country was hit by the worst flood which affected 32 states killing more than 360 people and displacing almost two million others.<sup>25</sup> The seriousness of the flood was attributed to two events: very heavy local rainfall and the release of excess water from the Lagdo Dam in Cameroun.<sup>26</sup> Recently, Nigeria was struck with another terrible flood, which took more than a thousand lives and left people without homes and properties.<sup>27</sup> Last year, high incidence of floods were recorded in Benue,<sup>28</sup> Niger,<sup>29</sup> Lagos,<sup>30</sup> Imo<sup>31</sup>

<sup>24</sup> Andrew Slaughter and Nelson Odume, 'It only Just started, flooding is going to become worst in Nigeria,' (*Quartz Africa*, 2017), <a href="https://qz.com/1054825/climate-changein-nigeria-floods-in-lagos-abuja-niger-delta-are-going-to-get-a-lot-worse/">https://qz.com/1054825/climate-changein-nigeria-floods-in-lagos-abuja-niger-delta-are-going-to-get-a-lot-worse/</a> accessed 26 December 2019.

<sup>25</sup> Ibid.

<sup>26</sup> Reuters, 'Nigerian Flood Kill 137, Displace Thousands,' (I, 2012), <https://www.reuters.com/article/us-nigeria-floods/nigeria-floods-kill-137-displace-thousandsidUSBRE8880D320120909> accessed 29 January 2019.

<sup>27</sup> Vivian Falae, 'Flood in Nigeria: Why did the latest disaster happen?,' (I, 2018), <https://www.naija.ng/1114394-flood-nigeria-latest-disaster-happen.html#1114394> accessed 26 December 2017; Hembadoon Orsar, 'Benue Flood, 110,000 persons and 24 communities affected' Leadership,' (*Makurdi*, 31 August 2017), <http://leadership.ng/2017/08/31/benue-flood110000-persons-24-community-affected/> accessed 26 December, 2019; Richard Davis, 'Nigeria-Thousands Displaced by Flood in Kogi,' (*Floodlist*, 2017), <http://floodlist.com/africa/nigeria-floods-kogi-september-2017> accessed 26 December, 2019; Richard Davis, 'Nigeria-Deadly Flood hits Niger-State,' (*Floodlist*, 2017) <http://floodlist.com/africa/nigeria-deadly-floods-hit-niger-state> accessed 26 December 2019.

<sup>28</sup> Ibid, See Richard Davis, President Muhammadu Buhari said via Social Media on 31 August, 2017 that over 100,000 people have been displaced. According to local media outlets, 12 local government areas of the state have been affected and around 4,000 homes have been damaged see Aljazeera, Nigeria Floods displace more than 100,000 people,' (*Aljazeera*, 1 September 2017), <a href="http://www.aljazeera.com/news/2017/08/nigeria-floods-displace-100000-people-170831221301909.html">http://www.aljazeera.com/news/2017/08/nigeria-floods-displace-100000-people-170831221301909.html</a>> accessed 27 December 2019.

<sup>29</sup> Ibid.

<sup>30</sup> Channels Television, 'Lagosians Laments as flood hits Lekki, Victoria Island' Channel Television (*Channelstelevision*, 8 July 2017) <a href="https://www.channelstv.com/2017/07/08/lagosians-lament-as-flood-hits-lekki-victoria-island/">https://www.channelstv.com/2017/07/08/lagosians-lament-as-flood-hits-lekki-victoria-island/</a>> accessed 28 December 2019.

<sup>31</sup> Chinonso Alozie, 'Breaking news: Flood Sack Imo Residents,' (Vanguard Online Newspaper, (21 September 2017), <https://www.vanguardngr.com/2017/09/breaking-flood-sack-imo-residents/> accessed 21 September 2019; The affected areas in Imo include; Uratta Toronto junction, World bank, Wethedral road, IMSU junction, Chukwuma Nwoha, Orji road. Others include Akwakuma/Amakohia road, Old Okigwe road, Amaraku roundabout in Isiala Mbano local government, Amakohia ubi road, Irete/Ndegwu road all in Owerri West Local Government Area.

Anambra,<sup>32</sup> Kastina<sup>33</sup> and Kogi<sup>34</sup> States respectively. This year, Kwara State (Ilorin) has recorded an incidence of flood with over 100 displaced persons.<sup>35</sup> Flood is therefore a major reason for the increased number of internal displacement in Nigeria.

ii. Erosion - Erosion is one of the surface processes that sculpture the earth's landscape and constitutes one of the Nigerian environmental problems.<sup>36</sup> Soil erosion is perhaps the most serious mechanism of land degradation in the country. It occurs in several parts of Nigeria under different climate and soil conditions. Soil erosion is also identified as a resultant effect of climate change. The cause of erosion in Nigeria can be attributed to natural and anthropogenic sources. It is a common phenomenon in Nigeria, however Southern and South- Eastern part of Nigeria suffer the worst fate.<sup>37</sup> Soil erosion is the environment's most threatened hazard. It is also a major cause of displacement as many properties especially those on the floodplain are constantly being destroyed by gully erosion in Nigeria.<sup>38</sup>

<sup>32</sup> Charles Onyekamuo, 'Five Communities in Anambra submerged by Flood', (*Thisdaylive* 8 September, 2016) <a href="https://www.thisdaylive.com/index.php/2016/09/08/five-communities-in-anambra-submerged-by-flood/">https://www.thisdaylive.com/index.php/2016/09/08/five-communities-in-anambra-submerged-by-flood/</a>> accessed 27 December 2019.

<sup>33</sup> Andy Asemota, 'Rainstorm, floods wreck 1000 Houses in Kastina –SEMA Leadership,' (*Leadership*, 5 August 2017), <a href="http://leadership.ng/2017/08/05/rainstorm-floods-wreak-1000-houses-katsina-sema/">http://leadership.ng/2017/08/05/rainstorm-floods-wreak-1000-houses-katsina-sema/</a>> accessed 28 December, 2019.

<sup>34</sup> Richard Davis, 'Outside Lokoja, Nigeria-Thousands Displaced by Flood in Kogi,' (*Floodlist*, 2017), <http://floodlist.com/africa/nigeria-floods-kogi-september-2017> accessed 26 December 2019: Affected areas include Ibaji, Igalamela-Odolu, Ajaokuta, Bassa and Koton-Karfe.

<sup>35</sup> NAN, 'Rainstorm renders hundreds of residents homeless in Ilorin' Vanguard online Newspaper (*Ilorin*, 18 March 2018), <https://www.vanguardngr.com/2018/03/rainstormrenders-hundreds-residents-homeless-llorin/> accessed 20 March 2019.

<sup>36</sup> Mary –Elika Foundation, 'Review of Gully Erosion in Nigeria: Causes, Impacts and Possible Solutions' (*mef*, 2017) <https://mef.org.ng/review-of-gully-erosion-in-nigeria-causesimpacts-and-possible-solutions/> accessed 28 December 2019.

<sup>37</sup> NGEnvironment, 'Soil Erosion,' (*Nigerianenvironment*, 2012) <a href="http://nigeriaenvironment.blogspot.com.ng/2012/12/soil-erosion.html">http://nigeriaenvironment.blogspot.com.ng/2012/12/soil-erosion.html</a>> accessed 29 December 2019.

<sup>38</sup> I Obiadi, and others, 'Gulley Erosion in Anambra State, South East Nigeria: Issues and Solutions,' (2011) 2(2)International Journal of Environmental Science, < https://www. researchgate.net/publication/281406997\_Gully\_Erosion\_in\_Anambra\_State\_South\_ East\_Nigeria\_Issues\_and\_Solution> accessed 2 March 2018; See also Chinedu Okoye, and others, 'Environmental Sensitivity Index Mapping and Assessment of Gully Erosion Sites in Anambra State –Nigeria (2014) 4 ((10) Journal of Environment and Earth Science http:// www.iiste.org/Journals/index.php/JEES/article/view/12973 accessed 17 January 2018. Dan Aigbavbo, 'Combating Erosion in Nigeria: New Projects Spells hope in seven States,' <http://www.worldbank.org/en/news/feature/2013/11/26/combating-erosion-in-nigerianew-project-spells-hope-in-seven-states> accessed 14 January 2019.

Records have shown that in 2013, over a thousand persons were displaced and 450 buildings lost to erosion in Edo State.<sup>39</sup> Furthermore, the Committee on Erosion and Ecological matter discovered 15 gully sites in residential areas in Bida, Niger State of Nigeria same year.<sup>40</sup> Currently, records from Nigeria Erosion and Watershed Management Project (NEWMAP) as on 8 of March 2018, shows that 19 out of 36 states of Nigeria is under threat of gully erosion and land degradation.<sup>41</sup>

iii. Drought - Drought is defined as the absence or poor distribution of rainfall. It may be an extended period such as a season, a year, or several years of deficient rainfall relative to the long term average rainfall for a region. According to the UN Convention to Combat Desertification, 'drought is a complex and slowly encroaching natural hazard with significance and pervasive socio–economic and environmental impacts, it is known to cause more death and displace more people than any other natural disaster'.<sup>42</sup> It is the inability of rainfall to meet the demands of crops resulting in general water stress, poor farm yield and food insecurity.<sup>43</sup> Drought is said to be a recurrent in the Northern part of Nigeria. The probability of drought at the on-set and towards the end of the rainy season is usually very high in Northern Nigeria. The underlying causes of most droughts can be related to climate change manifested through the excessive build-up of heat on the earth's surface, meteorological changes which result in a reduction

<sup>39</sup> I A Abdulfatai and others, 'Review of Gully erosion in Nigeria: Causes, Impacts and Possible Solutions' (2014) 2.3 Journal of Geosciences and Geomatics 125-129 <a href="http://pubs.sciepub.com/jgg/2/3/8/">http://pubs.sciepub. com/jgg/2/3/8/</a>> accessed 30 January 2019.

<sup>40</sup> Ibid, see also Ibrahim Usman Jibril, 'Nigeria Erosion and Watershed Management Project (NEWMAP); An Innovative Way of Solving Gully Erosion and Addressing Land Management Issues in Nigeria,' (Fig, 2017) <a href="https://www.fig.net/resources/proceedings/fig\_2017/ppt/iss2b/ISS2B\_usman\_jibril\_9139\_ppt.pdf">https://www.fig.net/resources/proceedings/ fig\_proceedings/fig2017/ppt/iss2b/ISS2B\_usman\_jibril\_9139\_ppt.pdf</a>> accessed 8 March 2019.

<sup>41</sup> Nigeria Erosion and Watershed Management Project States include: Abia, Anambra, Cross River, Ebonyi, Edo, Enugu, Imo, Delta, Oyo, Sokoto, Gombe, Plateau, Kogi, Kano, Akwa Ibom, Borno, Nasarawa, Kastina and Niger <a href="http://newmap.gov.ng/newmap-states/">http://newmap.gov.ng/newmap-states/</a> accessed 8 March 2019.

<sup>42 &#</sup>x27;United Nations Convention to Combat Desertification 1994' <a href="https://www.2.unccd.int/issues/land-and-drought">https://www.2.unccd.int/issues/land-and-drought</a>> accessed 3 March 2019.

<sup>43</sup> IU Abubakar and MA Yamusa, 'Recurrence of Drought in Nigeria: Causes, Effects and Mitigation International Journal of Agriculture and Food Science Technology' (2013) (4) 3 IJAFSTV 169-180, <a href="https://www.ripublication.com/ijafst\_spl/ijafstv4n3spl\_02.pdf">https://www.ripublication.com/ijafst\_spl/ijafstv4n3spl\_02.pdf</a> accessed 29 December 2019.

of rainfall, and reduced cloud cover, all of which results in greater evaporation rates. The resultant effects of drought are aggravated by human activities such as deforestation, bush burning, overgrazing and poor cropping methods, which reduce water retention of the soil, and improper soil conservation techniques and usually lead to soil degradation.<sup>44</sup>

The impacts of drought include famine, food insecurity, and cessation of economic activity especially in the Northern part of Nigeria where rain fed agriculture is the main stay of the rural economy. Furthermore, drought is the major cause of most ethnic conflicts, relocation and internal displacement in Nigeria.<sup>45</sup>

iv. *Heat waves* - Heat wave refers to prolong period of excessive heat often combined with excessive humidity.<sup>46</sup> It arises whenever there is an abnormal rise in the temperature of the environment. This abnormal rise in temperature is a result of global warming<sup>47</sup> which is an aftereffect of climate change. Being in the tropical region, Nigeria recorded high incidence of death as a result of heat waves in 2016 and early part of 2017.<sup>48</sup> Recently, Nigeria Metrological Agency through the National Orientation Agency (NOA) has warned Nigerians to prepare for more hot days and to adopt lifestyles that will enable them cope with extreme weather conditions.<sup>49</sup> Some of the effects of heat waves include dehydration and

<sup>44</sup> Nigerian Metrological Agency, 'Drought and Flood Monitoring Bulletin January to December 2019,' (*nimet*, 2019), <http://www.nimet.gov.ng/drought-and-flood-monitor-bulletin> accessed 17 January 2019.

<sup>45</sup> Drought is one of the reason for Fulani Herdsmen relocation and conflict in Nigeria.

<sup>46</sup> International Centre For Investigative Reporting, 'Heat wave: Meningitis Kills over 200 Nigerians' <a href="https://www.icirnigeria.org">https://www.icirnigeria.org</a>> accessed 21 January 2019.

<sup>47</sup> The term global warming simply re fers to the persisting rise of the earth's average climate temperature over time. It is calculated by measuring both the air and sea temperature of the earth's surface. Global warming occurs when there is an increase in the concentration of greenhouse gases in the atmosphere. Whale Facts, 'Global Warming Facts, Causes & Effects of Climate Change' <a href="http://www.whalefacts.org/global-warming-facts-causes-effects-of-climate-change/">http://www.whalefacts.org/global-warming-facts-causes-effects-of-climate-change/</a> accessed 8 January 2018; *See also* 'Global Warming' <a href="https://www.lpl.arizona.edu/~showman/climate.html">https://www.lpl.arizona.edu/~showman/climate.html</a>> accessed 8 January 2019.

<sup>48</sup> Eric Dumo and Esther Olajide, 'Frustration, Anger as Heat Wave Worsens Nigerians Misery,' (*Punch online newspaper*,Lagos,16 April 2016) <a href="http://punchng.com/frustrationanger-as-heat-wave-worsens-nigerians-misery/">http://punchng.com/frustrationanger-as-heat-wave-worsens-nigerians-misery/> accessed 21 January 2019; See also National Emergency Management Agency, 'Heat Extreme', (*NEMA Nigeria*, 2013), <a href="http://nema.gov.ng/heat-extreme/">http://nema.gov.ng/heat-extreme/</a>> accessed 21 January 2019.

<sup>49</sup> Oladipo Abiola, 'Prepare for More hot days NIMET Tells Nigerians,' <a href="https://www.naijanews.com/news/47041-prepare-for-more-hot-days-nimet-tell-nigerians/">https://www.naijanews.com/news/47041-prepare-for-more-hot-days-nimet-tell-nigerians/</a>> accessed 3 March 2019.

diseases such as measles and chickenpox. Heat wave is also a major cause of wide fire which can result in internal displacement. <sup>50</sup>

v. Shrinking of Lake Chad Basin- The Lake Chad basin which is home to 30 million people across four Countries (Nigeria being one of them) is fast losing its attraction. The Lake's water level and size has shrunk by 90 percent compared with what it was in the 1960 as the surface area has decreased from 25,000 square kilometres to approximately 1,350 square kilometres as at date. The rapid shrinking/drop in water level of Lake Chad is attributed to climate change. However, the ongoing violent conflict in the north coupled with the shrinking of Lake Chad is a cause of food shortage and internal displacement in that region.<sup>51</sup>

Considering the harmful effects of climate change and global warming on our environment, there is need for government at all level to be prepared and also put in place measures that will reduce internal displacement resulting from negative effects of climate change in Nigeria.

## THE IMPACT OF CLIMATE CHANGE ON INTERNAL DISPLACEMENT IN NIGERIA

The term internal displacement is commonly used in Nigeria to refer to persons whose displacements are as a result of violent conflict. Hence, little or no care are accorded to persons whose displacement are caused by natural disaster/ environmental factors. It is no longer news that in the past few years Nigeria has been experiencing incidences of flood and other natural disaster such as erosion, which has been attributed to climate change.<sup>52</sup> In 2017 the number of persons displaced as a result of flood is

<sup>50</sup> *Ibid* n 19, Olasunkanmi Akoni, Again, 'Fire outbreak forces Lagos to shut down' (*Vanguard online Newspaper, Lagos,* 18 March 2018), <a href="https://www.vanguardngr.com/2018/03/fire-outbreak-forces-lagos-shut-olusosun-dumpsite/">https://www.vanguardngr.com/2018/03/fire-outbreak-forces-lagos-shut-olusosun-dumpsite/</a> accessed 20 March 2019.

<sup>51</sup> Nick Agnew, 'Climate Change, Hunger and Terrorism in the Lake Chad Basin,' (Opinion, 2018) <a href="https://www.geopoliticalmonitor.com/climate-change-hunger-and-terrorism-in-the-lake-chad-basin/">https://www.geopoliticalmonitor.com/climate-change-hunger-and-terrorism-in-the-lake-chad-basin/> accessed 8 March 2019; Mariama Sow, 'Figure of the week: The Shrinking Lake Chad,' (Brookings, 2017), <a href="https://www.brookings.edu/blog/africa-in-focus/2017/02/09/figure-of-the-week-the-shrinking-lake-chad/">https://www.brookings.edu/blog/africa-in-focus/2017/02/09/figure-of-the-week-the-shrinking-lake-chad/</a>> accessed 8 March 2019; Okwe Obi, Nigeria,' 3 Nations Threatened by lake Chad Shrinking –Buhari' (Sunonline, 27 February 2018), <a href="http://sunnewsonline.com/nigeria-3-nations-threatened-by-lake-chad-shrinking-buhari/">http://sunnewsonline.com/nigeria-3-nations-threatened-by-lake-chad-shrinking-buhari/</a>> accessed 10 March 2019.

<sup>52</sup> Vanguard, 'Flood, NEMA puts causality figure a 363 deaths, 2.1 IDPS', (Vanguard Newspaper, 6 November 2012), <a href="https://www.vanguardngr.com/2012/11/flood-nema-puts-casualty-figure-at-363-deaths-2-1m-idps">https://www.vanguardngr.com/2012/11/flood-nema-puts-casualty-figure-at-363-deaths-2-1m-idps</a> accessed 1 March 2019; Femi Giwa, 'Looming Flood:

close to the number recorded in 2012.<sup>53</sup> This no doubt left the country with a large number of displaced persons and goes to show that displacement resulting from climate change effects/natural disasters is inevitable, hence the need to ascertain and also mitigate the impact of environmental/climate change related displacement in Nigeria. Some of the observable impacts of climate change on internal displacement in Nigeria includes:

- i. Loss of life and property- Loss of life and property are common impacts of climate change on internal displacement. As mentioned earlier, 360 people were killed and more than 2 million people displaced in the 2012 flood incidence in Nigeria. Also, the last flood incidence in Nigeria resulted in loss of lives and properties worth billions in Lagos, Benue and Niger State respectively.<sup>54</sup>
- ii. *Loss of agricultural produce-* Loss of agricultural produce to climate change effects such as flood, erosion or drought is another way climate change affects internal displacement in Nigeria. This is because loss of agricultural produce can result in famine, food insecurity, malnutrition and even death of victims.<sup>55</sup>
- iii. Relocation- Relocation and resettlement may be the most threatening impact of climate change on internal displacement.<sup>56</sup> Most internal displacements result in the following: loss of housing as a result of flood or erosion, loss of living resources like water and food supply to drought, loss of social and cultural resources such

thousands of Lagosians may be displaced,' (*Vanguard Newspaper*, 7 August 2016), <https:// www.vanguardngt.com/2016/08/looming-floods-thousands-lagosians-may-displaced/> and 2017 flood see Samuel Ogundipe, 'Nigeria Special Report-Benue Floods: Two weeks after, Displaced victims face anguish as government explores lasting solutions,' (*Premium Times*, 16 September 2017) <http://allafrica.com/stories/201709160076.html> accessed 17 January 2019.

<sup>53</sup> In 2012, Nigeria suffered disastrous flood across 30 of its 36 states. Hundreds of people died, and about two million people were left homeless see Aljazeera, Nigeria Floods displace more than 100,000 people.

<sup>&</sup>lt;https://www.aljazeera.com/news/2017/08/nigeria-floods-displace-100000people-170831221301909.html>accessed 15 January 2017; Michelle Yonetan, 'Disaster – related displacement in a changing climate' <https://public.wmo.int/en/resources/bulletin/ disaster-related-displacement-changing-climate> (WMO, 2016), accessed 17 January 2019.

<sup>54</sup> Susana Adamo, 'Mitigation, Displacement and Climate Change' <a href="http://www.un.org/en/development/desa/population/migration/events/other/other/documents/250416\_COLUMBIA\_UNI\_Susana\_Adamo.pdf">http://www.un.org/en/development/desa/population/migration/events/other/other/documents/250416\_COLUMBIA\_UNI\_Susana\_Adamo.pdf</a>> accessed 11 March 2018.

<sup>55</sup> Ibid.

<sup>56</sup> Ibid.

as cultural properties, neighborhood or community networks, particularly in the cases of devastating flood. Relocation comes with a lot of challenges such as:

- Overcrowding in the host communities/urban area
- High incidence of crime and insecurity in the host communities
- Ethnic conflicts/communal clash (example herdsmen-farmers clash).

Hence, the need for government preparedness through adoption of safeguards that will prevent or minimize internal displacement resulting from climate change/natural disaster.

### THE ROLE OF LAW

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In the past few years, Nigeria has been experiencing the negative effects of climate change. These effects have been identified as the major cause of internal displacement in Nigeria and therefore require urgent attention. The role of the law in mitigating internal displacement arising from negative effects of climate change cannot be ignored especially with the devastating effects of the last flood incidence in Nigeria. This paper will attempt to examine the extent the existing laws are mitigating displacement caused by climate change effects in Nigeria in comparison with international best practices.

## INTERNATIONAL LEGAL REGIMES ON EMERGENCY DISASTER MANAGEMENT

A study of the international and regional legal regime on emergency/disaster management reveals that issues of disaster management/prevention just came into lime light. However, in this section, some of soft and hard laws that make up the international and regional legal regime on emergency/disaster managements will be examined.

i. United Nation Sendai Framework on Disaster Risk Reduction 2015-2030-The framework succeeded Hyogo Framework for Action and disaster risk reduction which ended in 2015.<sup>57</sup> The frame work though non-binding on

<sup>57</sup> United Nations Office for Disaster Risk Reduction, Hyogo Framework for Action 2005 to 2015 <a href="https://www.unisdr.org/we/coordinate/hfa">https://www.unisdr.org/we/coordinate/hfa</a> accessed 19 February 2019, the Framework which commenced in 2005 and came to an end in 2015 was a 10-year plan to make the world safe from natural hazards. It was endorsed by the UN General Assembly in the Resolution A/RES/60/195 following the 2005 World Disaster Reduction Conference.

States outlines seven clear targets and four priorities for action to prevent new disaster and also reduce existing disaster risks. The four priorities include:

- Understanding disaster risk;
- Strengthening disaster risk governance to manage disaster risk;
- Investing in disaster reduction for resilience and;
- Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction.

Further, the framework aims at achieving substantial reduction of disaster risk, displacement, loss of lives and livelihoods such as economic, social, cultural and environmental assets of persons, businesses, communities and countries over the next 12 years. The Framework was adopted at the third UN World Conference on Disaster Risk Reduction in Sendai, Japan in 2015,<sup>58</sup> it is noteworthy that Nigeria has adopted the framework.<sup>59</sup>

ii. The Guiding Principles on Internal Displacement 1998- The Guiding Principle though a soft law, was issued by the Secretary General of the United Nations in 1988. Principles 5, 6 and 9 of the Guidelines are explicit on the prevention of displacement caused by natural disaster.<sup>60</sup> The guidelines also identified internationally recognized rights and guarantees of persons who have been forcibly displaced from their homes due to a number of factors, including natural disasters. According to the Guidelines, national authorities are primarily

<sup>58</sup> Sendai Framework for Disaster Risk Reduction 2015-2030 <a href="https://www.unisdr.org/we/inform/publications/43291">https://www.unisdr.org/we/inform/publications/43291</a>> accessed 10 January 2019.

<sup>59</sup> Maihaja, 'Mustapha Yunusa, 'Nigeria: Statement made at the Global Platform for Disaster Risk Reduction (2017),' (preventionweb, 2017) <a href="https://www.preventionweb.net/english/">https://www.preventionweb.net/english/</a> professional/policies/v.php?id=53845> accessed 10 January 2019.

<sup>60</sup> United Nations, Guiding Principles on internal Displacement 1998, Articles 5, 6 and 9. Principle 5 lays out the duty of governments to abide by their obligations under international law, including human rights and humanitarian law, to prevent and avoid conditions that might lead to displacement in the first instance. Principle 6 articulates a prohibition against "arbitrary displacement" which includes cases where displacement is caused by means of (unjustified) human intervention. Principle 9 provides that particular care should be taken to avoid displacement of indigenous peoples, minorities, peasants, pastoralists, and other groups with special dependency and attachment to their lands. *See also* Walter Kalin and Ors (eds), 'Incorporating the Guiding Principles on Internal Displacement into Domestic Law : Issues and Challenges', (*American Society of International Law*, 20`6), <https://www.brookings.edu/wp-content/uploads/2016/06/0119\_internal\_displacement\_complete.pdf> accessed 19 January 2019.

responsible for ensuring protection of human rights of internally displaced persons. However, the guidelines though not binding on states are relevant to States, intergovernmental agencies, non-governmental agencies as well as local authorities.<sup>61</sup>

iii. The African Union Convention for Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention) 2009- The Convention is the world's first continental instrument that legally binds governments to protect the rights and wellbeing of people forced to flee their homes by conflict, violence, natural disasters and development projects. It provides an excellent opportunity for member States to put in place national framework for the prevention of displacement and comprehensive framework when it happens.<sup>62</sup> The Convention is a shared framework between member states, though individual countries can take different approaches to achieve the goals set out in the Convention. Nigeria is not just signatory to this Convention but has also ratified it in the year 2012.<sup>63</sup> The Kampala Convention provides an excellent opportunity for member states to put in place national frameworks on emergency/disaster management and internal displacement.

## DOMESTIC LEGAL REGIME ON EMERGENCY/DISASTER MANAGEMENT.

i. **Constitution of Federal Republic of Nigeria 1999 (as amended)**- The primary responsibility of the government under Chapter four of the Constitution is to

<sup>61</sup> Walter Kalin, 'Guiding Principles on Internal Displacement Annotations' Internal Displacement Monitoring Centre,' (*Brookings*, 2016), <https://www.brookings.edu/ wp-content/uploads/2016/06/spring\_guiding\_principles.pdf> accessed 8 January 2019; Guiding principle on Internal Displacement <http://www.internal-displacement.org/ internal-displacement/what-is-internal-displacement/guiding-principles-on-internaldisplacement> accessed 8 January 2019, International Standards <http://www.ohchr.org/ EN/Issues/IDPersons/Pages/Standards.aspx> accessed 10 January 2019.

<sup>62</sup> The African Union Convention for Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention) 2009, Articles 2 and 3 (1) (a), <a href="https://au.int/sites/default/files/treaties/7796-treaty-0039\_kampala\_convention\_african\_union\_convention\_for\_the\_protection\_and\_assistance\_of\_internally\_displaced\_persons\_in\_africa\_e.pdf">https://au.int/sites/ default/files/treaties/7796-treaty-0039\_kampala\_convention\_african\_union\_convention\_ for\_the\_protection\_and\_assistance\_of\_internally\_displaced\_persons\_in\_africa\_e.pdf</a>, accessed 13 February 2019.

<sup>63</sup> African Union, African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention), <a href="https://au.int/en/treaties/african-union-convention-protection-and-assistance-internally-displaced-persons-africa">https://au.int/en/treaties/africanunion-convention-protection-and-assistance-internally-displaced-persons-africa</a> accessed 13 February 2019.

ensure the promotion and protection of the constitutionally guaranteed rights of all citizens (including internally displaced persons). The rights which are stipulated in sections 33-43 of the Constitution are the right to life, human dignity, personal liberty, privacy and family life, fair hearing, freedoms of religion, expression, assembly, association, movement, from non-discrimination and to acquire and own immovable property.<sup>64</sup>

Accordingly, section 14(2)(b) of the Nigerian Constitution states that the government is constitutionally obligated to ensure the promotion of security and welfare of all the citizens. This can be done by ensuring the realization of the fundamental, social, economic, educational, and environmental and foreign policy objectives of the state as enshrined under sections 15-20 of chapter two of the Constitution. Though the rights under chapter two of the Constitution is said to be non-justiciable, however, it has been argued by many authors that one cannot enjoy the rights under chapter four without socio–economic rights listed under chapter two. However, the Supreme Court of Nigeria whittled down the rigid nature of non-justifiability of chapter two is legislated upon by the National Assembly, that provision becomes justiciable.<sup>65</sup> Since, there are plethora of legislations on emergency/disaster management in Nigeria, climate change/ environmentally displaced person should as of right, be entitled to welfare and state protection.

ii. National Emergency Management Agency Act (NEMA) 1999- The National Emergency Management Agency was established by Act 12 as amended by Act 50 of 1999 to manage disasters in Nigeria.<sup>66</sup> The Act under Section 6 (1) paragraphs (a) to (o) goes further to list out fifteen (15) broad functions of the Agency which include but are not limited to formulating policy on all activities relating to disaster management in Nigeria, coordinating the plans and programmes for efficient and effective response to disasters at national level, promoting research activities relating to disaster management at national level,

<sup>64</sup> Constitution of Federal Republic of Nigeria 1999, Chapter 4.

<sup>65</sup> Olafisoyo v. FRN (2004) LPELR-2553 (SC); see also AG of Ondo v. AG Federation (2002) 9 NWLR (pt. 772).

<sup>66</sup> National Emergency Management Agency, <a href="http://nema.gov.ng/2131-2/">http://nema.gov.ng/2131-2/</a>> accessed 4 February 2019.

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monitoring state preparedness of all organisations or agencies which contribute to disaster management in Nigeria, collating data from relevant agencies so as to enhance forecasting, planning and field operation of disaster management etc.

The Act under Section 6(2) defines disaster. The Section provides thus- for the purpose of paragraphs (e), (f), (j), (k) and (m) of subsection (1) of this section;

"Natural or other disasters" include any disaster arising from any crisis, epidemic, drought, flood, earthquake, storm, train, roads, aircraft, oil spillage or other accidents.<sup>67</sup>

- iii. States Emergency Laws To ensure that Sates participate and are also not left out in disaster risk reduction and mitigation strategies of NEMA, Section 8 of NEMA Act makes provision for state emergency committees.<sup>68</sup> To achieve its mandate of putting in place disaster management structures at all levels of government, NEMA adopted policies such as the National Disaster Management Framework (NDMF). The framework which will be discussed later in this work is a policy document developed by NEMA to address areas that were left out in the Act especially areas involving state and local government participation in disaster prevention, mitigation and management. This is centred on the principle of shared responsibility and collaboration among stakeholders. The NDMF policy document gave birth to State Emergency Management Agencies (SEMA) and Local Emergency Management Authority (LEMA). Sequel to the provisions of NDMF all states were to enact laws on disaster management and also put in place institutional frameworks on disaster management.<sup>69</sup> The aim is to mitigate internal displacement or provide relief to victims.
- iv. National Disaster Response Plan (2002)- The National Disaster Response Plan (NDRP) was developed in 2002 as a policy guideline for disaster/emergency management in Nigeria. The document which was approved by the Federal Executive Council (FEC) established a process and structure for the systematic, coordinated and effective delivery of Federal Assistance, to address the aftermath

<sup>67</sup> Ibid.

<sup>68</sup> Ibid.

<sup>69</sup> National Emergency Management Agency, <a href="http://nema.gov.ng/2131-2/">http://nema.gov.ng/2131-2/</a> accessed 4 February 2019.
of any disaster or emergency in all parts of Nigeria.<sup>70</sup> Furthermore, the plan set forth fundamental policies, planning assumptions, concepts of operation, response and recovery measures, and also described the responsibilities of agencies involved in disaster management. The plan further spells out the process and methodology for implementing and managing Government Recovery and Mitigation Programmes.<sup>71</sup>

Despite the rich content of the plan, it is noteworthy to mention that issues like risk reduction and prevention strategies were not captured and this necessitated the development of National Disaster Management Framework years after the development of NDRP.<sup>72</sup>

- v. National Disaster Management Policy Framework, 2010 (NDMF)- The National Disaster Management Framework (NDMF) was developed to serve as a foundation upon which all plans, policies, programmes and procedures for Disaster Management in Nigeria can be created, developed and sustained.<sup>73</sup> The framework provides a mechanism that serves as a regulatory guideline for effective and efficient disaster management in Nigeria. Areas such as disaster management; from Institutional Capacity, Coordination, Risk Assessment, Risk Reduction, Preparedness, Prevention, Mitigation, Response, Relief, Recovery through information management, education and communication were adequately covered under the framework. The framework serves as the guideline for all stakeholders in executing their disaster management responsibilities and activities.<sup>74</sup>
- vi. *The National Contingency Plan* The National Contingency Plan focuses on the hazards that have highest probability of occurrence and greatest severity, such as flooding, conflicts, and drought and disease epidemics. The plan addresses the readiness of disaster management stakeholders in the country and defines strategies for engaging international assistance when required. The

- 72 Ibid.
- 73 Ibid.
- 74 Ibid.

<sup>70</sup> National Emergency Management Agency, 'National Disaster Management Framework' <a href="http://nema.gov.ng/national-disaster-management-frame-work/2/">http://nema.gov.ng/national-disaster-management-frame-work/2/</a>> accessed 14 January 2019.

<sup>71</sup> Ibid.

plan emphasizes sectorial responses in the areas of camp management, basic education, food and nutrition, logistics and telecommunication, security and protection, water, sanitation and hygiene, health, and emergency shelter and non-food items. This plan has been implemented in a couple of hazard cases, a memorable test case was at 2012 flood incidence.<sup>75</sup>

vii. *Revised Draft National Policy on Internal Displacement 2012-* The first Draft National Policy on IDPs in Nigeria (2003-2009) was influenced by the United Nations Guiding Principles on Internal Displacement. The draft policy was reviewed twice to accommodate and also reflect the current realities in Nigeria and the new provisions of the Kampala Convention on IDPs which was adopted in 2009.<sup>76</sup> This Draft Policy was further reviewed in 2012 to reflect the implementation strategies marshalled out in the Kampala Convention which Nigeria is signatory to.

It is saddening, that the 56 page Revised Draft National Policy on internal displacement in Nigeria is yet to be adopted by the Federal Government. Thus, the policy contains six broad chapters dealing with meaning, prevention of internal displacement, rights and duties of internally displaced persons, responsibilities of government to prevent internal displacement, implementation strategies and necessary legal and institutional framework to back up the policy.<sup>77</sup>

# INTERNATIONAL LEGAL REGIME ON THE ENVIRONMENTAL PROTECTION

There is a plethora of international and regional legal regimes on environmental protection.<sup>78</sup> These laws are either hard or soft laws. However, for the purpose of this

<sup>75</sup> Assessment Report on Mainstreaming and Implementing disaster risk reduction measures in Nigeria <a href="https://www.uneca.org/sites/default/files/uploaded">https://www.uneca.org/sites/default/files/uploaded</a> documents/Natural\_ Resource\_Management/drr/nigeria-drr-report\_english\_fin.pdf> accessed 10 January 2019.

<sup>76</sup> African Union Convention for the protection and Assistance of Internally Displaced Persons in Africa (*Kampala Convention*, 2009, <https://au.int/en/treaties/african-union-conventionprotection-and-assistance-internally-displaced-persons-africa> accessed 15 January 2019.

<sup>77</sup> M T Ladan, 'National Framework for the Protection of Internally displaced Persons in Nigeria' https://test.abu.edu.ng/abu/publications/2013-05-18-180015\_3901.docx accessed 15 January 2019.

<sup>78</sup> Some of the international Conventions on environmental protection include; Stockholm Declaration on Human Environment (Stockholm Declaration) 1972, 1985 Vienna Convention on protection of Ozone Layer, Espoo Convention on Environmental Impact

research and topic under discourse we shall examine the few that are relevant to this study.

- i. United Nations Conference on the Human Environment, 1972- The declaration of the United Nations Conference on the Human Environment also called Stockholm Declaration<sup>79</sup> was the first of its kind especially with respect to international environmental problems.<sup>80</sup> The Stockholm conference examined the global human impact on the environment and the challenges of preserving and enhancing the human environment.<sup>81</sup>
- ii. United Nations Conference on Environment and Development (Earths Summit), 1992: The United Nations Conference on Environment and Development also known as the Rio Declaration and Earth Summit reaffirmed and also builds upon the Stockholm declaration. The Earth Summit which came 20 years after the Stockholm Declaration proved to be a major international environmental legal landmark. The Declaration adopted a set of principles which were to guide future development, define the rights of people to development and also define their responsibilities to safeguard the common environment.<sup>82</sup>
- iii. United Nations Framework Convention on Climate Change (UNFCCC), 1992- The UNFCCC was adopted by countries in 1992 as a framework for international cooperation to combat climate change. However the framework was unable to achieve its purpose and that is necessitated the adoption of an

- 81 Audio Library of International law, Declaration of the United Nations Conference on Human Environment <a href="http://legal.un.org/avl/ha/dunche/dunche.html">http://legal.un.org/avl/ha/dunche/dunche.html</a> accessed 7 January 2019.
- 82 Stephanie Meakia, 'The Rio Earth Summit: Summary of the United Nations Conference on Environment and Development,' (*Publications*, 1992), <a href="http://publications.gc.ca/Collection-R/LoPBdP/BP/bp317-e.htm">http://publications.gc.ca/Collection-R/LoPBdP/BP/bp317-e.htm</a>> accessed 10 January 2019.

<sup>79</sup> UN Documents, 'The Declaration of United Nations Conference on the Human Environment,' <a href="http://www.un-documents.net/unchedec.htm">http://www.un-documents.net/unchedec.htm</a>> accessed 8 February 2019.

<sup>80</sup> Sustainable development Platform, 'United Nations Conference on the Human Environment', (*Stockholm Conference*, 1972) <a href="https://sustainabledevelopment.un.org/milestones/humanenvironment">https://sustainabledevelopment.un.org/milestones/humanenvironment</a> accessed 8 February 2019. Stephanie Meakia, 'The Rio Earth Summit: Summary of the United Nations Conference on Environment and Development,' (*Publications*, 1992), <a href="https://publications.gc.ca/Collection-R/LoPBdP/BP/bp317-e.htm">https://publications.gc.ca/Collection-R/LoPBdP/BP/bp317-e.htm</a> accessed 10 January 2019.

enforcement mechanism – the Kyoto Protocol in 1997.<sup>83</sup> The Protocol as an enforcement mechanism binds developed countries that are signatories to it to emission reduction targets within a commitment period.<sup>84</sup> Accordingly, another legal regime which builds on the UNFCCC is the Paris Agreement adopted in 2015.<sup>85</sup> The Agreement is a new course in the global efforts to combat climate change. Though not domesticated, it is worthy to note that Nigeria is not only signatory to the UNFCCC, and Kyoto Protocol but has also ratified them.<sup>86</sup>

iv. The Paris Agreement, 2015- The Paris Agreement set out to improve upon and replace the Kyoto Protocol, an earlier international treaty designed to curb the release of greenhouse gases. It entered into force on November 4, 2016, and has been signed by 197 countries and ratified by 187 as of November 2019. The Paris Agreement requires all Parties to put forward their best efforts through "Nationally Determined Contributions" (NDCs) which is an individual effort by nations to curb greenhouse gas emissions and are also required to strengthen these efforts in the years ahead. These efforts include the requirements that all Parties report regularly on their emissions and on their implementation efforts. There will also be a global stocktake every 5 years to assess the collective progress towards achieving the purpose of the agreement and to inform further individual actions by Parties.<sup>87</sup> The Paris Agreement will help developing countries mostly African countries like Nigeria who are the most vulnerable to climate change effects to help in the global mitigation of climate change through their own national efforts. It will no doubt help in mitigating internal displacements resulting from climate change effects. Though Nigeria is yet to domesticate the Agreement but Nigeria is a signatory and has also ratified it.<sup>88</sup>

<sup>83</sup> United Nations Climate Change, 'Kyoto Protocol', <http://unfccc.int/kyoto\_protocol/ items/2830.php> accessed 18 January 2019.

<sup>84</sup> We are currently in the second commitment period which is 2013 to 2020, Background on the UNFCCC: The International response to Climate Change <a href="http://unfccc.int/essential\_background/items/6031.php">http://unfccc.int/essential\_background/items/6031.php</a>> accessed 8 February, 2019.

<sup>85</sup> United Nations Climate Change, 'The Paris Agreement,' <a href="http://unfccc.int/paris\_agreement/items/9485.php">http://unfccc.int/paris\_agreement/items/9485.php</a> accessed 8 February 2019.

<sup>86</sup> Nigeria 146<sup>th</sup> to endorse Paris Climate Agreement- UN, (*Premium Times* May 17 2017) <a href="https://www.premiumtimesng.com/news/more-news/231462-nigeria-146th-to-endorse-paris-climate-agreement-un.html">https://www.premiumtimesng.com/news/more-news/231462-nigeria-146th-to-endorse-paris-climate-agreement-un.html</a>> accessed 8 February 2019.

<sup>87</sup> UNFCCC, 'What is Paris Agreement,' <a href="https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreemen">https://unfccc.int/process-and-meetings/the-paris-agreemen</a> 19 April 2020.

<sup>88</sup> UNFCCC, 'Nigeria,' <https://unfccc.int/node/61130> accessed 19 April 2020.

# DOMESTIC LEGAL REGIME ON ENVIRONMENTAL PROTECTION

There are quite a number of laws and policies<sup>89</sup> on environmental protection. However, for the purpose of this study we shall be looking at a few.

- i. Constitution of Federal Republic of Nigeria 1999 (as amended)-The Constitution recognizes the importance of improving and protecting the environment and therefore makes provision for it under section 20. The section states that it is the objective of the Nigerian State to improve and protect the air, land, water, forest and wildlife. However this section has been linked to right to life and human dignity enshrined under chapter four of the Constitution.<sup>90</sup> This is because one cannot enjoy the right to life in an unhealthy environment nor enjoy right to life in a flooded environment without shelter, food and property. Therefore, for environmentally displaced person right to life and dignity not to be derogated from unjustly, government must ensure constant improvement on the environment reduce the impact of disaster on displaced persons.
- ii. *The African Charter on Human and Peoples Rights, LFN 2004-* Article 24 of the Charter states as follows; 'All peoples shall have the right to a general satisfactory environment favourable to their development and states shall have the duty, individually or collectively to ensure the exercise of the right to development.' From the provisions of article 24 above it is clear that the Charter is in support of a healthy environment for all, even the internally displaced. It is noteworthy that the African Charter though a regional instrument, has been domesticated and has now become part of our Laws.<sup>91</sup>
- iii. Environmental Impact Assessment Act (EIA) Act. CAP E12, LFN 2004- An Environmental Impact Assessment (EIA) is an assessment of the potential

<sup>89</sup> National Policy on Drought and Desertification: Drought Preparedness Plan, National Biodiversity Strategy and Action Plan, and National Policy on Erosion and Flood Control. See The United Nations Economic Commission for Africa and United Nations Office for Disaster Risk Reduction, Assessment Report on Mainstreaming and Implementing Disaster Risk Reduction and Measures in Nigeria <a href="https://www.uneca.org/sites/default/files/uploadeddocuments/Natural\_Resource\_Management/drr/nigeria-drr-report\_english\_fin.pdf">https://www.uneca.org/sites/default/files/ uploadeddocuments/Natural\_Resource\_Management/drr/nigeria-drr-report\_english\_fin. pdf</a>> accessed 12 January 2019.

<sup>90</sup> Constitution of the Federal Republic of Nigeria 1999, Chapter 4.

<sup>91</sup> Abacha v. Fawenhmi [2001] 51 WRN 29.

impacts whether positive or negative, of a proposed project on the environment. The EIA Act, as it is informally called, deals with the considerations of environmental impact in respect of public and private projects. Sections relevant to environmental emergency/disaster prevention under the EIA include; Section 2 (1) requires an assessment of public or private projects likely to have a significant (negative) impact on the environment, Section 2 (4) requires an application in writing to the Agency before embarking on projects for their environmental assessment to determine approval, establishes cases where an EIA is required and Section 60 which is on legal liability for contravention of any provision of the Act. The essence of the EIA is to prevent/reduce human induced environmental disaster which is a cause of internal displacement.<sup>92</sup>

iv. *The Nigerian Urban and Regional Planning Act CAP N138, LFN 2004-* The Urban and Regional Planning Act is aimed at overseeing a realistic, purposeful planning of the country/state to avoid overcrowding and poor environmental conditions. In this regard, the following sections are important provisions of the Act;<sup>93</sup> Section 30(3) requires a building plan to be drawn by a registered architect or town planner while Section 39(7) establishes that an application for land development would be rejected if such development would harm the environment or constitute a nuisance to the community. Further, Section 59 makes it an offence to disobey a stop-work order while Section 72 provides for the preservation and planting of trees for environmental conservation.<sup>94</sup> This Act if adopted and implemented by States will definitely put an end to illegal constructions especially on drainage systems which are the major cause of flooding/natural disaster and internal displacement in Nigeria.<sup>95</sup>

<sup>92</sup> Environmental Impact Assessment Act, LFN 2004.

<sup>93</sup> Nigerian Urban and Regional Planning Act LFN 2004 <a href="http://www.lawnigeria.com/LawsoftheFederation/NIGERIAN-URBAN-AND-REGIONAL-PLANNING-ACT">http://www.lawnigeria.com/LawsoftheFederation/NIGERIAN-URBAN-AND-REGIONAL-PLANNING-ACT</a>. <a href="http://www.lawnigeria.com/html">http://www.lawnigeria.com/LawsoftheFederation/NIGERIAN-URBAN-AND-REGIONAL-PLANNING-ACT</a>. <a href="http://www.lawnigeria.com/html">http://www.lawnigeria.com/LawsoftheFederation/NIGERIAN-URBAN-AND-REGIONAL-PLANNING-ACT</a>. <a href="http://www.lawnigeria.com/html">http://www.lawnigeria.com/LawsoftheFederation/NIGERIAN-URBAN-AND-REGIONAL-PLANNING-ACT</a>. <a href="http://www.lawnigeria.com/html">http://www.lawnigeria.com/lawsoftheFederation/NIGERIAN-URBAN-AND-REGIONAL-PLANNING-ACT</a>. <a href="http://www.lawnigeria.com/html">http://www.lawnigeria.com/html</a>.

<sup>94</sup> Environmental Law Research Institute, <a href="http://www.elri-ng.org/newsandrelease2.html">http://www.elri-ng.org/newsandrelease2.html</a> accessed 8 February 2019.

<sup>95</sup> Kofo Aderogba, and others, 'Challenges of Poor drainage Systems and Floods in Lagos Metropolis', (2012) 2(3)International J. Soc. Sci. & Education <a href="http://www.ijsse.com/sites/default/files/issues/2012/Volume%202%20Issue%203,%202012/Paper-39/Paper-39.pdf">http://www.ijsse.com/sites/default/files/issues/2012/Volume%202%20Issue%203,%202012/Paper-39/Paper-39.pdf</a> accessed 2 March 2018,see also Nigeria Friends of the Environment, 'Flooding –Effect of Blocked Drainage System on the Environment, Using Lagos State as a case Study,'(*Fote, 2017*), <a href="http://fote.org.ng/2017/07/4154/">http://fote.org.ng/2017/07/4154/</a>> accessed 2 March 2019.

- v. National Environmental Standards and Regulation Enforcement Agency (NESREA) Act 2007- The Act which is also an embodiment of regulations focused on the protection and sustainable development of the environment and its natural resources.<sup>96</sup> Section 7 of the Act which is all encompassing grants the agency the authority to ensure the following:
  - Compliance with environmental laws, local and international
  - Monitor and control environmental sanitation and pollution

NESREA has all it takes from the above, to ensure that the negative effects of climate change which are among the major cause of internal displacement in Nigeria are reduced or mitigated.<sup>97</sup>

- vi. State Environmental Laws- Environmental matters exist in the concurrent legislative list and as a result States are free to enact their own laws on environment.<sup>98</sup> Some States especially Lagos is leading in that area with a recent law on environmental protection.<sup>99</sup>
- vii. *National Policy on Environment 2016* The first national policy on the environment was formulated in 1991. It was revised in 1999, and seventeen years later, the document has been subjected to another review in order to capture emerging environmental issues and concerns such as internal displacement. The policy also prescribes guidelines and strategies for achieving Sustainable Development and environmental protection in Nigeria.<sup>100</sup> It further made provisions for environmental disaster management mitigation, preparedness and disaster risk reduction.<sup>101</sup>

<sup>96</sup> National Environmental Standards and Regulations Enforcement Agency (NESREA) <a href="http://www.nesrea.gov.ng/about-us/">http://www.nesrea.gov.ng/about-us/</a> accessed 19 January 2019.

<sup>97</sup> Ibid.

<sup>98</sup> Constitution of Federal Republic of Nigeria 1999, Second Schedule.

<sup>99</sup> Lagos State Environmental Management and Protection Law 2017.

<sup>100</sup> Aliyu Ibrahim Kankara, 'Examining Environmental Policies and Laws in Nigeria' (2013) 4(3) International Journal of Environmental Engineering and Management <a href="https://www.ripublication.com/ijeem\_spl/ijeemv4n3\_02.pdf">https://www.ripublication.com/ijeem\_spl/ijeemv4n3\_02.pdf</a>> accessed 18 March 2019.

<sup>101</sup> National Policy on the Environment (Revised) 2016, Figure 6.1 and 6.3 <a href="http://environment.gov.ng/media/attachments/2017/09/22/revised-national-policy-on-the-environment-final-draft.pdf">http://environment.gov.ng/media/attachments/2017/09/22/revised-national-policy-on-the-environment-final-draft.pdf</a>> accessed 3 March 2019.

## **INSTITUTIONAL FRAMEWORK**

There are quite a number of institutions on ground saddled with the responsibility of ensuring disaster prevention/disaster risk reduction which is mostly internal displacement. However for the purpose of this study we shall be limited to the following institutional frameworks namely; National Emergency Management Agency (NEMA),<sup>102</sup> National Environmental Standards and Regulations Enforcement Agency (NESREA),<sup>103</sup> National Commission for Refugees, Migrants and Internally Displaced Persons (NCFRMI),<sup>104</sup> Federal Ministry of Environment, Nigerian Metrological Agency (NIMET),<sup>105</sup> National Orientation Agency (NOA),<sup>106</sup> House Committee on disaster at the federal Level, while State Emergency Management Agency (SEMA),<sup>107</sup> State Ministries of Environment and Local Emergency Management Authority (LEMA) at the State and Local levels respectively.

Though, there have been few cases of collaboration between NEMA and some of the Institutions mentioned above in the past especially NIMET and NOA, one can however notice the absence of synergy amongst the institutional stakeholders. This absence of synergy is as a result of gaps in the enabling laws/mandate of these institutional stakeholders and therefore requires urgent legislative action. This however, underscores the role of law in achieving the purpose of this study.

### **INTERNATIONAL BEST PRACTICES**

In this section, we shall be examining the success rate of mitigating climate/ environmental displacement in other climes. This study will be limited to the United States of America and the United Kingdom. These two countries were chosen because of the level of development in these countries and the fact that they both have few things in common. Firstly, both climes decentralised the structure of emergency management hence most emergency situations receive first attention at the local

<sup>102</sup> National Emergency Management Agency, <a href="http://nema.gov.ng/">http://nema.gov.ng/</a> accessed 2 March 2019.

<sup>103</sup> National Environmental Standards and Regulations Enforcement Agency, <a href="http://www.nesrea.gov.ng/">http://www.nesrea.gov.ng/</a> accessed 3 March 2019.

<sup>104</sup> National Commission for Refugees, 'Migrants and Internally displaced persons', <a href="http://ncfrmi.gov.ng/">http://ncfrmi.gov.ng/</a>> accessed 2 March 2019.

<sup>105</sup> Nigeria Metrological Agency, <a href="http://www.nimet.gov.ng/">http://www.nimet.gov.ng/</a> accessed 2 March 2019.

<sup>106</sup> National Orientation Agency, <a href="http://www.noa.gov.ng/>accessed 2 March 2019">http://www.noa.gov.ng/>accessed 2 March 2019</a>.

<sup>107</sup> SEMA, <https://www.informationng.com/tag/sema> accessed 2 March 2019.

level. Secondly, there are in existence legal framework on disaster management and displacement in both climes.<sup>108</sup> A brief examination of both climes will justify the above fact.

i. The United States of America (USA)- The United States of America was chosen because of the prevalence of natural disasters and their experience in disaster management. Over the years the United States of America has experienced quite a number of natural disasters with the Houston Hurricane of 2017 being the most recent. The USA disaster response institutions are always active during most disasters and constantly make arrangements for emergency shelter, food, medical care, and monetary distributions to disaster victims.<sup>109</sup> The institutions also rebuild homes soon after a disaster and are efficient during most earthquakes, floods, and hurricanes in USA.<sup>110</sup>

The success rate of the US disaster response system could be attributed to the array of legislation, functional policy and institutional frameworks on disaster management in USA. One of such legislations which is also important in this research is the United States of America Disaster Mitigation Act.<sup>111</sup> While the institutional framework is the US Federal Emergency Management Agency (FEMA).<sup>112</sup> The Agency which emerged from a consolidation of wide range of institutional disaster frameworks<sup>113</sup> is responsible for mitigating internal displacement, disaster preparedness, disaster risk reduction in the United State. In discharge of this mandate the agency established 'the mutual aid network'. This network requires cooperation from state, local, federal, non-profit, for-profit, and other private sector organizations in event of any disaster. It is note

<sup>108</sup> Civil Contingency Act of United Kingdom, 2004 <a href="https://www.legislation.gov">https://www.legislation.gov</a>. uk/ukpga/2004/36/notes/contents> accessed 18 March 2018; United States of America Disaster Mitigation Act, 2000 <a href="https://www.fema.gov/media-library-data/20130726-1524-20490-1678/dma2000.txt">https://www.fema.gov/media-librarydata/20130726-1524-20490-1678/dma2000.txt</a>> accessed 3 March 2019.

<sup>109</sup> S Andrew, and others, 'Disaster Response in the United States of America: An Analysis of the Bureaucratic and Political History of a Failing System', (*CUREJ*, 2007) <</p>
http://repository. upenn.edu/curej/63> accessed 7 March 2019.

<sup>110</sup> Ibid.

<sup>111</sup> United State of America Disaster Mitigation Act, 2000, <a href="https://www.fema.gov/media-library-data/20130726-1524-20490-1678/dma2000.txt">https://www.fema.gov/media-library-data/20130726-1524-20490-1678/dma2000.txt</a> accessed 3 March 2019.

<sup>112</sup> United State of America Federal Emergency Management Agency 1979.

<sup>113</sup> USA Executive Order 12127 < https://www.fema.gov/about-agenc> accessed 8 March 2019.

worthy that each of these organizations offers remarkable services during most disaster experienced by the USA.

A case in sight is the Houston hurricane of 2017, where FEMA deployed about 28 urban search and rescue teams to Houston from across the United States to assist State and Local agencies on life saving mission.<sup>114</sup> Records revealed that over 6,453 people and 237 animals were rescued by the team. Also worthy of note is the fact that FEMA supplied 3 million meals, 3 million litres of water, 9,900 blankets, 8,840 cots and 10,300 hygiene kits to the state for distribution to victims/displaced persons. FEMA quickly provided \$186 million in Public Assistance funding to reimburse local and state agencies for the cost of emergency protective measures and debris removal. FEMA deployed teams of specialists to neighbourhoods and disaster recovery centres to help victims/internal displaced persons with registration and questions about disaster assistance.<sup>115</sup> FEMA coordinated National Business Emergency Operations and call centres amongst 150 private sector partners working on disaster response. FEMA also worked with social media companies to share disaster information and assisted cell service companies in providing charging stations for disaster survivors/victims.<sup>116</sup>

ii. The United Kingdom (UK)- The history of different types of disasters in the UK includes a wide variety of incidents ranging from natural hazards and the threat of manmade disasters. Due to the geographical location, and climate change, it is almost impossible to prevent natural disasters such as major flooding, severe storms and gales, persistent low temperatures, heavy snow, heat waves, drought, fires and other severe weather incidents in the UK.<sup>117</sup> The flood events of 2007 alone caused damage to more than 55,000 properties, took the life of 13 people, left 350,000 people without water supply, affected 7,300 businesses and caused billions of spending by central government. The risk of flood events is not new

<sup>114</sup> FEMA, Historic Disaster Response to Hurricane Harvey in Texas,' (FEMA, 2017), <https://www.fema.gov/news-release/2017/09/22/historic-disaster-response-hurricaneharvey-texas> accessed 11 March 2019.

<sup>115</sup> FEMA, Historic Disaster Response to Hurricane Harvey in Texas,' (FEMA, 2017), <a href="https://www.fema.gov/news-release/2017/09/22/historic-disaster-response-hurricane-harvey-texas">https://www.fema.gov/news-release/2017/09/22/historic-disaster-response-hurricane-harvey-texas</a> accessed 11 March 2019.

<sup>116</sup> Ibid.

<sup>117</sup> D Parker and J Hadmer, 'Hazard Management and Emergency Planning: Perspectives on Britain,' (*Earthscan Publications Ltd*, 1992).

and has historically been characteristic for the UK. Today more than 5 million people live in risk areas in England and Wales, which creates additional concerns for the central government to respond. The coastline regions are usually affected by sea surges, high tides, and gale force winds. <sup>118</sup>

These emergencies were taken care off under the UK Civil Contingencies Act (CCA) of 2004. As a central framework for responding and preparing for emergencies at national, regional, and local levels, the Act decentralized the structure of emergency system in UK. Despite having an organized structure on disaster management, the system is said not to be as proactive as the US disaster management system when disaster occurs.<sup>119</sup> Mitigating internal displacement is paramount, but probably the most difficult measure to take when disaster occurs especially with dearth of laws and absence of a proactive institutional framework on disaster management and internal displacement.<sup>120</sup> This study however, has shown that the United States of America has a more effective disaster response system and disaster management related information than the United Kingdom and Nigeria. This may be attributed to the decentralised disaster response system and synergy amongst the institutional frameworks on disaster management in the United States of America. The US system should serve as a lesson for Nigeria. Based on the above, it may be noted that the challenges to mitigating Internal Displacement resulting from Environmental Disaster/Climate Change in Nigeria may be summed up as hereunder:

- i. Lack of synergy among identified institutional Stakeholders: There is no collaboration among the various institutional stakeholders involved in disaster management and internal displacement.
- ii. Lack of town planning/implementation of town planning Laws: Availability of illegal structures especially structures blocking drainage system, building on green areas, lack of drainage systems and blocked drainage system are

<sup>118</sup> Ibid.

<sup>119</sup> Naim Kapucu, 'Emergency and Crisis Management in the United Kingdom : Disaster Experienced, Lessons Learned and Recommendations for the future', <a href="https://training.fema.gov">https://training.fema.gov</a> accessed 18 March 2019.

<sup>120</sup> Brooking –Bern Project on Internal Displacement, From National Responsibility to Response: IDPS' Housing, Land and Property Rights, (*Refworld*, 2012), <a href="http://www.refworld.org/docid/4f45f1692.html">http://www.refworld.org/docid/4f45f1692.html</a>> accessed 14 January 2019.

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evidence of non-implementation of town planning laws by some States in Nigeria. This however, is a major cause of flood and internal displacement.

- iii. Improper waste disposal: improper disposal of waste especially in drainage system is a common practice in Nigeria and this is a major cause of flood which will result in displacement in most states.
- iv. Lack of funds especially at the local government level, to put in place measures that will ensure emergency preparedness and also reduce internal displacement.
- Slow adoption of eco-friendly project such as use of solar lights, recycling of v. plastics.121
- vi. Lack of awareness/sensitization on the functions/responsibilities of institutional stakeholders such as LEMA, SEMA and NCFRMI.
- vii. The need for Nigeria to try and meet the National Determined Contribution, which is a commitment Nigeria made under the Paris agreement.

## THE ROLE OF LAW

The objective of this section is to address the crux of this research which is on the role of law in mitigating internal displacement resulting from climate change effects in Nigeria. In examining this section, it may be necessary to raise the following questions:

- Are the laws in Emergency management and internal displacement in Nigeria • adequate?
- To what extent have the existing laws been able to achieve the purpose for which they were enacted or are there gaps in the law that require legislative action?
- Can Nigeria's National Determined Contribution under the Paris Agreement • help mitigate internal displacement from climate change effects?
- What is the role of law in mitigating internal displacement in Nigeria? •

<sup>121</sup> Sunday Riti Joshua and Yang Shu, 'Renewable energy, energy efficiency, and eco-friendly environment (R-E<sup>5</sup>) in Nigeria', (Energy, Sustainability and Society Springer open, 2017 <https://energsustainsoc.springeropen.com/articles/10.1186/s13705-016-0072-1> accessed 19 March 2019.

Addressing the first question on whether the laws on emergency/disaster management and internal displacement in Nigeria are adequate. The first part of the question is answered in affirmative as Nigeria has a plethora of laws on emergency/disaster management (emergency laws relevant to this study has been discussed above). However, there is no identifiable legislation on internal displacement as most provisions on internal displacement are in piecemeal and form part of other laws. Though the NCFRMI is saddle with the responsibility of internal displacement since 2002, however going by the current enabling law of NCFRMI,<sup>122</sup> the commission lacks the mandate to handle matters related to internal displacement in Nigeria. Hence, the clamour for amendment of the commissions enabling law to incorporate the mandate on internal displacement, and also the adoption of the revised draft policy on internal displacement 2012, as a policy framework on internal displacement in Nigeria.

On the extent the existing laws have been able to achieve their purpose and if there are gaps in those laws that require legislative action? The answer is in the negative as the emergency laws in existence in Nigeria, failed to provide synergy and also decentralise the emergency response system. Thus, the LEMA is a toothless bulldog in event of any disaster, as they lack both funds and capacity to manage disaster effectively. The reason is not farfetched as there was no provision for LEMA/ LEMA representatives among members of State Committee under section 8 of NEMA Act. This is obviously a lacuna in NEMA Act and requires legislative action. Though there is a NEMA Amendment Bill<sup>123</sup> before the National Assembly, the bill only made provisions for amendment of section 8 of NEMA Act to include LEMA amongst the state committee. However, the bill left out the provision on mandatory synergy between NEMA and other institutional stakeholders. On internal displacement, as mentioned earlier there is no single legislation on internal displacement and the fragments/piecemeal legislation have not achieved their purpose.

<sup>122</sup> National Commission for Refugee (Establishment Act, ETC.) LFN CAP N21 2004, <a href="http://ncfrmi.gov.ng/the-commission/">http://ncfrmi.gov.ng/the-commission/</a>> accessed 18 March 2019.

<sup>123</sup> The author is aware that there are so many versions of NEMA (amendment) Bill before the National Assembly, however the bill discussed in this study is the National Emergency Management Agency (Amendment) Bill, 2017. which is a private member bill sponsored by Hon. Joseph Edionwele. The bill sought to amend section 8 (2) (C) by adding subparagraph (xiv) which provides thus 'A representatives of the Local Government Council where the incident occurred in the State'. <a href="http://www.nassnig.org/document/download/8849">http://www.nassnig.org/document/download/8849</a>> accessed 9 March 2019.

Under the Paris Agreement, Nigeria by her third Paris Agreement National Communication pledged her commitment to unconditional reduction of Greenhouse Gas (GHG) emissions by 20 percent below Business as Usual (BAU) projections by 2030, and a conditional contribution of 45 percent reduction, based on commitment with international support. Therefore, the engagement of all levels of governmentlocal, sub-national and national to adapt effective climate change mitigation and adaption strategies is crucial to tackle climate change and hence mitigate internal displacement resulting from climate change.

Lastly, the role of the law in mitigating internal displacement resulting from natural disaster or climate change involves the above discussions. However, mitigating climate change related displacement will not be possible without effective implementation of Nigerian commitment to the Paris agreement especially in the reduction of the greenhouse gases and implementation of the domestic laws examined in this study. To achieve this, there is an urgent need for synergy among the institutional frameworks. This synergy can be achieved if the discussions in this section result in legislative action. Further individuals are also entrusted with the responsibility to ensure reduction of greenhouse gases and mitigation of climate change. These can be achieved through tree planting, ending indiscriminate bush burning. This will help Nigeria achieve the Paris Agreement NDC and also help mitigate climate change and its induced displacement. When this is done it will be a lesson to other African Countries striving to mitigate climate change while meeting their target Paris Agreement NDC.

## CONCLUSION

Climate change has come to stay and Nigeria is not shielded from its negative effects. However, with the advancement in technology, man- made hazards are increasing in magnitude and one of the major causes of natural disasters. With the prevalence of natural disasters especially floods, internal displacement resulting from natural disasters maybe on the increase. The obligation for Nigeria to work towards meeting her Paris Agreement National Determined Contribution is necessary and requires the engagement of all levels of government- local, sub-national, national and individual efforts. The need for disaster preparedness, disaster risk reduction and, putting in place measures that will mitigate internal displacement is necessary. Furthermore, reviewing the National Emergency Management Agency Amendment Bill before

the National Assembly, to reflect some of the recommendations in this study are imperative. Amending the enabling Law of the National Commission for Refugees Migrants and Internally Displaced Persons to reflect their mandate on internal displacement is overdue. Finally, empowering Local Emergency Management Authority, adequate representation of each institutional stakeholder on the board/ council of the other and effective collaboration amongst institutional stakeholder is key to achieving the goal of this research. 3

## INTERRELATIONSHIP BETWEEN ENVIRONMENT AND HUMAN RIGHTS

#### - Dr. Kudrat-E-Khuda (Babu)\*

Keywords: Climate Change, Ecosystem, Disasters, Human Rights, Environment Protection.

## **INTRODUCTION**

There is a strong and undeniable connection between environment and human rights. The survival of people relies on a healthy and secure system. For example, serious pollution of the environment may influence the well-being of people and can stop them from enjoying their fundamental rights. One author has indicated this symbiotic relationship as follows:

"Human life and the human environment are inseparable. To survive, humans must have air to breathe, water to drink, foods to eat, and a place in which they can live and sleep. If these elements become polluted, contaminated, or eliminated or destroyed, life will cease to exist. To protect human life, our environmental life support system must be maintained and protected. One way to accomplish this protection is through the enactment or recognition of a legal human right to environment."<sup>1</sup>

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<sup>1</sup> Melissa Thorme, 'Establishing Environment as a Human Right', Denver journal of International Law and Policy, Vol. 19, No.2 (1991), p. 301.

In global legislation, the relationship between the environment and human rights is now well created. Actually, human rights cannot be protected without the protection of the environment in which people live, and environmental rights can often be properly implemented only if human rights have been respected at the same time.<sup>2</sup> Thus, the two regions inherently connected with human rights and environmental rights should be approached in a consistent manner. The right to a healthy environment is essential to the right to life and the integrity of people.

## IS THE ENVIRONMENT A HUMAN RIGHTS ISSUE?

Is there any necessity of treating the protection of environment as an issue of human rights? Several possible responses are available. The first and foremost argument is that a human rights perspective, which is clearly contrary to the rest of international environmental law, straightforwardly addresses the environmental impacts on the life, health, and property of the individual instead of on other states or the environment. It might also help attain higher standards of environmental quality as it is the obligation of states to take steps necessary for keeping pollution, which directly affects the health and the private life of the individual, in control. It, most of all, may serve to strengthen the rule of law when the authorities become unswervingly accountable for their inability to regulate and control environmental nuisances, and take necessary measures to facilitate easy access to justice and enforce environmental laws and judicial decisions. In addition to this, the idea that there is, or should be, in some form, a right to a decent environment, has been fueled up by the enlargement of economic and social rights in shaping the interest of the people in protecting the environment.

But there is hardly any debate or discussion on the relationship between the environmental and the human rights. In general, in the academic treatments of human rights law, environmental dimensions are rarely discussed.<sup>3</sup> Nevertheless the

<sup>2</sup> Yves Lador, 'The Challenges of Human Environmental Rights', Proceedings of a Geneva Environment Network roundtable, published in July 2004 by the United Nations Environment Programme (UNEP), Geneva.

<sup>3</sup> P. Alston, H. Steiner, and R. Goodman, International Human Rights in Context (3rd edn, 2008) and O. De Schutter, International Human Rights Law (2010) refer to some of the precedents and list 'environment' in their indexes but there is no significant discussion of the precedents from an environmental perspect ive. Compare Loucaides, 'Environmental Protection through the Jurisprudence of the ECHR', 75 BYBIL (2004) 249 and Desgagné, 'Integrating Environmental Values into the ECHR', 89 AJIL (1995) 263.

emerging environmental caseload of human rights courts and treaty bodies allude to the significance of environmental protection in the mainstream human rights law. It goes without saying that considering the extent, we are worried about the environmental dimensions of rights as found explicitly in human rights treaties-the International Covenant on Civil and Political Rights (ICCPR), the International Covenant on Economic Social and Cultural Rights (ICESCR), the European Convention on Human Rights (ECHR), the American Convention on Human Rights (AmCHR), and the African Convention on Human and Peoples' Rights (AfCHPR)- which are simply speaking of 'greening' of the existing human rights law instead of adding a new dimension or rights to existing treaties. Thus the case law mainly focuses on the rights to life, private life, health, water, and property. However, some exclusive environmental provisions have been included in some of the human rights treaties and those provisions narrowly focus on only human health<sup>4</sup> while human rights treaties such as the ECHR and the ICCPR do not have any environmental provision. Human rights law greening is not just a European phenomenon, but extends to the IACHR, AfCHPR, and ICCPR. Judge Higgins has also pointed out how human rights courts 'work consciously to co-ordinate their approaches.'5 Therefore there is explicit evidence of amalgamation in the environmental case law and in the crossfertilization of concepts between the different human rights framework.<sup>6</sup>

The quick advancement in the environmental case-law in Europe has led to the continuous refusal of the proposals for an environmental protocol to be introduced to the ECHR.<sup>7</sup> The Council of Europe, however, embraced a *Manual on Human Rights and the Environment* in 2005 which examines the Court's decisions and outlines

<sup>4</sup> E.g., ICESCR 1966, Art. 12; European Social Charter 1961, Art. 11; Additional Protocol to the AmCHR 1988, Art. 11; Convention on the Rights of the Child 1989, Art. 24(2) (c). See Churchill, 'Environmental Rights in Existing Human Rights Treaties', in Boyle and Anderson (eds).

<sup>5</sup> Higgins, 'A Babel of Judicial Voices?' 55 ICLQ (2006) 791, at 798. See also *Diallo Case* (Guinea v. Democratic Republic of Congo) [2010] ICJ Rep, at paras 64–68.

<sup>6</sup> See Judge Trindade in *Caesar v. Trinidad and Tobago* (2005) IACHR Sers. C, No. 123, at paras 6–12: '[t]he converging case-law to this effect has generated the common understanding, in the regional (European and inter-American) systems of human rights protection' (at para. 7).

<sup>7</sup> On 16 June 2010 the Committee of Ministers again decided not to add a right to a healthy and viable environment to the ECHR.

some general principles.<sup>8</sup> In a nutshell, the cases such as *Fadeyeva, Lopez, Öneryildiz, Guerra, Taskin, Ostra, Budayeva* demonstrate how the right to private life, or the right to life, can make the authorities concerned to control environmental risks, implement environmental laws, or reveal environmental information.<sup>9</sup> Since governments are committed to take appropriate actions necessary for acquiring both the right to life and that of respect for private life and property, the governments' inability either to regulate or enforce the law is the case of concern of some of the environmental cases-*Lopez Ostra, Guerra, Fadeyeva*- while the rest of the cases concentrate on the decision-making process.<sup>10</sup> However, though environmental protection is a genuine target which allows governments to constrain certain rights, including the right to property and ownerships, human rights law does not protect the environment itself.

A study on the correlation between the environment and human rights<sup>11</sup> initiated by the UN Human Rights Council in early 2011 resulted in the appointment of an independent professional in March 2012 who was approached to make recommendations on human rights obligations on how to ensure a "safe, clean, healthy and sustainable environment".<sup>12</sup> In the second section we will examine the work of the UNHRC. The United Nations Environment Programme (UNEP) has also addressed the same issue resulting in a draft declaration and commentary by an expert working group in 2009-2010.<sup>13</sup> A prior UNHRC venture aiming to adopt a declaration on human rights and the environment ended in 1994 with a report and the text of a declaration that could not succeed in securing state supports.<sup>14</sup> Retrospectively this early work was premature and overly ambitious, and it did not

<sup>8</sup> See Council of Europe: Final Activity Report on Human Rights and the Environment, DH-DEV (2005) 006 rev, 10 Nov. 2005, App. II ('Council of Europe Report').

Lopez Ostra v. Spain, 20 EHRR (1994) 277; Guerra v. Italy, 26 EHRR (1998) 357; Fadeyeva v. Russia, 45 EHRR (2007) 10; Öneryildiz v. Turkey, 41 EHRR (2005) 20; Taskin v. Turkey, 42 EHRR (2006) 50, at paras 113–119; Tatar v. Romania [2009] ECtHR, at para. 88; Budayeva v. Russia [2008] ECtHR.

<sup>10</sup> See infra, section 3.

<sup>11</sup> UN Human Rights Council (UN HRC) res. 16/11, 'Human Rights and the Environment', 24 Mar. 2011.

<sup>12</sup> UNHRC res. 19/12, 'Human Rights and the Environment', 20 Mar. 2012.

<sup>13</sup> UNEP, High Level Expert Meeting on the New Future of Human Rights and Environment, Nairobi 2009. This draft declaration was completed in 2010 but has not been published.

<sup>14</sup> Draft Declaration of Principles on Human Rights and the Environment, ECOSOC, Human Rights and the Environment, Final Report (1994) UN Doc E/CN 4/Sub 2/1994/9. The text of the draft declaration is reproduced in Boyle and Anderson, at 67–69. See Popovic, 'In Pursuit of Human Rights: Commentary on the Draft Declaration of Principles on Human Rights and the Environment', 27 Columbia Human Rts L Rev (1996) 487.

make any progress in the UN. Nevertheless, the correlation between human rights and environmental protection in international law is neither straightforward nor plain, since it is challenging for UNEP and the agenda of human rights organizations in view of the reality that it straddles two competing bureaucratic authorities. Furthermore, it raises some troubling questions about fundamental human rights law which will be discussed in the subsequent parts of this paper.

The advantages of any proposition for a declaration or protocol on this topic rely, thus, on the extent to which it deals with basic issues or simply dresses up what we already are aware of. It is not clear whether the application of rights to life, private life and property in relation to the environment is simply codified. Furthermore, the greening of existing human rights, which has already taken place by making explicit in a statement or protocol, would neither add anything to the existing one nor explain much. 'Codification which constitutes a record of the past' as Lauterpacht noted in 1949, 'rather than a creative use of the existing materials – legal and others – for the purpose of regulating the life of the community is a brake upon progress'.<sup>15</sup> The real question is, how far it is prudent or political to go if there are inevitably important components of progressive development and law reform? The question therefore is not whether a declaration or protocol on human rights and the environment should deal with existing civil and political rights, but how much more it should add. What can it say that is new or that develops the existing corpus of human rights law? There are three obvious possibilities.

Firstly, after the Rio Declaration on Environment and Development (1992), often shortened to Rio Declaration, the most significant environmental addition to human rights law is the procedural rights. According to the Declaration, this development would inevitably need to be taken into consideration if any endeavor is made to codify the human rights law and the environmental law. Thus the value of procedural rights in an environmental context would be endorsed while their precise content would be elucidated at a global level. The study will examine whether the devolvement of a public interest model of accountability could make any further advancement, especially which is more relevant to the environmental context. It will also consider this with the help of the Aarhus Convention, 1948.

<sup>15</sup> UN, Survey of International Law in Relation to the Work of the ILC, GAOR A/CN.4/Rev. 1 (1949), at paras 3–14 (hereinafter 'UN Survey').

Secondly, a declaration or protocol could be used, in some form, as a suitable instrument in enunciating the still disputable notion of a right to environment which is more decent—a right which would distinguish the relationship between a healthy environment and the achievement of other civil, political, economic, and social rights. It, most of all, would present some ways to adjust the environmental goals against economic advancement by making the relationship between the environment, human rights, and sustainable development more vivid and by addressing the sustainable use of nature and natural resources. It takes into the incorporation of this right account within the corpus of economic, social, and cultural rights. Finally, it examines the complicated dilemma of existing human rights treaties' extra-territorial application which is pertinent to trans-boundary pollution and global environmental problems, such as climate change. It cannot use the pertinent application to help protecting the global environment if human rights law lacks extraterritorial scope in environmental cases. Even if we overcome this dilemma, the problems remain considerable.

## IMPORTANCE OF HUMAN RIGHTS APPROACH TO ENVIRONMENT PROTECTION

There are two primary approaches to the strategy of human rights in terms of environmental protection. The first is to protect the environment as a means to meet human rights standards. Since, degraded physical environments directly leads to human rights violations of life, health and living conditions, acts leading to degradation of the environment can represent an instant breach of globally recognized human rights. Secondly, the legal protection of human rights is an efficient way of attaining the objectives of preservation and protection of the environment. Thus, it can only be feasible to achieve full human rights in culture and politics where environmental rights are more like to be respected.<sup>16</sup> Two primary reasons for an independent right to a good setting are: Firstly, the improved status be given to the quality of the environment, and secondly; the essential nature of the climate be acknowledged as a fundamental condition for life which is essential for promoting right to life. Besides, the essential character of the setting would be recognized as a

<sup>16</sup> Michael R. Anderson, 'Human Rights Approaches on Environmental Protection: An Overview', in: Alam E. Boyle, and Michael R. Anderson (eds.), *Human Rights Approaches to Environmental Protection*, Clarendon Press, Oxford, 1996, p.3.

fundamental condition for life which is indispensable for promoting human dignity and welfare and the satisfaction of other types of human freedoms.<sup>17</sup>

However, there has been a wise discussion about the nature of relationships between human rights and the environment. The right to the environment is placed by various academies in various classifications of human rights.<sup>18</sup> It is a basic human right for some academies.<sup>19</sup> Others have regarded other requirements, like food, water, air, housing, apparel etc. as fundamental human requirements.<sup>20</sup> The right to a secure setting is also seen as a right of the third generation of 'solidarity', referring to the development of the freedoms in terms of their historical source.<sup>21</sup> The most recent acknowledged category of human rights includes the so-called thirdgeneration rights, including the right to health, peace and a good environment. However, according to Birnie and Boyle, such categorization is a misnomer and environmental rights straddle all three of the above categories. Environment rights can thus serve three functions: first, to use current civic and political rights to provide access to data, judicial remedies, or political procedures to people, organizations and NGOs. Secondly, by treating environmental rights as financial or social rights, the environmental quality will offer similar status to other social economic rights. Third, to treat environmental quality as a solidarity right is to obtain the funds, abilities and technology required by governments and international organizations for the fulfilment of environmental goals.<sup>22</sup>

### **RIGHTS TO SAFE ENVIRONMENT AS A HUMAN RIGHT**

The recognition of the right to the environment has two significant objectives: firstly, to enhance the life quality and secondly; to provide a remedy to people who have suffered

<sup>17</sup> Patricia Birnie and Alan Bolyle, International Law and the Environment, 2<sup>nd</sup> Ed., Oxford University Press, Oxford, (2002), p. 255.

<sup>18</sup> Supra note 1, p.317.

<sup>19</sup> Edit Brown Weiss, 'Our Common Future', World Commission on Environment and Sustainable Development, 1987, p.347.

<sup>20</sup> Richard Falk, Human Rights and State Sovereignty, Holmes and Meier Publication, New York, 1981, p.116.

<sup>21</sup> Theodore Meron, 'On a Hierarchy of International Human rights', American Journal of International Law, Vol. 80, (1986) p.2.

<sup>22</sup> Supra note 4, p. 253.

by pollution.<sup>23</sup> The breach of both types of civil and political rights, and financial, social and cultural freedoms could be related to the environmental degradation according to Phillippe Sands. According to Philippe Sands, environmental degradation could be linked to the violation of both categories of rights- civil and political rights, and economic, social and cultural rights.

According to Phillippe Sands, the right to the environment in the context of the achievement of financial, social and cultural freedoms relates to the right to a standard of living suitable for health and well-being; the right to health; the right for everyone to free access to their natural assets; safe and healthy working conditions; protection of children against social exploitation etc. On the other side, certain civil and political freedoms can also create practical and enforceable environmental and associated commitments. The rights to life, freedom, right to property etc. are the most significant civil and political rights relating to environmental protection.<sup>24</sup> There are three wider categories of rights articulated by academics in the expansive exposure to the environment: substantive rights and environmental law, eco-centric rights and procedural laws. Thus, the substantive elements of the right to the environment as well as the procedural safeguards given by recognized environmental rights are covered in the expansive formulation of human rights to the environment.

There have been many adjectives used for describing and providing the word 'correct' to the environment with a substantial quality standard, which humans are entitled to live in accordance with global and national legislation.<sup>25</sup> Safe, satisfying, healthy, decent, proper, tidy, pure, natural, feasible, ecologically sound and environmentally balanced adjectives are the most common.<sup>26</sup> The right to the environment as a human right means the right to live in a minimum quality setting that enables a life of dignity and well-being to be achieved.

<sup>23</sup> W. Paul Gormley, 'The Right to a Safe and Decent Environment', Indian Journal of International Law, Vol. 28, No. 1(1998), p.10.

<sup>24</sup> Philippe Sands, 'Principles of International Environmental Law', <a href="https://www.cambridge.org/core/books/principles-of-international-environmental-law/00DB84D321DA304D35">https://www.cambridge.org/core/books/principles-of-international-environmental-law/00DB84D321DA304D35</a> C90CB1935477F1>.

<sup>25</sup> Supra note 1, p.309.

<sup>26</sup> Supra note 1, p.309.

## **CONTENTS OF THE RIGHT TO ENVIRONMENT**

The determination of such a precise minimum standard of environmental quality is often a difficult task. According to Birnie and Boyle, the right to environment includes the following elements:

- (i) Freedom from pollution, damage to the environment and activities which influence or threaten the environment, life, health, livelihood, well-being or sustainable growth;
- (ii) Protect and preserve the fauna, flora and wildlife of the atmosphere, water, sea ice and all required procedures and regions for preserving biological diversity and ecosystems;
- (iii) The highest achievable health level;
- (iv) A safe and healthy environment for food, water and work;
- (v) Adequate housing and land tenure in a safe, healthy and environmentally sound setting and living circumstances;
- (vi) Ecologically sound access to nature, and natural assets preservation and sustainable use;
- (vii) Distinctive sire preservation;
- (viii) Traditional life and livelihood should be enjoyed by native people.<sup>27</sup>

#### The Right of the Environment

This philosophic concept articulates that the environment has privileges based on its own inherent value, which is separate and different from those which it can be ascribed to by human use.<sup>28</sup>

It implies that if a product is worthy and not merely for its uses, it has an intrinsic value.<sup>29</sup> Many environmental concerns have a moral, spiritual, symbolic, esthetic or cultural meaning.<sup>30</sup> The two competing concepts- The human right to the

<sup>27</sup> Patricia Birnie and Alan Boyle, *Supra* note 4, p.255.

<sup>28</sup> Luis E. Rodriguez-Rivera, 'The Human Right to Environment and the Peaceful use of Nuclear Energy', *Denver Journal of International Law and Policy*, Vol.35 (2006), p. 282.

<sup>29</sup> Joseph R. Des Jardins, *Environmental Ethics*, 3<sup>rd</sup> Ed., Wadsworth, 2001, p.133.

<sup>30</sup> *Ibid*.

environment and the right to the environment are hard to balance as the former is anti-prop-centric and the latter is environmentally friendly. Professor Kiss and Shelton, however, resolved this issue by suggesting that environmental right is, in reality, a key component in the building of environmental rights: "Intrinsic value" can be grasped in this respect. Viewing people and nature as interrelated enables us to conclude that both of them have to be preserved. The right to the environment as a substantive part of the expanding right to the environment should, therefore, be incorporated.<sup>31</sup>

### Procedural Environmental Rights

The procedural environmental rights are the precondition for the realization of substantial elements of the extensive right to the environment. They refer to human rights procedures or proceedings that are essential to implement efficiently the substantial elements of the extensive right to the environment. Access to environmental data, involvement in decision-making of environmental policies and the accessibility of legal remedies in order to compensate the environmental damage are among the acknowledged procedural environmental rights. Access to environmental data is commonly acknowledged as a precondition for the efficient leadership, security and collaboration of the environment at domestic and international level.<sup>32</sup> The accessibility and access to data also make it possible to take preventive steps and mitigate them, guarantees citizens' involvement in domestic decision-making procedures and enables the global community to determine whether the states meet their legal requirements or not.<sup>33</sup> The question of government involvement in environmental affairs is a significant tool to guarantee the right of the public to a clean atmosphere. Such a right is based on civil society's broad involvement in environmental relations. In practice, one of the major trends of international environmental law has arisen from the notion of public participation in decision-making in the environment.

Public involvement in the environmental field is viewed as an instrument that individuals can use in choices on environmental protection policies. In the environmental sphere, public participation is considered as a tool, which people

<sup>31</sup> Alexandre Kiss and Dinah Shelton, International Environmental Law, 1991, p.23.

<sup>32</sup> Philippe Sands, *Principles of International Environmental Law*, 2<sup>nd</sup> Ed., Cambridge University Press (2003), p.826.

<sup>33</sup> Ibid.

can use in making decisions on measures relating to environmental protection. Involvement of everyone in the decision-making process of a project implies the participation of the public. The participation of stakeholders in environmental issues is progressively recognized as a way to enhance the value of decision making and assist environmental initiatives to address local requirements and priorities. In brief, as demonstrated by several treaties and non-binding documents, the concept of public participation has discovered expression and is already deeply rooted in civil and political rights.<sup>34</sup> The right of the stakeholders to participate in decision-making and environmental impact assessments usually involves public involvement in environmental issues.<sup>35</sup> There are two significant components to the demands for public participation in environmental issues: First, the EIA legislation, which typically requires government consultation as an essential element. Second, public participation in not an environmental impact assessment but in the decision-making process.<sup>36</sup>

Principle 10 of the Rio Declaration provides that "effective access to judicial and administrative proceedings, including redress and remedy, shall be provided." Agenda 21 needs that governments introduce legal redress processes for judicial and administrative measures in order to resolve problems caused by unwise environmental behavior.

Three distinct adjudication processes relate to access to justice under international environmental law are:

- 1) Challenge the refusal of access to information;
- 2) Sought prevention and compensation for environmentally harmful activities;
- 3) Implementing environmental legislation.

In fact, an efficient government participation enforcement system needs access to administrative and judicial redress.

<sup>34</sup> Malgosia Fitzmaurice, 'Public Participation in the North American Agreement on Environmental Cooperation', *International and comparative Law Quarterly*, Vol. 52, (2003), p.22.

<sup>35</sup> George (Rock) Pring and Susan Y.Noe, 'The Emerging International Law of Public Participation Affecting Global Mining, Energy and Resources Development,' in Donald N. Zillman, Alastair R. Lucas and George (Rock) Pring (eds.), *Human Rights in Natural Resource Development*, Oxford University Press, 2002, ph.13.

<sup>36</sup> Ibid, p. 38.

## LINKAGES BETWEEN HUMAN RIGHTS AND THE ENVIRONMENT

Shelton finds four 'primary and complementary methods' that define the human rights-environment relationship:

- (1) Selected human rights, such as the emphasis on procedural rights (freedom of association and right of access to data on the future environmental threat) are used by global legislation on the environment for the protection of the environment;
- (2) Human rights regulations interpret human rights to include environmental protection if environmental degradation prevents human rights, including the right to life, health, culture, a family and personal life, from being exercised;
- (3) A fresh substantive human right is now emerging to a secure and healthy setting;
- (4) As a matter of human responsibilities rather than rights, environmental protection has to be resolved.<sup>37</sup> Connections have been created by domestic and international courts and tribunals under foreign soft law standards, treaties on human rights, environmental conventions, domestic constitutions and judicial interpretations.

#### International Soft Law Norms

Many UN resolutions and works have discussed and developed linkages between human rights and the environment. The 1972 Stockholm Declaration was created at the United Nations Conference on Environment and Development which acknowledges the environment as a human rights element.

According to Principle 1 of that Declaration:

"Man has the fundamental right to freedom, equality and adequate conditions of life in an environment of a quality that permits a life of dignity and wellbeing, and he bears a solemn responsibility to protect and improve the environment for present and future generations."<sup>38</sup> The United Nations Conference on Environment and Development 1992

<sup>37</sup> Dinah Shelton, 'Human rights and the Environment: What Specific Environmental Rights have been recognized?' *Denver Journal of International Law and Policy*, Vol.35, (2006), p.129.

<sup>38</sup> Declaration of the UN Conference on the Human Environment, UN Doc. A/CONF.48/14/ Rev. 1(1972), reprinted in 11 I.L.M. 1416 (1972).

## followed up the Stockholm Declaration with the Rio Declaration which declares "Human beings are entitled to a healthy and productive life in harmony with nature".

While this pronouncement is not a right to the environment, in its principle 10, the Rio Declaration recognizes that public access to information on the environment is necessary, as well as public participation in environmental decision-making and it can be seen as procedural rights deriving from this substantive right. The UN General Assembly highlighted the connection between environmental protection and the fulfilment of human rights in its several Resolutions in the 1990s. In 1990, "All people are entitled to live in a setting appropriate for their health and welfare" was specifically acknowledged by the General Assembly.<sup>39</sup> In the same year, Resolution 1990/41, reiterating the link between environmental protection and the realization of human rights, was approved by the UN Commission for Human Rights.<sup>40</sup> In 1994, The United Nations Special Reporter Fatema Zohra Ksentini produced a study on the issue titled, "Human and Environmental Rights" which provided for the environmental aspect of basic human rights - to life, health and culture and for a powerful and thorough connection between human right and environment.<sup>41</sup> The Ksentini Final Report showed that there is "universal acceptance of the environmental rights recognized at the national, regional and international levels." The World Summit on Sustainable Development in 2002 addressed further links. The right to the environment was implicitly related to the wider right to developments included in the Johannesburg Implementation Plan.<sup>42</sup> An International Seminar on the Right to the Environment, released the Bizkaia Declaration on the Right to the Environment, was arranged by the United Nations Educational, Scientific, Cultural Organization and the United Nations High Commissioner for Human Rights in 1999.<sup>43</sup> According to Article 1 of the Bizkaia Declaration, "Everyone has the right, individually or in

<sup>39</sup> Resolution 1990/7, 30 August 1990.

<sup>40</sup> G.A. Res. 45/94, 1, U.N. Doc. A/Res/45/94 (Dec. 14, 1990).

Doc.E/CN.4/Sub.2/1994/9, (July 6, 1994) (prepared by Mrs. Fatma Zohra Ksentini, Special Rapporteur).

<sup>42</sup> Johannesburg Plan of Implementation, 169, <a href="https://www.un.org/esa/sustdev/documents/WSSD\_POI\_PD/English/WSSD\_PlanImpl.pdf">https://www.un.org/esa/sustdev/documents/WSSD\_POI\_PD/English/WSSD\_PlanImpl.pdf</a>> accessed 30 June 2020.

<sup>43</sup> See Draft Principles of Human Rights and the Environment, May 16, 1994, U.N. Doc. E/ CN.4/Sub.2/1994/9.

association with others, to enjoy a healthy and ecologically balanced environment, which may be exercised before public bodies and private entities, whatever their legal status under national and international law."

### Human Rights Treaties

In International Human Rights Instruments, the right to the environment is not explicitly acknowledged. The International Human Rights Instruments have made only some implicit references. The Universal Statement of Human Rights, for instance, declares that: "Everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food, clothing and housing." The term 'standard of living' also means the presence of environmental quality that is vital to every individual's life. The International Pact on Economic,

Social and Cultural Rights 1966 offers for the right to 'improving the environmental and industrial hygiene in all aspects of health rights' as set out in the reference to human rights to the environment [Article 12 (2)(b)].

Some regional human rights tools specifically include the right to a secure setting. Article 24 of the African Charter on Human and Peoples Rights 1981 for instance states, "All people shall have the right to a general satisfactory environment favorable to their development". The African Charter acknowledges the right to a good setting as a third-generation category or a right to solidarity. Initially, the 1969 American Convention on Human Rights made no reference to environmental rights but in its 1988 Additional Protocol, Article 11 states, "Everyone shall have the right to live in a healthy environment. The States Parties shall promote the protection, preservation, and improvement of the environment." The 1950 European Convention on Human Rights and Fundamental Freedoms does not include the right to the environment, but some civil and political rights to safeguard against environmental damages have been interpreted by the European Court of Human Rights. For instance, the Court has creatively interpreted the right of the House to remediate the extreme pollution with respect for life (Article 8).44 In some worldwide human rights treaties, unique groups of individuals have reference to the right to the environment. The 1989 Convention on the Rights of the Child, for instance, deals with the protection of the environment in relation to the right of the child to health. Article 24 offers for

<sup>44</sup> Stuaart Bell and Donald McGillivray, *Environmental Law*, 5<sup>th</sup> Ed., Blackstone, London, 2000, p.55.

the fake of suitable actions against disease and malnutrition by States parties. Article 4 of ILO Convention No 169 on Indigenous and Tribal Peoples of Independent Countries (1989) says that States shall take unique steps to safeguard native peoples' environment in accordance with their free expression.

#### Constitutionalization of Environmental Rights

In the constitutional regulations on the right to the environment, there is a further link between the environment and human rights.<sup>45</sup> The constitutions of 118 countries around the globe recognize the right to a healthy environment in different formulations. For example, Article 24 of the Constitution of South Africa states that, 'Everyone, by means of reasonable legislation and other actions to prevent pollution and degradation, has the right to an environment that is not detrimental to health and well-being, and to have an environment safeguarded in the interests of the present and future generations.' Moreover, the right of all citizens to "a good, equitable setting appropriate for human development and productive activity that is capable of meeting current requirements without compromising that of the future generations" are provided for in Article 41 of the Constitution of Argentina. However, some environmental constitutional provisions stay mainly inspiring and express domestic objectives rather than legitimate rights. The Constitutions of nations such as Cameroon, Ghana, Namibia and Tanzania, for instance, have clauses of this kind that are laws and policy goals rather than enforceable laws. 'Constitutionalization' can be seen as a more effective manner of environmental protection.<sup>46</sup> In addition to the right to the environment, the constitutional regulations may impose on the public to avoid environmental harm or to protect the environment.

Certain constitutions impose environmental protection duties on residents and government interest organizations. For example, it has been stated in accordance with Article 48A of the Indian Constitution that the State shall try to protect and strengthen the country's environment and its forests and wildlife. The fundamental duties of every citizen are laid down in Article 51A of the Constitutions of India. It says that it is the responsibility of all Indians to safeguard, enhance and compassionate for life's living

<sup>45</sup> See, Daniel A. Sabsay, 'Constitution and Environment in Relation to Sustainable Development', *Pace Environmental Law Review*, Vol. 21, Issue 1 (2004), p. 155.

<sup>46</sup> David Marrani, 'Human Rights and Environmental Protection: The Pressure of the Charter for the Environment on the French Administrative Courts', Sustainable Development Law & Policy, Volume 10, Issue 1 (2009).

beings and to safeguard and enhance the natural environment, including woodlands, lakes, rivers and wilderness. Since a constitution is the supreme law of any nation, it places the protection of the environment on a greater level and is a superior norm immune from normal legislative change. Consequently, constitutional recognition of the right to secure environment offers a higher standard of environmental protection than common laws. Constitutional recognition is particularly essential because, in international human rights instruments, it is not specifically stated as a human right. On the other hand, constitutional recognition allows people to invoke directly the right to secure environment as a basic human right in domestic courts and tribunals. This enhances environmental accountability and empowers civil society under the constitutional regulations.<sup>47</sup> The right for a secure setting is particularly essential for ensuring, for instance, that the right of Constitutional regulations on liberty of association, access to data, government involvement and judicial remedies can significantly enhance the capacity of proponents to use the law as an environment in the following respects: First, the scope of environmental legislation and regulatory regimes that are often not sufficiently developed to provide full protection may be expanded. The legislative system can enact environmental law for the protection of the environment by the constitutional regulations. Secondly, the comparative status of environmental rights can be enhanced by constitutional regulations which are often considered secondary to other priorities such as economic development. Environmental proponents can raise environmental cases to the point of constitutional instances that address basic human freedoms by referring to environmental protection enshrined directly in the Constitution. Thirdly, Constitutions are often the source of procedural rights needed to carry out the programs on environmental protection in the context of environmental protection for the citizens. The inclusion into Constitutions of environmental standards can, in general, be a potential instrument in direct or indirect development, enforcement and implementation of environmental protection.48

<sup>47</sup> Carl Bruch, Wole Coker, and Chris Van Arsdale, Breathing Life into Fundamental Principles: Implementing Constitutional Environmental Protections in Africa, World Resource Institute, Washington, 2001, <a href="http://pdf.wri.org/eaa\_bruch.pdf">http://pdf.wri.org/eaa\_bruch.pdf</a>.> accessed 30 June 2020.

<sup>48</sup> Ibid.

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#### Judicial Interpretation and Environmental Rights

International and national authorities and courts have freely interpreted the current human rights corpus to include the right to a secure setting. In 1997, the International Court of Justice specifically acknowledged the human right to environmental protection in line with contemporary international law as regards the Gabcikovo-Nagymaros Project (Hungary/Slovakia). The International Court of Justice in the 1997 Case Concerning the Gabcikovo-Nagymaros Project (Hungary/Slovakia) expressly recognized the existence of a human right to environmental protection under modern international law.<sup>49</sup>

The distinct view presented to the International Court by Judge Weramantry indicated the following:

"The protection of the environment is...a vital part of contemporary human rights doctrine, for it is a sine qua non for numerous human rights such as the right to health and the right to life itself. It is scarcely necessary to elaborate on this, as damage to the environment can and undermine all the human rights spoken of in the Universal Declaration and other human rights instruments".

Justice militancy continues as a significant avenue at domestic level for interlinked innovative aspects of human rights and environmental protection.<sup>50</sup> If the Constitution expressly guarantees the right of the indispensable judiciary, these Constitutional provisions have not been reluctantly interpreted and enforced by a country. On the other side, Constitutional rights such as the right to life have become a significant interpretative instrument for expanding environmental law if the Constitution of a country has not affirmed the right to the environment. The significance and scope of this clause have been widely explained so that in a multitude of factual contexts, the right to a secure setting is implied. Justice activism helps to properly apply environmental legislation and gives backwards-looking access to the justice system to the vast majority. The 'right to environment' was expressly recognized as a consequence of a progressive interpretation by the judiciary in respect of certain clauses in the Constitution and law.<sup>51</sup>

<sup>49</sup> Gabcikovo-Nagymaros Project (Hung v. Slovk), 1997 ICJ.7, 78 (Sep.25).

<sup>50</sup> See, Abdullah Al Faruque, 'Protection of Environment through Judicial Activism in Bangladesh', *South Asian Journal*, Issue 30, (2010), pp.57-68.

<sup>51</sup> Hon. Justice Mainur Reza Chowdhury, 'Legal and Institutional Framework Promoting Environmental Management in Bangladesh', <a href="http://www.unep.org/law/Symposium/Documents/Country\_papers/Bangladesh.doc">http://www.unep.org/law/Symposium/Documents/Country\_papers/Bangladesh.doc</a>> acessed 30 June 2020.

## CLIMATE CHANGE AND HUMAN RIGHTS

Nothing better expresses the connection between human rights and the environment than the effect of climate change.<sup>52</sup> The UN Human Rights Council in its resolution 7/23, in March 2008 entitled "Human Rights and Climate Change" emphasized that "climate change poses an immediate and far-reaching threat to people and communities around the world and has implications for the full enjoyment of human rights."53 Climate change's adverse effects are widely known and can include rising sea levels, forced mass migration, increasing incidence of diseases, shelter destructiveness and landslides. Clearly, rising global temperatures will boost poverty and social deprivation, the vulnerability of the world's poor people. In the near future, forced migration can lead to millions of being "environmental migrants". We are now well aware of worldwide warming which may lead to water shortage, floods, droughts and livelihood losses. This puts a broad variety of widely acknowledged fundamental rights, including the freedoms of life, food, appropriate housing, health and water, under direct threat from climate change. In specific, those sections of the population which are already susceptible because of variables such as poverty, gender, age, minority status and disability will be the most sensitive to the impacts of climate change.

The harmful effects of climate change are especially susceptible to women, kids and indigenous peoples. Indigenous people have, by reason of their proximity to the environment and different livelihoods depending on access to soil and natural resources, in multiple regions of the globe, already been disproportionately impacted by climate change. The environmental strategy continues a traditional approach to climate change, which sees climatic change mainly as an economic and ecological issue of environmental pollution and ecosystem degradation. But the strategy of human rights also points to an issue of human protection and safety that must be solved from a wider socio-economic standpoint. There is a growing realization that

<sup>52</sup> See, Kate Raworth, 'Climate Wrongs and Human Rights-Putting People at the Heart of Climate Change Policy' (Oxfam Briefing Paper No. 117, Oxfam International, 2008), <http://www.ohchr.org/EN/NEWSEVENTS/Pages/TrackingClimateChange.aspx>; Marcos A Orellana, 'Practical Approaches to Integrating Human Rights and Climate Change Law and Policy', (Center for International Environmental Law, 2009).

<sup>53</sup> Human Rights Council, Report of the Human Rights Council on Its Seventh Session, 65-66, 1, U.N. Doc. A/HRC/7/78 (July 14, 2008).

climate change does not have to be viewed as a holistic approach in isolation from the technical problem. An approach based on human rights is an essential component of this holistic strategy which considers that climate negotiations in progress should be taken from different viewpoints and should include human rights problems. It is an urgent task for the adoption of a climate strategy that already has drastic effects on the poor and marginalized worldwide, reinforcing current vulnerabilities and rising inequalities, as a result of quickly growing climate change. From a more favorable and forward-looking point of view, human rights may be argued in favor of informing policies and legal solutions to climate change. This may include arguments based on States' human rights commitments in accordance with a multitude of tools of international law. Human rights obligations may provide a legal basis for tackling and protecting against climate change. Thus, how to address climate change may contribute to the realization of human rights and how to ensure that rights are fulfilled can assist to improve their adaptability to climate change and emphasize fundamental compatibility of objectives and results between climate change issues and human rights. A human rights strategy to climate change represents a shift from physical science to a situation in which people and communities express the issues and views of vulnerable and marginalized groups. Until now, although the human cost of climate change threatens numerous fundamental human rights such as freedoms to life, to food, to a location to live and to work, the human rights impacts of climate change have not been investigated. Unless the state acts efficiently to limit global change, these human rights may be widely violated. State reactions to climate change threat must guarantee the protection of human rights. The human rights strategy has become one of the most efficient approaches to combat the impacts of climate change. This strategy is normally based on global human rights standards and is practically geared to human rights promotion and protection.<sup>54</sup> Three components of such a strategy based on human rights can be recognized: firstly, the argument for powerful mitigation and adaption measures may add significant normative importance. Secondly, a strategy based on human rights can help modify and improve international law in appropriate fields. Thirdly, it will certainly help create domestic climate policy, including adaption measures and connecting climate change to a human rights view. Climate adaption is the method by which individuals

<sup>54</sup> Siobhan McInerney-Lankford, 'Climate Change and Human Rights: An Introduction to Legal Issues', *Harvard Environmental Law Review*, Vol. 33, (2009), 431-437.

decrease their harmful health and well-being by reducing their climate vulnerability and requires changes.

Human Rights can be undermined by the strategies of mitigation and adaption which do not rely on human rights principles. Therefore, it is essential to guarantee from the beginning that the human rights implications are taken into account in mitigation and adaption measures. Accountability and openness are equally essential in implementing on-the-ground adaptation strategies. Adaptation policies and mitigation programs should be developed through proper government consultations with the groups concerned in order to guarantee accountability and transparency. A human rights-based approach places accountability on governments so that impacted members of a society can participate and contribute to the growth of adjustment measures. Climate change impedes the pleasure of the human rights agreements. Human rights legislation places very few commitments on private players such as multinational corporations that make a significant contribution to climate change. A human rights view could also help impose on multinationals certain immediate commitments to take steps to mitigate the impacts of climate change within the framework of global law. Another result of the strategy based on human rights is that the adversely impacted populations should have access to suitable solutions for violations of human rights linked to climate change. Because climate change impacts usually categories of people's financial, social and cultural freedoms that are traditionally characterized by weak surveillance and enforcement. The practical human-related importance lies in the reality that it focuses on the incorporation in climate change decision making of formerly excluded and marginalized communities.

# RIGHT TO ENVIRONMENT (BASED ON FEW JUDICIAL CASES): BANGLADESH AND GLOBAL CONTEXT

The judiciary has embraced a liberal and harmonious interpretation of some fundamental rights to guarantee environmental protection in the lack of express constitutional provision on environmental rights in Bangladesh<sup>55</sup>. At the moment,

<sup>55</sup> See, Jona Razzaque, 'Access to Environmental Justice: Role of the Judiciary in Bangladesh', Bangladesh Journal of Law, Vol. 4, (2000), pp.1-27; Syeda Rizwana Hasan, 'Environment and Sustainable Development: litigation and Judicial decisions in Bangladesh' A paper presented at National Workshop on Environmental Law and Sustainable Development, 22-23 Sep. 1999, Dhaka.

most Bangladeshi environmental activities are covered by the Bangladeshi Constitution on the right to life. The method of writing is preferred rather than the standard case because it is quick, fairly cheap and gives immediate access to the highest judiciary of the country. In the case of *Dr. Mohiuddin Farooque v. Bangladesh and others*, <sup>56</sup> judicial recognition for protection of environment was first recorded by the High Court in a case that challenged nuisance during election campaign. The judiciary disposed of the case on assurance from the Attorney General to take measures against defacing of public and private property in the name of election campaign.

In another case of *Dr Mohiuddin Farooque* v. *Bangladesh and others*,<sup>57</sup> the judiciary, while deciding on a case involving importation of radiated milk attached broader meaning to the constitutional 'right to life' and held "Right to life is not only limited to the protection of life and limbs but extends to the protection of health and strength of the workers, their means of livelihood, enjoyment of pollution-free water and air, bare necessaries of life, facilities for education, development of children, maternity benefit, free movement, maintenance and improvement of public health by creating and sustaining conditions congenial to good health and ensuring quality of life consistent with human dignity".

The European Court of Human Rights, while dealing with the *Hatton and others v. the United Kingdom*<sup>58</sup> case, was requested to assess whether the government's night flights policy at Heathrow airport resulted in a breach of the applicants' rights under articles 8 and 13 of the Convention. While delivering judgments on October 2, 2001, a Chamber of the Court mentioned that there had to be a reasonable equilibrium between the conflicting concerns of the individual and that of the society as an entire body, adding that the State enjoyed a "certain" margin of appreciation in determining the steps to be taken to ensure compliance with the Convention (Commission on Human Rights, Science, and Environment, 2005). The Chamber stressed, however, that states must have taken all sorts of material considerations into account to strike the balance required. Moreover, the negligible reference to the

<sup>56 48</sup> DLR (Dhaka Law Report), 434 HC (High Court).

<sup>57 48</sup> DLR (Dhaka Law Report), 438 HC.

<sup>58</sup> Bharadvaj V. (2018). Pollution Human Rights and Environmental Protection, International Journal of Advance Research, Ideas and Innovations in Technology, 4 (1), 98-101, <a href="https://www.ijariit.com/index-of-volumes/">https://www.ijariit.com/index-of-volumes/</a>> accessed 14 June 2020.
country's well-being is not adequate, in the particularly delicate area of environmental protection, to overweigh the rights of others. The Court, consequently, found that the United Kingdom had neglected, in breach of Article 8, to strike such a reasonable equilibrium due to the absence of any serious effort to assess the extent or effect of the interferences with the applicants' rest designs. Following an appeal, the Grand Chamber of the European Court later overturned the earlier judgment on July 8, 2003. The Grand Chamber reiterated the "fundamentally subsidiary role of the Convention" (para. 97) and reaffirmed that it is essential for the state to reach a reasonable equilibrium between the country's economic interest and the conflicting interest of the persons impacted by noise disturbances. The Court concluded that there had no breach of article 8 of the Convention as it had been found that the United Kingdom authorities had not exceeded their "wide" margin of appreciation by failing to strike a fair balance between the conflicting concerns of the individual and that of the society as an entire body.

The opening of a tannery waste treatment plant in Lorca, Spain, in July 1988,<sup>59</sup> without the required license, caused health problems and a nuisance to people living in the district. Due to the gas fumes and contamination caused by the plant, one of the four members—one husband and two daughters—of the applicant's family suffered serious health problems. Getting complaints of stinking smells, fumes, and contamination from the habitants of Lorca, the municipal council relocated them for three months. The council also ordered an end to the settlement of chemical and organic residues in water tanks for one of the plant operations, but allowed the treatment of wastewater contaminated with chromium to proceed. As the applicant was still facing the same problem even after the relocation, she applied for the defense of her fundamental rights, including those liked to the illegal interference with her home and her peaceful enjoyment of it, to the district administrative court. Based on Spain's failure to take actions necessary for the remedy to the smell, noise and contaminating smoke from the plant, the applicant lodged a complaint with the Court under the European Convention, Article 3 (inhuman and degrading treatment), and Article 8 (right to respect for private and family life). The Court considered that a fair balance should be struck between the interest in the town's economic well-being and the effective enjoyment by the applicant of its right to

<sup>59</sup> Ibid, p. 100.

respect their home, private and family life in order to determine whether a breach in Article 8 occurred. In the conclusion, the Court came out with the finding that the "margin of appreciation," which permits the State a "certain" margin of appreciation in determining the appropriate balance, had been exceeded (paras. 52-58). *Lopez Ostra* v. *Spain* was the European Court of Human Rights' first major decision on the relationship between the right to a healthy environment and the Article 8 right to respect for private life and home and family life. It also verified prior decisions on third party accountability, opening the door to findings of State accountability for (polluting) actions by private companies in its jurisdiction.

As already stated, under the Bangladesh Constitution, there is no right to the environment. But the protracted movement of civil society and environmentalists has led to the incorporation by the 15th amendment of provisions relating to conservation and growth of the environment in the basic principles of the State Policy of Bangladesh. This evolution is obviously welcomed. But this clause requires the state to safeguard and develop its environment and to guarantee preservation and safety of natural assets, biodiversity, of wetlands and of the wildlife. It, therefore, does not lay down the right of people to a secure setting but is declared to be one of the basic principles of the state policy that can be taken as a guideline when interpreting.<sup>60</sup> The government, its organizations, people and legal entities can bear this constitutional obligation to safeguard the environment as a basic right that was set up by the judiciary.

### SELECTED TREATY AND OTHER PROVISIONS LINKING HUMAN RIGHTS, HEALTH AND ENVIRONMENT

#### Human Rights Instruments with Provisions on Health and the Environment

Before environmental protection turned out to be an issue of global concern, most of the human rights treaties were designed and adopted, leaving few references to environmental issues in international human rights mechanisms. However, the rights to life and the rights to health are avowedly incorporated in those mechanisms and some formulations of the latter right leave few references to environmental issues. The

<sup>60</sup> Constitution of Bangladesh, Art. 8(2).

International Covenant on Economic, Social and Cultural Rights, adopted by General Assembly resolution 2200A (XXI) of 16 December 1966, guarantees the right to safe and healthy working conditions (art. 7 b) and the right of children and young person to be free from work harmful to their health (art. 10-3). Article 12 of the Covenant deliberately calls on states parties to adopt measures for "the improvement of all aspects of environmental and industrial hygiene" and "the prevention, treatment and control of epidemic, endemic, occupational, and other diseases."

The Convention on the Rights of the Child (New York, 20 November 1989), commonly known abbreviated as the CRC or UNCRC, is an international agreement on childhood which relates to the protection of the environment as far as the right to health of children is concerned. In article 24, it has been stated that States Parties shall take appropriate measures to combat disease and malnutrition "through the provision of adequate nutritious foods and clean drinking water, taking into consideration the dangers and risks of environmental pollution" (Art. 24(2)(c)). Information and education is to be provided to all segments of society on hygiene and environmental sanitation (Art. 24(2)(e)).

A number of references to the lands, resources, and environment of indigenous peoples (e.g., arts. 2, 6, 7, 15) have been found in the *Indigenous and Tribal Peoples Convention, 1989 (No. 169).* Part II of the Convention addresses land related issues including the rights of the peoples "concerned of their relationship with the lands or territories, or both as applicable, which they occupy or otherwise use, and in particular the collective aspects of this relationship". In addition, article 25 provides that governments are to ensure adequate health services available to the indigenous groups "so that they may enjoy the highest attainable standard of physical and mental health" (Art. 25(1)). Governments, as demanded by Article 30, are to take appropriate measures to make known to the people concerned their rights and duties, especially in regard to labour, economic opportunities, education and health matters.

There are particular provisions in two territorial human rights treaties on the environment: the American Convention Protocol speaks of a "healthy environment" while the African Charter links environment to development.<sup>61</sup>

<sup>61</sup> Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (San Salvador, November 17, 1988, OAS T.S. 69.

Both a right to health and a right to the environment are incorporated in the *African Charter of Human and Peoples' Rights* (Banjul 26 June 1991). The right to enjoy the highest attainable state of physical and mental health is guaranteed by Article 16 of the Charter, whereas Article 24 states that "All peoples shall have the right to a general satisfactory environment favorable to their development." However, it is not made clear how a person is distinguished from a person's right.

The Additional Protocol to the American Convention on Human Rights in the area of *Economic, Social and Cultural Rights*,<sup>62</sup> also contains both a right to health and a right to environment, drafted in more detail than in other human rights instruments. Article 10 provides

- Everyone shall have the right to health, understood to mean the enjoyment of the highest level of physical, mental and social well-being.
- In order to ensure the exercise of the right to health, the States Parties agree to recognize heath as a public good and, particularly, to adopt the following measures to ensure that right: (a) Primary health care, that is, essential health care made available to all individuals and families in the community;
  (b) Extension of the benefits of health services to all individuals subject to the State's jurisdiction; (c) Universal immunization against the principal infectious diseases; (d) Prevention and treatment of endemic, occupational sand other diseases; (e) Education of the population on the prevention and treatment of health problems, and (f) Satisfaction of the health needs of the highest risk groups and of those whose poverty makes them the most vulnerable.

Article 11 is entitled: "Right to a healthy environment." It proclaims:

- Everyone shall have the right to live in a healthy environment and to have access to basic public services.
- The States Parties shall promote the protection, preservation and improvement of the environment.

<sup>62</sup> See, the Additional Protocol to the American Convention on Human Rights in the area of Economic, Social and Cultural Rights, <a href="https://www.refworld.org/docid/3ae6b3b90.html">https://www.refworld.org/docid/3ae6b3b90.html</a> accessed 14 June 2020.

#### Environmental Instruments with Provisions on Health and Human Rights

In environmental treaties, health concern is a steady theme. Indeed, it is one of the main objectives of environmental protection. As found in the numerous legal documents, a standard definition of pollution is "the introduction by man, directly or indirectly, of substance or energy into the [environment] resulting in deleterious effects of such a nature as to endanger human health, harm living resources...." etc.<sup>63</sup> The prelude of the directives made by European Community often enunciates their aim as being "to protect human health and the environment."<sup>64</sup> The preamble of the *Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal*<sup>65</sup> also begins with "aware of the risk of damage to human health..." and "the growing threat to human health" posed by hazardous wastes. The link is also made by non-binding statements. In paragraph 3, the Stockholm Declaration expresses its concern about widespread proof of human-made harm in many areas of the world:

"dangerous levels of pollution in water, air earth and living beings; major and undesirable disturbances to the ecological balance of the biosphere; destruction and depletion of irreplaceable resources; and gross deficiencies harmful to the physical, mental and social health of man, in the man-made environment, particularly in the living and working environment."

States are, as stated in the Principle 7 of the Stockholm Declaration, "to take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health. . ." Article 1 of the Legal Principles for Environmental Protection and Sustainable Development, adopted by the Expert Group of the Brundtland Commission, declares that "All human beings have the fundamental

<sup>63</sup> See, e.g., Convention on Long-Range Trans-boundary Air Pollution (Geneva, 13 Nov. 1979), 1302 U.N.T.S. 217, art. 1. See also: Vienna Convention for the Protection of the Ozone Layer (Vienna, 22 Mar. 1985), UNEP Doc. IG.53/5, art. 1(2); Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal, 16, Sept. 1987), 26 I.L.M. 1550 1987), Pmbl, para. 3; Convention on the Trans-boundary Effects of Industrial Accidents (Helsinki, 17 Mar. 1992).

<sup>64</sup> EC Council Directive No. 85/201 on Air Quality Standards for Nitrogen Dioxide, 7 Mar. 1985, L 87 O.J.E.C. (1985); EC Council Directive No. 80/779 on Air Quality Limit Values, 15 July 1980, L 229, O.J.E.C. 30 (1980).

<sup>65</sup> Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal (Basel, 22 Mar. 1989), 28 I.L.M. 657.

right to an environment adequate for their health and well-being."<sup>66</sup> Chapter 6 of Agenda 21, adopted at the 1992 Rio Conference on Environment and Development, is entirely devoted to "protecting and promoting human health conditions," while the Rio Declaration itself proclaims that human beings "are entitled to a healthy and productive life in harmony with nature" (Principle 1) and provides that states should effectively cooperate to discourage or prevent the relocation and transfer to other states of any activities and substances that, inter alia, are found to be harmful to human health (Principle 14).

In environment treaties, procedural human rights are given much emphasis.<sup>67</sup> Since the Stockholm Conference calls upon states, to take particular steps to make people sufficiently informed about environmental risks, including health risks, several dozen international treaties have been adopted while people are provided broad rights to take part in decision-making and easy access to remedy for environmental harm.<sup>68</sup> After the espousal of Principle 10 of the Rio Declaration on Environment and Development the protections afforded have increased in scope and number.<sup>69</sup>

By utilizing procedural human rights many international treaties approached to secure an enhanced environmental protection, but the *Convention on Access to Information*,

<sup>66</sup> Legal Principles for Environmental Protection and Sustainable Development, adopted by the Experts Groups on Environmental Law of the World Commission on Environment and Development (WCED), 18-20 June 1986, U.N. Doc. WCED/86/23/Add. 1 (1986), Art. 1.

<sup>67</sup> In addition to those discussed in the text, see e.g. Protocol to the 1979 Convention on Long-Range Trans-boundary Air Pollution Concerning the Control of Emissions of Volatile Organic Compounds or Their Trans-boundary Fluexes (Geneva, 18 November 1991), art. 2(3) (a) (4); Convention on the Protection and Utilization of Transboundary Rivers and Lakes (Helsinki, 17 March 1992), Art. 16; the regional seas agreements; Convention on Civil Responsibility for Damage Resulting from Activities Dangerous to the Environment (Lugano, 21 June 1993, Arts.13-16; and United Nations Framework Convention on Climate Change (Rio de Janeiro, 1992), 31 I.L.M. 849, Art.6.

<sup>68</sup> See, e.g., the Helsinki Convention on the Trans-boundary Effects of Industrial Accidents, 31 I.L.M. 1330 (1992), which, recognizing the importance and urgency of preventing serious adverse effects of industrial accidents on human beings and the environment requires that States Parties provide adequate information to the public and, whenever possible and appropriate, give them the opportunity to participate in relevant procedures and afford them access to justice. (Art. 9).

<sup>69</sup> See, e.g., the United Nations Convention to Combat Desertification in Those Countries Experiences Serious Drought and/or Desertification (14 October 1994), which places human beings at the center of concern to combat desertification (Pmbl) and requires states parties to ensure that all decisions to combat desertification or to mitigate the effects of drought are taken with the participation of populations and local communities. (Art. 3).

Public Participation and Access to Justice in Environmental Matters, (Aarhus, June 25, 1998), was the one that took a comprehensive approach. The Convention which was signed by thirty-five States and the European Community follows the prior texts, especially Principal 1 of Stockholm Declaration. The Convention mainly incorporates and strengthens the Stockholm Principal 1. The Convention's Preamble forthrightly proclaims that "every person has the right to live in an environment adequate to his or her health and well-being, and the duty, both individually and in association with others, to protect and improve the environment for the benefit of present and future generations". If a citizen wants to assert his rights and observe his duty, he/she must have, according to the following paragraphs, easy access to information, to the participation in decision-making and to justice in environmental issues—the provisions which have been repeated in Article 1 where the rights of access to information, public participation, and access to justice is guaranteed by the State parties.

The Helsinki Watercourses Convention Protocol on Water and Health<sup>70</sup> (London, June 17, 1999) includes the most comprehensive treaty clauses eluding the linkage among the three topics. The Protocol is designed to strengthen the protection of human health and well-being at all suitable contexts through improving water management, including the protection of water ecosystems, and through preventing, controlling and reducing water-related disease. Since its commencement, the Convention states that water is crucial if existence is to be sustained, and that the quality and quantity of water must be guaranteed to ensure basic human needs, "a prerequisite both for improved health and for sustainable development". In Article 4 the general provisions states an obligation for Parties "to take all appropriate measures for the purpose of ensuring adequate supplies of wholesome drinking which is free from any micro-organisms, parasites and substances which, owing to their numbers or concentration, constitute a potential danger to human health" (art. 4). Article 5 stresses the need for access to information and public participation in decisionmaking "in order to enhance the quality and the implementation of the decisions, to build public awareness of issues, to give the public the opportunity to express its

<sup>70</sup> Protocol on Water and Health to the 1992 Convention on the Protection and Use of Trans-boundary Water Courses and International Lakes (London, 17 June 1999), <a href="https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg\_no=XXVII-5-a&chapter=27&clang=\_en>accessed 14 June 2020.">https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg\_no=XXVII-5-a&chapter=27&clang=\_en>accessed 14 June 2020.</a>

concerns and to enable public authorities to take due account of such concerns" (Art. 5i). For the review of relevant decisions, information and participation should be supplemented by access to justice if necessary. The Protocol also links the issues by referring several times to "rights and entitlements" to water.

### CONCLUSION

There is no doubt that the environmental and human rights are strongly interlinked with one another. Therefore, the enlargement of this relationship would surely provoke the humans beings to merge the principles of human rights within an environmental scale, which would also strengthen human rights as this enlargement of environmental concerns would facilitate the possibility of having easy access to justice to the environmental dilapidation victims as well as allowing the scope of human rights protection to be expanded and generating concrete solutions for degradation related cases. Thus the victims of environmental degradation are brought closer to the mechanisms of protection that are provided for by human rights, through the amalgamation of the human rights and the environment. Moreover, as we are seriously concerned with environmental degradation and its serious impacts on human health and well-being, it is high time we refined our policies and cultural practices to mirror our enhanced understanding. Consequently, by drawing upon and contributing to those who are actively involved in the fields of environment and public health we should be in a position to safeguard human rights and dignity within its wider social, economic and cultural contexts. This should also promote the development of a stronger working relationship with people working in the field of environment and conservation and in the arena of human rights, eventually leading to the verbalization of a more incorporated way to address the socio-economic and environmental issues and fostering the enlargement of sustainable model for the preservation of biological resources and natural ecosystems, for the use and enjoyment of both present and future generations. Demands for a safe, free and healthy environment, as in the sphere of human rights, have widely been propagate, by the developing countries of the south, to a culture based on mass production, mass use and disposal of waste, which is a clear indication of economic growth in the industrialized nations of the northern part of the world. Providing the opportunity of easy access for compensation to the victims of environmental degradation is one of the most significant implications of integrating human rights principles within an

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environmental scale. In view of the occasional impotence experienced by victims of environmental degradation, "linking human rights and the environment brings such victims closer to the mechanisms of protection that are provided by human rights law." Although the discourse on human rights cannot include all environmental issues, at least environmental protection should be based on a right-based strategy. This trend is also indicated by the current global standards. However, insufficiencies in the existing worldwide system of human rights to tackle the problems of the environment, the right to a secure environment, and access to human rights tribunals and processes should be explicitly integrated into the international tool of human rights such as ICCPR or ICESR in order to agree to environmental allegations. In such cases, an existing structure can be used to implement the right to environment. The development of a new environment protection scheme is another proposal for better environmental protection. To this end, a distinct convention could be enacted which would include environmental freedoms both substantive and procedural. The principal reason for the adoption of a distinct tool is that the right to the environment is classified as a right of solidarity and consequently, must be improved by its own oversight and enforcement structures and mechanisms.

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## ASSESSMENT OF CLIMATE ACTION PLANS IN INDIA: A PERSPECTIVE OF GREEN FEDERALISM

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Keywords: Federalism, Decentralization, Climate Change, Ecology.

#### **CLIMATE CHANGE: A GLOBAL MENACE**

The pace at which economic development has taken place in the last century has caused an irreparable anthropogenic impact on the ecology as well as the environment. The summers now have become much hotter, the rains have become more erratic, and there is an overall alteration in the weather pattern all over the world. Climate change is thus negatively impacting food production, cropping pattern, weather conditions, the environment, and our lifestyles. The forest cover of the world has been decreasing, the glacier is melting, and there is a heightened level of global warming.<sup>1</sup> The average temperature of the earth has been increased by 0.85 °C between 1880 and 2012.<sup>2</sup> The concerns regarding climate change and environmental protection have been raised several times at the global level starting from Stockholm conference, 1972 to recent G7 Summit at Biarritz, France. These conferences now recognize

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<sup>1</sup> Daniel Glick, 'The Big Thaw, As The Climate Warms, How Much, and How Quickly, Will Earth's Glaciers Melt?' *National Geographic*, <a href="https://www.nationalgeographic.com/environment/global-warming/big-thaw/">https://www.nationalgeographic.com/environment/global-warming/big-thaw/</a> accessed 7 April 2020.

<sup>2</sup> Gonzalo Delacama, 'Reason, Climate Change and Federalism' Smart Water Magazine, < https://smartwatermagazine.com/blogs/gonzalo-delacamara/reason-climate-change-and-federalism> accessed 7 April 2020.

climate change and environmental degradation, a global menace, and thus, aim for taking collective action towards the protection of the same.

The respective nation-states are thus coming up with legislative policies and frameworks for the sustainable development of the economy to align the economic development goals with the environment. With regard to India, the Constitution initially did not have any direct provision dealing with environment and climate change issues per se. However, the aftermath of the United Nations Conference on the Human Environment (Stockholm Conference), the government of India inserted Article 48A and Article 51A (g) by bringing 42<sup>nd</sup> Constitutional Amendment Act, 1976, which cast a duty on State and citizens respectively to protect and improve the environment.<sup>3</sup> This finally led to the Parliament of India coming up with various legislation such as Wild Life (Protection) Act, 1972, Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981, Environmental (Protection) Act, 1986, Energy Conservation Act of 2001, Biological Diversity Act, 2002, National Green Tribunal Act, 2010, etc. to check water, air and environment protection and also to establish quasi-judicial authority to speedily dispose of the environment cases. The central government has even by exercising its powers under the relevant legislation, has formulated specific regulations pertaining to coastal zones, waste management, etc.

In terms of climate change, India, however, does not have any integrated climate change legislation and majorly rely on existing scattered environment legislations and government commitment under international agreements.<sup>4</sup> Therefore, in order to holistically deal with the issues arising out of climate change, the government bought 'National Action Plan on Climate Change (hereinafter referred to as N.A.P.C.C.). The Indian climate change regime is thus governed by N.A.P.C.C. which has been brought by Prime Minister's Council on Climate Change<sup>5</sup> in the year

<sup>3</sup> The Constitution (Forty-Second Amendment) Act, 1976.

<sup>4</sup> For instance, India under Paris Agreement has committed to reduce the emission intensity of its gross domestic product (GHG emissions per unit GDP) by 33-35 by 2030. Similarly, India though is a non-annex I country under Kyoto Protocol with no legal binding target, however, is actively participating in Clean Development Mechanism (CDM) under the protocol. See Paris Agreement, United Nations Framework Convention on Climate Change (Signed on 22 April 2016) and Kyoto Protocol to the United Nations Framework Convention on Climate Change 2303 UNTS (p.162) (Concluded on December 11, 1997.

<sup>5 &#</sup>x27;Climate Change Programme', Department Of Science & Technology, <a href="https://dst.gov.in/climate-change-programme">https://dst.gov.in/climate-change-programme</a>> accessed 7 April 2020.

2008 to warranting equilibrium amongst economic development goals meanwhile also reducing the carbon footprints and greenhouse emission in the atmosphere. The plan is said to adopt a 'co-benefit approach' by making interaction with facets of development as well as climate change.<sup>6</sup> As a policy document, the N.A.P.C.C. lays down specific goals expected to achieve by the Government of India to reduce the emissions of greenhouse gases in the atmosphere and to attain sustainable development of the country. For that purpose, the Action Plan goes forward to enact eight national missions to integrated and long term to fight climate change. The Twelfth Five Year Plan also recommended for enacting the missions set forth under the N.A.P.C.C. to achieve sustainable development goals by adopting strategies to mitigate carbon emission.<sup>7</sup> The N.A.P.C.C. further casts an obligation on the respective state governments to formulate their policy for combating climate change considering the geographical needs of the State. The paper is majorly concerned with critically analysing the progress made by these state action plans in light of the greater need for the participation of state and local authorities to combat climate change.

India's existing climate change policy is, however, convoluted by the federal structure of the country wherein the centre and State have different legislative competence over the various subject matters relating to the environment and climate change. Because usually, the state government are unwilling to take any steps for the protection of climate and depends hugely on the centre for the funds. Therefore, it becomes indispensable to make both centre and state work together for fighting the battle against climate change by taking necessary measures.

The debate as to the extent of the role played by central and state governments in combating climate change have arisen. Advocates of strong centre argue for having uniform measures and standards set by the central government as it reduces the externalities, interstate spill over, and has better economies of scales.<sup>8</sup> They believe that usually, states are unwilling to take any steps towards climate change as it comes

<sup>6</sup> Parul Kumar and Abhayraj Naik, 'India's Domestic Climate Policy is Fragmented and Lacks Clarity' (Engage), <a href="https://www.epw.in/engage/article/indias-domestic-climate-policy-fragmented-lacks-clarity">https://www.epw.in/engage/article/indias-domestic-climate-policy-fragmented-lacks-clarity</a> accessed 7 April 2020.

<sup>7</sup> Planning Commission, 'Climate Change & 12th Five Year Plan, Report of Sub-Group On Climate Change', <a href="http://planningcommission.nic.in/aboutus/committee/wrkgrp12/enf/wgsub\_climate.pdf">http://planningcommission.nic.in/aboutus/committee/wrkgrp12/enf/wgsub\_climate.pdf</a>> accessed 7 April 2020.

<sup>8</sup> David M. Konisky & Neal D. Woods, 'Environmental Federalism and the Trump Presidency: A Preliminary Assessment', (2018) 48 (3) The Journal of Federalism 345, 337.

at the cost of development. Thus, it is the central government that should have the principal role in formulating the climate change policy for the entire country. On the other hand, others argue for giving more authorities to state government as it promotes decentralization and innovation.<sup>9</sup> Moreover, it is of utmost importance to observe that the real assessment of the effectiveness of those actions and measures taken up by the concerned nation-state lies at their implementation at the local level.

In light of the inability of the central government to effectively deal with the increasing issues posed by climate change, the concept of 'Green Federalism' or 'Environmental Federalism' came into existence. Green Federalism essentially is an extension of the constitutional principle of Federalism into the environmental jurisprudence. The concept of Green Federalism recognizes that it is a shared and collective responsibility of Centre, State, and local bodies to act towards a common goal of addressing climate change issues. Thus, to combat climate change and to protect the environment, it calls for the decentralization of power and policies relating to the environmental safeguards and protection between multi-level governmental bodies starting from the centre, state, municipal and panchayat level.

This paper, therefore, delves into critically analyse the state climate action plans adopted currently on the touchstone of the federal structure of the country. Moving ahead, the paper put forth the idea of 'green federalism' as a last resort to fight climate change and argues for the greater involvement of local bodies and people to combat the menace of climate change. The paper also undertakes the study of the Sundarbans Delta region to highlight the shortcoming of the existing climate change framework in the area. The paper, therefore, proposes to integrate climate action concerns into existing machinery at the grass-root level to ensure that the action against climate change can be taken by the active participation of municipalities, village panchayats, and the public at large.

<sup>9</sup> Dorothy Marie Daley & James C Garand, 'Horizontal Diffusion, Vertical Diffusion, and Internal Pressure in State Environmental Policymaking' 1989-1998, (*Research Gate*), <a href="https://www.researchgate.net/figure/Box-Plot-of-State-Hazardous-Waste-Regulation-Scores-Over-Time\_fig1\_237968050">https://www.researchgate.net/figure/Box-Plot-of-State-Hazardous-Waste-Regulation-Scores-Over-Time\_fig1\_237968050</a>> accessed 7 April 2020.

Volume 7

# STATE ACTION PLAN ON CLIMATE CHANGE (S.A.P.C.C): SIMPLY A PAPER TIGER?

The N.A.P.C.C. was thus brought by the government in the year 2008 to have a comprehensive national policy to effectively deal with the issues arising out of climate change. To date, the concerns of climate change were addressed under the legislative and constitutional regime of constitutional protection. The action plan lays down specific goals to be achieved for reducing carbon emission and greenhouse gases by adopting sustainable means of development. The plan takes a 'co-benefit' approach by introducing eight specific sustainable missions to address the concerns raised by economic development resulting in climate change. The plan also intends to create a comprehensive document and create awareness regarding climate change amongst various shareholders of the society, namely, scientists, government agencies, N.G.O.s, private bodies, and the public at large.

To achieve the sustainable goals of development, the action plan calls for the adoption of the following eight missions<sup>10</sup> namely "National Solar Mission, National Mission For Enhanced Energy Efficiency, National Mission On Sustainable Habitat, National Water Mission, National Mission For Sustaining The Himalayan Ecosystem, National Mission For A Green India, National Mission For Sustainable Agriculture and National Mission On Strategic Knowledge For Climate Change."

These National Mission under the N.A.P.C.C. have quite been successful in fulfilling their targets. Moreover, the central government is proactively and continuously revising and monitoring the missions. For example, the National Solar Mission is considered as the most successful missions under the N.A.P.C.C., which as per the report of the Ministry of New and Renewable Energy India has achieved installed capacity of a solar grid of 31,101.68 MWp by the end of 30<sup>th</sup> September 2019 fulfilling the 2022 target already.<sup>11</sup> Similarly, under National Water Mission, which aims to improve water efficiency by 20%,<sup>12</sup> the N.D.A. led government in order to

<sup>10</sup> Centre for Science and Environment, 'Coping with Climate Change: An Analysis of India's National Action Plan on Climate Change' (2018), <a href="http://www.indiaenvironmentportal.org.in/files/file/coping-climate-change-NAPCC.pdf">http://www.indiaenvironmentportal.org.in/files/file/coping-climate-change-NAPCC.pdf</a>> accessed 7 April 2020.

<sup>11</sup> Ministry of New and Renewable Energy, 'Programme/Scheme wise Physical Progress in 2019-20 & Cumulative up to Feb, 2020 (table)' <a href="http://164.100.94.214/physical-progress-achievements">http://164.100.94.214/physical-progress-achievements</a>> accessed 7 April 2020.

<sup>12</sup> Ministry of Jal Shakti, Department of Water Resources, River Development & Ganga Rejuvenation, 'National Water Mission under National Action Plan on Climate Change'

integrate the major rivers, and water resource bodies of the country have also made a proposal to create Jal Shakti Ministry to ensure better and efficient management of water. The ministry aims to 'HarGhar Jal' under Jal Jeevan Mission by 2024.<sup>13</sup>

The aftermath of the formulation of the N.A.P.C.C., the central government, also made compulsory on the part of respective state governments to draft the State Action Plan on Climate Change (hereinafter referred to as S.A.P.C.C) modelled on the national action plan. The S.A.P.C.C, thought to be modelled on the N.A.P.C.C., the central government has however encouraged the state government to draft their State Action Plans to depend on their geographical needs and requirement to align the development goals with the changing climate. The climatic condition of different states of India varies depending upon the location in which they are situated. For instance, the coastal states like Kerala, Tamil Nadu, Karnataka, Odisha, Goa, Maharashtra, etc. have different environmental concerns in comparison to Himalayan states such as Uttarakhand, Himachal Pradesh, etc.

Therefore, S.A.P.C.C has to be drafted, keeping in mind the geographical need of the State by the respective government. Notably, in light of recent re-current floods in Bihar and Assam, water shortage in Tamil Nadu and Maharashtra, landslides in Uttarakhand, depleting mangrove cover in the country, the respective state government should take the issues of climate change more seriously.

The S.A.P.C.C. majorly consists of firstly describing the geographical location of the State and climatic conditions, followed by statistics of reduction in forest area cover, climate change variation, and their influence on health, agriculture, biodiversity and so on. After assessing the impact of climate change and identifying the vulnerabilities, the action plan goes forward to formulate strategies to address those climate change and environmental degradation concerns on a sectoral basis which comprises agriculture, water resources, forest and biodiversity, power and renewable energy, sustainable habitat, knowledge management, etc.<sup>14</sup> Besides, respective states based on their geographical location incorporates other themes such as Coastal Zone Management for coastal states, floods, and droughts for northern states.

<sup>(2011) &</sup>lt;http://mowr.gov.in/schemes-projects-programmes/schemes/implementation-ofnational-water-mission> accessed 7 April 2020.

<sup>13</sup> Ibid.

<sup>14</sup> Government of Gujarat, 'State Action Plan on Climate Change' (2014), <http://gujenvis. nic.in/PDF/Gujarat-SAPCC.pdf> accessed 7 April 2020.

The S.A.P.C.C. has been successful to some extent. The states, for example, Gujarat, Tamil Nadu, Haryana, Maharashtra, Karnataka, Kerala, Punjab, Uttarakhand, Himachal Pradesh<sup>15</sup>have done impressively well by reducing greenhouse gases, encouraging the adoption of the renewable source of energy, adopting proper solid waste management, reducing waste of water and promoting water preservation, and using advanced technology to combat climate change.<sup>16</sup> The action plan on climate change at the national and State level has enabled the central and state governments to align the goals of climate change. For instance, inspired by the National Solar Mission, the state government such as Gujarat, Madhya Pradesh, Rajasthan, etc. have formulated the state solar policy. The respective state government is also working closely with the central government in implementing the national solar mission by helping developers to gain access to sites and other infrastructure facilities.<sup>17</sup>

The S.A.P.C.C, however, suffers from significant challenges which are impeding the proper implementation of the action plan:

- i. BUDGETARY CONSTRAINT: Firstly, there is a lack of political will on the part of the state government to implement the state action plan earnestly due to the fiscal constraint.<sup>18</sup>The state government is very much dependent on the central funds, which are influenced by the right political relationship with the ruling party at the centre. Therefore, though the state action plans set forth the ambitious goals to combat climate change, they majorly suffer from a lack of proper funds for the implementation of projects.
- ii. LACK OF CONSULTATION FROM STAKEHOLDERS: Secondly, the plan fails to take into account all the stakeholders into consideration. The state action plans are formulated in a haphazard manner without proper involvement of stakeholders such as N.G.O.s, expert groups, and the public. Even the

<sup>15</sup> The Climate Group, 'Driving Climate Action: State Leadership in India' (2019) <https:// www.theclimategroup.org/sites/default/files/india\_report\_web\_singles.pdf> accessed 7 April 2020.

<sup>16</sup> *Ibid*.

<sup>17</sup> Deepak Kumar, 'SOLAR INDIA and JNNSM' (2010), <https://www.greatlakes.edu.in gurgaon/sites/default/files/Solar\_India\_and\_JNNSM.pdf> accessed 7 April 2020.

<sup>18</sup> Oxford Policy Management, 'India's 'State Action Plans on Climate Change: towards meaningful action' (2017), <a href="https://www.opml.co.uk/files/Publications/corporatepublications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1">https://www.opml.co.uk/files/Publications/corporatepublications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1">https://www.opml.co.uk/files/Publications/corporatepublications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1">https://www.opml.co.uk/files/Publications/corporatepublications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1">https://www.opml.co.uk/files/Publications/corporatepublications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1">https://www.opml.co.uk/files/Publications/corporatepublications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1">https://www.opml.co.uk/files/Publications/corporatepublications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1">https://www.opml.co.uk/files/Publications/corporatepublications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1">https://www.opml.co.uk/files/Publications/corporatepublications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1">https://www.opml.co.uk/files/Publications/corporatepublications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1">https://www.opml.co.uk/files/Publications/corporatepublications/briefing-notes/id-state-action-plan-climate-india.pdf?noredirect=1"/>

participation of sectorial player during the drafting process was not seen. For instance, unlike the state action plan of Odisha and Sikkim, the state action plan of Madhya Pradesh was driven by the Climate Action Cell of the State, and there was a limited role played by the officials of the different sector.<sup>19</sup>

- iii. MISSING INTER-DEPARTMENTAL LINKAGE: Thirdly, the state action plan lacks an inter-departmental linkage. The environmental issues are not restricted to one department of the State; rather, the environmental issues are interlinked with one another, having the effect of one on another. However, the current state action plans work in isolation with other departments.
- iv. LACK OF ABILITY OF REPLICATION OF PILOT PROJECTS: Fourthly, the pilot projects and target plans enacted under the specific state action plans lack the ability of replication and adopted in other climatic conditions and geographical locations.<sup>20</sup> The pilot projects thus need up-scaling and more adaptable.
- v. LACK OF INNOVATION: Fifthly, the state action plans lack innovation because many state action plans are just a reproduction of the national action plan. The state government precisely aligned their climate action goals with the eight mission of the national action plans without giving any consideration to the unique geographical requirement of their State.
- vi. LACK OF DEVOLUTION OF POWER TO LOCAL SELF-GOVERNMENT: Most importantly, the state action plans such as Madhya Pradesh, Maharashtra, Haryana, etc. do not further devolve the power from state authorities to the local bodies. The formulation and implementation of the state action plans are restricted to the nodal department and agencies of the state government. It must be kept in mind that the policy decision taken at the state level has to be executed at the very ground level, and therefore, the local government is required to be consulted. The involvement of municipalities and panchayats in the formulation of state action plans will help in making a more holistic state action plan. Moreover, devolving power to the municipalities and

<sup>19</sup> AnuJogesh and Navroz K. Dubash, 'An Analysis of The Madhya Pradesh 'State Action Plan On Climate Change' (Centre For Policy Research (CPR), Climate INITIATIVE) (2014), <a href="https://cprindia.org/sites/default/files/2014\_February\_Jogesh%20&%20Dubash\_mainstreaming%20climate%20in%20state%20planning\_MP%20Climate%20Plan.pdf">https://cprindia.org/sites/default/files/2014\_February\_Jogesh%20&%20Dubash\_mainstreaming%20climate%20in%20state%20planning\_MP%20Climate%20Plan.pdf</a>> accessed 7 April 2020.

<sup>20</sup> Ibid.

panchayats will also encourage creativity in resolving the climate change depending on the regional requirement. It gives space for experimentation and creativity. The Bihar action plan provides recognition to the village panchayats and municipalities in their role for the implementation of the state action plan; however, how far they are functional is questionable.<sup>21</sup> Nevertheless, a commendable role has been played by the municipalities and village panchayats in Kerala, and the action plan also recognizes the same.<sup>22</sup>

- vii. LACK OF PUBLIC PARTICIPATION: Besides, the state action plans reflect the bureaucratic approach, which does not understand the importance of public participation. The climate action plans of states such as Madhya Pradesh, Himachal Pradesh, etc. except having limited consultation with the local people at the time of formulation of the action plans, does not recognize any role that can be played by the local public in helping the authorities to fight the climate change. The issue of climate change and environmental degradation cannot be addressed without the active participation of people at large. The community participation and change in behavior of individuals can only help the country to achieve the goals of reduction of biodiversity and preservation of the environment at large.
- viii. LACK OF RESEARCH: The state action plans so formulated also suffer from a lack of proper research conducted. For instance, the Maharashtra State Action Plan did not even consider the impact of lightning, hailstorm, air pollution on the climate.<sup>23</sup>

Therefore, there is an urgent need to revise the existing S.A.P.C.C to clearly define the goals and establish an operational system tackles the menace of climate change at the grass-root level.

<sup>21</sup> Government of Bihar, 'State Action Plan on Climate Change' (2015), <http://forest.bih. nic.in/Docs/SAPCC%20Final%20Draft%2011-092015%20(Part%20A,%20B%20 and%20C.pdf> accessed 7 April 2020.

<sup>22</sup> Government of Kerala, 'State Action Plan on Climate Change' (2014) < http://moef.gov. in/wp-content/uploads/2017/09/KERALA-STATE-ACTION-PLAN-ON-CLIMATE-CHANGE.pdf> accessed 7 April 2020.

<sup>23</sup> Government of Maharashtra, 'State Action Plan on Climate Action (2014) <http:// admin.indiaenvironmentportal.org.in/files/file/Bihar%20Action%20Plan%20for%20 Climate%20Change.pdf> accessed 7 April 2020. See also Maharashtra's Climate Action Plan comes up short, Nagpur Today (2018), <https://www.nagpurtoday.in/maharashtrasclimate-action-plan-comes-up-short/01011615> accessed 7 April 2020.

# GREEN FEDERALISM: LAST RESORT TO TACKLE CLIMATE CHANGE

The principle of Federalism is considered to be a basic structure of the Constitution<sup>24</sup> and vital for the effective functioning of the government. Originally, under the Constitution of India, there was only decentralization and distribution of power between the centre and state level. However, the aftermath of the enactment of the 73<sup>rd</sup> and 74<sup>th</sup> Constitutional Amendment Act, 1972, the power has been further devolved to local bodies at the municipal and Panchayat level. The Constitution has devolved the power for the proper enforcement of policies and law at the ground level, to give rise to the green Federalism or environment federalism.

The conception of 'Panchayati Raj' is not foreign to India, Mahatma Gandhi always argued for self-governance at the local level called 'Poorna Swaraj.' He reasoned that for any democracy to function, the power should lie in the hands of people who are at the bottom of the hierarchy. The efforts of Gandhi thus paved the way for the incorporation of Article 40 in the Constitution in the form of Directive Principles of State Policy, which imposes a duty on the respective state government to take necessary steps to empower the village panchayats to enable them to function independently. However, it took about 22 years for true adoption and incorporation of the principle in becoming the law of the land.

Therefore, initiatives and steps have been taken to incorporate the local government to address the issue concerning environmental degradation and climate change. Ford Foundation, under the directorship of Douglas Ensminger, extensively advocated for the 'community development' by decentralizing the powers to the village panchayats.<sup>25</sup> The role of the Balwantrai Mehta Committee is also noteworthy, which recommended for the adoption principle of local self-government under Article 40 in reality. The report highlighted the requirement of Panchayati raj system for the effective functioning of democracy, increased role of the public in the decisionmaking process, improved competence to handle issues at the local level and to integrate the people at the grass-root level in the process of development.<sup>26</sup> And, thus

<sup>24</sup> Kesavananda Bharati v. State of Kerala and Anr, AIR 1973 SC 1461 (Supreme Court of India).

<sup>25</sup> Jagannath Pathy, 'Panchayati Raj and Decentralization of Political Power', 8(9) Social Scientist, 36-41, (1980).

<sup>26</sup> Ibid.

finally, the Constitution was amended by the Parliament for the incorporation of panchayats and municipal authorities by 73<sup>rd</sup> and 74<sup>th</sup> Constitutional Amendment.

The efforts thus have been made by various committees, working groups, and commissions to recognize the active participation of local bodies in the decision concerning environmental protection. The Punchhi Commission constituted under the chairmanship of Justice Madan Mohan Punchhi for relooking the issues and challenges relating to the centre-state relation emphasized on the role of municipalities and panchayats in the decision making process by devolution of roles and responsibilities for the proper delivery of goods and services.<sup>27</sup> The 13th Finance Commission (2010-15) also recognized and recommended the grants to the State for the protection of forests; however, due to the lack of adequate database on the natural resources of India, the recommendations could not be implemented.<sup>28</sup> The twelfth five-year plan (2012-17) also emphasized the role of local bodies and panchayats and called for strengthening capabilities of these bodies for recycling and proper management of the waste.<sup>29</sup> The Niti Ayog C.E.O. Amitabh Kant, in a recent conference on 'Circular Economy & Waste Management' also emphasized the duties and responsibilities of municipalities for waste management in the areas of their jurisdiction.30

The concept of green Federalism thus recognizes the role of State, municipalities, and panchayats in the decision-making process and ensures democratic decentralization of power at various levels of government.<sup>31</sup> It provides an opportunity for the local government to counter the local concerns, considering the need for the specific issue

<sup>27</sup> Commission on Centre-State Relations, 'Local-self Governments and Decentralized Governance' (2010), <a href="http://interstatecouncil.nic.in/wp-content/uploads/2015/06/volume4.pdf">http://interstatecouncil.nic.in/wp-content/uploads/2015/06/volume4.pdf</a>> accessed 7 April 2020.

<sup>28</sup> Pramit Bhattacharya, 'The rules of green federalism' (livemint, March 21, 2013), <https:// www.livemint.com/Opinion/thEhiaUwEwyqxNaBwnPhII/The-rules-of-green-federalism. html> accessed 7 April 2020.

<sup>29</sup> Planning Commission of India, '12<sup>th</sup> Five year plan' <a href="http://planningcommission.gov.in/plans/planrel/12thplan/pdf/12fyp\_vol2.pdf">http://planningcommission.gov.in/plans/planrel/12thplan/pdf/12fyp\_vol2.pdf</a>> accessed 7 April 2020.

<sup>30</sup> Banjot Kaur, 'Municipalities responsible for dirty India, says NITI Aayog CEO' (*Down To Earth*, March 19, 2019) <a href="https://www.downtoearth.org.in/news/india/municipalities-responsible-for-dirty-india-says-niti-aayog-ceo-63632">https://www.downtoearth.org.in/news/india/municipalities-responsible-for-dirty-india-says-niti-aayog-ceo-63632</a>> accessed 7 April 2020.

<sup>31</sup> Ishwara Bhatt, 'Why and How Federalism Matters in Elimination of Disparities and Promotion Of Equal Opportunities for Positive Rights, Liberties and Welfare?' (2012) 54(3) Journal of the Indian Law Institute, 324-363.

at hand by adopting a regional approach.<sup>32</sup> The role of local bodies, municipalities, and panchayats have become significant in today's world because climate change issues often have territorial nexus and are intrinsically linked to the available natural resources and their use thereof.<sup>33</sup> Green Federalism, along with enabling decentralization of powers and collective responsibilities at different levels of government, results in furthering good governance, transparency, and incorporation of local concerns in the process.<sup>34</sup> The decentralization also ensures the involvement and contribution of the general public in the process of decision making and enforcement of the measures.

The advocate for the concept of 'Green Federalism' thus argues for utilizing the principle of Federalism in tackling climate change and environmental degradation. They point towards the inefficiency of collaborative Federalism wherein the state government works under the regulatory control of the central government and argues that climate change issues are better addressed based on the geographical location of the place. Thus, it is the local authorities which are well equipped with bringing policy change to fight climate change.

For that very reason, the theory of 'dynamic federalism' as a justification to further climate change goals and to address environmental issues has evolved. The dynamic Federalism advances concurrent legislation and overlap by the centre and state authorities.<sup>35</sup> It facilitates the plurality of legislative measures to be taken by the authorities at centre and state level to resolve the issue of climate change by adopting a multilateral approach. The dynamic Federalism thus furthers experimentation, enables dialogue, and encourages innovation to address socio-economic and environmental problems. Alexis Bélanger (2001),<sup>36</sup> in his paper, has pointed Gseen Federalism as a tool for innovation and most suitable due to its adaptability and proximity to citizens.

<sup>32</sup> Ibid.

<sup>33</sup> Tiago de Melo Cartaxo, 'Environmental subsidiarity in the EU: or halfway to green federalism?' (2018)10(3) Perspectives on Federalism.

<sup>34</sup> Ibid.

<sup>35</sup> Shannon M. Roesler, 'Federalism and Local Environmental Regulation'(2015) 48(3) UC Davis Law Review. (2015).

<sup>36</sup> A.Bélanger, 'Canadian Federalism in the Context of Combating Climate Change' (2011) 20(1) Constitutional Forum.

The federal structure would enable bridging the gap between local people and government and, thus, would be effective in translating environmental laws and policies of the government at the local level.<sup>37</sup> Mainly, the issues of climate change can be identified and resolved at the grass-root level effortlessly by public participation. Decentralization power at the village level not only allows taking into consideration the local concerns but also enhances the active involvement of people, disseminates political and environmental education, the coordinated response between different levels of government, and enables the resolution of ecological degradation more effectively.<sup>38</sup> For instance, due to the community as well as municipal level efforts in few cities that the bio-degradable waste is being disposed of by the people of the city only. In another case, the dynamic role played by the Indore Municipality, along with incredible cooperation by the local people, enabled the city to become the 'cleanest city in India' continuously for three years. Another example is of Bruhat Bengaluru Mahanagara Palike, Bengaluru,<sup>39</sup> which has started solid waste segregation at source and is ensuring a sustainable waste management system.

Another praiseworthy attempt has been made by the Department of Environment in Lucknow, which has launched a District Climate Resilience Plan (D.C.R.P.) in the district of Jhansi and Chitrakoot, Uttar Pradesh.<sup>40</sup> The District Climate Resilience Plan (D.C.R.P.) primarily aims to resolve climate issues at the district level. The D.C.R.P. is inspired by the S.A.P.C.C. The D.C.R.P.seeks to target climate change concerns on the environment, ecosystem, and community at large.

The Green Federalism thus allows 'creativity' for translating environmental the laws and policies framed by central and State government into the action plan for the effective implementation. Because though ecological degradation is a universal issue, but it needs to be tackled at the grass-root level as environment concerns vary depending upon the physical terrain of the place.

<sup>37</sup> Indira Hirway, 'Panchayati Raj at Crossroads' (1989) 24(29) Economic and Political Weekly, 1663.

<sup>38</sup> Ibid.

<sup>39</sup> National Institute of Urban Affairs, 'Urban Solid Waste Management in Indian Cities' (2015), <a href="https://pearl.niua.org/sites/default/files/books/GP-IN3\_SWM.pdf">https://pearl.niua.org/sites/default/files/books/GP-IN3\_SWM.pdf</a>> accessed 7 April 2020.

<sup>40 &#</sup>x27;District Climate Resilience Plan in Jhansi and Chitrakoot' (Climate Action Network South Asia) <a href="https://www.cansouthasia.net/district-climate-resilience-plan/">https://www.cansouthasia.net/district-climate-resilience-plan/</a>> accessed 7 April 2020.

### DEVOLUTION OF POWERS TO LOCAL BODIES: STRENGTHENING THE GREEN FEDERALISM

Considering the inadequacy of S.A.P.C.C. to reduce greenhouse gases, control carbon emission, conserve water resources, and protect wildlife, the need has been felt to devolve responsibilities to the local bodies. The Constitution of India already recognizes the decentralization of power to the local bodies and has thus introduced Part IX (Panchayats) and Part IXA (Municipalities) via the 73<sup>rd</sup> and 74<sup>th</sup> Constitutional Amendment, 1992. The aforesaid mentioned Constitutional Amendment provides for a three-tier structure of local government, i.e., Panchayat at the village, block and district level,<sup>41</sup> and in urban areas Nagar Panchayat, a Municipal Council and a Municipal Corporation depending on the level of transition from rural to urban.<sup>42</sup>

The Amendment further lays down the matters in relation to which the Panchayats and Municipalities have the power and authority to carry out its function under Schedule XI and XII of the Constitution, respectively. The subject matter includes regulating land use patterns, agriculture, land improvement, public health and sanitation, protection of forestry, protection of the environment and improvement of ecology, water conservation and watershed development, usage of non-conventional source of energy including solar, wind energy, management of solid waste, etc.<sup>43</sup> Moreover, with regards to the financing the activities and programs undertaken by the panchayats and municipalities, the Amendment provides that "*subject to the law passed by the State Legislature, they have the power and authority to levy, collect and appropriate certain taxes, duties, tolls, and fees, the state government can also assign them to levy and collect such duties, taxes and fees on their behalf may provide grant-in-aid.*"<sup>44</sup>

In light of the constitutional mandate given to the panchayats and municipalities, the researcher argues for the active involvement of these local bodies in environmental and climate concerns. Currently, in spite of having the competence to deal with subject matter dealing with environment and climate change, there has not been adequate devolution of powers to the panchayats and municipalities. In the existing

<sup>41</sup> Art. 243B, The Constitution of India, 1950.

<sup>42</sup> Art. 243Q, The Constitution of India, 1950.

<sup>43</sup> Schedule XI, XII, The Constitution of India, 1950.

<sup>44</sup> Art. 243H, 243X, The Constitution of India, 1950.

legal framework dealing with climate change concerns, it is either the central government or state government that has the power. In lieu of that, the central and State government has formulated with various legislation, and action to resolve the menace of climate change. However, the central and State government has failed to recognize the role to be played by the local bodies.

The researcher, therefore, proposes that the respective state government needs to devolve power and responsivities to these local bodies at the grass-root level. The menace of climate change through global in nature but has origin and impact on the ground level. Thus, the researcher proposes the following ways in which the participation of panchayats and municipalities can be integrated:

- i. INTEGRATING THE CLIMATE CONCERN UNDER MASTER PLANS OF DISTRICTS-The master plans prepared by the respective district can be a useful tool in encouraging the participation and devolution of power to these local authorities to tackle climate change. The existing master plans do have a certain measure for the conservation of environment and climate; however, they majorly fail because of lack of proper machinery, expertise, resources, bureaucratic structure, and lack of implementation mechanism in place.
- ii. PREPARATION OF CLIMATE CHANGE ACTION PLANS AT DISTRICT LEVEL: A pilot study in the nature of having a separate District Action Plan on Climate Change has been adopted by the Uttar Pradesh in the district of Jhansi and Chitrakoot.<sup>45</sup> The District Climate Resilience Plan recognizes the role to be played by the local bodies such as the District Planning Committee (D.P.C.), Zilla Panchayat, Gram Panchayat, and Municipalities. The Kerala government is also mooting to formulate District wise Climate Action plan in line with the State Action Plan to fight climate change.<sup>46</sup>
- iii. RECOGNIZING THE ROLE PLAYED BY LOCAL BODIES UNDER THE RESPECTIVE STATE ACTION PLANS: Currently, not many State Action Plans to devolve the responsibility to the local bodies. The State Action Plans have created a new authority such as Climate Action Cells, which works in coordination with

<sup>45</sup> Supra note 10, at 13.

<sup>46 &#</sup>x27;Govt. moots local action plan on climate change' (*The Hindu*, January 29, 2020), <a href="https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://www.thehindu.com/news/national/kerala/govt-moots-local-action-plan-on-climatechange/article30684842.ece>">https://ww

different departments to undertake any activity. These State Action Plans can, therefore, be revised to grant responsibilities to the local government to come up with a solution to reduce environmental damage.

Few State Action Plans such as that of Kerala and Bihar though devolves the power at the village and district level authorities to undertake and implement the objectives sought under the plan. However, except for Kerala, the actual role played by these local authorities is highly ambiguous.

Federalism, therefore, can be used as a tool to address the issues of environmental degradation and climate change. The researcher believes that resolving the issue of climate change requires ground-level action. We need to follow a "*bottom-up top approach*" in fighting global warming and climate change because the geographical needs of the area differ significantly from each other. However, for the application of green Federalism in its true sense, it is necessary to ensure the following:

iv. FINANCIAL INCLUSIVENESS/ SELF-SUFFICIENCY OF LOCAL BODIES: True federalism ensures that along with decentralization of power, the federal government provides an adequate mechanism to enable these local bodies in meeting the finance required for its functioning. Because currently, the local bodies, through constitutionally empowered to take actions in certain subject matter, however, have to majorly depend on the state government for the funds, which in turn have been dependent on the central government.

The funding for climate action schemes and programmes can be raised either through public or private finance, which includes money allocated for budget, imposing a carbon tax, providing market subsidies, tax holidays, money raised from banks, financial institutions, and debt or equity market, etc.<sup>47</sup> The central government is thus making budgetary allocation for climate change actions to the state government for the various schemes. For instance, the annual budget of 2020-21 allocated Rs. 3100 crore to Ministry of Environment, Forests and Climate Change out of which Rs. 460 crore for pollution control and Rs. 40 crore for climate

<sup>47</sup> Vyoma Jha, 'The coordination of climate finance in India' (*Centre for Policy Research*, 2014) <a href="https://smartnet.niua.org/csc/assets/pdf/knowledge-repository/Other-Resources/CPR-coordination-of-climate-finance-in-India.pdf">https://smartnet.niua.org/csc/assets/pdf/knowledge-repository/Other-Resources/CPR-coordination-of-climate-finance-in-India.pdf</a>> accessed 30 April 2020.

change.<sup>48</sup> The central government has also established special funds such as the National Adaptation Fund,<sup>49</sup> National Clean Energy Fund,<sup>50</sup> and Green Climate Fund (GCF)<sup>51</sup> to finance climate action endeavors. Apart from that, the climate change projects are also funded by C.D.M. Mechanism,<sup>52</sup> banks, and financial institutions, debt and equity instruments, etc.<sup>53</sup> However, all these climate finance mechanisms are highly dominated by the central government, which leaves state and local level governments at the mercy of the centre. Therefore, there aren't sufficient funds for climate action mitigation.

The concerns, therefore, regarding the viability of devolution of power to local authorities have been raised in terms of budgetary constraints. The researcher wants to point out the constitutional provisions which grant the power to these municipalities and panchayats "to levy, collect, and appropriate the taxes, duties, and fees subject to the approval of state legislature." The state legislature may also assign the panchayats and municipalities "to collect taxes on behalf of the state government and may also provide grant-in-aid to facilitate the functioning of these authorities."

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<sup>48 &#</sup>x27;Budget 2020: Environment Ministry gets Rs 3100 crore in 2020-21' (*The Economic Times*, February 1, 2020) <a href="https://economictimes.indiatimes.com/news/economy/policy/budget-2020-environment-ministry-gets-rs-3100-crore-in-2020-21/articleshow/73848344">https://economictimes.indiatimes.com/news/economy/policy/budget-2020-environment-ministry-gets-rs-3100-crore-in-2020-21/articleshow/73848344</a>. cms?from=mdr> accessed 30 April 2020.

<sup>49</sup> National Adaptation Fund for Climate Change (NAFCC) established in 2015-16 with National Bank for Agriculture and Rural Development (NABARD) as its National Implementing Entity to finance and support the climate action schemes. The major source of income for the fund is derived through Clean Development Mechanism which grants tradable certified emission reduction (CER) credits to the clean energy project in developing nations. See Press Release of Minister of State for Environment, Forest and Climate Change, National Adaptation Fund for Climate Change (February 5, 2018).

<sup>50</sup> The National Clean Energy Fund (NCEF) was established in 2011 for the promotion of clean energy gets its funding by central government levying tax on coal produced domestically and internationally. See Press Release of Ministry of Finance, Creation of National Clean Energy Fund (April 6, 2011).

<sup>51</sup> Green Climate Fund (GCF) has been set up under the framework of United Nations Framework Convention on Climate Change (UNFCCC) which provides financial assistance to the developing countries in reducing carbon emission and employing climate change mitigation strategies. See About GCF, GREEN CLIMATE FUND, < https://www.greenclimate. fund/about> accessed 30 April 2020.

<sup>52</sup> Supra note 48.

<sup>53</sup> Supra note 47.

Therefore, the researcher believes that these local authorities are needed to be encouraged to levy and collect taxes, duties, and fees for the services rendered by them. The success of Brihanmumbai Municipal Corporation (B.M.C.), Mumbai is commendable in this regards, the civil body is considered to be as India's richest civic body which earns its revenue from property tax, receipt from development plans, water and sewage charges, Goods and Service Tax compensation, etc. and later spends on infrastructure development, solid waste management, maintaining roads, bridges, and traffic, etc. Thus, the researcher believes that such a practice can also be adopted by other local authorities to meet its expenses instead of always depending on the state government for the funds.

- v. CAPACITY BUILDING OF LOCAL-SELF-GOVERNMENT: The local self-government is often criticized due to its lack of expertise and experience in handling issues. The officials and employees working under the local-self-government are often lacking technical education, ill-equipped and inexperienced in handling matters at hand. Therefore, the researcher argues that along with the devolution of powers, the federal government should ensure the capacity building of these institutions to enable them to function independently and effectively. To achieve capacity building, proper training of employees and appointment of experts has to be done. A team comprising of individuals belonging to a different field of education such as law, engineering, social sciences, etc. need to be appointed to ensure that scientific and creative approach is taken to combat climate change.
- vi. PUBLIC PARTICIPATION: The fight against climate change can only be successful if we allow the municipalities and panchayats to take proactive roles because it is the local people who know the ground-level situation in comparison to the officials sitting in the air-conditioned room in the state capital.

The adoption of Green Federalism will not only ensure the devolution of power from the center to State to local bodies but will also help in integrating the participation of stakeholders such as N.G.O.s, experts, scientists, people, etc. It will allow the authorities and people to experiment and innovate depending on their geographical needs and requirement. Therefore, Green Federalism can be a successful tool in fulfilling our objective to reduce carbon emission, reduce greenhouse gases, concern water resources, protect wildlife, and having sustainable development.

vii. COORDINATED, COLLECTIVE AND SYSTEMATIZED EFFORTS OF GOVERNMENT AT ALL THE LEVEL: Rather than working in isolation of each other, the three levels of government at centre, state and local level need to work together in a coordinated, collective and systematized manner to ensure that the effective and innovation steps are undertaken for the protection of the environment and fight climate change. Such a coordinated and collective effort will help in avoiding an overlap of subject matter and conflict of opinion amongst the level of government and enable them to fill any void existing in the framework of governance.

# CLIMATE CHANGE EFFECT ON SUNDARBANS DELTA: A CASE STUDY

The Sundarbans Delta region located on the border of India and Bangladesh has been declared as United Nations World Heritage Site with 19,000 square kilometres of areas and consisting of 102 islands. The Sundarbans Delta is the largest mangrove forest in the world with rich flora and fauna. However, in the last few decades, the delta is suffering huge ecological loss due to the climate change phenomenon-the temperature is rising, the islands are shrinking, water salinity increasing, declining number of fishes, etc. The climate change in the region is further fuelled by the continuous deforestation, uncontrollable fishing, and other greedy human activities. As a result of which the mangrove covers are shrinking, there has been soil erosion, islands are submerging, and there has been a constant threat of cyclones in the region. This erratic climate change has forced the people living in the islands such as Sagar Island and Ghoramara to migrate to cities. If this continues, the time is not far away when we will have hundreds of millions of climate refugees.<sup>54</sup>

Sundarbans areas have been declared as biosphere areas and also demarcated as protected areas for tiger conservation while it also is a coastal area. That's to say, the central government, as well as the state government, has jurisdiction over

<sup>54</sup> S.S. Singh, 'Hungry tides of the Sundarbans: How the rising seas create environmental migrants', (*The Hindu*, November 23, 2019), < https://www.thehindu.com/sci-tech/energyand-environment/hungry-tides-in-the-sundarbans/article30054094.ece> accessed 30 April 2020.

the Sundarbans region. To mitigate the problem, the governments of India and Bangladesh have resolved to work together to address the issue of climate change in the Sundarbans region and, thus, have signed Memorandum of Understanding (MoU) in 2011.<sup>55</sup> However, the MoU is restricted to making a commitment to work together and engage in research of the issues rather than formulating any plans to address soil erosion, water rising, deforestation, etc. The Ministry of Water Resources under the Government of India and the State government of West Bengal has also taken steps to address the climate change issues in the area. The centre and state governments have constructed embankments in the region to check soil erosion; however, this strategy also proved out to be ineffective as when cyclone 'Aila' came in 2009, it broke off 400 km of embankments.<sup>56</sup> Moreover, the Government of West Bengal also recognized Sundarbans Delta as one of the most climate-sensitive sectors in the State under its S.A.P.C.C. and analysed the prospective impact of climate change in the region. Furthermore, the action plan has also suggested an adaptation strategy to achieve the same.

However, the schemes and programmes undertaken under the plan have not yielded much result in addressing the climate change in the region because of the short-sightedness of the schemes, lack of clarity of local climate change impact, failure to include local bodies and Panchayat, lack of coordinate efforts by different levels of the government, the lack of public participation and other stakeholders.<sup>57</sup> Furthermore, the climate action plan of the centre and State has failed to take the issue of climate refugee.<sup>58</sup>

Thus, the case study of Sundarbans Delta points out the importance of Green Federalism because the coordinated and cooperative efforts of different levels of government along with public participation will help only us to combat climate

<sup>55</sup> MOU on Conservation of the Sundarbans between India and Bangladesh (Adopted on September 6, 2011).

<sup>56</sup> World Bank, 'Building Resilience for Sustainable Development of the Sundarbans' (2014), <a href="http://documents.worldbank.org/curated/en/879351468259748207/pdf/880610REVIS">http://documents.worldbank.org/curated/en/879351468259748207/pdf/880610REVIS</a> ED00ns000Strategy0Report.pdf> accessed 30 April 2020.

<sup>57</sup> U. Ghosh et al, 'living on the Edge: Climate Change and Uncertainty in the Indian Sundarbans' (Working Paper No. 101, Brighton: STEPS Centre, 2018.

<sup>58</sup> A. Sen, 'surviving in the fragile Sundarbans delta: Will the new government respond?' (Mongabay-India, July 16, 2019), <a href="https://india.mongabay.com/2019/07/commentary-surviving-in-the-fragile-sundarbans-delta-will-the-new-government-respond/">https://india.mongabay.com/2019/07/commentarysurviving-in-the-fragile-sundarbans-delta-will-the-new-government-respond/</a>> accessed 30 April 2020.

change battle. Therefore, both central and State governments should act immediately in order to tack these issues and identify the primary threat to this ecosystem. There is an urgent requirement of an action-oriented approach to this region from both the centre and state government to evolve integrated strategy not only for mitigation of devastation but also to work with the community at the local level or panchayat level.

### CONCLUSION

The current legislative framework dealing with climate change and environment protection does provide decentralization of power and roles and responsibilities. However, the present legislative framework is more centred towards the central government in comparison to the state government and local bodies. The major policies, agenda, approvals, and constitution of the boards/bodies predominantly rest with the central government. The very reason for the same lies in the lack of political will and resources on the part of the respective government and the existence of weaker enforcement authorities. That's the reason; the centre is over-stepping for the regulation and protection of the environment at all possible levels.

Thus, there is an utmost need for the adoption of green Federalism to fight climate change. India can also adopt the Canadian approach and grant more autonomy to respective states to come up with state-specific policies and guidelines, which is independent of any federal control. Under the Constitution of Canada, environmental protection is a shared responsibility between the federal government and the provincial government. However, more autonomy is granted to the respective provinces to set their emission standards and take other innovative measures to curb carbon emissions.<sup>59</sup>

Therefore, India needs to adopt a bottom-up approach in fighting the battle against climate change because though climate change is a global issue, the only way to combat it lies at the very grass root level. The government thus should empower local authorities to regulate land use patterns, citizen's behaviour, and forestation in the area concerned. The central and State government should thus devolve the powers

<sup>59 &#</sup>x27;Provincial Governments', (Climate Action Network Canada) <a href="https://climateactionnetwork">https://climateactionnetwork</a>. ca/issues/government-inaction/learning-center/provincial-governments/> accessed 7 April 2020.

further to the municipalities and panchayats, so as to ensure that the federalism in its true essence is being adhered in the country. In order for the effective functioning of these local bodies, the federal government should create an environment for the capacity building of these bodies. These local bodies should be made self-sufficient in terms of finance, manpower, and expertise. The decentralization of power will also ensure public participation in our combat against climate change.

Moreover, there has to be coordinated, collective and systematized efforts that have to be taken by the federal governments at the centre, state, and local level to fight the peril of climate change. 5

## MITIGATION AND ADAPTATION STRATEGIES OF INDIA FOR IMPLEMENTING PARIS GOALS-A CRITICAL ANALYSIS

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**Keywords:** Climate Change, Environment, Disasters, Paris Agreement, Nationally Determined Contributions.

### **INTRODUCTION**

In total disregard to any national boundary, climate change is an international legal quagmire.<sup>1</sup> It demands an internationalized approach of combat through collective action. However, state to state disparities in their roles towards contributing to climate change or in their economic capacities to provide aid in combating climate change have led to the formulation of the principle of common but differentiated responsibilities due to problems in collective actions. Thus, after multiple efforts the international community met at the 21<sup>st</sup> Conference of Parties in 2015 wherein the Paris Agreement was negotiated and signed. The Agreement provides a framework for the reduction of greenhouse gas emissions, with the explicit goal of keeping the rise of global temperature levels to well below two degrees celsius above pre-industrial levels.<sup>2</sup> The Agreement also sought that this goal can be achieved through

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Nico Krisch, 'The Decay of Consent: International Law in an Age of Global Public Goods' (2014) 108 AM. J. INT'L Law 5 in Frfadrlc Gilles Sourgens, 'Climate Commons Law: The Transformative Force of The Paris Agreement' (2017-2018) 50 N.Y.U. J. International Law & Policy 885.

<sup>2</sup> Art.2(1)(a) of the Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 13, 2015, in Rep. of the Conference of the Parties on the Twenty-

the mandate of Nationally Determined Contributions (NDCs) to be submitted by the individual countries, concerning their respective reductions in greenhouse gas emissions.<sup>3</sup> The Agreement further sets out that states should communicate regularly about their nationally determined commitments and must update their NDCs at least every five years. These NDC commitments should become progressively more ambitious to meet the Agreement's climate change mitigation goals. Further, the Agreement provides for market and finance mechanisms to assist developing and high emission countries to make ambitious contributions to reducing greenhouse gas emissions.<sup>4</sup>

Year 2020 marks the watershed moment for an enhanced transparency framework on climate policy regime under the obligations of Paris Agreement for initiating the dynamic process of updating Nationally Determined Contributions and setting up a roadmap for progressive improvement in the successive five years' cycle. This policy framework seeks for parties to adapt and mitigate to changing climatic situations while strategizing upon the development of modalities, procedures and guidelines as laid down in the Paris Agreement. Parties have adopted variant mitigation and adaptation strategies with different approaches to time frames and period of implementation in their Intended Nationally Determined Contributions (INDC). India, having been sternly criticized as being a Non-annexed country under the Kyoto regime,<sup>5</sup> has taken up quite an ambitious step to showcase its commitment towards reduction of global temperature. Amongst the mitigation strategies, India has targeted towards reduction of greenhouse gases, rejuvenation and urban transformation as well as cleanliness, so as to make the country litter free by 2020. Its adaptation policies include promotion

First Session, U.N. Doc. FCCC/CP/2015/10/Add.1, annex (2016) <a href="http://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement/saccessed">http://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement/saccessed</a> 3 March 2020.

<sup>3</sup> Art. 3 of the Paris Agreement, Supra note 2.

<sup>4</sup> Frfadrlc Gilles Sourgens, 'Climate Commons Law: The Transformative Force of The Paris Agreement' (2017-2018) 50 N.Y.U. J. International Law & Policy 885.

<sup>5</sup> The Kyoto Protocol is based on the principle of common but differentiated responsibilities as it acknowledges that individual countries have different capabilities in combating climate change, owing to economic development, and therefore puts the obligation to reduce current emissions on developed countries on the basis that they are historically responsible for the current levels of greenhouse gases in the atmosphere. Thus, the Protocol mentions about Annexure I and Annexure II countries to whom different quantum's of commitments are imposed to reduce the GHGs. However, the protocol exempts more than 100 developing countries from legal commitment on GHG reductions. These countries include China and India.

of organic farming processes, promotion, regulation and control of efficient use of water and encouragement of people to help the government to reach out to the needy citizens, in order to effectively stop people in the rural areas from irregular use of biomass. Though these strategies seem quite fair and appealing, major challenges in the availability of international financing and technology transfer shall remain a perpetual plea, hindering the actions. Moreover, India has included goals in their INDC for greenhouse gas (GHG) emissions as per GDP without reporting the level of emissions per unit of GDP in the base year or target year. This highlights a half-baked approach in laying down a transparent policy framework. Furthermore, the corona pandemic which has hit all across the globe, raises a serious concern as to how countries would strategize to improve their crippled economy and address the climate change issues in the coming years. Thus, this paper shall explore the concepts of mitigation and adaptation strategies in combating climate change and thereafter critically anticipate whether India can successfully implement its INDC in the post 2020 period.

### ANALYSIS OF THE CONCEPT OF ADAPTATION AND MITIGATION STRATEGIES AS A RESPONSE TO CLIMATE CHANGE

One must understand that though adaptation and mitigation are both viable strategies to combat damages due to climate change, their approaches to tackle the issue differ. Mitigation and adaptation work on different spatial and time scales. While mitigation is considered to respond at global level and is considered to be having a long term approach, adaptation policies are mostly locally acted upon and have got a shorter term approach.<sup>6</sup> Mitigation is considered to be a permanent solution to the anthropogenic causes of climate change whereas adaptation is considered to be more temporary and typically addresses the current or expected damage.<sup>7</sup> Furthermore, mitigation strategies are believed to be undertaken as a long term policy setting where the effects of mitigation may not be immediate but can be permanent in future whereas adaptation measures, once implemented, have been believed to produce immediate results. This differentiation is particularly relevant under the

<sup>6</sup> Francesco Bosello, Carlo Carraro et. al., 'An Analysis of Adaptation as a Response to Climate Change' (2018) <a href="https://www.jstor.org/stable/resrep16322.8">https://www.jstor.org/stable/resrep16322.8</a> accessed 2 April 2020.

<sup>7</sup> Ibid.

policy making perspective: It is probable that the stronger reason for the scarce appeal of mitigation policies is their "certain" and "present" cost facing a future and thus uncertain benefit.<sup>8</sup> Therefore mitigation is considered to have received less attention than adaptation in the climate change community, both from the scientific and the policy perspective. However, mitigation strategies are useful to reduce impacts on all climate-sensitive systems, which is not the same in the case of adaptation strategies. For instance, mitigation strategies to reduce GHG emissions are relatively easier to be monitored quantitatively both in terms of the absolute amount and as deviation from the established baseline, whereas in adaptation, inferring the impacts of the strategies are more difficult to be monitored. <sup>9</sup>

On the contrary, some convincing arguments exist in favor of adopting adaptation policies. The argument believes that mitigation strategies at times seem more ambitious to achieve in the future and therefore many of such strategies are likely to be fruitless, whereas the adaptation strategies are supposed to have more immediate benefits. Also, since adaptation policies are acted upon at a small scale, mostly on a regional basis, the impact of such policies is less dependent on the action of the others. Furthermore, adaptation strategies are effective in handling and reducing the risks associated with current climate viability.<sup>10</sup>

However, the Paris Agreement in 2015 advanced the idea that synergies between adaptation and mitigation in policy can have multiple benefits.<sup>11</sup> Article 5 of the Paris Agreement encourages policy approaches, such as joint mitigation and adaptation approaches for the integral and sustainable management. The Agreement in Article 9 focuses upon balancing between adaptation and mitigation strategies in matters of disbursement of financial resources taking into account the country-driven strategies and prioritizing the needs of the developing countries.<sup>12</sup> Article 11 stated that capacity building under the Agreement should enhance the capacity

<sup>8</sup> Fussel and Klein, 'Climate Change Vulnerability Assessments: An Evolution of Conceptual Thinking' (2006) 75 *Climate Change* 301.

<sup>9</sup> Ibid.

<sup>10</sup> *Ibid*.

<sup>11</sup> Stephen Leonard, Bruno Locatelli *et al*, 'A matchmade in Paris Adaptation–mitigation synergies in the land sec' (2016) Centre for International Forestry Research <a href="https://www.jstor.org/stable/resrep16204">https://www.jstor.org/stable/resrep16204</a>> accessed 2 April 2020.

<sup>12</sup> The Paris Agreement, United Nations Climate Change, <a href="http://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement">http://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement</a>> accessed 3 April 2020.

and the ability of developing countries to effectively take climate change actions which should include both mitigation and adaptation actions. Thus the agreement mandates a work program to "enhance linkages and create synergies between, inter alia, mitigation, adaptation, finance, technology transfer and capacity-building".<sup>13</sup>

In this context, it is pertinent to understand that even countries are looking forward to synergizing both the policies in their fight against climate change. But there are risks associated with both adaptation and mitigation actions and thus there is a need to identify both the opportunities and challenges more holistically. Some adaptation measures can increase emissions as adaptation actions are supposed to seek only for short term impact. Moreover, there are also risks involved in the mitigation activities too. Mitigation measures, particularly in the land sector, may increase people's vulnerability if they have impacts on land tenure and land use rights for indigenous peoples and local communities. Such actions may result in lack of recognition of their customary rights, loss of tenure or possession rights, and in some cases displacement of social groups all of which increases vulnerability and negatively impacts adaptive capacity.<sup>14</sup> Land-use mitigation measures may also have impact on food security, for instance, if large-scale forestry or energy crop plantations are promoted then there are chances of reduced food production which may increase conflict if appropriate measures are not taken in relation to benefit sharing.<sup>15</sup> Thus, to have a win-win situation in synergizing mitigation and adaptation policies, policy designs must ensure minimum risks against adverse outcomes and maximize benefits arising from the relationship between the two.<sup>16</sup>

One has to understand that the purpose of the Paris Climate Agreement is "to foster climate resilience and low greenhouse gas emissions development".<sup>17</sup> The issue of climate change has been so grave that it seeks for immediate action. Thus, adopting a single line of approach in combating the issue does not seem appropriate anymore.

<sup>13</sup> Supra note 11.

<sup>14</sup> Ibid.

<sup>15</sup> BE Robinson, MB Holland *et al*, 'Does secure land tenure save forests? A review of the relationship between land tenure and tropical deforestation' (2011) 7 CCAFS Working Paper.

<sup>16</sup> LA Duguma, SW Wambuguet al, 'A systematic analysis of enabling conditions for synergy between climate change mitigation and adaptation measures in developing countries' (2014) 42 Environmental Science and Policy 138.

<sup>17</sup> Article 2.1(b) of the Paris Climate Agreement in Supra note 12.
Hence, the Paris Agreement, aimed for a combined or a holistic approach where both mitigation and adaptation strategies would operate together to jointly respond to the issue of climate change. Moreover, it is being argued that the separate treatment of adaptation and mitigation increases the cost of climate change and fails to give full meaning to practices that minimize resource requirements.<sup>18</sup>

Though mitigation and adaptation vary in their approaches insofar as the implementation methods are concerned, these two strategies share similar objectives to be achieved and this provides a potential reason for their harmonization. Adaptation and mitigation strategies being simultaneously implemented can lead to multiple benefits, if carefully acted upon. Adaptation and mitigation policies, rolling side by side, can check the over-ambitious mitigating strategies which may turn out futile in future. At the same time, adaptation policies can also be planned out to have a more long term impact, not only at the local level but also at the national and international level.

Thus, joint strategies of adaptation-mitigation emerged as a well-established concept for climate policy objectives. With the passage of time, there has been more clear scientific evidence that would support such combined or co-operative approach. However, there are requirements of adequate institutional arrangements that would ensure a proper and sustainable financial mechanism to promote this coordinated approach.<sup>19</sup> However, it is important to understand that although the climate change issue is a global problem, common institutional policies, general for all countries, cannot be opted for. Disparity among countries in their climatic conditions, financial affordability or technological advancement, require different countries to adopt different models. Paris Agreement therefore considered new negotiation with nationally determined contribution, their reporting requirements and MRV (measuring, reporting and verification) wherein the international community can think globally and act locally. These nationally determined contributions are mandated to look for the portfolios of practices with adequate institutional frameworks and monitoring bodies so that they can synergize mitigation and adaptation to effectively respond to climate change.

<sup>18</sup> S. Kane S and G Yohe, 'Societal Adaptation to climate variability and change: An introduction' (2000) 45 *Climate Change* 1, *Supra* note 15.

<sup>19</sup> Supra note 16.

However, in the process of formulation of the policies, the policy-makers must pay adequate attention to the possible effect of the adaptation-mitigation synergies. At times the policies can lead to projects that are more complex and, hence, potentially more expensive than single objective projects.<sup>20</sup> In such circumstances, there are acute issues of funding the policy. Policy makers will also need to identify and understand the trade-offs and develop policies so as to reduce and preferably avoid negative impacts.<sup>21</sup> For instance, the policy-makers have to be careful so that mitigation action does not lead to mal-adaptation which may make the ecosystem vulnerable.<sup>22</sup>

#### MITIGATION AND ADAPTATION STRATEGIES OF INDIA FOR IMPLEMENTING PARIS GOALS

India, with a population reaching above 1.3 billion<sup>23</sup> and having a phenomenal growth rate in GDP, has evolved as one of the leading players in the economic development of the global east. Thus the country is expected to act as a responsible player in the global efforts towards climate change mitigation by developing adequate domestic measures as well as promoting a sustainable development path while targeting to achieve its long term and short term economic goals.<sup>24</sup> Hence India aims for an extraordinary vision, leadership, compassion and wisdom to take up the challenge of climate change.<sup>25</sup> India took its obligation of adopting Nationally Appropriate Mitigation Actions (NAMA) post Bali Action Plan which was seen as one of the important processes that provide a platform for the developing countries to put forward their share of mitigation actions. These were the voluntary measures towards climate change mitigation adopted by countries guided by the national priorities relating to long term development goals and the environmental health.<sup>26</sup> However, under the plan, the developing countries like India did not have any international

<sup>20</sup> Supra note 11.

<sup>21</sup> Ibid.

<sup>22</sup> Ibid.

<sup>23</sup> Population, total – India, The World Bank, <a href="https://data.worldbank.org/indicator/SP.POP">https://data.worldbank.org/indicator/SP.POP</a>. TOTL?locations=IN> accessed 21 March 2020.

<sup>24</sup> NandakumarJanardhanan, 'Shaping the Climate Change Agenda in India:, Reporting and Verification (MRV) Report' (2010) Institute for Global Environmental Strategies <a href="https://www.jstor.org/stable/resrep00825.3">https://www.jstor.org/stable/resrep00825.3</a>> accessed 2 April 2020.

<sup>25</sup> India and INDC Report <a href="https://www4.unfccc.int/sites/submissions/INDC/Submission%20Pages/submissions.aspx">https://www4.unfccc.int/sites/submissions/INDC/Submission%20Pages/submissions.aspx</a> accessed 2 April 2020.

<sup>26</sup> Supra note 23.

legally binding mitigation commitments and had flexibility in identifying appropriate measures that would minimize the impact of the countries' economic trajectory on the climate patterns. India has taken mitigation and adaptation measures in various key sectors in the post-Bali period with the formation of the Prime Minister's Panel for National Action Plan for Climate Change (NAPCC). However, since the obligation has been purely of a voluntary nature, scholars across the globe have been skeptical about whether the efforts intended to be adopted by India could ultimately lead to potential actions.

Therefore, the 2015 Paris Agreement gave India an opportunity to prove its genuine willingness to establish an effective, cooperative and equitable global architecture based on climate justice.<sup>27</sup> Anchoring on the vision of Mahatma Gandhi which stated *"Earth has enough resources to meet people's needs, but will never have enough to satisfy people's greed"*, India intended to promote its actions which would be comprehensive, balanced, equitable and pragmatic. Amongst the actions promoted to combat climate change, focus has been on strategies which included adaptation, mitigation, finance, technology transfer and capacity building and transparency of actions. Thus, adaptation and mitigation are believed to be significant strategies to be adapted to promote sustainable development and address the threat of climate change at national and sub-national level.<sup>28</sup>

Among the mitigation strategies, India in its Intended Nationally Determined Contribution Report submitted to UNFCCC, has largely focused upon energy. Considering universal energy access and energy security as one of the fundamental development goals for the country, the Government of India seeks to promote greater use of renewables in the energy mix. In its promotion for clean energy, India is focusing on wind energy, solar power, biomass energy, hydropower, nuclear power and clean coal policies. It has been targeting the infrastructural sectors through various initiatives by streamlining environment and forest approvals, labor reforms and undertaking other measures. The policies seek to enable the industries to reduce their energy consumption which in turn shall play a critical role as an instrument for sustainable environment through various interventions.

<sup>27</sup> Supra note 24.

<sup>28</sup> Supra note 25.

Among the other mitigation strategies, India focuses upon its launching of a number of schemes for transformation and rejuvenation of urban areas like that of Smart Cities Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and National Heritage City Development and Augmentation Yojana.<sup>29</sup> The objective behind the smart city scheme is to develop new generation cities that will provide core infrastructure and a decent quality of life to its citizens by building a clean and sustainable environment. Smart solutions like recycling and reuse of waste, use of renewables, and protection of sensitive natural environments are proposed to be incorporated to make these cities climate resilient. In furtherance to that, India also aims for scientific disposal of waste so as to serve the dual benefits that can arise from efficient waste disposal leading to enhanced environmental benefits along with conversion to energy. The government is seeking for conservation of waste and sale of fertilizers derived from those wastes so as to provide for market development assistance.

Furthermore, the country is endeavoring towards a low carbon economy by focusing on low carbon infrastructure and public transport systems in order to reduce emissions by about 457 million tonne of CO2 over a 30 year period.<sup>30</sup> Among other mitigation strategies, India focuses on sustainable forest management, afforestation and regulating diversion of forest land for non-forest purpose by launching initiatives like Green India Mission which aims to further increase the forest/tree cover to the extent of 5 million hectares and improve quality of forest/tree cover on another 5 mha of forest/non-forest lands along with providing livelihood support. It is expected to enhance carbon sequestration by about 100 million tonnes CO2 equivalent annually.<sup>31</sup> The country also proposes to launch programs and schemes to address the problem of pollution.

In adaptation strategies, India seeks to fight against the adverse impacts of climate change on the developmental prospects of the country. A wide range of actions are being addressed for adaptation policies in the sectors like that of agriculture, water, Himalayan ecosystem, forestry, capacity building and knowledge management. The plethora of schemes so launched as adaptation policies are diverse keeping in

<sup>29</sup> Ibid.

<sup>30</sup> *Supra* note 25.

<sup>31</sup> Ibid.

mind substantial variations in topography, climatic conditions, ecosystems as well as diversity in its social structures, economic conditions and needs of different communities.<sup>32</sup>

The policies in the agricultural sector aim at enhancing food security and protection of resources such as land, water, biodiversity and genetics and at encouraging and expanding tree plantation in complementarity and integrated manner with crops and livestock. The adaptation strategies for the water sector focus on enhancing efficient use of water, ensuring access and tackling the adverse impact of climate change. In the arena of coastal regulation and governance, the vision is to build national capacity for implementation of comprehensive coastal management through ecological management, conservation and protection of critical habitats, coastal geomorphology and geology of coastal and marine areas, coastal engineering, socio-economic aspects, policy and legal issues and other related fields.<sup>33</sup>

Amongst the adaptation strategies, India is also reported to establish a holistic disaster risk reduction and response apparatus at national, state and district levels with the aim of reducing existing levels of vulnerability, prevention, and mitigation of disasters and also to provide appropriate response, rehabilitation and reconstruction. Lastly and most significantly, India is ambitious to protect biodiversity from changing climate by developing a bio-geographic classification for conservation planning and mapping biodiversity rich areas in the country.<sup>34</sup>

However, on the pertinent question of implementing this variety of schemes, India reported that it is mostly dependent upon the budgetary sources which now finance and is supposed to finance the ongoing and future mitigation and adaptation programmes. However, it claims to be experimenting with a careful mix of market mechanisms together with fiscal instruments and regulatory interventions to mobilize finance for climate change. In its report, it has clarified that the INDC is not binding to any sector specific mitigation obligation or action, including in the agriculture sector but to reduce overall emission intensity and improve energy efficiency of its economy over time and at the same time protecting the vulnerable sectors of economy and segments of our society.<sup>35</sup>

<sup>32</sup> Ibid.

<sup>33</sup> Ibid.

<sup>34</sup> *Supra* note 25.

<sup>35</sup> Ibid.

The concluding portion of the report is however something which one needs to ponder upon. It has expressed its limitation mentioning that these mitigation and adaptation actions are difficult tasks to be implemented given the rapid pace of changing technologies and innovation. It also stated that actions to respond to climate change are performed mostly through domestic finance which is not at all enough to meet the huge expenses to be incurred. India also has expressed its concern on the availability of technologies and their knowhow as they would be the key in enhancing adaptation and mitigation measures.<sup>36</sup>

Thus, though India's INDC commitment in initiating mitigation and adaptation strategies apparently suggests being quite promising and ambitious, on the hind side, there are a plethora of issues which require more comprehensive addressing.

### A CRITICAL OVERVIEW

After going through the INDC report submitted by India before IPCC as a part of their commitment to the Paris Agreement of 2015, one does not find it difficult to bring out the fact that though the adaptation and mitigation actions proposed for implementing the goals are appreciable, they sound over ambitious and conditional. It is made clear that though the country is willing and enthusiastic in appropriately addressing the issue of climate change, the same cannot take place without external support.

It is pertinent to note that this external support is indicated by many countries, like India, as necessary for additional mitigation to happen. This external support indicates financial support to establish or implement the mitigation required to reach the conditional target.<sup>37</sup> Such support can be in pure money or financial terms or can be as support to specific investments, in particular, renewable energy capacity. The second is the technology transfer and its knowhow which indicates the policies or action in other countries which can support or facilitate a given country's mitigation policy, or make this policy more favorable or less costly to implement.<sup>38</sup>

<sup>36</sup> Ibid.

<sup>37</sup> Jon Strand, 'Unconditional and conditional NDCs under the Paris Agreement: Interpretations and their relations to policy instruments' (2017) CREE Working Paper 09/2017 <a href="http://www.cree.uio.no">http://www.cree.uio.no</a> accessed 2 April 2020.

<sup>38</sup> Ibid.

To address this financial issue, Asian Development Bank in 2018 initiated the creation of a platform to support the INDC of some selected countries. It promised for technical support in energy subsidy reform, including providing advice for policymakers. But India anticipates that mitigation activities for moderate low carbon development would require more additional investments. Furthermore, the World Bank Group (WBG) is a part of the NDC Partnership, through which it has an NDC Support Facility Trust Fund. Over a two year pilot (2017-18) this facility was meant to be client-driven and to focus on upstream analytical work such as capacity building and investment plan development.<sup>39</sup> The Support Facility Trust Fund also supports the Coalition of Finance Ministers for Climate Action via Climate Action Peer Exchange which aims to help countries to mobilize and align finance needed to combat climate change. Till date more than 50 countries are parties to this action plan to promote national climate action. However, India is yet not a party to this action plan. India is yet to determine the gap between actual cost of implementation of its plans and what can be made available from domestic sources. Moreover, since the targets are not exclusively sector specific but holistic, individual sectors are not strictly obligated to fetch their specific targets.

Apart from the strategies being dependent on external help and hence causing the contingency to prevail over their ultimate implementation, there are other arenas in the INDC which require a critical analysis. There are arguments being put forward which states that an economy-wide emissions reduction policy simulated through a carbon price will result in the lowest decline in consumer welfare to achieve the target emissions intensity.<sup>40</sup> Furthermore, India's climate targets submitted in its NDC promises a reduction in CO<sub>2</sub> emissions intensity of GDP by 33–35% by 2030 from 2005 levels and an increase in non-fossil-based power to about 40% of cumulative installed capacity, in 2030.<sup>41</sup> In order to achieve the same, the country has been targeting mostly on carbon pricing through pure carbon tax as well as through a combination of carbon tax with sustainable policies. However, homogeneity in policy-making can have different impacts on heterogeneous households belonging to different income and expenditure groups.

<sup>39</sup> Helena Wright, James Hawkins et al, 'Technical Assistance For Implementing Paris Goals' (2018) <a href="https://Www.Jstor.Org/Stable/Resrep17705.19">https://Www.Jstor.Org/Stable/Resrep17705.19</a>> accessed 3 April 2020.

<sup>40</sup> Arun Singh *et al*, 'Evaluating India's Climate Targets: The Implications of Economy-Wide And Sector-Specific Policies' (2019) 10 *Climate Change Economics* 3.

<sup>41</sup> Ibid.

Lastly, and most significantly, the present crisis of the corona pandemic across the globe has shown us the devastating consequences of under-prepared health care systems. The pandemic has resulted in the lockdown of most of the sectors in almost every country for which the globe is anticipating a phase of acute global recession. In such a situation of financial crisis, it is obvious that many of the rich and developed countries would not be in a position to financially support the poor and developing countries to combat global warming. The threat of COVID 19 is now a full-blown reality for the entire globe and India is not an exception to this. This is destined to throw the country into a huge economic crisis. At such a juncture, there can be some reasonable anticipation that the focus would shift towards bringing back the economic stability as a result of which climatic commitments may get affected. It is no more a deniable fact the world till date has not done much to adequately address the climate change issue and now with this global economic turmoil prioritizing clean energy plans may not seem viable.

However, one cannot rule out the theory that there exists a correlation between climate change and the expansion and spread of many vector borne diseases. Extreme and unpredictable weather changes have often been responsible for the birth of such diseases. Though the present case of corona might not have been the result of climatic inconsistency, it has showcased that there is a need for the world to synergize the mitigation and adaptation strategies by thinking globally and acting locally. Many experts feel that it is the right time for a green new deal to scale up for clean and renewable energy, in light of the slowdown in the industrial activity, due to which the carbon dioxide emission has dropped significantly during this corona crisis. <sup>42</sup> However, to what extent that would be practically feasible depends largely upon the political will of the countries and the impact that the pandemic would leave behind. Therefore, it is the test time to see how India can overcome this critical situation and focus upon its goal to respond to climate change. There is a need to explore the arenas of green investments which can be financially profitable as well as environmentally sustainable.

<sup>42 &</sup>lt;https://www.dw.com/en/corona-stimulus-plans-overlook-historic-chance-for-climatecrisis/a-52876341> accessed 6 April 2020.

### CONCLUSION

Climate change related events make no distinction between developed and developing countries. Nevertheless, it has been documented that the developing world is less prepared to face climate change challenges and is therefore more vulnerable.<sup>43</sup> Their vulnerability is due to multiple factors that can limit their ability to prevent and respond to the impacts of climate change. This recent pandemic has been an eye opener for the world, making it realize that we are not in a position to address and take measures for sudden yet destined pandemics. Under such circumstances, there are requisites for radical thinking for committing to initiatives that significantly reduce greenhouse gases. For the same, the adaptation policies should seek for public private models so that the new private sector funds can be mobilized for climate action in developing countries like India. India being a large country with a heterogeneous population, specific regions, groups of people or sectors with high emission patterns is to be targeted and variant suitable mitigation approaches are to be pursued. Last but not the least, climate action demands increasing investments in disaster preparedness and reduction. Thus, precautionary arrangements to handle the disaster should come as priority.

<sup>43</sup> J.L. Baker (ed.), 'Climate Change, Disaster Risk and the Urban Poor: Cities Building Resilience for a Changing World' 2012World Bank <penknowledge.worldbank.org/ bitstream/handle/10986/6018/683580PUB0EP-I0067869B09780821388457.pdf> accessed 6 April 2020.

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## ROLE OF UN VIS-À-VIS ASEAN TO COMBAT TRANSBOUNDARY ENVIRONMENTAL DAMAGE: A CASE STUDY OF IMPLEMENTATION OF GOOD INTERNATIONAL PRACTICES

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**Keywords:** Transboundary environmental governance, Industrialization, Rio Declaration.

#### INTRODUCTION

Human activities cause unprecedented damage to the environment, which often do not remain restricted to national borders and may even surpass international territorial boundaries. Such transnational environmental harm or damage has evolved a body of jurisprudence, consisting of soft and hard policies, rules and principles, widely known as *Transboundary environmental governance*. For the last three decades, transboundary environmental jurisprudence has become one of the most debated issues among scholars and scientists.<sup>1</sup> One of the greatest challenges presented in the area of transboundary environmental jurisprudence is the ever-changing nature

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<sup>1</sup> Aaron Schwabach, Transboundary Environmental Harm and State Responsibility: Customary International Law (2000) 1st Supp., 7thEdn. Sweet and Maxwell.

and complexity of environmental crimes committed beyond international borders.<sup>2</sup> At the regional or national level, environmental problems or issues are generally restricted to air and water pollution, resource extraction impacts, diminished freshwater quality and quantity, nuclear explosions and injury, hazardous waste and toxic materials.<sup>3</sup> However, at a transboundary or global level, these problems are further compounded and lead to more complex problems such as biodiversity loss, ozone depletion, melting of glacier pole, declining food production and depleted fish stocks, deforestation and anthropogenic climate change.<sup>4</sup> Given the complexities and far-reaching consequences that transboundary environmental harm causes to living beings, including human life, international jurists have time and again demanded stricter rules of liability to prevent transboundary environmental damage.<sup>5</sup> In addition, transboundary environmental harm has also raised the demand for better and more effective environmental governance for the implementation of existing rules, policies and principles. Approaches to the affixation of liability for any kind of transboundary environmental damage vary among nations: Either the extension of existing domestic or national level rules and principles such as the strict liability rule or evolving new rules or principles made applicable to all kinds of transboundary environmental damage. In light of these challenges, this paper explores the role of ASEAN at the regional level and, at the international level, the UN and the ICI in the mitigation and prevention of actions that can cause transboundary environmental damage or harm.

### TRANSBOUNDARY ENVIRONMENTAL HARM: ORIGIN AND DEVELOPMENT

In plain terms, transboundary environmental harm means those activities that have significantly adverse effect on the environment resulting from any kind of human activity, where the physical origin of such activities must be, wholly or in part, within

<sup>2</sup> Ibid.

<sup>3</sup> Jervan Marte, 'The Prohibition of Transboundary Environmental Harm: An Analysis of the Contribution of the International Court of Justice to the Development of the Noharm Rule' (2014) An Analysis of the Contribution of the International Court of Justice to the Development of the No-Harm Rule, Pluri Courts Research Paper No. 14-17.

<sup>4</sup> Ibid.

<sup>5</sup> John H. Knox, 'The Myth and Reality of Transboundary Environmental Impact' (2002) 96 *The American Journal of International Law* 291.

an area under the jurisdiction of another State.<sup>6</sup> In this regard, scholars consider transboundary environmental harm to consist of the following elements:

- The harm must be arising out of human activities.
- The harm must be a physical consequence of the human activity.
- There must be a physical effect crossing national boundaries or having impact beyond the political boundaries of a nation/state.
- The harm in question must exceed a certain level of severity/damage that calls for legal action.

Essentially, transboundary environmental harm, under international law, expands the *No-Harm Rule* to include harm to areas beyond national control.<sup>7</sup> Thus, the rule also intends to protect "global commons", i.e. the high seas, the outer space, the atmosphere and the polar regions. The transboundary harm principle states that a State owes, at all times, a duty to protect other States against injurious acts by individuals from within its jurisdiction.<sup>8</sup> The character of the rules governing transboundary damages can mainly be based upon liability, normativity, equity and efficiency.<sup>9</sup>

The phrase "transboundary environmental harm" was first discussed in the case of *Trail Smelter*,<sup>10</sup> initially reported in the year 1939. When reported, The *Trail Smelter* case became one of the most debated cases in the history of jurisprudence on transboundary environmental harms and damage. This was one of the first cases to discuss the extent of liability of a State where an environmental harm was committed by one country beyond its national boundaries in another country. In particular, with this case, it was the first time that an international court or tribunal evolved the principle of *transboundary environmental harm*. In this case, the United States of America (USA), sought damages from Canada for the harm caused by *Trail Smelter*, a Canadian based and domiciled corporation, for causing excessive

<sup>6</sup> Ibid.

<sup>7</sup> Kamen Sachariew, 'The Definition of Thresholds of Tolerance for Transboundary Environmental Injury Under International Law: Development and Present Status' (1990) 37(2) Netherlands International Law Review 193, 205.

<sup>8 (</sup>United States v. Canada) (1938 and 1941) 3 R.I.A.A. 1905.

<sup>9</sup> Xue Hanquin, Transboundary Damage in International Law, (27 Cambridge University Press 2003).

<sup>10</sup> United States v. Canada (supra note 8).

air pollution in the state of Washington in the USA. The continuous emission of sulphur dioxide by Trail Smelter Corporation, had resulted in a huge amount of toxic air pollution within the state of Washington in (USA) between the years 1925 to 1936. To stop Trail Smelter from causing further damage and harm arising out of these toxic sulphur dioxide emissions, the USA filed a suit for injunction and damages against Trail Smelter and the State of Canada. The main question before the International Joint Commission (IJC), established under a treaty between USA and Canada in 1909, was whether a State can be liable for harms or damage caused by the actions of individuals or corporations within a State to another State. In particular, the Commission had to decide whether a State has duty or responsibility to protect other States for environmental harm or damage caused by a State or any individuals within the State. Taking into consideration all the facts and evidence presented, the Commission held the State of Canada responsible for the environmental damage caused to the farmers and local people due to the toxic sulphur dioxide fumes in Washington, United States. For reaching its decision, the Commission applied both relevant principles of international law and analogous judgments of the US Supreme Court on air and water pollution to hold that a State has a duty of care to other States to ensure that its territories are not being used for causing harm or injury to the citizens, their properties and the environment of any other State. In terms of the quantum of damages, the Commission held that the compensation payable by the State of Canada must take into account the present conditions of the river valley which has been damaged by the toxic fumes and well as future costs of the damage. Further, Smelter Corporation was permanently refrained from carrying out its industrial activities at or near the river valley.

In a similar case to the *Smelter* arbitration, in the *Corfu Channel* case<sup>11</sup>Albania was held responsible for the damage to the UK's warships in the North Corfu Strait. The *Corfu Channel* case was one of the first cases to be heard before the International Court of Justice (ICJ), concerning responsibility of the State for damage to another State's war ships at sea. Following a series of encounters from May to November 1946 in the Corfu Channel between the United Kingdom and the People's Republic of Albania—one of which resulted in damage to two Royal Navy ships and significant loss of life—the United Kingdom brought suit in the ICJ seeking reparations.

<sup>11</sup> Corfu Channel Case (UK v. Albania) (Merits) [1949] ICJ Rep 4.

After an initial ruling on jurisdiction in 1948, the ICJ issued separate merits and compensation judgments in 1949. The Court awarded the United Kingdom £843,947.<sup>12</sup> Importantly, the Court held that "*every state is "under an obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States*"" While this ruling was similar to the arbitration decision given by the Commission in the Smelter case, this was stated by the Court in more formal terms. However, unlike the Commission's ruling based on treaty law, the ICJ applied "certain general and well-recognized principles of international laws" for arriving at its decision. In this regard, the ICJ finally recognized the existence of a general principle of law prohibiting and restricting states from violating the rights of or causing damage to other states. The Court thus generalized the Trail Smelter principle, and furthermore found that it can be violated by any act as well as an omission to certain acts.<sup>13</sup>

#### Common But Differentiated Responsibilities (CBDR)

It is a principle which was enunciated in the Kyoto Protocol (1997) where states acknowledged the disparity and gap of economic development between developed and developing countries. Industrialization proceeded in developed countries much earlier than it did in developing countries.<sup>14</sup> The principle specifically put its emphasis of carrying out the obligations on developed country.<sup>15</sup> The CBDR principle divides responsibilities based on the theory that more industrialized a country, more likely is its contribution to climate change. As a part of this agreement, member states accepted that developed countries have contributed more to environmental degradation and hence, they should have greater responsibility than developing countries.<sup>16</sup> The principle of CBDR could therefore be said to be part of the polluter-

<sup>12</sup> Ibid.

<sup>13</sup> Jervan Marte (supra note 3) at 127.

<sup>14</sup> Principle 7 of the Rio Declaration at the Earth Summit in 1992, The declaration states: "In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command." Similar language exists in the Framework Convention on Climate Change; parties should act to protect the climate system "on the basis of equality and in accordance with their common but differentiated responsibilities and respective capabilities."

<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

pays principle where historical contribution to climate change and respective ability become measures of responsibility for environmental protection. Although the CBDR principle has been appreciated by many developing countries, it has created a gap between developed and developing countries which could be seen in the south and north division.

### ROLE OF UN IN TRANSBOUNDARY ENVIRONMENT MANAGEMENT

The United Nations (UN) is an inter-governmental organization founded on 24<sup>th</sup> October 1945 after the Second World War, which has been tasked to promote international cooperation and to create and maintain international order.<sup>17</sup> The prime objective of UN is to maintain international peace and security, foster social and economic development, protecting the environment, promoting human rights, and providing humanitarian aid in cases of natural disaster, famine, and armed conflict.<sup>18</sup> In the last two decades, the UN has been paying strong and pervasive attention to the issues of the environment which primarily includes climate change and the transboundary impact on the environment.<sup>19</sup>

In its effort to lessen the impact of transboundary environmental harm and remind the States of their duty to protect the environment across their boundaries, the United Nations has recommended guidelines for the prevention of transboundary harm from hazardous activities to deal with the concept of prevention and avoidance of hazardous activities which pose and create a significant risk of transboundary harm.<sup>20</sup>

<sup>17</sup> See United Nations, Charter of the United Nations (Adopted on 24 June 1945, entered into force 24 October 1945) 1 UNTS XVI (https://www.refworld.org/docid/ 3ae6b3930.html) accessed 24 April 2020.

<sup>18</sup> Ibid.

Peter M. Hass, 'UN Conferences and Constructive Governance of the Environment' (2002) 8(1) Global Governance: A Review of Multilateralism and International Organizations 73, 89.

<sup>20</sup> Draft Articles on Prevention of Transboundary Harm from Hazardous Activities (Adopted on 13 June 2001, entered into force on 18 August 2001) UN Doc. A/RES/56/82, 56 UN GAOR Supp (No. 49) at 498, Supp. (No. 10) A/56/10 (V.E.1) <a href="https://legal.un.org/ilc/texts/instruments/english/commentaries/9\_7\_2001.pdf">https://legal.un.org/ilc/texts/instruments/english/commentaries/9\_7\_2001.pdf</a>> accessed 23 April 2020.

#### Draft Articles on Prevention of Transboundary Harm from Hazardous Activities

The Draft Articles on Prevention of Transboundary Harm from Hazardous Activities focus on the responsibilities of states for the prevention of transboundary harm without harming their sovereign interest. Under the Draft Articles, Member States are free to formulate essential policies to develop and protect their natural resources and to carry out necessary activities in response to the needs of their stakeholders. However, the Draft Articles also restrict the States' sovereign rights and place responsibility upon them to ensure that anti-environmental activities are being carried out while keeping view the transboundary impact of these activities and interests of other States.

The Draft Articles is a commendable effort of UN to strengthen its obligation mentioned in Article 13 of the UN Charter, which states that any State as a sovereign body, has complete control on its boundary, but when it comes to management of natural resources, it must give due regard to the international environmental laws and treaties. The Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, were adopted by the International Law Commission (ILC) at its fifty-third session, in 2001. The Principles on the Allocation of Loss in the Case of Transboundary Harm Arising Out of Hazardous Activities were adopted by the International Law Commission at its fifty-eighth session, in 2006. The General Assembly of the UN took note of the Articles at its 53<sup>rd</sup> session, in the year 2001, and of the Principles at its 61<sup>st</sup> session, in 2006.<sup>21</sup>

# OTHER IMPORTANT TREATIES AND CONVENTIONS ON TRANSBOUNDARY HARM PREVENTION

#### **Rio Declaration**

Principle 19 of the Rio Declaration, accords a duty to all the signatory states to "provide timely and adequate information" to other signatory states who may be potentially affected by the activities done within the State, which may have transboundary environmental effects. In this regard, States must, in good faith, consult other states at "early stages" of such activities. In other words, States while planning activities that may potentially harm the transboundary environment or natural resources of

<sup>21</sup> Ibid.

another State, should enter into good faith consultations with such States over a reasonable time in an effort to minimize the transboundary environmental impacts.<sup>22</sup>

#### International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS)

The HNS Convention, adopted by an international conference in 1996, is administered by the International Maritime Organisation (IMO), a specialized body of the United Nations, responsible for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships.<sup>23</sup> The HNS Convention is based on the civil liability model, and seeks to establish a two-tier system for compensation to be paid in the event of accidents at sea, in this case, involving hazardous and noxious substances such as chemicals.<sup>24</sup>

#### United Nations Convention on Environmental Impact Assessment in a Transboundary Context, 1991<sup>25</sup>(Espoo Convention)

Signed in the year 1991, the Espoo (EIA) Convention, ratified by 44 States, obligates the Signatory Parties to assess the environmental impact of certain activities at early stages of their planning. Further, this Convention calls upon the States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across national boundaries.

<sup>22</sup> Principle 19, Rio Declaration, "States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith."

<sup>23 &#</sup>x27;Introduction to IMO', (International Maritime Organisation) <a href="http://www.imo.org/en/About/Pages/Default.aspx">http://www.imo.org/en/About/Pages/Default.aspx</a>> accessed 25 April 2020.

<sup>24 &#</sup>x27;International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS)' (*International Maritime* Organisation) <a href="http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/">http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/</a> International-Convention-on-Liability-and-Compensation-for-Damage-in-Connectionwith-the-Carriage-of-Hazardous-and-Noxious-.aspx> accessed 25 April 2020.

<sup>25</sup> The Convention was adopted by the Senior Advisers to ECE Governments on Environmental and Water Problems of the Economic Commission for Europe at their fourth session held in Espoo, Finland, in March 1991. The Convention was open for signature at Espoo, Finland, during the said period and thereafter at the United Nations Headquarters in New York.

#### The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal<sup>26</sup>

The prime objective of this Convention is to protect human health and the environment against the adverse effects of global hazardous wastes. Its scope of application covers a wide range and variety of wastes defined as "hazardous wastes" based on their origin and/or composition and their characteristics.<sup>27</sup>

## Recent Developments by the UN: Nationally Determined Contributions (NDCs) and the Paris Agreement

Recently, the United Nations has made commendable efforts for harmonizing transboundary governance by introducing the Nationally Determined Contributions (NDCs) initiative to reduce carbon emissions by each country under the Paris Agreement.<sup>28</sup> In December 2015, Parties to the United Nations Framework Convention Climate Change (UNFCCC) ("the Convention") reached a landmark agreement to combat climate change and to accelerate and intensify the actions and investments needed for bringing transboundary environmental governance. The Paris Agreement builds upon the Convention and for the first time brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so.

Under this Agreement, each individual country has to undertake efforts to reduce national carbon emissions within one's territory and adapt to the numerous and multi-level impacts of climate change. This Agreement further requires each Party to prepare, communicate and maintain successive NDCs that it intends to achieve.<sup>29</sup> Parties shall pursue domestic mitigation measures, with the aim to achieve the objectives of such contributions.

<sup>26</sup> The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was adopted on 22<sup>nd</sup> March 1989 by the Conference of Plenipotentiaries in Basel, Switzerland, in response to a public outcry following the discovery, in the 1980s, in Africa and other parts of the developing world of deposits of toxic wastes imported from abroad.

<sup>27 &#</sup>x27;Overview: Basel Convention' (United Nations Environment Programme) <a href="http://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx">http://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx</a>> accessed 3 April 2020.

<sup>28</sup> The Paris Agreement 2015 is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC), dealing with greenhouse-gas-emissions mitigation and its adaptation.

<sup>29</sup> Conference of the Parties, Adoption of the Paris Agreement (Adopted 12 December 2015) U.N. Doc. FCCC/CP/2015/L.9/Rev/1 (Paris Agreement) art. 4, para 2.

# TREATIES AND CONVENTIONS AT REGIONAL LEVEL: EUROPEAN UNION

#### The Convention on the Protection of the Marine Environment of the Baltic Sea Area

The Convention on the Protection of the Marine Environment of the Baltic Sea Area (also known as the Helsinki Convention) entered into force in May 1980 with an objective of intergovernmental cooperation on the protection of the Baltic Sea includes the content of the Convention and the organizational structure of the Commission.<sup>30</sup>

# The Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment<sup>31</sup>

The objective of this Convention is to ensure adequate and reasonable compensation for transboundary damage resulting from activities dangerous to the environment and provides for means of prevention and reinstatement.

#### The Nuuk Declaration on Environment and Development in the Arctic, 1993

The Convention specifies the duties of Parties with regard to the transboundary impact of proposed activities and procedures for their implementation, and it provides procedures, in a transboundary context, for the consideration of environmental impacts in decision-making procedures.<sup>32</sup>

<sup>30 &#</sup>x27;The Helsinki Convention' (*Baltic Marine Environment Protection Commission*) <a href="https://helcom.fi/about-us/convention/">https://helcom.fi/about-us/convention/</a> accessed 25 April 2020.

<sup>31 &#</sup>x27;Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment' (*Council of Europe*) <a href="https://rm.coe.int/168007c079">https://rm.coe.int/168007c079</a>> accessed 22 April 2020.

<sup>32 &#</sup>x27;Nuuk Declaration on Environment and Development in the Arctic' (University of Oregon, International Environmental Agreements Database Project) <a href="https://iea.uoregon.edu/treaty-text/1993-nuukdeclarationenvironmentdevelopmentarcticentxt">https://iea.uoregon.edu/treatytext/1993-nuukdeclarationenvironmentdevelopmentarcticentxt</a>> accessed 23 April 2020.

# TREATIES AND CONVENTIONS AT REGIONAL LEVEL: AFRICA

The Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (Bamako Convention)<sup>33</sup>

This treaty prohibits the import of hazardous wastes into the territories of the African States. Impetus for the Bamako Convention arose from the failure of the Basel Convention to prohibit trade of hazardous waste to less developed countries (LDCs), and from the realization that many developed nations were exporting toxic wastes to Africa. The Convention was negotiated by twelve nations of the Organisation of African Unity at Bamako, Mali in January, 1991, and came into force in 1998.

#### **ROLE OF THE INTERNATIONAL COURT OF JUSTICE**

#### Adjudication of Disputes

The International Court of Justice (ICJ), the principal judicial organ of the UN, came into existence through the adoption of the UN Charter and Statute of the ICJ in 1945. It has two important objectives to achieve:<sup>34</sup> First, to settle, in accordance with international law, legal disputes submitted by States, and Second, to give advisory opinions on legal questions referred to it by authorized UN organs and specialized agencies. While there is no specific bench in the ICJ for adjudication of disputes related to international environmental law, issues of conservation of natural resources and environmental protection are dealt with by a number of other adjudicating bodies of the UN and its specialized agencies, such as the WTO Dispute Settlement Understanding, International Tribunal for the Law of the Sea, and the Permanent Court of Arbitration. Nevertheless, the judicial decisions of the ICJ have played an increasingly important role in international environmental law, particularly in the field of transboundary governance and climate change over the past few decades.

<sup>33 &#</sup>x27;Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa' (*Africa Union*) <a href="https://au.int/sites/default/files/treaties/7774-treaty-0015\_-\_bamako\_convention\_on\_hazardous\_wastes\_e.pdf">https://au.int/sites/default/files/treaties/7774-treaty-0015\_-\_bamako\_convention\_on\_hazardous\_wastes\_e.pdf</a>> accessed 23 April 2020.

<sup>34 &#</sup>x27;UN Documentation: International Court of Justice' (United Nations Documents Library) (https://research.un.org/en/docs/icj) accessed 25 April 2020.

One of the most important judgments of the ICJ was Nuclear Tests I & II.35 These cases involved the question of legality of atmospheric nuclear tests conducted in the South Pacific by the French Government from 1966 to 1972. New Zealand and Australia took to the Court to decide and declare that the nuclear tests conducted in the region by France lead to the rise of radio-active fall-out, which constituted a violation of New Zealand's sovereign rights to protect the environment within its national boundaries and the health and well-being of the people. In addition to New Zealand' claims, Australia pleaded the Court to declare that carrying out these nuclear tests in the South Pacific by the French government was inconsistent and incoherent with rules of international law. The ICJ finally interpreted the submissions and found that the objective of the application was a termination of French atmospheric nuclear tests in the South Pacific. It further observed that since France, by stating that it intended to cease atmospheric testing, had assumed an obligation not to carry out further nuclear tests in the atmosphere in the South Pacific, and consequently, the objective of the New Zealand and Australia's applications had been accomplished and the dispute thus no longer existed. The Court, therefore, did not pronounce its judgment, based on the merits in this case, and avoided assessing the claims presented by Australia and New Zealand. For this decision, the ICJ was heavily criticized that its decision was based on a misconceived interpretation of the claims presented by the claimants, particularly those of New Zealand, whose claims were not limited to the stoppage of the atmospheric tests.<sup>36</sup>

#### Advisory Opinion of the ICJ

In 1995, the UN General Assembly requested the ICJ to give an advisory opinion on the following question: *"Is the threat or use of nuclear weapons in any circumstance permitted under international law?"* The ICJ however gave its advisory opinion in 1996, where it addressed the complex and wide question of environmental impact from the use of nuclear weapons. Some states that participated in the proceedings before the Court had submitted that the use of nuclear weapons was unlawful according to "existing norms relating to the safeguarding and protection of the environment." In their submissions to the ICJ, Principle 21 of the Stockholm Declaration was among the most important legal instruments widely invoked by States. Majority of the

<sup>35</sup> Nuclear Tests (Australia v. France) (Interim Protection Order of 22 June 1973) [1973] ICJ Rep 99.

<sup>36</sup> Jervan Marte (supra note 3) at 405.

States also supported their submissions with the principles of customary law while some argued that such principles were irrelevant to the case. The ICJ made some important remarks with regard to international environmental law in its discussion of the relevance of environmental norms for the question of the legality of nuclear weapons. It explicitly acknowledged that the environment *"is under daily threat and that the use of nuclear weapons could constitute a catastrophe for the environment" and that it "is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn. "The Court is reported to have recalled its obiter dictum from Nuclear Tests II as cited above, and further stated:* 

"The existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment."

#### ASEAN

The ASEAN or the Association of Southeast Asian Nations is an international organization which was established in 1967 by the governments of five countries of the South-East Asian region, including Malaysia, Indonesia, Philippines, Singapore and Thailand. The primary objective for the formation of ASEAN was to accelerate economic growth, social progress, and cultural development as well as the promotion of peace and security in the region. Later on, other countries such as Brunei joined in 1984, followed by Vietnam in 1995, Laos and Myanmar in 1997, and Cambodia in 1999. The ASEAN region has a population of more than 600 million and covers a total area of 1.7 million square miles (4.5 million square km). The headquarters of ASEAN is situated at Jakarta, Indonesia.

#### Major Environmental Issues In The ASEAN

Majority of the ASEAN countries are suffering from many large-scale environmental issues, specifically, air pollution from biomass burning (also known as Haze). Transboundary Haze has created adverse economic, environmental and health impacts in the entire South-East Asian region.<sup>37</sup> Use of extensive fire to transform forest areas into agricultural land particularly by Indonesia during dry season has been the major source of pollutants are one of the contributors to this widespread transboundary haze. The following paragraphs presents few case studies on Transboundary haze

<sup>37</sup> Gerald Tan, ASEAN Economic Development and Co-Operation, Singapore (Marshall Cavendish International 2000).

from the ASEAN region, that clearly demonstrate the scale and depth of the problem and dire consequences it creates on the economic as well as social and environmental well-being of these countries.<sup>38</sup>

#### The 1997 Southeast Asian Environmental Haze

The Southeast Asian haze, caused in late-1997, was a large-scale air quality tragedy that primarily caused widespread diminished atmospheric visibility and increased health problems within member states of ASEAN region. The total monetary loss suffered by ASEAN members was estimated around US\$ 9.5 billion due to expenditure on health care management, disruption of air travel and business activities. The primary reason behind the 1997 Southeast Asian haze was slash and burn techniques which were widely adopted by farmers for many years in Indonesia. Slash-and-Burn is one the cheapest and easiest available means to clear the farm lands for traditional agriculture. It was also reported that fire had also been used during the long fallow rotation of the so-called jungle rubber in Kalimantan and Sumatra to remove most of the biomass which includes the woody parts before new plantations can be re-established.<sup>39</sup>

Slash and burn fires contributed huge amounts of particulate matter in the atmosphere, leading to the haze and degradation of ambient air quality standards during this crisis. The haze affected all countries by an increase of acute health outcomes in the region. The major health effects included respiratory problems such as upper respiratory infection, asthma, decreased lung function as well as eye and skin infections. During the crisis, Singapore, for instance, was reported to have 30% increase in patients' attendance in hospitals due to air quality related symptoms. The smoke haze episode has also added to the widespread urban and industrial air pollution in Southeast Asia, causing it to reach ultimately alarming levels in many metropolitan areas of ASEAN regions.<sup>40</sup>

<sup>38</sup> Quirine M. Ketterings, 'Farmers' Perspectives on Slash-and-Burn as a Land Clearing Method for Small-Scale Rubber Producers in Sepunggur, Jambi Province, Sumatra, Indonesia' (1999) 120 Forest Ecology and Management 157, 169.

<sup>39</sup> *Ibid.* at 168.

<sup>40</sup> S. Suyanto, 'The Role of Fire in Changing Land Use and Livelihoods in Riau-Sumatra' (2013) 9 Ecology & Society, 142, <a href="https://www.ecologyandsociety.org/vol9/iss1/art15/">https://www.ecologyandsociety.org/vol9/iss1/art15/</a> accessed 14 September 2019.

#### Malaysian Haze, 2005

In August 2005, air quality in Kuala Lumpur (capital city of Malaysia) deteriorated so much that Malaysian health officials issued advisory for all of its residents to stay at home with the doors closed. A state of emergency was also announced at one of the world's largest ports, Port Klang and at the district of Kuala Selangor, following which some schools were declared closed to keep children away from being exposed to the haze. As per the report available, the air pollution is claimed to have reached dangerous levels (i.e. greater than 500 on the API).<sup>41</sup> This was the second time the state of environmental emergency had been declared in Malaysia since the 1997 haze discussed above. The reason for the 2005 Malaysian haze is similar to that of the 1997 haze as the same is caused by "hotspots" and lingering smoke from forest fires on the Indonesian island. Farmers were reported to have burnt scrub and forest continuously to clear land during the dry season for agricultural and other connected purposes and consequently, Malaysia became one of the worst-hit countries, since the 1997 haze.<sup>42</sup>

#### The 2006 Southeast Asian Haze

One year after the 2005 haze, a polluted haze appeared in Southeast Asian countries mainly due to continuous uncontrolled burning from "slash and burn" cultivation by farmers of Indonesia. The 2006 haze though less strong as compared to the 2005 haze, still affected almost all ASEAN countries including southern Thailand, Malaysia, Singapore and as far as Taiwan.<sup>43</sup> In particular the Klang Valley of Malaysia was worst affected from haze as the surrounding terrain acted as a natural retainer of polluted air, aggravating the situation in high-pollution areas such as ports, oil refineries, highly urbanized and industrial areas and dense urban areas. The primary reason behind the haze was fires in Kalimantan that produced large amounts of smoke, which continued burning for a long time. The fire was difficult to extinguish because they are on peatland, and once lit the fires can burn for months and release gases having substantial content of sulphuric acid.

<sup>41</sup> T. Genayong, 'Malaysia haze triggers emergency' BBC (Kuala Lumpur Times, 11 August 2005) <http://news.bbc. co.uk/2/hi/asia-pacific/4140660.stm> accessed 14 September 2019.

<sup>42</sup> Forest fires result from government failure in Indonesia, mongabay.com editorial (*Jakaria Times*, 15 October 2006) <a href="http://arquivo.pt/wayback/20090713122935/">http://arquivo.pt/wayback/20090713122935/</a>> <a href="http://news.mongabay.com/2006/1015-indonesia.html">http://news.mongabay.com/2006/1015-indonesia.html</a>> accessed 14 September 2019.

<sup>43</sup> Ibid.

#### The 2009 Southeast Asian haze

In the year 2009, Straits of Malacca, Indonesia, Malaysia and Singapore once again became the victim of haze, primarily caused by the same slash and burn practices which have long been used by local people of Indonesia to clear land for agricultural purposes. The vast area of forest fires raging in Indonesia's Sumatra island had increased tremendously, with wind blowing choking smoke over parts of Malaysia and left slashing visibility in the surrounding areas. The haze reportedly began in early June 2009 and progressively became worse toward the end of July. With a prevailing dry season caused by El Nino, the haze continued till August or September when the monsoon season arrived.<sup>44</sup>

#### The 2013 Southeast Asian haze

The 2013 Southeast Asian haze was one of the major environmental crises that largely affected many member countries of ASEAN including Brunei, Singapore, Indonesia, Malaysia, and Southern Thailand. The haze period was primarily caused by large-scale burning in many parts of Borneo and Sumatra. As per the input received by NASA satellites, the haze was reported mainly due to smoke from illegal wildfires on the Indonesian island of Sumatra and fires burning in Riau province Indonesia.<sup>45</sup> The 2013 haze was notable for causing highest records of pollution in Singapore and several other parts of Malaysia. The situation in some parts became so bad that the Air Pollution Index (API) in Muar, Johor went up to 746 (almost 2.5 times above the minimum range of the *Hazardous* level).<sup>46</sup>

Several ASEAN countries such as Singapore, Malaysia had declared a state of emergency following the presence of high levels of pollutants in the air. The schools and outside activities had completely been stopped in a few worst affected districts of Malaysia, Indonesia, Brunei and Singapore. The Department of Environment in Indonesia

<sup>44</sup> T. Nathalia, 'Indonesia forest fires flare, Malaysia hit by haze' (Reuters Jakarta, 12 June 2009) <a href="https://in.reuters.com/article/us-indonesia-haze/indonesia-forest-fires-flare-malaysia-hit-by-haze-idINTRE55B1B">https://in.reuters.com/article/us-indonesia-haze/indonesia-forest-fires-flare-malaysia-hit-by-haze-idINTRE55B1B</a> X20090612?sp=true> accessed 19 September 2019.

<sup>45</sup> NASA Earth Observatory, 'Smoke from fires in Sumatra shrouded Singapore and southern Malaysia in thick plumes of smoke in June 2013' (*Image of the Day*, 21 June 2013) <a href="https://earthobservatory.nasa.gov/images/81431/smoke-engulfs-Singapore">https://earthobservatory.nasa.gov/images/81431/smoke-engulfs-Singapore</a> accessed 19 September 2019.

<sup>46</sup> L. Neon, 'Singapore haze hits record high from Indonesia fires', (*BBC Singapore*, 21 June 2005).

issued a ban against open burning in Selangor, Malacca and Johor and increased the punishment to the tune of fine US \$199,400 or maximum imprisonment of five years, or both according to Environmental Quality (Amendment) Act 2001.<sup>47</sup>

International organisations such as Greenpeace International described the situation as an "international problem", stating that "nothing could be more illustrative of forest destruction than the polluting haze that is coming from Sumatra." Greenpeace also called on big palm oil companies such as Singapore-based Wilmar International and Malaysia-based Sime Darby to check if their suppliers were involved in the burning.<sup>48</sup>

#### The 2015 Southeast Asian Haze

The 2015 Southeast Asian haze majorly affected almost all the member states of ASEAN (Brunei, Indonesia, Malaysia, Singapore, Thailand, Vietnam, Cambodia and the Philippines).

The crisis is reported to blow a major financial loss to Indonesian government which is roughly estimated between US\$35 billion or US\$47 billion. Due to the wide impact of the haze many schools were ordered to be closed in Indonesia, Malaysia and Singapore. As per one estimate, these affected nearly four million students in Malaysia and on 4<sup>th</sup> September 2015, six Indonesian provinces had declared a state of emergency due to the worst situation of haze. More than 28 million people in Indonesia alone were reported to have been affected by the crisis, and more than 140,000 reported respiratory illnesses.

# Policy and Efforts of ASEAN Members for Transboundary Environmental Governance

ASEAN members have always put in their best efforts to resolve transboundary disputes concerning the problem of transboundary haze. But, in terms of addressing transboundary haze issues, the patterns of engagement between Indonesia and Malaysia have been different from those of Indonesia and Singapore. While Malaysia has been one of the most active proponents of regional cooperation within the

<sup>47 &#</sup>x27;Malaysia declares state of emergency in Muar and Ledang' (Asia Pacific Channel Kuala Lumpur, 23 June 2013) <a href="https://web.archive.org/web/20130626025209/http://www.channelnewsasia.com/news/asiapacific/malaysia-declares-state/721254.html">https://web.archive.org/web/20130626025209/http://www.channelnewsasia.com/news/asiapacific/malaysia-declares-state/721254.html</a> accessed 19 September 2019.

<sup>48</sup> Greenpeace International, *Palm oil companies must come clean on Indonesian fire hotspots* (Greenpeace International Publication 2013).

framework of the Association of Southeast Asian Nations (ASEAN), Singapore has of late chosen to adopt a comparatively unilateral response to the problem. The following paragraphs describe the efforts taken by ASEAN to combat the environmental issues plaguing the region, with special reference to transboundary haze:

# i. ASEAN Agreement on Transboundary Haze Pollution (hereinafter called ATHP).

ASEAN-level cooperation related to transboundary haze has been taking place since the 1980s, and one of the most significant outcomes in this area, has been the ASEAN Agreement on Transboundary Haze Pollution. The Agreement on Transboundary Haze Pollution (ATHP) is a legally binding environmental agreement, signed in 2002 by the ASEAN member states. As of September 2014, all ten ASEAN countries have ratified this agreement. The underlined objectives of the ATHP is: "to prevent and monitor transboundary haze pollution as a result of land and/ or forest fires which should be mitigated, through concerted national efforts and intensified regional and international cooperation and called for, *inter alia*, establishing procedures and mechanisms for co-operation among ASEAN Member States in the prevention and mitigation of land and/or forest fires and haze."<sup>49</sup>

It was also determined to give effect to the 1995 ASEAN Cooperation Plan on Transboundary Pollution and the 1997 regional Haze Action Plan through this agreement.<sup>50</sup> The major challenge with the implementation of ATHP in Indonesia, which has been recognized as the primary haze producing party. It is interesting to note that Indonesia was the last ASEAN country to ratify the agreement in 2014, while other member states signed the Agreement in 2002. However, the chief concerns and doubts still remain over the ability of the Indonesian government to monitor and prevent the problem. The Treaty seems to have failed in preventing the annual return of the haze from 2004 to 2015. Recently Indonesia has been placed as the world's third largest greenhouse gas emitter with two thirds of its emissions generated from deforestation and forest burning.

<sup>49</sup> ASEAN Agreement on Transboundary Haze Pollution, (Adopted 10 June 2002, entered into force 12 November 2003) <a href="http://haze.asean.org/?wpfb\_dl=32">http://haze.asean.org/?wpfb\_dl=32</a>> accessed 10 October 2019.

<sup>50</sup> Ibid.

At ASEAN-level meetings in 2013, the Singaporean Minister of Environment expressed frustration on the strong unwillingness of Indonesia to share its land maps with ASEAN member countries through the ASEAN Haze Monitoring System (HMS) mechanism. To implement the Agreement, Singapore has enacted the Transboundary Haze Pollution Act (THPA),<sup>51</sup> The THPA is one of the few extraterrestrial environmental legislations in the world which criminalizes and punishes extraterritorial conduct that causes or contributes to haze pollution in Singapore. Further, it empowers Singaporeans to sue companies whose actions may be causing or contributing to fires in Indonesia that result in haze in Singapore. The adoption of the THPA was a marked departure from the traditional ASEAN approach to resolve regional issues, which prioritizes diplomacy over legal solutions.

#### ii. ASEAN Regional Centre for Biodiversity Conservation

ASEAN Regional Centre for Biodiversity Conservation (hereinafter called ACB) was established at the 9th Informal ASEAN Ministerial Meeting on 27 September 2005. ACB is an intergovernmental regional centre of excellence that facilitates co-ordination and co-operation among the members of ASEAN, and with relevant regional, national and international organizations on the Conservation and Sustainable use of biological diversity, guided by fair and equitable sharing of benefits arising from the use of such biodiversity as per the CBD.<sup>52</sup> The Centre serves as the main focal point for networking and institutional linkage among ASEAN member countries, and with other regional organizations, to enhance the region's capacity to promote biodiversity conservation. The process also prepares the ASEAN members to participate in the Conference of Parties to the Convention on Biological Diversity. As a part of its continuing commitment towards biodiversity protection, ACB reinforces its efforts to engage more sectors and stakeholders for the protection of the region's biodiversity. It has formed alliances with key stakeholders at the regional and global levels in the last few years.

<sup>51</sup> Transboundary Haze Pollution Act 2014 (SG).

<sup>52</sup> The Convention on Biological Diversity (CBD), is a multilateral treaty, commenced in the Rio Convention, 1992. The Convention has three goals: the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources.

#### iii. ASEAN Sustainability Framework

ASEAN's policies, in soft law instruments, set forth a common regional policy framework for sustainable development with the following guidelines:

- *Environment Management:* Endorse and employ environmental impact assessments, optimal land use plans, and town and country planning or zoning plans;
- *Nature Conservation:* Develop new practicable approaches for preserving forest wildlife and ecosystems; monitor the quality of environment and natural resources to enable compilation of ASEAN State of the Environment reports;
- *Marine Conservation:* Develop practicable methods for management of pollution discharges;
- *Industry:* Ensure reasonable control of waste discharges at the early stages of project formulation; recycle waste; develop suitable systems for control of toxic and hazardous waste;
- *Education and Training:* Enhance public awareness; introduce environmental subjects in schools and universities; provide technical training in environmental information systems; encourage wider involvement in environmental management; promote cooperation among governments, NGOs, universities, and business communities within ASEAN;
- *Environmental Legislation:* Develop appropriate, regional and countrylevel legislation to support proper management in the development of the environment;
- Information Systems: Establish monitoring programs for surveillance of sensitive environmental resources; promote use of remote sensing to establish databases; develop comprehensive environmental information systems to facilitate decision-making;
- Enhanced ASEAN Joint Action: Facilitate closer cooperation of the ASEAN member states to act in unison for incorporating environmental concerns into economic policies to provide better foundation for natural resource management;

• *International Cooperation:* Establish cooperation with developed and developing countries and international agencies for transfer of technology; share experiences in the management of the environment.

#### iv. Concurrent activities and future plan of ASEAN<sup>53</sup>

The Ministers responsible for the environment from AMS held their 11th Meeting of the Conference of the Parties to the ASEAN Agreement on Transboundary Haze Pollution on 29 October 2015 in Hanoi, Vietnam. The Ministers reviewed possibilities for regional cooperation on a number of haze-related issues, in particular, actions taken under the AATHP, and discussed new initiatives to further promote regional cooperation in addressing transboundary haze pollution.

Significant achievements under COP11 are:

- Commitment to develop an ASEAN Haze-Free Roadmap which is an actionoriented and time-bound framework for AMS to achieve the vision of Haze-Free ASEAN by 2020;
- Endorsement of the revised Standard Operating Procedure for Monitoring, Assessment and Joint Emergency Response under the ASEAN Agreement on Transboundary Haze Pollution, where the Alert Levels, Trigger Points and Actions on Fire Suppression adopted by COP-10 were incorporated;
- Endorsement of ASEAN Guidelines on Peatland Fire Management; and
- Substantive progress of the development of the successor ASEAN Programme on Sustainable Management of Peatland Ecosystems APSMPE (2014-2020).
- A draft of the Road Map for Haze-Free ASEAN by 2020 was written during the task force meeting in March 2016.
- To finalize the Road Map, AMS still needs to address the establishment of the ASEAN Coordinating Center (ACC) in Indonesia and also develop and agree on the ASEAN Haze Monitoring.
- Prevention of land and forest fires through better management policies and allowance of subsidized technologies for the same.

<sup>53</sup> ASEAN, 'Roadmap on ASEAN Cooperation towards Transboundary Haze Pollution Control with Means of Implementation' (ASEAN Report, 20 May 2015) <a href="http://intl.denr.gov.ph/index.php/asean-menu/asean-agreements/">http://intl.denr.gov.ph/index.php/asean-menu/asean-agreements/</a> article/1#next-meetings> accessed 12 September 2019.

### CONCLUSION

International and regional cooperation on the matters of environmental protection is considered as a basic obligation under international law. Whether the rules of international cooperation are being effectively embraced must be measured by whether the response is proportional to the need. The cooperation of States can also be measured by looking into the level of such action taken and adequacy of the same to satisfy the duty to cooperate under international law.

The above discussion on transboundary haze makes it apparently clear that this problem has become an annual occurrence in some ASEAN nations. As is evident from the above arguments, dangerous levels of haze usually appear in the dry season from June to September, coinciding with the southwest monsoon. Southwest monsoon winds shift the haze from Sumatra, Indonesia towards the Malay Peninsula and Singapore, which causes thick haze that generally lasts for several weeks. In the case of the legally-binding ATHP, the international law obligation to cooperate was ineffective in producing action proportionate to the need.<sup>54</sup> The 'haze treaty' is mainly criticized for being vague and lacking enforcement mechanisms from member states or insufficiency of strong instruments for dispute-resolution.<sup>55</sup> Even though the ASEAN has put in every effort to depart from its institutional culture in an attempt to achieve deeper co-operation on this issue, failure in mutual cooperation amongst the member states and their adamant nature has increased the gravity of problems in the last few years.

Further, concerns remain over the capacity of Indonesia to monitor and effect changes to the crisis. The treaty is also criticized for being ill served by the ASEAN style of regional engagement which adamantly protects national sovereignty.<sup>56</sup> The results widely reflect that States are compelled to act in their own self-interest as opposed to the regional interests. Further, the close relationships between key economic actors and political elites have meant maintenance of the status quo. The solution

<sup>54</sup> Koh Kheng Lian & Nicholas A. Robinson, 'Regional Environmental Governance: Examining the Association of South East Asian Nations (ASEAN) Model (2002) Global Environmental Governance: Options and Opportunities 101, 120.

<sup>55</sup> Nguitragool, Paruedee, 'Negotiating the Haze Treaty: Rationality and Institutions in the Negotiations for the ASEAN Agreement on Transboundary Haze Pollution' (2002) 4 Asian Survey 358.

<sup>56</sup> Varkkey, Muhamad, 'The Asian Way and Haze Mitigation Efforts' (2012) 2 JIS 77.

of the problem lies in the effective mutual cooperation and consultations among the member states of the ASEAN to assimilate and prevent these grave problems. The international laws, in particular, guidelines prescribed by ICJ, the UN and the ASEAN Secretariat could be of great importance if followed in real spirit and words.

In view of the failure of the ASEAN Member States to deal effectively with the problem of transboundary haze, the authors recommend the following alternatives that may be implemented to address the problem of haze pollution, moving away from the reliance on regional policies. First, a regional level research centre may be established for the assessment of those reasons which compel local people to rely on forest fires on clearing land for agriculture and not using alternate technologies. Second, regional level investigating agencies may be established, which could institute criminal cases against those who have indulged in illegal and harmful activities causing pollution in the air. Similarly, operational mechanisms may be put in place to monitor land and forest fires and fix accountability upon the officials responsible for the prevention of such forest fires. Further, technology may be used effectively for the land and forest management, and for strengthening regional land and forest fire-fighting capability and other mitigating measures. Fifth, training programs may be organized at local levels for creating awareness on the best practices for land and forest management. Last but not the least, environmental management systems and capacity building projects may be developed with active collaboration between ASEAN member states.

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## ENVIRONMENT, BIODIVERSITY AND INTELLECTUAL PROPERTY RIGHTS: NEED FOR A HARMONIOUS ECOSYSTEM

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**Keywords:** Environment and Intellectual Property, Plant Variety Protection Laws, Biodiversity, National Biodiversity Authority.

#### **INTRODUCTION**

Life on earth being a process and product of organic reactions, diverse species of flora and fauna found their abode in 'ecosystems' associated with a geographical regions diversified into forests, grasslands, desserts, marine, etc. Diversity is the lifeline of a developing agrarian economy with majority of its population being dependant on bio resources. Monopoly, politics of control and illegal enrichments in the form of misappropriation invite negotiation on global standards of consent and access. Contributed by farmers over thousands of years, developing Nations of the South have been biodiversity hotspots of landraces, indigenous plant species and traditional knowledge. Evolved by indigenous farming communities and forest dwellers, diverse crop varieties rescued human race from doomsday, thus, meeting food security and end consumers' needs while adapting to local agro-climatic conditions. However, shift from rational use of its richness to rampant commercialization via aid of research and development (newer technologies/innovations in products and

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processes), a few categories of major food crops/ species got neglected and became extinct. Also, changing patterns of consumption and 'population to land' ratio led to destruction and shifting of vegetation of many plant species. Sustainable use and legal use of genetic resources is desired from global community inviting thoughtful investments concerning biodiversity rather meeting mere exploitative expectations. Private interests of multinational corporations being in clash with public interest demand favorable interpretation of international conventions and national level implementation.

Food growers have been the backbone of the country's GDP with traditional practices of cultivation securing diverse food grains and commercial crops for consumption and livelihood. However, intellectual property rights' orientation into domain of agriculture brought with it a monopolistic culture as against the community culture. Title and property rights under Patents, Plant Breeders' rights, Traditional Knowledge and Geographical Indication are closely linked to biodiversity. And as custodians of biodiversity, farmers have a legitimate right over the resources evolved and developed by them. Patent application involving small number of wellknown and cosmopolitan plant species being held by pharmaceuticals, cosmetics and personal care industries reflect a 'herd like' tendency. Plants in Pharmaceutical preparations are associated with traditional medicine. Around 2,045 plant species are wildly used, of which Curcuma longa (turmeric) is popular as antineoplastic, Aloe Vera and Vitis vinifera (grape vine) for dermatological and Ginkgo biloba for nervous system.<sup>1</sup> Cosmetics industries across the globe are accused of over-harvesting of wild or endangered species including unusual species coffee, while camellia (tea), aloe, citrus, prunus, mentha, sandalwood, rosewood, palm oil etc. which remain popular sources of raw materials raising concern of 'green washing' and environment via pollutants from manufacturing processes.

# ENVIRONMENT AND INTELLECTUAL PROPERTY: AN INTERNATIONAL REGULATORY FRAMEWORK

The international community's consensus over biodiversity emerged with advocacy and negotiations across inter-governmental bodies, global forum and can be is

<sup>1</sup> Paul Oldman et al, 'Biological Diversity in the Patent System' (2013) 8(11) PLOS ONE <a href="https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0078737">https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0078737</a>> accessed 10 April 2020.

traced to the drafting of the Convention on Biological Diversity (CBD), the first ever comprehensive legally binding agreement envisioning a wholesome protection regime by integrating conservation strategy with intellectual property environmental research and sustainable development. Granting sovereign rights to the country of origin, appreciating a fair and equitable access, right to the indigenous communities, it shares a 'benefit sharing' exchange system under Article 16.1<sup>2</sup> with the provider country (mostly developing) seeking for environmentally sound technologies for utilization of its resources. Clean Development Mechanism (CDM) of the United Nations Framework Convention on Climate Change (UNFCCC) and Article 10 of Montreal Convention ensures public private partnership for climate and energy technologies.<sup>3</sup>

In harmony with CBD, the FAO Conference adopted ITPGRFA (popular as International Seed Treaty) in 2001 for the realization of farmers' rights in an integrated system of guidelines for sustainable use of plant genetic resources u/ Articles 5 and 6 in support to ex situ (wild plants) and on-farm management of crop species. Held in trust by the International Agricultural Research Centers (IARCs) and managed Consultative Group on International Agricultural Research (CGIAR) for '35 food & 29 forage' crops (Annex 1); *ex-situ* depository of all PGRs operates via Standard Material Transfer Agreement (SMTA). Contributions of each contracting party are weighed under '*common but differentiated responsibilities (CBDR)*',<sup>4</sup> wherein countries are watchful of respective national interests in the world of climate change. Germplasm-sharing for free, though is a community rescue objective, Resolution 2/2019<sup>5</sup> makes India revisit its share of contribution as against others being the highest donor in the past.

<sup>2 &</sup>quot;Each Contracting Party, recognizing that technology includes biotechnology, and that both access to and transfer of technology among Contracting Parties are essential elements for the attainment of the objectives of this Convention, undertakes subject to the provisions of this Article to provide and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment".

<sup>3</sup> Fridtjof Nansen Institute, The State of Technology Transfer Obligations in Global Environmental Governance and Law: Biodiversity Conservation and Sustainable Use (Lysaker, FNI Report 4/2015)18p.

<sup>4</sup> Indra Shekhar Singh, 'Indian Biodiversity First, Foreign Treaties Later' (*Great game India*, 17 October 2019) <a href="https://greatgameindia.com/indian-biodiversity-first-foreign-treaties-later">https://greatgameindia.com/indian-biodiversity-first-foreign-treaties-later</a> accessed 1 April 2020.

<sup>5</sup> UNFAO Res 2/2019 (29 June 2019).

Asserting monopoly rights and profits over biodiversity is a continuing complex multidimensional issue contesting debates on; a) patenting on life forms; b) genetically modified species (GMOs); c) ownership right over the community's interest; and d) susceptibility of environment to reckless innovations. To the end of World War-II, European countries eyed the global south for industrializing vast diversity bypassing the mandate of the World Intellectual Property Organization (WIPO), leading to the establishment of WTO (preceded by GAAT) and its Uruguay round resulting in Trade Related Intellectual Property Rights (TRIPs) requiring member countries to regulate trade aspects of intellectual property, excluding protection cover to biodiversity. Article 27.3(b)<sup>6</sup> allowed patents, plant breeders' rights or sui generis model national legislation for members with no inbuilt existing complementary standards to respect utilization of biodiversity. The 2006 review by the TRIPs Council raised questions on the justification of broad patenting rights and conflicts with CBD on non-existence of 'benefit sharing' mechanism, observed that "patents on life forms give rise to a range of concerns, including in regard to development, food security, the environment, culture and morality".7 A similar move on Article 27.3(b) was observed in 1999 review with a 5 year gestation period for developing and least developed countries allowing formulation of unique comprehensive national legislative framework safeguarding biodiversity and related knowledge.8 Of all the concerns embedded in intellectual property rights and their role in biodiversity, lack of prior informed consent, good faith in disclosure and modalities of benefit sharing demand review and attention.

<sup>6 &</sup>quot;Members may also exclude from patentability:
(b) Plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof".

<sup>7</sup> Council for Trade-Related Aspects of Intellectual Property Rights, 'The Relationship between the TRIPs Agreement and the Convention on Biological Diversity' (*World Trade Organization*, 8 February 2006) <a href="https://docs.wto.org/dol2fe/Pages/FE\_Search/FE\_S\_ S009-DP.aspx?language=E&CatalogueIdList=71013,62129,31989,25697,49523&Curren tCatalogueIdIndex=1&FullTextHash=&HasEnglishRecord=True&HasFrenchRecord=Tr ue&HasSpanishRecord=True> accessed 1 April 2020.

<sup>8</sup> Genetic Resources Action International, 'TRIPS versus Biodiversity: What to do with the 1999 Review of Article27.3 (b)' (*GRAIN*, May 1999) <a href="https://www.grain.org/en/article/11-trips-versus-biodiversity-what-to-do-with-the-1999-review-of-article-27-3-b">https://www.grain.org/en/article/11trips-versus-biodiversity-what-to-do-with-the-1999-review-of-article-27-3-b</a>> accessed 1 April 2020.
#### Patent Regime and Environmental Issues

In its transition from 'common heritage' of mankind to a 'public good', biodiversity has crumbled into private interests of corporate conglomerates' parameters of onedimensional research resulting in erosion of culturally sensitive or vulnerable species. Inventors of products and processes add to global patent pool for lucrative royalties and a protection period of 20 years. The requisite of 'inventive step' and 'industrial application' popularizes it in all fields of technology, however, with some general exceptions i.e. environment and human health.

*i. Patenting On Life Forms*- Being patent eligible, a whole plant or parts thereof including cDNA, transgenic events or specific plant stains, revolutionary experiments at gene level have changed the course of research. Utility patents for DNA sequences being preferred over GM crops or seeds is a smarter way of processing claims than Plant Patent Act, 1930 of the USA.

Additionally, advocacy of GM food crops over conventional crops is criticized for its inherent risk of possible interference with human health. Considering nutritional properties, allergenicity, threat of out crossing (i.e. migration of genes from GM plants to non-GM plants risks mixing of commercial cash crops with food crops), chemicalization of soil health and susceptibility of nortarget insects and unperceived effects lead to potential bio-cover loss. Trans boundary trade (import/export) raised stricter regulation on GM foods by *Codex Alimentarius*-Food Code and mandatory safety assessment done by national authorities.<sup>9</sup> Organic food growers threatened by damage from neighboring farms questioning liability for contamination of own varieties. "In 2000, parties to the CBD adopted the Cartagena Protocol on Biosafety, seeking to protect biological diversity from the potential risks posed by living genetically modified organisms (GMOs), taking into account the human health".

*ii. Patents on Goods-* Pharmaceutical companies, cosmetics and agricultural industries being major explorers and innovators of plant related knowledge, compete for profit sharing and market dominance. The consumer-customer base from across the globe while preferring advanced beauty products, drugs, vaccines

<sup>9</sup> FAO, 'Frequently asked questions on genetically modified foods' (WHO, May 2014) <https://www.who.int/foodsafety/areas\_work/food-technology/faq-genetically-modifiedfood/en/> accessed 10 April 2020.

etc. lean on developed nations with technologies/facilities for production and meeting demand, thus, opening gates for negotiation on access to plant diversity. Top pharmaceutical firms such as Merck & Co., Pfizer, Novartis, Bayer, Sanofi or Roche, in response to best practices and biodiversity governance, facilitate bioprospecting and implement corporate social responsibility (CSR) while observing compliance standards under the CBD and Nagoya Protocol.<sup>10</sup> L'Oréal's endeavors to replace traditional materials with alternatives from recycled or renewable sources green chemistry, novel ingredients, and bio-inspired processes are a welcoming step. The 2010 Union for Ethical Bio trade 'UEBT Principles on Patents and Biodiversity' also garners encouragement. 'Cleaner production' advocated by the United Nations Environment Programme (UNEP) takes up a 'minimizing waste' approach towards environment, human health and safety; a) for processes, it includes conserving raw materials and energy, eliminating the use of toxic raw materials and reducing the quantity and toxicity of all emissions and wastes and b) for products, it involves reducing the negative effects of the product throughout its life- cycle, from the extraction of the raw materials right through to the product's ultimate disposal.<sup>11</sup> Sustainable environmental technologies in the form of Patents (environmental remediation, greenhouse gas reduction, renewable energy technologies or solid waste, recycling contribute to the development of clean technologies) are welcomed by global community for restoration of the ecosystem.

Exclusive ownership rights to sell, import, export, transfer etc. remain with the patent holder u/Article 28.1 of TRIPs while Article 31 voices concern of compliance from national authorities (in the public interest) to issue compulsory licensing of 'green patents' leading access to dominant patents for further improved innovation. Moreover, its clause (b), 'a *national emergency or other circumstances of extreme urgency*' is debated not to include 'environment' under its ambit. Additionally, contracting parties question effective utilization of such technologies by LDCs in the absence

<sup>10</sup> Christian Hellwig, 'Deforestation Impacting Pharmaceutical Industry' (*Global Risk Insights*, 29 June 2015) <a href="https://globalriskinsights.com/2015/06/deforestation-impacting-pharmaceutical-industry/">https://globalriskinsights.com/2015/06/deforestation-impacting-pharmaceutical-industry/</a>> accessed 6 April 2020.

<sup>11</sup> World Business Council for Sustainable Development, 'Cleaner production and Eco efficiency: Complementary Approaches to Sustainable Development' (WBCSD, 1 March 1988) <a href="https://www.environmental-expert.com/articles/cleaner-production-and-eco-efficiency-complementary-approaches-to-sustainable-development-1452">https://www.environmental-expert.com/articles/cleaner-production-and-eco-efficiency-complementary-approaches-to-sustainable-development-1452</a>> accessed 9 April 2020.

of FDI and minimum infrastructural facilities, to which Doha Declaration too is hesitant.<sup>12</sup> The Patent Co-operation Treaty (PCT) encourages filing of dynamic green technologies in the field of renewable energy and air pollution control.<sup>13</sup> Realizing that there is an inevitable need for clean technologies, developed economies provide market to environmental friendly technologies for consumption; e.g. Japan and USA hold popular patents for electric vehicles, China is the leading exporter of affordable photovoltaic cells, etc. and India has thrived on Low Carbon Emitting Goods.<sup>14</sup>

Also, appreciating the grappling effect of climate change and aggravated forms of air pollution, expert consultations and discussions at Rio+20, Kyoto Protocol, 1997 etc. have been trying to formulate policy strategies to tackle public health from negative impacts of technologies. The clear intent of the Paris Agreement of 2015 emphasizes trust on TK in reversing the environmental damage when it observes that, "adaptation action should follow a country-drive......guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems."<sup>15</sup>

## PLANT VARIETY PROTECTION LAWS AND BIODIVERSITY

Although breeding is a natural phenomenon, however, acknowledging the farming communities' efforts and scientific methods which leads in development of new crop varieties, a new class of intellectual property has been developed in the form of Plant Breeder' Right (PBR). It secures the right holder a limited power over marketing of his/her registered varieties with the holder registering a new variety with the designated authority.

<sup>12</sup> Anders Karlsson, 'Green Technology Patents: TRIPS Compulsory Licensing and Global Health' (*Stockholm University*, 2014) <a href="https://www.diva-portal.org/smash/get/diva2:764784/FULLTEXT01.pdf">https://www.diva-portal.org/smash/get/diva2:764784/FULLTEXT01.pdf</a>> accessed 9 April 2020.

<sup>13</sup> The Organisation for Economic Co-operation and Development, 'Patents on Environment-Related Technologies' (*OECD*, 2020) <https://data.oecd.org/envpolicy/ patents-on-environment-technologies.htm#:~:text=Patents%20on%20environment%20 technologies,climate%20change%20or%20regional%20pollution.&text=They%20 can%20also%20be%20disaggregated%20%E2%80%93%20an%20important,when%20 analysing%20environment%2Drelated%20technologies.> accessed 9 April 2020.

<sup>14</sup> Sugandha Srivastav and Rajat Kathuria, 'Green technology: Can India Win the Race?' *Financial Express* (India, 9 April 2018) <a href="https://www.financialexpress.com/opinion/green-technology-can-india-win-the-race/1126192/">https://www.financialexpress.com/opinion/green-technology-can-india-win-the-race/1126192/</a>> accessed 9 April 2020.

<sup>15</sup> United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) UN (UNFCCC) art 7.

Though hybrid and high yielding varieties remain popular amongst farmers on their output, long term effects on environment and human health are held in anticipation with a dismal picture on chemicals and pesticides attacking food chain and genetic diversity. The UPOV adopted in 1961 (subsequently amended in 1972, 1978 and 1991) while it incentivized public and private sectors in sustainable breeding programmes with PBR certificates (of ownership for 20/25 years), it gifted improved cultivars to biodiversity with no pre-determination/categorization of genera or species to be bred/beneficial, maintaining no-biased use. Protected varieties remained available with farmers (self-consumption) and researchers for non-commercial uses.

Plant variety protection(PVP) furthers the implementation of Article 9 of ITPGFRA. The Consultative Group for International Agricultural Research (CGIAR) with its partnering organizations for e.g. Africa Rice, ICARDA, ICRISAT, IRRI observe best practices in the form of 'Community seed banks' (for e.g. DIVERSIFOOD Project funded by the European Union), local seed fairs, integration of formal and informal seed systems, maintaining of catalogues and biodiversity registers monitoring trend in use of diversity and identifying gaps.<sup>16</sup>

Seed saving and exchange amongst the farmers is an old tradition which prevents species from going extinct. Due to natural disasters, distorting climate and soil health, local germ-plasm (crop diversity) is approaching extinction and loss of habitat. Varietal selection and storing in gene banks of traditional varieties boosting the food chain with cereals, etc. seasonal, adaption rate Gene banks, seed banks are major strategies in agriculture to preserve plant varieties. Of 1750 seed banks worldwide (FAO's estimation<sup>17</sup>), Norway's Svalbard Global Seed Vault ('*Doomsday Vault'*) established in 2008 represents the world's largest collection (currently holds 4.5 million varieties) of crop diversity and is the '*iCloud*' for the plant life information on the planet. With a capacity to hold more than 2 billion seeds at about 500 seeds per variety on February 2020, it received more than 1 million seed samples from 36 international and regional gene banks, as well as national institutions and civil society organizations.<sup>18</sup> In a recent development, the *Cherokee Nation*, USA becomes

<sup>16</sup> Food and Agricultural Organisation of the United Nations, 'Views, Experiences and Best Practices as an example of possible options for the national implementation of Article 9 of the International Treaty, (FAO, 2019) < http://www.fao.org/3/ca4179en/ca4179en.pdf> accessed 9 April 2020.

<sup>17</sup> Food and Agricultural Organisation of the United Nations, 'FAO Launches New Standards for Plant Gene Banks' (FAO, 30 January 2014) < http://www.fao.org/news/story/en/ item/212982/icode/> accessed 9 April 2020.

<sup>18</sup> Elizabeth, 'The Svalbard Global Seed Vault inspires world leaders to champion the

the first tribe to deposit 9 crop ceremonial seeds (including four strain of corn including sacred 'White eagle corn', Gizzard black and brown beans) which is lauded as a historic event in the preservation of a culture.<sup>19</sup> Moreover, international environmental policies too support seed banking.

Vavilov Institute of Plant Industry <sup>20</sup> St. Petersburg, Russia	<b>The Royal Botanical Gardens<sup>21</sup></b> Kew, United Kingdom	National Centre for Genetic Resources <sup>22</sup> Fort Collins, USA
Set up in 1894, oldest seed bank in the world. In vitro, cryo-bank facilities and molecular laboratories. 46,666 accessions of PGR and crop wild relatives representing 64 botanical families, 376 genera, and 2169 species. Survived 28-month Siege in World War II.	Opened up the Millennium Seed Bank Project in 2000. Currently, MSB holdings represent nearly 40,000 species. Ex situ conservation of endangered wild species of flaura (tropical and temperate regions) with 30% of known plant diversity accounting for 105,634 species. Aim to collect and conserve (with its 96 partners) 25% of the world's orthodox species by 2020.	Established in 1958, for restoration of native plant communities. It has duplicated collections from other gene banks as a back-up security. For e.g. accessions from IRRI, Philippines for Rice (112,111) and CIMMYT, Mexico for Wheat and Corn (149,557). Ability to preserve the viability (germination of dormancy) of seeds for longer periods of time. Rescued 1980's Russian Wheat Aphid- green bug crisis('new' resistant varieties developed from 10 genes at NCGR).

#### Table 1: Major Rescue Seed Banks

safeguarding of the world's seeds and their contribution towards SDG 2: Zero Hunger' (Valbard Global Seed Vault, 26 March 2020) <a href="https://www.seedvault.no/nyheter/safeguarding-of-the-worlds-seeds-zero-hunger/sacessed15.april 2020">https://www.seedvault.no/nyheter/safeguarding-of-the-worlds-seeds-zero-hunger/sacessed15.april 2020</a>.

- 19 Sophie Lewis, "This is History in the making: Cherokee Nation becomes first U.S. tribe to preserve Culturally Important Seeds in Arctic "doomsday" Vault' CBS NEWS (New York, 8 February 2020) <https://www.cbsnews.com/news/doomsday-vault-cherokee-nation-firstu-s-tribe-preserve-seeds-arctic-svalbard-norway/#:~:text=%22This%20is%20history%20 in%20the,seeds%20in%20Arctic%20%22doomsday%22%20vault&text=For%20 more%20than%20a%20decade,largest%20collection%20of%20diverse%20crops.> accessed 9 April 2020.
- 20 N.I. Dzyubenko, 'Vavilov's Collection of Worldwide Crop Genetic Resources in the 21st Century' (NCBI, 1 October 2018) <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6204569/?report=">https://www.ncbi.nlm.nih.gov/pmc/articles/ PMC6204569/?report=</a> accessed 10 April 2020.
- Xatherine O'Donnell and Suzanne Sharrock, 'Botanic Gardens Complement Agricultural Gene Bank in Collecting and Conserving Plant Genetic Diversity' (*NCBI*, 1 October 2018) <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6204555/#s004">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6204555/#s004</a> title> accessed 10 April 2020.
- 22 United States Department of Agriculture, 'Agricultural Research Service National Center for Genetic Resources Preservation' (*Plant and Animal Genetic Resources Preservation Research Unit*, August 2013) <a href="https://www.ars.usda.gov/ARSUserFiles/30120505/142772-Seed-Broc-PROOF-4.pdf">https://www.ars.usda.gov/ARSUserFiles/30120505/142772-Seed-Broc-PROOF-4.pdf</a>> accessed 10 April 2020.

Other major repositories include, the Germplasm Bank of Wild Species (GBOWS) in China, International Institute for Tropical Agriculture, Nigeria, RBG Sydney's Plant Bank in Australia, and International Center for Tropical Agriculture, Colombia, Korean National Arboretum Seed Bank (KNASB) in South Korea. Thus, along with germplasm collection or acquisition, management, distribution, regeneration and utilization, long term and short term storage is facilitated across the seed/gene banks, though a gap is observed on 'availability' and 'utilization' of conserved species.

#### TRADITIONAL KNOWLEDGE AND BIODIVERSITY

Old customary patterns, repository of knowledge on agriculture, medicinal value of plant species have added value to crop diversity and conservation. Forest ecosystems in their wild habitats preserved wild races with conscious choices and tribal communities under sustainable farming systems. Crop diversity of the world has been preserved over generations by indigenous people who contributed to the development and evolution of diverse staple and cash crops via domestication through selection and cross breeding.

Undermining contribution of aboriginals in the utilization of various plant species either as food, cosmetics or traditional medicines, biotechnology and modern methods of breeding risked draining of valuable vegetation cover. Patenting of Philippine Sea Snail by Neurex Inc. of USA, Japanese Patent Office receiving claims on Camu from Peru, case of Ayahuasca from Amazon, contest by Indian Council for Scientific & Industrial Research (ICSIR) for Neem and Turmeric are examples of blatant piracy. The Indian Government revived with documentary evidences, scriptures and prior art, but failed to contest its claim for Basmati rice and its patenting against *RiceTec*<sup>23</sup> Inc. for its claim of 'novel rice lines' (although patent name was changed to 'Rice lines 867) which indicates vulnerability of plant species.

*i. Prior Consent-* Monopolization of plant genetic resources (PGRs) without authorization, acknowledgment is an attack on the fundamental customary rights of the community. While a statement of disclosure on 'source of material' and 'country of origin' is encouraged to promote register of traditional

<sup>23</sup> Stephen A. Hansen and Justin W. Van Fleet, 'Traditional Knowledge and Intellectual Property; A Handbook on Issues and Options for Traditional Knowledge Holders in Protecting their Intellectual Property and Maintaining Biological Diversity' (*Community*, July 2003) <a href="https://community-wealth.org/sites/clone.community-wealth.org/files/downloads/book-hansen-vanFleet.pdf">https://community-wealth.org/sites/clone.community-wealth.org/sites/clone.community-wealth.org/files/downloads/ book-hansen-vanFleet.pdf</a>> accessed 10 April, 2020.

knowledge, 'prior art,' and restricted unfair patenting were encouraged. The Bonn Guidelines on 'Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization' was adopted in 2002. It operationalized the commitment of CBD for 'prior informed consent(PIC)' or mandating transparency in permission from the government of the provider States with legal certainty(time, duration etc.) and respecting domestic laws on access on mutually agreed terms(MATs).<sup>24</sup>

Continuing politics of conflicting interests of developed and developing nations tends to replace PIC by the weaker formulation of the '*indigenous consultation*' phrase in bilateral agreements, thereby decreasing the scope of right of self-determination to expand exploitation. The World Intellectual Property Organization (WIPO) remained watchful to cover minute acts of misappropriation with "theft, bribery, coercion, fraud, trespass, breach or inducement of breach of contract, breach or inducement of breach of confidence or confidentiality, breach of fiduciary obligations or other relations of trust etc."<sup>25</sup>

*ii. Benefit sharing-* Partnering of genetic resource providers and users is a key trade-off in the CBD. Promoting an 'equitable agreement' for benefit sharing has always been challenging in terms of assimilation of diverse interests of sovereign nations over GRs and rights of indigenous/local communities over TK, complexities in administrative and legal matters and collaboration involving effective consultation and negotiation between parties.

Ambitious IP rights under TRIPs (over genetic resources and its associated knowledge) devoid of provision for indemnifying traditional communities for equivalent rights, pushed India and other developing States including Brazil, Bolivia, Colombia, Cuba, Dominican Republic, Ecuador, Peru, Thailand etc. to demand incorporation of '*disclosure of origin*' in patent applications u/Articles 27 and 29 of the agreement to make promises of CBD meaningful. This move was supported by the European Union and Norway suggesting linkages of CBD Clearing House to give effect to 'Access to and Transfer of Technology' provision

<sup>24</sup> Simon West, 'Institutionalized Exclusion: The Political Economy of Benefit Sharing and Intellectual Property'(2012) 8 Law Environment and Development Journal 19.

<sup>25</sup> Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, 'The Protection of Traditional cultural expressions/ expressions of Folklore: Overview of Policy Objectives and core Principles' (WTPO, 10 April, 2019) <a href="https://www.wipo.int/edocs/mdocs/tk/en/wipo\_grtkf\_ic\_40/wipo\_grtkf\_ic\_40\_10.pdf">https://www.wipo.int/edocs/mdocs/tk/en/wipo\_grtkf\_ic\_40/wipo\_grtkf\_ic\_40\_10.pdf</a> accessed 11 April 2020.

of Article 16.5 of the CBD.<sup>26</sup> Additionally, Article 15.7 demanded transparency and cooperation from Contracting States in framing legislative, administrative and policy measures via a financial mechanism for fair and equitable sharing of commercial utility from research and development.

As against the free and open access, an ABS mechanism is understood as a *'bargained reward'* with monetary incentive like distribution of any funds received on account of facilitating access, up-front payments, royalties or license fees and non-monetary incentives such as sharing of research results, technology transfer or capacity-building etc.

## Table 2: Some Case Studies on 'Access and Benefit Sharing' across the Globe.

1.	Ethiopian Institute of Biodiversity Conservation (the provider) and the Ethiopian Agricultural Research Organization executed the <i>Teff Agreement</i> with Performance Food International (the user), a Dutch Company. For continuing breeding and development of <i>Teff-the Staple Cereal Crop</i> . <sup>27</sup>
2.	Aveda (US personal care and cosmetic company), Mount Romance (Australian Co.) in partnership with indigenous people. Agreements on 'supply of raw materials-Sandalwood' and for the use in marketing of indigenous peoples' images and cultural property. <sup>28</sup>
3.	Unilever (the British phytomedicine Co.), Phytopharm, the Council for Scientific and Industrial Research (CSIR) ' <i>Hoodia</i> ' (appetite suppressant) growers, and the indigenous San peoples. For collection and commercialization of the patented extract. <sup>29</sup>
4.	Monsanto's compensation to <i>Aguaruna Amazonian</i> communities of Peru For use of TK in medicinal plants under system of ' <i>know-how</i> ' licenses initiated by ICBG's (International Cooperative Biodiversity Group) Program. <sup>30</sup>

<sup>26</sup> Joseph, Reji, International Regime on Access and Benefit Sharing: Where Are We Now?' (2010) 12 (3) Asian Biotechnology and Development Review 77, 83.

<sup>27</sup> Geoff Tansey and Tasmin Rajotte, *The Future Control of Food: A Guide to International* Negotiations and Rules on Intellectual property, Biodiversity and Food Security (Earthscan 2008).

<sup>28</sup> Sarah Laird and Rachel Wynberg, 'Access and Benefit-Sharing in practice: Trends in Partnerships Across Sectors' (*Convention on Biological Diversity*, 2008) <a href="https://www.cbd.int/doc/publications/cbd-ts-38-en.pdf">https://www.cbd.int/doc/publications/cbd-ts-38-en.pdf</a>> accessed 10 April 2020.

<sup>29</sup> Laura A. Foster, *Reinventing Hoodia: Peoples, Plants, and Patents in South Africa* (University of Washington Press 2017).

<sup>30</sup> Genetic Resources Action International, 'Biopiracy's Latest Disguises' (*GRAIN*, 25 Jun 1997) <a href="https://www.grain.org/article/entries/270-biopiracy-s-latest-disguises">https://www.grain.org/article/entries/270-biopiracy-s-latest-disguises</a> accessed 9 April 2020.

The North-South political divide plays a very important role in transfer of technology and access to resources. Allegations of inadequate and disproportionate sharing, replacement of 'right' with 'benefit' create dissatisfaction amongst stakeholders of the PGRs. Moreover, lack of institutional capacity, bottlenecks in implementing ABS in marginalized communities, question the rationality and viability of the scheme of 'benefit sharing.'

# INTELLECTUAL PROPERTY AND ENVIRONMENT: AN INDIAN CONTEXT

It is customary in India to respect the bounty of natural resources. Being a party to the World Heritage Convention (1972), Convention on International Trade in Endangered Species of Flora and Fauna (CITES,1975), CBD(1992), Agenda 21 (1992), UNFCC(1992), UN Convention to Combat Desertification (1994), the WTO-TRIPs(1994), Cartagena Protocol(2000) and FAO's ITPGRFA(2001) etc., India has been actively responsive towards meeting its obligations under these agreements and framed appropriate regulatory legislations on biodiversity conservation and various intellectual property rights.

The Biological Diversity Act, 2002 though reflects a composite framework for *in situ* and *ex situ* conservation, it is criticized for being under the centralized control of the National Biodiversity Authority (NBA) over biological resources with no significant representation of beneficiaries and their interests. Also, there are no clear evidences on adherence to PIC and MAT procedures in the access approvals. Any person intending to file a patent or plant variety protection as PBR outside India under foreign legislations is required to apply to the NBA in compliance with section 6 of 2002 Act. Foreigners including non-resident Indians along with body corporates not incorporated or registered in India for making any use of the associated knowledge for research, commercial use, bio-survey, or bio-utilization of bio-resources need prior approval.

Implementation of NBA's ABS guidelines, 2014 in pursuance of the Nagoya Protocol, is yet to be realized. However, emphasizing its commitment to safeguard country's TK, the CSIR and Department of AYUSH established Indian Traditional Knowledge Digital Library (ITKD) as 'point of contact' to International Patent Offices (IPOs) for verification on patent applications.

In the case of *Divya Pharmacy*,<sup>31</sup> the pharma unit of the Divya Yog Mandir Trust Hardiwar, an FEBS(Fair and Equitable Benefit Sharing) compliance was demanded by the Uttarakhand High Court to be deposited with the State Biodiversity Board (SBB) for 10.4 Crores, a share of INR 20.4 million of its INR 4.21-billion revenue in 2014-15 with farmers balancing conjoint commitments under 2002 domestic law and the Nagoya Protocol though, Patanjali's defense of being exempted as an Indian Ayurvedic company could not sustain.

Red Sanders Wood	Bio India Biological	Habib Cosmetics
NBA has received about Rupees 38 crores.	NBA received about USD 924 for export of 2000 kilograms of Neem to Japan.	It shared benefit worthRupees 3, 22, 99 with the Uttarakhand State Biodiversity Board.
Deemed to be a source of income and engagement at decision-making level for forest dwellers.	Part of royalty shared with to the local biodiversity body in ' <i>Amarchinta</i> ' for "planting Neem saplings and creation of awareness about biodiversity conservation."	Compliance of 'Access to Biological Resources and Associated Knowledge and Benefits Sharing Regulations, 2014.'

Table 3: Case Studies on 'Access and Benefit Sharing' Mechanism implemented in India<sup>32</sup>

Discovery of '*Aarogyapacha*', an anti-fatigue, anti-stress, immune restorative drug, by biologists, is the most popular case study in India (Agastyamalai forest of Kerala) exemplifying traditional medicinal knowledge of '*plathis-the healers*'. Tropical Botanic Garden and Research Institute (TBGRI) extracted 12 active compounds from the aarogyapacha plant, later licensing it to Arya Vaidya Pharmacy Ltd. with a 'Trust Fund' created to disburse half of licensing fee and royalties from its commercial sale.<sup>33</sup> Other incidents of domestic benefit sharing can be found with Dabur India Pvt. Ltd and the Honey Bee Network.

While the biotechnologies required for developing GM traits are patentable under Indian Patent Act, 2005, but once a foreign gene is integrated in the genome, GM

<sup>31</sup> Divya Pharmacy v. Union of India & Ors., 2018 Writ Petition (M/S) No. 3437 of 2016

<sup>32</sup> Centre for Environmental Law, Education, Research and Advocacy, *Handbook on Biodiversity Laws, Access and Benefit Sharing* (NLSIU 2019).

<sup>33</sup> C.R. Bijoy, 'Benefit Sharing from the Indigenous Peoples' Perspective: The TBGRI-Kani 'Model', (2007) Law, Environment and Development Journal 3, 5.

traits get expressed in a plant variety, such transgenic varieties are not patentable<sup>34</sup> rather they become eligible for protection under PVP legislation, subject to express declaration of non-involvement of 'Genetic use restriction technologies' (GURT). The restriction on involvement of GURT helps in arresting erosion of genetic diversity from fields, preserving local germplasm.<sup>35</sup> It too recognizes' benefit sharing' from the use of registered variety, conservation of traditional varieties u/sections 26 and 39(1)(iii).

GM Cotton being the only lab altered crop allowed to be grown in India adding to 90% of fiber production, the battle of seed Giant Monsanto is yet to see a clear win, however, the Apex Court interpreting the Patent Law and Plant Variety Protection Act observed that genetic sequences generated in the lab can be patented, but seeds and plants can't giving confidence to Monsanto's claim that Nucleic Acid sequence (NAS) is a mere chemical and a product while evading clutches of section 3(j) of Patent (Amendment) Act,2005 which restrict patenting on seeds.

Anticipation looming large for the biotechnology industry and seed companies licensing, biologists and environmentalists oppose any position as against public health. Illegal cultivation of GM- HT Soybean and restless efforts of getting GM Mustard commercialized in India raised alarms with biologists, conservationists questioning monitoring abilities, hasty approvals of the Genetic Engineering Approval Committee (GEAC) demeaning bio-safety norms. The upcoming Govt. Advisory Protocol<sup>36</sup> in line with the 'Rules for the Manufacture/Use/Import/Export and Storage of Hazardous Microorganisms, Genetically Engineered Organisms or Cells, 1989' remains hopeful.

<sup>34</sup> Prashant Reddy, 'Gene Patents and Plant Varieties: NSAI v. Monsanto'(*SPICYIP*, 4 September 2016) <a href="https://spicyip.com/2016/09/gene-patents-and-plant-varieties-nsai-v-monsanto.html">https://spicyip.com/2016/09/gene-patents-and-plant-varieties-nsai-v-monsanto.html</a> accessed 10 April 2020.

<sup>35</sup> Luca Lombardo, 'Genetic Use Restriction Technologies: A Review' (2014) 12 Plant Biotechnology Journal 995, 997.

<sup>36</sup> Anubhuti Bisnoi, 'Govt. Advisory on Illegal 'Genetically Modified' Crops Soon', The Economic Times (India, 18 January 2020) <a href="https://economictimes.indiatimes.com/news/economy/agriculture/govt-advisory-on-illegal-genetically-modified-crops-soon/articleshow/73346749.cms?from=mdr">https://economictimes.indiatimes.com/news/economy/agriculture/govt-advisory-on-illegal-genetically-modified-crops-soon/articleshow/73346749.cms?from=mdr</a>> accessed 10 April 2020.

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### CONCLUSION

Living in the world of dynamic innovations and possibilities, limiting development to mere concretization of forests is a gross violation of natures' generosity. Irregular consumption patterns and indifference towards 'neglected and underutilized plant species' in research or breeding programmes result in an imbalanced food chain. Lack of on-farm conservation strategies for landraces or traditional varieties at local level, community seed banks further the loss of resilient genetic diversity. While exploring investment opportunities in biodiversity, an equanimity is to be observed in integrating transparency in intent, defined and prior informed choice, cultural values and ways of life of indigenous communities. At the same time, sensitizing people about the human impact on environment builds knowledge towards remediation and restoration. A strong legislative intent and policy decisions inclusive of climate change demand for different crop-species, environment friendly technologies, age old conservation strategies and respecting traditional knowledge. This seems to be 'the call of the hour' for all economies of the world. Realizing that economic development and advancement in technology could never be at the cost of biodiversity, the precautionary principle and theory of intergenerational equity should be observed. The conscious efforts of progressive consumers for 'buying green' and demand for revival of organic farming and conventional knowledge system generates hope for meaningful co-existence of human aspirations and biodiversity consumption.

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## EMPHASIZING SENDAI FRAMEWORK MANDATES ON DISASTER RISK REDUCTION IN THE WAKE OF COVID – 19

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**Keywords:** World Health Organization, Natural Disaster Reduction, Sendai framework, Role of United Nation

#### **INTRODUCTION**

We are continuously learning about the unpredictable powers of nature. This is nowhere more true than in the continuous evolution of new infectious threats to human health that emerge – often without warning – from the natural environment. Already in these first two decades of the 21st century the world has been sharply reminded time after time of the degree to which people in all countries and in all continents remain chronically vulnerable to infectious diseases, known and unknown.<sup>1</sup>

The aforementioned excerpt from the World Health Organization handbook forewarns the danger that lurks vis-à-vis infectious threats. Public health is profoundly stricken when infection appears/reappears. As it is being witnessed, never before has the world come to a screeching halt as it has now due to the onslaught of COVID-19.

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<sup>1</sup> World Health Organization, 'Managing epidemics: Key Facts about Major Deadly Diseases' (*WHO*, 2018), <a href="https://www.who.int/emergencies/diseases/managing-epidemics-interactive.pdf">https://www.who.int/emergencies/diseases/managing-epidemics-interactive.pdf</a>> accessed 7 April 2020.

As this crisis burgeons<sup>2</sup> and wreaks havoc in most countries, questions galore pertaining to the response capacity and preparedness to deal with a disaster of this magnitude. The gap between the available disaster risk reduction framework to deal with the health crisis vis-à-vis the requisite infrastructure has never been so glaring as it appears now. The situation which has turned from bad to worse prompted the Director-General of the World Health Organization to declare the outbreak as a pandemic on 11<sup>th</sup> March, 2020.<sup>3</sup> Consequently, several drastic measures have been taken as recommended by health agencies. Since the first reporting of this disease by China to the WHO on 31<sup>st</sup> December, 2019 the international agency has been proactively issuing various advice, technical guidance and conducting training exercises to optimise resources and ensuring minimum loss of human lives.<sup>4</sup> Likewise countries have scrambled resources to address the dire situation and *inter alia* imposed harsh measures to the extent of forcing nationwide lockdowns.<sup>5</sup> As

<sup>2</sup> World Health Organization, 'Coronavirus disease (COVID-19) pandemic,' (WHO, 2020) ≤https://www.who.int/emergencies/diseases/novel-coronavirus-2019>, accessed 7 April, 2020: As on 7 April 2020, 05:30 GMT+5:30: worldwide there were 1279722 confirmed cases and 72616 confirmed deaths due to COVID-19 outbreak affecting 211 countries, areas or territories;, See also, World Health Organization, 'Coronavirus disease 2019 (COVID-19) Situation Report – 70' (WHO, 30th March 2020) <htps://www.who.int/docs/default-source/coronaviruse/situation-reports/20200330-sitrep-70-covid-19. pdf?sfvrsn=7e0fe3f8\_2> accessed 7 April 2020: In Indian context similarly as on 7 April 2020, 18:00 GMT+5:30 as per Ministry of Health and Family Welfare, Government of India: there were 4312 Active Cases, 352 Cured/Discharged, 124 Deaths, 1 Migrated cases in India.

<sup>3</sup> World Health Organization, 'WHO Director General's Opening Remarks at the Media Briefing on COVID-19', (WHO, 2020) <a href="https://www.who.int/dg/speeches/detail/whodirector-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020">https://www.who.int/dg/speeches/detail/whodirector-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020</a>, accessed April 7, 2020; See also Nicolas LePan, 'A Visual History of Pandemics' (World Economic Forum, March 15, 2020) <a href="https://www.weforum.org/agenda/2020/03/a-visual-history-of-pandemics/">https://www.weforum.org/agenda/2020/03/a-visualhistory-of-pandemics/</a>> accessed 7 April 2020.

<sup>4</sup> World Health Organization, 'Coronavirus Disease (COVID-19) Advice for the Public (World Health Organization, March 31, 2020) <a href="https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public">https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public</a>> accessed 7 April 2020.

<sup>5</sup> Juliana Kaplan, Lauren Frias and Morgan McFall-Johnsen, 'A third of the global population is on coronavirus lockdown – here's our constantly updated list of countries and restrictions,' (*Business Insider*, 7<sup>th</sup> April 2020) <https://www.businessinsider.com/countries-on-lockdowncoronavirus-italy-2020-3?IR=T> accessed April 7, 2020; Prime Minister of India has also called for complete lockdown for 21 days effective from 25<sup>th</sup> March, 2020 to 14<sup>th</sup> April to combat the spread of COVID-19, Press Information Bureau, GOI, 'PM calls for complete lockdown of entire nation for 21 days,' (*PIB*, March 24, 2020) <https://pib.gov.in/newsite/ PrintRelease.aspx?relid=200658> accessed 7 April 2020.

the possible vaccine to cure COVID-19 is still in the development stage,<sup>6</sup> these nationwide lock downs seem a viable and far more expedient way to curtail the spread of this highly virulent virus. The COVID-19 pandemic undoubtedly has presented an unprecedented challenge before the entire world. And as it continues to cost human lives/ it incontrovertibly poses a grave existential crisis. A disaster of this nature is but one among multitudinous varieties of calamities - natural or manmade – being continuously suffered by humanity. Calamities cripple normal lives and unvaryingly cause appalling hardships. Moreover, certain groups face unusually precarious situations such as inter-alia differently-abled, old aged, orphan, destitute, women, child, migrant labourer, transgender. At the same time economic hardship wrought by disaster viz., cyclone, earthquake, bio warfare, disease outbreak, climate change etc. cast a lasting impact on society. As it has been seen, bringing normalcy and more specifically restitution-of-the-environment in the face of disaster becomes the most daunting task. It is in these contexts that it is pertinent to assess the lead role the United Nations plays in addressing the scourge of disaster. This pandemic undoubtedly has caught governments off guard. Country after country reels under severe crises compounded by shortage of essential infrastructure. In this given scenario when governments are at their wit's end in their battle against COVID 19 it is pertinent to take note of Sendai Framework's guiding principles and priorities. It is sine qua non to comprehend 'disaster' and 'disaster-risk' in the current context of mammoth global emergency. This framework endeavours to entrench 'Build Back Better' paradigm via implementing disaster risk reduction mechanism. Certainly, in these contexts the role of United Nations cannot be overstated.

### **EMERGING ROLE OF UNITED NATIONS**

United Nations (hereinafter referred as UN) enjoys a wide-ranging remit as an international organization especially when it comes to disaster risk reduction. Since its inception it has been in the thick of action when it comes to resolving humancrisis. Founded in the aftermath of the second world war, the UN - over the period of time - has widened its ambit in diverse array of work. Spearheading concrete

<sup>6</sup> Joseph Walker, Peter Loftus and Jared S. Hopkins, 'Scientist Rush to Find Coronavirus Cure – but It Still Isn't Fast Enough,' (*The Wall Street Journal*, 6<sup>th</sup> April 2020) <https:// www.wsj.com/articles/inside-the-race-to-find-a-coronavirus-cure-11586189463> accessed 7 April 2020.

initiatives in addressing human issues that arose in the past; and that which afflicts the present world and the newer challenges is the concern of this intergovernmental organization. The turn of the century saw the unprecedented anthropogenic activity which concomitantly also witnessed society going through the throes of disaster crisis. Recurring calamities such as earthquake, flood, tsunami, hunger, disease outbreak saw exponentially large number of loss of lives and destruction. It was not difficult to see through the marked change observable in the new trend vis-à-vis the preceding centuries and millennium of human history. In these contexts, the UN and its agencies played a major role in unshackling long-held perception and in developing thematic conceptualization of 'disaster'. The constituent and theoretical underpinnings of disaster study underwent a sea-change. It traversed from the deeprooted perception of disaster as an "unavoidable act of God" to the present paradigm which disaggregates disaster as a phenomenon which in itself is a consequence of underlying vulnerabilities in societal structure. This paradigm shift perceives disaster as a resultant by-product of weakened infrastructure and the prevalent socio-economic exacerbated by population growth on finite natural resources.<sup>7</sup> The UN setting along with sister organizations plays a preeminent role in demystifying disaster and laying bare its multiple components. It must be noted that the rise in the episodes of disaster and destruction led the UN to declare 1990-1999 as the International Decade for Natural Disaster Reduction (IDNDR). In a way it gave a firm shove required to draw up institutional frameworks and policy development.<sup>8</sup>. Corollary

<sup>7</sup> UNDRR, 'Reinventing DPR, the evolution of Disaster Risk Reduction Activities for the last 25 years-where we are now?,' (*PreventionWeb, Asian Disaster Preparedness Centre, March* 16, 2011) <a href="https://www.preventionweb.net/events/view/18456?id=18456">https://www.preventionweb.net/events/view/18456?id=18456</a>> accessed 7 April 2020.

<sup>8</sup> United Nations Office for Disaster Risk Reduction, 'History,' (UNDRR), <https:// www.undrr.org/about-undrr/history> accessed April 7, 2020; The decade of 1990s saw series of events under the auspices of UN which centred around environment ('disaster' being an intrinsic component) such as United Nations Conference on Environment and Development (UNCED), Principle 18 of Earth Summit which states: States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted. See, Convention on Biological Diversity, 'Rio Declaration on Environment and Development,' (*Convention on Biological Diversity*) <https://www.cbd.int/doc/ref/rio-declaration.shtml> accessed 7 April, 2020; Agenda – 21 which premised on sustainable development categorically emphasized on 'prevention and reduction' of disasters – natural or man-made. See, United Nations Sustainable Development, 'United Nations Conference on Environment and Development,' (*United Nations Sustainable Development*, 14<sup>th</sup> June 1992) <https://sustainabledevelopment. un.org/content/documents/Agenda21.pdf> accessed 7 April 2020.

to the IDNDR was the development of International Strategy for Disaster Reduction (ISDR). Further, to facilitate the agenda of ISDR, United Nation Office for Disaster Risk Reduction was established in the year 1999. Aimed primarily to streamline the efforts of UN – these developments evolved under the UN system gave major fillip to the evolution of disaster law framework.

## OUTLINING DISASTER, DISASTER RISKS AND ITS COGNATE

It would be worthwhile to enumerate various terminology which relates to 'disaster'. ISDR in its 2009 UNISDR Terminology on Disaster Risk Reduction has defined disaster as "A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources."<sup>9</sup> Similarly, disaster risk is seen as "The potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period."<sup>10</sup> As per UNSIDR

<sup>9</sup> UNSIDR's International Strategy for Disaster Reduction, '2009 UNISDR Terminology on Disaster Risk Reduction, (UNSIDR, 2009) < https://www.preventionweb.net/files/7817\_ UNISDRTerminologyEnglish.pdf> accessed 7 April 2020; Disaster as per 'Emergency Events Database (EM-DAT), Centre for Research on the Epidemiology of Disasters (CRED) can be classified as 'Natural' and 'Technological'. Natural disaster is subcategorised as Geophysical which is "A hazard originating from solid earth. This term is used interchangeably with the term geological hazard." E.g. Earthquake, Volcanic activity; Meteorological which is "A hazard caused by short-lived, micro- to meso-scale extreme weather and atmospheric conditions that last from minutes to days." E.g. extreme temperature, fog, storm; Hydrological which is "A hazard caused by the occurrence, movement, and distribution of surface and subsurface freshwater and saltwater." E.g. flood, landslide; Climatological which is "A hazard caused by long lived, meso-to macro scale atmospheric processes ranging from intra-seasonal to multi-decadal climate variability." E.g. draught, wildfire; Biological which is "A hazard caused by the exposure to living organisms and their toxic substances (e.g. venom, mold) or vector-borne diseases that they may carry. Examples are venomous wildlife and insects, poisonous plants, and mosquitoes carrying disease-causing agents such as parasites, bacteria, or viruses." E.g. epidemic, malaria; Extra-terrestrial which is ""A hazard caused by asteroids, meteoroids, and comets as they pass near-earth, enter the Earth's atmosphere, and/or strike the Earth, and by changes in interplanetary conditions that effect the Earth's magnetosphere, ionosphere, and thermosphere." E.g. impact, space weather and lastly disaster as categorised as Technological wherein disaster predominantly results from technological factor for example such as industrial accident, transport accident. See, EM-DAT The International Disaster Database CRED, 'General Classification,' (EMdat) <a>https://www.emdat.be/classification> accessed 7 April 2020.</a>

<sup>10</sup> International Strategy for Disaster Reduction, '2009 UNISDR Terminology on Disaster Risk Reduction, (United Nations, 2009) <a href="https://www.preventionweb.net/files/7817\_UNISDRTerminologyEnglish.pdf">https://www.preventionweb.net/files/7817\_ UNISDRTerminologyEnglish.pdf</a>> accessed 7 April 2020.

*Global Assessment Report (2015)* "disaster risk is expressed as the likelihood of loss of life, injury or destruction and damage from a disaster in a given period of time."<sup>11</sup> Here it is important to draw a point of distinction between *disaster* and *disaster risk*. As per UNDRR "Disasters are sometimes considered external shocks, but disaster risk results from the complex interaction between development processes that generate conditions of exposure, vulnerability and hazard."<sup>12</sup> This may be pictorially represented as follows:



Source: https://www.preventionweb.net/risk/disaster-risk

As shown, *disaster risk* connotes the "consequence of the interaction between a hazard and the characteristics that make people and places vulnerable and exposed."<sup>13</sup> Hazard means "the probability of experiencing a certain intensity of hazard (e.g. Earthquake, cyclone etc) at a specific location and is usually determined by a historical or userdefined scenario, probabilistic hazard assessment, or other method."<sup>14</sup> Exposure represents "the stock of property and infrastructure exposed to a hazard, and it can include socioeconomic factors."<sup>15</sup> and vulnerability means "susceptibility to damage

13 Ibid.

<sup>11</sup> UNDRR,; the Knowledge Platform for Disaster Risk Reduction,' (*PreventionWeb*, 2015) <a href="https://www.preventionweb.net/risk/disaster-risk">https://www.preventionweb.net/risk/disaster-risk</a> accessed 7 April 2020.

<sup>12</sup> Ibid.

<sup>14</sup> Ibid, hazard can also be explained as "process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation. Hazards may be natural, anthropogenic or socionatural in origin." Prevention Web- The Knowledge Platform for Disaster Risk Reduction (UNDRR 2017) <a href="https://www.preventionweb.net/risk/hazard">https://www.preventionweb.net/risk/hazard</a> accessed 7 April 2020.

<sup>15</sup> Supra note 11, Exposure can be explained as "The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas." Prevention Web- The Knowledge Platform for Disaster Risk Reduction, See, UNDRR, 'Vulnerability,' (*PreventionWeb*, 2017) <a href="https://www.preventionweb.net/risk/vulnerability">https://www.preventionweb.net/risk/vulnerability</a> accessed 7 April 2020.

of the assets exposed to the forces generated by the hazard."<sup>16</sup> From the aforesaid, it may be extrapolated that the *exposure* of "situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas" in conjunction with *vulnerability* in terms of "physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems" when both coalesce with "natural, anthropogenic or socio-natural" *hazards*, exacerbate *disaster risk* resulting in mind-numbing death and destruction.<sup>17</sup> Disaster risk reduction as stipulated in the Sendai Framework is an effort to comprehend these stated nuances of disaster risk. This framework owes its origin to the 'UN World Conference on Disaster Risk Reduction'.

## UN WORLD CONFERENCE ON DISASTER RISK REDUCTION

World Conference on Disaster Risk Reduction has been held three times at three different places i.e., in Yokohama (1994), in Kobe (2005) and in Sendai (2015). These events resulted in 'Yokohama Strategy and Plan of Action for a Safer World', 'Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disaster' and 'Sendai Framework for Disaster Risk Reduction 2015-2030'. Common thread which ran through these events were towards developing disaster risk reduction strategy and entrenching disaster resilient world. The first conference at Yokohama started with "sub regional, regional and international cooperation in activities to prevent, reduce and mitigate natural and other disasters".<sup>18</sup> It emphasized on "Human and institutional capacity-building and strengthening"<sup>19</sup>, "Technology sharing, the collection, the dissemination and the utilization of information"<sup>20</sup>, and "Mobilization of resources".<sup>21</sup> Countries *inter-alia* were called

<sup>16</sup> Supra note 11, Vulnerability can be explained as "The characteristics determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards." Prevention Web- The Knowledge Platform for Disaster Risk Reduction, See, UNDRR, 'Vulnerability,' (*PreventionWeb*, 2017) <a href="https://www.preventionweb.net/risk/vulnerability">https://www.preventionweb.net/risk/vulnerability</a>> accessed 7 April 2020.

<sup>17</sup> Supra note 11.

<sup>18</sup> Yokohama Strategy and Plan of Action for a Safer World, 'Guidelines for Natural Disaster Prevention, Preparedness, and Mitigation,' (*World Conference on Natural Disaster Reduction*, May 1994) <a href="https://www.ifrc.org/Docs/idrl/I248EN.pdf">https://www.ifrc.org/Docs/idrl/I248EN.pdf</a>> accessed 7 April 2020.

<sup>19</sup> Ibid.

<sup>20</sup> *Ibid*.

<sup>21</sup> Ibid.

upon to commit themselves through legislation, policy and declaration requiring "progressive implementation of disaster assessment", "developing documented comprehensive national management plan", conducting "Environmental Impact Assessment with a view to disaster reduction" and to "Take measures to upgrade the resistance of important infrastructure and lifeline".<sup>22</sup> The second World Conference on Disaster Risk Reduction held in Kobe, Hyogo, Japan adopted Framework for Action 2005-2015 - which avowedly pursued "building the resilience of nations and communities to disasters."23 The expected outcome as specified under the second world conference was to ensure "substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries."24 Drawing on the experience of Yokohama strategy, this framework was adopted to further strengthen efforts in reinforcing disaster reduction measures. It identified specific gaps<sup>25</sup> and adopted strategic goals and priority of actions.<sup>26</sup> The Third World Conference was held in Sendai, Miyagi, Japan from 14 to 18 March, 2015. It had in its objective inter-alia to a) "adopt a post 2015 framework for disaster reduction" b) to assess the previous framework and assess the gaps and c) to identify modalities of cooperation for the implementation of post 2015 framework.<sup>27</sup> It stressed on

<sup>22</sup> Ibid.

<sup>23</sup> World Conference on Disaster Reduction, 'Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disaster,' (UNDRR, 2005) <a href="https://www.unisdr.org/2005/wcdr/intergover/official-doc/L-docs/Hyogo-framework-for-action-english.pdf">https://www.unisdr.org/2005/wcdr/intergover/official-doc/L-docs/Hyogo-framework-for-action-english.pdf</a>> accessed 7 April 2020.

<sup>24</sup> Ibid.

<sup>25</sup> There were five specific gaps along with challenges which were identified in five main area which were: "(a) Governance: organizational, legal and policy frameworks; (b) Risk identification, assessment, monitoring and early warning; (c) Knowledge management and education; (d) Reducing underlying risk factors; (e) Preparedness for effective response and recovery."; See, *Supra* note 23.

<sup>26</sup> The strategic goals are: "(a) The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction; To attain this expected outcome, the Conference resolves to adopt the following strategic goals: (a) The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction"; and Priorities for action are: "1. Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation. 2. Identify, assess and monitor disaster risks and enhance early warning. 3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels. 4. Reduce the underlying risk factors. 5. Strengthen disaster preparedness for effective response at all levels." See, *Supra* note 23.

<sup>27</sup> Supra note 23.

diverting focus from 'managing disasters' to 'managing risks' and called for dedicated action towards unravelling the underlying disaster risk drivers.

## SENDAI FRAMEWORK AND ITS RELEVANCE IN ONGOING CRISIS

Sendai Framework for Disaster Risk Reduction (Hereinafter referred to as SFDRR) was adopted in 2015. The year 2015 assumes tremendous salience as few landmark international agreements and their adoption also took place, viz., 'Transforming our world: the 2030 Agenda for Sustainable Development,<sup>28</sup> Paris Agreement on Climate Change,<sup>29</sup> Addis Ababa Action Agenda on Financing for Development.<sup>30</sup> SFDRR underscores the importance of *comprehensive approach* to target multiple hazards arising from environmental, biological or technological factor. It focusses on enhancing national and community capacity to deal with disaster risks.<sup>31</sup> This framework being a "successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters"<sup>32</sup> aims at adopting "a concise, focused, forward-looking and action-oriented post 2015 framework for disaster risk reduction".<sup>33</sup> It is not difficult to recognize that the Sendai Framework works in tandem with the Paris Agreement on Climate Change, the Sustainable Development Goals, the Addis Ababa Action Agenda on Financing for Development as all of them are intrinsically interconnected. More specifically this framework as per paragraph fifteen "applies to the risk of small-scale and large-

<sup>28</sup> United Nations, 'Sustainable Development Goals,' (*United Nations*) <a href="https://www.un.org/sustainabledevelopment/sustainable-development-goals/">https://www.un.org/sustainabledevelopment/sustainable-development-goals/</a> accessed 7 April 2020.

<sup>29</sup> United Nations Climate Change, 'The Paris Agreement,' (UNFCC, 2015) <a href="https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement">https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement</a> accessed April 7, 2020.

<sup>30</sup> United Nations, United Nations Third International Conference on Financing and Development, (*United Nations Department of Economic and Social Affairs*, 2015)</https://www.un.org/esa/ffd/ffd3/press-release/countries-reach-historic-agreement.html> accessed 7 April 2020.

<sup>31</sup> Riyanti Djalante, Rajib Shaw, Andrew DeWit, 'Building resilience against biological hazards and pandemics: COVID-19 and its implications for the Sendai Framework' (2020) 6 Progress in Disaster Science <a href="https://www.sciencedirect.com/science/article/pii/S259006172030017X?via%3Dihub">https://www.sciencedirect.com/science/article/pii/S259006172030017X?via%3Dihub</a>> accessed 7 April 2020.

<sup>32</sup> United Nations, 'Sendai Framework for Disaster Risk Reduction 2015-2030,' (*United Nations*, 2015) <a href="https://www.preventionweb.net/files/43291\_sendaiframeworkfordrren.pdf">https://www.preventionweb.net/files/43291\_sendaiframeworkfordrren.pdf</a>> accessed 7 April 2020.

<sup>33</sup> United Nations, 'Third International Conference on Financing and Development,' (United Nations Department of Economic and Social Affairs, 2015) <a href="https://www.un.org/esa/ffd/ffd3/">https://www.un.org/esa/ffd/ffd3/</a> press-release/countries-reach-historic-agreement.html> accessed 7 April 2020.

scale, frequent and infrequent, sudden and slow-onset disasters caused by natural or man-made hazards, as well as related environmental, technological and *biological hazards* and risks. It aims to guide the multi hazard management of disaster risk in development at all levels as well as within and across all sectors."<sup>34</sup> It emphasizes on adopting measures which address three chief dimensions of disaster risk viz., hazard's characteristics, exposure to hazards and vulnerability. This framework outlines seven global targets and four priorities for action.<sup>35</sup> SFDRR categorically gives focus to health. It is in fact replete with improving resilience of health infrastructure. Some important paragraphs are: as per paragraph 15 - SFDRR includes *biological hazards* as its important component. Paragraph 16 explicitly focusses on "The substantial reduction of disaster risk and losses in lives, livelihoods and health."<sup>36</sup> Paragraph 27 (b) calls for "strengthening of economic, social, health and environmental resilience."<sup>37</sup> It is worthwhile here to underline Paragraph 30 (i) which states that - *at the National and local levels* - priorities should be given to:

To enhance the resilience of national health systems, including integrating disaster risk management into primary, secondary and tertiary health care, especially at the local level; developing the capacity of health workers in understanding disaster risk

<sup>34</sup> Ibid.

The seven global targets and priories for action are: "(a) Substantially reduce global disaster 35 mortality by 2030, aiming to lower the average per 100,000 global mortality rate in the decade 2020-2030 compared to the period 2005- 2015; (b) Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 in the decade 2020-2030 compared to the period 2005-2015;9 (c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030; (d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030; (e) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020; (f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of the present Framework by 2030; (g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030". Likewise, four priorities for action are: "Priority 1: Understanding disaster risk. Priority 2: Strengthening disaster risk governance to manage disaster risk. Priority 3: Investing in disaster risk reduction for resilience. Priority 4: Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction." What is Sendai Framework for Disaster Risk Reduction, See, United Nations Office for Disaster Risk Reduction, 'What is the Sendai Framework for Disaster Risk Reduction?', (UNDRR), < https://www.preventionweb.net/ files/43291\_sendaiframeworkfordrren.pdf > accessed April 7, 2020.

<sup>36</sup> Ibid.

<sup>37</sup> Ibid. at 17.

and applying and implementing disaster risk reduction approaches in health work; promoting and enhancing the training capacities in the field of disaster medicine; and supporting and training community health groups in disaster risk reduction approaches in health programmes, in collaboration with other sectors, as well as in the implementation of the International Health Regulations (2005) of the World Health Organization;<sup>38</sup>

Equally relevant is Paragraph 31 (e) which calls for enhancing "cooperation between health authorities and other relevant stakeholders to strengthen country capacity for disaster risk management for health, the implementation of the International Health Regulations (2005) and the building of resilient health systems."<sup>39</sup> As it is conspicuous from the aforementioned, SFDRR categorically stresses on entrenching the resilience of public health infrastructure. It identifies global health as an important area constituted in the disaster risk reduction efforts. As a matter of fact, risk mitigation entails transformation of health infrastructure. The ongoing crisis does allude to the critical gaps in health infrastructure. Filling those critical gaps is *sine-qua-non* to bolster disaster risk reduction efforts as per SFDRR mandate.

## SENDAI FRAMEWORK AND ENVIRONMENT

Life on earth is dependent on the benevolent and nurturing environment. The scourge of disaster invariably affects the health of the environment. Anthropogenic activities trigger disasters and that become the source of environmental despoliation. Interlinkage between disaster and environment cannot be refuted and SFDRR categorically highlights that. It highlights on the fact that the disaster impinges on the environment which in turn adversely affect the community. As per the document, reduction of disaster risks necessarily requires investing in environment via technological intervention and research and also the development of multi-hazard early warning systems. Expected outcome and goal of SFDRR (as per paragraph 16) is to realize "the substantial reduction of disaster risk and losses in lives, livelihoods and health and in…environmental assets of persons, businesses, communities and countries."<sup>40</sup>

<sup>38</sup> United Nations Office for Disaster Risk Reduction, 'What is the Sendai Framework for Disaster Risk Reduction?', (UNDRR), <https://www.preventionweb.net/files/43291\_ sendaiframeworkfordrren.pdf > accessed 7 April 2020, p. 19.

<sup>39</sup> *Ibid*. at 20.

<sup>40</sup> Ibid. at 12.

The document conspicuously espouses sustainable development and prescribes the development and implementation of relevant policies towards the same. It suggests disaster risk reduction as an important ingredient to realize sustainable development. It sees disaster as a major impediment to achieve the avowed goals of sustainable development. Here it is pertinent to highlight paragraph 19(j) which underlines the importance of assessing underlying disaster risk factors. It unequivocally asserts that addressing disaster risk factors as being better than post disaster response and recovery. And also, it being more cost effective, provides a major fillip to sustainable development. Paragraph 28(b) highlights the importance of global collaboration to strengthen disaster risk governance and sustainable development. SFDRR in its document also outlines the role of environmental impact assessment as an important component to bolster disaster resilience.<sup>41</sup> Priority 3 outlines investing in disaster risk reduction for resilience and towards the same as per paragraph 30(n) it stipulates that to achieve this requires strengthening "the sustainable use and management of ecosystem"42 and implementing "integrated environmental and natural resource management approaches that incorporate disaster risk reduction"43 The third world conference on disaster risk reduction being alive to the different capacities of the developing nations mandates (paragraph 46) international cooperation and global partnership specifically targeting "transfer of reliable, affordable, appropriate and modern environmentally sound technology."44 Priority 4 of SFDRR set "Build Back Better" as an avowed goal. Build Back Better model is wedded into the fabric of SFDRR. Recovery, rehabilitation and reconstruction as stipulated under it essentially to put environment into the foreground. Salubrious environment is the avowed objective of SFDRR. Its various mandates duly validate that.

#### CONCLUSION

SFDRR is designed to meet newer challenges. It definitely has spurred better assessment of risks. As present it stands as the most comprehensive plan devised by UN on disaster. It covers a vast array of disasters stemming from natural and

<sup>41</sup> United Nations Office for Disaster Risk Reduction, 'What is the Sendai Framework for Disaster Risk Reduction?', (UNDRR), <https://www.preventionweb.net/files/43291\_ sendaiframeworkfordrren.pdf > accessed 7 April 2020., p.19.

<sup>42</sup> Ibid. at 20.

<sup>43</sup> *Ibid.* at 20.

<sup>44</sup> Ibid. at 25.

manmade factors and also outlines technological, environmental and biological hazards. It has set the target to substantially reduce disaster damage and considerably enhance international cooperation. It calls for strategizing and strengthening of health and environmental resilience. The beginning of twenty-first century indubitably has thrown various challenges. As a matter-of-fact these challenges would only multiply. The coming time world would be facing heightened threats arising from "Epidemic-prone diseases, Food-borne diseases, Accidental and deliberate outbreaks, Toxic chemical accidents, Radio nuclear accidents, Environmental disasters."<sup>45</sup> It is time we took note of it. As the world races against time to find the cure to COVID 19 pandemic it is crucial that the SFDRR mandate is embraced and implemented.

<sup>45</sup> International Health Regulations, 'Areas of work for implementation', (*World Health Organization*, 2007) <a href="https://www.who.int/ihr/finalversion9Nov07.pdf">https://www.who.int/ihr/finalversion9Nov07.pdf</a>> accessed April 7, 2020.

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## BIO-MEDICAL WASTE MANAGEMENT: A SOCIAL RESPONSIBILITY AND A LEGAL NECESSITY

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**Keywords:** Bio-Medical Waste Management, economic development, Stockholm Conference, Environment Protection Act, 1986

#### **INTRODUCTION**

"You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you gave to decide what kind of difference you want to make."

-Jane Goodall

Homo Sapiens are considered to be the most intelligent species to have ever walked on this planet. However, unfortunately they are still not able to comprehend that they are incomplete without the environment in which they live or to be more precise, they cannot survive without it. Irrational use of the natural resources without giving a second thought about these can be termed as a classic example of puffery of the principle of sustainable development which was proposed in Stockholm Declaration.<sup>1</sup>

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<sup>1 &</sup>quot;The Stockholm Conference was an international conference convened under United Nations auspices held in Stockholm, Sweden from June 5-16, 1972. It was the UN's first major conference on international environmental issues, and marked a turning point in the development of international environmental politics." UN General Assembly, 'Report on United Nations Conference on the Human Environment', A/RES/2994, 15 December 1972.

Gone are the days when the pollution and waste was simply classified on the basis of the water, air, soil. With the advancement of science and technology, these categories have undoubtedly evolved and hence been further bifurcated into many other types of pollutions, ultimately causing harm to *everyone's environment*. One such pollution causing harm to the environment is that of excess generation of Bio-Medical Wastes and lack of proper disposal measures, which is also the issue of this legal research analysis.

Bio-Medical Waste has been defined as any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or research activities pertaining thereto or in the production or testing of biological products or in health camps.<sup>2</sup> The Ministry of Environment, Forests and Climate Change (MoEF&CC) made its first attempt to combat the problem of Bio-Medical Waste as early as in 1998 by introducing the Bio-Medical Waste Management Rules, 1998. The presence of manual Scavengers who to sort open the unprotected health care waste without any protective gear or equipment, that is without any mask, gloves or boots further compounded to the problems especially in the form of health hazards posed by Bio-Medical Wastes. Reuse of syringes without any proper sterilization also acted as a catalyst to these hazards.

The Bio-Medical Waste Management Rules, 1998 were time and again modified till the recent past to meet the exigencies of time. However giving due consideration to the rapidly advancing technology, developments in the field of health care facilities and so as to face the modern challenges posed by Bio-Medical Waste, the MoEF&CC introduced the new Bio-Medical Waste Management Rules, 2016 with an aim to improve the coverage, as well as to simplify the procedures & practices related to categorization and authorization.<sup>3</sup> The 2016 Rules consist of 18 Rules, 5 forms and 4 Schedules. Further, changes gave been made and several new entries have been made in different categories of similar wastes as mentioned in Schedule I appended to the 2016 Rules.

<sup>2</sup> Bio-Medical Waste (Management and Handling) Rules 1998, r 5; Bio-Medical Waste Management Rules 2016, r 3(f).

<sup>3</sup> Priya Dutta, Gursimran Kaur Mohi & Jagdish Chander, 'Bio-Medical Waste Management in India: Critical appraisal' (2018) 10 (1) J Lab Pysicians <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5784295/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5784295/</a>> accessed 26 March 2020.

Initially, the main producers of Bio-Medical Wastes were only considered to be Hospitals, Emergency care facilities; outpatient facilities, dialysis centres. However, with passage of time, in the modern era prisons, transfusion centres, blood banks; laboratories; mortuaries, death care facilities; veterinarians; nursing homes, doctor, dentist offices, chiropractors; ambulance companies; needle exchanges; tattoo parlours and ear piercing businesses have also become considerable contributors in production of Bio-Medical Wastes. These sources have been observed to be present in India too; however, few of them have not been included in the 2016 Rules.<sup>4</sup>

The Indian lawmakers have been persistent to provide for a stable framework for the Bio-Medical Waste disposal in the Rules of 1998 as well as that of 2016. Yet there have been discrepancies which have not been addressed yet.

The main focus of this research work is to make an attempt to delve into the depth of the need and importance to deal with Bio-Medical Waste, the evolution of the legal regime related to it in India and also the position across the globe, that is how other countries have tackled the problem of Bio-Medical Waste Management. The research work also attempts to understand the gravity of this issue which, in spite of being accepted globally, has yet not been worked upon more stringently.

#### LEGAL REGIME IN INDIA

India has seen a major boom in its economic development in the last two decades. With an aim of becoming a \$5 Trillion Economy, rapid economic development is a major push in the right direction. However, one cannot overlook that along with this development there has been a surge in environmental pollution as a direct consequence of excessive waste generation. The country on its part has taken several measures to contain the problem. Among the types of waste generated, Bio-Medical Waste has always been troublesome to deal with, owing to its nature which poses several risks including the fearful Bio-Hazards. So as to combat this problem of Bio-Medical Waste, the first Bio-Medical Waste Management Rules were notified in the year 1998 by the erstwhile Ministry of Environment and Forest. In India, this problem has been causing much damage at a rapid speed due to presence of manual

<sup>4 &#</sup>x27;Environmentally Sound Management of Medical Wastes in India', (United Nations Industrial Development Organization, May 2019) <a href="https://www.unido.org/sites/default/files/files/2019-07/GFIND-104160\_TOR\_MedWaste-Draft\_May%202019.pdf">https://www.unido.org/sites/default/ files/files/2019-07/GFIND-104160\_TOR\_MedWaste-Draft\_May%202019.pdf</a>> accessed 26 May 2020.

scavengers, who sort out open medical waste including disposed syringes, used surgical blades, blood bags etc., without any protective gear such as gloves, shoes or other related equipment. Such Bio-Medical Waste was observed to be thrown out in the open even with the presence of governing rules. The rules adopted a cradleto-grave approach with emphasis on minimization of waste generation. However, reuse of syringes without proper sterilization compounded to the risks posed by the Bio-Medical Waste.

Such solid Bio-Medical Waste not only poses harm to the immediate surrounding environment directly but also indirectly as the waste can affect water bodies, air or soil quality with allied contaminations or threats. Municipal bodies, panchayats and other institutions have a duty to dispose of such garbage in a scientific method to avoid contamination of rivers and seepage of harmful chemicals into the groundwater table. States also have the responsibility to follow the Environment Protection Act, 1986 along with Rules enacted therein in their letter and spirit.<sup>5</sup> The onus to prove is on the actor or developer to show that his action is environmentally benign and State must attempt to apply the 'precautionary principle' to ensure that unless the activity is shown to be environmentally benign in real and practical terms, it has to be presumed to be environmentally harmful.<sup>6</sup>

Proceeding further, the original 1998 Rules had been notified as the Bio-Medical Waste (Management and Handling) Rules on 27th July 1998 under the provisions of Environment (Protection) Act, 1986 which were later amended in the year 2000. These rules apply indiscriminately to all persons who generate such Bio-Medical Waste in any form whatsoever. All the hospitals whether private or public were within the ambit of rules of 1998. 'Bio-Medical Wastes'<sup>7</sup> have been defined as to include human anatomical waste, animal waste, microbiology and bio-technology waste, waste sharps, discarded medicines and cytotoxic drugs, solid waste, liquid waste, incineration ash and chemical waste.

<sup>5</sup> Court in its motion v. Union of India and Others, CWP-PIL 191 of 2019 (PHHC).

<sup>6</sup> P.K. Nayyar & Ors. v. Union of India & Others and Synergy Waste Management Put. Ltd. v. Union of India & Others., W.P.(C) No. 6976/2008 and W.P. (C) 5683/2010.

<sup>7</sup> Bio-Medical Waste (Management and Handling) Rules 1998, r 3(5); Bio-Medical Waste (Management and Handling) Rules 1998 sch 1.

The Rules also provide for the duties and responsibilities of the Occupier.<sup>8</sup> Every occupier of an Institution shall be responsible for the effective handling of such Bio-Medical Wastes. The Occupier shall make sure that all reasonable steps to ensure that such waste are handled without any adverse effect to human health and the environment. The Occupier shall make sure that Bio-Medical Waste shall not get mixed with ordinary waste. To ensure this, the Operator has been vested with several duties to follow. The essence of any waste management is to *first segregate* and then to ensure of follow-up action. This segregation shall be done at the source of generation of this waste like from the out-patient care activity areas, operation theatres or diagnostic service areas and other associated places.<sup>9</sup> If the wastes, the moment they are generated, are segregated into different packaging, then there would not be any chaos or confusion caused. This has been provided under the Schedule II of the Rules. The Schedule has assigned a special colour to categorise different kinds of waste generated, so they can be stored together. For instance, the colour 'red' has been assigned to contain 'Disinfected container plastic bags' which shall contain microbiological waste, Category 6 solid waste and Category 7 solid waste. Along with that, the collected waste should not be stored for more than 24 hours at room temperature.

The next step in the effective handling of the wastes is in relation to the *effective transportation* of waste generated. The Schedule III provides with the symbols which shall be imposed upon the container in which the wastes are to be stored and the symbols are to indicate which wastes are 'Bio-hazard' and 'cytotoxic-hazard' ones. Supplementary compliance provisions are contained in the Schedule IV of the Rules. They provide that if the waste treatment facility is outside the premises, then along with the container labelling as per Schedule III, there shall also be labelling with respect to the information to be provided under the Schedule. This provision has been made to indicate the nature of waste to the patients and public. Further, the label shall be non-washable and prominently visible. The next major step is *that an* Occupier is not supposed to keep the untreated Bio-Medical Waste or store it beyond the period of 48 hours.<sup>10</sup> However, if due to uncertain circumstances, it becomes necessary

<sup>8</sup> Bio-Medical Waste (Management and Handling) Rules 1998, r 3(m).

<sup>9</sup> Hem Chandra, 'Hospital Waste: An Environmental Health Hazard and its Management' (1999) 5 (3) ISEB <a href="http://isebindia.com/95\_99/99-07-2.html">http://isebindia.com/95\_99/99-07-2.html</a>> accessed 26 March 2020.

<sup>10</sup> Bio-Medical Waste (Management and Handling) Rules 1998, r 6(5).

to store the Bio-Waste, beyond the authorized time period, then the authorized person must take permission of the prescribed authority and take measures to ensure that the waste does not adversely affect human health and the environment.

After this, comes the transportation of the segregated Non-Bio-Medical Wastes and duly treated Bio-Medical Waste. The Municipal Body of the concerned area has been assigned with the duty of timely collection and transportation of segregated Bio-Medical waste generated in hospitals and nursing homes, as well as duly treated Bio-Medical Wastes for disposal at municipal dump sites.<sup>11</sup> Further, duty has been assigned to individual operators where no municipal support is present, to ensure proper dumping.

The next and final step is with respect to the *treatment* and *disposal* of *Bio-Medical Waste*. Schedule-I provides with a duty to treat and dispose of the Bio-Medical Waste on the Occupier. Incinerators, Autoclaving, Mutilation/shredding, Microwaving and Deep Burial are the prescribed methods for treatment of Bio-Medical Waste. If the occupier does not have any of the aforementioned facilities, he can always opt for the government treatment facilities. This was an analysis of the major steps taken in the Bio-Medical Waste disposal.

### **CRITIQUE OF RULES OF 1998**

The 1998 Rules posed various difficulties at the ground level during the course of implementation and seemed to be quite complex and ambiguous in some aspects. Introduction of the concept of colour scheme-based segregation of Bio-Medical Waste was a major step. However, the 1998 Rules provided a complex colour scheme for segregation of Bio-Medical Waste at source which posed practical difficulties for health care professionals as well as sanitation worker. A survey conducted by Delhi Pollution Control Committee and Delhi Health Ministry of Medical Waste Management has pointed out that only 20 percent of the hospitals are achieving good segregation but 60 percent are not following basic segregation.<sup>12</sup> A major reason for this was that the colour scheme provided under the 1998 Rules for segregation in many

<sup>11</sup> Bio-Medical Waste (Management and Handling) Rules 1998, r 6(6).

<sup>12</sup> Satpal Singh, 'Mismanaging Hospital Waste', *Economic and Political Weekly* 36(16), pp 1297-98 (April 21-27 2001).

hospitals in other parts of the country as well. Further, the mode of transportation has not been provided by the Rules. It is necessary to also provide for the mode of travel as there should be specific means to do so, for instance, specialized jeeps or trucks. Furthermore, there should be assigned timings within which, only such Bio-Medical Waste shall be transported and manual unloading shall be avoided as much as possible. The 1998 Rules clearly lacked such provisions.

Also, the 1998 Rules (as amended by 2000 Regulations) have nowhere provided for the *necessary equipments* or *tools* to be worn by the workers while dealing with the waste. Heavy duty rubber gloves, full and proper covering boots, essential apparels or protective gears area must be a bare minimum requirement for workers dealing with Bio-Medical Waste to prevent contamination, yet 1998 rules lack such provisions. The quantity for dustbins, so that they are not overflowing, and means to ensure that these are cleaned regularly, has also not been provided by the Rules. When it comes to the storing of waste beyond the authorized time span, there have been provisions for taking permission from the authority but there are not prescribed measures on part of the authorized person to ensure that the waste does not adversely affect human health and environment. When the wastes are collected by the municipality bodies, there is no preliminary way provided by the regulations to make sure that the collected waste is properly segregated and not mixed. A single act of negligence at one place can lead to disastrous effects.

#### NEW BIO-MEDICAL WASTE MANAGEMENT RULES, 2016

Now, in 2016, the new 'Bio-Medical Waste Management Rules, 2016' were notified on 28<sup>th</sup> March, 2016. Accordingly, the 'handling' would now be included under 'management' aspect. The Rules of 2016 were made to be more unambiguous in their operation. The modified rules have brought in more clarity in their application. The Rules clarified that vaccination camps, blood donation camps, surgical camps or any other healthcare activity undertaken outside the healthcare facility will be covered within the term 'Occupier'.<sup>13</sup> Additional duties have been made for the Health Care Facilities to pre-treat different wastes such as the laboratory waste, microbiological waste, blood samples and blood bags. Proper training has been ensured to the personnel to prevent adverse impact on their healthcare or avoid any potential spillage of such waste causing contamination of environment.

<sup>13</sup> Bio-Medical Waste (Management and Handling) Rules 1998, r 3(m).

The new rules provide for gradually phasing out the chlorinated plastic bags, gloves and blood bags within two years from the date of notification of these rules. Earlier, the waste was classified into 10 categories and now they have been classified in to 4 categories based on treatment options so as to make the segregation process easier and smoother. One of the major highlights of the 2016 Rules is that it provides for establishing of a Bar-Code system for all the bags and containers containing Bio-Medical Wastes. Along with that, in case the specified waste has been stored for more than 48 hours, the occupier shall not be required to immediately take permission of concerned authority and first treat in its own prudent way and after that inform and seek permission from the authority. This will eliminate the need for obtaining permission within 48 hours which is not practically feasible. Further, the standards of emission from incinerators have been made more stringent. With the new Rules, the review of implementation by District Committee is likely to improve the implementations. The Rules have made sure that required treatment of waste be done with more care and precision, more stringent measures and procedures have been provided to ensure the same.

Hence the new rules seek to achieve a better, smoother and more efficient process for management and disposal of Bio-Medical Waste. It aims to improve the coverage, as well as to simplify the procedures & practices related to categorization and authorization. The Rules to a great extent have been successful in achieving its aim, however, there still remain certain aspects which could be and need to be improved so as make the process of Bio-Medical Waste management safe, reliable and eco-friendly.

### GLOBAL SCENARIO WITH REGARD TO BIO-MEDICAL WASTE MANAGEMENT

The International Conference on the Human Environment, 1972<sup>14</sup> referred to as the Stockholm Conference was the first conference with regard to protection of Environment. Even though, the Bio-Medical Waste management and the risks related to were not a part of the main agenda and it did not take the centre stage, the importance of nature and environment was discussed. It emerged as an undeniable

<sup>14 &</sup>quot;Also known as the Stockholm Conference was an international conference convened under United Nations auspices held in Stockholm, Sweden from June 5-16, 1972. It was the UN's first major conference on international environmental issues, and marked a turning point in the development of international environmental politics." UN General Assembly, '*Report on United Nations Conference on the Human Environment*', A/RES/2994, 15 December 1972.

fact that man is a part of nature and his life depends on it. It was reiterated in Stockholm Conference that environment is common to all and it is the duty of every person to not only protect and improve the environment but also to prevent pollution. Since then the environment has been the focus of the international legal regime and several international treaties related to environment have emerged and almost all nations have formulated: national legal regimes with regard to protection and improvement of the environment.

Control of trans-boundary movements of hazardous wastes and their disposal, was addressed through the Basel Convention, which is one of the major international conventions specifically dealing with Bio-Medical Wastes. As the name itself suggests, this international treaty was formulated to control and reduce the transboundary movement of hazardous waste and specifically prevent movement of such hazardous waste from developed nations to least developed countries, which had become an easy way out for developed countries to get rid of their hazardous wastes.

Based on the international conventions and treaties and giving due consideration to the fundamental principles underlying them such as the precautionary principle, polluter pay principle, duty of care principle, several countries have developed a comprehensive legal regime to combat the risks posed by Bio-Medical Waste and ensure its proper and efficient management. India being a developing nation can take inspiration from such global developments to strengthen its legislative regime with respect to management of Bio-Medical Wastes and make the process much more efficient, safer, reliable and most importantly eco-friendly.

#### **USA**

When it comes to legislation related to management of Bio-Medical Waste, it becomes necessary to mention United States of America as they were the pioneers in developing a specially dedicated legislation to this effect. The governing legislation in the United States, in this regard is the Medical Waste Tracking Act, 1988. It is an extremely comprehensive legislation which provides exhaustive definition of terms such as 'medical- waste', 'disposal facility' and 'inspection'. As a direct consequence of 1988 Act, The Environment Protection Agency promulgated MWTA Regulations, 1989. In 1998 the MWTA Act also made amendments to the Solid Waste Disposal Act, 1976. It is pertinent to mention that MWTA Act, 1988 has been extremely

effective and successful in dealing with Bio-Medical Wastes and the risks posed by it in an efficient, reliable, safe and eco-friendly manner.

#### Croatia

Despite, not being a member of the EU, Croatia has a well-developed waste disposal and management legal regime and hence requires special mention while discussing Management of Bio-Medical Wastes.<sup>15</sup>

The Bio-Medical Waste management in Croatia is regulated by 3 Fundamental Acts

- a. Waste Act, 2004
- b. Ordinance on waste types
- c. Directive on manipulation of waste generated in healthcare

The waste disposal in general and implementation of these Acts in particular are supported by legislation dealing with movement of hazardous waste and toxic substances.

The integrated approach adopted by Croatia has been extremely successful as it follows a hierarchical approach and structure for management of Bio-Medical Waste from the point it is produced till the point it is finally disposed of.

Hence, India can take inspiration from such approaches as have been adopted by USA and Croatia to strengthen its legal regime with regard to Bio-Medical Waste Management and make the process safer, reliable, efficient and eco-friendly.

#### CONCLUSION

The maxim *sic utere tuo ut alienum non laedas* means enjoying one's own property without injuring one's neighbourhood. Comparing the natural environment to someone's property shall not be appropriate but applying the environment to the substance of the maxim shall not be wrong. It can be concluded from the above legal research that Bio-Medical Wastes can prove to be dangerous, if left in the open or disposed of without following the necessary protocol. Therefore, to overcome this

<sup>15</sup> Natalija Marinkovic and others, 'Medical waste management: the law and its application' (2006) 57 (3) Arh Hig Rada Toksikol < https://pubmed.ncbi.nlm.nih.gov/17121007/> accessed 26 March, 2020.

issue of waste disposal, the Bio-Medical Waste Management Rules were made by the Central Government via the Environment Protection Act, 1986. However, it is observed that a statute on paper is never enough till it has been accepted by the public for whom it is made. Therefore, it the Rules are not followed then there is no use of their existence. The authors feel that there is a need for more stringent enforcement mechanism to be put in motion to deal with the issue of non-following. The authors also feel that instead of the rules, an act should be passed in this regard. The reason behind this is that Rules are of secondary nature only and don't have any independent existence of their own than from the parent Act. When seen from the global point of view, it is noticed that majority countries have made a specific legislation in this regard with an autonomous existence. Therefore, India should take inspiration from the above-mentioned countries to strengthen the legal regime with respect to its Bio-Medical Waste Management Law.
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# OFFSHORE WIND ENERGY: REGULATION AND LEGAL MECHANISM IN INDIA

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Keywords: Offshore Wind Energy; Regulatory structure; Policy; Clearances; environmental law

#### **INTRODUCTION**

The current offshore wind energy capacity in the world exceeds 8.7 GW.<sup>1</sup> According to projections from the International Renewable Energy Agency (IRENA), growth in off shore wind energy will accelerate in the coming years, that will have an installed capacity rising from 19.2 GW in 2017 to 521 GW in 2050.<sup>2</sup> India has established a national target to install at least 5 GW of offshore wind capacity by 2022 and 30 GW by 2030<sup>3</sup> and has currently initiated a demonstration project offshore of the Gulf of Khambhat with an estimated capacity of 1 GW. The main current maritime area that can potentially be harnessed for offshore wind energy projects in India are the Indian Territorial Waters which extends to 12 nautical miles (nm) from the baseline and Exclusive Economic Zones (EEZ) beyond the 12 nm limit and up to 200 nm, where under international law, India has the right to construct structures

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Aarushi Koundal, 'India conducts first LiDAR-based wind profiling to set up offshore farms', (*Economic Times EnergyWorld*, 23 July 2019.) <a href="https://energy.economictimes.indiatimes.com/news/renewable/india-conducts-first-lidar-based-wind-profiling-to-set-up-offshore-farms/65659564">https://energy.economictimes.indiatimes.com/news/renewable/india-conducts-first-lidar-based-wind-profiling-to-set-up-offshore-farms/65659564</a>> accessed 20 April 2020.

<sup>2</sup> IRENA, Nurturing offshore wind markets: Good practices for international standardisation, International Renewable Energy Agency (2018).

<sup>3</sup> Press Information Bureau, 'Year End Review 2018 – MNRE', (Dec 10 2018) < http://www. pib.nic.in/Pressreleaseshare.aspx?PRID=1555373> accessed 20 April 2020.

such as wind farm installations.<sup>4</sup> The current stance on the treatment of offshore wind energy projects that the government has taken is quite conflicted as on one hand, they have relaxed the Environment Impact Assessment Norms on various renewable energy projects as they are "green projects" and Wind energy projects are exempted from Environment Impact Assessments<sup>5</sup> while the National Offshore Wind Energy Policy although remaining a policy<sup>6</sup> states that an Environment Impact Assessment is an essential element<sup>7</sup> in the initiation of such projects. Therefore, the question arises as to whether "Offshore wind energy" is a subset of conventional wind energy or whether it is considered as a whole new category.

The government's Expert Forest Panel has declared that Environment Impact Assessments are unnecessary for wind power projects as it produces renewable energy.<sup>8</sup> The misconception that all renewable energy is sustainable is clearly one that is widespread even to the opinions of professionals with specialised knowledge. This chapter views the sustainability of offshore wind energy specifically, with its costs and benefits weighed out and thereon goes to make recommendations on a subset of wind energy policy; the offshore wind energy policy which already consists of a few deficiencies. As per the current policy, the Ministry of New and Renewable Energy (MNRE) acts as the nodal ministry that deals with applications and the National Institute of Wind Energy (NIWE) acts as the nodal agency where they act as facilitators for receiving clearances and No Objection Certificates (NOCs), conduct surveys, studies, research in EEZs; the nodal ministry and agency having many more functions. Since only a single project in Offshore Wind Energy has

<sup>4</sup> Ministry of New and Renewable Energy, National Offshore Wind Energy Policy, <a href="https://mnre.gov.in/file-manager/UserFiles/National-Offshore-Wind-Energy-Policy.pdf">https://mnre.gov.in/file-manager/UserFiles/National-Offshore-Wind-Energy-Policy.pdf</a>> 20 April 2020, pp 4, 1.3.

<sup>5</sup> Ministry of New and Renewable Energy, 'Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects' (Sept 2013),<https://mnre.gov.in/sites/ default/files/uploads/report-on-developmental-impacts-of-RE.pdf>, pp 15, 2.1. accessed 20 April 2020.

<sup>6</sup> Press Information Bureau, 'Approval of National Offshore Wind Energy Policy' (Sept 9 2015), MANU/PIBU/1246/2015, accessed 20 April 2020.

<sup>7</sup> Ministry of New and Renewable Resources, National Offshore Wind Energy Policy, <a href="https://mnre.gov.in/file-manager/UserFiles/National-Offshore-Wind-Energy-Policy.pdf">https://mnre.gov.in/file-manager/UserFiles/National-Offshore-Wind-Energy-Policy.pdf</a>, pp 6, 6.

<sup>8</sup> MayankAggarwal, 'Environmentalimpactassessmentnotneededforwindprojects: panel', (*Live Mint*, 31 Aug 2017) <a href="https://www.livemint.com/Politics/gXK5bmycdMRzEtwD0r4aDP/Govt-panel-approves-wind-power-project-in-Andhra-Pradesh-wit.html">https://www.livemint.com/Politics/gXK5bmycdMRzEtwD0r4aDP/Govt-panel-approves-wind-power-project-in-Andhra-Pradesh-wit.html</a> accessed 20 April 2020.

been commenced in India until now off the shore of Gujarat,<sup>9</sup> the scope of the existing framework has not been substantially tested yet. The fact that the MNRE is making the effort to set up a National Offshore Wind Energy Agency<sup>10</sup> along with the objective to restore the benefit of Accelerated Depreciation for wind producers displays that the centre is being quite cautious while treating "offshore wind energy projects" as a separate bracket with the exception that the benefits availed under conventional wind energy projects are still available to the former; However, this paper attempts to addresses the alternative possibility wherein it isn't as there exists a need to address the possibilities of an inefficient framework in order to abide by the "precautionary principle" as the failure to do so could lead to other Environmental repercussions.<sup>11</sup>

## **PROSPECTIVE EFFICIENT STRUCTURES**

Although there is no single particular model of a wind turbine system that is regarded as the most efficient one in terms of its output, maintenance, investment or other factors, there exists a few basic traits that tend to be the most optimal. When designing the average wind turbine, 3 main factors need to be considered: its weight, the manufacturing costs of the project and its economic feasibility. Although there are various existing designs for wind turbines, its main components include: the blades, the rotor hub, the generator and the tower. The number of blades depends on how much the rotor hub can hold and this averages between 2 and 3 in the most common models. Although the model with 2 blades accounts for lesser weight; it requires a higher tip which results in more noise being created, it does not produce a symmetric overload as well and it experiences wind shear when the 2 blades are directly in line with the tower.<sup>12</sup> Acknowledging the health effects of the noise created by wind turbines, the World Health Organization (WHO) has issued guidelines for the EU

<sup>9</sup> Press Information Bureau,, 'MOU Signed for First Ever Offshore Wind Power Project in India 100 MW Project to Come up in Gujrat Coast National Offshore Wind Energy Policy in the Anvil', (Oct 1 2014), MANU/PIBU/1078/2014 accessed 20 April 2020.

<sup>10</sup> Press Information Bureau, 'Efforts being made to set-up a National Offshore Wind Energy Agency' (Jan 9 2014), MANU/PIBU/0017/2014.

<sup>11</sup> Clexit, 'Compendium for a Sensible Energy Policy', <a href="http://clexit.net/wp-content/uploads/2018/08/1-6-\_kompendium-der-energiewende\_englisch\_1.pdf">http://clexit.net/wp-content/uploads/2018/08/1-6-\_kompendium-der-energiewende\_englisch\_1.pdf</a>. accessed 24 June 2019.

<sup>12</sup> David A Rivkin et al, *Wind Turbine Technology and Design*, (1 edition, Jones & Bartlett Learning, 2012) pp. 9 (2013).

region,<sup>13</sup> to ensure that the noise levels of wind turbines fall below 45 dB during the day when there is generally more exposure to the turbines.<sup>14</sup> This section serves the purpose of highlighting the importance of a policy regime that uses scientific methods to lay down the most efficient structure of a wind turbine. The pursuance of offshore wind farms has an array of obstacles posed to it; such as the steep seafloor incline, high wind velocities, corrosion by salt water, vigorous wave and wind interaction and the impact on the environment and all its components which needs to be carefully taken into consideration. Windmills can have operational hazards<sup>15</sup> although they are negligible<sup>16</sup> and it must be ensured that the rights of workers and labourers who come in contact with such systems on a daily basis are secured. Therefore, there is a need for a a separate study on the effects of the required work on the workers and their health, safety, leisure and social security.

It is essential to acknowledge the implications of noise pollution on the species surrounding its source. There are 3 general methods<sup>17</sup> adopted to reduce noise pollution or to minimise the impact of noise pollution on the stakeholders of the system. The first method is to reduce the noise at the source by resorting to structures and designs that don't require the generation of much sound, such as by erecting floating farms, gravity-based foundations, alternative installation procedures, systems that avoid the supersonic wave in the pile which is the main source of the pollution, etc.. The second method is to reduce the amount of sound propagated into the surrounding environment. This is done by creating a shielding barrier around the monopile which absorbs the sound emitted; usually an air bubble curtain. The third

<sup>13</sup> New WHO noise guidelines for Europe released (*World Health Organisation*, 10 Oct 2018) <a href="http://www.euro.who.int/en/media-centre/sections/press-releases/2018/press-information-note-on-the-launch-of-the-who-environmental-noise-guidelines-for-the-european-region">http://www.euro.who.int/en/media-centre/sections/press-releases/2018/press-information-note-on-the-launch-of-the-who-environmental-noise-guidelines-for-the-european-region> accessed 20 April 2020.</a>

<sup>14</sup> Environmental Noise Guidelines for The European Region: Executive Summary, (*World Health Organization*) <a href="http://www.euro.who.int/\_\_data/assets/pdf\_file/0009/383922/">http://www.euro.who.int/\_\_data/assets/pdf\_file/0009/383922/</a> noise-guidelines-exec-sum-eng.pdf?ua=1> accessed 20 April 2020.

<sup>15</sup> Summary of Wind Turbine Accident data to 31 March 2019, (Caithness Wind Farm Information Forum, 31 Dec 2019), <a href="http://www.caithnesswindfarms.co.uk/">http://www.caithnesswindfarms.co.uk/</a> AccidentStatistics.htm> accessed 20 April 2020.

<sup>16</sup> Patrick Smith, 'Turbine fire report based on anti-wind group data', (Wind Power Monthly, 17 July 2014), <a href="https://www.windpowermonthly.com/article/1303975/turbine-fire-report-based-anti-wind-group-data">https://www.windpowermonthly.com/article/1303975/turbine-fire-reportbased-anti-wind-group-data> accessed 20 April 2020.</a>

<sup>17</sup> Michael D\u00e4hne et al, 'Bubble curtains attenuate noise from offshore wind farm construction and reduce temporary habitat loss for harbour porpoises',(2017) Vol. 580: 221–237 <a href="https://doi.org/10.3354/meps12257">https://doi.org/10.3354/meps12257</a>> accessed 20 April 2020.

method is to prevent animals from being located in the vicinity of the sound source. This requires intensive scoping and assessment of the area to ensure that the animals are not there; permanently or temporarily due to the seasonal conveniences.

Recent developments have shown that floating offshore wind farms are more economically efficient than conventional offshore wind farms that have a section of their pile cut just below the sea floor. The ease of decommissioning<sup>18</sup> such floating structures is easier than the pile-driven structures as they can be towed away and relocated and anchoring it according to the requirements as opposed to a process requiring the dismantling of the structure to an extent on the shore. Apart from having access to stronger winds, floating wind farms largely avoid the negative effects of pile-driving which disturbs the biodiversity residing in and around the ocean while minimising the impact to their habitats. In case a lease for an Offshore Wind Energy farm is granted and it is found that the structures erected are causing environmental damage due to interference with the routes of migratory aquatic species or avian species, it can be moved to a more feasible location with a lot more ease than a Conventional Offshore Wind Energy farm.

Going a step further, Floating hybrid energy platforms with wind energy as an essential element is a new emerging technology. The floating platforms consist of synergies between compatible energy sources such of Wave Energy Convertors and Wind Energy.<sup>19</sup> SCDnezzy developed a wind-wind system which combines conventional and airborne wind energy on the same platform.<sup>20</sup> The EU Project Marina<sup>21</sup> has developed and studied Spar-Torus-Combination (STC) and the Semi-submersible Flap Combination (SFC); both which exploit the wind-wave synergy.<sup>22</sup>

<sup>18</sup> Eva Topham & David McMillan, 'Sustainable decommissioning of an offshore wind farm', (2017), Volume 102, Part B, ELSEVIER, Pages 470-480 <a href="https://www.sciencedirect.com/science/article/pii/S0960148116309430?via%3Dihubsaccessed">https://www.sciencedirect.com/science/article/pii/S0960148116309430?via%3Dihubsaccessed 20 April 2020.</a>

<sup>19</sup> Christopher R. Golightly, 'Blackbird: A Hybrid CAES Storage Anchored Mono TLP VAWT-WEC'.

<sup>20</sup> Aerodyne-engineering, SCDnezzy <https://www.aerodyn-engineering.com/fileadmin/ Download/aerodyn\_engineering\_Data\_sheet\_SCD\_nezzy\_hoch2.pdf> accessed 20 April 2020.

<sup>21</sup> Marine Renewable Integrated Application Platform (*Cordis EU*, 93425, 1 Aug 2019) <a href="https://cordis.europa.eu/project/id/241402">https://cordis.europa.eu/project/id/241402</a>> accessed 20 April 2020.

<sup>22</sup> Zhen Ga, Torgeir Moan, Comparative numerical and experimental study of two combined wind and wave energy concepts' (2016, Volume 1, Issue 1) Journal of Ocean Engineering and Science, Pages 36-51<https://doi.org/10.1016/j.joes.2015.12.006> accessed 20 April 2020.

Although such technology is in the early stages of development, it improves the productivity of the energy market as wave energy is more reliable and predictable than wind energy which does not always guarantee a constant supply of electricity.<sup>23</sup>

Introduction of an active and passive control system along the rotor blades wherein the blade is divided into movable sections such as the Bend Twist Coupling system<sup>24</sup> would help in sparing the costs of damage to the blades due to extreme weather conditions; wherein when faced with such obstacles, it would fold and therefore reduce the tension caused on the blade due to its length.

#### BASIC PRACTICES REQUIRED FOR AN EFFICIENT OFFSHORE WIND ENERGY POLICY

Although the offshore wind policy in India may have a few elements of the best practices followed in Europe, this section will lay down a few non-exhaustive, basic requirements for an offshore wind energy policy that are mainly imbibed from European literature since they are the leading producers of wind energy.

The initial "Planning and Policy Context"<sup>25</sup> which sets the ground for offshore wind projects determines what ideological stance the regulating body would be taking considering the balance between anthropocentricism and eco-centrism. It is essential to plan out the spatial usage efficiently to accommodate all of the stakeholders under the scenario. The SEANERGY2020 project funded by Intelligent Energy Europe (IEE) provides an in-depth analysis of national and international Maritime Spatial Planning (MSP) practices, and policy recommendations for developing existing and potentially new MSP for the development of offshore renewable power

<sup>23</sup> Nicolas Tomey Bozo et al, 'A review and comparison of offshore floating concepts with combined wind-wave energy' (*Researchgate*, Sept 2015) <a href="https://www.researchgate.net/profile/Nicolas\_Tomey\_Bozo/publication/286376700\_A\_review\_and\_comparison\_of\_offshore\_floating\_concepts\_with\_combined\_wind-wave\_energy/links/5b4c6f9da6fdccadaecf7107/A-review-and-comparison-of-offshore-floating-concepts-with-combined-wind-wave-energy.pdf">https://www.researchgate.net/profile/Nicolas\_Tomey\_Bozo/publication/286376700\_A\_review\_and\_comparison\_of\_offshore\_floating\_concepts\_with\_combined\_wind-wave-energy/links/5b4c6f9da6fdccadaecf7107/A-review-and-comparison-of-offshore-floating-concepts-with-combined-wind-wave-energy.pdf">https://www.researchgate.net/profile/Nicolas\_Tomey\_Bozo/publication/286376700\_A\_review\_and\_comparison\_of\_offshore\_floating\_concepts\_with\_combined\_wind-wave\_energy/links/5b4c6f9da6fdccadaecf7107/A-review-and-comparison-of-offshore-floating-concepts-with-combined-wind-wave-energy.pdf</a>> accessed 20 April 2020.

<sup>24</sup> Alexander R.Stäblein, 'Fundamental aeroelastic properties of a bend-twist coupled blade section', (2017), Volume 68, Journal of Fluids and Structures. Pages 72-89, <https://doi. org/10.1016/j.jfluidstructs.2016.10.010> accessed 20 April 2020.

<sup>25</sup> GP WIND, 'Good Practice Guide, 2.1, Planning and Policy Context', pg 5, <a href="http://www.project-gpwind.eu/">http://www.project-gpwind.eu/</a>> accessed 20 April 2020.

generation.<sup>26</sup> The "Roadmap for Maritime Spatial Planning" is a key instrument for the Integrated Maritime Policy of the European Union (EU).<sup>27</sup> It helps public authorities and stakeholders to coordinate their action and optimises the use of marine space to benefit economic development and the marine environment. It is a tool for improved decision-making and it provides a framework for arbitrating between competing human activities and managing their impact on the marine environment. The "Blue Seas Green Energy"<sup>28</sup> which is the Sectoral Marine Plan for Offshore Wind in Scottish Territorial Waters, utilised a marine planning approach to guide development of offshore wind energy around the coast of Scotland and considered the Environmental and Economic implications, as well as the cultural impact by recognising issues such as "visual pollution" by utilising a marine spatial planning tool, the Marine Resource system (MaRS)<sup>29</sup> as a scoping tool in order to identify viable areas.

The essential elements for establishing a strong Planning and Policy context are-Early planning and mapping; Defining and applying clear planning and guidance on scoping procedures; Mapping of most suited sites to avoid landscape saturation; Establishing a clear, consistent and proactive communication on strategic goals by the consenting authorities; Developing clear, transparent and strict rules as a frame for the consenting process, to improve social acceptance; Developing clear and transparent spatial planning to improve social acceptance; Developing official guidance or standards to assess potential socio-economic impacts.

It is suggested that the stage of "Project initiation"<sup>30</sup> can be started off with communication, site selection and scoping. The purpose of transparent

<sup>26</sup> Intelligent Energy Europe, 'Delivering offshore electricity to the EU: spatial planning of offshore renewable energies and electricity infrastructures in and integrated EU maritime policy', (SEANERGY 2020), <https://ec.europa.eu/energy/intelligent/projects/en/projects/ seanergy-2020> accessed 20 April 2020.

<sup>27</sup> European Commission, 'Roadmap for Maritime Spatial Planning: Achieving Common Principles in the EU', (2008) <a href="https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=C">https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=C</a> OM:2008:0791:FIN:EN:PDF> accessed 20 April 2020.

<sup>28</sup> Scottish Government, 'Blue Seas - Green Energy A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters Part A The Plan', (2011) <a href="https://www2.gov.scot/Publications/2011/03/18141232/0">https://www2.gov.scot/Publications/2011/03/18141232/0</a>> accessed 20 April 2020.

<sup>29</sup> The Crown Estate, 'Marine Resource System' <a href="https://resource.esriuk.com/esri-resources/the-crown-estate/">https://resource.esriuk.com/esri-resources/the-crown-estate/</a> accessed 20 April 2020.

<sup>30</sup> GP WIND – Good Practice Guide, '2.2, Project initiation - communication and scoping', pg 8, <a href="http://www.project-gpwind.eu/">http://www.project-gpwind.eu/</a> accessed 20 April 2020.

communication between the project developers, communities settled around the project site and other economic actors is to obtain full knowledge of the sensitivities of the site. This knowledge can help- firstly, in obtaining complete information for Environment Impact Assessments as indigenous communities around a site are bound to know the site's specifics fairly well; secondly to minimise the conflict with these stakeholders and reach a peaceable settlement; and thirdly to integrate these communities in the participation of the project. Positive communication also has the additional benefit of increased publicity, tourism and investment in the facilities of the project developer and their organization. The municipality of Hitra<sup>31</sup> in Norway opened a dialogue with its citizens regarding a wind energy project and the citizens displayed more participation and acceptance of the procedure as they were getting daily updates through newspaper reports. In France, Italy, Slovenia, Belgium and Portugal, a "renewable energy weather forecast" is televised to convey the energy savings through the usage of renewable energy such as solar panels and wind turbines and the viewer base has reached 2.5 million people.<sup>32</sup>

It must be noted that communication channels must be maintained throughout the course of the project wherein a separate category referred to as "Consultation and Communication"<sup>33</sup> is established. Its essential elements are- Promoting the touristic features of the wind farm; Creating and maintaining up-to-date and complete websites, social media networks and newsletters about the project and its environmental and economic impacts and benefits to the locality; Raising awareness and communicating with factual information; Providing detailed information on local benefits; Organising events around wind energy; Communicating positively on local initiatives; Opening the participation in wind energy projects to local financing and equitable profit sharing; Facilitating the implementation of conditions enabling an equitable distribution of benefits; Using the profits from wind energy as a leverage for developing other renewable energy projects; Finding the right balance to secure both community involvement and efficient wind farm development and Using appealing ways to disseminate a broad positive communication on wind energy.

<sup>31</sup> Power Technology, 'Fosen Vind Power Project', <a href="https://www.power-technology.com/projects/fosen-vind-power-project/">https://www.power-technology.com/project/</a> accessed 20 April 2020.

<sup>32</sup> Intelligent Energy Europe, 'EnergizAIR - The sky is the limit' (*ENERGIZAIR* 2020) <a href="https://ec.europa.eu/energy/intelligent/projects/en/projects/energizair">https://ec.europa.eu/energy/intelligent/projects/en/projects/energizair</a> accessed 20 April 2020.

<sup>33</sup> GP WIND – Good Practice Guide, '2.4, Consultation and Communication', pg 11 <http:// www.project-gpwind.eu/> accessed 20 April 2020.

The next step would be to have an in-depth "Environmental Impact Assessment"<sup>34</sup> wherein the anthropocentric portion of the policy is highly prioritised. The necessary elements are- Clear and high quality Environmental Impact Assessment (EIA) standards; Assessing cumulative impacts; Considering carbon emissions; Compatibility of wind farms with other human activities; Assessing the visual impacts of the wind farm; Integrating wind turbines in the landscape; Careful siting and pre-construction assessment with respect to human activities to minimise impacts; Avoiding, minimising and managing noise impacts; Considering socio-economic impact assessments Include socio-economic criterions while granting the permits.

It is essential for the quality of the standards to be of a high magnitude so that lesser delays are caused due to challenges and to minimise the possibility of a lease getting cancelled due to environmental harm. The same is evident under the Danish and Scottish<sup>35</sup> norms where the rate of challenges is quite low. Under the Danish regulatory norms, the offshore investigation area is 40% larger than the actual area required for planned installed capacity to provide some flexibility to the developer. Their EIA report is based on the principle of the greatest conceivable environmental impact, through a combination of a "most likely" and a "worst case" approaches, to ensure that subsequent EIAs are not necessary for the specific project.<sup>36</sup> The environmental components taken into consideration while conducting an assessment are quite variant- such as; coastal morphology which considers the change in movement of waves; marine substrate and vegetation; bottom fauna; benthos which is the ecosystem of benthic organisms that sustain in the bottom of the water column; fish; birds; marine mammals; potential for raw materials extraction and mineral resources; marine archaeology; recreational uses such as the visual impact of turbine structures; naval traffic; aviation; commercial fishery and Unexploded ordnance (UXO).<sup>37</sup> The

<sup>34</sup> GP WIND – Good Practice Guide, '2.3, Environment Impact Assessment', pg 9 <http:// www.project-gpwind.eu/> accessed 20 April 2020.

<sup>35</sup> Scottish Government, 'Planning Advise Note 58 Environmental Impact Assessment', (1999)

<sup>36</sup> Danish Energy Agency, 'Environmental impacts of offshore wind farms: assessment and long-term monitoring in denmark' (*DEA*, March 2019) <a href="https://ens.dk/sites/ens.dk/files/Globalcooperation/Short\_materials/environmental\_impacts\_of\_offshore\_wind\_farms.pdf">https://ens.dk/sites/ens.dk/files/ Globalcooperation/Short\_materials/environmental\_impacts\_of\_offshore\_wind\_farms.pdf</a>> accessed 6 May 2020.

<sup>37</sup> Clausen, N-E., 'Planning and development of wind farms: Environmental impact and grid connection. DTU Wind Energy'. (DTU Wind Energy I, No. 46, 2013).

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Scottish norms consider the same components as seen in Denmark, which involves specialised consultants on the components being consulted in the process.<sup>38</sup>

The next step of "Mitigation and Monitoring"<sup>39</sup> is necessary to ensure that the environment is protected not only in the stage of EIA, but even after it is conducted. The essential elements of a system with good mitigation norms is- Adopting a Mitigation Hierarchy, where mitigation attempts are in the following order, to: firstly, avoid negative impacts; secondly, minimise or reduce negative impacts; thirdly, repair or restore negatively affected areas; fourthly, offset or compensate for unavoidable adverse effects. Further, there lies the need to manage mitigation measures globally by public authority. The essential elements of a monitoring system are- monitoring impacts on the environment and sharing knowledge gained to improve understanding of environmental impacts; monitoring and evaluating socio-economic impacts to track and understand changes to local communities.

Another noted good practice is the standardisation of Wind Energy Projects.<sup>40</sup> The standardisation of Wind Energy projects is not only essential to ensure the health and safety of the persons interacting with the machinery behind the energy and to maximise productivity and efficiency of the product, but is also important to strive for certain acceptable international standards so that the exchange of information and machinery across countries is with lesser variations in technology to support the growth of the international market for offshore wind energy. Germany's certification standards are extremely well drafted with a few key features in its good practices being- Strong co-ordination among various standards committees; Developed own step-wise certification and approval scheme for offshore projects within the Exclusive Economic Zone. The approval authority supervises the project progress by approving individual phases on the basis of evaluation of the listed certification bodies.<sup>41</sup> However, certain standards would have to be specifically tailored for the

<sup>38</sup> Moray Offshore Windfarm (West) Limited, 'Offshore EIA Report Moray Offshore Windfarm (West) Limited' <a href="http://marine.gov.scot/sites/default/files/00538033.pdf">http://marine.gov.scot/sites/default/files/00538033.pdf</a>> accessed 20 April 2020.

<sup>39</sup> GP WIND – Good Practice Guide, '2.5, Mitigation and Monitoring', pg 5, <a href="http://www.project-gpwind.eu/">http://www.project-gpwind.eu/</a>> accessed 20 April 2020.

<sup>40</sup> IRENA, Nurturing Offshore Wind Markets: Good Practices for International Standardisation, International Renewable Energy Agency, (2018).

<sup>41</sup> IRENA, Nurturing Offshore Wind Markets: Good Practices for International Standardisation, International Renewable Energy Agency, (2018), page 11.

Indian scenario. For example, floating platforms might require different standards in India than in Europe because of the deeper water; the weather conditions on the Indian coasts are also more extreme<sup>42</sup> than the general conditions faced in Europe and the standards must therefore be specially fixed in a manner to suit those variances. Therefore, it is suggested that the said structures be mandated to be certified by a competent agency such as the International Electrotechnical Commission (IEC), International Organization for Standardization (ISO) or Germanischer Lloyd (GL) with the required evidence of the same such as a detailed report on the reasons for such certification, possible deficiencies and more in order to secure the legitimacy of the said certificate.

## **KEY POLICY INITIATIVES IN THE WIND ENERGY SECTOR**

The Electricity Act, 2003 regulates licenses for 3 separate purposes: transmission of electricity; trading of electricity (purchase of electricity for resale); and distribution of electricity. Section 86(1)(e) states that the state commissions shall discharge the following functions, namely, promoting cogeneration and generation of electricity from renewable sources of energy by providing, suitable measures for connectivity with the grid and sale of electricity to any person, and also specifying, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution license.

Section 15 of the Electricity Act sets out the framework and procedure for obtaining the licence. The SERCs grant the distribution licence for 25 years from the date of issue. While a trader must have a licence from the appropriate commission under the Electricity Act for purchase and resale electricity, distribution licensees are exempted and do not need a separate licence for trading. Wind energy can be procured through various ways: it can be obtained directly by the distribution licensee from the Wind Power Generator or the distribution licensee can procure it through an intermediary procurer. In states with high renewable energy potential, high cost of generation discourages the local distribution licensees from purchasing renewable

<sup>42</sup> Bloomberg, 'Renewable Energy: Freak weather events pose new risk to India's goals', (*Energy World*, 17 July 2019) <a href="https://energy.economictimes.indiatimes.com/news/renewable/renewable-energy-freak-weather-events-pose-new-risk-to-indias-goals/70256137">https://energy.economictimes.indiatimes.com/news/renewable/renewable-energy-freak-weather-events-pose-new-risk-to-indias-goals/70256137</a>> accessed 20 April 2020.

power beyond the RPO level mandated by the State Commission.<sup>43</sup> The 2018 amendment to the tariff policy requires all future power purchases to be procured competitively by distribution licensees and that DISCOMs are penalised for power cuts. However, it provides for a series of exceptions in practice for state government or central government generators. While the new tariff policy will allow the legacy costs to pass through, it also allows central government generators and DISCOMs to choose to not sell power through the bidding process, thus limiting competition and hampering overall creation of a liquid and functioning wholesale electricity market, and leading to higher power prices for DISCOMs.<sup>44</sup>

Any change in the law such as- the enactment of any new law; or an amendment, modification or repeal of an existing law; or the requirement to obtain a new consent, permit or license; or any modification to the prevailing conditions prescribed for obtaining a consent, permit or license, not owing to any default of the WPG; or any change in the rates of any taxes which have a direct effect on the Project which results in any adverse financial loss or gain to the Wind Power Generator or Procurer, would pave the way for entitlement to compensation by the other party.<sup>45</sup>

It must be noted that since the licenses for distribution are regulated by the "appropriate commission" under the Electricity Act which amounts to either the CERC, SERC or State governments, the MNRE does not have much of a regulatory function over the licensing as their policy framework mainly pertains to incentivising Wind Power Generators to enter the market while also regulating the mechanics, design, engineering and the transmission structure. Since these incentives do have a determinant impact of the rest of the stakeholders of the industry, a few of such policy initiatives and essential terminologies shall be discussed, such as- the Generation based incentive scheme, accelerated depreciation scheme (AD), tariff waivers, Renewable energy certificate scheme, Renewable Purchase Obligations, repowering policy etc. in addition to other provisions of a PPA.

<sup>43</sup> J. K. Jethani, 'Renewable Policy Framework and Wind Energy Programme in India', (2016) <a href="https://mnre.gov.in/img/documents/uploads/94e402c36ee44fe29e2b96a6b1b69a30.pdf">https://mnre.gov.in/img/documents/uploads/94e402c36ee44fe29e2b96a6b1b69a30.pdf</a>> accessed 20 April 2020.

<sup>44</sup> IEA, 'India 2020, Energy Policy Review',<https://niti.gov.in/sites/default/files/2020-01/ IEA-India%202020-In-depth-EnergyPolicy\_0.pdf> accessed 20 April 2020.

<sup>45</sup> Ministry of Power Resolution, 'Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Wind Power Projects' (8th December, 2017), No. 23/54/2017-R&R., para 7.8<https://mnre.gov.in/img/documents/uploads/ a3ebdeec0b6846b281db0708b746a7ef.pdf> accessed 20 April 2020.

PPA is a contract between two parties, one which generates electricity (the seller) and one which purchases electricity (the buyer). The PPA defines all the commercial terms for the sale of electricity between the two parties, including when the project will begin commercial operation, schedule for delivery of electricity, penalties for under delivery, payment terms, and termination. A PPA is the principal agreement that defines the revenue and credit quality of a generating project.<sup>46</sup> It is important for the PPA to have favourable provisions in order to attract private investment.

Under the Accelerated Depreciation Scheme (ADS), the depreciation of the assets during the initial years is increased, which allows the asset owner to write off more of the worth asset during the initial years of ownership, thereby decreasing the greater fraction of taxable income. The AD does not directly provide any monetary assistance to wind power project developers. However, there are significant post-tax benefits for the investors, in terms of the timing of cash flows.

The GBI aims to broaden the investor base and incentivize actual generation with the help of an outcome-based incentive. It has facilitated the entry of large Independent Power Producers and Foreign Direct Investment to the wind power sector. Under this scheme for wind power, a GBI at Rs. 0.50 per unit of electricity fed into the grid is provided for a period not less than 4 years and a maximum period of 10 years with a cap of Rs. 62 lakhs per MW. The scheme is in parallel with accelerated depreciation but in a mutually exclusive manner. The total disbursement in a year should not exceed one fourth of the maximum limit of the incentive i.e. Rs. 15.50 lakhs per MW during the first four years. The Scheme includes captive wind power projects, but excludes third party sale, (viz. merchant power plants). There is no minimum capacity fixed under the scheme and is applicable for the projects commissioned on and after 17.12.2009. The projects should not avail accelerated depreciation and should sell the electricity to grid at a tariff fixed by SERC in order to remain eligible.<sup>47</sup>

The withdrawal of the scheme in 2012 before its reintroduction in 2013, and the lack of assurance about its continuity has posed to paint the wind energy sector as one

<sup>46</sup> Indian Wind Turbine Manufacturing Association, 'Indian Wind Power', (Feb-March, 2018). Vol 6(3), <a href="https://www.indianwindpower.com/pdf/Indian-Wind-Power%20Feb-March-2018.pdf">https://www.indianwindpower.com/pdf/Indian-Wind-Power%20Feb-March-2018.pdf</a>> accessed 20 April 2020.

<sup>47</sup> Press Information Bureau, 'Generation Based Incentive Scheme' (16 Dec 2011) <a href="https://pib.gov.in/newsite/PrintRelease.aspx?relid=78829">https://pib.gov.in/newsite/PrintRelease.aspx?relid=78829</a>> accessed 20 April 2020.

that is not reliable and has deflected developers due to the same.<sup>48</sup> The withdrawal of the AD scheme in 2012 before it was reintroduced in 2014 at the rate of 80% has also caused this lack of reliability in the industry and therefore there has been an evident slowdown in the investments in the industry caused due to it.<sup>49</sup>

A few recent developments in tariff policy provide that no inter-state transmission charges or the charges generated due to the loss of wind power during the sale of wind power to facilitate the inter-state transmission are to be waived off under certain conditions: it is applicable for wind power projects which get commissioned till March 31, 2019 and for 25 years from the date of commissioning of the projects. Further, the waiver is also available for projects having power purchase agreements (PPAs) with DISCOMS for fulfilment of RPO;<sup>50</sup> and the IST'S charges is only applicable for wind projects awarded through a competitive bidding process.<sup>51</sup> The applicability of these regulations to offshore wind energy is still not completely clear.

The renewable energy certificate (REC) mechanism was introduced to relieve states that have a high share of wind power in their grid, wherein, renewable project developers can vend power to host utilities at a tariff corresponding to their average procurement price and to obtain tradable certificates. The Renewable Purchase Obligation (RPO) varies from state to state and is generally in the range of 3–12% and can go higher depending on the orders of SERCs. Some states which are not able to achieve RPO levels required by the SERCs as it is quite difficult for regulators to enforce the RPO and REC provisions.

<sup>48</sup> M. Ramesh, 'Cabinet clears 'generation-based incentive' for wind power projects', (The *Hindu business line*, August 13, 2013) <a href="https://www.thehindubusinessline.com/economy/cabinet-clears-generation-based-incentive-for-wind-power-projects/article23122494.ece">https://www.thehindubusinessline.com/economy/cabinet-clears-generation-based-incentive-for-wind-power-projects/article23122494.ece</a> accessed 6 May 2020.

<sup>49</sup> TusharSud et al, 'Case Study: India's Accelerated Depreciation Policy for Wind Energy', (International Institute for Sustainable Development, April 2015) <a href="https://www.iisd.org/sites/default/files/publications/india-accelerated-depreciation-policy-wind-energy-case-study">https://www.iisd.org/sites/ default/files/publications/india-accelerated-depreciation-policy-wind-energy-case-study. pdf> accessed 6 May 2020.</a>

<sup>50</sup> Ministry of Power, GoI, 'No. 23/12/2016-R&R: Waiver of inter-state transmission charges and losses on transmission of the electricity generated from solar and wind sources of energy under para 6.4(6) of the revised Tariff Policy, 2016', (*Ministry of Power, GOI*,13 Feb 2018) <https://powermin.nic.in/sites/default/files/webform/notices/Waiver\_of\_inter\_state\_ transmission\_of\_the\_electricity.pdf> accessed 6 May 2020.

<sup>51</sup> Ministry of New and Renewable Energy, GoI 'No. 238/22/2019-Wind Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power From Grid Connected Wind Solar Hybrid Projects - Reg.', (MNRE, 11 Oct 2019) <a href="https://mnre.gov.in/img/documents/uploads/701295f2d0614d2d97d25e361f634b21.pdf">https://mnre.gov.in/img/documents/ uploads/701295f2d0614d2d97d25e361f634b21.pdf</a>> accessed 6 May 2020.

# THE WIND ENERGY SECTOR IN SOUTH INDIA: AN OVERVIEW OF LEGAL AND REGULATORY ISSUES

While it is necessary to ensure that electricity is supplied at affordable prices, certain instances of what could be perceived as arm-twisting<sup>52 53</sup> has been unleashed on project developers by the state such as in Andhra Pradesh to reduce tariffs, which may may deter the growth<sup>54</sup> of the industry while slowing down the potential reductions in invested costs by way of the economies of scale.<sup>55</sup> Although the State's intention to renegotiate PPAs which are supposedly unfair due to their rates which are higher than the rates of other states, there<sup>56</sup> existed tremendous state debt<sup>57</sup> nevertheless and an approach with such strict action with coercive measures<sup>58</sup> launched by a player who had formal accountability is risky for the growth<sup>59</sup> of the Wind Energy sector.<sup>60</sup> Another challenge to counter in the future would be to uphold the growth

- 52 Shaurya Bajaj, 'Now, Andhra Pradesh Decides to Withdraw Connectivity of 98 MW of Wind Projects' (*Mercom India*, 19 Sept 2019) <a href="https://mercomindia.com/andhra-pradesh-withdraw-connectivity-wind-projects/">https://mercomindia.com/andhra-pradesh-withdraw-connectivity-wind-projects/</a> accessed 20 April 2020.
- 53 Anjana Parikh, 'APTEL Stalls Andhra DISCOM's Move to Cancel Axis Energy's Wind PPA' (*Mercom India*, 13 Aug 2019) <a href="https://mercomindia.com/aptel-andhra-discoms-cancel-axis-wind-ppa/">https://mercomindia.com/aptel-andhra-discomscancel-axis-wind-ppa/</a>> accessed 20 April 2020.
- 54 Kaavya Chandrasekaran, 'ReNew Power moves HC over connectivity denial to wind projectsm', (*Energy World*, 19 Sept 2019) <https://energy.economictimes.indiatimes. com/news/renewable/renew-power-moves-hc-over-connectivity-denial-to-windprojects/71194173> accessed 20 April 2020.
- 55 G Seetharaman, 'How Jagan Mohan Reddy rolled back several of his predecessor's policy decisions in Andra Pradesh', (*Energy World*, 9 Feb 2020)<https://energy.economictimes. indiatimes.com/news/renewable/how-jagan-mohan-reddy-rolled-back-several-of-his-predecessors-policy-decisions-in-andra-pradesh/74038712> accessed 20 April 2020.
- 56 Kaavya Chandrasekaran, 'Andhra discoms clear dues to renewable energy developers', (*Energy World*, 16 March 2020) <a href="https://energy.economictimes.indiatimes.com/news/">https://energy.economictimes.indiatimes.com/news/</a> renewable/andhra-discoms-clear-dues-to-renewable-energy-developers/74644500> accessed 20 April 2020.
- 57 Kaavya Chandrasekaran, 'Andhra discom seeks more time to clear Rs 599 crore dues', (Energy World, 19 Feb 2020) <a href="https://energy.economictimes.indiatimes.com/news/renewable/top-andhra-discom-seeks-more-time-to-clear-rs-599-crore-dues/74200711">https://energy.economictimes.indiatimes.com/news/renewable/top-andhra-discom-seeks-more-time-to-clear-rs-599-crore-dues/74200711</a>> accessed 20 April 2020.
- 58 ReNew Power Limited and Ors. v.. State of Andhra Pradesh and Ors, 2020(1)ALD433, 2019(6)ALT191, 2020(1)ALT457.
- 59 PTI, 'AP, Telangana discoms payment delay may weaken credit outlook,' (*Energy World*, 18 Oct 2019) <https://energy.economictimes.indiatimes.com/news/power/ap-telanganadiscoms-payment-delay-may-weaken-credit-outlook/71645331> accessed 20 april 2020.
- 60 Kaavya Chandrasekaran, 'Tariff adoption has become a huge challenge: Azure Power CEO,' (Energy World, 18 March 2020) <a href="https://energy.economictimes.indiatimes.com/news/renewable/tariff-adoption-has-become-a-huge-challenge-azure-power-ceo/74683523">https://energy.economictimes.indiatimes.com/ news/renewable/tariff-adoption-has-become-a-huge-challenge-azure-power-ceo/74683523> accessed 20 April 2020.

of the wind industry after the Coronavirus crisis wherein a nation-wide lockdown was imposed amidst a global lockdown.<sup>61</sup> It is extremely likely that all the established renewable energy goals will not be met due to the slowdown of the economy,<sup>62</sup> since the importing of technology will take a while to get revamped.<sup>63</sup>

There exists a scope for developing Hybrid projects especially between solar and wind energy in most of the Southern states.<sup>64</sup> About 99% of the wind power projects in Tamil Nadu which is the leading producer of wind energy is privatised.<sup>65</sup> It has acknowledged that wind power isn't a reliable source for a constant supply of electricity throughout the power-grid and therefore has established reservations with coal<sup>66</sup> and nuclear energy.<sup>67</sup> The difference in approaches of clearance of dues between Andhra Pradesh and Tamil Nadu can be seen wherein the latter places the onus on the DISCOMS with more stringency and appropriately minimises a conflict of interest.<sup>68</sup>

<sup>61</sup> Kaavya Chandrasekaran, 'India's wind installation for 2020 likely to fall drastically,' (*Energy World*, 13 April 2020)<a href="https://energy.economictimes.indiatimes.com/news/renewable/indias-wind-installation-for-2020-likely-to-fall-drastically/75114659">https://energy.economictimes.indiatimes.com/news/renewable/indias-wind-installation-for-2020-likely-to-fall-drastically/75114659</a>> accessed 20 April 2020.

<sup>62</sup> PTI, 'India's renewables installation could fall by a fifth due to lockdown: Wood Mackenzie,' (*Energy World*, 7 April 2020)<https://energy.economictimes.indiatimes.com/news/ renewable/indias-renewables-installation-could-fall-by-a-fifth-due-to-lockdown-woodmackenzie/75027294> accessed 20 April 2020.

<sup>63</sup> Aarushi Koundal, 'States with highest growth in solar, wind capacity also those worst-hit by coronavirus,' (*Energy world*, 8 April 2020) <a href="https://energy.economictimes.indiatimes.com/news/renewable/states-with-highest-growth-in-solar-wind-capacity-also-those-worst-hit-by-coronavirus/75042787">https://energy.economictimes.indiatimes.com/news/renewable/states-with-highest-growth-in-solar-wind-capacity-also-those-worst-hit-by-coronavirus/75042787</a>> accessed 20 April 2020.

<sup>64</sup> Kaavya Chandrasekaran, 'SECI invites bids for 2000 MW hybrid solar and wind projects' (*Energy World*, 17 April 2017) <https://energy.economictimes.indiatimes.com/news/ renewable/seci-invites-bids-for-2000-mw-hybrid-solar-and-wind-projects/63943302> accessed 20 April 2020.

<sup>65</sup> B Sivakumar, 'Secret of Tamil Nadu's energy: Wind & Water', (*Energy World* 30 Aug 2018) <a href="https://energy.economictimes.indiatimes.com/news/renewable/secret-of-tamil-nadus-energy-wind-water/65601486">https://energy.economictimes.indiatimes.com/news/renewable/secret-of-tamil-nadus-energy-wind-water/65601486</a>> accessed 20 April 2020.

<sup>66</sup> B Sivakumar, 'Wind not enough, coal continues to power TN,' (*Energy World*, 11 Dec 2019) <a href="https://energy.economictimes.indiatimes.com/news/coal/wind-not-enough-coal-continues-to-power-tn/72465889">https://energy.economictimes.indiatimes.com/news/coal/wind-not-enough-coal-continues-to-power-tn/72465889</a>> accessed 20 April 2020.

<sup>67</sup> B Sivakumar, 'Thermal units shut, TN to buy more power,' (*Energy World*, 11 Jan 2019) <a href="https://energy.economictimes.indiatimes.com/news/power/thermal-units-shut-tn-to-buy-more-power/67480471">https://energy.economictimes.indiatimes.com/news/power/thermal-units-shut-tn-to-buy-more-power/67480471</a>> accessed 20 April 2020.

<sup>68</sup> B Sivakumar, 'Govt asks discoms to pay pending dues or forget power supply,' (*Energy World*, 14 July 2019) <a href="https://energy.economictimes.indiatimes.com/news/power/govt-asks-discoms-to-pay-pending-dues-or-forget-power-supply/70211936">https://energy.economictimes.indiatimes.com/news/power/govt-asks-discoms-to-pay-pending-dues-or-forget-power-supply/70211936</a>> accessed 20 April 2020.

The issue of the persisting debt of DISCOMS<sup>69</sup> to Renewable Energy firms<sup>70</sup> seems to be a consistent<sup>7172</sup> one with Andhra Pradesh, Telangana, Karnataka and Tamil Nadu at 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 5<sup>th</sup> respectively when the debt due to the firms in these states is ranked.<sup>73</sup> In Andhra Pradesh, Generation Based Incentives (GIB)<sup>74</sup> offered to project developers were withdrawn in the course of introducing a new policy framework governing the wind energy sector in 2018.<sup>75</sup> There has been an array of state-leaning decisions in the wind energy sector over discrepancies in wheeling contracts Power Purchase agreements and more.<sup>76</sup> These existing systematic disincentives coupled with the proposed carbon tax waiverincentivises entry into the opposing industry risks harming the growth of the renewable energy sector as a whole.<sup>77</sup>

<sup>69</sup> Saumy Prateek, 'DISCOMs in the Top Renewable States are the Biggest Defaulters as Dues Reach ₹69 Billion,' (*Mercom India*, 22 Aug 2019)<https://mercomindia.com/discom-toprenewable-states-biggest-defaulters/> accessed 20 April 2020.

<sup>70</sup> Anjana Parikh, 'CEA to Maintain Database of Outstanding Dues by DISCOMs to Solar, Wind Developers,' (*Mercom India*, 9th Aug 2019)<https://mercomindia.com/cea-duesdiscoms-solar-wind-developers/> accessed 20 April 2020.

<sup>71</sup> PTI, 'Discoms' outstanding dues to power gencos rise nearly 50 pc to Rs 88,177 cr in Dec' (energy.economictimes.indiatimes.com, February 17, 2020)<https://energy.economictimes. indiatimes.com/news/power/discoms-outstanding-dues-to-power-gencos-rise-nearly-50-pcto-rs-88177-cr-in-dec/74167451> accessed 20 April 2020.

<sup>72</sup> PTI, "Discoms' outstanding dues to power gencos rise nearly 32 pc to Rs 88,311 cr in Jan' (*energy.economictimes.indiatimes.com*, March 30, 2020)<https://energy.economictimes.indiatimes.com/news/power/discoms-outstanding-dues-to-power-gencos-rise-nearly-32-pc-to-rs-88311-cr-in-jan/74881219> accessed 20 April 2020.

<sup>73</sup> ETEnergyWorld, India's power discoms owe more than Rs 6,800 cr to RE firms as payment dues: CEA, '(*energy.economictimes.indiatimes.com*, August 21,2019) <a href="https://energy.economictimes.indiatimes.com">https://energy.economictimes.indiatimes.com</a>, renewable/indias-power-discoms-owe-more-than-rs-6800-cr-to-re-firms-as-payment-dues-cea/70772024> accessed 20 April 2020.

Saumy Prateek, 'Andhra Pradesh to Withdraw Generation Based Incentives for Wind Projects' (*Mercom India*, July 30, 2018).
 <a href="https://mercomindia.com/andhra-pradesh-withdraws-generation-incentive-wind/sacessed">https://mercomindia.com/andhra-pradesh-withdraws-generation-incentive-wind/sacessed</a> 20 April 2020.

<sup>75</sup> Saumy Prateek, 'Andhra Pradesh Issues New Wind Policy with Various Incentives to Attract Developers,' (*Mercom India*, JAN 09, 2019). <a href="https://mercomindia.com/andhra-pradesh-wind-policy-incentives/">https://mercomindia.com/andhra-pradesh-wind-policy-incentives/</a> accessed 20 April 2020.

<sup>76</sup> Nitin Kabeer, 'Contractual Agreement Mandatory for Banking of Energy by Project Developer: APTEL', (*Mercom India*, FEB 13, 2019). <a href="https://mercomindia.com/contractual-agreement-banking-energy-aptel/">https://mercomindia.com/contractual-agreement-banking-energy-aptel/</a> accessed 20 April 2020.

PTI, 'Proposed carbon tax waiver on coal may pose risks to India's renewables growth: Fitch', (energy.economictimes.indiatimes.com, January 06, 2020) <a href="https://energy.economictimes.indiatimes.com/news/renewable/proposed-carbon-tax-waiver-on-coal-may-pose-risks-to-indias-renewables-growth-fitch/73118235">https://energy.economictimes.indiatimes.com</a>, January 06, 2020) <a href="https://energy.economictimes.indiatimes.com">https://energy.economictimes.indiatimes.com</a>, January 06, 2020) </a>, <a href="https://energy.economictimes.com">https://energy.economictimes.indiatimes.com</a>, January 06, 2020) </a>, <a href="https://energy.economictimes.com">https://energy.economictimes.indiatimes.com</a>, January 06, 2020 </a>, </a>, <a href="https://energy.economictimes.com">https://energy.economictimes.indiatimes.com</a>, January 06, 2020 </a>, <

It must be understood that wind projects are land intensive and the requirement depends upon the wind speed in the region, turbine technology and land topography. The actual use of land is much smaller because each wind turbine is kept at a certain distance from the adjacent turbine. This spacing allows each turbine to capture the wind in the most optimum manner. Some land is required for service roads and for the foundations upon which the wind turbines stand. It must be understood that the land intensity of wind turbine projects has been reducing over years due to the developments in technology to around 1 Acre/MW in 2016 from 1.7 Acres/MW in 2013.<sup>78</sup>

The issue of land availability faced by the project developers is resolved to an extent with the amendment to the Competitive Bidding Guidelines wherein 100% of the land will be specified at the time of the bid, with a seemingly reasonable minimum Capacity Utilization Factor (CUF) of 22% being established, and failing to maintain this will lead to a penalty of 50% of the PPA tariffs for the shortfall on the developer.<sup>79</sup> It would be efficient to utilise wasteland<sup>80</sup> more than cultivable land for wind power projects, since the opportunity costs of converting agricultural lands and forest lands to wind energy farms are not very feasible, considering the current issues revolving around climatic conditions, extinction and endangerment of species, unemployment in the working class tended to by the agricultural sector, crop availability etc.<sup>81</sup> It is essential to have proper consultation and communication with the stakeholders around the project development area in order to garner their support, participation and avoid long and endearing conflicts.<sup>82</sup> The legal framework in a lot of states such

<sup>78</sup> TERI School of Advanced Studies, 'Report - Addressing Land Issues for Utility Scale Renewable Energy Deployment in India', (*TERISAS*, Dec 2017), Table 18: Land Intensity of Wind Projects, Pg 68.

<sup>79</sup> Saumy Prateek, 'Ministry of Power Amends Competitive Bidding Guidelines for Wind Procurement', (Mercom India, 25 July 2019). <a href="https://mercomindia.com/ministry-power-competitive-bidding-guidelines-wind/">https://mercomindia.com/ministry-power-competitive-bidding-guidelines-wind/</a> accessed 20 April 2020.

<sup>80</sup> TERI School of Advanced Studies, 'Report - Addressing Land Issues for Utility Scale Renewable Energy Deployment in India, Wind Potential on Wasteland,' (*TERISAS*, Dec 2017), pg 68.

<sup>81</sup> Anjana Parikh, 'India's Cultivable Land Has Wind Generation Potential of 347 GW: Report,' (*Mercom India*, 2 Feb 2019).

<sup>&</sup>lt;https://mercomindia.com/india-cultivable-land-wind-generation/> accessed 20 April 2020
82 S. Muppidathi v. Chief Engineer, Non Conventional Energy Sources (NCES), Tamil Nadu

Electricity Board, (2012) 3 MLJ 6.

as Karnataka<sup>83</sup> does incentivise the development of wind energy by treating them and their components as moveable property<sup>84 85</sup> and exempting them from sales tax and excise duty<sup>86</sup> including works contracts for its development which is considered to be indivisible from the term "wind mill" in the form of a series of activities.<sup>87</sup>

It has been noted that if no solution is found to clear the dues from utilities or on the proposed revision of tariffs, in addition to making land acquisition easier and easing tariff caps, global investors are likely to look for opportunities in other economies, which could lead to a consolidation in the industry, and banks and non-banking financial companies will further tighten their purse strings.<sup>88</sup> The government has provided the industry with various benefits under the 2019 budget.<sup>89 90</sup> It would be unfair to assume that courts have been uncooperative with project developers in the entire process of approving of tariffs<sup>91 92 93 94</sup> and other related activities, but the

87 Enercon (India) Ltd. v. State of Karnataka, (2016) 55 GST 114 (SC), 2016(3)SCALE360

<sup>83</sup> Entry 57, Schedule 5, Karnataka Sales Tax Act, 1957.

<sup>84</sup> Sri Velayuthaswamy Spinning Mills v. The Inspector General of Registration and the Sub Registrar MANU/TN/0164/2013, 2013 (2) CTC 551.

Perumal Naicker v. T. RamaswamiKone and Anr., MANU/TN/0213/1969, AIR 1969 Mad 346.

<sup>86</sup> Gemini InstratechPvt. Ltd. v. Commissioner of Central Excise, MANU/CM/0171/2013 : 2014 (300) E.L.T. 446 (Tri. - Mum), 2015 (315) E.L.T. A81 (S.C.).

<sup>88</sup> G Seetharaman, 'Why India may not achieve its 2022 renewable energy target,' (*Energy World*, 3 Nov 2019) <a href="https://energy.economictimes.indiatimes.com/news/renewable/why-india-may-not-achieve-its-2022-renewable-energy-target/71873987">https://energy.economictimes.indiatimes.com/news/renewable/why-india-may-not-achieve-its-2022-renewable-energy-target/71873987</a>> accessed 20 April 2020.

<sup>89</sup> PTI, 'Great Indian Bustard deaths: Power firms must lay cables underground, says govt,' (*Energy World*, 25 Nov 2019) <a href="https://energy.economictimes.indiatimes.com/news/">https://energy.economictimes.indiatimes.com/news/</a> power/great-indian-bustard-deaths-power-firms-must-lay-cables-underground-saysgovt/72216552> accessed 20 April 2020.

<sup>90</sup> PTI, 'Power Minister dedicates 11 renewable energy management centres to nation', (*Energy World*, 2 March 2020) <a href="https://energy.economictimes.indiatimes.com/news/renewable/power-minister-dedicates-11-renewable-energy-management-centres-to-nation/74439350">https://energy.economictimes.indiatimes.com/news/renewable/power-minister-dedicates-11-renewable-energy-management-centres-to-nation/74439350</a>> accessed 20 April 2020.

<sup>91</sup> Indian Wind Power Association, Hyderabad and Ors. v. State of Andhra Pradesh and Ors., MANU/AP/0259/2019.

<sup>92</sup> Rakesh Ranjan, 'Tata Power to Buy 50 MW of Wind Power from SECI at ₹2.52/kWh,' (Energy World, 6 March 2020) <https://mercomindia.com/tata-power-buy-wind-seci/> accessed 20 April 2020.

<sup>93</sup> Nithin Thomas Prasad, 'CERC Approves a Tariff of ₹2.77/kWh for 200 MW of Wind Projects,' (*Mercom India*, 23 March 2020) <a href="https://mercomindia.com/cerc-approves-tariff-200-mw-wind-projects/">https://mercomindia.com/cerc-approves-tariff-200-mw-wind-projects/</a>> accessed 20 April 2020.

<sup>94</sup> Nithin Thomas Prasad, 'Kerala Commission asks DISCOM to Modify PSA for 200 MW of Wind Projects Signed with SECI,' (*Mercom India*, 4 Nov 2019) <a href="https://mercomindia.com/kerala-commission-discom-modify-psa-200-mw-wind-projects-seci/">https://mercomindia.com/kerala-commission-discom-modify-psa-200-mw-wind-projects-seci/</a>> accessed 20 April 2020.

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direction from which uniform change must appear from is the executive as judicial activism would not be able to benefit such an intricate field with the requirement of inter-disciplinary knowledge.

The MoEF&CC has taken a fairly positive step by relaxing the lease rent of wind power projects while still mandating the payment of compensatory afforestation and Net Present Value.<sup>95</sup> However, the fact that the industry falls under the white category denotes that it is exempted from clearances under the Air Act which also regulations noise pollution. This is problematic as the noise emitted by wind turbines can disrupt the biodiversity in the area it is erected in and can especially lead to disruption of avian specie's routes. While it is important to ease the norms to develop wind energy, it is extremely essential to avoid derailing the objectives of environmentalism.

There exists the need to establish appropriate tariff rates fixed by the State Electricity Regulatory Commission<sup>96</sup> including transmission and wheeling charges<sup>97</sup> while consulting the stakeholders using the appropriate mechanism such as consultative papers. It is essential for the tariffs to be appropriately established in order to incentivise renewable energy generators to sell electricity to Distribution licensees so that the Renewable Purchase Obligations that the entire State Electricity Regulatory Commission is expected to maintain is achieved.<sup>98</sup> It is also necessary for a fixed chain of command to exist while establishing these rates wherein the onus is supposed to lie on the Appropriate Commission,<sup>99</sup> without any interference from the State Governments unless there exists prior communication between the two authorities to avoid any confusion which deters developers due to the lack of ease in management.<sup>100</sup>

<sup>95</sup> Anjana Parikh, 'Environment Ministry Relaxes Lease Rent on Wind Power Projects,' (*Mercom India*, 26 Aug 2019) <a href="https://mercomindia.com/environment-ministry-lease-rent-wind-projects/">https://mercomindia.com/environment-ministry-lease-rent-wind-projects/</a>> accessed 20 April 2020.

<sup>96</sup> Tamilnadu State Electricity Board v. Tamil Nadu Electricity Regulatory Commission, 2011ELR(APTEL)397.

<sup>97</sup> Transmission Corporation of Andhra Pradesh Limited v. Rain Calcining Limited and Ors, MANU/SC/1653/2019.

<sup>98</sup> Indian Wind Energy Association and Ors. v. Andhra Pradesh Electricity Regulatory Commission and Ors., MANU/TD/0018/2015.

<sup>99</sup> The Electricity Act, 2003 [No.36 of 2003], sec 61.

<sup>100</sup> Transmission Corporation of Andhra Pradesh Ltd. and Ors. v. Sai Renewable Power Pvt. Ltd. and Ors., 2010ELR(SC)697, JT2010(7)SC1, 2010(6)SCALE541, (2011)11SCC34, [2010]8SCR636, 2010(7)UJ3299.

#### The Impact on Biodiversity

The current assessment on the impact of wind projects on biodiversity has a few deficiencies, wherein the behavioural analysis of the components of biodiversity such as the collisions of birds and bats with the wind turbines are not consistently studied in an area every month<sup>101</sup> which poses to be a problem as various species have different migratory seasons which brings up the possibility of greater rates of such collisions or other negative impacts being unaccounted for. As a simple example, the study conducted by Ela can be cited wherein it was found that in Bhambarwadi wind farm plateau, out of 89 avian species recorded, 27 of them flew in the risk area swept by rotor blades and were at the risk of collision.<sup>102</sup> Another example of the interference of wind energy with nature is the potential number of Great Indian Bustard deaths being caused by collisions with wind turbines throughout India.<sup>103</sup> If this goes on unchecked, the loss of population in large numbers could lead to ecological imbalance. It is therefore of utmost importance that Environment Impact Assessments only consider documents that possess the holistic empirical data regarding situations wherein all particular circumstances surrounding a study are considered. Although this particular deficiency exists throughout various fields which the Environment Impact Assessment is concerned with, it has been pointed out in this case as there exists relevant precedents emerging out of this deficiency. The Draft Offshore Wind Energy Lease Rules, 2019 state that the lease given to a developer may only be cancelled on harm to underwater flora & fauna which is a shallow understanding of the environment which is enunciated on in the 7th section of this paper.

<sup>101</sup> Mayank Aggarwal, 'Green panel nod for Kutch wind power project despite member's objection,' (*Live mint*, 19 July 2017) <a href="https://www.livemint.com/Industry/naDTMUoCjm7iF9ec9ry2OL/Green-panel-nod-for-Kutch-wind-power-project-despite-member.html">https://www.livemint.com/Industry/ naDTMUoCjm7iF9ec9ry2OL/Green-panel-nod-for-Kutch-wind-power-project-despitemember.html</a>> accessed 20 April 2020.

<sup>102</sup> Satish Achyut Pande et al, 'Avian collision threat assessment at 'Bhambarwadi Wind Farm Plateau' in northern Western Ghats, India, Research Gate,' (*ResearchGate*, Jan 2013.), <a href="https://www.researchgate.net/publication/235803334\_Avian\_collision\_threat\_assessment\_at\_">https://www.researchgate.net/publication/235803334\_Avian\_collision\_threat\_ assessment\_at\_"Bhambarwadi\_Wind\_Farm\_Plateau'\_in\_northern\_Western\_Ghats\_India> accessed 20 April 2020.</a>

<sup>103</sup> PTI, 'Great Indian Bustard deaths: Power firms must lay cables underground, says govt,' (*Energy World*, 25 Nov 2019) <a href="https://energy.economictimes.indiatimes.com/news/">https://energy.economictimes.indiatimes.com/news/</a> power/great-indian-bustard-deaths-power-firms-must-lay-cables-underground-saysgovt/72216552> accessed 20 April 2020.

Many nations have imbibed impact assessments of offshore wind farm installations and operations on the marine fauna into their legislation. Yet, our current knowledge on fish injury and mortality due to pile driving is mainly based on laboratory experiments, in which high-intensity pile driving sounds are generated inside acoustic chambers and on the basis of observation of habitats. The pile-driving activities produce strong impulsive<sup>104</sup> sounds, which may harm marine fishes, eggs and larvae that could cause a shortage of prey to pelagic fishes and reduce adult population<sup>105</sup> of the species largely, causing ecological imbalances. The methods of curtailing noise as suggested in the second section of this paper are essential to be followed.

Offshore wind developers in the US are able to better protect endangered whales because research in the North Sea shows that construction noise temporarily displaces some fish and marine mammals; so they're now timing the building to avoid affecting those species when they are in the area.<sup>106</sup> Targeted monitoring and studying of ecosystems could help minimize unwanted impacts on fish and marine mammals, said United Kingdom-based marine researcher Andrew Gill. He has advocated a holistic research approach that considers how all the species in an area function together. Some of the probable effects are unexpected, on species such as Sharks and Rays who use electro-magnetic ways to hunt for prey and for other species that migrate using similar mechanism.<sup>107</sup> The interference of a large structure that does emit such waves however so small the amount, is to be taken into consideration when an Environment Impact Assessment is being conducted.

Off the Scandinavian coast, a scientist has watched some of the underwater turbine foundations gradually transform into artificial reefs, attracting mollusks and small fish

<sup>104</sup> Christina Mueller et al, 'Effects of pile-driving noise on the behaviour of marine fish', (*Cefas on behalf of COWRIE*, March 2010), <a href="https://www.researchgate.net/publication/228397182\_Effects\_of\_pile-driving\_noise\_on\_the\_behaviour\_of\_marine\_fish">https://www.researchgate.net/publication/228397182\_Effects\_of\_pile-driving\_noise\_on\_the\_behaviour\_of\_marine\_fish</a> accessed 20 April 2020.

<sup>105</sup> Debusschere E, De Coensel B, Bajek A, Botteldooren D, Hostens K, Vanaverbeke J, et al. 'In Situ Mortality Experiments with Juvenile Sea Bass (*Dicentrarchuslabrax*) in Relation to Impulsive Sound Levels Caused by Pile Driving of Windmill Foundations', (2014), PLoS ONE 9(10): e109280. <https://doi.org/10.1371/journal.pone.0109280> accessed 20 April 2020.

<sup>106</sup> Priscilla Brooks, 'Offshore Wind and Right Whales Can Coexist. Here's How,' (Conservation Law Foundation, 5 March 2019)<https://www.clf.org/blog/offshore-wind-right-whalescoexist/> accessed 20 April 2020.

<sup>107</sup> James Keegan, 'Offshore Windmill's Impact on the Marine Environment,' (SharkResearch, 4 March 2015) <a href="https://sharkresearch.rsmas.miami.edu/offshore-windmills-impact-on-themarine-environment/">https://sharkresearch.rsmas.miami.edu/offshore-windmills-impact-on-themarine-environment/</a>> accessed 20 April 2020.

that feed on plankton. Some scientists have described these zones as de facto marine sanctuaries because fishing is often limited directly around the turbines. Seafloor ecosystems may even be recovering in areas where fishermen have "pulverized" the seabed by dragging heavy nets along the seafloor for 100 years, said Jason Hall-Spencer, a marine biologist at the University of Plymouth.<sup>108</sup> This requires a safe method of decommissioning where the portion of the pile that experiences this aquaculture must stay in the ocean bed in order to prevent a large-scale disruption of an eco-system.<sup>109</sup>

#### Privatisation

When it comes to the site selection for offshore windmill farms in Europe, there are 3 main approaches<sup>110</sup>: the open-door approach wherein a developer may approach the concerned authorities for initiation of work on a specific land in exchange for a certain specified price; the zoning approach wherein the concerned authority declares a larger area off the coast for the development of wind farms and the site-specific selection approach wherein a particular identified site is handed over to the developers usually by way of auction. The first 2 approaches offer more flexibility to the developer but also incur a larger risk as it isn't specifically prescribed by the concerned governmental authority which is bound to use its expertise. The process of zone identification and site selection is followed by the site investigation, permitting process and finally, the development is carried out. India has employed all 3 approaches with the Ministry of New and Renewable Energy (MNRE) as the nodal ministry and the National Institute of Wind Energy (NIWE) as the nodal agency<sup>111</sup> for the development of offshore wind energy off the coast of Gujarat,<sup>112</sup> the

<sup>108</sup> Bob Berwyn, 'How do offshore wind farms affect ocean ecosystems?,' (DW, 22 Nov 2017) <a href="https://www.dw.com/en/how-do-offshore-wind-farms-affect-ocean-ecosystems/a-40969339">https://www.dw.com/en/how-do-offshore-wind-farms-affect-ocean-ecosystems/a-40969339</a>> accessed 20 April 2020.

<sup>109</sup> Eva Topham et al, 'Challenges of decommissioning offshore wind farms: Overview of the European experience,'(May 2019), Journal of Physics Conference Series 1222 <a href="https://www.researchgate.net/publication/333238033\_Challenges\_of\_decommissioning\_offshore\_wind\_farms\_Overview\_of\_the\_European\_experience">https://www.researchgate.net/publication/333238033\_Challenges\_of\_decommissioning\_ offshore\_wind\_farms\_Overview\_of\_the\_European\_experience</a>> accessed 20 April 2020.

<sup>110</sup> First Offshore Wind Project of India, 'Procedures for Offshore Wind,' (June 23 2019) pp 4-7.

<sup>111</sup> Ministry of New and Renewable Energy, 'Expression of Interest,' (April 10 2018), <https://mnre.gov.in/sites/default/files/tenders/EOI\_for\_Development\_of\_1000\_MW\_Offshore\_Wind\_Farm\_in\_Gujarat.pdf.> accessed 19 July 2020.

<sup>112</sup> Ministry of New and Renewable Energy, 'EOI for development of first 1000 MW commercial offshore wind farm in India, off the coast of Gujarat,'(*NIWE/PUR/EOI* 

privatisation of such projects being widely encouraged by the centre.<sup>113</sup> The NIWE is also looking into the offshore wind energy potential off the coast of Tamil Nadu and Gujarat under the Met-ocean measurements<sup>114</sup> with 2 zones being identified in Gujarat (zones A and B2) and 2 zones being identified in Tamil Nadu (zones B1 and D1). However, there isn't much transparency in the system as NIWE has not been required to publish the obtained permits and its contents.

For a developer to seek a prospective site, certain searching costs are involved. Therefore, for a private developer to seek a site only by utilising their resources which are most likely inadequate and for the concerned government authority to conduct a site investigation which would then possibly be unfit for development would lead to social costs that would not have been incurred, had the developer not exhausted his expenses inefficiently. Even if the developer does reimburse the authority to save the costs of society (in the form of taxpayers' money), a social cost still exists, technically. However, if the concerned authority conducted a site selection for a large area in the form of zones to shortlist the possibilities and minimise the risks, they wouldn't incur costs as high as they would with a site-specific selection process; and the developers could further restore those expenses incurred by the authority (so as to avoid the exhaustion of the taxpayers' money).

Other suitable methods of privatisation would be Power Purchase Agreements (PPAs), Auctions, Public Private Participation (PPP) and more. However, when auctions are conducted before the investigation takes place, many private players would incur costs in conducting their own separate investigations which would lead to a higher cumulative cost and bids would also occur inconsistently if the face value of the site is not known as it could potentially end up being a redundant site which cannot attain the required permits.

A model category that dwells more deeply into the sharing of the costs and prioritisation is the central-decentral and hybrid model. The central model, which has been imbibed in nations such as Denmark and Netherlands involves the government taking the onus of the initial stages of project planning which includes

*(Offshore\_GUJ)/18,* May 24 2018), <https://mnre.gov.in/sites/default/files/tenders/EOI%20Corrigendum%204.pdf.> accessed 20 June 2019.

<sup>113</sup> Press Information Bureau, 'Generation Based Incentive for Wind Power Producers,' (MANU/PIBU/0350/2015, 9th March 2015).

<sup>114</sup> National Institute of Wind Energy, 'Wind & Solar Resource Measurements / Offshore (WSOM): Met-Ocean measurements,' <a href="https://niwe.res.in/department\_wra&o.php">https://niwe.res.in/department\_wra&o.php</a> accessed 25 June 2019.

the searching for suitable areas for project development, distinguishing suitable sites, coordination of activities, presentation of solutions to conflicts while the developer mainly takes care of the grid development and management. The decentral model (such as in UK wherein the private developer takes care of the site investigation etc.) involves the developer taking care of almost all the requirements of the project, including the identification of sites and the government merely plays a party who exercises vigilance over the functioning as a public trustee.

While the latter model does spare the government of a lot of expenses, it may tend to dwell too deep into neoliberalism and if misused may hand over the reins of common property resources to the concerned private developers as the developers are firstly, not under any current obligation to disclose all their findings to the public unlike the government which is theoretically bound to maintain utmost transparency and is required to minimise the information imbalance between its subjects and itself. The absence of this obligation which arises from the absence of governmental control could therefore influence them to misrepresent their findings on the environmental impact such as aquaculture disturbance, impact on the seabed, impact on the climate, impact on livelihood etc. and would therefore conceal the known negative externalities as long as it does not inhibit the generation of wind energy and supports their requirements profitably. It must be noted that it would be quite unlikely to be able to scrape tangible statistics regarding this issue as the inception of the issue rises from the lack of transparency in the form of information and since these private developers would have a direct control over these figures, they may be able to easily furnish and veil what the world actually receives the liberty to view. Secondly, they would be bound to attempt to achieve the maximisation of their returns and therefore they would minimise their costs by not investing as much of their expenditure into facets that they don't consider to be as important for the purpose of maximising their revenue and therefore their lack of conformance to the priorities of the society would lead to an inefficiency in the allocation of efforts and further, lead to intergenerational inequity. Although UK does follow a decentral system and is the leading deployer<sup>115</sup> of offshore wind energy,<sup>116</sup> it is highly likely that not all components of the environment are being reviewed as the compensatory

<sup>115</sup> Global Wind Energy Council, 'Global Wind Report 2018,' (*GWEC*, April 2019), <https://gwec.net/wp-content/uploads/2019/04/GWEC-Global-Wind-Report-2018.pdf> accessed 20 June 2019.

<sup>116</sup> Martin Whitmarsh, 'The UK: offshore Wind Industry: Supply Chain Review, Offshore Wind Industry council,' (June 19 2019), <a href="https://cdn.ymaws.com/www.renewableuk.com/resource/resmgr/publications/supply\_chain\_review\_31.01.20.pdf">https://cdn.ymaws.com/www.renewableuk.com/ resource/resmgr/publications/supply\_chain\_review\_31.01.20.pdf</a>> accessed 20 April 2020.

Environmental and Social costs accounts for the costs charged to energy users by the Office of Gas and Electricity Markets only includes the "costs of government programmes to save energy, reduce emissions and encourage take up of renewable energy"117 and has nowhere listed the restoration of the seabed, the rehabilitation of surrounding aquaculture etc. or costs to actually restore the environment. Rather than incurring expenses while actively benefiting to the environment, the OFGEM therefore makes its prime focus with regards to the environment; the costs of making renewable energy more available and has therefore equated renewable energy to efforts in the furtherance of environmental concerns which is an inadequate perspective. This coupled with its initiative to drive down the costs of supply of energy to its customers<sup>118</sup> makes it highly likely that the factors which could potentially lead to environmental deterioration are not being considered. The precautionary principle must be employed as it would be unjust for the privileged to resume their functions purely due to the lack of tangible proof which they have the ability to regulate. Therefore, all efforts must be taken to avoid conflicts of interests which is being condoned in the status quo and the entities providing information should not be the same ones benefitting out of the absence of perfect information.

The permit process involves compliance with the requirements laid down by various authorities. In Denmark, single points of contact<sup>119</sup> between the private developers and the public authorities have been laid down which minimise the time, money and resources exhausted by the developer in seeking permits from various departments. As per the National Offshore Wind Energy Policy adopted by India, the NIWE holds similar functions by coordinating the permits, clearances and NOCs.

#### The Clearances Required for Offshore Wind Energy Projects

There is an array of benefits provided by Offshore Wind systems over the traditional wind turbine systems. The issue of shadow flicker<sup>120</sup> faced by humans is almost

<sup>117</sup> OFGEM, 'Environmental and Social costs,' <a href="https://www.ofgem.gov.uk/key-term-explained/environmental-and-social-costs">https://www.ofgem.gov.uk/key-term-explained/environmental-and-social-costs</a> accesssed 20 April 2020.

<sup>118</sup> OFGEM, 'Ofgem cuts costs of a smarter, fairer and cleaner energy system,' (*OFGEM*, 18th December 2018) <a href="https://www.ofgem.gov.uk/publications-and-updates/ofgem-cuts-costs-smarter-fairer-and-cleaner-energy-system">https://www.ofgem.gov.uk/publications-and-updates/ofgem-cuts-costs-smarter-fairer-and-cleaner-energy-system</a>> accessed 20 April 2020.

<sup>119</sup> Denmark Energy Agency, 'One Stop Shop,' <a href="https://ens.dk/sites/ens.dk/files/Globalcooperation/onestopshop\_draft\_2018\_oct.pdf">https://ens.dk/sites/ens.dk/files/Globalcooperation/onestopshop\_draft\_2018\_oct.pdf</a>> accessed 17 June 2019.

<sup>120</sup> Loren D Knopper& Christopher A Ollson, 'Health effects and wind turbines: A review of the literature,' (2014) <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3179699/>accessed 20 April 2020">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3179699/>accessed 20 April 2020</a>.

eliminated by moving wind projects off the coast and away from conventional human habitats, the necessity of land is eliminated which benefits the land distribution potential and gives rise to various other benefits.

Wind power plants are currently exempted from the 2006 Environment Impact Assessment Notification and are also exempted from various other clearances as the Central Pollution Control Board (CPCB) quite recently has placed them under the white category<sup>121</sup> of industries. Under these directions, the said white industries are not required to obtain a Consent to Operate (CTO) from the State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) and a mere intimation to the concerned SPCB and PCC is said to suffice. Although the CPCB's move to create a codified system wherein all the state authorities had to follow a single categorisation system is quite positive, it has been counterproductive by relaxing the regulations on these "white category industries" as it has employed a one-dimensional approach to the concept of pollution. It must be understood that it is inefficient to exempt an industry from "pollution" as the term itself is multifaceted and includes various aspects such as air pollution, water pollution, land pollution, noise pollution etc. For example, although it is likely for an industry to have extremely low rates of land pollution or water pollution, it may be inclined to contribute to noise pollution and air pollution. It is still unclear whether offshore wind energy projects come under the purview of "wind power plants" which has been placed under the white category industry but there has been no separate categorisation of "offshore wind power plants" or anything similar to the field which leads to such a conclusion being made. It is understood that the CPCB would not have dwelled much on offshore wind energy as it remains to be an extremely untouched field in India with extreme rarity and low occurrences but it still must be a priority considering the potential development and the scope of exploitation in an unregulated field.

The problem of noise pollution as faced by humans in particular is solved to a large extent as a result of offshore wind systems as their sleeping pattern disturbances

<sup>121</sup> Central Pollution Control Board, 'Modified Directions under sec 18(1)(b) of the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 regarding harmonization of classification of industrial sectors under Red/ Orange/ Green/ White categories,' [No. B-29012/ESS(CPA)/2015-2016], <https:// cpcb.nic.in/uploads/Latest\_Final\_Directions.pdf> accessed 20 April 2020.

and other physiological effects are now minimised.<sup>122</sup> Noise pollution has been regulated under the Air (Prevention and Control of Pollution) Act, 1981 and under schedule-3 of the Environment Protection Act, 1986 which lays down the Noise Pollution (Regulation and Control) Rules. Although there is barely any effect of noise pollution caused by offshore wind farms that is faced by humans, there is a need to regulate this noise as it can affect the behaviour and functioning of various avian species, bats, aquatic life and more due to the humming noise produced. Currently, Section 21 of the Air (Prevention and Control of Pollution) Act mandates the need to procure a Consent to Establish (CTE) and Consent to Operate (CTO) for wind projects. Pile driving is the most common method of erecting the foundation of wind turbines<sup>123</sup> and this process involves the generation of a lot of noise which may mask the calls of various marine species (and avian species to an extent) and may lead to their displacement etc. It must be the state's endeavour to take the clearances required under these provisions as seriously as they do in other circumstances if not more and they must not relax the norms just because humans in particular would experience marginal effects of such noise. The effects of noise pollution<sup>124</sup> on various other species has been documented<sup>125 126 127 128</sup> and in order to avoid any disruption in their sustenance which can also lead to an effect on humans due to ecological imbalance through an array of ways, the norms must be upheld.<sup>129</sup>

A wind power project is required to take authorisation from the State Pollution Control Board under sec 5 (1) of the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 as it uses generator cooling fluid, lubricating

124 Hanuman LaxmanAroskar v. Union of India (UOI) and Ors., 2020(1)ALT318.

129 Savage, R (on the application of) v. Mansfield District Council & Anor, [2015] EWCA Civ 4.

<sup>122</sup> Sherry Lange, 'Heath Effects from Industrial Wind: Australian Testimony,' (5 August, 2015) <a href="https://www.masterresource.org/windpower-health-effects/au-testimony-laurie-ii/">https://www.masterresource.org/windpower-health-effects/au-testimony-laurie-ii/</a> accessed 20 April 2020.

<sup>123</sup> Helen Bailey 'Assessing environmental impacts of offshore wind farms: lessons learned and recommendations for the future,'(2014), <a href="https://aquaticbiosystems.biomedcentral.com/articles/10.1186/2046-9063-10-8#citeas">https://aquaticbiosystems.biomedcentral.com/articles/10.1186/2046-9063-10-8#citeas</a> accessed 20 April 2020.

<sup>125</sup> Christensen, Thomas Kjær, Petersen, IbKrag& Fox, Anthony D, 'Effects on birds of the Horns Rev 2 offshore wind farm: Environmental Impact Assessment,' (*National Environmental Research Institute Ministry of the Environment*, Denmark 2006) <http://www. dmu.dk> accessed 20 April 2020.

<sup>126</sup> John Paul Martin Jarrett and ors. v. Secretary of state for communities and Local Government, [2012]EWHC3642(Admin).

<sup>127</sup> Reet Mohinder Singh and Ors. v. State of Punjab and Ors., (2019)195PLR787.

<sup>128</sup> V. Lakshmipathy and Ors. v. Respondent: State of Karnataka and Ors. AIR1992Kant57.

oil, hydraulic oil etc., which comes under the purview of "used oil" in sec 3 (ze). If the above stated by-products do come under the purview of "trade effluent"<sup>130</sup> defined under sec 2(k) of the Water (Prevention and Control of Pollution) Act, 1974 which "includes any liquid, gaseous or solid substance which is discharged from any premises used for carrying on any 3 [industry, operation or process, or treatment and disposal system], other than domestic sewage", then ideally, the permits must be sought under the said act too in order to uphold its intention as pollution to sea-waters is covered to an extent to by the act as "stream" includes "sea or tidal waters to such extent or, as the case may be, to such point as the State Government may, by notification in the Official Gazette, specify in this behalf".<sup>131</sup> However, the permits under the Water (Prevention and Control of Pollution) Act, 1974 would be unnecessary under the norms which classify wind energy plants as white category industries. This combination of facts does point to the possibility that the legislators did not consider the perfect information while implementing the updated norms. It could be claimed that the exemption under the Water Act is calculated to avoid the duplication of efforts, however it is likely that the authority under the Hazardous Wastes Rules would not consider all the aspects regarding water pollution such as the concerned board under the Water Act would. In order to account for the potential issues from all possible dimensions, it is essential for both authorities to research on the matter from different aspects unless there is an explicit exercise of the board's functions under the Water Act by the authority under the Hazardous Wastes Rules.

There is no displacement of persons for this system as there is no land to be acquired, therefore saving up on space. However, while the problem until now has largely included the clearance of forest areas for wind projects which in turn translated to the loss of ecology, the loss of habitats of forest dwellers, indigenous people etc; there is also the issue of the impact of offshore wind projects on marine ecology, aquaculture etc. which needs to be considerably weighed.

The Draft Offshore Wind Energy Lease Rules, 2019<sup>132</sup> has defined "offshore wind energy projects" as "deployment of Wind operated Electricity generators within the exclusive economic zones of the Country (200 nautical miles from the coast line on

<sup>130</sup> Water (Prevention and Control of Pollution) Act, 1974, Act, No. 6 of 1974, S. 2(k).

<sup>131</sup> Water (Prevention and Control of Pollution) Act, 1974, Act, No. 6 of 1974, S. 2(j)(v).

<sup>132</sup> Draft Offshore Wind Energy Lease Rules 2019.

the sea bed) to generate electrical power in natural sea environment for exploitation of wind energy potential, assessed through various resource assessment/studies/ investigations" while traditional wind energy projects generally refer to those that are onshore. So, it is quite likely that the Ministry of New & Renewable Energy would advocate the separate categorisation of such offshore initiatives. The lack of coordination between the concerned ministries, boards and other authorities regarding such definitions could potentially cause graver lacunae in policy, legislation, regulations and more; therefore; making it a priority which deserves to be placed on a reasonable pedestal. The said draft rules have taken a fairly forward step by placing a provision which states that "Causing environmental damage to both flora & fauna beneath the sea water and posing threat to human life and property while carrying out the activities under water and operation of the wind energy turbines during validity of the lease"133 is a ground for the cancellation of a lease for the development of offshore wind energy projects. Although they have expressed this intent to preserve the environment through a draft document, the current potential seems quite positive. however a more specific mechanism to achieve such preservation would be fairly ideal. Further, the MNRE has been fairly shallow while considering the extent of environmental damage that could be caused by Offshore Wind Energy Projects as they have restricted the scope of such damage to what takes place beneath the sea, completely neglecting the biodiversity above and around the sea in the process such as migratory avian species which may collide with the structures erected under the execution of the projects due to the interference with their migration routes. To do so, the ministry may place a vigilance committee for the same and mandate the concerned developers to publish their reports during frequent periods. The expectation for this mechanism is not excessive as it is essential to specify the procedural component of the law in rules unlike substantive laws which mainly come forth as "acts" conveying the knowledge a layman must have for refraining from and performing specific activities.

Wind projects are currently exempted from the Environment Impact Assessment but it has been proven that such an assessment needs to be conducted to protect the biodiversity and ecological balance. The concept of "transboundary cooperation" must be embodied as most of the affected species are migratory and therefore an

<sup>133</sup> Draft Offshore Wind Energy Lease Rules, 2019, Rule 17 (d).

impact in the state where such a project has been initiated may affect the ecology of another region, giving rise to the need for clearance of such a project by the Central government in a manner that the information asymmetry is minimised. Therefore, it is optimal to recategorize such projects under the Environment Impact Assessment.

# CONCLUSION

In 2016, it surpassed its wind energy target by 116%.<sup>134</sup> There are multiple benefits of Offshore Wind Energy Projects such as the absence of any land requirement which prevents the conventional effects such as displacement of persons and communities, shadow flicker, interference with forest ecology. Further, it is a development in the direction of more renewable energy which is fairly sustainable since the productivity of an offshore wind energy farm is higher than that of a wind energy farm which is erected onshore due to the extremely high speeds of wind, subject to the costs of maintenance. Any development in the direction of broadening the horizon of renewable energy is therefore generally viewed as positive.

While there do lie an array of negatives to offshore wind energy such as the effect of marine ecology, the effects on migratory avian species and the potential seismic interference of such projects, there lies a middle-ground. Most of the negatives arise out of excessively relaxed norms or standards that have not been thoroughly considered which causes a need to improve the regulation of this industry rather than holding back its progress. The Environmental Impact of Offshore Wind Energy projects on marine ecology, aquaculture and flora & fauna beneath the sea needs to have specific standards established with detailed metrics. Since this is an area which the MOEF has expertise on, the said onus must be placed on them. Any EIA which studies the effect on biodiversity must depend on reports conducted on a seasonal basis since migratory species may be affected by the projects during specific seasons and not perennially. The Draft Offshore Wind Energy Lease Rules, 2019 give grounds for cancellation of the lease on the basis of environmental damage being caused, which is a positive step. However, the scope of environmental damage is restricted to flora & fauna beneath the sea while it should also consider the biodiversity above and around the sea; and a humongous set of costs can be spared if the potential

<sup>134</sup> United Nations Climate Change, China and India Lead Global Renewable Energy Transition, (Alianz SEKoeniginstr, 21<sup>st</sup> April 2017).

damage is properly evaluated beforehand, which is why a detailed EIA is of extreme importance.

There must be clarity in categorisation of Offshore Wind Energy projects to avoid the confusion in conformity to the norms between Offshore Wind Energy Projects which have been defined under the Draft Offshore Wind Energy Lease Rules, 2019 and Conventional Wind Energy which has been placed under the white category. An additional suggestion is to withdraw Wind Energy projects from the white category as the conformances to clearances depends on the geographical location of the project. For example, if a Wind Energy project is to take place near a forest area or biodiversity hotspot, it is likely that the noise caused by it would disrupt avian specie patterns while a similar project in a relatively urban locality would not require the same level of vigilance. It is therefore suggested that the onus must be placed on SPCBs and PCCs to categorise industries on a regional basis within their states and territories, subject to the CPCB's approval. While the wind energy sector does face drawbacks, the sector is not inherently a poor investment and therefore, the regulations should be shaped to balance out the developer's, the people's and the environment's needs.

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### **BOOK REVIEW**

# NATURE CONSERVATION IN THE NEW ECONOMY: PEOPLE, WILDLIFE AND THE LAW IN INDIA by Eds. Ghazala Shahabuddin and K. Sivaramakrishnan\*

- Dr. M. K. Ramesh\*\*

This edited work is a collection of nine papers, woven round the theme, "contemporary issues in nature and biodiversity conservation". These are drawn from the presentations made in a workshop entitled, "Wildlife Conservation in India: From Policy to Practice", a few years back, in Delhi.

It is claimed that the contributions are, in a way, attempts intaking stock of the developments of about 25 years, starting from 1991(when the ambitious economic reforms were initiated) that laid greater emphasis on economic growth, its impact on natural resources and nature conservation areas and the policy and legal responses to them, in India. However, as one goes through the papers, it becomes evident that the entire effort remains primarily confined to impacts of developmental decisions, during the period, on wildlife conservation. Even on this limited scale, curiosity of the reader is kindled to look for comparison of the impacts of the market forces on conservation during the said period, with those during the three decades preceding it; to assess the extent of emphasis for environmental conservation, committed to by India, internationally, right from the first Global Environmental Summit

<sup>\*</sup> Orient Black Swan Pvt. Ltd., (2019).

<sup>\*\*</sup> Professor of Law, NLSIU.

at Stockholm (Human Environment Summit, 1972). This aspect has, somehow, escaped the attention of the authors.

None the less, the fairly elaborate introductory chapter by the Editors gives a brief overview of the culture of conservation of wildlife and the impact of various systems of governance upon it, over time. Reflections abound as to the nature and extent of control by the Centre and States over resources, with a greater degree of managerial role assigned to the Local Government Institutions, at the start of the period of enquiry in this work. The editors contend that all other subsequent developments like, the Forest Rights Act, 2006, and the Joint Forest Management Programme, could not really engage Communities in Resource Management, in a meaningful way. This was despite the recognition of rights of the communities over them under the new law and even assigning a role for the community in natural resource management through governmental programmes. As these were viewed, predominantly by the Conservationists and the Wildlife authorities (-who wielded enormous decisive influence in the working and decision-making in the resource management regime-) as no more than populist measures and, instead of addressing the concerns of conservation, they had a detrimental effect. Added to this, they believe, increase in population, economic development decisions and actions, in an accelerated manner, in forest and wildlife rich areas, contributed significantly to weaken the desire, determination and commitment for conservation. In addition, they believe, "the cacophony of voices over the conservation of more attractive species such as the Asian Elephant", ignored the loss of a large number of unknown and "less important species". They also highlight the irony of proliferation of laws for environmental protection and resource conservation and their poor implementation, majorly contributing to more stress on Protected Areas and loss of many valuable ecosystems and varieties of plants and animals.

Reflections on the Wetland Policy and the regulations concerning the Coast, a subject of interest for the researcher in law provides rare and valuable insights. The take on the market-forces responsible for weakening of social arrangements and institutions, and the role of science in conservation, both in the introductory part and in some of the papers, should be of particular interest to those engaged in discourses on Environmental Ecology, Market- mechanisms, work of voluntary groups and human rights. The well written analytical introductory chapter, appropriately sets the mood,

atmosphere and the context for the entire work and the justification of the need for such an exercise. The brief peep into the gist of the contributions of each of the authors given in the introduction, enables, enthuses and prepares thereafter to delve deep into the Papers that follow.

Authors to this interesting work are drawn mainly from the Academic Research Community, some of whom are having experience in working in and with voluntary groups. The Research Papers cover a fairly wide range of areas like, community forest management; problems of wildlife protection in the north-eastern autonomous regions; protection of habitats of Cheetah and Pine Trees; Management of Ecosystems, like Wetlands and the Coast; protecting wildlife in urban spaces of Delhi and the forests from humans!

Although, the approach is intended be multi-disciplinary, there is a greater emphasis on ecological and natural sciences and social organisations. Critical and evaluative analysis of policy and law, except in the introductory chapter, is mainly confined to issues of implementation.

The work is embellished by a number of photographs, tables etc. It is, indeed, a fairly commendable effort that can serve as good paradigmatic base for researcher in a wide variety of disciplines. A true value addition to Libraries of Research Institutions engaged in Academic and Research work concerning Environment, Forests and Wildlife.

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### **BOOK REVIEW**

# POST-GROWTH THINKING IN INDIA: TOWARDS SUSTAINABLE EGALITARIAN ALTERNATIVES

## by Eds. Julien-Francois Gerber and Rajeswari S. Raina\*

- Dr. M. K. Ramesh\*\*

The last fifty odd years has witnessed a raging and unending debate between the proponents of "Development" with those of "Environment" over natural resource management. The pendulum has swung between, "Limits of Growth" and "Green Growth", with the idea of "Sustainable development" coming in between to give a pretence of balance. Call it a pastime or passion, it has occupied the mindscape of an "Economist" of every colour, creed or description, in the West.

Every time when policies get formulated and laws made, on any aspect of environment and the natural resources, these ideas invariably make their presence felt and, with few honourable exceptions, the "Western Model of Development" will have the field-day, the world over. India is no exception. While there is abundance of literature on this subject by Western Thinkers, significant contributions have emerged from this part of the world, in recent times. But, there is a dearth of literature containing reflections on these, by the leaders among them from India, about the options available for India at the present moment. The book on hand appears to meet this demand.

<sup>\*</sup> Orient Black Swan Pvt. Ltd., (2018).

<sup>\*\*</sup> Professor of Law, NLSIU.
Edited by Julien-Francois Gerber and Rajeswari S.Raina, *Post-Growth Thinking In India*, is a collection of papers by a very distinguished group of Academic Scholars, Activist-researchers, from India, who have spent a life-time researching on the subject. The perspectives they present are, indeed, arguments for a fundamental re-thinking of growth, well-being and development". "Post-Growth Thinking", as the approach having its roots also in the West, started gaining traction in this part of the world by early nineteen eighties. The authors of the work under review are some of the most prominent representatives of the group. Their primary concern is to explore for "alternatives to the current global model promoting western- type growth driven societies".<sup>1</sup> This thinking is not new to India.

Lucid and elaborate introduction, provides an excellent backdrop for the arguments that follow, in the contributions of an eminent group of authors. Anchored to the "clear warning about the illusion of endless growth",<sup>2</sup> this book, questions the virtues of the claims of western capitalist growth model about its social and environmental costs, as seen through the lens of Indian scholarship on the subject. The uninitiated reader to the approach is helped by the Editors as they get into great lengths of explanation of this "critique of growth" and the different strands that weave into the Post-Growth argument. It questions the main pillars of the Western Capitalist Growth Model by asserting that technically advanced and efficient economies consume more resources than they conserve; that high GDP in no guarantee of being environment friendly; that since transition to renewables can only provide enough energy metabolism for economies with less production and consumption and not ideally suited for bigger economies (including India), as they invariably have to fall back on conventional energy (primarily, coal) to meet their demands and that endless economic growth cannot be assumed to improve happiness, etc.<sup>3</sup> The proponents of Post-Growth emphasise a return to "need based approach" for guiding development policies. They desire abolition of GDP as a useful indicator for economic growth policies. Instead they offer a number of alternatives like, "green and inclusive growth", "Gross National Happiness". For them it is not sufficient to "live well" but to "live better"! In explaining the relevance of Post-Growth Thinking

<sup>1</sup> Julien-Francois Gerber and Rajeswari S.Raina, Post-Growth Thinking in India: Towards Sustainable Egalitarian Alternatives (Orient Black Swan Pvt. Ltd. 2018) 8.

<sup>2</sup> Donella H. Meadows and others, *Limits of Growth* (Potomac Associates 1972).

<sup>3</sup> Julien-Francois Gerber and Rajeswari S.Raina, Post-Growth Thinking in India: Towards Sustainable Egalitarian Alternatives (Orient Black Swan Pvt. Ltd. 2018) 5.

to India, the editors reveal and remind the readers that it had its roots deep in South Asia, in Gandhian and Buddhists thoughts.<sup>4</sup> The fourteen papers that constitute the book, are divided into three major themes: why growth is not the answer; conceptual concerns and contexts and elements of a post-growth programme. The last one, comprises of a number of options to wean away the current thinking into a new world order! It includes, among others, "radical ecological democracy", based on Indian notion of "ecological swaraj"<sup>5</sup> and the need for a 'civilizational change' towards a society with a smaller metabolism, that aims at enhancing localized, democratic and equitable economies.<sup>6</sup>

It is the desire of those responsible for the creation of this work that it would, "offer some preliminary insights for reflection, dialogue, action and education".<sup>7</sup> Profound thought that should interest anyone concerned about the current state of rapidly degrading environment as a result of environmentally unsustainable plans, decisions and actions, to browse through, mull, reflect upon the feast of highly thoughtprovoking write-ups in this book.

Going through the entire book, may not be that easy for a Lawyer, Law Academic and Law Researcher as the language used, the form, frame and substance are not in the familiar street that he treads. But, a little effort would open up new vistas of learning for him to size up the trans-disciplinary contexts and drivers for environment and developmental decision-making processes, laws and their working.

Law Schools and Law Colleges in India, engaged in serious learning of Environmental Law and Natural Resources Management would find this book of great value and utility. This is especially so, as it echoes the familiar sentiments and concerns of the Developing South of which India is a part and directs one to the pathways for securing ecological and human equity.

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<sup>4</sup> Julien-Francois Gerber and Rajeswari S.Raina, Post-Growth Thinking in India: Towards Sustainable Egalitarian Alternatives (Orient Black Swan Pvt. Ltd. 2018) 19.

<sup>5</sup> Ashish Kothari, 'Radical Ecological Democracy: An Orchestration of Alternatives for a Post-Growth India' (*Great Transition Initiative*, July 2014) <a href="https://greattransition.org/">https://greattransition.org/</a> publication/radical-ecological-democracy-a-path-forward-for-india-and-beyond> accessed 5 June, 2020.

<sup>6</sup> Vandana Shiva, 'How Wealth Creates Poverty' (*Resurgence & Ecologist*, 2007) <a href="https://www.resurgence.org/magazine/article250-how-wealth-creates-poverty.html">https://www.resurgence.org/magazine/article250-how-wealth-creates-poverty.html</a>> accessed 5 June, 2020.

<sup>7</sup> Julien-Francois Gerber and Rajeswari S.Raina, Post-Growth Thinking in India: Towards Sustainable Egalitarian Alternatives (Orient Black Swan Pvt. Ltd. 2018) 24.

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## **BOOK REVIEW**

## IDEA AND METHODS OF LEGAL RESEARCH by Ishwara Bhat\*

- G.B. Reddy\*\*

Research is the act of searching into a matter closely and carefully, and an inquiry directed to the discovery of truth. It is the trained scientific investigation of principles or facts of any subject, based on original and first hand study of authorities or experiment. It is said that without 'research' no authoritative works have been written, no scientific discoveries or inventions made, no theories of any value propounded. Legal research in India since independence has been one of the areas which attracted insufficient attention and focus. It is well known that Law is a tool of social engineering and governance in modern times. A sound legal research is a *sine qua non* for making the laws, their interpretation, adjudication of disputes by courts and tribunals, and also their effective enforcement. Some of the scholars say that one must aim for sound and publishable research, not unattainable perfection,<sup>1</sup> though it is essential to inculcate honest and dispassionate investigation.

Many of us feel that there are not many Indian books written on legal research in India, and very few of them are worthy of being called standard books on legal research. Another factor could be that law is always treated as a subject of social science stream. This factor, in the humble opinion of this reviewer has been primarily

<sup>\*</sup> Oxford University Press, New Delhi, 1<sup>st</sup> Edition 2019.

<sup>\*\*</sup> Professor, University College of Law, Osmania University, Hyderabad-500007 India.

<sup>1</sup> Wortley B.A., 'Some Reflections on Legal Research' in S.K.Verma & Afzal Wani (eds), *Legal Research and Methodology*, (Indian Law Institute, 2nd edn, 2001) Page 5.

responsible for preventing the law getting its due recognition as a professional course, and 'legal research' emerging as a separate stream of specialized domain of research. The net result is that either the legal research scholar referred to the various editions of ILI publication "Legal Research and Methodology" first published in 1983<sup>2</sup> containing about 40 articles on various aspects of legal research written by different authors, or simply to refer to Kothari's 'Research Methodology-Methods and Techniques' first published in 1985.<sup>3</sup> In between one could see the glimpses of certain brilliant research works of people like Rajeev Dhawan and Upendra Baxi.

Legal research in modern times is necessary not only as part of legal studies like LL.B., LL.M., M.Phil., and Ph.D. in Law, but also for law practitioners, law makers, law teachers, NGOs, social/rights activists, legal administrators and judges. Similarly, legal research methodology is essential component of the LL.M. syllabus as a compulsory paper. Thus, conducting legal research in an effective manner becomes essential. For that, standard literature is required and there has been a huge gap in that domain at least in India.

I have had the opportunity of reviewing Prof. P. Ishwara Bhat's seminal work on legal research entitled 'Idea and Methods of Legal Research' first published in 2019. This is an instance of effective research on legal research with reference to modern trends. This book published by Oxford University Press in print and online, consists of a total of 661 pages of sheer brilliance on legal research and its different methods. There are altogether five parts in the book dealing with general introduction, doctrinal method of legal research, non-doctrinal method of legal research, integrated methods of legal research and research reporting. There are as many as 18 well written chapters pertaining to the above five broad topics. There are 18 tables, 7 figures and about 220 cases apart from a very useful appendix relating to different modes of citation.

The unique feature of this work is that the arrangement of the topics has been done in a very systematic and scientific manner i.e., right from conceptualization of the idea, its manifestation in the form of research work, and finally culminating in the form of report. Another feature which is impressive in the book is the use of abundant number of illustrations and case laws, to explain different concepts and methods.

<sup>2</sup> See S.K.Verma & Afzal Wani (eds), Legal Research and Methodology, (Indian Law Institute, 2<sup>nd</sup> edn, 2001).

<sup>3 1</sup>st Ed, 1985, Wishwa Prakashan, Delhi.

The branches of law covered to highlight different methods and steps are diverse ranging from jurisprudence to criminal laws. The references range from history and culture to feminist legal theory.

Coming to the individual papers, the first paper on 'legal research methodology, purposes and footsteps' highlights lucidly the importance of knowledge and research, conceptual explanation of research, importance of legal research, footsteps of Indian legal research and taxonomy of legal research. The author has spread his canvass very wide to present a very impressive introduction to legal research by making references to establishment of NLSIU, Bangalore in 1988, UGC initiatives relating to research pedagogy, and the recommendations of the National Knowledge Commission. Even a layman will be compelled to read this book once he reads the introduction. The second chapter on diverse models on thinking process in legal research explains the reflective thinking, its meaning, significance and process, ancient Indian epistemology as a precursor to the scientific method of research, and inductive and deductive methods of reasoning in legal research etc. The author ultimately concludes that thinking process is central to research activity and advocates avoidance of haphazard thinking. The third chapter is on objectivity, value neutrality, originality and ethics which are the most essential characteristics. The author made references to the ancient sources, western writings on legal research to drive home the importance to adhere to the above values and originality. Any prospective researcher with a preconceived notion or stereotyped thinking would do well to assimilate the essence of this chapter to ensure originality and objectivity in legal research. With regard to plagiarism which appears to be the order of the day in all kinds of research including the legal research, Prof. Bhat explained its concept, and the UGC Regulations of 2018 relating to promotion of academic integrity and prevention of plagiarism. The fourth chapter gives a way forward to selection of research problem, and also highlights the emergence of inter-disciplinary research in law. Doctrinal Legal research (DLR) has been succinctly explained in fifth chapter by comparing and contrasting it with Non-Doctrinal Legal research (NDLR). During this age where the popular thinking appears to be against the efficacy of DLR, this chapter puts the things in right perspective.

The sixth chapter analyses the contours of analytical legal research including the analysis and synthesis of legal norms. The explanation of Historical Legal research (HLR) is made in a very interesting manner to bridge the gap between the past and

the present in the seventh chapter. The author succeeded in generating interest in connecting the time, history and law in a lucid manner. The Philosophical Research in Law has been one of the neglected areas. The author traces and points out its possibilities in the eighth chapter. He rightly quotes John Rawls' epoch-making work on justice, Amartya Sen's idea of justice, and Upendra Baxi's discourse on future of human rights as proper instances of philosophical research works. The nineth chapter discussed the Comparative method of Legal Research (CLR), its methods and steps and different kinds of comparison. He also highlights the limitations of CLR. The tenth chapter is on Empirical Legal Research(ELR), which is the evidence-based research involving systematic collection of information and its analysis. To illustrate the ELR, the author refers to the Death Penalty Research Project of National Law University, Delhi and the UNICEF Project of NUJS, Kolkata. He describes ELR as a product of Sociological and Realist schools of thinking, and characterizes it as interdisciplinary. He also explained the expanding horizons of ELR in recent times.

The eleventh chapter is on tools of data collection in NDLR. The traditional methods and also emerging methods like the Focused Group discussion (FGD) have been comprehensively discussed in this chapter. Qualitative Legal Research(QLR) as a methodological discourse has been discussed in the twelfth chapter. In this chapter, the author discussed the distinction between the qualitative and quantitative methods of legal research(QtLR). Quantitative Legal research is one of the methods avoided by many legal researchers. The thirteenth chapter discusses the increasing importance of QtLR, the American experience, its relevance in the Indian context especially where statistical data has been relied upon by the Indian courts like in the case of Mohd. Hanif Quareshi (1958, SC) and Rajasthan Unaided Schools case (2012, SC) have been explained well by the learned author in the 13<sup>th</sup> chapter. In fact, this chapter demystifies the QtLR in more than one way, and can be considered as a highlight of the book.

The author clarified the oft asked question as to the best method of legal research in the 14<sup>th</sup> chapter dealing with the Multi-Method Legal Research(MMLR). He explained the scope. need and potentiality of MMLR. The Policy research in Law, another forgotten area in India which would become beacon light in formulating various policies by the Government has been analyzed in the 15<sup>th</sup> chapter. The 16<sup>th</sup> chapter deals with Action Research in Law, and its role and methods with special reference to human rights. Feminist Legal Research, another emerging area in recent

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times is the subject matter of discourse in the 17<sup>th</sup> chapter. The last chapter focuses on the legal writing based on research, which explains the nuances of report writing.

Any reader, after going through this seminal work by Prof. Ishwara Bhat can't help but feel that he has swam across an ocean of legal research. It has everything to offer to every stakeholder relating to the legal field irrespective of the capacity. Though the author appears to have been influenced by the best practices of legal research published by the Indian Law Institute, he retained his own identity in dealing with a difficult subject in a comprehensive manner. Being an accomplished legal scholar of international repute, acknowledged not only among the academicians but also among the lawyers and judges, Prof. Bhat has contributed a substantial resource on legal research and its methods. He has succeeded in filling up the glaring vacuum in the standard literature on the subject by providing everything in a single book. The uniqueness of the book is that it addresses ancient and modern methods of legal research which caters to the needs of Indian and international scholars. He has unearthed the rich reservoir of the best values and practices of legal research in ancient Indian jurisprudence while keeping pace with the latest developments in law, judicial behavior and contemporary global developments. Here is an invaluable book useful to every law student, researcher, lawyer, teacher, judge and policymaker. The book deserves to be in the library of every law school, advocate's office, court and chambers of every judge not to forget the law teachers and scholars. Already prescribed as a reference book on legal research methodology in several law schools and universities, the book has rendered yeoman's service to one and all, as a single window to the world of legal research.

The language used, illustrations given, authorities and judgments cited, the systematic arrangement of chapters and parts, and the sincere effort to simplify the legal research methodology are the assets of the book. At the cost of repetition, it must be said that it has demystified a complex subject for the benefit of all.

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