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EDITORIAL

Environmental law, as a standalone discipline, arose in the 1960s in the major industrial economies. After the increased awareness about the importance of this domain triggered by a series of international conferences in the 1970's, it is fast becoming an important and essential branch of international and domestic law across jurisdictions. The need for environmental law is being felt now more than ever due to increased exploitation of earth's resources under the garb of "development." The world community is striving to strike a balance between economic development and environmental protection. Over the years, this law has adopted a more inclusive approach moving from a mere 'command and control' style of regulation to one which allows stakeholders to adopt targets and deliverables voluntarily. The outcome of such practices includes eco-taxes, emission allowance, negotiated agreements and other such applications. Therefore, today protection of the environment is one amongst the several facets of the ever-expanding paradigms of environmental law, albeit the most crucial one. With development, the challenges posed to environmental governance have been dynamic, thereby posing greater responsibility on states and stakeholders. Vol. VIII of the Journal attempts to bring to the fore some recent developments in the field of environment law and policy that merit an intellectual discourse.

Dr. Francine Rochford in her article titled '*A Tortious Duty of Care in Environmental Decision-Making?*', analyses the appropriateness of the tort of negligence for the protection of the environment – particularly for protection against threats arising from climate change and considers the operation of the 'salient features' approach to establish that a duty of care is owed by the State, comparing current judicial approaches to the tortious duty of care in Australian and Indian jurisdictions.

Dr. Chiradeep Basak in his article titled '*Mitigating Transboundary Haze Pollution in South-East Asia: Exploring the Techno-Legal Avenues of ASEAN*' highlights the environmental issues that affect several Southeast Asian nations, *viz.*, the Haze crisis, a consequence of large-scale illegal slash & burn practices of peat swamps and forest lands. The author attempts to articulate certain pragmatic solutions by presenting an enviro-legal zero-burn policy framework that can reduce the adverse effects of haze pollution by positioning it with the Poznan technology transfer strategic program along with an effective mode of land use allocations and economic incentives/disincentives mechanisms, to align with the spirit of sustainable development.

Amrisha Tripathi in her article '*Feasibility of Making Ecocide a Fifth Crime against Peace under the Rome Statute*' discusses the need for a strict regime for creation of accountability for Ecocide by its inclusion in the Rome Statute. In the light of the

controversy surrounding the subject, the author assesses the feasibility of treating the breach of eco-centric principles as crime.

Kingsley Osinachi N. Onu in his article '*Human Rights Impacts of Nigeria's Oil and Gas Sector NDC implementation Projects: Lessons from the Kwale CDM Project*' observes the various climate actions and measures required to mitigate and adapt to the effects of climate change. The article is a culmination of doctrinal research on Nigeria's oil and gas sector's climate change mitigation measures in its first Nationally Determined Contribution under the Paris Agreement to ascertain their human rights impacts. The article critically studies the Kwale Gas Flare Utilization project and actions under the Kyoto Protocol's Clean Development Mechanism to postulate the impacts on the human rights. The author recommends that the extant international legal regime on climate change should incorporate human rights protection and Nigeria should enact a comprehensive framework on climate change that mainstreams human rights protection.

Madhubanti Sadhya and *Vanshika Agarwal* in their contribution, '*Reliance Industries' Inroads into the Wild: Assessing the Viability of Private Zoos in India*', discuss the different legal, environmental and ethical concerns emerging from the assumption of power by a private industry to build a zoo. The authors in this article attempt to address these concerns by examining the statutes and guidelines on establishment of zoos in India. The working of private zoos in the UK and United States are examined to compare the situation prevailing in those jurisdictions vis-à-vis India. The applicability of the public trust doctrine to animals that undeniably form a part of the biological diversity of the country is also explored.

Mridhu Tandon and *Anvita Dulluri*, in their article '*A Case for Sustainable Oil Palm Cultivation in India*' attempt to critically analyse the National Mission on Edible Oil-Oil Palm (NMEO-OP). In doing so, they particularly focus on the Mission's intended implementation in the North-east region of India and the Andaman and Nicobar islands. The article significantly discusses the legal and ecological implications that arise from oil palm expansion in these biodiversity hotspots and the various threats it poses to the environment.

'Environmental Development in Cameroon: Implications for Human Rights' written by *Edumebong Smith Naseri* highlights the laws that seek to protect the environment as an attempt by the country to enhance its attempts towards achieving sustainable development. This article critically examines the legal protection of the right to a healthy environment in Cameroon, through an elaboration of various laws that seek to ensure both substantive and procedural rights in the country.

Ramakash G.S., in *'Pitfalls of a 'Common Concern' Approach to Preservation of Biodiversity: Can e-DNA Analysis Techniques Offer a Turnaround?'* has discussed the role of e-DNA Analysis Technique in the conservation of biodiversity. The author argues that use of such technologies radically transforms the manner in which biodiversity assessment is done and therefore has the potential to alter our approach to biodiversity, from being seen as a common concern to viewing it as an entity to be promoted.

Palak Mehta highlights the detrimental effects of various Renewable Energy Projects on the Environment in the article *'The impact of renewable energy projects on wildlife in India'*. The article reiterates the detrimental effects of hydropower, solar power, and wind energy on the environment, habitat degradation, biodiversity loss, and species extinction. As a result, renewable energy as a priority for sustainable development faces several obstacles. The author recommends coordinated action on the part of the government that can help mitigate the negative effects of renewable energy development.

The articles shortlisted for this volume bring to the fore some niche aspects of environmental law and governance that seldom feature in the mainstream discourse on the subject. The publication of this journal is a team effort, for which we express our profound gratitude to **Dr. Sudhir Krishnaswamy**, Vice-Chancellor, National Law School of India University, for his overwhelming support and encouragement for the research activities undertaken by CEERA.

Appreciation is due to the Board of Editors comprising of **Dr. Armin Rosencranz**, Dean, Jindal School of Environment and Sustainability, Jindal Global University, **Shri Shyam Divan**, Senior Advocate, Supreme Court of India, **Dr. S. Shanthakumar**, Director, Gujarat National Law University, **Dr. Kirk W. Junker**, Faculty of Law, University of Cologne and **Dr. Jolyon Ford**, Associate Professor, ANU College of Law, The Australian National University, whose constant support have guided us in this publication.

Lastly, I commend the efforts of Ms. Madhubanti Sadhya, Mr. Rohith Kamath, Mr. Vikas Gahlot, Ms. Lianne D'Souza and Ms. Gayathri Gireesh for their assistance in the selection of research papers and their contributions as a part of the Editorial Team.

Dr. Sairam Bhat
Chief Editor, JELPD

A TORTIOUS DUTY OF CARE IN ENVIRONMENTAL DECISION-MAKING?

*Dr. Francine Rochford**

Abstract

The use of tortious mechanisms to pursue environmental goals has been a matter of ongoing debate. Whilst public law remedies have been frequently utilised to challenge decisions with potential climate change impacts, the Federal Court of Australia has significantly advanced the argument of proponents of private law environmental remedies. In Sharma by her litigation representative Sister Marie Brigid Arthur v. Minister for the Environment¹ Justice Bromberg held that the Minister for the Environment owed a duty of care in tort cases to the plaintiff children when making decisions relating to the approval of an extension of an extraction project. This article will analyse the appropriateness of the tort of negligence for the protection of the environment – particularly for protection against threats arising from climate change and considers the operation of the ‘salient features’ approach to establish that a duty of care is owed by the State, while comparing current judicial approaches to the tortious duty of care in Australian and Indian jurisdictions.

Keywords: Climate Change, Negligence, Tort, Duty of Care

* Associate Professor, School of Law, La Trobe University

1 Sharma by her litigation representative Sister Marie Brigid Arthur v. Minister for the Environment, [2021] FCA 560.

INTRODUCTION

The tort of negligence is one of the private law mechanisms designed to address and remedy fault-based conduct. However, its high profile and flexible criteria has resulted in its application to factual circumstances beyond its original parameters. In particular, it has been advocated as a mechanism for modification of behavior.² The tort of negligence as it currently stands in Australia continues to be based on the common law, although it has been heavily affected by state-based legislation.³ It requires that the plaintiff establish three pre-requisites; that a duty of care is owed, that the duty has been breached and that the breach caused compensable damage which was within the scope of liability. This article considers the recent case of *Sharma by her litigation representative Sister Marie Brigid Arthur v. Minister for the Environment*⁴ which constitutes a 'potential watershed moment for climate change litigation in Australia and also has global significance, representing the first time that a government has been found to have a duty of care regarding climate harms owed specifically to 'children'.⁵ It will consider the widening of the range of persons to whom a duty of care is owed in tort law and the consequences of that widening for the coherence of law. In particular, it will consider the contention that the expansion of the duty of care in this context moves beyond the exercise of judicial power, contravening the separation of powers doctrine. This could be problematic in the context of the Australian Constitution, and similar issues would arise in the parliamentary system adopted in India, with some reservations.⁶ Lessons from the Australian jurisdiction are relevant to the Indian experience, which illustrates a trend in public interest litigation, 'especially apparent in cases involving environmental law and socio-economic rights'⁷ resulting in the courts to 'monitor government

2 Peter Cane, *Tort Law as Regulation*, 31 COMMON LAW REVIEW 305 (2002).

3 See The Civil Liability Act 2002 (NSW); The Civil Liability Act 2003 (Qld); The Civil Liability Act 1936 (SA); The Civil Liability Act 2002 (Tas); The Civil Liability Act 2002 (WA); The Wrongs Act 1958 (Vic).

4 *Sharma by her litigation representative Sister Marie Brigid Arthur v. Minister for the Environment*, [2021] FCA 560.

5 Jacqueline Peel & Rebekkah Markey-Towler, *A Duty to Care: The Case of Sharma v Minister for the Environment*, JOURNAL OF ENVIRONMENTAL LAW 1, 2-3 (2021).

6 Rehan Abeyratne & Didon Misri, *Separation of Powers and the Potential for Constitutional Dialogue in India*, 5 JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW 363 (2018).

7 *Id.* 365.

compliance'.⁸ Australian and Indian jurisdictions demonstrate similar approaches towards environmental litigation. However, the reasoning adopted in relation to duty of care in Australian jurisdictions has recently diverged from other common law countries. The unbundling of public policy factors in the 'salient features' approach in Australia may exhibit similar explicit enumeration of public policy concerns in cases in environmental torts in India, and it is suggested that concern for the coherence of law be amongst those concerns.

Climate change is considered to be the greatest environmental challenge of our time. As an environmental catastrophe with anthropogenic origins, the issue has been addressed by the United Nations Framework Convention on Climate Change,⁹ which was followed by the ratification of the Paris Climate Agreement.¹⁰ Australia is a signatory to the Convention. Through Australia's Intergovernmental Agreement on the Environment 1992,¹¹ Australian governments are required to commit to the precautionary principle and the principle of intergenerational equity. Legislation addresses aspects of emissions, measuring and reporting at both state and federal level.¹² Nevertheless there is clearly a sense that these measures are insufficient, and that other avenues should be pursued to address the crisis. Litigation is one of the alternative measures deployed. One of the frustrations of Australian activists is the continued extraction of coal from Australian coalfields,¹³ and this is the focus of the *Sharma* litigation.

8 *Id.*

9 United Nations Framework Convention on Climate, June 20 1992, 1771 U.N.T.S. 107 [hereinafter UNFCCC].

10 Paris Agreement, Apr. 22 2016, [2016] A.T.S 24 (entered into force 4 November 2016; ratified by the Australian Parliament on 10 November 2016).

11 Intergovernmental Agreement on the Environment, 1992 (Aus.).

12 The Climate Change Authority Act, 2011 (Cth); The Clean Energy Act, 2011 (Cth); The Clean Energy Finance Corporation Act, 2012 (Cth); The Clean Energy Regulator Act, 2011 (Cth); The Carbon Credits (Carbon Farming Initiative) Act, 2011 (Cth); The National Greenhouse and Energy Reporting Act, 2007 (Cth); The Australian Renewable Energy Agency Act, 2011 (Cth); The Australian National Registry of Emissions Units Act, 2011; The National Environment Protection Council Act, 1994 (Cth); The Environment Protection and Biodiversity Conservation Act, 1999 (Cth); The Environmental Planning and Assessment Act, 1979 (NSW); The Protection of the Environment Operations Act, 1997 (NSW); The Climate Change Act, 2017 (Vic); The Environmental Protection Act, 1994 (Qld); The Climate Change and Greenhouse Emissions Reduction Act, 2007 (SA); The Climate Change (State Action) Act, 2008; and The Environmental Protection Act, 1986 (WA).

13 See, Roman Stutzer, *Black Coal, Thin Ice: The Discursive Legitimisation of Australian Coal in the Age of Climate Change*, 178 HUMANITIES AND SOCIAL SCIENCES COMMUNICATIONS 8 (2021).

This article will briefly recount the background to the *Sharma* litigation and its outcome. It will then contextualize the litigation in the series of cases argued in administrative law to address decision-making in the process of approval or expansion of coal extraction activities. It will then consider the place of the tort of negligence in the regulation of activities contributing to climate change, in particular from the perspective of a coherent law of negligence. This analysis will draw upon cases in both Australia and India and in particular upon the criticism of the role of the judiciary in overseeing administrative actions using the law of negligence.

The *Sharma* litigation

In *Sharma*, the plaintiffs, a group of children, brought an action in the Federal Court of Australia under the tort of negligence through litigation representative Sister Marie Brigid Arthur, a sister of the Brigidine Order of Victoria. They successfully argued that the Commonwealth Minister for the Environment owed a duty of care to the plaintiffs and other Australian children when making a decision to approve an extension of a coal mine under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). *Sharma* follows a worldwide strategy and potentially extends the legal arsenal available to environmental and climate activists,¹⁴ however the case has been criticized on a number of grounds, particularly on the basis of judicial activism,¹⁵ and notice of appeal has been filed.¹⁶

The coal mine is a project approved as a State Significant Development under the *Environmental Planning and Assessment Act 1979* (NSW), although it has not yet commenced coal production. Whitehaven Coal Pty Ltd, which holds development assent for the project, applied to the commonwealth minister for the Environment for approval to expand and extend the project. Federal Approval was required under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). The plaintiffs argued that in making a decision under that Act, the Commonwealth Minister for the Environment owed a duty of care to Australian children.

14 See *Urgenda v. the Netherlands*, 24 June 2015 C/09/456689/ HA ZA 13-1396 in the Court of Appeal, The Hague, Oct. 9 2018 (in which the Court of Appeal held that the government was liable in negligence for failing to take adequate measures to mitigate climate change) [hereinafter *Urgenda*]; See also Amalie Bang & Marie-Louise Holle, *Making Legal History: State Liability for Negligence in Climate Change*, 25(1) EUROPEAN PUBLIC LAW 45 (2020).

15 Janet Albrechtsen, *Judges Have No Place in Deciding Climate Policy*, THE AUSTRALIAN (Sept. 18, 2021), <https://www.theaustralian.com.au/inquirer/judges-have-no-place-in-deciding-climate-policy/news-story/4c1c2499460fb50baf5e92e89fd1b97d>.

16 See Adeshola Ore, *Environment Minister Sussan Ley Appeals Historic Coal Mine Ruling*, THE AUSTRALIAN (July 22, 2021).

The significance of the case for the law of negligence was the application of the Australian approach to novel categories of duty, the ‘multi-factorial’ or ‘salient features’ approach. This approach, to which the High Court reverted after exhausting several conceptual tools,¹⁷ involves a consideration of a number of relevant matters¹⁸ commencing with foreseeability of harm, and when the matter is also subject to legislation requires consideration of the relevant Act.¹⁹ In applying the salient features approach, the process of balancing those features, and the weightage to be applied to each of them, is not (yet) clear. Courts have tended to privilege issues of the degree and nature of control exercised by the defendant and the vulnerability of the plaintiff to harm from the defendant’s conduct, including the capacity of the plaintiff to take measures on their own behalf.²⁰ In India, courts are also tracking the trajectory of this reasoning in novel cases, moving away from the English reasoning in *Caparo Industries Plc v. Dickman*²¹ to adopt a four-step approach requiring consideration of foreseeability of harm, proximity of relationship, whether it is just and reasonable that a duty is owed, and whether there are policy considerations that negate the existence of a duty.²² For instance, in *Rajkot Municipal Corporation v. Manjulben Jayantilal Nakum*²³ the court noted that a determination of whether there should be an extension of a duty of care, particularly where the defendant is carrying out statutory functions, requires examination of whether it ‘elongates that public policy or retards its effectuation or frustrates its object’.²⁴

In *Sharma*, His Honour divided the salient features into ‘affirmative’ and ‘negative’ aspects holding that, on balance, the features of the relationship suggestive of a duty (the ‘affirmative’ features) outweighed the negative features. Relevant affirmative features were the reasonable foreseeability of harm, the control exercised by the Minister, the knowledge of the Minister of the risk of harm and capacity to avert the risk, the

17 A series of cases in the Australian High Court tracked the disenchantment with the ‘proximity’ approach and the approach in *Caparo Industries Plc v. Dickman* [1990] 1 All ER 568; [1990] 2 AC 605; See, e.g., *Jaensch v. Coffey*, (1984) 155 CLR 549, *Hill v Van Erp*, (1997) 188 CLR 159; The current approach is set out in *Sullivan v. Moody*, [2001] HCA 59.

18 Conveniently summarised in *Caltex Refineries (Qld) Pty Limited v. Stavar*, [2009] NSWCA 258 (Aug. 2009) 75 NSWLR 649.

19 See, *Crimmins v. Stevedoring Industry Finance Committee*, (1999) ALR 1; *Graham Barclay Oysters Pty Ltd v. Ryan*, (2002) 211 CLR 540.

20 *Precision Products (NSW) Pty Limited v Hawkesbury City Council*, [2008] NSWCA 278 (Oct.31, 2008) (Allsop P; Beazley JA; McColl JA); 74 NSWLR 102.

21 *Caparo Industries Plc v. Dickman*, [1990] 1 All ER 568; [1990] 2 AC 605.

22 JUSTICE GP SINGH & AKSHAY SAPRE, RATANLAL & DHIRAJLAL: THE LAW OF TORTS (27th ed. LexisNexis, 2019).

23 *Rajkot Municipal Corporation v. Manjulben Jayantila Nakum*, [1997] 9 SCC 552.

24 *Id.*

vulnerability of the children to risk of harm in the form of adverse health outcomes and economic and property loss and the powerlessness of the children to avert that harm, and consequent reliance on the Minister, and the recognized relationship between the Minister in *parens patriae* and the children. The negative salient features, those that were inconsistent with the contended duty, were coherent of the posited duty with the statutory scheme created by the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and administrative law generally, the extent and indeterminacy of potential liability arising from the posited duty, and the interference with ‘policy decisions’ more suited to the legislature. His Honour concluded, after consideration of these features, that

[b]y reference to contemporary social conditions and community standards, a reasonable Minister for the Environment ought to have the Children in contemplation when facilitating the emission of ... CO₂ into the Earth’s atmosphere. It follows that the applicants have established that the Minister has a duty to take reasonable care to avoid causing personal injury to the Children when deciding...to approve or not approve the Extension Project.²⁵

Whilst a duty of care was found, as a matter of law, to be owed, the applicants’ claim for a *quiatimet* injunction was dismissed as the applicants had not satisfied the Court that the extent of the restraint was justified by the imposition of liability.

LITIGATION, LEGISLATION AND CLIMATE CHANGE

Sharma continues an activist strategy to deploy litigation to address the risks arising from climate change.²⁶ It has become common to focus on administrative law remedies. However, the remedies in administrative law, whilst requiring compliance with appropriate decision-making processes, do not commonly interfere with the merits of a decision once made.²⁷ Judicial review of decision-making occurs on the

25 *Sharma by her litigation representative Sister Marie Brigid Arthur v. Minister for the Environment*, [2021] FCA 560,491.

26 See generally Jacqueline Peel, *The Role of Climate Change Litigation in Australia’s Response to Global Warming*, 24 ENVIRONMENTAL AND PLANNING LAW JOURNAL90 (2007).

27 Justine Bell-James & Anna Huggins, *Compliance with Statutory Directives and the Negligence Liability of Public Authorities: Climate Change and Coastal Development*, 34(5) ENVIRONMENTAL AND PLANNING LAW JOURNAL398 (2017); Peter Cane, *Judicial Review and Merits Review: Comparing Administrative Adjudication by Courts and Tribunals*, in SUSAN ROSE-ACKERMAN & PETER L LINDSETH (EDS), COMPARATIVE ADMINISTRATIVE LAW(2010) (Merits review is the province of administrative tribunals, who occupy the executive rather than the judiciary).

basis of the legality of the decision, which may be interfered with on the basis that the decision has been made for an improper purpose, that the decision maker did not exercise a discretion independently,²⁸ that the decision was unreasonable - in the sense that 'no reasonable authority could have reached it'²⁹ - that the decision-maker followed policy inflexibly, without giving 'proper, genuine and realistic consideration to the merits of the case,'³⁰ or that, when making the decision, relevant considerations were not taken into account or irrelevant considerations were taken into account.³¹

Most telling, for the purposes of this article, are the grounds that a decision-maker failed to take into account mandatory considerations under the relevant legislation,³² or took into account considerations prohibited under the relevant legislation.³³ In the context of climate change, the typical grounds for judicial review arise from a decision-maker's failure to take into account the impacts of climate change when approving developments.³⁴ However, the process of judicial review does not interfere with the weighting applied by the decision-maker to the mandatory considerations, as this would amount to a merits review³⁵ which is available only under limited circumstances³⁶ and is circumscribed as potentially contravening the separation of powers doctrine.³⁷

28 R v. Anderson, (1965) 113 CLR 177.

29 Associated Provincial Picture Houses v. Wednesbury, [1948] 1 KB 223.

30 Khan v. Minister for Immigration and Ethnic Affairs (Unreported Judgements Fed Ct, Dec. 1987); See also Surinakova v. Minister for Immigration, Local Government and Ethnic Affairs, (1991) 33 FCR 87.

31 Minister for Aboriginal Affairs v. Peko-Wallsend Ltd, (1986) 162 CLR 24.

32 *Id.* 39-42 per Mason J.

33 *Id.* per Mason J.

34 Bell-James & Huggins, *supra* note 27.

35 Minister for Aboriginal Affairs v. Peko-Wallsend Ltd, (1986) 162 CLR 24, 41 (per Mason J).

36 Merits review processes are generally available only to applicants under state planning legislation. See generally Stephen Willey, *The Merits of Merit-based Planning Appeals: Observations from Australia*, 9(4) INTERNATIONAL PLANNING STUDIES 261 (2004).

37 The separation of judicial, executive and legislative powers is reflected in the chapter divisions of the Australian Constitution and has been confirmed by the Australian High Court in *R v Kirby; Ex parte Boilermakers' Society of Australia* (Boilermakers' case), (1956) 94 CLR 254. See *Kable v. Director of Public Prosecutions (NSW)*, (1996) 189 CLR 51 (whilst there is no strict separation of judicial power at state level, state courts exercising federal judicial powers must not be conferred with functions or powers incompatible with the exercise of federal judicial power).

The scope and limitations of these remedies was demonstrated in a trilogy of Australian cases focusing on planning approval for coal mining activities. *Gray v. The Minister for Planning*³⁸ involved judicial review of the environmental assessment process required for construction of an open-cut coal mine at Anvil Hill in New South Wales under the *Environmental Planning and Assessment Act 1979* (NSW). In determining whether the environmental assessment was appropriately prepared, the New South Wales Land and Environment Court held that the global warming contribution of the use of the thermal coal extracted from the mine should be contained in the environmental assessment so that it could be considered by the relevant Minister. The Court held that the principles of ecological sustainable development, including intergenerational equity, were applicable to decisions made under the NSW Act.³⁹ *Re Australian Conservation Foundation v. Latrobe City Council*⁴⁰ concerned with a challenge in the Victorian Civil and Administrative Tribunal to an Amendment to the Latrobe Planning Scheme so, an additional coal field could be developed to facilitate the continued operation of the Hazelwood Power Station. An environmental effects statement was required but the Tribunal held that the environmental effects caused by the generation of greenhouse gases was not considered. Justice Morris held that ‘there was a sufficient nexus between the approval of [the amendment] and the environmental effect of greenhouse gases that are likely to be produced by the use of the Hazelwood Power Station beyond 2009.’⁴¹ However in *Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc v. Minister for the Environment & Heritage*,⁴² an application for review of a decision does not require an environmental impact assessment under the Environment Protection and Biodiversity Conservation Act 1999 (Cth). The Federal Court did not progress this line of thought.

38 *Gray v. The Minister for Planning*, [2006] NSWLEC 720.

39 *Id.* ¶ 114-115.

40 *Re Australian Conservation Foundation v. Latrobe City Council*, (2004) 140 LGERA 100.

41 *Id.* at ¶ 46. See also Benita Kolovos, *Watch: Hazelwood Power Station Chimneys Demolished by Detonation*, THE AGE (May 25, 2020), <https://www.theage.com.au/> (An Environmental Effects Statement was prepared in compliance with the ruling, and the mine expansion subsequently proceeded, but the Hazelwood Power Station was closed in 2017. Its eight chimneys were demolished on 25th May 2020).

42 *Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc v. Minister for the Environment & Heritage*, [2006] FCA 736.

The applicant's concern is the possibility that at some unspecified future time, protected matters in Australia will be adversely and significantly affected by climate change of unidentified magnitude. Such climate change having been caused by levels of greenhouse gases (derived from all sources) in the atmosphere. There has been no suggestion that the mining, transportation or burning of coal from either proposed mine would directly affect any such protected matter, nor was there any attempt to identify the extent (if any) to which emissions from such mining, transportation and burning might aggravate the greenhouse gas problem.⁴³

As Peel notes, a litigation strategy based on administrative law 'is heavily dependent for its success on adequate breadth in the applicable legislation to permit a "climate friendly" interpretation and the willingness of courts to adopt such an interpretation.'⁴⁴

In India this appears to have been a successful approach, and the role of the Indian judiciary in environmental governance has been described as 'active'.⁴⁵ The Indian judiciary has also expansively interpreted constitutional and statutory rights (both substantive and procedural), prodded an otherwise apathetic executive machinery into action, moulded relief to appropriately respond to deteriorating environmental conditions, and readily relied on, or referred to, international legal instruments to support its decisions.⁴⁶

Indian courts have held the principles of precaution, polluter pays and inter-generational equity, as well as the public trust doctrine as integral to the corpus of Indian law. Indeed, they have interpreted the precautionary principle to require that the onus of proof lies with an industrialist to establish that a proposed activity is 'environmentally benign' before it will be sanctioned.⁴⁷

The well-developed jurisprudence interrogating the distinction between merits and procedural review, and the overarching separation of judicial from administrative power still makes room for the criticism that 'the Court merely substitutes executive

43 *Id.* at 72.

44 Peel & Markey-Towler, *supra* note 5.

45 Shibani Ghosh, *Litigating Climate Claims in India*, 114 AMERICAN JOURNAL OF INTERNATIONAL LAW UNBOUND 45 (2020).

46 *Id.*, at 46.

47 Lavanya Rajamani, *The Right to Environmental Protection in India: Many a Slip between the Cup and the Lip?*, 16(3)REVIEW OF EUROPEAN COMMUNITY AND INTERNATIONAL ENVIRONMENTAL LAW 274 (2008).

governance with judicial governance.⁴⁸ It can also be contended that the judiciary is not well-placed to assess matters of policy, and that judicial decisions are affected by value preferences,⁴⁹ so that it is inappropriate to rely on the province of administrative law for prosecution of environmental claims. The following section will consider the underlying premise of separation of powers, which acts as a conservative force against judicial activism.

SEPARATION OF POWERS

The separation of judicial, executive and legislative powers manifests in a 'traditional judicial reluctance to evaluate the wisdom of governmental action as measured by social, political or economic criteria',⁵⁰ thus representing and supporting the doctrine of separation of powers.⁵¹ The doctrine of separation of powers, whilst it does not preclude oversight of government decision-making presents peculiar challenges to the process of oversight. Decisions, such as those relating to the manner of responding to the threats presented by climate change involve the balancing of competing claims about the best way to meet the collective good. So, for instance, the competing claims of coal mining communities are addressed through representation of those whose interests are vested in a legislative process.⁵² The appropriate way to assess the validity of the results is through the electoral process or through the submission process in administrative decision-making.⁵³ In *Urgenda* the court explicitly addressed the issue, noting that an unelected judge has no democratic legitimacy. However, the role of the judge in settling legal disputes has a democratic foundation as a result of the legislation establishing the court. The court went on to note that:

This task also extends to cases in which citizens, individually or collectively, have turned against government authorities. The task of

48 *Id.*

49 *Id.*

50 M ARONSON & H WHITMORE, *PUBLIC TORTS AND CONTRACTS* 38 (1982) (this was referred to as an effect of the relevant immunities afforded by the *Federal Tort Claims Act*, 1946, which were, in part, said to be a reflection of that reluctance); See *Crimmins v. Stevedoring Industry Finance Committee*, (1999) 167 ALR 1, 21 (McHugh J), 55-6 (Kirby J).

51 Bruce Feldthusen, *Failure to Confer Discretionary Public Benefits: The Case for Complete Negligence Immunity*, 5 TORT LAW REVIEW 17 (1997).

52 See, e.g., Hannah Della Bosca & Josephine Gillespie, *The Coal Story: Generational Coal Mining Communities and Strategies of Energy Transition in Australia*, 120 ENERGY POLICY 734 (2018).

53 John Doyle & Jonathon Redwood, *The Common Law Liability of Public Authorities: The Interface Between Public and Private Law*, (1999) 7 TORT LAW REVIEW 31.

providing legal protection from government authorities, such as the State, pre-eminently belongs to the domain of a judge. This task is also enshrined in legislation'.⁵⁴

In Australia, the High Court performs the role of judicial review. The role of judicial review of matters relating to Constitutional interpretation was derived from *Marbury v. Madison*⁵⁵ and entrenched in Chapter III of the Australian Constitution reposing in the High Court the capacity to interpret the Constitution and in Chapter III provides it with the capacity to determine the validity of legislation. However, this does not mean that courts are to assess the validity of the policy underlying the law; rather the courts are to assess whether the legislature is authorised to enact the provisions.

Where the judicial task is to interpret the provisions of legislation, as it is in cases brought under administrative law, the principles of statutory interpretation apply to circumscribe judicial activism. The High Court decision in the *Engineers* case⁵⁶ held that the Constitution was to be given its natural and ordinary meaning and reinforced the golden rule of statutory interpretation – that 'statute is to be expounded according to the intent of the Parliament that made it; and that intention has to be found by an examination of the language used in the statute as a whole'.⁵⁷ More recently, the High Court has reiterated that statutory interpretation must remain grounded in separation of powers.⁵⁸ In the context of interpretation of administrative powers, nuanced questions of language arise requiring the support of 'reasoning which complies with the logic of the statute, including implied statutory interpretations'.⁵⁹ However, judicial review of administrative action 'is a natural home for the rule of law, and the courts must be cautious not to 'abdicate judicial responsibility'.⁶⁰ Judicial review of

54 Urgendav. the Netherlands, June 24 2015, P. 4.97.

55 *Marbury v. Madison* 5 US 137 (1803).

56 *Amalgamated Society of Engineers v. Adelaide Steamship Co Ltd (Engineers' Case)*, (1920) 28 CLR 129.

57 *Engineers case* 161-2 (Higgins J).

58 *Zheng v. Cai*, (2009) 239 CLR 446; See generally Ki on Alex Wong, *Parliamentary Intention: Deciphering its Role in Statutory Interpretation in the Australian Constitutional Context*, 20 STATUTE LAW REVIEW1 (2021).

59 Robert French, *Statutory Interpretation and Rationality in Administrative Law*, AUSTRALIAN INSTITUTE OF ADMINISTRATIVE LAW NATIONAL ADMINISTRATIVE LAW LECTURE 12 (2015).

60 M Beazley, *Administrative Law and Statutory Interpretation: Room for the Rule of Law?*, 93 AUSTRALIAN INSTITUTE OF ADMINISTRATIVE LAW 1, 4 (2018), <https://search.informit.org/>

administrative action enables redressal for decisions which 'adversely affect the rights, interests and legitimate expectations of individuals'.⁶¹ It appears the appropriate forum for the review of planning decisions, such as that at issue in *Sharma* and is constrained by fundamental principles of separation of powers and the rule of law. The next section will consider the capacity of the law of negligence to adjudicate on the matter, particularly in relation to the coherence of the law.

COHERENCE OF THE LAW

Coherence in the law has more than a single meaning. It could be a reference to a coherent aim or basis for the law, and in that sense the coherence of tort law generally, and the tort of negligence in particular, can be problematic.⁶² It could be a reference to the incoherence of concepts used to identify a duty – 'imprecise and beguiling but deceptively simple terms'⁶³ of which there is doubt 'that they have sufficient coherence to dispose of novel cases'.⁶⁴ In *Sharma case*, amongst the matters to be canvassed when deciding whether a duty is owed in a novel case, the 'coherence of the posited duty with the statutory scheme and administrative law' was considered to be one of the 'negative' salient features.

The use of private law mechanisms to litigate administrative decisions is, of course, available. Sovereign immunity from civil suit (contended because it would be a contradiction for the sovereign to submit to the Crown's courts)⁶⁵ has been removed by statute in common law jurisdictions.⁶⁶ Government action and

doi/10.3316/informit.972609538086449., citing Gaudron J in *Corporation of the City of Enfield v. Development Assessment Commission*, (2000) 199 CLR 135.

61 Beazley, *supra* note 60.

62 Jonathan Morgan, *Tort, Insurance and Incoherence*, 67(3) MODERN LAW REVIEW 384 (2004).

63 Hill v. Van Erp, [1997] HCA 9; 188 CLR 159 [209] (per Gummow J).

64 *Id.*

65 See, e.g., Aronson & Whitmore *supra* note 50.

66 See, e.g., The Crown Proceedings Act, 1947 (UK); India Const. art. 300; The Claims Against the Colonial Government Act, 1876 (NSW), which was held in *Farnell v. Bowman*, (1887) 12 App Cas 643 to be intended to subject the Crown to liability in tort. The legislation which affects the current position in Australia is the *Crown Proceedings Act*, 1988 (NSW) § 5(2); The Crown Suits Act, 1947 (WA) § 5(1); The Crown Proceedings Act, 1993 (Tas); The Crown Proceedings Act, 1992 (SA); The Crown Proceedings Act, 1980 (Qld) § 9(2); The Crown Proceedings Act, 1958 (Vic) § 23(1)(b) - the Victorian liability is limited to vicarious liability; The Crown Proceedings Act, 1993 (NT); The Crown Proceedings Act, 1992 (ACT); Commonwealth v. Evans Deakin Industries Ltd, (1986) 161 CLR 254 interpreted the Judiciary Act, 1903 (Cth) § 64 to affect the liability of the Commonwealth

administrative decision making are subject to private suit in contract, property and tort and in general where the state is a party it is to be treated, as far as possible, in the same manner as a private citizen.⁶⁷ Where a private interest is identified it is appropriate for an interference with that interest to be remedied in private law. Thus, a public authority may be liable for physical injury arising from a failure to carefully construct or repair, economic injury arising from the provision of incorrect information, or property damage arising from poor construction procedures. Furthermore, the Executive is potentially liable in tort in the exercise of its functions, unless liability is excluded.⁶⁸

However, claims in private law are handled differently when the state is performing a 'government' function. Naturally the cases are litigated in the context of the relevant legislation; in *Tepko Pty Limited v. Water Board*⁶⁹ where Gleeson CJ and Gummow and Hayne JJ noted that a defendant which is a public authority exercising statutory functions under Ministerial oversight moves within a legislative regime with which the common law interacts. Hence, it is necessary to view the particular circumstances with an appreciation of that legislation.⁷⁰ Cases litigated against public authorities in the tort of negligence have recognised considerations peculiar to review of administrative decisions, including the perceived lack of competence of a court to review decisions based on values or policy,⁷¹ the inappropriateness of opening

in tort. In New Zealand see the Crown Proceedings Act, 1950 (NZ); *See Cf* the position in the United States in which immunity of the state and its agencies from claims of violations of federal constitutional rights is afforded by the Eleventh Amendment to the United States Constitution.

67 In Australia the legislation adopts the formula of § 3 of the Claims Against the Colonial Government Act, 1876 (NSW), requiring the rights of the parties to be as 'nearly as possible' the same, with some significant exceptions.

68 Plaintiff M68/2015 v. Minister for Immigration and Border Protection, (2016) 257 CLR 42 at [12], *The Commonwealth v. Mewett*, (1997) 191 CLR 471 at 549-50.

69 *Tepko Pty Limited v. Water Board*, (2001) 206 CLR 1.

70 *Id.*

71 *See, e.g.* Lord Wilberforce in *Anns v. Merton LBC*, [1978] AC 728, 754 ("most, indeed probably all, statutes relating to public authorities or public bodies, contain in them a large area of policy. The courts call this 'discretion' meaning that the decision is one for the authority or body to make, and not for the courts."); *See also Feldthusen supra* note 51, at 19. In *Crimmins v. Stevedoring Industry Finance Committee*, (1999) 167 ALR 1,3 Gleeson CJ noted: "recognition of the existence of a duty is consistent with the need, when dealing with the question of breach, to take account of complex considerations, perhaps including matters of policy, resources and industrial relations".

administrative decisions to scrutiny in the context of bilateral decision-making,⁷² the effect on public officials of potential liability to suit (the so-called ‘chill factor’) which would distort public policy,⁷³ the lack of comparators in the private sector, leading to an inability to create an appropriate standard of care and the inability to apply judicial evaluative techniques to political questions. Aronson and Whitmore noted that

‘almost all acts of government hurt someone, and it would be utterly impractical to assess and order compensation for every injury inflicted by government. Even if one were to limit such compensation to injuries caused by government fault, the impracticability of complete compensation remains. ... Complete liability would inhibit governments from acting’.⁷⁴

There are torts directed specifically to the oversight of administrative decision-making. The tort of breach of statutory duty arises where there is a duty to exercise a statutory power.⁷⁵ The tort of misfeasance in public office applies when a public officer, acting in bad faith, abuses power or neglects duties or acts beyond power, causing harm to the plaintiff.⁷⁶ The tort protects the interest of the public in good administration, and has the potential to provide punitive damages, so appears at face value a better fit than the tort of negligence. Similarly, the tort of public nuisance aligns with public law interests, save for the requirement of proof of special damage which it shares with the tort of misfeasance in public office.

In *Sharma* the Federal Court considered ‘coherence’ as ‘having special importance to the outcome of this proceeding’.⁷⁷ In particular, coherence with the statutory scheme of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth)

72 Feldthusen, *supra* note 51 at 34.

73 *Id.* at 19.

74 Aronson & Whitmore, *supra* note 50.

75 Vickery v. The Owners - Strata Plan No 80412, [2020] NSWCA 284; 103 NSWLR 352; 386 ALR 153; 19 BPR 40817 (Basten JA at [1]; Leeming JA at [65]; White JA at [158].)

76 Three Rivers DC v. Governor and Company of the Bank of England, (No3) [2003] 2 AC 1 (HL) 190. See generally John Murphy, *Misfeasance in a Public Office: A Tort Law Misfit?*, (2012) 32(1) OXFORD JOURNAL OF LEGAL STUDIES 51. Although relatively rarely actioned, the tort has been recently applied in the Australian High Court in *Northern Territory of Australia v. Mengel*, (1995) 185 CLR 307 and *Sanders v. Snell* (1998) 196 CLR 329.

77 *Sharma* 147.

was 'of critical relevance' as a salient feature.⁷⁸ His Honor noted that 'coherence-based reasoning is a "policy consideration" applied by the common law.'⁷⁹

Where Parliament is already in the field, coherence-based reasoning is driven by a need to avoid joint occupation of the field that would undermine, contradict or substantially interfere with the purpose, policy and operation of the statutory law already in place. It is not necessary for the common law to adhere to the existing statutory law as though they are glued together as a seamless whole. What is required by coherence-based reasoning is that the two laws cohere, one sitting compatibly alongside the other without "incongruity" or "contrariety" ... In *Sullivan v. Moody*, an absence of coherence was expressed in terms of a lack of consistency.⁸⁰

The coherence of the law and the issues arising from dissolving established categorizations is a longstanding preservation of legal conservatism. The 'salient features' approach to determining duty of care in a novel case recognizes this. In *Sullivan v. Moody*⁸¹ the High Court reflected this in nominating the issues arising in different classes of cases ascertaining the existence and scope of a duty of care: 'sometimes they may concern the need to preserve the coherence of other legal principles, or of a statutory scheme which governs certain conduct or relationships.'⁸² In *Stuart v. Kirkland-Veenstra*⁸³ the High Court reiterated the desirability of maintaining the coherence of law. In that case it was argued that the existence of a statutory duty gave rise to the duty relationship in negligence. The court noted that the existence of conditions giving rise to the obligation to exercise a statutory power does not determine the question of the existence of a common law duty of care.⁸⁴ The asserted duty would arise only by reference to Victorian legislation, creating inconsistencies between jurisdictions and could not be confined to a particular class of persons. Further, 'the statutory power is said to be coupled with a common law duty of care that would require not only consideration of the exercise of the power but also its

78 *Sharma* 147.

79 *Sharma* 321.

80 *Sharma* 322.

81 *Sullivan v. Moody*, (2001) 207 CLR 562.

82 *Id.* 50 (Gleeson CJ, Gaudron, McHugh, Hayne and Callinan JJ) citing *Hill v. Van Erp*, (1997) 188 CLR 159, 231 (Gummow JJ).

83 *Stuart v. Kirkland-Veenstra*, [2009] HCA 15; 237 CLR 215.

84 *Id.* at 103.

exercise whenever reasonable to do so.⁸⁵ In *Sharma* the interaction between the obligations imposed on the Minister by the statute were closely reasoned. The extensive consideration of the coherence of the law signals the significance of the issue for the development of the law of negligence generally. The Minister's submissions were primarily concerned with the asserted duty and the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). It would give rise to a 'process-based' impairment of the discretion of the Minister in the sense that it would elevate a duty of care to children to a mandatory consideration. However, in the context of the wider development of the law of negligence, there are practical consequences for extending private law rights such as negligence to review of administrative decisions.

In *Sullivan v. Moody*⁸⁶ the High Court did not confine consideration of coherence to an associated statutory scheme; the need to preserve the coherence of other legal principles was also relevant, including the stress on the principles of defamation. Thus, in *Hill v. Van Erp*⁸⁷ Dawson J referred to disturbance to 'any general body of rules constituting a coherent body of law'.⁸⁸ The duty owed by the solicitor to a client was not affected by a duty of care owed by the solicitor to an intended beneficiary. Justice Gummow noted that the posited duty had to be considered on the basis of 'whether there is a need consistently with the overall policy of the law to provide a coherent and comprehensive system of civil obligations to supplement those established rules.'⁸⁹ In *Koehler v. Cerebos (Australia) Ltd*,⁹⁰ the imposition of a duty of care in negligence in the context of performance of a contract was considered to raise questions of legal coherence. In other words, the process of reasoning to determine the existence of a duty of care should take into account the overall coherence of tort law, the place of negligence in tort law generally, and the interaction between tort law and other causes of action. In resolving whether a duty of care should be held to exist in addition to the existing administrative avenues of recourse a potential 'rivalry between principles'⁹¹ should be avoided.

85 *Id.* at 108; *See also*, *Hunter and New England Local Health District v. McKenna*, [2014] HCA 44; 253 CLR 270.

86 *Sullivan v. Moody*, [2001] HCA 59.

87 *Hill v. Van Erp*, [1997] HCA 9; 188 CLR 159.

88 *Id.* at 52.

89 *Id.* at 191.

90 *Koehler v. Cerebos (Australia) Ltd*, (2005) 222 CLR 44.

91 Francis Reynolds, *Contract and Tort: The View from the Contract Side of the Fence*, 5

The separation of powers and the coherence of the law are associated concepts. There are reasons for the separation of administrative and common law remedies, and the chief of these is the non-justiciability of certain administrative decisions.⁹² The capacity to undertake merits review of an administrative activity is reposed in the executive branch as specified by the legislation and can extend to determining the 'correct or preferable' decision.⁹³ However, the coherence of law is also a consideration in the choice between two private law actions, such as contract and tort, and in the choice between two species of tort, such as negligence and breach of statutory duty.

CONCLUSION

Sharma is a watershed case, not only as a legal response to the challenges presented by climate change but also as an application of the 'salient features or multifactorial approach to determine whether a duty of care is owed. This approach is of interest even in jurisdictions which use other reasoning processes (such as the four-step approach in India) because it unbundles the composite elements of judicial reasoning. This renders clearer the policy aspects of judicial reasoning. The appeal in *Sharma* will provide a significant opportunity to clarify the weighting and interaction between the already expressed salient features and potentially address aspects of reasoning that have not yet been expressed. In any event the litigation will be closely monitored.

CANTERBURY LAW REVIEW 280 (1993).

92 Report of the Commonwealth Administrative Review Committee (Chairman: The Hon Mr Justice JG Kerr) (1971); Peter Cane, *Merits Review and Judicial Review – The AAT as Trojan Horse*, 28 FEDERAL LAW REVIEW 213 (2000).

93 *Drake v. Minister for Immigration and Ethnic Affairs*, (1979) 24 ALR 577, 589-90.

MITIGATING TRANSBOUNDARY HAZE POLLUTION IN SOUTH-EAST ASIA: EXPLORING THE TECHNO-LEGAL AVENUES OF ASEAN

*Dr. Chiradeep Basak**

Abstract

Transboundary Haze Pollution is one of the multi-faceted and complicated environmental issues that affects several Southeast Asian nations. The Haze crisis is a consequence of large-scale illegal slash & burn practices of peat swamps and forest lands to make them available for lucrative palm oil plantations. Several provinces of Indonesia such as South Sumatra, Riau, and Kalimantan region of Borneo Island are source-points of transboundary haze pollution; affecting Malaysia, Singapore, Southern Thailand, the Philippine Islands, and even other fragments of Indonesia itself. This is not only degrading the air quality of this region but also depriving its citizens of the right to have a pollution-free environment. In 2002, the Association of Southeast Asian Nations (ASEAN) had adopted an Agreement on Transboundary Air Pollution (ATHP), asking the member state-parties to adopt joint cooperative actions & domestic measures to abate the haze crisis. However, weakened by the doctrine of non-intervention norm, the said multilateral instrument is still far from its desired goals. The proposed article aims to systematically analyse these facets and articulate certain pragmatic solutions by presenting an enviro-legal zero-burn policy framework that can reduce the adverse effects of haze pollution by positioning it with the Poznan technology transfer strategic program along with an effective mode of land use allocations and economic incentives/disincentives mechanisms, to align with the spirit of Sustainable Development.

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Key words: Transboundary Haze Pollution in Southeast Asia, Technology Transfer, Zero burn policy, Poznan Strategic Program, Environmentally Sound Technologies

INTRODUCTION

The framework of ASEAN's socio-cultural cooperation outlines the feature of ensuring environmental sustainability by adopting a sharing and caring approach. This characteristic has been continuously beleaguered by the menace of transboundary haze pollution for more than an eternity now. One can argue that unless the haze problem is decisively addressed, ASEAN would continue to be faced with credibility problems given the huge gap between its aspirational goals of achieving a caring society and the realities of the region's complex set of environmental and socio-economic issues.¹ The transboundary haze pollution of the South-East Asian region is not a new environmental concern as several instances and literature have already been delved upon to show that the given environmental crisis poses a serious hazard and peril to its ecosystem, livelihood and human health. The unregulated slash and burn cultivation practices of Indonesia's Kalimantan have already contributed to the degrading air quality standards of its neighbouring states- Brunei, Malaysia and Singapore during the occurrence of this environmental instance. Several previous instances of haze crisis have drawn regional and global attention in the context of transboundary air pollution.

The Regional Haze Action Plan

The infamous haze crisis of 1997 has given birth to the Regional Haze Action Plan, which emphasized on regional cooperation by adopting three aspects of prevention, monitoring and mitigation of forest and land fires.² The said Action Plan of 1997 was adopted in Singapore with three primary objectives: to prevent land and forest fires by adopting effective policies to ensure better management and enforcement (prevention); to further establish operational mechanisms to monitor such land and forest fires (monitoring); and to strengthen the capacity building to enhance

1 Mely Caballero-Anthony, *Transboundary Haze in Southeast Asia: Dealing with Elusive Regional Solutions and Implications on ASEAN Community*, in EUSTON QUAH & TSIAT SIONG TAN (EDS.), *POLLUTION ACROSS BORDERS TRANSBOUNDARY FIRE, SMOKE AND HAZE IN SOUTHEAST ASIA* 19 (2018).

2 *Id.*; See also Regional Haze Action Plan, 1997.

firefighting capability and other significant mitigation measures (mitigation).³ Based on these three primary objectives, the Action Plan further enshrines the respective methodologies to attain these three aspects of prevention, monitoring and mitigation by enunciating the following:

Preventive measures- ASEAN countries were encouraged to adopt National Plans to encapsulate their respective national measures and strategies to not only prevent but also mitigate land and forest fires by considering the common elements of policies to eliminate the activities that contribute to land and forest fires such as by ensuring strict regulation of slash and burn practices during the dry period, prohibition of open burning. Along with the policy measures, the said Action Plan of 1997 also encourages the member states to devise strategies to meet the same objective by formulating air quality management legislation to restrict open burning⁴; strictly control the practice of slash and burn during the dry practices⁵; implementing air quality monitoring and reporting regimes by setting up surveillance on local sources of both mobile as well as stationary emissions⁶; establishing a national task committee/force to further develop strategies⁷ and response mechanism to abate smoke haze and fires⁸; utilizing *information technology* to render necessary haze related information to prescribed agencies, to prevent and contain further spread of fires and generate public awareness on such haze crisis.⁹ As preventive measures, the member states are also required to issue guidelines and provide support mechanisms to discourage such environmentally destructive and detrimental activities that can trigger and cause forest and land fires.¹⁰ For an early and effective mobilization of resources to prevent such haze menace, an operating procedure¹¹ shall also be adopted at a national level. Along with these strategies, the said Action plan also promotes the development of markets for economic recovery and utilization of briquette and other appropriate

3 Regional Haze Action Plan, 1997, cl. 4.

4 Regional Haze Action Plan, 1997, cl. 6(b).

5 Regional Haze Action Plan, 1997, cl. 6(a).

6 Regional Haze Action Plan, 1997, cl. 6(b).

7 *Id.*

8 *Id.*

9 *Id.*

10 Regional Haze Action Plan, 1997, cl. 6(c).

11 Regional Haze Action Plan, 1997, cl. 6(d).

and feasible methods for environmentally sound disposal of agricultural waste.¹²

Monitoring mechanisms- Technology plays a crucial role in effectively abating and preventing transboundary haze. The ASEAN Haze Action Plan of 1997 further strengthens the regional framework of monitoring mechanisms by espousing early warning systems to alert any such forest and land fires. Coupled with such a system, the monitoring mechanism also stresses upon an assessment of meteorology by creating an ASEAN Specialized Meteorological Centre. The said Centre aims to streamline and strengthen the regional information network by analyzing, compiling and sharing the same amongst members. This Specialized Centre relies upon an intra-net system of technological services and methods such as satellite imagery, wind charts, visibility information etc.

Mitigating measures- The Regional Haze Action Plan aims to strengthen the national and regional land and forest fire fighting capacity. Several measures have been adopted under the said Action Plan that includes- preparation of the inventory of land forest firefighting capacity of each nation; formulation of programmes for individual countries and the region, technical support to tackle land and forest fires; identification of the sources of technical assistance for ASEAN countries as regards forest fire-fighting equipment etc.; establishment of an operating procedure to activate the deployment of the firefighting resources in each nation for regional firefighting operations; and creation of a mechanism in each country to provide regular updates to the Haze Technical Task Force on progress made in efforts to fight the fires.

THE INTERNATIONAL LEGAL SCENARIO ON TRANSBOUNDARY HAZE POLLUTION

The customary principle of permanent sovereignty postulates a right to utilize one's natural resources as per one's whims but it also underlines a correlative duty to not cause any transboundary damage to neighbours. This obligation of the state is not to cause any transboundary environmental harm that has gained immense momentum with the pronouncement of the *Trail Smelter Arbitration*. The *Trail Smelter Arbitration*, with decisions awarded in 1938 and 1941, changed this significantly by cementing the no-harm principle in international law, from which subsequent attempts to regulate

12 Regional Haze Action Plan, 1997, cl. 6(e).

transboundary air pollution are derived.¹³ The tribunal in the said matter has held that,

‘under the principles of international law, as well as the law of the United States, no state has the right to use of its territory in such a manner as to cause injury by fumes in or to the territory of another or properties or person therein, when the case is of serious consequence and the injury is established by clear and convincing evidence’¹⁴

The *Trail Smelter* award led to widespread recognition of the no-harm principle, which appeared later in instruments supporting the burgeoning twentieth-century development of international environmental law.¹⁵ Moreover, several multilateral agreements are addressing the issue of atmospheric pollution, which have sought to incorporate the principles of State responsibility for transboundary harm elucidated in the Stockholm and Rio Declarations, which includes: the Convention on Long-Range Transboundary Air Pollution, 1979; Vienna Convention for the Protection of the Ozone Layer, 1985, its Montreal Protocol 1987; and the United Nations Framework Convention on Climate Change, 1992 along with its successor- Kyoto Protocol, 1997 and Paris Agreement, 2015.¹⁶

In 2001, during the 53rd session of the International Law Commission, the Draft Articles on Prevention of Transboundary Harm from Hazardous Activities were adopted and the given Draft Articles applied to those activities which were not prohibited by international law that involves a risk of causing significant transboundary harm through physical consequences.¹⁷ Another noteworthy international legal instrument, which is relevant in the context of transboundary harm is the Draft Principles on the allocation of loss in the case of transboundary harm arising out of hazardous activities with commentaries, 2006. The said Draft Principles encourages the States to adopt bilateral and multilateral arrangements to develop a framework

13 United States v. Canada, (1949) 3 RIAA 1903.

14 *Id.* at 1965.

15 S. Alam & L. Nurhidayah, *The international law on transboundary haze pollution: What can we learn from the Southeast Asia Region?*, 26 RECIEL 245 (2017).

16 *Id.*

17 Chiradeep Basak, *Can China be Sued at the ICJ for Causing Transboundary Harm for Covid-19 Pandemic?*, The Eurasian Times (Apr. 10, 2020), <https://eurasianimes.com/can-china-be-sued-at-the-icj-for-causing-transboundary-harm-for-covid-19-pandemic/>.

of compensation for any transboundary hazardous activity.¹⁸

The Special Rapporteur on the protection of the atmosphere in its 2017 report to International Law Commission (ILC) acknowledges the challenges posed by the fragmentation and compartmentalization of the various regimes under which the relevant concerns are atmospheric pollution and protection, including international trade and investment law, the law of the sea and international human rights law.¹⁹ Following the Special Rapporteur's recommendations, the ILC has assumed a coordinating role for addressing the problem of regulatory fragmentation across multilateral environmental agreements dealing with the protection of the atmosphere.²⁰ Thereafter in 2017, the ILC adopted a draft guideline that upheld the principles of harmonization and systemic integration and to avoid conflicts and allow for a single set of compatible obligations.²¹ State liability for compensation for transboundary atmospheric harm has been a complex aspect of international law. Most states are reluctant to accept liability for obvious political and financial reasons and therefore lack the will to negotiate an international legal regime for liability in case of transboundary harm through air pollution.²²

The ASEAN arrangement on Transboundary Haze Pollution

The position of ASEAN member States on such a contentious issue as State liability is no different.²³ The transboundary haze pollution in the ASEAN region, by its very nature, is an internationally shared environmental problem whose impacts are noticed and felt beyond the borders of the nation States.²⁴ However, the issue of transboundary haze pollution of this region has taken a

18 *Id.*

19 S MURASE, SPECIAL RAPPORTEUR'S IV REPORT TO THE GENERAL ASSEMBLY ON THE PROTECTION OF THE ATMOSPHERE, UN Doc A/CN.4/705 (2017) 6.

20 Alam, & Nurhidayah *supra* 15 at 246.

21 ILC REPORT OF THE COMMISSION TO THE GENERAL ASSEMBLY ON THE WORK OF ITS SIXTY NINTH SESSION, UN Doc. A/72/10 203. (2017).

22 P H Sand & J B Wiener, *Towards a New International Law of the Atmosphere*, 7 GÖTTINGEN JOURNAL OF INTERNATIONAL LAW 195 (2016).

23 A Bellamy & M Beeson, *The Responsibility to Protect in Southeast Asia: Can ASEAN Reconcile Humanitarianism and Sovereignty*, (2010) 6 ASIAN SECURITY 262.

24 L Nurhidayah, Z Lipman & S Alam, *Regional Environmental Governance: An Evaluation of the ASEAN Legal Framework for Addressing Transboundary Haze Pollution*, 15 AUSTRALIAN JOURNAL OF ASIAN LAW 1 (2014).

preventive and cooperative approach instead of any stringent liability regime. Studies suggested that States strategically and selectively choose whether or not to apply the ASEAN way, depending on whether it is in their national interest to do so.²⁵ Indonesia's hesitation to ratify ASEAN Agreement on Transboundary Haze Pollution was more motivated by its deference to powerful political and economic interests on the domestic front.²⁶

To bring Indonesia, under the umbrella of a regional framework for transboundary haze pollution, ASEAN has adopted several soft law instruments in the form of declarations, action plans, guidelines, resolutions etc. Some of these noteworthy soft law instruments and their core objectives are as follows:

Regional Legal Instruments	Objectives
<i>Kuala Lumpur Accord on Environment and Development, 1990</i>	The Accord aims to initiate efforts leading towards concrete steps regarding environmental management by formulating "ASEAN strategy for sustainable development; harmonizing environmental quality standards, transboundary pollution prevention and abatement practices; &undertaking of research and development and promoting the use of clean technologies" ²⁷
<i>Singapore Declaration, 1992</i>	"ASEAN member countries should continue to enhance environmental cooperation, particularly on the issues of transboundary pollution, natural disasters, forest fires and in addressing the anti-tropical timber campaign" ²⁸

25 H Varkkey, *The Haze Problem in Southeast Asia: Palm Oil and Patronage*, ROUTLEDGE 68 (2016).

26 *Id.* 78.

27 See Kuala Lumpur Accord on Environment and Development, 1990pmbl.

28 See Stockholm Declaration, 1992, pmbl.

<i>Singapore Resolution on Environment and Development, 1992</i>	“ASEAN member countries shall intensify cooperation in environmental management and protection in their common pursuit of sustainable development and with this regard, member countries shall work collectively towards the improvement of environmental quality, harmonization of standards, and jointly promote the application, transfer and development of <i>appropriate environmental technologies</i> ” ²⁹
<i>ASEAN Cooperation Plan on Transboundary Pollution, 1995</i>	“Given the increasing periodicity and worsening impact of transboundary pollution in the region and recognizing the complexity of the problem, the Ministers agreed to the formulation of an ASEAN Cooperation Plan on Transboundary Pollution- This Plan initially addresses the following three programme areas- transboundary atmospheric pollution; transboundary movement of hazardous wastes; & transboundary shipborne pollution” ³⁰
<i>Guidelines for the Implementation of Controlled Burning Practices, 2003</i>	“These guidelines were developed to provide recommendations to smallholders, farmers and shifting cultivators in implementing controlled burning techniques, following the principles of sustainable forest management, environment-friendly land management and agricultural practices”. ³¹
<i>ASEAN Peatland Management Initiative, 2003</i>	This Peatland Management Initiative was adopted to “promote sustainable management of peatlands in the ASEAN region through collective actions and enhanced cooperation as well as to reduce risk of fire and the associated regional haze and contribute to global environmental management” ³²

29 See Singapore Resolution on Environment and Development, 1992, pmb.

30 See *ASEAN Co-Operation Plan on Transboundary Pollution*, 12 (1)ASEAN ECONOMIC BULLETIN 89 (1995).

31 See *Guidelines for the Implementation of Controlled Burning Practices, 2003*, ¶ 1.2, <https://environment.asean.org/wp-content/uploads/2004/07/ASEAN-Guidelines-for-the-Implementation-of-Controlled-Burning-Practices.pdf>.

32 See *Goal*, ASEAN PEATLAND MANAGEMENT INITIATIVE, <https://haze.asean.org/download/apmi/APMI.pdf> (last visited Dec. 29 2021).

<i>ASEAN Peatland Management Strategy (2006-2020)</i>	“The goal of the strategy is to promote sustainable management of peatlands in the ASEAN region through collective actions and enhanced cooperation to support and sustain local livelihoods, reduce risk of fire and the associated haze and contribute to global environmental management”. The said strategy has four prime objectives: Enhance awareness and capacity on Peatlands; address transboundary haze pollution and environmental degradation; promote sustainable management of Peatlands & promote regional cooperation. ³³
<i>ASEAN Socio-cultural Community Blue Print 2025 (2016)</i>	“The Blueprint 2025 aims to realize an inclusive community that promotes a high quality of life, equitable access to opportunities for all; promote social development and environmental protection through effective mechanisms; a participative, committed and socially responsible community through an inclusive and accountable mechanism; a harmonious and dynamic community that is cognizant and proud of its identity, heritage and culture with the strengthened ability to innovate and proactively contribute to the global community” ³⁴
<i>ASEAN Agreement on Transboundary Haze Pollution</i>	The said Agreement “desires to undertake individual and joint action to assess the origin, causes, nature and extent of land and land and/or forest fires and the resulting haze, to prevent and control the sources of such land and or forest fires and the resulting haze by applying environmentally sound policies, practices and technologies and to strengthen national and regional capabilities and co-operation in assessment, prevention, mitigation and management of land and/ or forest fires and the resulting haze.” ³⁵

33 *Id.*; See also ASEAN Peatland Management Strategy (2006-2020), <https://environment.asean.org/wp-content/uploads/2015/06/ASEAN-Peatland-Management-Strategy-2006-20201.pdf>.

34 See ASEAN Socio-cultural Community Blue Print 2025, part B, ¶ 10, <http://carum.um.edu.my/wp-content/uploads/2015/05/ASCC-Blueprint-2025.pdf>.

35 See ASEAN Agreement on Transboundary Haze Pollution, pmbl. ¶ 10.

<i>ASEAN Agreement on Disaster Management and Emergency Response</i>	“This Agreement aims to provide effective mechanisms to achieve substantial reduction of disaster losses in lives and the social, economic and environmental assets of the Parties, and to jointly respond to disaster emergencies through concerted national efforts and intensified regional and international cooperation” ³⁶
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From the given list of regional legal instruments, it is apparent that there has been a continuous endeavor to address the crisis of transboundary haze pollution but the same has not been given a concrete and binding regulatory framework. If technologically managed environments are to be a significant part of our regulatory future, then the argument so far is that the domain of jurisprudence needs to be extended in a way that facilitates inquiry into both laws as a normative regulatory strategy and the use of non-normative technological instruments.³⁷

Law, that is to say, needs to be set in a broader signaling and steering context: first, in a context that takes full account of the variety of norms that impact on, and influence, human behaviors; and secondly, in a context that recognizes the channeling and constraining effect of technological management.³⁸ The contentious issue of transboundary pollution in this region might have certain possible solutions. The most obvious is that there is a wide discrepancy, and also a time lag, between awareness and action in identifying a principle and putting it into practice.³⁹ The ignorance is leading to continuous acts of despoiling ecosystems and depleting resources and even if they are aware, they do not care enough to act and even if they wish to act, they are powerless to act. In some of the peripheral parts of South- East Asia where environmental damage has a direct and lasting impact on people’s lives and livelihoods, levels of formal education may be low, but traditional environmental knowledge is in contrast often very strong.⁴⁰ The pro-development school still has a strong presence and followers in this region. Development is perceived as a

36 ASEAN Agreement on Disaster Management and Emergency Response, 2005, art. 2.
37 ROGER BROWNSWORD, LAW, TECHNOLOGY AND SOCIETY- RE-IMAGINING THE REGULATORY ENVIRONMENT, 40 (2019).
38 *Id.*
39 MICHAEL PARNWELL&RAYMON BRYANT, ENVIRONMENTAL CHANGE IN SOUTH-EAST ASIA- PEOPLE, POLITICS AND SUSTAINABLE DEVELOPMENT319 (1996).
40 *Id.*

significant component, which can potentially ameliorate the impacts of human induces activities on the climate systems. Conservation has taken a back seat and exploitation of natural resources in a 'sustainable manner' has come to the forefront in this neo-liberal economy. Market forces and human ingenuity will always take care of shortages by providing solutions that will leave us better off than before and this perspective puts faith in the market mechanism and the advancement and transfer of technology, and upon human reaction to environmental pressures to create the circumstances for change.⁴¹ The underlying philosophy in South-East Asia appears to be one of 'grow now, clean up later.'⁴²

Technology Transfer in ASEAN Framework

ASEAN countries on December 15th, 1995 came forward with a framework agreement on intellectual property cooperation. This framework was emulated from the European model, which established an ASEAN trademark and patents system. In addition, regional cooperation with regards to copyrights and related rights were also envisaged in this agreement. The framework agreement outlined the obligations of member states to implement intra-ASEAN intellectual property arrangements in line with their international intellectual property obligations, in particular, their obligations under the WTO Agreement on Trade-Related Intellectual Property Rights.⁴³ The said framework agreement also envisages cooperation in cross-border protection and networking of judicial authorities in ASEAN countries. Furthermore, it also emphasizes capacity building and training exercises. In this present discourse of transboundary haze pollution, the technology transfer framework can play a significant role.

Amongst several ASEAN countries, Thailand is currently taking steps towards adopting an eclectic approach to environmental law and policy that incorporates Buddhism, Animism and local knowledge.⁴⁴ A Memorandum of Understanding on

41 *Id.*, at 322.

42 *Id.*

43 Michael Blakeney, *The Legal Regulation of Technology Transfer Arrangements within ASEAN*, in CHRISTOPHER ANTONS (ED.), *LAW AND DEVELOPMENT IN EAST AND SOUTHEAST ASIA* 243 (2005).

44 Douglas L. Tookey, *Southeast Asian Environmentalism at Its Crossroads: Learning Lessons from Thailand's Eclectic Approach to Environmental Law and Policy*, 11 *GEORGETOWN ENVIRONMENTAL LAW REVIEW* 307 (1999).

Bilateral Cooperation in the Field of Industrial Property was signed between Thailand and Vietnam on April 22nd, 1994.⁴⁵ In addition, another bilateral arrangement between Laos and Thailand was established to exchange information between the Thai Department of IPR and the Lao Science, Technology and Environment Organization. Thailand has taken certain preventive and mitigation steps such as: -

- National Fire Haze Control Plan of Action, 1997;
- Zero Burning Measures, 2007;
- National Master Plan for Open Burning (2004-09);
- Promotion & Conservation of Natural Environment Quality Act (2008-2011)
- Northern Haze Prevention & Mitigation Plan, 2015;
- Burn Sugarcane Solving Plan, 2019; &
- Thailand Environment Quality Management Plan (2017-2021)

These measures have been taken to combat the problem of air pollution by promoting stakeholders' collaboration. While these measures are commendable, they are not sufficient to address the issue of transboundary haze. The national air quality standards of Thailand are comparatively weaker than World Health Organization's prescribed standards.⁴⁶ One of the major challenges to address this menace of haze lies in the technological-gap that persists in several ASEAN countries.

While current technology allows for the location of the fire events to be identified within concession maps, it is still inadequate in addressing actors responsible for starting the fire.⁴⁷ The level of accuracy of these concession maps is contentious due to a lack of coordination among district, provincial and central government authorities.⁴⁸ In 2014, Singapore enacted Transboundary Haze Pollution Act that penalizes corporations for transboundary haze pollution. However, the challenges faced by Singapore's Transboundary Haze Pollution Act reveal the context of land use

45 *Id.*, at 244.

46 Jae Nikam, Diane Archer *et.al.*, *Regulating Quality in Thailand- a Review of Policies*, STOCKHOLM ENVIRONMENT INSTITUTE, <https://cdn.sei.org/wp-content/uploads/2021/03/regulating-air-quality-in-thailand-a-review-of-policies--sei-policy-brief.pdf> (last visited Dec. 31, 2021).

47 J S Lee, Zeehan Jaafar *et. al.*, *Towards Clearer Skies: Challenges in Regulating Transboundary Haze in Southeast Asia*, 55 ENVIRONMENTAL SCIENCE AND POLICY 89 (2016).

48 *Id.*

development history and entrenched economic and political interests under which the Southeast Asian haze phenomenon is embedded in.⁴⁹ Scientists proposed several potential resolutions which go beyond the implementation of the legislation and aims to advance fire detection technologies, which includes⁵⁰:

- Refinement of spatial data by improving land use maps to differentiate areas occupied by corporations and farmer-owned areas within concession boundaries
- Refinement of daily hotspot data to monitor the origin of fire events and chart the fire progression maps.

According to the MIT's Joint Program on the Science and Policy of Global Change, in collaboration with institutions in Hong Kong and Singapore, a model has been developed that could provide decision-makers with a useful breakdown of air quality impact by emissions source.⁵¹ The study portrays the significance of six different machine learning algorithms, that can be used to forecast the occurrence of haze events and thereby guide preventive air quality mitigation measures that could minimize economic losses in the events. The algorithms achieved 80 per cent accuracy in prediction and forecast reliability by correlating historical observational data of meteorological conditions and fire activity with past severe haze events.⁵² Forecasting haze events with typical weather models was a challenging task, due to wanting of timely emissions data and economic factors associated with high computation but with algorithmic machine learning, these loopholes and drawbacks can be eliminated as the same goes directly to observational and historical data to identify potential patterns that can be further correlated to haze events, so that future events can be predicted beforehand.⁵³

These promising technologies should be coupled with a tough regulatory mechanism, for effective implementation. There are several unsustainable practices of fire burning for land clearances that have amounted to persistent forest fires even during dry weather, leading to a substantial cause of transboundary smoke haze in the southern

49 *Id.*, at 92.

50 *Id.*

51 Mark Dwoetzan, *Clearing the Air Over Southeast Asia, MIT on Campus and Around the World*, MIT NEWS (May 7, 2018), <https://news.mit.edu/2018/mit-clearing-air-pollution-over-southeast-asia-0507>.

52 *Id.*

53 This study is an outcome of a joint venture of MIT-Singapore Alliance for Research & Technology Centre for Environmental Sensing and Modeling- National Research Foundation of Singapore, USA's Department of Energy and National Science Foundation.

part of the ASEAN region. Once fires start, they can burn for months until the dried peat is all burnt.⁵⁴ Peatlands are also vulnerable to Climate Change, reduction in dry season rainfall and global escalation of temperature up to 2.5 degrees Celsius will further add to the woes of peatlands.⁵⁵ Fortunately, the solution to peatland degradation, in theory, is relatively simple- stop the further drainage of peatlands and rehabilitate the degrading areas by restoring natural water levels or rewetting the peatlands.⁵⁶ However, in practice, the implementation of this solution might not be free from challenges. As discussed above, the technology development is already in place but their transfer needs a smooth mechanism, which should be based on a need-based assessment. In addition to the regional framework on intellectual property rights, the UNFCCC's Poznan Strategic Programme on Technology Transfer is relevant in the given context. Before getting into that angle, it is pertinent to highlight the complex challenges attributed to the liability associated with transboundary haze pollution. Not only the corporates but also the smallholder farmers in Indonesia have been practicing slash and burn agricultural practices for generations. To curtail this menace, the Indonesian government has adopted stringent penalties, including seizure of lands owned by these smallholders' farmers.⁵⁷ As the Southeast Asian haze made a return in 2015-16, even after Indonesia has ratified the haze treaty in 2014, there was much anger on the ground in Singapore, and consumers were urged to boycott products from companies that used fire to clear land for agriculture or planting.⁵⁸ To address this issue, Indonesia has instituted several initiatives such as the Sustainable Palm Oil Initiative, Palm Oil Pledge etc but these initiatives exempted smallholders. Another challenge is associated with the user rights and ownership rights of the landholders. Certain poverty alleviation scheme has also been misused by several entities in the name of Indonesia's two hectares policy that grants each head of family or even new migrant user rights over two hectares of land.⁵⁹

54 See *Climate Change- The Time to act is Now*, 5 THE ASEAN 22 (2020).

55 *Id.*

56 *Id.*

57 See *We Meet the People burning Down Indonesia's Forests*, VICE, https://www.vice.com/en/article/59nydz/people-burning-down-indonesia-forests?utm_campaign=sharebutton&fbclid=IwAR0j5r4ReNmN4i00CShnftb4QIIP_Q73HKLsliwnA_C__3qfWuRggBS_0pw (last visited July 31, 2021).

58 Prakash Chander, *A Political Economy Analysis of the Southeast Asian Haze and Some Solutions* (RSIS Working Paper No. 303, 2017), <https://dr.ntu.edu.sg/bitstream/10356/83744/1/WP303.pdf>.

59 *Id.*, at 9.

Now coming back to the transfer of environmentally sound technologies, we have to consider the existing framework of international trade as well because apart from import and export, technology is also exchanged indirectly through licensing and the provision of consultancy services as well as through foreign direct investment and hence, unlocking trade opportunities in environmentally sound technologies requires not only the liberalization of trade in environmental goods and services but also access to an enabling environment for foreign investment to facilitate technology transfer.⁶⁰ Paragraph 31(iii) of the Doha Ministerial Declaration envisages a reduction or as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services. Negotiations on environmental goods effectively took place in the special sessions of the Committee on Trade and Environment, although the final modalities of liberalizing environmental goods were to be dealt with by the World Trade Organization's Negotiating Group on Non-Agricultural Market Access that also dealt with other industrial goods. Negotiations on environmental services were handled separately by services trade negotiators in the special session for the Council on Trade in Services.⁶¹ In 2012, Asia Pacific Economic Cooperation Agreement on Environmental Goods have envisaged several provisions such as the best endeavour clause, investment and innovation clause, environmental cooperation clause. In 2013, Trade in Services Agreement negotiations was launched. Subsequently, in 2014, Environmental Goods Agreement negotiations were initiated. Thereafter, in 2015 with the adoption of the Paris Agreement, the amplitude of environmentally sound technologies have been widened. The 2030 Agenda of SDGs have also highlighted the significance of environmentally sound technologies. Under Sustainable Development Goals, the trade-in Environmentally Sound Technologies has been given immense importance:

- SDG 2- Zero Hunger is linked with technology investment for agriculture
- SDG 7- Affordable and clean energy is connected with international access to environmentally sound technologies
- SDG 9- Industry, innovation and infrastructure emphasizes domestic technology development

60 UNITED NATIONS ENVIRONMENT PROGRAMME, *TRADE IN ENVIRONMENTALLY SOUND TECHNOLOGIES: IMPLICATIONS FOR DEVELOPING COUNTRIES* (2018).

61 *Id.*

- SDG 12- responsible consumption and production emphasizes strengthening technological capacity towards sustainable consumption and production by removing market distortions
- SDG 17- partnerships for the goals aim to develop, disseminate and transfer environmentally sound technologies. This is based on the principle of international cooperation to ensure access to tech-know-how and promote an equitable multilateral trading system, which has been also recognized during Doha Negotiations.

The sustainability assessment provides a useful framework to comprehensively assess the potential benefits of Environmentally Sound Technologies, including their contribution to SDGs and climate goals.⁶² While tariff rates have been reduced substantively for many environmentally sound technologies over past decades, further reductions, or indeed the elimination of tariffs, could help to reduce administrative costs for customs authorities and thereby facilitate smoother trade of environmentally sound technologies.⁶³ To further enable developing countries to fully harness the opportunities presented by trade in ESTs and increase their engagement in related trade negotiations, a holistic approach is needed, including data and research, awareness-raising, capacity enhancement, and policy coherence at both national and global levels.⁶⁴

Amongst the ASEAN countries, Malaysia is leading in the trade of environmentally sound technologies with special reference to the Air Pollution Control System. Malaysia is committed to control air pollution and has sufficient capacity to manage air quality through various means, including that of the enforcement of environmental law.⁶⁵ The Environmental Ministers of ASEAN met in Malaysia and have recommended the adoption of a joint Haze Monitoring System, which would be used in tandem with official land use and concession maps of fire-prone areas, it will help to identify which companies or individual farm owners own the plots of land which are on fire.⁶⁶

62 *Id.*

63 *Id.*

64 *Id.*

65 Mainzaton Mustafa, Sharifah Abdul Kader *et al.*, *Coping with Climate Change through Air Pollution Control: Some Legal Initiatives from Malaysia*, 33 INTERNATIONAL CONFERENCE ON ENVIRONMENT, ENERGY AND BIOTECHNOLOGY 105 (2012).

66 Ayyappan Palanisamy, *Haze Free Air in Singapore and Malaysia - The spirit of the law in*

THE IMPLICATIONS OF THE ASEAN POLICY ON ZERO BURNING

In response to the land and forest fires that have affected the ASEAN region, a zero burning policy was adopted at the 6th ASEAN Ministerial Meeting on Haze in 1999.⁶⁷ The zero burning policy is defined under Article 1(14) of the ASEAN Agreement on Transboundary Haze Pollution. The said policy prohibits open burning but may allow some forms of controlled burning.⁶⁸ This policy promotes zero burning techniques by plantation companies and timber concessionaires in the region.⁶⁹ It is not intended to apply to smallholders or local communities who do not have the resources to implement it.⁷⁰ A zero burning policy is a method of land clearing whereby the tree stand (either logged-over secondary forest or an old area of plantation tree crops such as oil palm) are felled, shredded, stacked and left in situ to decompose naturally.⁷¹

In 2001, Indonesia adopted the said policy through Government Regulation No. 4 of 2001.⁷² A zero burning policy was also adopted in Government Regulation (GR) No 45 of 2004 on Forest Protection, particularly arts 18-27, which provide that all people are prohibited from carrying out burning activities in forest or land.⁷³ As a result of the adoption of zero-burning policy in a statutory scheme, the conditions apply not only to commercial companies but also to stakeholders and local communities.⁷⁴ Irrespective of the adoption of the aforesaid regulation, the ASEAN zero burning policy has failed to create an impact in Indonesia because open burning is the most cost-effective and accessible mode of land clearing for the local communities. The number of defaulters being brought to justice on account

Southeast Asia, 8(1) INTERNATIONAL JOURNAL OF EDUCATION AND RESEARCH 5(2013).

67 Laely Nurhidayah, Zada Lipman & Shawkat Alam, *Regional Environmental Governance: An Evaluation of the ASEAN Legal Framework for Addressing Transboundary Haze Pollution*, 15 AUSTRALIAN JOURNAL OF ASIAN LAW 91(2014).

68 ASEAN Agreement on Transboundary Haze Pollution, 2002, art. 1(14).

69 Nurhidayah, Lipman & Alam, *supra* note 67.

70 *Id.*

71 *Id.*, at 92.

72 *Regulation No 4 of 2001 Concerning Control of Environment Degradation and/or Pollution related to Forest and/or Land Fires* (Indonesia).

73 Nurhidayah, Lipman & Alam, *supra* note 67, at 92.

74 *Id.*

of violation has been very minimal. For example, in the *Pt Adei Plantation Case*, the Malaysian firm was imposed with a heavy fine (Rp 250 million) and the managing executive of *Pt Adei Plantation and Industry* was convicted for negligence.⁷⁵ On appeal to the Rau High Court, the sentence was reduced to Rp 100 million- and eight-months imprisonment.⁷⁶ In another case of *Pt Kallista Alam v. K ementerian Lingkungan Hidup*⁷⁷, *Pt Alam* was convicted by the District Court of *Meulaboh* for burning peatland in the swamp of *Rawa Tripa*. The court ordered the company to pay a fine of Rp 114 billion and restoration fees of Rp 250 billion.⁷⁸ As a result of poor enforcement and minimal cases, the ASEAN countries have realized the practical difficulties in enforcement of zero burning policy and adopted the Guidelines for the Implementation of Controlled Burning Practices at the 10th Ministerial Meeting on Haze in 2003. The said guidelines emphasized ‘controlled burning’ which involves appropriate burning of an area depending on the environment.⁷⁹

The controlled burning guidelines were developed to help the small stakeholders’, shifting cultivators, farmers in implementing controlled burning techniques. The said guidelines were recommended after conducting field surveys. The guidelines identified and recommended modifications for several burning techniques used by the local communities, which includes: spot firing technique; the combination of back & ring firing technique; and the combination of head and ring firing technique.

The Twenty-first Meeting of the Sub-Regional Ministerial Steering Committee on Transboundary Haze Pollution was held on August 6th 2019 in Brunei Darussalam. The ASEAN ministers and representatives, holding environmental portfolios participated in the said meeting to address the continuing issues of haze, land and forest fires. The parties to the said meeting have pledged to monitor and stay vigilant by stepping up their preventive measures to minimize transboundary smoke haze during drier weather. Furthermore, the parties have also pledged to strengthen

75 See *Malaysian Firm Fined, Executives Get Prison for Role in Forest Fires*, THE JAKARTA POST, <https://www.thejakartapost.com/news/2014/09/11/malaysian-firm-fined-executives-get-prison-role-forest-fires.html> (last visited Dec. 30, 2021).

76 *Id.*

77 *Pt. Kallista Alam v. Kementerian Lingkungan Hidup*, KLH (2012) No 12/PDTG/2-12/PN-MBO.

78 Nurhidayah, Lipman and Alam, *supra* note 67, at 92.
Id.

79 ASEAN Guidelines for the Implementation of Controlled Burning Practices, 2004.

their ‘technical capacities’ in assessment, monitoring and early warning mechanism to arrest transboundary haze. In this regard, an expert team of operational meteorologists performing 24/7 monitoring and assessment of regional weather and haze, and research scientists working on advanced weather and climate prediction models, as well as supercomputing resources were to be formed. There have been some endeavors, in principle (haze control management system, fire danger rating system, joint emergency response etc.) but despite these efforts, the challenge of open burning persists. Primarily, technological capacity has been cited as one of the prime reasons behind it. Different member states of ASEAN countries have different meteorological capacities. This amounts to certain challenges in the legitimacy and validity of the data. The current country-based situation report mechanisms lead to disputes over satellite ‘hotspot’ validity and ground-truthing.⁸⁰ If the haze-free ASEAN region is the target, then the ASEAN roadmap on transboundary haze should be adopted in letter and spirit by depoliticizing science and promoting technology transfer. In this regard, Poznan Strategic Program on Technology Transfer can be of great relevance.

Lessons from Poznan Strategic Program on Technology Transfer

Poznan Strategic Programme under United Nations Framework Convention on Climate Change aims to catalyze investments in environmentally sound technology deployment.⁸¹ The Poznan Strategic Program on Technology Transfer (Poznan strategy) was the Global Environment Facility’s (GEF) response to the COP’s request that as the operating entity of the UNFCCC Financial Mechanism (FM), it consults with interested parties and institutions to “elaborate a strategic Programme to scale up the level of investment for technology transfer to help developing countries address their needs for environmentally sound technologies.”⁸²

In line with this objective, the Asian Development Bank’s regional pilot climate technology transfer center has adopted a dual approach by mainstreaming in its

80 Jayaprakash Murulitharan, *Depoliticising Southeast Asia’s Forest Fire Pollution*, EAST ASIA FORUM, <https://www.eastasiaforum.org/2021/08/17/depoliticising-southeast-asias-forest-fire-pollution/> (last visited Dec. 30, 2021).

81 See Technology Executive Committee, Updated evaluation of the Poznan Strategic Programme on Technology Transfer, TEC/2019/18/4.

82 See Development and Transfer of Technologies under the Subsidiary Body for Implementation, Dec 4/CP.13, UNFCCCOR, 2007, UN Doc FCCC/CP/2007/6/Add at 1, 3.

regular operations for the adaptation activities which focus on water projects, policy reforms and supporting mitigation activities as well.⁸³ A total amount of 74.7 USD million worth of projects is under implementation. Albeit, the national and regional circumstances and legal framework is continuously striving to address the crisis by imposing stringent liability factor upon the stakeholders but on the parallel note of a scientific solution, where some of these emerging environmentally sound technologies can be transferred to mitigate the haze crisis by streamlining them under Poznan Strategic Programme.

As simple as it is to propose such a measure, the plausibility of the same will face severe challenges because the aims and objectives of these pathways are not quite akin to each other. In addition, the pre-existing regional agreements are aiming to resolve this crisis through cooperation but one of the major problems associated with economic barriers concerning technology transfer revolves around inadequate access to financial resources and inappropriate economic incentives.⁸⁴ Nevertheless, Poznan strategic program sets out a crucial architecture of technology transfer mechanism to ensure climate resilient actions by states with higher technology-based needs, which in itself is a lesson for a regional integrated body like ASEAN.

While approaching the conclusion of this article, it will be suitable to discuss some of the special features of the ASEAN Agreement on Transboundary Haze Pollution. This agreement aims for mitigation measure with five guiding principles (Article 3): the principle of permanent sovereignty with the duty, not to cause damage to neighbors; the principle of international cooperation and coordination; precautionary principle; the concept of sustainable development; and equity and liability principle with the engagement of all stakeholders vis-à-vis transboundary haze pollution. To deal with forest fires, the said Agreement under Article 9 (a) envisages a strategy to develop and implement legislative and other regulatory measures to promote zero burning policy to abate forest fires and such land use resulting in transboundary haze pollution. The said Agreement under Article 12 also emphasizes the norm of non-interference and lastly, under Article 27, the said instrument sets out a dispute settlement mechanism

83 *Id.*

84 Chiradeep Basak & Swastik, *Rio to Paris via Poznan: The Journey of Technology Transfer Mechanism Under UNFCCC*, 1 CONTEMPORARY ENVIRONMENTAL CONCERNS- MULTI DISCIPLINARY ASPECTS OF ENVIRONMENTAL LAW, 53 (2020).

through negotiation and consultation. This implies that in case of any willful breach of the normative frame, there won't be any liability of stricter sense but rather be a pacific resolution through cooperation. This particular angle of the agreement has been fairly criticized for being a soft spot of this Agreement.

CONCLUSION

The challenge of transboundary haze pollution cannot be addressed with a casual business approach. Along with stringent liability and penal clauses in several regional and domestic legal frameworks, the emerging environmentally sound technologies should be given equal importance. To mitigate and abate this regional human-induced climate crisis, promotion of peatland mapping assessment, fire mapping and monitoring system, air pollution control system should be integrated into these pre-existing regional and domestic legal and regulatory measures. Furthermore, to promote sustainable peatland and forest management, the economic and natural resources-based policy concerning peatland and land use development should be mainstreamed with other sectoral policies, as well. In addition, to these aforesaid concluding remarks, ASEAN regional frame has to garner the technology transfer mechanism by facilitating the IPR regime and it should also consider mainstreaming the Poznan framework on technology transfer provided, the same passes muster all regulatory and technical plausibility. Last but not the least, any environmental decision turns out to be fruitful if there is a shared realization of the common concern of mankind, clubbed with the core elements of the right to information, accountability and access to environmental justice. The same stands equally important for the transboundary haze pollution in ASEAN countries. There are challenges and opportunities- with the advancement of technological know-how, strict liability and sound decision making, this menace can be curbed up to a greater extent. Afterall, the real objective of social engineering is to balance the conflicting interests, present in society.

FEASIBILITY OF MAKING ECOCIDE A FIFTH CRIME AGAINST PEACE UNDER THE ROME STATUTE

*Amrisha Tripathi**

ABSTRACT

Accountability for Ecocide is no more a limited concern, and it needs to be accommodated into the Rome Statute by necessitating changes to its substantive provisions. In the light of the controversy surrounding the subject, this article assesses the feasibility of this change advocating that the crime of ecocide represents the most suitable legal response to environmental damage. The first part of this article is an introduction to the concept of ecocentrism primarily focusing on the historical nexus between war/conflict and environmental degradation, and the cursory foundations of 'ecocide' in international law. The second part of this article analyses the application of 'Grundnorm' to ecological integrity thereby attempting to justify environmental protection independent of its anthropocentric significance. The third part explores the plausibility of 'green interpretation' of the relevant provisions of the Rome Statute as a tool of international accountability for environmental crimes. The fourth part looks at the challenges that impede the application of 'green interpretation' to the Rome Statute and the changes in international law to expand the scope of international crime to strictly environmental offences. In the fifth and concluding part, the author, based on the historical and current discourse on ecocide, argues that a breach of an eco-centric principle invokes international responsibility on its own merit and that the scope of the "crime" of ecocide must look beyond the conventional institutions of State to include any person or association that has caused such a breach.

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INTRODUCTION

An exceptional part of Antonio Cassese's colossal legacy for international criminal law is the judgement by the Appeals Chamber of the International Criminal Tribunal for the former Yugoslavia (ICTY) in the historic trial of *Dusko Tadic*.¹ The impact of this judgement was akin to that of the Nuremberg Trials, on the development of customary rules of international criminal law. The *Tadic* decision compelled the world to adopt a teleological approach to the application of the international humanitarian and criminal law. It advocated the abolition of unnecessary suffering in times of peace and war thereby imparting the much-needed element of humanity to these laws. This approach, instantly, modifies the role of State, making it clear that *all law is created for the benefit of human beings*.² The legitimacy of States is based on the cardinal understanding that (a) States are protectors of the rights already possessed by people; and (b) all law, including international law, is for the protection of people, not States.³ However, Cassese's legacy and the *Tadic* judgement are in constant danger owing to the repulsive attitudes of States toward the 'human-being oriented approach'.⁴ This repulse is mostly disguised in the subtle methodological concerns attributed to this approach. The States fear that this approach could diminish the compelling status of customary international law leading to an acute negligence of rule of law and due process.⁵ An issue that has, constantly, found itself at the centre of this debate is crimes against humanity. The human-oriented approach advocated earlier is inherent in this field, yet it discounts the most obvious damage that is caused by any conflict - the damage to environment. The *Rome Statute of the International Criminal Court* (hereafter as the *Rome Statute*) was enacted with the broader objective of punishing the "the most serious crimes of international concern".⁶

1 Prosecutor v. Dusko Tadic aka "Dule", Case No. IT-94-1-T (Int'l Crim. Tribunal:1995).

2 *Id.*, at 97.

3 *Id.*

4 *Id.*

5 Gerhard Werle & Boris Burghardt, *Do Crimes Against Humanity Require the Participation of a State, or a State-Like Organization*, 10 J. INT'L CRIM. JUST. 1151, 1152 (2012).

6 Rome Statute of the International Criminal Court, AA. 1, 5 (2002).

The Preamble to the *Rome Statute* determines the seriousness of such crimes by their potential to disrupt the peace, security and well-being of the world.⁷ The case of *Agent Orange*⁸ is a glaring example in this context. During the Vietnam War, between 1961-71, the U.S. military troops sprayed gallons of a chemical defoliant to eliminate the North Vietnamese Forest and crop cover to gain a vantage point over the Viet Cong Troops. The Vietnam Red Cross estimates that nearly 3 million Vietnamese people including 150,000⁹ children have been affected consequent to the use of Agent Orange. Even today, infants in Vietnam are born with birth defects induced by this chemical.¹⁰ There is an overabundance of evidence establishing a direct link between war/armed conflict and environmental degradation. For example, as recently as in 2017, the receding ISIS militia in Iraq set fire to the oil wells in the areas of conflict resulting into the release of toxic gases and particulate matter in the air, and harmful metals into its water bodies, capable of causing serious physical ailments to the inhabitants of such areas.¹¹ Similarly, a UNEP assessment of the aftermath of the 1996 conflict in Kosovo showed not only the contamination of River Danube but also the risk of transboundary pollution to the neighboring countries like Romania and Bulgaria from the industrial facilities located downstream along the course of the river.¹² However, the current international legal framework fails to acknowledge or punish deliberate acts leading to the destruction of ecosystems.¹³

2010 PROPOSAL TO THE UN LAW COMMISSION TO MAKE ECOCIDE A FIFTH CRIME AGAINST PEACE

It is noteworthy that the idea of designating ecocide as a crime against

7 Werle & Burghardt, *supra* note 5.

8 Michael G. Palmer, *The Case of Agent Orange*, 29 CON. SE ASIA 1, 172, 175-177 (2007).

9 *Id.*

10 Karl Schuler, *Living Disabled*, THE MAGAZINE OF INTERNATIONAL RED CROSS AND RED CRESCENT MOVEMENT, http://www.redcross.int/EN/mag/magazine2004_3/22-23.html (last visited Mar. 10, 2022).

11 Stephen Kalin, *Oil fires cast black cloud over Iraqi town retaken from Islamic State*, REUTERS (Aug. 30, 2016), <https://www.reuters.com/article/us-mideast-crisis-iraq-oil/oil-fires-cast-black-cloud-over-iraqi-town-retaken-from-islamic-state-idUSKCN1150UR>.

12 UNEP & UNHCS, THE KOSOVO CONFLICT-CONSEQUENCES FOR THE ENVIRONMENT AND HUMAN SETTLEMENTS 22-27 (1999), <https://postconflict.unep.ch/publications/finalreport.pdf>.

13 See discussion, *infra*-PART III.

humanity is not novel albeit the one that has never been brought to fruition.¹⁴ For over four decades, various UN agencies had considered this possibility¹⁵ and in this regard three alternatives were brought to fore to incorporate ecocide into the Draft Code of Offences against the Peace and Security of Mankind¹⁶- that it should be a standalone crime; or, that it should be a crime against humanity; or, that it should be a war crime. Eventually, States decided to drop this crime out of the draft *Rome Statute* reducing the act of aggression against environment to a feeble consideration which needs to be aligned with the anticipated military objectives of a State.¹⁷ The notion received a fresh impetus when Polly Higgins, a notable contemporary figure in the green movement, voiced it out before the UN through a legal proposal.¹⁸ When Higgins addressed the UN in 2010 underscoring the immediate necessity of protecting our planet, she made compelling arguments for a fifth crime against peace- the crime of ecocide. The widely accepted definition of ecocide is the one proposed by Higgins to the UN Law Commission in 2010 which is:

*[T]he extensive destruction, damage to or loss of ecosystem(s) of a given territory, whether by human agency or by other causes, to such an extent that peaceful enjoyment by the inhabitants of that territory has been severely diminished.*¹⁹

Higgins later expanded this definition into a model law that states:

1. *Acts or omissions committed in times of peace or conflict by any senior person within the course of State, corporate or any other entity's activity which cause, contribute to, or may be expected to cause or contribute to serious ecological, climate or cultural loss or damage to or destruction of ecosystem(s) of a given territory(ies), such that peaceful enjoyment by the inhabitants has been or will be severely diminished;*
2. *To establish*

14 Sailesh Mehta & Prisca Merz, *Ecocide - A New Crime against Peace*, 17 ENVTL. L. REV. 3 (2015).

15 Polly Higgins, Damien Short & Nigel South, *Protecting the Planet: A Proposal for a Law of Ecocide* 59 CRIME LAW AND SOCIAL CHANGE 251, 256-8 (2013).

16 The code was the precursor of the Rome Statute which was adopted by the International Law Commission in 1954, https://legal.un.org/ilc/texts/instruments/english/commentaries/17_3_1954.pdf. See Gross&Leo, *Some Observations on the Draft Code of Offenses Against the Peace and Security of Mankind*, 13 INT'L. YRBK. HUMAN RIGHTS 9, 10 (1983).

17 Rome Statute, 2002, art. 8.2 (b)(iv).

18 For more information on the proposed law on Ecocide visit <https://www.stopecocide.earth/>.

19 POLLY HIGGINS, ERADICATING ECOCIDE: LAWS AND GOVERNANCE TO PREVENT THE DESTRUCTION OF OUR PLANET 63 (2010).

*seriousness, impact(s) must be widespread, long-term or severe.*²⁰

According to the proposed law, anyone who is capable of ‘*being*’, must be protected. Therefore, the law focuses on the protection of *inhabitants* of this planet which constitute: (a) humans, (b) animals, fish, birds, insects; (c) plant species; (d) other living organisms. By including nearly everything that signifies life, the law echoes the most obvious yet overlooked fact that we are all governed by a symbiotic equation of life ergo ecocide must be a crime against all life.²¹

The law clearly states that the ecological, climate or cultural loss must be of a *serious* nature, seriously diminishing the right to peaceful enjoyment of territory and its resources, of the inhabitants. The standard of seriousness is drawn from the existing Convention on the Prohibition of Military or any other Hostile use of Environmental Modification Techniques (ENMOD) 1977 which defines keywords such as *widespread*, *long-lasting* and *severe* which are shared by the proposed model law.²² It defines *widespread* as “encompassing an area on the scale of hundred kilometers”, *long-lasting* as “lasting for a period of months, or approximately a season”, and *severe* as “involving serious or significant disruption or harm to human life, natural and economic resources or other assets.”²³ The proposed concept includes ecocide caused by human agency as well as *force majeure* which implies that States will be responsible for damage caused by any means if the consequence is a mass ecosystem collapse.

I. ECOLOGICAL INTEGRITY- THE *GRUNDNORM*

Higgins’s proposal rekindled the debate on eco-centric ethical paradigms which have failed to find application in the existing customary laws designed to defend state sovereignty. This is perhaps because the normative character of state sovereignty has always trumped ecocentrism; the notion of state boundaries has, constantly, invaded the notion planetary boundaries²⁴ thereby impeding the evolution of a fundamental

20 Ecocide Law, *Mission Lifeforce*, <https://www.missionlifeforce.org/ecocide-law> [<https://perma.cc/L326-S4KA>].

21 UNEP & UNHCS, *supra* note 12.

22 ENMOD Convention, Art. I (1977).

23 Understanding Relating to Article I, *Rep. of the Conference of the Comm. on Disarmament*, U.N. GAOR, 31st Sess., Supp. No. 27, at 91–92, U.N. Doc. A/31/2(1976), <https://ihldatabases.icrc.org/applic/ihl/ihl.nsf/Article.xsp?action=openDocument&documentId=A951B510E9491F56C12563CD0051FC40> [<https://perma.cc/F53E-CA3R>].

24 LAURA WESTRA ET. AL., ECOLOGICAL INTEGRITY IN SCIENCE AND LAW 248 (2020).

norm, or *Grundnorm*, in international environmental laws in the way it has evolved through rule of law or human rights in domestic as well as international laws.²⁵

It is now established and commonly accepted that the ongoing sixth mass extinction of species and rapid climate change are attributable to human activities. The International Environmental Law, replete with multilateral and bilateral legal instruments has, thus far, proved inadequate in restraining the States from pursuing activities posing direct and massive threats to ecosystems. In fact, a UN Report published in 2018 described the existing environmental law regime as “piecemeal and reactive... characterized by fragmentation and a general lack of coherence and synergy among a large body of sectoral regulatory frameworks” which means that “some issues remain without specific, legally binding regulation.”²⁶ Currently, only three Multilateral Environmental Agreements (MEA) lay down legal basis for certain kinds of environmental crimes:²⁷

1. International Convention for the Prevention of Pollution from Ships (MARPOL) 1972- Article 4;
2. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 1973- Article 3.1.a; and
3. The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal 1989- Article 4.3

Regardless of the support these instruments collectively enjoy, they still require an intervention of the Contracting Parties to ensure assimilation of the principles envisaged in them into the domestic laws followed by their effective implementation. The problem with these laws engenders from the fundamental issue of ‘soft law’ which has often been used to describe the nature of international law. The absence of a control mechanism, monitoring the structure and implementation of such laws, combined with the rapid internationalisation of environmental crimes has

25 Rakhyum & Bosslemann, *Operationalizing Sustainable Development: Ecological Integrity as a ‘Grundnorm’ of International Law*, 24 REV. EURO. COMP. & INT’L ENV. L. 115, 117 (2015).

26 REPORT OF THE UN SECRETARY GENERAL, GAPS IN INTERNATIONAL ENVIRONMENTAL LAW AND ENVIRONMENT-RELATED INSTRUMENTS: TOWARDS A GLOBAL PACT FOR THE ENVIRONMENT 1, 43 (2018), <https://digitallibrary.un.org/record/1655544?ln=en>.

27 Maud Sarlieve, *ICL and Environmental Protection Symposium: Which Future for the Crime of Ecocide?* OPINIO JURIS (June 03, 2020), <http://opiniojuris.org/2020/06/03/icl-and-environmental-protection-symposium-which-future-for-the-crime-of-ecocide/>.

contributed to the exponential increase of environmental damage.²⁸

The above mentioned instruments also shy away from one of the major concerns—corporate responsibility. Global capitalism, today, is structured in such a way that economic rationality leans in favor of corporate entities. The consolidation of certain privileges in corporate entities through international instrumentality explains the reticence exhibited by the international legal order in holding corporate protagonists directly accountable for violation of environmental standards as well as human rights. While the purpose of any law, including environmental law, is to ensure well-being of human beings, the latter cannot be seen in isolation from the well-being of natural environment.²⁹ In this regard, international law suffers from anthropocentrism in which it considers environment as a means of ensuring right to life, culture and health thereby diminishing its value as an end in itself. The vast exploitation of natural resources for economic development is also reflective of the anthropocentrism and the principle of sustainable development (hereafter “the principle”) was adopted to establish an equilibrium between economic development on one hand and environmental protection on the other. However, the principle did not achieve the kind of success it was expected to because it ended up prioritizing economic development over environmental protection. In theory, the idea behind the principle was to keep urbanization, industrialization, and economic development from disrupting ecological balance but its realization, thus far, has been the other way around. This is precisely because the principle failed to address primary concerns like demarcation of objectives and, clash of developmental and environmental interests. In the light of this reality, Bosselmann contends that ecological integrity should be treated as a *Grundnorm* against which all other legal norms can be assessed and validated.³⁰ It is a utilitarian expression envisaging non-negotiable commitment of economic activities to ecological limits ensuring well-being of life of all kinds. If operationalized, it would serve both as a preamble to potential legal framework aimed to reform environmental protection goals and a standard for assessing

28 *Id.*

29 Geoffrey Garver, *The Rule of Ecological Law: The Legal Complement to Degrowth Economics*, 5 SUSTAINABILITY 316 (2013), <https://therightsofnature.org/wp-content/uploads/Garver-final-Sustainability-article-Rule-of-Ecological-Law-Sustainability-journal-final.pdf>.

30 Klaus Bosselmann, *Losing the Forest for the Trees: Environmental Reductionism in the Law*, 2 SUSTAINABILITY 2424, 2425 (2010).

international criminal law's adequacy to respond to global environmental issues.³¹ In essence, ecological integrity aims to realign the scales of justice for Earth and its inhabitants in a way that *the natural environment is universal and comes first, human social organization exists within it and comes second and economic modelling only exists within both, neither in parallel nor above them.*³²

II. GREEN INTERPRETATION OF THE SUBSTANTIVE PROVISIONS OF THE *ROME STATUTE*³³

To address the legal vacuum that exists in theory and *praxis*, activists and experts have turned to international criminal law hoping that criminalization of ecocide and a novel approach to the relevant provisions of the Rome Statute would be the necessary steps towards mitigating the losses caused so far. The four Geneva Conventions and the three additional protocols regulate the conduct and methods of war. However, the focus of these frameworks has been war's immediate effect on human life, completely negating the toll it takes on ecosystems and vulnerable communities. These laws do not go far in addressing the missing responsibility to protect the environment from serious violations which, although appalling, remain unimpeded and legally unaddressed. Of the four crimes recognized under the *Rome Statute*, "natural environment" is envisaged under a single provision in the category of War Crimes. Article 8.2 (b)(iv) criminalizes an intentional attack on the natural environment with the knowledge of the severity and long-term effects that entail such an attack. However, this provision, owing to its parent framework, requires either a proof of an armed conflict or violation of the principle of proportionality. This implies that the severity of the environmental damage is excused as long as it is proportionate to and in the pursuit of military objectives ergo the provision is regulating conduct of war, overlooking the ecological damage that ensues from war and lasts even during peace.

Nonetheless, a 'green interpretation' of some of the flexible provisions of the *Rome Statute* could, potentially, impart an evolutive character to the International Criminal

31 Rosemary Mwanza, *Enhancing Accountability for Environmental Damage under International Law: Ecocide as a Legal Fulfilment of Ecological Integrity*, 19 MELB. J. INT'L L. 586, 594 (2018).

32 Rakhyun E Kim & Klaus Bosselmann, *Operationalizing Sustainable Development: Ecological Integrity as a Grundnorm of International Law*, 24 REV. EUR. COMP. & INT'L ENV. L. 194 (2015).

33 Mwanza, *supra* note 31, at 596.

Court (hereafter “the ICC”) which would legally enable it to penalize environmentally detrimental conduct. Even though the issue of environment is remotely addressed in Article 8 of the *Rome Statute*, it is the flexible nature of Article 7 that makes it more relevant to the present context. This flexibility was brought about by the changes introduced by the drafters of the statute owing to which the limitation of ‘war nexus’ was entirely removed.³⁴ The elimination of this condition would mean that there would be no requirement to establish a causal link between crimes against humanity and armed conflict ergo extending criminal liability to offences committed during war or peace.³⁵ In addition, the ICC’s Office of Prosecutor (hereafter “OTP”) has already applied this provision to situations outside the matrix of conflict. This was evident in a 2016 policy paper³⁶ published by the OTP extending the ‘green’ approach to the interpretation of the *Rome Statute*. In the paper, the OTP stated that it would, henceforth, prioritize the investigation and prosecution of crimes that meet a gravity threshold.³⁷ This threshold would be met by proof that a particular crime has been committed by means of, or has amounted to, *inter alia*, *ecological destruction, illegal exploitation of natural resources or illegal dispossession of land*.³⁸ *Although non-binding, the focus of this policy paper on environmental concerns has massively improved the possibility of embedding the ‘green’ approach in the interpretation of the Rome Statute.* Additionally, the recommendations of the policy paper have received wide recognition because of their potential to expand the ICC’s jurisdiction to cases of environmental harm and delivering justice to its victims while simultaneously combating the surging climate crisis.

34 B. Van Schaack, *The Definition of Crimes Against Humanity: Resolving the Incoherence*, 37 COLUMBIA JOURNAL OF TRANSNATIONAL LAW 787, 792 (1998-1999) (Noting that the Nuremberg Tribunal had jurisdiction only over crimes committed ‘before or during the war’ and ‘in execution of or in connection with any crime within the jurisdiction of the Tribunal. The Charter of International Military Tribunal for the Far East, known simply as the Tokyo Tribunal, followed a similar construction for crimes against humanity as the Nuremberg Charter requiring that the acts be committed ‘before or during the war’).

35 Caitlin Lambert, *Environmental Destruction in Ecuador: Crimes Against Humanity Under the Rome Statute*, 30 LEIDEN JOURNAL OF INTERNATIONAL LAW 707, 719 (2017).

36 Office of the Prosecutor, Policy Paper on Case Selection and Prioritisation (Policy Paper, International Criminal Court, Sept. 15, 2016), https://www.icc-cpi.int/itemsDocuments/20160915_OTP-PolicyCase-SelectionEng.pdf.

37 *Id.*, at 41.

38 *Id.*

III. EXISTING CHALLENGES

To a certain degree, the need for the protection of environment and the need for the protection of human rights are mutually reinforcing. However, the expanding nature of human rights has encouraged a new pedigree of rights particularly influenced by the rapid technological and industrial advancements. This has made the protection of environment counterproductive to the protection of individual rights.³⁹ For example, industrialization, over the years, has been able to achieve social objectives such as employment, eradication of poverty, abridgement of gender gap, and access to education.⁴⁰ However, with technology boosting industrial development, its negative impact on environment has not only aggravated the existing issues of deforestation, soil erosion, etc. but also has created new problems like generation of hazardous waste, harmful emissions, threat to biodiversity, etc. In addition to these, military and political objectives of governments have led to several instances of unaccountable environmental destruction.⁴¹ Therefore, international legal accountability for environmental destruction, while perfectly sensible, would require a vast and rapid change in the existing regime on crimes against humanity. Needless to say, the magnitude of such a change, although urgent, is the first obstruction in its way. Given below are some other factors that have held back this notion so far-

- *Inherent problems of the 'green' interpretation*

'Green' approach, in a sense, is reflective of the disharmony that exists between the stark realities of global environmental challenges and law's response to them. The propositions made in the previous sections, however, fail to bring about any legal change to the existing laws. OTP's Policy Paper, for instance, is a remarkable instrument signifying the necessity of environmental damage as criminality, yet it has no control over any substantive amendments required to effectuate the necessary changes. Again, 'green' approach is silent on the issue of legal impediments that challenge the accountability for ecological damage such as lack of legal basis holding corporate giants directly accountable for their crimes. As workable as this approach may seem, it has, on a certain level, failed to regard ecological destruction

39 KLAUS BOSSELMANN, *THE PRINCIPLE OF SUSTAINABILITY, TRANSFORMING LAW AND GOVERNANCE* 112 (2008).

40 *European Commission Environment Fact Sheet*, EUROPEAN COMMISSION, https://ec.europa.eu/environment/archives/wssd/pdf/fs_industrial_development.pdf (last visited July 10, 2021).

41 Palmer, *supra* note 8, at 177.

as an independent ground for liability.⁴² While it does envisage a protective framework for environment on latter's own merit, it fails to challenge the marginal treatment that has been meted out to serious ecological issues under the present international criminal law. Lastly, 'green' interpretation, much like all the existing laws on environmental protection, is anthropocentric by nature; by addressing the humanitarian ramifications of environmental damage, it has failed to highlight its ecological dimensions.⁴³

- *Conceptual challenges*

The first conceptual challenge in the way of a law against ecocide is the fundamental nature of the law itself. Its anthropocentric nature prevents it from adopting an eco-centric approach. While international crimes may be committed through ecological destruction, they may not be considered punishable unless serious harm to people is established. If such harm, devoid of people, is collateral to the military objectives of a State (during a conflict) or economic development, then it will not attract any legal consequences whatsoever. So, the 'scorched earth' tactic used by militaries during war stand justified in the light of the aforementioned grounds. The negative impact of such activities was recently recognized by the Intern-American Court of Human Rights in its 2017 Advisory Opinion⁴⁴ which stated that *environmental degradation may cause irreparable harm to human beings; thus, a healthy environment is a fundamental right for the existence of humankind*.⁴⁵

The second conceptual challenge is the difference between the individual focus of the international criminal law, which is incapable of mitigating a crisis as systemic as climate change. The complexity of the universal character of climate crisis makes it difficult to predict its reaction to new strategies and solutions.

42 Graver *supra* note 29, at 599; See Courtney Brown, *Politics, and the Environment, Non-Linear Instabilities Dominate*, 88 AM. POL. SC. REV. 292, 293 (1994) (where the author propounds that the environmental protection has been just as vulnerable (in the US) to political trade-offs as any other concern simply because public pressure and political accountability barely factor in the importance of an environmentally conscientious government).

43 *Id.*

44 The Environment and Human Rights (State Obligations in Relation to the Environment in the Context of the Protection and Guarantee of the Rights to Life and to Personal Integrity: Interpretation and Scope of Articles 4(1) And 5(1) in Relation to Articles 1(1) and 2 of the American Convention on Human Rights), Advisory Opinion Requested by The Republic of Colombia (2017), https://www.corteidh.or.cr/docs/opiniones/seriea_23_ing.pdf.

45 *Id.* ¶ 59.

- *Determining the elements of crime*

As discussed before, States have already resisted the recognition of ecocide as a crime against peace and legitimately so. The concept does not have a universally acceptable legal definition and may not even be accepted as a crime considering it would put economic development and state sovereignty at risk and in conflict with the environment which, so far, has been considered secondary to the former two. The principle of legality (*nullum crimen sine lege*) and the principle of sovereignty are two very practical challenges that impede the inclusion and acceptance of ecocide.

According to the principle of legality, the law must outline the material and psychological elements of crime. These must be unambiguous and foreseeable as to the effects of the crime enabling an individual to understand the acts and omissions that would render their acts criminally liable. The notions of “environment” and “environmental damage” have dynamic interpretations. Therefore, what will determine the standard of *actus reus*? Should all acts leading to environmental damage be considered ecocide or should there be a threshold? Given the absence of clarity in the former notions, what would impart stability to such a threshold? A similar problem lies with the element of *mens rea*. Would legal liability require special intent, or would regular intent hold a personality equally liable? Would environmental negligence amount to ecocide (circling back to the question of threshold)?

The discussion so far has made it clear that endeavours of both aggression and development are not unilateral and involve, at a time, more States than one. Thus, any law prohibiting ecocide would be at loggerheads with the principle of sovereignty. A country where a crime may have originally perpetrated may not be the country eventually executing it. In case of corporate endeavours, multinational agreements of binding nature are involved. How will a new body of laws on ecocide affect such contractual obligations? Use of legal business by criminal actors is a known cause of environmental destruction. Will the addition of crimes like fraud or corruption finally push the corporate majors to pivot to sustainable and eco-friendly business practices? The current speculations around criminal law fail to answer these questions.

- *Direct accountability of corporate actors*

The *Rome Statute* in its current form is not equipped to deal with direct corporate accountability. This would necessitate an amendment to Article 25 of the statute

which authorizes the ICC to try human actors only. The issue was considered in the Rome Diplomatic Conference of 1998 but got subsided due to various factors. First, there was no precedent of criminal tribunals trying corporate entities ergo there was no instructive reference point suggesting the relevant inclusions in the *Rome Statute*.⁴⁶ Second, during the making of the statute, most domestic jurisdictions did not have laws on direct corporate accountability which would have made admissibility of cases under Article 17 difficult at the time.⁴⁷ However, the developments in municipal laws following the *Rome Statute* and the wide legal acceptance of the latter could be indicative of the fact that the admissibility issues may not be as disabling today as they would have been during the negotiations on the statute. Direct accountability of corporate actors elicits the question of whether they are the subjects of international law? The prerequisite of direct accountability in international law is legal personhood of the offender. Since corporations do not possess international personhood, they are neither direct bearers of international obligations nor direct beneficiaries of rights guaranteed under international law.⁴⁸ Even though they could be held indirectly accountable pursuant to the doctrine of state responsibility or accountability of corporate officers under Article 25 of the *Rome Statute*, thus far, indirect accountability has not proven to be an adequate instrument of restraint for corporations responsible for environmental or other violations. However, international law scholars have both criticised and rejected the notion of legal subjectivity as the sole normative basis of corporate accountability.⁴⁹ The strict observance of this norm is potentially erosive for international law's ability to protect humans as intended legatees of human rights as guaranteed under international human rights laws. A more constructive approach to this problem would be to narrow down the laws that would legally obligate corporations instead of gripping to laws that would not.⁵⁰

Another interesting approach towards prosecution of corporate environmental crimes could be the 'isolated case approach' wherein, other standards considered, individual perpetrators affiliated to the same corporation could be punished for their

46 David Scheffer, *Corporate Liability under the Rome Statute*, 57 HARVARD INTERNATIONAL LAW JOURNAL 35, 38 (2016).

47 *Id.*

48 Mwanza, *supra* note 23, at 602.

49 *Id.*

50 Jose E. Alvarez, *Are Corporations "Subjects" of International Law?*, 9 SANTA CLARA JOURNAL OF INTERNATIONAL LAW 1, 12 (2011).

violations.⁵¹ Dr. Aparac suggests that this would resolve the issue of territoriality as liability will not be attached to any State but to a legal person who is a legitimate subject of international criminal law. As pragmatic as this sounds, when effectuated, the ‘isolated case approach’ will surely face questions on the nature of such liability and its proportionality.

- *Amendment to the Rome Statute*

The above mentioned suggestions, pragmatic or otherwise, are eventually subjected to the procedure of amendment to the *Rome Statute*. At the outset, it would involve an amendment to Article 5 of the Statute to include environmental crimes followed by an additional article on the crime of ecocide. Given the dire necessity of including corporate actors as potential perpetrators, Article 25(1) of the Statute will need to be modified as well. Article 121(3) requires a two-third majority of the State parties, in the absence of consensus, over an amendment. Once approved, the amendment itself needs to be ratified by 7/8th majority of member states under Article 121(4) of the Statute. The application of the statutory procedure of amendment to each of the proposed modifications above will not only be tedious but also diplomatically challenging since States would be less likely to come to absolute consensus on the proposed changes owing to their individual interests. Another legal recourse is the institution of an additional or optional protocol to the *Rome Statute* which would depend on separate ratification by States.⁵²

IV. CONCLUSION

Whether or not the ICC can be pivotal to the notion of criminal responsibility for ecological crimes can be understood in the backdrop of the case of Texaco (TexPet), a Chevron Corporation and the Oriente region of the State of Ecuador.⁵³ In February 2011, the Ecuadorian Supreme Court ordered Chevron to compensate for the oil

51 Jelena Aparac, *ICL and Environmental Protection Symposium: International Criminal Courts as Potential Jurisdiction for Corporate Responsibility for Environmental Crimes*, OPINIO JURIS, <http://opiniojuris.org/2020/06/04/icl-and-environmental-protection-symposium-international-criminal-courts-as-potential-jurisdiction-for-corporate-responsibility-for-environmental-crimes-part-ii/> (last visited July 10, 2021).

52 *Id.*

53 *The Republic of Ecuador v. Chevron Corporation (USA) and Texaco Petroleum Company (USA)*, Case No. 200.112.516/01, Appeal on Arbitral Award, ¶ 24-25 (The Hague Court of Appeal Jul. 9, 2014).

contamination caused by TexPet (acquired by Chevron in 2001) between 1980-90.⁵⁴ The class action suit involving 30000 plaintiffs was dismissed by the US Supreme Court for the lack of jurisdiction of the Ecuadorian Supreme Court in the matter.⁵⁵ Following this, the Permanent Court of Arbitration passed an award in favour of Chevron which was, later, upheld by the Hague court of Appeal.⁵⁶ The consequences of the oil spill that occurred over a few decades has been deemed as “rainforest Chernobyl” in Ecuador.⁵⁷ The communication filed by the Lago Agrio plaintiffs with the ICC contends that spillage by Chevron acquired TexPet was a “deliberate” attempt of environmental damage which had “devastating health effects on the residents of Oriente”.⁵⁸ It addresses the acts of Chevron as “serious and sustained attack” on the lives of those who had been peacefully inhabiting the region for generations. Not only did the Permanent Court of Arbitration but also the Hague Court of Appeal favoured Chevron and the suit was dismissed on legal merits.⁵⁹ Lago Agrio alleged *inter alia* that not only was Chevron responsible for the pollution in the region but also the continuous harm that resulted from it⁶⁰ which essentially qualifies as a crime against humanity.⁶¹ However, even if the said omissions could be attributed to Chevron, the alleged violations happened long before the Rome Statute came into existence and was ratified by Ecuador.⁶² In their communication, the Lago Agrio

54 Bret Stephens, *Amazonian Swindle*, WSJ (Oct. 30, 2007), <https://www.wsj.com/articles/SB119370013621475588>.

55 *Id.*

56 The Republic of Ecuador v. Chevron Corporation (USA) and Texaco Petroleum Company (USA), Case No. 200.112.516/01, Appeal on Arbitral Award, ¶ 24-25 (The Hague Court of Appeal Jul. 9, 2014); See also Karan Nagakatti & Gary Mc. Williams, *International Tribunal Rules in Favour of Chevron in Ecuador Case*, REUTERS (Sep. 7, 2018), <https://www.reuters.com/article/us-chevron-ecuador-idUSKCN1LN1WS>.

57 Kevin Heller, *The ICC, Continuing Crimes, and Lago Agrio*, OPINIO JURIS (Oct. 28, 2014), <http://opiniojuris.org/2014/10/28/icc-prosecute-chevron-officials-damage-lago-agrio/>.

58 COMMUNICATION FILED BY THE LEGAL REPRESENTATIVES ON BEHALF OF THE VICTIMS OF THE LAGO AGRIO OIL SPILL, <https://chevroninecuador.org/assets/docs/2014-icc-complaint.pdf> (last visited July 10, 2010).

59 Chevron Corporation (USA) & Texaco Corporation (USA) v. Ecuador (II), PCA Case No. 2009-23

60 *Id.* at ¶ 36.

61 *Id.*

62 The Rome Statute of the International Criminal Court came into force on July 1, 2002, <https://www.icc-cpi.int/resource-library/documents/rs-eng.pdf>. Ecuador submitted its instrument of ratification to the statute on February 5, 2002, <https://asp.icccpi.int/en/menus/asp/states%20parties/latin%20american%20and%20caribbean%20states/Pages/ecuador.aspx>.

plaintiffs seem to suggest an element of continuing crime to the alleged failure by the current set of Chevron officials in preventing the pollution.⁶³ Perhaps Articles 7 (1)(d)⁶⁴ and 25(3)(c)⁶⁵ could have substantiated the allegations against Chevron had the ICC, like the ICTR, recognised continuous crime.⁶⁶ However, the temporal jurisdiction of this court is non-retroactive⁶⁷ and the ICTR ruling is of no significance here as international law does not recognize *stare decisis*.

The Lago Agrio rulings certainly draw our attention to the lack of political will to empower the ICC to push the statutory objectives of the Rome Statute. However, the author argues that it is not the temporal limitations of the statute *per se* but the overall framework of environmental law, that is the issue here. Therefore, there needs to be a shift from the conventional environmental law to ecological ethics and planetary limits whose foundations reflect the principle of sustainability. Geoffrey Graver explains that ecological law is grounded on the belief that humans are an equally important life form on Earth ergo it has limits-insistent compared to the existing environmental laws which are growth-insistent⁶⁸, giving precedence to human life form above all other natural life forms on Earth. The norm of ecological integrity equalises all life forms⁶⁹ ergo it will enable us to choose such modes and methods of development which will give due regard to all life on this planet. Graver observes that the current environmental framework operates largely within a growth-intensive economic paradigm which has failed to acknowledge and respect the ecological limitations of human endeavour.⁷⁰ In such a scenario the notion of planetary boundaries must

63 Heller, *supra* note 57.

64 Article 7(1)(d) addresses a widespread and systematic deportation or forcible transfer of population as a crime against humanity.

65 Article 25(3)(c) imposes individual criminal responsibility over natural persons who either aid, abet or assist in the commission of crimes against humanity as specified under Article 7.

66 The ICTR Appeals Chamber, in the case of *Prosecutor v. Nahimana and Ngeze*, Case No. ICTR-99-52-T (2003) ¶ 95-97, 100, observed that it was not improper for the Chamber to consider that acts that occurred before its establishment as they could have a “probative and evidentiary value”.

67 The Rome Statute of the International Criminal Court, article 11.

68 Geoffrey Graver, *Moving from Environmental Law to Ecological Law*, in LAURA WESTRA (ED.) ECOLOGICAL INTEGRITY, LAW AND GOVERNANCE 144 (2018).

69 J. Rockström et al., *Planetary Boundaries: Exploring the Safe Operating Space for Humanity*, 14 ECOLOGY & SOCIETY 32 (2009).

70 Graver, *supra* note 68, at 142.

be implemented to check the ecological impact⁷¹ of perpetual development which has given rise to potentially irreversible environmental challenges. In this regard, the World Conservation Strategy (WCS) 1980 put forth an integrated definition of sustainable development that attempted to balance the ecological and economic points on the scale of development.⁷² The United Nations adopted the Sustainable Development Goals (SDG's) in 2015 which, in a sense, revived the WCS objectives by adopting environmental goals with ecological dimensions.⁷³

The attempts to coalesce ecological integrity with anthropocentrism have been few and far between. Balancing economic development and ecological integrity is not a simple goal to realise but legal accountability for the breach of planetary boundaries is, arguably, the most effective way to counter the threats posed by territorial tussles and developmental activities taken on by States. A crucial aspect of environmental violations is that they may have been perpetrated by one state and resisted by another, in all probability, a third state- smaller in size and lesser in capabilities- is the most likely to suffer the outcome of such violations. Case in point- small island states with rising sea levels; countries with melting icecaps. Inclusion of ecocide in international criminal law would impose superior responsibility on policy and decision makers compelling them to consider the interest of human as well as non-human living beings on Earth. The required transition in law vis-à-vis corporations can operate within a broader framework involving pulling the subsidies given to the companies, outlawing the problems, and creating subsidies in other directions. This formula has proven successful once before and its application at the time led to the legal abolition of slavery, yet another practice undermining life. A few States were apprehensive that stopping slave trade would do irreversible harm to many economies, not much needs to be said about the un-sustainability of this stance today.⁷⁴ The idea behind ecocide,

71 *Id.*

72 INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES (IUCN) (ED.), *WORLD CONSERVATION STRATEGY: LIVING RESOURCE CONSERVATION FOR SUSTAINABLE DEVELOPMENT* (1980).

73 *The SDG's in Action*, UNDP, <https://www.undp.org/sustainable-development-goals> (last visited Mar. 10, 2022).

74 John K. Thornton, *Debates over Slavery and Abolition- Slave Trade in the Atlantic World, in SLAVERY AND ANTI-SLAVERY: A TRANSNATIONAL ARCHIVE* (2009), https://www.gale.com/binaries/content/assets/gale-us-en/primary-sources/intl-gps/intl-gps-essays/full-ghn-contextual-essays/gps_essay_saas_thornton1_website.pdf; See also PARL. DEB. HC, *THE DEBATE ON A MOTION FOR THE ABOLITION OF THE SLAVE TRADE*, 110, 110-13, (1972).

therefore, is not anti-profit. In fact, it encourages profit not acquired at the cost of life. Commodification of our planet and exploitation of its resources is, in many ways, like commodification of human lives in the era of slave trade. Fortunately, anti-slavery movement, eventually, found a strong support in historical figures like Rosa Parks and Martin Luther King Jr. but Earth is yet to experience the power of people's mandate. It needs lawmakers, judges, and activists to scale that extra mile, to think beyond the established system and to create a disruption that reinforces life- all life.

HUMAN RIGHTS IMPACTS OF NIGERIA'S OIL AND GAS SECTOR NDC IMPLEMENTATION PROJECTS: LESSONS FROM THE KWALE CDM PROJECT

*Kingsley Osinachi N. Onu**

ABSTRACT

Extant climate change regimes require state parties to engage in climate actions and measures to mitigate and adapt to the effects of climate change (CC). Studies have shown that these measures may result in some unintended human rights violations. This article uses a doctrinal research approach to examine Nigeria's oil and gas sector's climate change mitigation measures/projects in its first Nationally Determined Contribution under the Paris Agreement to ascertain their human rights impacts. The paper refers to the Kwale Gas Flare Utilization project under the Kyoto Protocol's Clean Development Mechanism (CDM) to postulate the possible impacts of current projects on the human rights of the members of the host communities. The article finds that some unintended human rights violations occur in the cause of siting and implementation of climate change mitigation projects. It also finds that human rights protection was not mainstreamed in extant international and municipal legal regimes on CC. Hence, it is a significant challenge in demanding proponents of climate change mitigation projects to respect and protect human rights. It concludes by recommending that the extant international legal regime on climate change incorporate human rights protection; Nigeria should enact a comprehensive framework on climate change that mainstreams human rights protection.

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Keywords: Climate Change, Mitigation, Human Rights, Oil and Gas

INTRODUCTION

Climate change is a significant threat to the enjoyment of human rights in the 21st century. Recent research has revealed that climate change mitigation (CCM) measures now cause unintended human rights violations such as rights to property, life, health, and procedural fairness.¹ This article examines the impact of the Kwale-Okpai Flare Utilization Clean Development Mechanism (CDM) project² on human rights. It considers how lessons drawn from this project can set the agenda for mainstreaming human rights in extant climate change regimes in a manner that will balance the conflicting interests of reducing greenhouse gas emissions and also protect human rights in the process.

This article appraises the human rights impact of climate change mitigation projects in Nigeria's oil and gas sector using a desk-based doctrinal research approach.

The article is divided into five parts. Part one is on the general introduction. The second part espouses the concept of climate change, climate change mitigation and human rights. Part three appraises the human rights impact of the Kwale-Okpai CDM project and possible lessons that may be learnt from it. Part four examines the Paris Agreement, Nationally Determined Contribution (NDC), and the human rights implications of the NDC's oil and gas sector's implementation action projects. It also attempts to draw a balance between the conflict interests of mitigating the effects of climate change and human rights protection. Finally, part five contains the conclusion.

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- 1 Damilola Olawuyi, *The Human Rights Based Approach to Climate Change Mitigation: Legal Framework for Addressing Human Rights Questions in Mitigation Projects*, at xxvii & 500 (Apr. 2013) (Ph.D. Thesis, Faculty of Law, Oxford University), https://ora.ox.ac.uk/objects/uuid:ade6153c-9dc9-4250-8fe5-2ad62ef8ddf8/download_file?file_format=pdf&safe_filename=THESIS01&type_of_work=Thesis.
 - 2 See UNFCCC, KWALE CDM PROJECT MONITORING REPORT OF RECOVERY OF ASSOCIATED GAS THAT WOULD OTHERS BE FLARED AT KWALE OIL-GAS PROCESSING PLANT, NIGERIA (2010), <https://cdm.unfccc.int/filestorage/5/B/4/5B4VENXRU6ZPK1HS9CIDJ0YLMGA8QT/New%20MR%20CDM%20Kwale%20R01.pdf?t=WFF8cjR6bGx0fDDKmwKX84IPUY3l4BI8iUR9>.

HUMAN RIGHTS, CLIMATE CHANGE AND CLIMATE CHANGE MITIGATION

The recent Intergovernmental Panel on Climate Change's (IPCC) Report 2021,³ has revealed that human activities have made the climate warmer at an unprecedented rate in the last 2000 years.⁴ The United Nations (UN) Secretary-General described this damning report as 'code red for humanity'.⁵ The effects of climate change occur in all the inhabited regions of the globe.⁶ The primary effect of climate change is extreme weather conditions that affect the ecosystem, humans, plants, and animal health/lives.⁷ IPCC has projected over 200 million will be displaced and forced to migrate by 2050 due to adverse weather conditions such as flooding, drought, and extreme cold.⁸

Mary Robinson had suggested that climate change could be the greatest threat to the enjoyment of human rights in the 21st century.⁹ It appears to be correct, as climate change affects the enjoyment of human rights, such as civil and political rights;¹⁰ Social-economic and cultural rights;¹¹ and third-generation rights like the right to development and the right to a healthy environment.¹²

3 *Summary for Policymakers, in* IUCN, CLIMATE CHANGE 2021: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE SIXTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 5, 15 (Valerie Masson-Delmotte et al. (eds.), 2021), https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf.

4 *Id.* at 7.

5 Matt Mcgrath, *Climate Change: IPCC Report is 'Code Red for Humanity'*, BBC (Aug. 9, 2021), <https://www.bbc.co.uk/news/science-environment-58130705>.

6 *Id.* at 12.

7 B. Mayer, *Climate Change Mitigation as an Obligation under Human Rights Treaties?*, 6 AMERICAN JOURNAL OF INTERNATIONAL LAW 9, 14. (2021).

8 J.T HOUGHTON, G.J. JENKINS & J.J EPHRAUMS (EDS.) IPPC FIRST ASSESSMENT REPORT, CLIMATE CHANGE: THE IPPC SCIENTIFIC ASSESSMENT 115, 278, 300 (1990), https://archive.ipcc.ch/ipccreports/far/wg_1/ipcc_far_wg_1_full_report.pdf.

9 Mary Robinson, *Social and Legal Aspects of Climate Change*, 5 J. HUM. RTS. & ENV'T. 15, 15 (2014).

10 *See* The International Convention on Civil and Political Rights, (ICCPR) (1966), art. 1 (e.g. right to life and property right).

11 *See* The International Convention on Economic, Social and Cultural Rights, (ICESCR), 1966 (e.g., right to health, indigenous peoples' rights, right to decent livelihood).

12 *See* Mayer, *supra* note 7, at 14.

Social-economic rights are among rights most affected by climate change. For instance, the right to food is threatened by droughts, rise in sea levels, floods which all affect crop planting, harvest yields, and animal survival; and as such result in shortage of food. The right to clean and healthy water is equally impacted by extreme hot weather conditions, heat waves and drought which lead to shortage of drinkable water and poor hygiene especially among rural dwellers and middle-class urban dwellers. The above conditions also have damning consequences for the right to health, as same is dependent on a healthy environment.¹³

Though the effects of climate change are gender and status neutral, however, their impacts are more severe on vulnerable groups like women, children, disables and minority groups.¹⁴ The above groups constitute the greater proportion of world's poorest people, hence lack the financial capacity to cope with the ravaging effects of climate change. These groups basically rely on natural resources for their daily sustenance, hence are more susceptible to the effects of any adverse change on the earth's climatic condition.¹⁵ For instance, rural girls/women depend on wood fuels and waters from streams for their daily needs, hence they trek miles every day in search of them, sometimes, at the expense of their education which may give rise to generational poverty. The physical labor of moving water and firewood from long distances also have adverse effect on the health of this group. They are also sometimes exposed to attacks by animals and sexual abuse in the process. Long inhalation of carbons from wood fuels also affects the health of these groups. When this vulnerable groups cannot cope with the adverse effects of climate change, they resort to sexual crimes and other vices as coping strategies,¹⁶an infraction on the fundamental right to dignity of human person.

Therefore, the obligations of states to protect human rights that are threatened by the effects of climate change must be informed based on reliable scientific

13 GAIL HERMAN, WHAT IS CLIMATE CHANGE 39 (2018).

14 M Majid, Human Rights-Based Approach to Climate Change Through Existing Human Rights Regimes 15 (2016) (Ph.D. Thesis. Department of Law, Governance & International Relations, London Metropolitan University), <http://hdl.handle.net/10919/71517>.

15 A.J.Trájer, G. Nagy & E. Domokos, *Exploration of the Heterogeneous Effect of Climate Change on Ozone Concentration in an Urban Environment*, 14 INTERNATIONAL JOURNAL OF ENVIRONMENTAL HEALTH RESEARCH 7 (2018).

16 *Id.*

knowledge of extant and probable futuristic impacts of climate change.¹⁷ This will elicit an obligation on states to develop climate adaptation measures that can help their populace cope with the effects of climate change. These measures may include relocation or early danger warnings to vulnerable groups of pending harms that extreme harsh weather conditions may occasion.¹⁸ Most of the times, these measures are achieved independently by the states or through foreign financial or technical support.¹⁹ Adaptation, as good as it is, cannot combat climate and its impacts effectively; hence, it needs to be complemented by mitigation.

On the other hand, mitigation demands that states engage and promote climate actions/measures that will reduce the emission of greenhouse gases that lead to climate change. The above is following the position of the Human Rights Council's Special procedure which suggests that states are required under extant human rights treaties "to adopt the mitigation measures necessary to reduce global emissions to hold the increase in global temperature below levels that would cause widespread harm to the enjoyment of human rights."²⁰

Mayer has posited three possible ways that climate change mitigation may impact human rights enjoyment.²¹ Firstly, climate change mitigation measures' implementation infringes human rights, such as forceful relocation and eviction of indigenous people to give way to mitigation projects.²² Nevertheless, states are obligated to respect human rights in the implementation of their climate change mitigation measures.²³ Hence, states must avoid infringing on human rights in executing their climate mitigation actions/projects.

17 Majid, *supra* note 14.

18 *Id.* at 16.

19 *Id.*

20 UNHRC, A New Climate Change Agreement Must Include Human Rights Protections for All (Oct. 17, 2014), <https://unfccc.int/resource/docs/2014/smsn/un/176.pdf>.

21 Mayer, *supra* note 7 at 18.

22 E.g. Brazil's Hydroelectric power project; See Philip Martin Fearnside, *Belo Monte: Actors and Arguments in the Struggle over Brazil's Most Controversial Amazonian Dam*, 148 DIE ERDE - JOURNAL OF THE GEOGRAPHICAL SOCIETY OF BERLIN 14,17-36 (2017), 17-36; *Id.* at 18.

23 Paris Agreement, pmb., Dec. 12, 2015, 55 ILM 740 (2016) (Note that the preamble of a treaty or law is generally not binding on the parties. It, however, aids in the interpretation of the operative clauses of such a treaty or law); See PatríciaGalvão Ferreira, *Did the Paris Agreement Fail to Incorporate Human Rights in Operative Provisions?* 3 (CIGI Papers No.113 of 2016).

Secondly, states may present climate change mitigation as overriding public interests permissible under human rights treaties and laws, such as public safety, national economy, development, and public order.²⁴ Thus, climate change mitigation may well form the basis of justification for compulsory acquisition of lands²⁵ or displacement of populations for biofuel or hydroelectricity sites, which ordinarily is inconsistent with citizens guaranteed rights to property and movement.²⁶ Mayer has rightly suggested that:

‘the recognition of a “climate emergency” by various national institutions in recent years²⁷ suggests the need for exceptional measures that could conceivably include derogations from human rights.’ Climate change mitigation is perhaps more naturally framed as an objective justifying limitation of and possibly derogations from human rights, rather than as a way to protect the enjoyment of individual rights — but one does not necessarily exclude the other.²⁸

Thirdly, the climate mitigation measures will entail the redistribution of natural resources, invariably competing with other states’ priorities related to human rights. This will in the long run, indirectly infringe on human rights.²⁹ Most times, climate change mitigation requires the construction of hydroelectric plants and biofuel plants which will inevitably compete with the existing needs for water and land; this will inevitably affect the rights to food and water.³⁰ Generally, climate mitigation actions are expensive. This means it will be challenging to make average income earners transit to renewable energy sources when they are costly, negatively

24 Constitution of the Federal Republic of Nigeria (CFRN) 1999, § 45 (limits the enjoyment of certain human rights on public order, security, morality, health, and the rights of others); See also *Agu v. Duru & Ors*, at 1 ¶ C-E, (2021) LPELR 53212 (CA).

25 See CFRN 1999, § 44; See also *Adewunmi Adeyemi-Berov. Lagos State Development Property Corporation*, (2012) LPELR 20615 (SC); *Gabamasiv. Julius Berger (NIG) LTD*, (2021) LPELR 52979 (CA).

26 OCHA, *Guiding Principles on Internal Displacement*, 2004, principle 6(2)(c), <https://www.unhcr.org/43ce1cff2.pdf>.

27 E.g., European Union Parliament, *Parliament Resolution on the Climate and Environment Emergency*, 2019/2930 (RSP), (Nov. 28, 2019), https://www.europarl.europa.eu/doceo/document/TA-9-2019-0078_EN.html; Canadian House of Commons, *Journals*, 42-1, No 435, Vote No. 1366 (Jun. 17 2019), <https://www.ourcommons.ca/DocumentViewer/en/42-1/house/sitting-435/journals>.

28 Mayer, *supra* note 7, at 22.

29 *Id.*

30 Benoit Mayer, *Bioenergy with Carbon Capture and Storage: Existing and Emerging Legal Principles*, 13 CARBON & CLIMATE L. REV. 113 (2019).

impacting poverty. The IPCC's report has estimated that effective climate change mitigation will require a consumption loss of 1.7 percent by 2030.³¹

It is imperative to note that states' responsibility to protect human rights is essentially resource-dependent,³² and some of the resources deployed by states to reduce greenhouse gases emission compete with other states' priorities which may be directly or indirectly related to human rights protection. Climate change mitigation projects budgetary needs may invariably affect fiscal allocation to social, economic rights demands such as education, health, labour, etc. It will also impact civil and political rights demands such as security, justice system. A utilitarian argument will justify climate change mitigation measures despite their high financial, and budgetary needs on their benefits. Mayer captured the above statement in this form 'humankind is undoubtedly better off investing in stringent standards to reduce GHG emissions than enduring the increasingly severe impacts of climate change on individuals, societies, and ecosystems for centuries to come.'³³

Other human rights impacted by climate change mitigation are procedural rights. Procedural rights are rights to public access to information, participation in decision-making, and access to justice.³⁴ Procedural rights may be infringed on in the course of planning, siting, and execution of climate change mitigation projects if the public is not: granted access to information regarding the project; allowed to participate in the decision making and execution of the climate change mitigation (CCM) project; or are not granted access to justice if their rights are infringed on in the course of execution of the CCM.

KWALE GAS UTILIZATION CDM PROJECT AND HUMAN RIGHTS

Clean Development Mechanism (CDM) is one of the three flexible GHGs emission reduction mechanisms introduced by the Kyoto Protocol (KP), 1997 to the United Nations Framework Convention on Climate Change, 1992.³⁵ CDM is the only

31 Mayer, *supra* note 7, at 22.

32 *Id.*

33 *Id.*

34 Olawuyi, *supra* note 1, at 240; *See also* the Aarhus Convention, 1998, art. 1.

35 *See* The Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997.

mechanism that involves annex B countries like Nigeria.³⁶It entails that annex A countries (developed countries) carry out GHGs emission reduction projects in annex B countries (developing countries) to earn Certified Emission Reduction (CER) units.³⁷

An investor or an Annex A country seeking to site a CCM or Climate Change Adaptation (CCA) project in a developing country (annex B) must first seek and secure the consent of its country's Designated National Authorities (DNA) and that of the host country.³⁸ The project must also be registered with the CDM Executive Board.³⁹ The essence of the CDM projects is to assist developing countries in reducing GHGs emissions within their territories in a sustainable manner; help the financing country meet their emission reduction target by earning CER units through such projects. The financing country may also trade the CER units in the carbon markets.⁴⁰ Since the CDM is a market-based mechanism, the developed country (financing country) is at liberty to select the developing country to site such projects. They often choose countries or projects that will earn them the highest units of CER, even though the host country may not hugely benefit from such projects.⁴¹Hence, developed countries opted more for CDM as it offered them the fastest and cheapest avenues to meet their emission reduction targets.⁴²

Nigeria was eligible and participated in CDM, although minimally being that as of 2018, only 11 CDM projects were registered in Nigeria.⁴³ Our focus shall be on the Kwale Gas Flaring Reduction Project (Kwale Project or Kwale-Okapi Project),⁴⁴ to

36 *Id.*

37 *Id.* art. 12; *See also* UNEP, CLEAN DEVELOPMENT MECHANISM (1997).

38 O.A. Adejumo, A. Akinsulore & O.O. Oduniyi, *The UNFCCC Mechanisms for Emission Reduction: Implementation Constraints in Nigeria*,1 OAU JOURNAL OF PUBLIC LAW 76 (2017).

39 *Id.* at 82.

40 M. Blevin, *The Clean Development Mechanism and the Poverty Issue*, 41 ENVIRONMENTAL LAW 778, 779 (2011).

41 Olawuyi, *supra* note 1, at 273

42 Adejumo, Akinsulore&Oduniyi, *supra* note 38, at 83.

43 DEPARTMENT OF CLIMATE CHANGE, FEDERAL MINISTRY OF ENVIRONMENT NIGERIA, FIRST BIENNIAL UPDATE REPORT (BUR1) OF THE FEDERAL REPUBLIC OF NIGERIA UNDER THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC) 14 (2018), [https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/218354_Nigeria-BUR1-1-Nigeria%20BUR1_Final%20\(2\).pdf](https://www4.unfccc.int/sites/SubmissionsStaging/NationalReports/Documents/218354_Nigeria-BUR1-1-Nigeria%20BUR1_Final%20(2).pdf).

44 *See* UNFCCC, *supra* note 2.

ascertain its impact on human rights. The Nigeria government approved the project in 2006 as one of its essential strategies in reducing GHG emissions that emanate from gas flaring. The project's core objective was to capture and transport associated gases (that would have flared) in Kwale Oil-Gas Processing Plant (OGPP) to Okpai Turbine Power Plant to generate energy for electricity.⁴⁵ As of 2010, the project had generated over 791,325 tons of CO₂ eq emission reduction.⁴⁶ The project was very ambitious in that it was regarded as having the most realistic prospect of addressing the issue of gas flaring in Nigeria.⁴⁷

Unfortunately, several human rights protests and petitions that straggled the project's approval undermined its clean energy potentials.⁴⁸ The first concern about the project was the lack of transparency in its environmental impact assessment to ascertain its short and long-term impacts on the environment.⁴⁹ Many environmental groups raised concerns on the high possibility of leakage as a result of the low-density seals of the gas pipes and low storage formation capacity that may likely end in the escape of the trapped gases. The escape of these associated gas into the land of the host community will pose serious economic and health concerns for the people. The flight of associated gases on land in a largely concentrated manner will lead to soil acidification, death of plants, animals, and air pollution.⁵⁰ Soil acidification will impact agricultural productivity, being that most of the indigenes rely on subsistent farming for their survival, and soil acidification will affect productivity. This will impact poverty. It will also lead to health complications for animals and human being alike. The proponents of this project will be unable to address these pertinent concerns by conducting a transparent and public-based environmental impact assessment to ascertain the long and short-term impacts of the project on the environment.⁵¹

Another major issue with the project was that its proponents failed to involve local

45 *Id.*

46 *Id.* at 2.

47 See ERA, Facts Sheet: Harmful Gas Flaring in Nigeria; See also Paul Edosa, *Nigeria Loses \$150 Billion to Gas Flare in 36 yr.*, VANGUARD (July 12, 2008).

48 Olawuyi, *supra* note 1, at 70.

49 *Id.*

50 *Id.*

51 See K Adeyemo, *Nigerians Oppose Climate Development Projects*, THE TRIBUNE (Sept. 12, 2010), at 3.

stakeholders and indigenes of Kwale-Okpai in the planning and execution of the project. They also failed to secure the prior and informed consent of the locals before siting the project. The people of Kwale were not given access to information relating to the project or were involved in making decisions related to the project. These neglects generated strong oppositions/resistance by the Kwale and Okpai local communities against the project, which deteriorated into violent protests that claimed the life of 5 persons.⁵²

The Kwale Project has impacted both substantive and procedural rights of the Kwale people. These rights include:

a. Right to property and forced displacement

The Kwale project impacted the proprietary rights of the people where vast expanse of land used for the project was compulsorily acquired from the people. The right to property is a fundamental human right recognized under international, regional and municipal laws.

At the international level, the Universal Declaration of Human Rights (UDHR), though a soft law hence not legally binding, recognizes and protects the right to property of all persons in article 17. Also, article 16 of the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) guarantees the right of both men and women to acquisition, ownership, enjoyment, ownership, and administration of property. This is also in tandem with the provisions of article 5 of the International Convention on the Elimination of All Forms of Racial Discrimination (ICERD).⁵³ At the regional level, Article 14 of the African Charter on Human and People's Rights⁵⁴ provides for the property right, but with the proviso, that same may only be infringed upon by the state in 'the interest of public need or the general interest of the community and per the provisions of appropriate laws.'⁵⁵ The Charter did not define 'public need' or 'general interest of the community'.

52 *Id.*

53 International Convention on the Elimination of All Forms of Racial Discrimination, Mar. 7, 1966, 660 U.N.T.S. 195.

54 Also known as ACHPR, African Charter, or Banjul Charter was adopted on June 27 1981, OAU Doc. CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (1982), and entered into force on October 21, 1986.

55 ACHPR, 1979, art. 14 (Nigeria is a signatory to all these international regimes).

In Nigeria, the Constitution recognizes and protects the right of people to own properties.⁵⁶ However, section 44 of CFRN empowers the government to compulsorily acquire lands from Nigerians for a public purpose, provided that the owners of the lands are compensated.⁵⁷ This provision is even more elaborate in the Land Use Act (LUA) of 1978. Section 1 of LUA vests all lands in states of the federation on the governors of such States, who hold them in trust for the state's people. The Act also empowers the governor and the federal government to acquire lands of the people for overriding public interest compulsorily.⁵⁸

It may seem that the forced acquisition of the land of Kwale people for the CDM project on the ground of overriding public interest is justified, but that is not the case as the vast portion of land was arbitrarily acquired without consultation and compensation of the people.⁵⁹ Compulsory acquisition of land by the government must strictly follow the due process of law. The courts have, in a plethora of cases, affirmed the above position. In the case of *Govt. of Enugu State of Nigeria v. Onya & Ors*,⁶⁰ the court had rightly held that “the property right is by the Constitution of the land and any interference therewith must be strictly per the law. Interference with property rights of citizens *vi et armis* by governmental bodies must be depreciated if the rule of law is to be crowned.” Also, in *SERAC v. Nigeria*,⁶¹ the African Court on Human Rights held that the Nigerian government's forceful acquisition of Ogoni land without compensation amounts to an infringement of the people's right to property as enshrined under article 14 of the African Charter. It is trite to note that the government cannot resort to self-help even where the government has compulsorily acquired land for national security and paid compensation thereto to the original owners. This was the position of the court in the recent case of *Nigerian Air Force & ORS v. Chia & ORS*,⁶² where the Court of Appeal held that

“...No citizen can be ejected from his place of abode by force or military fiat without recourse to law. The Land Use Act provides for compulsory

56 See the Constitution of the Federal Republic of Nigeria (CFRN), 1999, § 43.

57 *Nigerian Air Force v. Chia*, (2021) LPELR-53293(CA).

58 LUA, 1978, § 28.

59 Olawuyi, *supra* note 1, at 86.

60 *Govt. of Enugu State of Nigeria v. Onya*, (2021) LPELR-52688(CA).

61 *SERAC v. Nigeria*, AHRLR 60, ACHPR 2001 Communication 155/96.

62 *Nigerian Air Force v. Chia*, (2021) LPELR-53293(CA).

land acquisition for overriding public purposes and compensation is usually paid by the government. Let us even assume that compensation had been paid and the Respondents refused to vacate the land; still, the Appellants must of necessity follow due process in ejecting them from the land. Self-help can never fulfil the overriding purpose of the rule of law. Even a squatter or trespasser deserves to be ejected by due process of law...In this case, self-help was employed to dehumanize citizens who were residing on their ancestral land and ironically part of those the Appellants claim to be working towards their interest and security. No, it is not done by means of breaching the human rights of citizens. Every citizen deserves to be treated with some dignity and the minimum standard is to respect the fundamental rights of citizens. The right to human dignity is guaranteed by the Constitution and when the country is not at war, there cannot be any justification for dehumanizing citizens in the name of national security. The Respondents as Nigerians also have the right to own property and their houses destroyed by the Appellants is also a breach of their rights to own property.”⁶³

Unarguably, climate change mitigation projects are projects of public interest; however, where such projects can lead to the displacement of individuals or communities,⁶⁴ the government must take proactive steps to balance the conflicting germane interests by involving the affected individuals in deciding and paying adequate compensation.

Nigerians are culturally and ancestrally attached to their lands. Lands are culturally guided by the principle of trust and not necessarily ownership. It is regarded as being bequeathed to the current generation by the past generation, to hold in trust for the unborn generation. Hence, the government must actively involve the people in any decision that will disinherit them from their ancestral lands. There exist evidences of lack of consultation of the people before the government compulsorily acquired lands for the CDM project.⁶⁵ The Nigerian government failed in this solemn responsibility in relation to the Kwale-Okpai Project which may largely account for the colossal opposition it generated from the people. The approval of the project by the Nigerian government as a sustainable CDM project, and its registration by the CDM Executive Board despite the protests by environmental groups on it, underscores the eminent

63 Per YargataByenchitNimpar, J., at 53-55, ¶ C-E.

64 Olawuyi, *supra* note 1, at 89.

65 Damilola Olawuyi, *Carbon Projects and Human Rights Struggles*, in HUMAN RIGHTS BASED APPROACH TO CARBON FINANCE 64 (Damilola Olawuyi ed. 2016).

dangers in magnifying GHGs emission reduction target over and above its human rights impacts.⁶⁶ The sustainability of a project should be measured from the volume of emission reduced and its effects on the community.

b. Right to Health

The relationship between an environment and the health condition of its occupants cannot be overemphasized. The environmental state of a given place considerably impacts the health of humans, animals, and plants.⁶⁷ Where the environmental impact assessment of the health implications of a project is poorly conducted (as is the case with the Kwale Flare Gas Reduction Project), it results in serious health concerns for the inhabitants of the project site area.

The people of Kwale who protested against this project did so solely on forced displacement, lack of compensation, and consultation.⁶⁸ The people do not have a full grasp of the long-term health implication of the project. What came to Kwale as a blessing also has some challenges that the government and the project owners have shown not to be prepared enough to handle. Research has reported that many occupants of the project site 'community would be diagnosed with cancer in their lifetimes due to effluents from the project.'⁶⁹ The noxious nitro dioxide is emitted in generating power through gas turbines and poses significant health concerns.⁷⁰ These health challenges are systemic and may even take a long time to show up. Hence, the Nigerian government should have taken steps to forestall this kind of ugly scenario.

The right to health is recognized under international and regional human rights regimes that Nigeria is a signatory to. Article 12 of ICESCR provides that everyone

66 FIDELIS ALLEN ET AL., THE CDM IN AFRICA CAN'T DELIVER THE MONEY: REPORT TO THE UNITED NATIONS CDM EXECUTIVE BOARD "CALL FOR INPUTS ON THE POLICY DIALOGUE" ABOUT CDM FLAWS IN SOUTH AFRICA AND NIGERIA (2012), https://cdm.unfccc.int/public_inputs/2011/eb64_02/cfi/P2MUQY1117HGL6AH8DJLCEY7ZD5VAX.

67 B.E. Umukoro, *The Ogidigben EPZ Gas Project and The Environment: Health and Human Rights Implications*, 1 AJAYI CROWTHER UNIVERSITY LAW JOURNAL 1, 12 (2018).

68 Olawuyi, *supra* note 1, at 89.

69 *Groups Slam Nigeria's Submission of Gas Flare Reductions for Carbon Credits*, CARBON TRADE WATCH (Jan. 11, 2006), http://www.carbontradewatch.org/index.php?option=com_content&task=view&id=171&Itemid=36.

70 *Id.*

has the right to the highest attainable physical and mental health standard.⁷¹ This is also in tandem with the provision of article 16 of the African Charter.⁷² The African Human Rights Commission in the case of *SERAC v. Nigeria*⁷³ examined the obligations of parties to the African Charter to prevent human rights violations. The complainants complained that the government of Nigeria has failed to avoid the violation of rights to a health and healthy environment under articles 16 and 24 of the African charter by International Oil Companies operating in Ogoniland. The commission found for the complainants and held that Nigeria failed to prevent human rights violations within her territory.

One may ask, is there a constitutionally recognized right to health in Nigeria? The answer to this question may be found in chapter II, section 17(3)(c) and (d) of CFRN. Subsection (c) provides that the health, safety, and welfare of all persons in employment are safeguarded and not endangered or abused. This is a laudable provision as it guarantees the protection of the health and safety of workers. It, therefore, connotes that the Nigerian government must make policies that will safeguard the health of workers in the CDM project sites. However, this provision is lopsided because it only catered for employees without consideration for members of the host communities of such employments who may be affected directly or indirectly by the activities of such works. Furthermore, workers at the project site most times reside within the host communities of such sites; if this assumption is anything to go by, it means that these workers are only protected while on duty and end up suffering the same health damage as the larger community after the close of work.

Subsection (d) provides that the state shall direct its policy towards ensuring adequate medical and health facilities for all persons. We submit that this cannot be regarded as a right to health but a medical facility/care. This provision creates a reactive obligation on the Nigerian government to care for the sick rather than prevent the sickness. It is miles away from the World Health organization's (WHO) definition of health, which has been defined as: "a complete state of physical, mental and social wellbeing, and not merely the absence of disease or infirmity."⁷⁴

71 International Covenant on Economic, Social and Cultural Rights, 1996, art. 12(1).

72 See the Protocol to the African Charter on Human and Peoples' Rights of Women in Africa (2005), art. 14 (provides for the health and reproductive Rights).

73 *SERAC v. Nigeria*, AHRLR (2001) 60.

74 See Constitution of the World Health Organization, 44 BASIC DOCUMENTS, SUPPLEMENT

Another challenge with the Nigerian provision for health is that it is located in chapter II of the Constitution, which is not enforceable under section 6(6)(c) of the same Constitution.⁷⁵ Hence, individuals whose right to health has been infringed upon as a result of the siting and operation of the Kwale CDM project cannot rely on section 17 of the Constitution to seek a remedy before the court. It appears that victims of health damages arising from the CDM project can only constitutionally enforce their rights to health by expansively reinterpreting existing fundamental rights under chapter IV of the Constitution (such as rights to life and dignity of the human person) to cover the right to health. The scope of the right to life⁷⁶ has in modern time expanded beyond the protection of limb and life.⁷⁷ It transcends a mere animal existence.⁷⁸ In the Indian case of *Miss Mohini Jain v. State of Karnataka & others*,⁷⁹ the right to life was interpreted to encompass 'all the rights which are basic to the dignified enjoyment of life and extends to the full range of activities which any individual is free to pursue.'⁸⁰ Hence, to consider the right to life only from its deprivation is parochial as the right to life extends to all that is expedient for the sustenance of life.⁸¹ The siting and execution of the Kwale CDM projects clogs the health of Kwale people and deprives them of all that is necessary for the sustenance of life. It is important to note that the success of a lawsuit that seeks to rely on this expansive reinterpretation of existing rights under chapter IV of the Constitution to cover the right to health will largely depend on scientific evidence and the liberality of the judge that sits on the case. It is pertinent to note that Nigeria has domesticated some international legal regimes that expressly recognize health rights. Article 16 of the African Charter on Human and Peoples' Rights (Ratification and Enforcement) Act⁸² provides that:

(2006) available at www.who.int/governance/eb/who_constitution_en.pdf.

75 Okogie v. Attorney-General of Lagos State, (1981) 1 NCLR 218.

76 CFRN, 1999, § 33.

77 Ifeanyichukwu Azuka Aniyie, *Recognition of Rights of Taxpayers and Its Implications* 1 (African Tax Research Network Working Paper No. 2, 2017).

78 *Munn v. Illinois*, 94 US 113 (1877) (per Field, J, dissenting).

79 *Miss Mohini Jain v. State of Karnataka*, 1992 AIR 1858.

80 See Aniyie, *supra* note 77, at 2.

81 A. Enabulele, *The Right to Life or to Compensation Upon Death: Perspectives on an Inclusive Understanding of the Constitutional Right to Life in Nigeria*, 3 AFE BABALOLA UNIVERSITY JOURNAL OF SUSTAINABLE DEVELOPMENT LAW AND POLICY 99 (2014).

82 ACHPR Act, Cap A9 Laws of the Federation of Nigeria (LFN), 2004, art. 16. See also Child's Right Act, 2003, § 13.

1. Every individual shall have the right to enjoy the best attainable state of physical and mental health.
2. States Parties to the present Charter shall take the necessary measures to protect the health of their people and to ensure that they receive medical attention when they are sick.

The whole activity of the Kwale CDM projects infringes on article 16(1) of the above Act, and Nigeria as a state has also failed in her duty as stipulated in article 16(2) by not declining to approve a project that is harmful to the health of her people. This ugly scenario would have been forestalled if a transparent and consultative Environmental Impact Assessment (EIA) was carried out before the siting of the project. It was allegedly reported that the Nigerian government connived with the proponents of the project to stage-manage an EIA exercise in respect of the project.⁸³

c. Procedural Rights

Procedural rights are rights to access to information, public participation, and access to justice. This right has emerged to be pivotal in decision-making that relates to the environment. The Aarhus Convention,⁸⁴ is the first international binding legal regime to explicitly provide for procedural rights. The Convention provides that in all matters related to the environment, ATI, participatory right, and access to justice must be provided, respected, and protected by the state parties.⁸⁵

Access to information is very vital in a given society. The descriptive documents relating to the Kwale CDM project were shrouded in secrecy from the affected community members as to its long- and short-term impacts on the environment.⁸⁶ The members of the community were not afforded adequate information about the project and how it will affect them. The exclusion of the Kwale and Okpai people in the project's planning and implementation made them vehemently oppose rather than laud the project. This underscores the importance of access to information to those that may be affected by CCM project planning, approval and implementation.

⁸³ Olawuyi, *supra* note 1, at 103.

⁸⁴ Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, June 25, 1998, 2161 U.N.T.S. 447 [hereinafter Aarhus Convention, 1999].

⁸⁵ *Id.* art. 1.

⁸⁶ *Id.*

The right to access to information (ATI) is recognized under the international legal regime that Nigeria has acceded to. Article 19(2) of ICCPR guarantees everyone the right to freedom of expression, including the right to '*seek, receive and impart information...*'⁸⁷

The Constitution of Nigeria also accords Nigerians the right to freedom of expression and access to information. Section 39(1) of the 1999 Constitution as amended provides: - "Every person shall be entitled to freedom of expression, including the freedom to hold opinions and *to receive and impart ideas and information without interference.*"⁸⁸ It is important to note that Section 39(3) of the Constitution,⁸⁹ only limited the right to freedom of expression and access to information. There is no known legislation in Nigeria that proscribed access to information in relation to CCM projects in Nigeria according to Section 45(1) of the Constitution; hence, the failure of the Nigerian government and proponents of the Kwale-Okpai project to avail the Kwale people of adequate information regarding the project amounts to a violation of their right to access to information.

Secondly, the right to participation entails stakeholders' consultation and involvement in decision-making, control, implementation, and decision over projects that affect them. The participatory right is enshrined in article 25 of ICCPR, a legally binding agreement to which Nigeria is a signatory. In Nigeria, there is no express provision for the right to participation; however, the same may be deduced from article 13 (1) of the African Charter which provides that: 'every citizen shall have the right to participate freely in the government of his country, either directly or through freely chosen representatives under provisions of the law.' This provision may generally be interpreted to denote political participation. However, when given a liberal interpretation will disclose the right of Nigerians to participate actively in planning and control of projects that affect them. The Nigerian government and the proponents of the Kwale Project failed and neglected to involve the Kwale and Okpai people in the execution of the project that directly affect them. As stated above, the environmental impact assessment process was stage-managed by the proponents of the project and the government without recourse to the people who may be directly

87 *Id.*

88 See also the African Charter, 1979, art. 9.

89 *Aviomoh v. C.O.P.*, (2014) LPELR-23039(CA), 1.

affected by the project. The cosmetic afterthought EIA consultation that took place after the project has been approved and already being implemented was conducted in the English language when the vast population of the people understands and speaks only the ukwani dialect.⁹⁰ This neglect made the people apprehensive and suspicious of the project, hence, their opposition to the project. The project was described by a scholar in this manner: 'CDM projects in Nigeria have no prospects for success given the context in which they have been initiated. Such projects are characterized by fraud, exclusion, the destruction of natural habitats, the degradation of local communities' livelihoods, and of soil and water resources.'⁹¹

Third is the issue of access to justice for people whose rights have been infringed upon through the implementation of a CCM project. One of the significant lacunae in the Kyoto Protocol (KP) and many other international law regimes is that only state parties can complain or initiate a dispute resolution process under them. Article 12 and 14 of the Kyoto Protocol⁹² only envisaged state parties when it comes to declaration and resolution of disputes; hence, individuals or people whose rights have been infringed on in the process of planning, siting, and implementation of a CCM project cannot approach the secretariat of KP for dispute resolution. However, section 6(6)(b) of the Nigerian Constitution has vested power on the judiciary to hear matters between individuals and government institutional bothering to determine their legal rights. Also, article 7(1) of the African Charter provides that:

Every individual shall have the right to have his cause heard. This comprises:

- (a) the right to an appeal to competent national organs against acts of violating his fundamental rights as recognized and guaranteed by conventions, laws, regulations, and customs in Force;

Similarly, section 46 of the Nigerian Constitution empowered the Chief Justice of Nigeria (CJN) to make rules to enforce fundamental human rights in Nigeria. The extant rule for the enforcement of human rights in Nigeria is the Fundamental Rights (Enforcement Procedure) Rule, 2009 made by the then CJN, Kutigi. The Rule regulates the enforcement of fundamental rights enshrined under chapter IV

90 See F Onojiribholo, *Kwale Chief Laments Plight of Communities*, DAILY INDEPENDENT (Aug. 16 2011).

91 Olawuyi, *supra* note 1, at 129.

92 UNFCCC, *supra* note 2.

of the Constitution and the African Charter. Therefore, it is clear that the right to access justice is a fundamental right recognized under extant laws in Nigeria. The suppression and arrest of protesters protesting against the approval of the Kwale CDM by security forces in Nigeria are an infringement of the right to access to justice of the Kwale people. The people deserve to be heard. It is cynical for the government in connivance with the proponents of the project to forcibly eject people from their ancestral lands and desecrate the environment in a desperado fashion and expect to be hailed by the people. The CCM projects are made for the people and not the people for CCM. Any guise to turn the tides will always be visited with swift opposition by the people, and government should not shy away from dancing to the rhythm of its music.

THE PARIS AGREEMENT, NATIONALLY DETERMINED CONTRIBUTION, AND HUMAN RIGHTS

The Paris Agreement, 2015⁹³ that was negotiated under the framework of the UNFCCC, 1992, was adopted on December 12, 2015, at the 21st Conference of Parties (COP) meeting tagged the Paris Climate Summit,⁹⁴ and came into force in November, 2017.⁹⁵ The Paris Agreement is a landmark agreement in the global efforts targeted at combating climate change. The central goal of the agreement is to reduce global temperature to well below 2 °C above pre-industrial levels⁹⁶ and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.⁹⁷

Unlike the Kyoto Protocol that set emission reduction targets for parties (particularly the Annex 1 parties), the Paris Agreement adopted a pledge and review mechanism

93 Paris Agreement, 2015, https://unfccc.int/sites/default/files/english_paris_agreement.pdf (Last visited Jan. 4, 2022)

94 UNFCCC, PROCESS AND MEETINGS: THE PARIS AGREEMENT 24 (2017) <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.

95 Under Article 22(1) of the Paris Agreement, which is to the effect that the agreement comes into force 30 days after at least 55 parties have ratified the agreement which presents at 55% of global GHG emissions. See *Paris Agreement- Status of Ratification*, UNFCCC, <https://unfccc.int/process/the-paris-agreement/status-of-ratification> (last visited Jan. 08, 2020).

96 Paris Agreement, 2015, art. 2.

97 *Id.* art. 2(1)(a).

for all parties called the Nationally Determined Contribution (NDC).⁹⁸ It requires parties to domestically develop an ambitious post-2020 emission reduction climate action pledge in their NDC, which is to be reviewed every 5 years.⁹⁹ The design of countries' NDC shall be based on common but differentiated responsibility (CBDR).¹⁰⁰ Hence, while the central goal of the NDCs is to reduce global emissions, the commitments of the parties differ.

The Paris Agreement has been hailed as the first international climate change regime to refer to the observance of human rights in its implementation. It provides that:

Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities, and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity¹⁰¹

Paragraph 15 of the preamble also made provision for procedural rights. Despite the ambitious nature of the above provisions of the Paris Agreement on human rights, the provision is not binding on the parties, even when it is contained in the preamble to the agreement.¹⁰² Human rights obligation was not explicitly provided for the inoperative articles of the Agreement, although references were made to sustainable development.¹⁰³ Human rights provided under the agreement is basic incantatory and vague.¹⁰⁴

Nigeria signed the Paris Agreement and as well deposited her first NDC on March 30, 2017.¹⁰⁵ The first Nigerian NDC (NNDC) takes to reduce Nigeria's emission

98 *Id.* art. 4(2).

99 *Id.* art. 4(9); See *Nationally Determined Contributions (NDCs)*, UNFCCC <https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs> (last visited Jan. 9, 2020).

100 Paris Agreement, 2015, art. 4(1).

101 Paris Agreement, 2015, pmb. ¶ 25.

102 See Patrícia Galvão Ferreira, *Did the Paris Agreement Fail to Incorporate Human Rights in Operative Provisions?*, (No. 113 CIGI PAPERS 3, 2016).

103 The operative provisions of the Paris Agreement include article 2 (purpose of the agreement), article 4 (mitigation), article 6 (cooperative approaches), and article 7 (adaptation).

104 B. Mayer, *Human Rights in the Paris Agreement*, 6 CLIMATE LAW 109, 117 (2016).

105 See *Paris Agreement- Status of Ratification*, UNFCCC, <https://unfccc.int/process/the-paris-agreement/status-of-ratification>. (last visited Jan. 8, 2020).

conditionally.¹⁰⁶ and unconditionally¹⁰⁷ by 20 and 45 percent respectively by the year 2030.¹⁰⁸ The key measures under the NNDC to attaining this goal are energy efficiency, efficient gas power states, eradication of gas flaring, climate-smart agriculture (CSA), reduction of transmission losses, and renewable energy.¹⁰⁹ The NNDC there singled out 5 GHGs emitting sectors in Nigeria (which are power; oil and gas; agriculture and land use; transportation and industry) and developed specific sectorial mitigation action plans for these sectors.¹¹⁰ It is pertinent to note that Nigeria submitted an updated NDC to the secretariat of the Paris Agreement on July 31, 2021.¹¹¹ It surprisingly omitted the oil and gas sector in the sectoral emission reduction focus. However, it increased the unconditional commitment of Nigeria from 45% to 47%.

THE OIL SECTOR SECTORAL IMPLEMENTATION ACTION PLAN

The oil and gas sector represent 65% of Nigeria's budget funds.¹¹² The oil and gas sector has also negatively impacted the environment. The oil companies operating in Nigeria have consistently toured the easy part of flaring gas in oil exploitation.¹¹³ Nigeria is currently ranked as the 5th highest gas flaring country.¹¹⁴ The NDC

106 Unconditional contribution means what Nigeria can contribute without international supports.

107 Conditional contribution means what Nigeria can contribute international support in financial assistance, capacity building, and transfer of technology.

108 The implementation is period spins from the year 2015-2030. See NIGERIA'S INTENDED NATIONALLY DETERMINED CONTRIBUTION, UNFCCC (Mar. 17, 2017) https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Nigeria%20First/Approved%20Nigeria%27s%20INDC_271115.pdf.

109 *Id.*

110 *Id.* at 11.

111 See *Nigeria's First Nationally Determined Contribution - 2021 Update*, DEPARTMENT OF CLIMATE CHANGE (Jul. 31, 2021), https://climatechange.gov.ng/wp-content/uploads/2021/08/NDC_File-Amended-_11222.pdf.

112 *Overview: Nigeria Extractive Industries Transparency Initiative*, EITI (Oct. 24, 2021), https://eti.org/es/implementing_country/32.

113 RICARDO ENERGY AND ENVIRONMENT, REF: ED62516- ISSUE NUMBER 3, NDC IMPLEMENTATION ACTION PLAN FOR THE AGRICULTURE SECTOR, REPORT FOR THE GOVERNMENT OF NIGERIA AND UNDP 2 (2016); See also RICARDO ENERGY AND ENVIRONMENT, REF: ED62516- ISSUE NUMBER 2, NDC IMPLEMENTATION ACTION PLAN FOR THE OIL AND GAS SECTOR, REPORT FOR THE GOVERNMENT OF NIGERIA AND UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP) 3 (2017).

114 *Id.*

Implementation Action Plan for the Oil and Gas Sector,' report for the Government of Nigeria and United Nations Development Programme (UNDP) shows that gas flaring has cost Nigeria over #233 billion in 2018 alone.¹¹⁵ The environmental cost of gas flaring in Nigeria amounts to #28.8 Billion annually.¹¹⁶

Gas flaring has led to acid rain and impact on animals and plants' lives in Niger Delta communities, like the Udeze community, where gas has been flared for over 45 years.¹¹⁷ The community's water source is polluted, and fire flames continually illuminate the community from gas flare sites.¹¹⁸ The NNDC estimates that the oil and gas sector will, under a Business as Usual scenario (BAU), emit 90 million tonnes of GHGs by 2030.¹¹⁹ In order to mitigate this, the NNDC stipulates that Nigeria will unconditionally reduce emissions by 10% by 2020 through still enforcement of anti-gas flaring laws and regulations, and ultimately eradicating gas flaring by 2030.¹²⁰ Conditionally, the NNDC suggested the development of Gas-to-Power Plants at Gas Flare Sites (microgrid); and blending 10% of the volume of Fuel-Ethanol with Gasoline (E10) and 20% by volume of Biodiesel with Petroleum Diesel (B20) for Transportation Fuels.¹²¹ So far, Nigeria has implemented four CCM mitigation projects under its first NDC,¹²² four projects are still being implemented,¹²³ while two projects are still at the planning stage.¹²⁴ Through these projects, Nigeria has

115 *Id.*

116 *Id.*

117 I Aye, & E. Wingate, *Nigeria's Flare Gas (Pollution and Prohibition) Regulation 2018*, 21 ENVIRONMENTAL LAW REVIEW 119, 120 (2019).

118 S. O. Aghalino, *Gas Flaring, Environmental Pollution and Abatement Measures in Nigeria*, 11 JOURNAL OF SUSTAINABLE DEVELOPMENT IN AFRICA 223, 229 (2009); See also I.L. Worika, *Deprivation, Despoliation and Destitution: Whither Environment and Human Rights in Nigeria's Niger Delta?*, (8) ILSA JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW 1, 9-11 (2001).

119 Worika, *supra* note 118, at 2.

120 *Id.* at 3; Unconditional contribution means what Nigeria can contribute without international supports. This process will lead to a reduction of 64 million tonnes of CO₂e by 2030. See Templars, *The Flare Gas (Prevention of Waste and Pollution) Regulations, 2018*, TEMPLARS (Sep. 2018), at 1, <https://www.templars-law.com/wp-content/uploads/2018/09/FLARE-GAS-PREVENTION-OF-WASTE-AND-POLLUTION-REGULATIONS-2018.pdf>.

121 *Id.* at 11.

122 *NDC Mitigation Projects List*, DEPARTMENT OF CLIMATE CHANGE, <https://ndcregistry.climatechange.gov.ng/projects/?sector=2> (last visited Aug. 3, 2021).

123 *Id.*

124 *Project List*, DEPARTMENT OF CLIMATE CHANGE, <https://ndcregistry.climatechange.gov.ng/projects/?sector=2>. (last visited Aug. 3, 2021).

reduced its emission from the oil and gas sector to the tune of 234,100 tonnes of CO₂e.¹²⁵

IS THE NNDC'S OIL, AND GAS SECTOR IMPLEMENTATION ACTION PLANS RIGHTS-BASED?

The Oil and gas sector's action plan is resilient and ambitious enough to drastically reduce the emission of GHGs emanating from the industry and inspire productivity. This will be achieved through stricter enforcement of the Flare Gas (Prevention of Waste and Pollution) Regulations 2018¹²⁶ and the Nigerian Gas Flare Commercialization Program (NGFCP) approved by the Federal Executive Council in 2016.¹²⁷ If properly implemented, the sectoral action plan will engineer productivity, create employment, and lift thousands of people out of poverty, hence, pro-human rights. However, did the NNDC and the oil and gas sector implementation action plan contemplate that CCM projects may cause some unintended human rights violations? Was human rights protection mainstreamed in the NNDC and implementation action plan for the oil and gas sector?

What is closest to a human rights provision in the first NNDC, is paragraph 4.2.8 that deals with social inclusion and gender impacts.¹²⁸ The recent updated first NNDC further expands this DC in paragraph 6. Also, paragraph 3.3.7, line 3 of the oil and gas sector Implementation Action Plan, alluded to stakeholder's engagement, without details on the modalities of this engagement. Therefore, it will be overambitious to assume that this provision has guaranteed procedural human rights in the oil and gas sector's CCM projects.

125 See *Nigeria NDC Registry*, DEPARTMENT OF CLIMATE CHANGE, <https://ndcregistry.climatechange.gov.ng/>. (last visited Aug. 3, 2021).

126 Flare Gas (Prevention of Waste and Pollution) Regulations, 2018 (This regulation is made pursuant to section 44 of the 1999 Constitution of the Federal Republic of Nigeria, as amended in 2018); The Petroleum Act 1969; The Associated Gas Reinjection Act, 1979; See Flare Gas (Prevention of Waste and Pollution) Regulation 2018, § 2(1) [hereafter "Regulations"].

127 Templars, *supra* note 120 (although current gas production does not satisfy domestic needs, as an estimated 4 million SCF gap still exist her day) See Ricardo Energy and Environment, *supra* note 113, at 4.

128 Aghalino, *supra* note 118, at 16.

The above provisions are vague and cannot command a compelling obligation on any person or individual to respect and protect humans in the cause of the implementation of NNDC.

NNDC and its oil and gas sector implementation action plans are silent on both substantive and procedural rights. The conditional contribution under the NDC is dependent on foreign investment, technology transfer, and funding. The NNDC failed to set out a transparent guideline for such endeavors to guarantee that the rights of Nigerians are not trampled in the process. Many Nigerians have suffered demeaning human rights abuse in the employment of so-called expatriates.¹²⁹ Hence economic interests drive these expatriates (like the CDM projects under the Kyoto Protocol), who have little or no regard for human rights protection, so long as profit is maximized. The Kwale-Okpai Gas Utilization Project¹³⁰ is a good illustration of this bizarre glorification of economic benefits over and above human and environmental protection.

The oil and gas sector's CCM projects are directly impacting their host communities. They are likely to face the same opposition as the Kwale CDM project under the Kyoto Protocol. There is not any known record of payment or compensation of the original owners of the project sites. Their EIA processes are shrouded in secrecy like the Kwale project, raising questions about the transparency of the entire process. The project has impacted and is still impacting the people's rights to property, life, health, and procedural rights.

Human rights exist in persons by virtue of the fact that they are humans. Human rights are interdependent and indivisible; hence, it is practically impossible to single out one and magnify it above the others. Thus, infringement on the right to property and health will invariably impact the right to life. Infringement of procedural rights also threatens the enjoyment of substantive rights. The CCM projects in the oil and gas sector under the NDC are repeating the history of the Kwale CDM project.

129 *Human Rights Abuse By Expatriates In Akwa Ibom Must Stop-CLO*, SAHARA REPORTERS (June 12, 2020), www.saharareporters.com/2012/05/13/human-rights-abuses-by-expatriates-in-akwa-ibom-must-stop-clo

130 Gas flaring is a primary environmental concern in Nigeria. It is estimated that 3.5 billion cubic feet of associated is produced annually in Nigeria, and 2.5 billion cubic feet (over 70%) is wasted through flaring. This wasted gas in Nigeria represents 40% of the entire gas annually consumed in Africa, and 25% of gas consumed in the UK; See Olawuyi, *supra* note 1, at 65.

The lack of involvement of the affected communities in the planning and execution of these sectoral implementation action plans in the oil and gas sector raises severe doubts about the sincerity and transparency of the government and the proponents of these projects.

BALANCING CLIMATE CHANGE MITIGATION WITH HUMAN RIGHTS PROTECTION

There is no gainsaying that the world is experiencing the most devastating global climate crisis of all time.¹³¹ Climate change mitigation is core to the survival of the human race. Its projects are no more minor projects of public interest, hence, deserve public priority. The demand for climate change mitigation is a substantial modern challenge for developing countries, such as Nigeria. These projects help mitigate climate change and as well generate revenue. They are essential to governments because they allow the government to address two significant challenges (reducing GHGs emissions and stimulating economic growth) with a singular approach. CCM project siting and implementation of the decision of governments, Designated National Authorities (DNA), and project proponents in developing countries always put emission reduction and economic benefit first. Other factors are usually secondary and primarily an afterthought consideration. This approach cannot be farfetched; the decision-makers most times do not directly suffer the consequences of such a decision. Basically, 'those who bear the brunt of these decisions are always the unprotected, oppressed and marginalized grass-root dwellers. They are closer to nature than the economists and the high profile and siren driven political gladiators.'¹³² Governments are now saddled with the enormous demand of drawing a line between meaningful siting and execution of climate change mitigation projects and the protection of human rights of people that may be affected by such projects. The essence of climate action is to make the world a better habitation for current and future generations of humankind; it will become counterproductive if a project targeted at mitigating climate change erodes on the human rights of people. It is imperative to strengthen the human rights architecture of Nigeria to adapt to climate change mitigation projects in a synergized manner that will not jeopardize either of the conflicting interests. How, then, can this be achieved?

131 HOUGHTON, JENKINS & EPHRAUMS, *supra* note 8.

132 Umukoro, *supra* note 67, at 30.

First, there is an urgent need to renegotiate and amend the extant international regimes so that human rights safeguards are reflected on and incorporated in the climate actions. This right approach will encompass both procedural and substantive rights. The incorporation of procedural rights in climate change regimes will trigger the restructuring of climate action governance so the right holders are involved in the decision-making process at all stages.¹³³ Olawuyi noted that

‘this could help prevent violations and could equally reduce the need for litigation or resistance of climate change projects by the public... Procedural rights provide preventive/long-term processes through which human rights are systematically integrated into climate change governance structures to avoid the source of the problems in the first place.’¹³⁴

The participatory rights get the stakeholders and individual members of the communities involved in the project's execution by securing their informed consent before and during the implementation of the projects.

CONCLUSION

The essence of all the global moves to reduce the emission of GHG and to cushion the effects of climate change is to make the world a better place for humanity, animals, and plant species. The welfare of humankind should and must always be the center point and driving force for every effort to reduce GHG emissions. Nigeria has had ugly human rights experiences from the implementation of the Kwale CDM Project which led to the infringement of people's right to life, property, health, food, water, and participatory rights (such as right to participation, access to information and justice). This whole situation negatives the essence of the CDM projects which were basically to better the lives of people. The extant Nigeria's CCM projects under the Paris Agreement appear to be heading the same part of playing the ostrich game towards human rights implications of CCM projects. If Nigeria should blindly pursue CCM without recourse to its attendant human rights implications, Nigeria may attain her emission reduction goals but lose her people. The *Nicaean* approach of business as usual must be scrapped.

¹³³ See Olawuyi, *supra* note 65, at 265.

¹³⁴ *Id.*

Therefore, Nigeria needs to develop a comprehensive legal framework on climate change that will draw up a detailed guideline for CCM project planning and execution that is human rights-based. Such legislation must identify the rights and duty bearers in the planning and execution of CCM. Such a framework must be centered around human development and not just on emissions reduction. The government and proponents of CCM projects must respect and protect human rights at all stages of such projects. It will also provide platforms to access information on CCM projects and enforce their rights when infringed upon. The approach will help Nigeria to balance the conflicting interests of mitigating climate change and protecting human rights of her citizens in the process.

RELIANCE INDUSTRIES' INROADS INTO THE WILD: ASSESSING THE VIABILITY OF PRIVATE ZOOS IN INDIA

Madhubanti Sadhya and Vanshika Agarwal***

ABSTRACT

Reliance Industries Limited, the Indian multinational behemoth is slated to undertake another lofty venture - the Greens Zoological Rescue and Rehabilitation Kingdom, claimed to be the world's largest private zoo of massive proportions to be established in Jamnagar, Gujarat. In pursuance of the same it has received approval of its detailed project report, master layout plan and for the import, acquisition and transfer of some animals. Since a private industry has assumed the mantle of building a zoo, several legal, environmental and ethical concerns that this endeavour may raise come to the fore. The authors in this article attempt to address these concerns by examining the statutes and guidelines on establishment of zoos in India. The working of private zoos in the UK and United States are examined to compare the situation prevailing in those jurisdictions vis-à-vis India. The applicability of the public trust doctrine to animals that undeniably form a part of the biological diversity of the country is also explored.

Keywords: Reliance Industry, Central Zoo Authority, Private Zoo, Public Trust Doctrine, guidelines

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INTRODUCTION

Reliance Industries Ltd. (RIL) is on track to build the world's 'largest' zoo in Jamnagar, Gujarat - "Greens Zoological, Rescue and Rehabilitation Kingdom".¹ The Detailed Project Report and Master Layout Plan of the zoo were approved by the Central Zoo Authority on 12 February, 2019² and subsequently, drawing of the service plan of the zoo was approved by the aforementioned authority on 24 January 2020³. As per the Master Layout, available on the Central Zoo Authority's website, the zoo is proposed to have a Site area of about 250.1 acres and sectioned enclosures, namely, Forest of India where 22 varieties of animals will be housed, Frogs House, Dragons Land, Marshes of West Coast, Land of Rodent, Aquatic Kingdom, Indian Desert, Wild Trail of Gujarat and Exotic Island which is proposed to house 28 varieties of animals.⁴ Touted as the 'pet project' of Mukesh Ambani's younger son, the endeavour has drawn flak from animal rights activists and conservationists in Assam over the purported transfer of two black panthers from a state owned zoo in Guwahati to the Reliance Zoo for the purpose of 'display'.⁵ The passage of the reigns of management of a zoo meant for providing a naturalistic ecosystem and promotion of in-situ conservation of wild animals to private players throws up several questions that are worth probing. The authors in this article examine the legal and procedural requirements for the establishment of zoos in India and whether the standards differ for private parties desirous of establishing zoos. Further, the feasibility of having zoos operated and run by private players is also explored.

- 1 Maulik Pathak, *Reliance to Build 'largest Zoo in World' in Gujarat*, THE TIMES OF INDIA (Dec. 20, 2020), <https://timesofindia.indiatimes.com/india/reliance-to-build-largest-zoo-in-world-in-gujarat/articleshow/79819786.cms>.
- 2 Master Layout Plans for Greens Zoological, Rescue & Rehabilitation Kingdom Jamnagar, Gujarat, CENTRAL ZOO AUTHORITY, <http://cza.nic.in/uploads/documents/zoos/layout/english/greens%20zoological%20jamnagar.pdf>. (last visited Jan. 16, 2022).
- 3 Layout Plan for Rescue & Rehabilitation Centre at GZRRK, Jamnagar, Gujarat, CENTRAL ZOO AUTHORITY, http://cza.nic.in/uploads/documents/zoos/layout/english/green_rrc_dtd_dtd_060220.pdf. (last visited Jan. 16, 2022).
- 4 Master Layout Plans for Greens Zoological, Rescue & Rehabilitation Kingdom Jamnagar, Gujarat, CENTRAL ZOO AUTHORITY, <http://cza.nic.in/uploads/documents/zoos/layout/english/greens%20zoological%20jamnagar.pdf>. (last visited Jan. 16, 2022).
- 5 Sumir Karmakar, *Black Panther Transfer from Assam to Ambani's Zoo Trigger Controversy, Congress Seeks an Inquiry*, DECCAN HERALD (Feb. 13, 2021), <https://www.deccanherald.com/national/east-and-northeast/black-panther-transfer-from-assam-to-ambanis-zoo-trigger-controversy-congress-seeks-an-inquiry-950877.html>

PROCEDURAL REQUIREMENTS FOR THE ESTABLISHMENT OF ZOOS

The Wildlife (Protection) Act, 1972 defines a zoo as an “establishment, whether stationary or mobile, where captive animals are kept for exhibition to the public and includes a circus and rescue centres but does not include an establishment of a licenced dealer in captive animals.”⁶ The Act also delineates that the word ‘captive animal’ means any animal mentioned in Schedule I, II, III or IV, which is captured or kept or bred in captivity.⁷ The aforementioned schedules include multiple varieties of mammals, birds, amphibians and reptiles, fish, crustacea and insects, mollusca, etc. In so far as the establishment and operation of zoos are concerned, the Wildlife (Protection) Act, 1972 gives very little direction besides laying down the roles and responsibilities of the Central Zoo Authority and prohibiting persons from teasing, molesting or feeding animals in a zoo or littering a zoo.⁸ Therefore, the procedural requirements for the establishment, upkeep and operation of zoos have mostly been derived from the guidelines issued by the Central Zoo Authority.

In *Navin M. Raheja v. Union of India*⁹ the attention of the Supreme Court was drawn by the petitioner to the defencelessness of captive tigers in Nandankanan zoo at Bhubaneswar and the live skinning of a tigress in Zoological Park in Hyderabad. Taking note of the deplorable condition in which zoos were being maintained in the country, the Supreme Court directed that no State or Union Territory would be allowed to set up a zoo without getting clearance from the Central Zoo Authority and orders from the Supreme Court. Eight years prior to this judgement, through an Amendment in the Wildlife Protection Act, 1972 sub-section 1A was inserted under Section 38H, which stated that on and after the commencement of 2002 Amendment, no zoo can be established without the prior approval of Central Zoo Authority.¹⁰

6 The Wildlife (Protection) Act, 1972 § 2(39).

7 *Id.* §2(5).

8 *Id.* § 38J.

9 *Navin M. Raheja v. Union of India*, (2012) 11 SCC 526.

10 The Wildlife (Protection) Amendment Act, 2002, CENTRAL ZOO AUTHORITY, <http://cza.nic.in/uploads/documents/guidelines/english/WLP%20Amendment%20Act%202002.pdf>. (last visited Jan 16, 2022).

In 2008, the Central Zoo Authority working under the auspices of the Ministry of Environment Forest and Climate Change has also issued guidelines for grant of approval for the establishment of new zoos.¹¹ The Guidelines require that every proposal for the establishment of a new zoo be placed before the Central Zoo Authority and be accompanied by a Detailed Project Report. This report must necessarily give a detailed appraisal of the proposed zoo site, 'mission-vision-theme' of the zoo and a detailed strategy for housing, upkeep and healthcare of the animals and their display. It is also essential to note that no approval can be granted by the Central Zoo Authority unless it is satisfied that establishment of the zoo will be instrumental in-ensuring high standards of housing, upkeep and healthcare to a significant number of animals housed in sub-standard and ill-managed zoos; carrying out research and development of innovative and novel strategies for enhancing the reproductive potential, neonatal care and genetic and behavioural management of endangered species of wildlife; and, setting up state of the art facilities on the use of innovative methods of display of zoo animals which are concomitant with the welfare of the animals and their conservation by humans. Lastly, the Central Zoo Authority must be satisfied that certain conditions are being met before granting approval. These conditions include-presence of adequate land of appropriate quality (free from all encumbrances, water-logging, sewage and storm water drains) for construction of the zoo and for raising tree belts of adequate width to act as a buffer against noise pollution and air pollution. The project proponents must also comply with the requirements of the Recognition of Zoo Rules, 2009. There should be requisite availability of water, energy and finances on a sustained basis for the construction and operation of the zoo, including payment of salary/emoluments of technical personnel; requisite numbers of qualified and experienced persons to be available for preparing the detailed plan of the zoo and its effective execution etc.¹² The proposal for the establishment of a new zoo would also be examined by the State Governments and/or Union territories. All of the above-mentioned conditions have to be complied with fully before Central Zoo Authority can grant permission for establishment of a new zoo.¹³

11 Guidelines for grant of approval by the Central Zoo Authority for establishment of new zoo under section 38H (1A) of the Wild Life (Protection) Act, 1972, CENTRAL ZOO AUTHORITY, <https://cza.nic.in/uploads/documents/guidelines/english/G-1.pdf>. (last visited Jan 16, 2022).

12 Recognition of Zoo Rules, 2009, Sched.

13 Guidelines for grant of approval by the Central Zoo Authority for establishment of new zoo

Master Layout Plan

The Central Zoo Authority has also brought out Guidelines for the submission of the master layout plan and the Format of a master layout plan to be submitted for approval. A master plan is a comprehensive document that provides a detailed overview of 20 years, with a provision for review every 10 years, of development, improvement and up-gradation of facilities and infrastructure available at the zoo. The Format seeks to aid project proponents in the optimum utilisation of the zoo resources in a planned manner, without being affected by individual whims, peer or uninformed public opinion and serves as a document to guide annual budgeting and personnel planning.¹⁴ The 2017 Guidelines for the submission of Master Layout Plan seek to address the lacunas in the 2011 Guidelines. It was proposed because it was observed on various occasions that the drawings under the layout plan were not legible or were not properly prepared and had disturbed scale, making it arduous for the Authority to do its work. These guidelines include points like different colour coding for animal enclosures, number, contouring and marking of north point in topographic plans, the indication of land use of surrounding areas of the zoo, designs of animal enclosures, etc.¹⁵

Scientific Management of Zoos

Guidelines of the Central Zoo Authority for effective and scientific management of zoos in India are also to be adhered to by zoos.¹⁶ These guidelines enshrine that a naturalistic environment must be provided to animals in zoos and basic naturalistic features of the zoo site must be maintained. The movement of the visitors should be regulated in such a way that the animals are not unduly disturbed and no activity

under section 38H (1A) of the Wild Life (Protection) Act, 1972, CENTRAL ZOO AUTHORITY, <https://cza.nic.in/uploads/documents/guidelines/english/G-1.pdf>. (last visited Jan 16, 2022).

14 Format for the Preparation of Master Plan of Zoos, CENTRAL ZOO AUTHORITY, <https://cza.nic.in/uploads/documents/guidelines/english/G-7a.pdf> (last visited Jan 16, 2022).

15 Ministry of Environment, Forest and Climate Change, Submission of the Master (Layout) Plan and drawing of enclosure for approval of the CZA (Vol. 2) (AK)/1520/2017 (Issued on August 8, 2017), <http://cza.nic.in/uploads/documents/notifications/news/english/guidelines%20for%20MLP.pdf>.

16 Guidelines for Establishment & Scientific Management of Zoos in India, CENTRAL ZOO AUTHORITY, <http://cza.nic.in/uploads/documents/guidelines/english/G-1.pdf>. (last visited Jan 16, 2022).

inconsistent with the objectives of the zoo occurs. There should be a detailed chart indicating duties and responsibilities for all levels of staff, indicating the chain of command for reporting and promptly dealing with the matters pertaining to maintenance and operation of the zoo and the emergencies that may arise during such operations. The posts that are mandatory are that of Curator (responsible for upkeep and maintenance of the animal collection and animal housing, etc), Veterinarian, Biologist and Education Officer. Environmental enrichment must be provided to animals so that they can be safely given an opportunity to express their natural behaviours. Healthcare, hygiene and upkeep of animals should be taken care of and they must be provided good quality food. The guidelines lay down specific circumstances under which tranquilization of animals are allowed with safeguards to be followed for carrying out such a task. The guidelines also provide events under which animals can be euthanized and set down information for conservation, breeding and population control measures.¹⁷

RULES GOVERNING DISPLAY AND TREATMENT OF ANIMALS IN ZOOS

The National Zoo Policy 1998 was drafted with the aim of giving proper direction for the management of zoos.¹⁸ The Policy outlines that apart from the conservation of rich diversity of flora and fauna, zoos also serve the objective of functioning as rescue centres for orphaned wild animals. The Policy lists out various provisions regarding the acquisition of animals, animal housing, upkeep of animal collections, healthcare, etc. The Policy states that zoos are not allowed to acquire animals from the wild, violate domestic law or obligations under any international convention on wildlife protection and enter into any transactions concerning their surplus animals or animal product with any commercial establishment for any commercial purposes.¹⁹ The Policy mandates for every animal to be provided with housing, upkeep and healthcare that ensures the quality of life. It is further delineated that animals should be provided feed in their diet that mirrors their feed in nature.

17 Guidelines for Establishment & Scientific Management of Zoos in India, CENTRAL ZOO AUTHORITY, <http://cza.nic.in/uploads/documents/guidelines/english/G-1.pdf>. (last visited Jan 16, 2022).

18 National Zoo Policy 1998, <https://www.forests.tn.gov.in/tnforest/app/webroot/img/document/legislations/NATIONAL%20ZOO%20POLICY.pdf>.

19 *Id.*, entry 3.2.2, 3.2.3.

Their nutritional requirements must be taken care of and they must be provided with potable drinking water at all times.²⁰ In order to avoid domestications of wild animals, physical handling of animals by staff must be avoided to the highest extent possible. One of the most important features of the Policy is that it prohibits torture or provocation of animals for any reason including but not limited to extraction of performance for public amusement. Zoos have an obligation to provide the highest standards of veterinary care to all animals. Appropriate vaccinations programs are to be undertaken along with adherence to quarantine rules and isolation norms to protect wildlife health and stop further proliferation of infectious diseases.²¹

Recognition of Zoo Rules 2009 also spells out similar guidelines as mentioned above. Additionally, they provide that animal must be maintained in socially and behaviourally viable groups. The distribution of food to animals must take place in accordance with natural instincts and skills and behaviour related to feeding. Waste generated by the animals must be properly removed and their sanitation and hygiene needs to be taken care of. Individual animals can only be handled by staff having experience and training, with round the clock watch by veterinary and curatorial staff on behaviour and health of animals. Enclosures of animals must be made in accordance with the standards specified by Central Zoo Authority with enough space between enclosures to prevent undue excitement or stress among animals by other animals.²²

PROCEDURE GOVERNING THE TRANSPORT AND EXCHANGE OF ANIMALS

RIL has received permission from CZA to import various endangered and threatened animals from zoos abroad and acquire several animals from domestic zoos in India. A Right to Information application revealed that Greens Zoological, Rescue and Rehabilitation Kingdom has been permitted to import 286 animals of 17 species from a zoo in San Pedro Garza Garcia, Nuevo Leon, Mexico. The animals range from hybrid Bengal tigers, hybrid lions, American flamingos, African cheetahs, jaguars, leopards, cougars, ocelots, margays, Mexican hairy dwarf porcupines, jaguarundi,

20 *Id.*, entry 3.4.

21 *Id.*, entry 3.5.

22 Recognition of Zoo Rules, 2009, rule 5, 6.

American black bears, bobcats, Linnaeus's two-toed sloth; brown bear, two species of anteaters.²³ A transfer to the Reliance zoo that has sparked a controversy is the relocation of two black panthers from Assam State Zoo cum Botanical Garden. This has allegedly been done in exchange of four zebras to be transferred from a zoo in Israel to the Assam Zoo in pursuance of a Memorandum of Understanding between Reliance and the Israel zoo.²⁴

In light of this, it becomes important for the proposed reliance zoo to ensure compliance with rules and procedures governing transport of animals within India and from abroad. Section 38I of the Wildlife (Protection) Act, 1972 mentions that acquisition, transfer of animals mentioned in Schedule I & II can only take place between recognized zoos and after mandatorily obtaining prior permission of Central Zoo Authority and that non-compliance might result in cancellation of the application under Section 38H of the Wildlife Protection Act.²⁵ For transportation of animals within the country, protocol requires that the Director of the recipient zoo arrange for all requisite permissions and the donor zoo provide necessary documents. The recipient zoo has to get permission from Chief wildlife Wardens and State Forest departments to acquire and transport animals. Further, permission has to be taken from the Central Zoo Authority and Quarantine officer of the region.²⁶ It is also pertinent to note that while general guidelines exist for exchange or transfer of animals between zoos, there is no explicit mention of how transfers would work between public and private zoos and whether such a situation would entail same amount of responsibility or not. This has been the bone of contention for the animal rights activists in Assam who have alleged that the transfer of the panthers is bad in law since Annexure VI-A of the Guidelines for Establishment and Scientific Management of Zoos in India which deals with Exchange or Transfer of animals between zoos is silent on the issue of

23 Sourodipto Sanyal, *Tigers from Mexico, Panthers from Assam: The Making of Reliance's Animal farm*, NEWS LAUNDRY (July 14, 2021), <https://www.newslaundry.com/2021/07/14/tigers-from-mexico-panthers-from-assam-the-making-of-reliances-animal-farm>.

24 Umanand Jaiswal, *Privatisation of Two Black Panthers Kicks up Storm in Guwahati*, THE TELEGRAPH (Feb. 22, 2021), <https://www.telegraphindia.com/north-east/privatisation-of-two-black-panthers-kicks-up-a-storm-in-guwahati/cid/1807414>.

25 *Acquisition of Animals by Zoos*, CENTRAL ZOO AUTHORITY, <http://cza.nic.in/uploads/documents/notifications/orders/english/c-29.pdf>

26 *Protocols for Transportation of Wild Animals*, CENTRAL ZOO AUTHORITY, <https://cza.nic.in/uploads/documents/guidelines/english/G-17.pdf>

transfer from and to private zoos. However, the move has been defended by the Divisional Forest Officer in charge of the Assam Zoo by citing the permission granted by the Central Zoo Authority.²⁷

Arguably, this stance could be accepted so long as the transfers are between 'recognized' zoos. Nonetheless, one of the Guidelines on Exchange and Transfer of animals requires the CZA to consider and give due weightage to the past track record of the donor and recipient zoos while approving exchange programmes with specific emphasis on the successes in breeding and infant healthcare and upkeep.²⁸ Considering that the Reliance zoo has been recently set up and is yet to become fully functional, it is trite for observers and animal conservationists to question this transfer, since there is no precedent to evaluate the zoo's success in breeding.

The Central Zoo Authority also provides for the 'Procedure and process for acquiring Animals from Zoos abroad'.²⁹ The document enlists various steps that need to be fulfilled in order to import wild animals from foreign zoos, which *inter alia* include NOC from the Chief Wildlife Warden of the concerned state and the Director (Wildlife Preservation), Ministry of Environment, Forests and Climate Change and approval of the Central Zoo Authority; application to the Regional office of the Wildlife Crime Control Bureau, for issuance of CITES import permit and the Director General of Foreign Trade for import certificate. The first step under the procedure requires the domestic importing zoo to ensure that the animals to be acquired from foreign zoos are a part of the collection plan approved by the CZA. If not, approval has to be first sought from the CZA before the foreign zoo is approached.³⁰ If the transfers effectuated by RIL are considered, the arrangement between the Jamnagar Zoo, the Assam Zoo and the zoo at Israel appears to be a tripartite one. For the black panthers transferred from Assam to the RIL Zoo, RIL has facilitated transfer of zebras from Israel to Assam. This arrangement implies that

27 Jaiswal, *supra* note 24.

28 Annexure VI A, Guidelines for Establishment & Scientific Management of Zoos in India, CENTRAL ZOO AUTHORITY, <http://cza.nic.in/uploads/documents/guidelines/english/G-1.pdf>. (last visited Jan 16, 2022).

29 *Procedure and Process for Acquiring Animals from Zoos Abroad*, Central Zoo AUTHORITY, <http://cza.nic.in/uploads/documents/guidelines/english/G-15.pdf>. (last visited Jan. 16, 2022).

30 *Legal Framework for International Trade in Fauna & Flora*, WILDLIFE CRIME CONTROL BUREAU, [http://wccb.gov.in/WriteReadData/userfiles/file/Trade%20Facilitation/Legal%20framework%20ITC%20HS\(1\).pdf](http://wccb.gov.in/WriteReadData/userfiles/file/Trade%20Facilitation/Legal%20framework%20ITC%20HS(1).pdf). (last visited Jan. 16, 2022).

the zebras to be transported from Israel are not a part of the collection plan of the RIL zoo. Under these circumstances, it is difficult to ascertain how first condition of CZA guidelines on procedure and process for acquiring animals from zoos abroad would be complied with.

While the involvement of private enterprises in establishing zoos arguably owing to the involvement of RIL has been mired in controversy and are likely to revive fears about shift of animals that form a part of the natural resources of the country from public to private hands, the Environment Ministry is contemplating greater involvement of the private sector in the development and upgradation of zoos. In October, 2020 the Minister of Environment, Forest and Climate Change announced plans of reviving 160 zoos across the country in the public private partnership mode which would see greater involvement of state governments, corporations, businesses and private individuals.³¹ The PPP model would follow the Finance Ministry Rules and would initially target 10 zoos which would be a part of the vision plan.³² With these plans of the Ministry, there is bound to be greater private intervention in the functioning of zoos and with this the need for revisiting the guidelines for the establishment, operation, transfer and scientific management of zoos would also be required.

APPLICATION OF THE PUBLIC TRUST DOCTRINE TO ZOOS

The public trust doctrine was given the status of 'law of the land' in *MC Mehta v. Kamal Nath*.³³ This doctrine is based on the idea that certain common properties are held in trust by the State for the benefit of the public. Alienating properties held in public trust by the sovereign to private owners is a flagrant violation of public interest.³⁴ The Convention on Biological Diversity, 1992, to which India is

31 *Government Chalking Out a Plan for Up Gradation and Expansion of Zoos Across the Country in PPP Mode: Shri Prakash Javadekar*, PRESS INFORMATION BUREAU (Oct. 5, 2020), <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1661727>.

32 Jayashri Nandi, *Fund-starved Zoos to be Developed on PPP Model*, HINDUSTAN TIMES (Oct. 6, 2020), <https://www.hindustantimes.com/india-news/fund-starved-zoos-to-be-developed-on-ppp-model/story-MAL0rkBppEK6zBjJ20VS2N.html>.

33 *MC Mehta v. Kamal Nath*, (1997) 1 SCC 388.

34 *Id.*

a signatory establishes the sovereign right of all states over their natural resources.³⁵ In this backdrop it is important to assess whether the public trust doctrine could be expanded to include within its ambit, animals that are a part of the natural resources of the country. The U.S. Supreme Court in the case of *Illinois Central Railroad Co. v. Illinois*,³⁶ permitted transfer of trust lands only under specific circumstances stating that alienation of trust property can be done as long as the grantee ensures public service will be done by executing the trust purpose via private initiative. A two-pronged test has been established to determine whether property owned by State is alienable or not. First, it must be seen whether the property is protected by public trust doctrine or not. In modern times, the doctrine has been expanded to include wildlife³⁷, public parks³⁸, etc. Second, once the question regarding the application of the doctrine to a property has been settled, it needs to be seen whether the private party will use this property for a trust purpose benefitting the public. The application of this doctrine can provide a great reconciliatory mechanism for the pursuit and growth of private entrepreneurship with optimal use of public resources.³⁹

In India, in consonance with Joseph Sax's article, the public trust doctrine imposes three types of restrictions on governmental authority before parting with trust property: first, the property must only be used for public purpose and be available for use by the general public; second, it cannot be sold for a fair cash equivalent; and third, the property must be maintained for particular types of uses (traditional use or natural use associated with that property).⁴⁰ The Supreme Court in *M.I. Builders (P) Ltd. v. Radhey Shyam Sahu*,⁴¹ applied the public trust doctrine to a park and denied construction of a shopping complex. The J&K High Court, in *The Majra Singh v. Indian Oil Co.*⁴² expanded the scope of application of this doctrine to widen

35 Convention on Biological Diversity, 1992, pmbl. & art. 15.

36 *Illinois Central Railroad Co. v. Illinois*, 146 U.S. 387 (1892).

37 *Owsichkev. State, Guide Licensing & Control Board*, 763 P.2d 488 (1988); *Geer v. Connecticut*, 161 U.S. 519 (1896); *Wade v. Kramer*, 459 N.E.2d 1025; *Th. Majra Singh v. Indian Oil Co.*, AIR 1999 J K 81.

38 *M.I. Builders (P) Ltd. v. Radhey Shyam Sahu*, AIR 1999 SC 2468.

39 Michael Seth Benn, *Towards Environmental Entrepreneurship: Restoring the Public Trust Doctrine In New York*, 155 UNIVERSITY OF PENNSYLVANIA LAW REVIEW 203 (2006).

40 Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970).

41 *M.I. Builders (P) Ltd. v. Radhey Shyam Sahu*, AIR 1999 SC 2468.

42 *The Majra Singh v. Indian Oil Co.*, AIR 1999 J K 81.

the State's obligation to see that forests, wildlife, lakes and environment are duly protected.

The zoo proposed by Reliance is expected to have a site area of about 250.1 acres. This is a vast expanse of public land allotted to a private entity. With Courts having widened the application of public trust doctrines to parks, wildlife, environment, etc, it needs to be ensured that the zoo being established by Reliance does not violate the three golden principles of public trust doctrine. In order to comply with the same, the zoo must be open for public use and wildlife should not be harmed, while maintaining the natural and essential features of the land.

HOW HAVE PRIVATE ZOOS FARED IN OTHER JURISDICTIONS?

A perusal of the website of the Central Zoo Authority reflects that there are 13 zoos in India that are owned by NGO's/Trusts/Societies and one zoo by a private circus.⁴³ Moreover, a detailed project report is being prepared for a night safari plan in Vandalur Zoo, Chennai and efforts are underway to execute the project in a Public-Private Partnership (PPP) mode.⁴⁴ However, it is important to note that information regarding ownership structure of zoos is not explicitly provided on Central Zoo Authority's website and one has to discern the same by looking under the 'History' section of Annual Reports of the Zoos⁴⁵ available on the website. In the absence of explicit categorization is entirely possible that even after looking at the scores of reports individually with over 480 reports to filter through, one might still not conclusively know whether a zoo is privately run or not. However, it is still appreciable that the reports do contain information regarding compliance by zoos of guidelines issued by the CZA, inventory/acquisition/transfer of animals, Zoo and Health Advisory committees, vaccination, research work, education and awareness programs, etc. but level of detailing and comprehensiveness of these reports prepared by the zoos varies.

43 *FAQs*, CENTRAL ZOO AUTHORITY, <http://cza.nic.in/page/en/faqs> (last visited Jan. 16, 2022).

44 S.V. Krishna Chaitanya, *Chennai's Vandalur Zoo to be Upgraded to Global Standards, Mulls Tie-up with Wellington Zoo*, THE NEW INDIAN EXPRESS (Dec. 10, 2020), <https://www.newindianexpress.com/cities/chennai/2020/dec/10/chennais-vandalur-zoo-to-be-upgraded-to-global-standards-mulls-tie-up-with-wellington-zoo-2234464.html>.

45 *Annual Reports of Zoos*, CENTRAL ZOO AUTHORITY, <https://cza.nic.in/annual-reports-of-zoos/en/page/49>. (last visited Jan. 16, 2022).

When the operation of private zoos in other jurisdictions is assessed, there appears to be no discernible uniformity in their approach. Australia has non subsidized and economically self-sustaining private zoos, which mainly house and exhibit Australian native animals.⁴⁶ These zoos attract more than double the visitors attracted by public zoos. These zoos are the only places that provide rural Australia with an opportunity to experience a zoo. Yet, given the huge educational responsibilities of these zoos, there are very few private zoos involved in regional species management programmes or formal conservation research activities.⁴⁷

In the UK, the Zoo Licensing Act of 1981 requires zoos to mandatory participation in at least one of the activities mentioned in the Act. These include active participation in research from which conservation benefits accrue to species of wild animals, training in relevant conservation skills, the breeding of wild animals in captivity, etc. Zoos are also obligated to educate the public on conservation and biodiversity. The Act mandates zoos to provide conditions that satisfy the biological and conservation requirements of a species. Even though zoos' ultimate goal is wildlife protection as opposed to profit, yet, 45 per cent of zoos in the UK are under private ownership, implying that revenue governs this business as opposed to innate love for animals.⁴⁸

In the United States of America, in general, animals are governed by laws existing on three levels- Federal level, Local and State level and International level. These laws by virtue of their application to animals invariably end up extending to zoos as well. On the federal level, Animal Welfare Act (AWA) and Endangered Species Act (ESA) govern zoo animals. As far as States are concerned, many have enacted their own anti-cruelty laws. On the International Level, the relevant law is CITES. Apart from this, voluntary standards have been put into place by the Association of Zoos and Aquariums (AZA) and the International Air Transport Association (IATA).⁴⁹

46 Andrew Tribe, *Captive Wildlife Tourism In Australia*, CRC SUSTAINABLE TOURISM, https://sustain.pata.org/wp-content/uploads/2014/12/WT14_Tribe-CaptiveWildlife.pdf. (last visited Jan. 16, 2022).

47 John Weigel, *The Conservation Role of Private Zoos in Australia: The Australian Reptile Park Experience*, ZSL PUBLICATIONS, <https://zslpublications.onlinelibrary.wiley.com/doi/abs/10.1111/j.1748-1090.1991.tb02356.x>. (last visited Jan. 16, 2022).

48 *Monkey business? The Unusual Business World of Zoo Ownership*, REAL BUSINESS (Jan. 5, 2017), <https://realbusiness.co.uk/unusual-business-world-zoo-ownership/>.

49 Kali S. Grech, *Detailed Discussion of the Laws Affecting Zoos*, ANIMAL LEGAL & HISTORICAL CENTRE (2004), <https://www.animallaw.info/article/detailed-discussion-laws-affecting-zoos>. (last visited Jan. 16, 2022).

The AWA is an overarching federal legislation concerned with the welfare of animals in general and does not specifically govern zoo or animals in zoos. The Act lays down the definition of ‘animals’ in S 2132(g) as any live warm-blooded animal that the Secretary determines as being used for exhibition purposes.⁵⁰ Clause (h) defines the term ‘exhibitor’ as any person who exhibits animals for compensation from the public and states that this term includes carnivals, circuses, and zoos, whether public or private and whether operated for profit or not. Clause (f) defines ‘dealer’ as any person who transports, buys, sells or negotiates the purchase of any animal for exhibition.⁵¹ Thus, AWA seeks to protect zoo animals by regulating dealers and exhibitors.

While it is appreciable that the definitions of the terms ‘exhibitor’ and ‘dealer’ bring under their ambit a varied range of animal facilities like private zoos, private collections, roadside attractions, etc, however, the range of animals falling under the purview of this protective legislation itself is low. This is because the definition of the term ‘animals’ has a very limited scope as it extends only to warm-blooded animals like non-human mammals, birds, etc and excludes all cold-blooded animals like insects, fish, amphibians, reptiles, etc.⁵² This severely narrows the ambit of animals being protected by the Act. It also has the negative effect of de-regularise the activities of persons who are not exhibiting or dealing with animals covered under the Act.

Further, S. 2143 of the Act states that the Secretary is empowered to publish standards, to be adhered to by the dealers and exhibitors that require humane handling, care, treatment, and transportation of animals. The aforementioned standards have to include minimum standards for handling, housing, feeding, sanitation, adequate veterinary care, shelter, etc.⁵³ The issue with general legislation like AWA is that it can only delineate minimum standards as it needs to cater to various kinds of

50 Code of Federal Regulations, 7 U.S.C. 2131–2159; 7 CFR 2.22, 2.80, and 371.7 (Animal Welfare) <https://www.govinfo.gov/content/pkg/CFR-2020-title9-vol1/pdf/CFR-2020-title9-vol1-chap1-subchapA.pdf>. (last visited Jan. 16, 2022).

51 7 U.S. Code Chapter 54 - Transportation, Sale, and Handling of Certain Animals <https://www.govinfo.gov/content/pkg/USCODE-2013-title7/pdf/USCODE-2013-title7-chap54.pdf>(last visited Jan. 16, 2022).

52 Grech, *supra* note 49.

53 7 U.S. Code Chapter 54 - Transportation, Sale, and Handling of Certain Animals <https://www.govinfo.gov/content/pkg/USCODE-2013-title7/pdf/USCODE-2013-title7-chap54.pdf>(last visited Jan. 16, 2022).

situations that animals require protection in. The legislation does not delve into the specific problems faced by zoos or animals in them. However, since it can be conclusively inferred from the definition of exhibitors that private zoos come within the purview of the Act, it can be concluded that private zoos have to necessarily comply with whatever minimum standards the Secretary might lay down.

States in the USA are subject to AWA but due to its generic nature, power has been given to States to make their own laws that are stricter than the federal law. The laws do not specifically extend to zoos but provide protection from cruelty to animals. Some states like Minnesota, Mississippi, and Oklahoma have broadened the definition of animals and included every animal within its scope, thereby, covering zoo animals as well.⁵⁴ On the other hand, states like Michigan, New Jersey, Washington, etc completely exclude zoo animals or exhibited animals from the purview of its anti-cruelty provisions.⁵⁵ This indicates that laws governing zoos vary from State-to-State in the USA. So, while some States, by broadening the definition of animals, may have brought more animals and private zoos under regulations, other States, by further limiting the definition of animals or exempting certain animals, may have relaxed already lax compliance requirements further.

Moreover, AZA is a not for profit organization, which provides accreditation to those zoos and aquariums that meet its high standards for animal welfare, veterinary care, conservation, education, guest services, physical facilities, safety, staffing, finance, and governing body.⁵⁶ Even though AZA is the primary accreditor that deals specifically with zoos, less than 10% of private animal exhibitors (licensed by US Department of Agriculture) are accredited by it and many organizations do not even meet the basic standards of AZA. This leads to roadside zoos and cub petting facilities racking up hundreds of violations before they are finally shut down.⁵⁷

If we compare the laws of the USA and India, we see that while both countries have overarching legislation for animal protection (AWA in USA and Wildlife

⁵⁴ Grech, *supra* note 49.

⁵⁵ *Id.*

⁵⁶ *About AZA Accreditation*, ASSOCIATION OF ZOOS & AQUARIUMS, <https://www.aza.org/what-is-accreditation>. (last visited Jan. 16, 2022).

⁵⁷ Jen Rose Smith, *The Wild World of America's Private Zoos*, CNN TRAVEL (Apr. 8, 2020), <https://edition.cnn.com/travel/article/america-private-zoos-legislation/index.html>.

(Protection) Act in India), everything in relation to the operation or functioning of zoos is different. *First*, unlike India, the USA does not have a statutory body like Central Zoo Authority for accreditation of zoos. *Second*, regulations in the USA are more general in nature and geared towards the protection of animals and find an extension to zoos by virtue of said animals whereas India has specific laws and regulations in relation to zoos. In fact, zoos are not explicitly regulated by any law in the USA and find mention in the definition of exhibitor whereas, in India, Wildlife (Protection) Act specifically defines zoo. *Third*, in the USA, the ambit of zoo animals finding protection under AWA is small whereas, in India, all types of animals are included in the definition. *Fourth*, while the legality of private zoos can be directly inferred from the definition of the exhibitor in the USA, the same is not the case for India.

It is interesting to note that privately-owned zoos are now being considered the norm in the USA and many public zoos are exploring privatising options.⁵⁸ This is because State-owned zoos were in abysmal conditions due to lack of funding. However, funding is not a problem with private parties and they are even able to maintain high standards required by prestigious accreditation agencies.⁵⁹ Advent of privatization of zoos may actually be beneficial for the animals in them. This may also become true for India as conditions of several public zoos are dismal as evident from the observations of the Ministry of Environment, Forest and Climate Change despite efforts taken by the country in formulating a comprehensive framework for the establishment and management of zoos. It is however important to ensure that private players do not exploit the natural or other resources at their disposal and the zoo is not run by private players to circumvent laws related to taxation, CSR obligations, etc.

ZOO: A PLACE FOR CONSERVATION OF ANIMALS OR PRISON?

A bigger question than understanding legal and technical aspects of establishing a new zoo is whether animal captivity in the form of zoos is ethical and is there really a need to establish new zoos. The presence of zoos is defended on the ground

58 Harris Kenny, *Privately Operated Zoos Now Considered the Standard*, REASON FOUNDATION (May 29, 2012), <https://reason.org/commentary/zoo-privatization-2011/>.

59 *Id.*

that they provide conservation and preservation to animals. Captive breeding helps in maintaining a healthy ecosystem and has the capability of maintaining target populations against threats like disease or pressure from non-native species.⁶⁰ Zoos also provide an opportunity for understanding the behaviour of animals and act as an interface for the intermingling of humans and animals. Zoos are staffed with specialised personnel, who are specially trained and equipped to take care of animals outside their native environment. Zoos also support scientific research in the fields of behavioural studies, anatomy, biodiversity and pathology. The physical and dietary needs of the animals are also taken care of, which sometimes animals themselves might not be able to take care of in the wild.⁶¹

Arguments against zoos by organizations like PETA, etc are that zoos are basically pitiful prisons and 'collections' of interesting animals as opposed to actual havens or homes. Zoos claim to provide education; however, they provide entertainment at the cost of captivity and loss of innate freedom of animals. Visitors merely spend a few minutes at each animal enclosure, which is not enough to provide any enlightenment. On the contrary, due to the small size of animal enclosures and lack of ability to witness animals in their natural form in their natural habitats, their natural behaviour cannot be observed and hence, no awareness or education is created. Wild terrestrial animals are put in cages, birds are not allowed to fly, aquatic animals do not have adequate water and animals used to living in large herds are kept alone or in pairs. The close confinement of animals coupled with lack of privacy and absence of mental and physical stimulation leads to the development of self-destructive and abnormal behaviour in animals known as "zoochosis". Animals witness severe stress and psycho-physical dysfunction in captivity.⁶² Moreover, the claim by zoos that they preserve the species from extinction is ill-founded as zoo officials tend to bring in exotic or popular animals that bring in crowds as opposed to animals in need of preservation or whose existence is threatened. Animals face abuse

60 D. A. Conde, N. Flesness, et. al., *An Emerging Role of Zoos to Conserve Biodiversity*, 331 SCIENCE 6023 (2011).

61 *Is Keeping Wild Animals in Zoos Unethical? Arguments For and Against*, WORLD ATLAS, <https://www.worldatlas.com/articles/is-keeping-wild-animals-in-zoos-unethical-arguments-for-and-against.html> (last visited Jan. 16, 2022).

62 *Animals Used for Entertainment*, PETA, <https://www.peta.org/issues/animals-in-entertainment/animals-used-entertainment-factsheets/zoos-pitiful-prisons/>. (last visited Jan 16, 2022).

and ill-treatment in zoos. There have been instances when they have been starved, poisoned, killed, beaten mercilessly, not given access to healthcare, not allowed to hibernate (animals that hibernate) because zoo officials did not have adequate knowledge about the habits of the animal, etc.⁶³ Zoos also expose animals to novel diseases. Animals in captivity have lower reproduction rates and higher offspring losses. The captive conservation efforts of zoos are not carried out in a scientific manner because of which zoos are not really able to preserve or reintroduce species.⁶⁴

CONCLUSION

Whether the establishment of zoos is ethical or not is a hotly debated and divisive topic. Some people believe that lack of sentience on the part of animals divests them of various rights which may be considered fundamental to human life. However, others are of the opinion that even though animals are incapable of giving consent, they can still feel and hence their liberty should not be curtailed and they should not be subjected to abuse. In such a subjective scenario, it is for the individual/corporation/government to decide what they consider unethical and the limits to which animal captivity can be justified. However, as long as people are engaging in animal captivity, it is expected that the same will be done in a lawful manner. It is also expected that various compliances will be adhered to and the norms related to good and ethical treatment shall be meted out to animals.

By looking at the plethora of laws and regulations applicable to Zoos in India and other jurisdictions, it is evident that the Indian law imposes higher standards for the formation and operation of zoos. What is needed is the implementation of these laws and for these laws to be in tandem with contemporary developments in animal conservation efforts. There is an urgent need for India to identify and delineate the role it wants its private zoos to shoulder. The Indian Legal framework governing the zoos does not provide for anything that necessarily requires the zoos in the country to be controlled by the State. The question that comes to light due to the opening up of new private zoos is whether there is a requirement for new rules or amendments in the existing rules to specifically govern the working of these private zoos, owing to the differences in incentives that public and private institutions have. Hence,

63 *Id.*

64 Andrew Balmford, Jeanette Kroshko, et. al., *Zoos and Captive Breeding Response*, 332 SCIENCE 1149 (2011).

the requirement of stringent rules and vigilance is a matter of policy that needs consideration. It is also suggested to give explicit recognition to the legality of private zoos in India so that private players are not able to bypass the rigours of laws and regulations citing that they do not come under the ambit of laws governing zoos established by Central or State Government/s or Municipalities. It is also suggested that India, like the UK, mandate private (and public) zoos to actively engage in research and contemporary conservation activities. The establishment of a zoo by Reliance Industries will surely lead to mushrooming of new private zoos. In such a scenario, it is imperative that steps are taken to regulate private zoos to ensure that basic standards of animal captivity are not abridged, no animals are abused or tortured for entertainment purposes and efforts are put into the conservation and development of wildlife.

6

A CASE FOR SUSTAINABLE OIL PALM CULTIVATION IN INDIA

Mridhu Tandon and Anvita Dulluri***

ABSTRACT

In this article, the authors make an attempt to unpack India's latest push for expansion of cultivation of oil palm under the recently announced National Mission on Edible Oil-Oil Palm (NMEO-OP). In doing so, they particularly focus on the Mission's intended implementation in the North-east and the Andaman and Nicobar Islands. They take a close look at the legal and ecological implications arising from oil palm expansion in these biodiversity hotspots. The article begins by outlining the context for the recent policy push towards oil palm expansion by underscoring the economic reasons for the same and the history of India's oil palm cultivation policies. In the second section, the authors explore the ecological consequences of oil palm cultivation in the North-east and Andaman and Nicobar Islands within the context of the lessons of ecological destruction arising from oil palm cultivation, learnt from other tropical countries. Under the third section, the authors proceed to outline the legal permissions arising from various environmental legislations to undertake oil palm expansion in the targeted areas under the announced scheme. The fourth section delves into the lesser-known implications of cultivating oil palm on critical ecosystems such as grasslands and peatlands. Bearing in mind the lessons learnt from the large-scale deforestation and irreversible ecosystem degradation in the wake of oil palm expansion in Indonesia and Malaysia, the authors explore potential pathways for a sustainable implementation of oil palm expansion in India.

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Keywords: Oil Palm Expansion, Ecological Impact, Biodiversity, Deforestation, Sustainability, Clearance.

SECTION 1: EXAMINING THE RECENT POLICY PUSH ON OIL PALM EXPANSION

1.1. The Economic Motivation

India is the world's largest importer of palm oil.¹The annual demand for edible oil in India is approximately 25 million tonnes of which the country imported a little over 13 million tonnes in 2019-20.² India spent close to Rs. 1,000 crores, importing roughly 45.61 lakh tonnes of palm oil in 2020.³ One study estimates that over 2.34 million hectares of land in Indonesia and Malaysia are required to meet India's current palm oil demand.⁴According to the Ministry of Commerce and Industry, the consumption level of palm oil in India reached 19 kg per person in 2020, and is expected to rise further.⁵ Targeting this rise in domestic demand, and with the intention to reduce the country's dependence on imports, the Union Cabinet of the Indian Government announced the Rs. 11,040 crore scheme National Mission on Edible Oils-Oil Palm (NMEO-OP) in August, 2021.⁶

India meets its edible oil demands from primary sources which include oil seeds such as soyabean, rapeseed and mustard, groundnut, sunflower, safflower, niger and secondary sources such as palm oil, coconut, rice bran, cotton seeds and tree borne

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- 1 TAN KIAN PANG & LIM SUET YIING, PALM OIL SUPPLY AND DEMAND OUTLOOK HALF YEAR REPORT (2021), https://www.cpopc.org/wp-content/uploads/2021/07/2021_PALM-OIL-SUPPLY-AND-DEMAND-OUTLOOK-REPORT-WITH-REFINITIV-1.pdf.
 - 2 *Explained: Why Edible Oils are Costlier and the Way Forward*, INDIAN EXPRESS (June 2, 2021), <https://indianexpress.com/article/explained/explained-why-edible-oils-are-costlier-7334810/>.
 - 3 *Import of Veg oil during Nov. 2020- Mar 2021*, SOLVENT EXTRACTORS ASSOCIATION OF INDIA (Jun 16, 2021), <https://seaoindia.com/interim-data-on-import-of-edible-oils-march-2020-down-by-32-percent-nov19-to-mar20-down-by-10-percent/>.
 - 4 H.S. Sagar& Sathya Chandra., *India in the Palm oil Era: Describing India's Dependence on Palm Oil, Recommendations for Sustainable Production, and Opportunities to become an Influential Consumer*, 12 TROPICAL CONSERVATION SCIENCE 3 (2019).
 - 5 *Buying of Palm Oil from Malaysia*, Ministry of Commerce and Industry, PRESS INFORMATION BUREAU (Feb 2, 2020), <https://pib.gov.in/PressReleseDetail.aspx?PRID=1602417>.
 - 6 *Cabinet Approves Implementation of National Mission on Edible Oils*, PRESS INFORMATION BUREAU (Aug. 18, 2021), <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1746942>.

oilseeds.⁷ Palm oil, which is a secondary source of edible oil, is known to give the highest per hectare oil yield.⁸ Palm oil is estimated to use less than 9% of the world's global croplands but constitutes 36% of world's oil.⁹ Studies indicate that per hectare yield of palm oil is 3-8 times more than other oil seeds.¹⁰ The global production of palm oil has increased from 17 million tonnes in the 1960s to 218 million tonnes in 2018.¹¹ It is therefore not surprising that palm oil has become a natural choice to meet the edible oil demand.

The economic and non-economic costs of importing palm oil would suggest that the Indian Government's efforts to expand cultivation of oil palm is logically sound. However, it is not possible to ignore the ecological catastrophe that resulted from oil palm expansion in other countries especially, Indonesia and Malaysia, the largest palm oil exporters in the world.¹² Together, Indonesia and Malaysia form 85% of global palm oil supply,¹³ bulk of which is exported to India, China, Pakistan, European Union and the United States.¹⁴ Out of 18.7 million hectares of the world's land cover of industrial scale oil palm plantations, 32% lies in Indonesia and 60% lie in Malaysia.¹⁵ In spite of its economic benefits, cultivation of oil palm plantation is a major driver of deforestation in these countries. In Malaysia, oil palm development accounted for 47% of deforestation from 1972 to 2015.¹⁶ In Indonesia, around 16%

7 *Brief Note on Palm oil*, NATIONAL FOOD SECURITY MISSION (2018), https://www.nfsm.gov.in/ReadyReckoner/Oilseeds/BriefNote_OS2018.pdf.

8 Hannah Ritchie & Max Roser, *Forests and Deforestation: Palm Oil*, *Our World in Data*, ONE WORLD IN DATA (Dec. 2020), <https://ourworldindata.org/palm-oil>.

9 *Id.*

10 Edson Barcelos et al., *Palm Oil Natural Diversity and the Potential for Yield Improvement*, *FRONTIERS IN PLANT SCIENCE* (Mar 27, 2015), <https://www.frontiersin.org/articles/10.3389/fpls.2015.00190/full>.

11 Ritchie & Roser, *supra* note 8.

12 K.G. Augustin et al., *Shifting Patterns of Palm Oil Driven Deforestation in Indonesia and Implications for Zero-deforestation Commitments*, 69 *LAND USE POLICY* 41 (2017); L.P. Koh et al., *Remotely Sensed Evidence of Tropical Peatland Conversion to Palm Oil*, 108 *PNAS* 5127 (2011).

13 INTERNATIONAL UNION OF CONSERVATION AND NATURE (IUCN), *PALM OIL AND BIODIVERSITY: A SITUATION ANALYSIS BY THE IUCN PALM OIL TASK FORCE* 20 (2018), <https://portals.iucn.org/library/sites/library/files/documents/2018-027-En.pdf>.

14 *Id.*, at 11; Mike Shanahan, *Palm Oil: The Pros and Cons of a Controversial Commodity*, *CHINA DIALOGUE* (Nov. 04, 2019), <https://chinadialogue.net/en/food/11627-palm-oil-the-pros-and-cons-of-a-controversial-commodity/>.

15 IUCN, *supra* note 13, at vii.

16 *Id.*, at 20.

of forest loss was directly linked to the commodity over the same period.¹⁷

Other palm oil producing nations around the world, such as Peru,¹⁸ Ecuador¹⁹ and Colombia²⁰ are also reeling under a similar habitat loss. It is estimated that globally, palm oil production is affecting at least 193 species which are categorised as threatened by the International Union for Conservation of Nature's (IUCN) Red List of Threatened Species.²¹ In fact, the IUCN has cautioned that "*if oil palm expands into biophysically suitable areas, some 270 million hectares of biodiversity hotspots could be threatened, and 39%, 64%, and 54% respectively of all threatened amphibians, birds and mammals affected.*"²²

1.2. Brief History of Oil Palm Cultivation in India:

India is not new to the cultivation of oil palm, with the latest NMEO-OP being a continuation in a long series of centrally-sponsored oil palm cultivation schemes in the country. The Oil Palm Development Programme (OPDP) was one of the earliest schemes of oil palm cultivation introduced under the 8th and 9th Five Year Plans of India (1992-2002).²³ The Government's support for oil palm cultivation continued under various schemes until the launch of National Mission on Oilseeds and Oil Palm (NMOOP) under the 12th Five Year Plan (2012-2017). Under the NMOOP, the Mini Mission-II (MM-II) is dedicated towards expansion of cultivation of oil palm.²⁴ The MM-II is being implemented in 13 states viz- Andhra Pradesh, Assam, Arunachal Pradesh, Chhattisgarh, Gujarat, Karnataka, Kerala, Mizoram, Nagaland, Odisha, Tamil Nadu, Telangana and Goa.²⁵ The funding pattern between the Central

17 *Id.*

18 *Id.*

19 Kimberley Brown, *Can Ecuador do Palm Oil Right? Jurisdictional RSPO Commitment Stirs Hope*, MONGABAY (Aug. 10, 2018), <https://news.mongabay.com/2018/08/can-ecuador-do-palm-oil-right-a-jurisdictional-rspo-commitment-is-stirring-hope/>.

20 WORLD WILDLIFE FUND, *DEFORESTATION FRONTS: DRIVERS AND RESPONSES IN A CHANGING WORLD* (2021), https://wwf.panda.org/discover/our_focus/forests_practice/deforestation_fronts/.

21 IUCN, *supra* note 13, at 23.

22 IUCN, *supra* note 13, at 69.

23 Ritchie & Roser, *supra* note 8, at 44.

24 Ministry of Agriculture and Farmers Welfare, *Operational Guidelines: National Mission on Oilseeds and Oil Palm (NMOOP)*, <https://nmoop.gov.in/Guidelines/NMOOP20114.pdf> (last visited Dec. 27, 2021).

25 Madhu Ramnath, *With Palm Oil Expansion, India is Blazing a Trail to a Parched Future*,

and State governments stayed at 50:50 till 2014-15. This was revised to 60:40 for general states and 90:10 for north-eastern and hill states from 2015-2016.²⁶ For four years under the MM-II, the Government funded 85% cost of the planting material and 50% cost of the other components like maintenance cost of new plantations for four years, installation of drip-irrigation systems, purchase of tools, machinery and fertilisers.²⁷ Given the government's financial backing, oil palm cultivation grew from 8,585 hectares in 1992 to 3.16 lakh hectares in 2016.²⁸

In 2015, the Indian Institute of Oil Palm Research (IOPR) released the Vision 2050 which set a target of bringing over 2 million hectares of land under oil palm cultivation producing 14.04 million tonnes of palm oil to meet the growing demands of the country by 2050.²⁹ To implement its vision, the government incentivised farmers by offering subsidies and offering new cultivation technologies, and hybrid seed varieties.³⁰ Investments by big corporations were welcomed by relaxing the land ceiling limit for palm oil cultivation, and allowing them to derive a maximum benefit of 100% FDI.³¹ Subsequently, companies such as M/s Godrej Agrovet Pvt. Ltd., M/s Ruchi Soya Industries, M/s Food, Fats & Fertilizers and M/s Shivasais Palm oil Ltd began entering the scene with large tracts of land being offered to them.³² The new scheme builds on this progress and aims to increase cultivation of oil palm from the present 0.35 million hectares to one million hectares by 2025-26. This cultivation is expected to expand crude palm oil output to 1.1 million tonnes by 2025-26 and up to 2.8 million tonnes by 2029-30.³³ Unlike MM-II which targets 13 states, the new scheme NMEO-OP focuses specifically on the north-eastern region

THE WIRE (Aug. 12, 2018), <https://thewire.in/agriculture/india-palm-oil-cultivation-foreign-currency>.

26 Ritchie & Roser *supra* note 8, at 49.

27 Ritchie & Roser *supra* note 8, at 45.

28 *Id.*

29 INDIAN INSTITUTE OF PALM OIL RESEARCH, INDIAN COUNCIL OF AGRICULTURAL RESEARCH, VISION 2050, 17 (2015), <https://iiopr.icar.gov.in/pdf/vision2050.pdf>.

30 *Id.*

31 *Cabinet approves measures to increase oil palm area and production in India*, PRESS INFORMATION BUREAU (Apr. 12, 2017), <https://pib.gov.in/newsite/PrintRelease.aspx?relid=160971>.

32 Ritchie & Roser, *supra* note 8, at 46.

33 *Cabinet Approves Implementation of National Mission on Edible Oils*, PRESS INFORMATION BUREAU (Aug. 18, 2021), <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1746942>.

and the Andaman and Nicobar Islands (ANI).³⁴ Ironically, both north-east India and ANI are ecologically fragile landscapes³⁵ and form part of the globally identified biodiversity hotspots.³⁶

SECTION 2: OIL PALM EXPERIENCE IN REGIONS TARGETED BY THE NMEO-OP

2.1. The North-east

2.1.1. Biodiversity impacts of Oil Palm cultivation

Given the policy push for achieving self-sufficiency in vegetable oil, cultivation of oil palm has been continuing rapidly in India's biodiversity-rich north-eastern states. By 2018, Mizoram had planted 28,295 hectares of oil palm, largely by diverting its high biodiversity forest-crop mosaics.³⁷ Other North-eastern states i.e. Assam, Arunachal Pradesh, Nagaland, and Tripura have followed suit, and have cultivated 2,881 hectares of oil palm on their supposedly 'degraded' landscapes.³⁸ These states form part of two global biodiversity hotspots in India-Himalaya and Indo-Burma.³⁹ The forests and shifting cultivation landscapes targeted for expansion of oil palm are biodiversity-rich ecosystems and support a multitude of vulnerable, forest-dependent species. Experts have cautioned that expansion of oil palm in the north-east could endanger these ecologically fragile landscapes, as has occurred elsewhere in the tropics.⁴⁰

Mizoram has embraced a leadership role in the cultivation of oil palm in the north-east, largely due to its New Land Use Policy.⁴¹ The policy describes traditional

34 *Id.*

35 Umesh Srinivasan *et al.*, *Palm oil cultivation can be expanded while sparing biodiversity in India*, 2 NATURE FOOD 442, 444(2021).

36 Vishwas Chitale *et al.*, *Global Biodiversity Hotspots in India: Significant Yet Under Studied*, 108 CURRENT SCIENCE 149 (2015).

37 Srinivasan, *supra* note 35, at 444.

38 *Id.*

39 CONSERVATION INTERNATIONAL, BIODIVERSITY HOTSPOTS IN INDIA, <http://bsienvis.nic.in/files/biodiversity%20hotspots%20in%20india.pdf> (last visited Sept. 29, 2021).

40 Srinivasan, *supra* note 35, at 445.

41 INDIAN COUNCIL OF AGRICULTURAL RESEARCH (ICAR), EXECUTIVE SUMMARY OF NEW LAND USE POLICY (NLUP) PROJECT, http://www.kiran.nic.in/pdf/agri-info/jhum%20cultivation/Executive_summary.pdf (last visited Sept. 29, 2021).

shifting cultivation (*jhum*) as unproductive, destructive of forests, and instead promotes 'settled' cultivation of agri-horticultural and plantation such as oil palm and pineapple. Policymakers and industry share this view because they see the forests burning due to *jhum* fire, but fail to see the rapid recovery of forest vegetation which follow when fields are rested.⁴² However, studies indicate that *jhum* causes only a temporal loss of small forest patches which is followed by swift regeneration of the forest, including 10,000 bamboo clumps per hectare in five years.⁴³ Oil palm, on the other hand, is notorious for causing deforestation. They are cultivated as monocultures devoid of tree and bamboo cover, and drastically reduce rainforest plant and animal diversity.⁴⁴

A research study was carried out in the year 2016 which assessed the forest bird use of oil palm plantations, teak plantations, and *jhum* as compared to mature forest use in Mizoram's Dampa Tiger Reserve Landscape.⁴⁵ The number of forest bird species recorded in oil plantations (10) was just one-fifth of the number of forest species recorded in *jhum* landscapes (50), and one-seventh of that found in rainforest interior (i.e. 70).⁴⁶ *Jhum* fared better than oil palm plantations in terms of supporting forest birds due to differences in the extent of alteration of the original forest habitats.⁴⁷ During a *jhum* cycle which starts early in the year, the farmers cut carefully demarcated patches of bamboo forests and sun-dry the vegetation.⁴⁸ They then burn the slash in spectacular-but-contained forest in March to clear the fields and cultivate them through the monsoon. After cultivation, the fields are rested, and farmers shift to new areas. The rested fields regenerate into forests.⁴⁹ *Jhum*, therefore, includes small open cultivated fields, which form a mosaic with

42 T.R. Shankar Raman, *Bamboozled by Land-use Policy: Jhum and Oil Palm in Mizoram*, in THE WILD HEART OF INDIA: NATURE IN THE CITY, THE COUNTRY AND THE WILD 222 (2019).

43 *Id.*

44 *Id.*, at 229.

45 Jaydev Mandal & T.R. Shankar Raman, *Shifting Agriculture Supports More Tropical Forest Birds Than Palm Oil or Teak Plantations in Mizoram, North-East India*, 118 THE CONDOR: ORNITHOLOGICAL APPLICANTS 346 (2016).

46 *Id.*

47 Mandal & Raman, *supra* note 45, at 354.

48 T R Shankar Raman, *Mizoram: Bamboozled by Land Use Policy*, THE HINDU (May 14, 2014), <https://www.thehindu.com/opinion/op-ed/mizoram-bamboozled-by-land-use-policy/article6005950.ece>.

49 *Id.*

recent fallows, secondary forests in various stages of regeneration, and mature forest remnants (retained along ravines and ridges, in reserves).⁵⁰ On the other hand, the conversion of forest into oil palm plantations leads to major habitat alteration with near total removal of native trees, bamboo, and understory vegetation.

2.1.2 Oil Palm- A Water Guzzler Crop

Oil palm is a water-intensive crop. It is estimated that for a good harvest, each palm tree requires about 250 litres of water every day, and that the recommended number of palm trees is 56 trees per acre.⁵¹ Given its water requirements, the cultivation of oil palm may be a concern in the north-east which is dependent on rainfall for its agriculture.⁵² Moreover, recent studies have shown that not only has the overall rainfall declined, but the overall patterns have changed in unpredictable ways too. The January 2021 study “Observed rainfall changes in the past century (1901–2019) over the wettest place on Earth”⁵³ analysed 119 years of rainfall measurements (from 1901 to 2019) at 16 different rain gauge stations across North-eastern India, and observed a decreasing trend of about 0.42 mm per decade for the period 1973-2019. The long-term changes were also responsible for the observed shift of the world’s wettest place from Cherrapunji to Mawsynram (separated by 15-km) in the recent decade. The study states⁵⁴

since north-east India is mostly hilly and is an extension of the Indo Gangetic Plains, the region is highly sensitive to changes in regional and global climate. It has to be noted that the first signs of the effect of climate change will be evident for the extreme cases such as the rainfall at CHE (Cherrapunji).”

Changes in the temperature of the Indian Ocean and conversion of forestlands and vegetation cover to croplands have been attributed as reasons for the declining rainfall pattern. A research compilation by the Centre for Science and Environment

50 Mandal & Raman, *supra* note 45, at 350.

51 Ramnath, *supra* note 25.

52 Ranjit Barthakur & Joanna Dawson, *Palm Oil in The North East: Can We Do It Better?*, EASTERN MIRROR (Sept. 1, 2021), <https://easternmirrornagaland.com/oil-palm-in-the-north-east-can-we-do-it-better/>.

53 J Kuttippurath, *Observed Rainfall Changes in the Past Century (1901-2019) over the wettest place on Earth*, 16, ENVIRONMENT RESEARCH LETTERS, 2 (2021).

54 *Id.*

“Code Red: Climate Change in North East India”⁵⁵ shows that climate change has led to dramatic shifts in the rainfall patterns, resulting in its overall drying up. The intensity and frequency of dry periods and droughts has also increased due to climate change. A 2018 NITI Aayog report⁵⁶ has attributed decreasing rainfall as one of the reasons for drying of water springs. The Report cautioned that⁵⁷

... with climate change and rising temperatures, rise in rainfall intensity and reduction in its temporal spread, and a marked decline in winter rain, the problem of drying springs is being increasingly felt across the Indian Himalayan Region. A survey in Sikkim found that the water production has declined in half of all springs in the State – a dangerous sign that aquifers are depleting in a State which is almost entirely dependent on springs for drinking water.

The NITI Aayog report estimated that approximately 27% of villages in Eastern Himalayan states depend on spring water.⁵⁸

Given the grim water security situation in the North-east, the questionable viability of oil palm is best brought out by ecologist Dr. TR Shankar Raman from his field work experience in Mizoram. As per his estimates,⁵⁹

Oil palm is a highly water-demanding crop with each plant needing about 300 litres of water per day. “Mizoram already faces water shortage for several months every year in rural areas. Even urban centres like Aizawl are no exception. A plantation that requires 40,000-50,000 litres of water per hectare every day is likely to exacerbate regional water scarcity. Going by this, two hectares of oil palm use up more water per day than a citizen of Mizoram might in an entire year.

55 CENTRE FOR SCIENCE AND ENVIRONMENT, CODE RED: CLIMATE CHANGE IN NORTH EAST INDIA (2021), https://cdn.cseindia.org/attachments/0.76359600_1634901104_climate-change-in-north-east-india.pdf.

56 NITI AAYOG, REPORT OF WORKING GROUP I INVENTORY AND REVIVAL OF SPRINGS IN THE HIMALAYAS FOR WATER SECURITY, at ii (2018), https://www.niti.gov.in/writereaddata/files/document_publication/doc1.pdf.

57 *Id.*, at ii.

58 *Id.*, at 3.

59 Raman, *supra* note 42, at 230; Bikash Kumar Bhattacharya *et al.*, *Mizoram’s Balancing Act with Palm Oil’s Ecological Impact and Economic Benefits*, MONGABAY (Sept. 13, 2021), <https://india.mongabay.com/2021/09/mizorams-balancing-act-with-palm-oils-ecological-impact-and-economic-benefits/>.

In view of the above, the government may need to examine the sustainability of cultivation of oil palm in the North-east.

2.2. Andaman and Nicobar Islands

2.2.1. History of Oil Palm's in the ANI:

The oil palm plantations have a chequered history in the ANI. The first push for their cultivation came in 1970 in the Little Andaman. By 1975-1976, 160 hectares of oil palm were created on the Island.⁶⁰ Three years later, Little Andaman got its first oil palm project sanctioned which targeted plantations over 2,400 hectares.⁶¹ However, the project was stopped midway in 1986 by the Environment Ministry for the want of impact assessment studies.⁶² While the result of these impact studies is unknown, reports published by the Central Agricultural Research Institute (CARI) in this regard are noteworthy. According to news media coverage, a 1987 CARI report stated that after the soil cover is changed from tropical rainforest to a crop or plantation-based system, it takes 15 years for the soil to attain a stable state.⁶³ Later in 1996, another CARI report was found to report an increase in the rodents in oil palm areas of Little Andaman. It remarked that monoculture plantations led to the loss of soil productivity, disturbed hydrological cycles, and were responsible for the introduction of exotics and pests.⁶⁴

The introduction of species not native to the Islands was also one of the major concerns mentioned in the Shekhar Singh Commission Report on Forest and Allied Matters in ANI submitted to the Supreme Court. The Commission was constituted by the court in November 2001 in the interlocutory application No. 502 of 1999 in the *TN Godavarmanv.. Union of India & Ors. WP. 202/1995*.⁶⁵ The Commission,

60 Roy Saswati, *Induced Commercial Growth and Deterioration of Little Andaman Island Environment-An Appraisal on Forest Policies*, 13 INDIAN JOURNAL OF GEOGRAPHY AND ENVIRONMENT 36 (2014).

61 *Id.*

62 Saswati, *supra* note 60, at 36.

63 Zubair Ahmed, *Andaman and Nicobar Wants to Take a Reverse Gear on Oil Palm*, DOWN TO EARTH (Apr. 05, 2019), <https://www.downtoearth.org.in/news/agriculture/andaman-nicobar-wants-to-take-a-reverse-gear-on-oil-palm-63803> (the authors rely on media coverage where the original reports are not available online).

64 *Id.* (The authors rely on media coverage where the original reports are not available online).

65 1 SHEKHAR SINGH, FORESTS AND ALLIED MATTERS IN THE ANDAMAN AND NICOBAR ISLANDS

based on its field inspection report remarked that

...introduction of oil palm in Little Andaman and of teak in various parts of the islands....had a significant negative impact. In fact, the areas in Little Andaman where oil palm were introduced show up clearly as degraded forests in the remote sensing map prepared by the Forest Survey of India (FSI).

It further recommended a complete ban on the expansion of monoculture or commercial plantation (such as oil palm) on forest lands.⁶⁶ For the existing plantations, the Commission suggested that since these are no longer viable, they should be phased out, and the forest land released insofar should be regenerated.⁶⁷ The Supreme Court considered this report on 07.05.2002 and noted that “Andaman and Nicobar Islands is one of the hot spots and is in the eco-fragile area and has, therefore, the eco-diversity thereby has to be preserved. For this, it is essential that the natural forest is protected and re-generation allowed to take place.” It further directed the environment ministry and ANI Administration to take specific actions on the recommendations made by the Commission report.⁶⁸

Given the Supreme Court ban on plantations on forest lands, the area under oil palm cultivation stayed at 1,593 hectares till 2018.⁶⁹ In 2018, the NITI Aayog recommended the reintroduction of oil palm plantations in the Islands.⁷⁰ Media sources that obtained access to the Indian Institute of Oil Palm Research (IOPR) feasibility report stated that the report which was submitted by IOPR in December 2018 mentioned that climate and soil conditions in the Islands were conducive for

REPORT FOR THE SUPREME COURT (2002), <http://shekharsinghcollections.com/content/Andman-Nicobar-Islands/2002-Forests-Allied-Matters-in-the-Andaman-Nicobar-Islands-Vol-I-Report-for-the-Supreme-Court.pdf>.

66 *Id.*

67 *Id.*

68 T.N. Godavarman Thirumalpad v. Union of India, W.P. No. 202/ 1995, I.A. No. 990, (2019).

69 Priscilla Jebraj, *Palm Oil Plan for North-East, Andaman a Recipe for Disaster, Say Activists*, THE HINDU (Aug. 30, 2021), <https://www.thehindu.com/news/national/oil-palm-plan-for-northeast-andamans-a-recipe-for-disaster-say-activists/article36165229.ece>.

70 Jay Mazoomdar, *Oil Palm Mission: Govt. Cleared Despite Red flags by Top Forestry Institute*, THE INDIAN EXPRESS (Aug. 23, 2021), <https://indianexpress.com/article/india/oil-palm-mission-govt-cleared-despite-red-flags-by-top-forestry-institute-7466071/>.

the growth of oil palm.⁷¹ Accordingly, in 2019, the ANI Administration approached the Supreme Court for reconsideration of its May 2002 order. The Court considered the matter on 22.11.2019 and directed the Indian Council of Forestry Research and Education (ICFRE) to submit its opinion.⁷² Media sources reported that the council submitted its report in January 2020 which cautioned that the “introduction of oil palm should be avoided in biodiversity-rich areas, including grasslands, without detailed studies on its ecological impact”.⁷³ Later in August 2020, the Ministry of Environment, Forest and Climate Change (MoEF&CC) wrote to the ICFRE to study the invasiveness of oil palm and its ecological impact. In November 2020, the ICFRE submitted detailed study proposals to the Ministry.⁷⁴ In January 2021, in a meeting of the Secretaries of the MoEF&CC and Ministry of Agriculture, it was decided that environment impact assessment studies recommended by ICFRE have already been taken up by the Indian Council of Agricultural Research (ICAR) and therefore, there is no need for any fresh studies. It was also decided that ICAR and ICFRE will submit a joint report to the Supreme Court.⁷⁵ The ICFRE, however, in its affidavit, stuck to its original recommendation for the need to conduct detailed biodiversity assessments.⁷⁶ The matter is still pending in court.

The oil palm decision-making process goes against the United Nations Environmental Programme (UNEP) conceptualised policy framework i.e. the Environmental Rule of Law (ERoL): Some of the important tenets of the ERoL framework are: public involvement in environmental decision-making and decision-making in the face of scientific uncertainty.⁷⁷ Effective civic engagement not only improves information available to decision makers but also leads to more responsible environmental actions

71 *Id.*; Ahmed, *supra* note 63; Raghu, *New Palm Oil Mission: Unscientific, Misconceived and Overestimated*, PEOPLE’S DEMOCRACY (Sept. 19, 2021), https://peoplesdemocracy.in/2021/0919_pd/new-oil-palm-mission-unscientific-misconceived-and-over-estimated (The authors rely on media coverage where the original reports are not available online).

72 T.N. Godavarman Thirumalpad v. Union of India & Ors, W.P. No. 202/ 1995, I.A. No. 990, (2019).

73 Mazoomdar, *supra* note 70; Ahmed, *supra* note 63; Raghu, *supra* note 71 (The authors rely on media coverage where the original reports are not available online).

74 Mazoomdar, *supra* note 70.

75 *Id.*

76 *Id.*

77 UNITED NATIONS ENVIRONMENT PROGRAMME, ENVIRONMENTAL RULE OF LAW: FIRST GLOBAL REPORT 12 (2019), <https://www.unep.org/resources/assessment/environmental-rule-law-first-global-report>.

by the companies. The success of this engagement in turn rests on the access to environmental information held by the public authorities, the scope of realistic and meaningful participation, and access to judicial proceedings.⁷⁸ However, as explained above, in the oil palm decision making process, there was no participation by local public and independent experts. The entire decision-making process took place at the ministerial level.

ICFRE's recommendations on conducting scientific biodiversity assessments prior to reintroducing oil palm expansion in the ANI, gives an impression that there may be an existing lack of understanding of the ecological impact of oil palm expansion in the islands. The ERoL, in such cases of absence of scientific certainty, recommends the adoption of the Precautionary Principle.⁷⁹ The principle states that when confronted with the lack of information, actions should be taken that err on the side of caution rather than increasing risk.⁸⁰ However, the decision to launch a national scheme for expansion of oil palm in a biodiversity rich area without being aware of its possible environmental impacts does not seem to be in conformity with this internationally recognized principle. Impact studies are important as they can help identify and reduce the uncertainties and negative impacts associated with the proposed oil palm expansion. Therefore, the decision to launch the scheme should have been postponed till there is complete scientific clarity on the potential ecological impacts of oil palm expansion.

2.2.2 The Cumulative Effect:

The recent policy push for the reintroduction of oil palm in the ANI only precedes the NITI Aayog's mega infrastructure and tourism development plans for the Little Andaman Island and the Great Nicobar Islands.

The NITI Aayog in January 2021⁸¹ announced the "The Sustainable Development of Little Andaman Islands: A Vision Document". The primary objective of this

78 *Id.*, at 88.

79 *Id.*, at 12.

80 UNEP, *supra* note 77, at 13.

81 Pankaj Sekhsaria, *NITI Aayog's Megacity Plan for Little Andaman Alarms Conservationists*, *The Hindu* (Feb. 01, 2021), <https://www.thehindu.com/news/national/financial-tourist-complex-on-little-andaman-a-bullet-through-an-islands-heart/article33710255.ece>.

vision document is to build a new greenfield coastal city in the Little Andaman.⁸² The city is proposed to be developed as a free trade zone and is stated to compete with cities like Hong Kong, Singapore and Dubai.⁸³ The 680 sq.km fragile Little Andaman is proposed to have three Development Zones: Financial District and Medi City, Leisure Zone and the Nature Zone.⁸⁴ Zone 1 will consist of: an Aerocity which will house an International Airport, dedicated areas for global brand hospitals and pharma research, an International Finance center, and tourism and hospitality district.⁸⁵ The Leisure Zone will house entertainment activities such as casino strips, sports institutes, film city, water based recreation, etc. This zone has been sub-categorised into three districts: Film City, Residential City and Tourism SEZ.⁸⁶ Zone 3 or Nature Zone will consist of luxury forest resorts dedicated to high-end clientele, Nature Care and Wellness Institutes, and The West Bay Nature Retreat.⁸⁷

The vision document states that “ecological and environmental constraints” have meant that the strategic and economic potential of the island to India has been neglected and ignored.⁸⁸ The document further states that 95% of the Little Andaman’s landmass is under forest cover, and there is a need to open Little Andaman, which is as big as Singapore and release the area for deployment of strategic assets.⁸⁹ Given the high forest cover of the Island, and that the forest land for the projects harbor more than two million trees, the Divisional Forest Officer (DFO), Little Andaman has cautioned that such a large diversion will lead to irreversible environmental damage.⁹⁰ Further, project sites coincide with the nesting sites of the leatherback

82 Niti Aayog, *Sustainable Development of Little Andaman Island: Vision Document*, in PANKAJ SEKHSARIA, *A MONUMENTAL FOLLY: NITI AAYOG’S DEVELOPMENT PLANS FOR GREAT NICOBAR ISLAND* 56 (2021), *See also* Sekhsaria, *supra* note 81.

83 Niti Aayog, *supra* note 82, at 76.

84 *Id.*, at 85-88.

85 *Id.*, at 89.

86 *Id.*, at 89-91.

87 *Id.*, at 92-93.

88 *Id.*, at 47.

89 *Id.*, at 85-88; Rosamma Thomas, *Leatherback Turtles Under Threat as Government Considers ‘Development’ in Little Andaman*, MONGABAY (Apr. 12, 2021), <https://india.mongabay.com/2021/04/leatherback-turtles-under-threat-as-government-considers-development-in-little-andamans/#:~:text=Leatherback%20turtles%20under%20threat%20as%20government%20considers%20'development'%20in%20Little%20Andaman,-by%20Rosamma%20Thomas&text=Proposed%20development%20of%20the%20Little,are%20found%20in%20Indian%20waters.>

90 Sekhsaria, *supra* note 81; ESZ Division, MoEF&CC, *Civil Society Letter dated 14.06.2020*

turtle (*Dermochelys coriacea*), a critically endangered species as per the IUCN Red List.⁹¹ As per the DFO Little Andaman, the impact of the development of coastal areas on turtles could not even be assessed as neither an environmental impact assessment was conducted nor any detailed site layout plans for proposed diversion were shared.⁹²

For the Great Nicobar Islands, the NITI Aayog has announced the Rs. 75,000 core vision “Holistic Development of Great Nicobar Island in Andaman and Nicobar Islands.”⁹³ Like the Little Andaman, the proposal for Great Nicobar envisions developing a new greenfield city.⁹⁴ The city will consist of four interlinked projects: an International Container Transshipment Terminal, Greenfield International Airport, Township and Area Development, and Power Plant.⁹⁵ The overall plan will use about 244 sq.km area of the Great Nicobar Island- a major portion being pristine forest and coastal systems.⁹⁶ In order to make way for construction of its transshipment port, the Standing Committee of National Board for Wildlife (SC NBWL), in January 2021 de-notified the entire Galathea Bay Wildlife Sanctuary.⁹⁷ The sanctuary is an important nesting site of leatherback turtles.⁹⁸

addressed to the IGF (Wildlife), in PANKAJ SEKHSARIA, A MONUMENTAL FOLLY: NITI AAYOG’S DEVELOPMENT PLANS FOR GREAT NICOBAR ISLAND 777 (2021), .

91 IUCN, LEATHERBACK TURTLES AND CLIMATE CHANGE: TURTLE-Y EXPOSED TO CLIMATE CHANGE (2009), https://www.iucn.org/sites/dev/files/import/downloads/fact_sheet_red_list_turtle_v2.pdf.

92 Sekhsaria, *supra* note 81.

93 Pankaj Sekhsaria, *Green Panel Allows Great Nicobar Plan to Advance*, THE HINDU (May 10, 2021), <https://www.thehindu.com/sci-tech/energy-and-environment/green-panel-allows-great-nicobar-plan-to-advance/article34521310.ece>.

94 AECOM, *Holistic Development of Great Nicobar Islands at Andaman and Nicobar Islands: A Pre-Feasibility Report March 2021*, in PANKAJ SEKHSARIA, A MONUMENTAL FOLLY: NITI AAYOG’S DEVELOPMENT PLANS FOR GREAT NICOBAR ISLAND 446 (2021), https://kalpavriksh.org/wp-content/uploads/2021/12/A-Monumental-Folly_Final-December-2021-2.pdf.

95 *Id.*

96 SEKHSARIA, *supra* note 82, at 777-778.

97 MoEF&CC, MINUTES OF THE 60TH MEETING OF THE STANDING COMMITTEE OF NATIONAL BOARD FOR WILDLIFE HELD ON 05 JANUARY 2021, at 10 (2021), http://forestsclearance.nic.in/writereaddata/Order_and_Release/11122122212161MinutesofMeeting60thSCNBWL.pdf.

98 MoEF&CC, NATIONAL MARINE TURTLE ACTION PLAN (2021-2026), at 13 (2018), https://moef.gov.in/wp-content/uploads/2018/03/NATIONAL-MARINE-_compressed.pdf.

In their 2018 publication titled *Faunal Diversity of Biogeographical Zones: Islands of India*, the Zoological Survey of India has estimated that the ANI harbors nearly 11,009 faunal species which straddle across both terrestrial and marine habitats, and out of these 1,067 species are endemic to the Islands, i.e. they are found nowhere else on the earth.⁹⁹ The Report further states that *endemic faunal communities of Andaman and Nicobar Islands contribute around 10% faunal communities of island ecosystem of India*. The ANI support unique biodiversity rich ecosystem mainly due to its long isolation from the mainland¹⁰⁰ Given the extent of biodiversity of the ANI, it is of utmost importance to study the cumulative impact of oil palm reintroduction and mega infrastructural-tourism plans on the ecology of the islands.

SECTION 3: THE CLEARANCE CONUNDRUM

Expansion of oil palm in India will require clearance under the country's conservation laws and policies. This is outlined below:

3.1. The Environment (Protection) Act, 1986 (EPA):

The Act grants the environment ministry the power to take measures deemed necessary to improve the quality of the environment. The Rules framed under the Act grant the ministry the power to restrict location of industries on considerations such as local biological diversity, and environmentally incompatible land use. Given the oil palm context, a few regulations promulgated by the ministry under the Act are relevant.

(i) Environmental Impact Assessment (EIA) Notification 2006:

The EIA Notification mandates a prior environmental clearance for projects mentioned under it. The very basis for granting an environmental clearance is environmental impact assessment (EIA) of that project. While a prior permission from the environment ministry is required for projects such as mining, river valley hydroelectric projects, thermal power plants, highways, ports, building and

99 KAILASH CHANDRA & C. RAGHUNATHAN, FAUNAL DIVERSITY OF BIOGEOGRAPHICAL ZONES: ISLANDS OF INDIA 22-24 (2018); Shiv Sahay Singh, *Andaman and Nicobar Islands: Home to a Tenth of India's Faunal Species*, THE HINDU (Nov. 25, 2018), <https://www.thehindu.com/sci-tech/energy-and-environment/andaman-nicobar-islands-home-to-a-tenth-of-indias-fauna-species/article25592134.ece>.

100 CHANDRA & RAGHUNATHAN, *supra* note 99, at 236.

construction, etc., no environmental clearance (and EIA) is required for conversion of land for oil palm plantations.¹⁰¹

(ii) Eco-Sensitive Zone (ESZ):

Eco-sensitive zones are buffer areas notified under EPA¹⁰² notified separately for each national park and wildlife sanctuary.¹⁰³ Areas outside protected areas are often used by the wildlife as corridors or migratory routes to move between habitats.¹⁰⁴ Therefore it is important that land use is regulated in these areas and be made consistent with the needs of the wildlife. The ESZ Notification does precisely that. It regulates developmental and industrial activities in these zones before it spills into an industrial urban area with severe anthropogenic pressures.¹⁰⁵ The extent of ESZs could range from 0 to 10 kilometres and in some exceptional instances it can even go beyond that.¹⁰⁶

ESZs are conserved and managed as per their respective notification and a Zonal Master Plan. In case oil palm cultivation is proposed within an ESZ, the proposal will undergo scrutiny by the ESZ Monitoring Committee.¹⁰⁷

3.2. *The Biological Diversity Act, 2002 (BDA):*

A biodiversity impact assessment is mandatory for oil palm under the provisions of the Biological Diversity Act, 2002. The Act states that “The Central Government shall undertake measures,— (i) wherever necessary, for assessment of environmental impact of that project which is likely to have adverse effect on biological diversity,

101 Schedule: List of Projects and Activities Requiring Environmental Clearance, Environment Impact Assessment Notification, 2006, Ministry of Environment Forests and Climate Change.

102 The Environment (Protection) Act 1986, §§ 3(2)(v) & 13; Environment (Protection) Rules, 1986, rule 5(1)(viii).

103 MoEF&CC, Guidelines for Declaration of Eco-Sensitive Zones Around National Parks and Wildlife Sanctuaries 6 (Issued on February 9, 2011), <https://moef.gov.in/wp-content/uploads/2017/06/1%20Guidelines%20for%20Eco-Sensitive%20Zones%20around%20Protected%20Areas.pdf>.

104 *Id.*

105 PRERNA SINGH BINDRA, THE VANISHING: INDIA’S WILDLIFE CRISIS 297 (2017).

106 MoEF&CC, *supra* note 104, at 6; Mayank Aggarwal, *States Propose Minimal Eco-sensitive Zones Around Protected Areas*, MONGABAY (Aug. 06, 2020), <https://india.mongabay.com/2020/08/states-propose-minimal-eco-sensitive-zones-around-protected-areas/>.

107 MoEF&CC, S.O. 2519(E) (Notified on July 12, 2019), <https://moef.gov.in/wp-content/uploads/2018/12/dampa.pdf>, (Last visited on Jan. 03, 2022) (A sample ESZ Notification elucidating the role of the Monitoring Committee can be seen here).

with a view to avoid or minimise such effects and where appropriate provide for public participation in such assessment”.¹⁰⁸ Expansion of oil palm clearly falls in the category of such projects.

The central government would also need to consult the authorities created under the Biodiversity Act, i.e., National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs) and Biodiversity Management Committees (BMCs). While NBA has a duty to advise the central government on matters relating to conservation of biodiversity¹⁰⁹, the SBBs have a similar duty towards the government.¹¹⁰ There have been multiple cases wherein the SBBs were involved in ecological impact assessment of development projects proposed in their respective states. These include Oil India's drilling operations in the vicinity of Dibru-Saikhowa National Park (Assam)¹¹¹, construction of Aranmula Airport in Panamaram village of Wayanad (Kerala) which threatens the local agricultural and ecological diversity¹¹², and the Margao National Highway Western Bypass which will divert wetlands and affect mangroves in the Benaulim, Seraulim and Margao villages of Goa.¹¹³ Lastly, the BMCs constituted at the local body level are custodians of their natural heritage.¹¹⁴ In Pune, these committees were involved in assessing the impact of a Pune Metro alignment passing through the river bed of Mula Mutha River.¹¹⁵

Therefore, any policy, plan, programme or project which is not in sync with the functions of these institutions will violate the Biodiversity Act.

108 The Biological Diversity Act, 2002, §36 (4)(i).

109 *Id.* §18 (3)(a).

110 *Id.* § 23(a).

111 *Gauhati HC Stays Nod for Oil India Work at Dibru-Saikhowa National Park in Assam*, THE HINDU (Dec. 08, 2020), <https://www.thehindu.com/news/national/other-states/gauhati-hc-stays-nod-for-oil-india-work-at-dibru-saikhowa-national-park-in-assam/article33277436.ece>.

112 *Farmers Mull Legal Action on Aranmula Airport Project*, THE TIMES OF INDIA (Apr. 04, 2013), <http://keralabiodiversity.org/images/news/aran.pdf>.

113 *Goa: NGT Orders Formation of 10-Member Panel for Western Bypass Stretch*, THE TIMES OF INDIA (June 24, 2021), <https://timesofindia.indiatimes.com/city/goa/ngt-orders-formation-of-10-member-panel-for-western-bypass-stretch/articleshow/83793153.cms>.

114 The Biological Diversity Act, 2002, §41; National Biodiversity Authority, Guidelines for Operationalization of Biodiversity Management Committees (BMCs) (Issued in 2013), <http://nbaindia.org/uploaded/pdf/Guidelines%20for%20BMC.pdf>.

115 Sarang Yadwadkar & Ors v. Pune Municipal Corporation & Ors., Unreported Judgements, decided on Oct. 13, 2017 (NGT).

3.3. *The Forest (Conservation) Act, 1980 (FCA):*

As per the Forest (Conservation) Act, 1980, diversion of forest land for non-forestry purposes will require a prior permission (or a forest clearance) from the MoEFCC.¹¹⁶ The Act explains the term non-forestry purpose as breaking or clearing forest land for the cultivation of tea, coffee, spices, rubber, palm, oil-bearing plants, horticulture crops of medicinal plants; and any purpose other than re-forestation.¹¹⁷ Diversion of forest land, therefore, for raising oil palm plantations will need a forest clearance. The Supreme Court in *T.N. Godavarman Thirumulpadu v. Union of India & Ors (Writ Petition No. 202/1995)* has further clarified that the term forest land (as occurring in the FCA) will not only include 'forest' as understood in dictionary sense, but also any area recorded as forest in the government record irrespective of ownership.¹¹⁸ By implication, oil palm plantations on privately owned lands recognised as forests in government records will also require a forest clearance.

Other legal considerations when forest land is proposed for diversion for oil palm are outlined below.

(i.) Questionable compliance with National Forest Policy, 1988 (NFP):

The National Forest Policy, 1988 is based on the idea that forest land or land covered with trees should be treated as a national asset which must be safeguarded. The policy cautions that forest land is not a resource ready for utilisation to implement projects and programmes.¹¹⁹ In regard to expansion of oil palm on forest land, following policy provisions are significant:

Schemes and projects which interfere with forests that clothe steep slopes, catchments of rivers, lakes, and reservoirs, geologically unstable terrain and such other ecologically sensitive areas should be severely restricted. Tropical rain/moist forests, particularly in areas like Arunachal Pradesh, Kerala, Andaman & Nicobar Islands, should be totally safeguarded."¹²⁰ With regards to diversion of forest land, the policy states that "Construction of dams and reservoirs, mining and industrial

116 The Forest (Conservation) Act, 1980, §2.

117 *Id.* § 2, explanation.

118 *T.N. Godavarman Thirumulpad v. Union of India & Ors.*, (1997) 2 SCC 267.

119 MoEF&CC, National Forest Policy, 1988, cl. 4.4.1, <http://asbb.gov.in/Downloads/National%20Forest%20Policy.pdf>.

120 *Id.* cl. 4.3.

development and expansion of agriculture should be consistent with the needs for conservation of trees and forests.¹²¹

Even though NFP is not essentially a law, the Supreme Court in its judgement in the matter of *Lafarge Umiam Mining (P.) Ltd. v. Union of India* [(2011) 7 SCC 388]¹²² stated that policy has a 'statutory flavour'.¹²³ The Court observed that the policy lays down far-reaching principles (specifically, the above stated provisions) which must necessarily govern the grant of forest clearance. Therefore, any decision to allow diversion of forest land for cultivation of oil palm must adhere to the above stated judgement and therefore the National Forest Policy.

(ii) The Offset Issue:

Forest clearance is granted on the condition of compensatory afforestation which seeks to offset the loss of 'land by land' and loss of 'trees by trees'.¹²⁴ Compensatory afforestation needs to be carried out on non-forest land equivalent to the land diverted, with the approval of the Central Government, as per the Forest Conservation Rules, 2003.¹²⁵ The non-forest land should be contiguous or in proximity to Reserved Forests or Protected Forests. In cases where non-forest land is not available, compensatory afforestation may be carried out on degraded forest land twice to the extent of the diverted area.¹²⁶ The degraded forest land should be as near as possible to the site of diversion to minimize the adverse impact on the micro-ecology of the area. However, the unavailability of land to carry out afforestation targets has led to violation of the above guidelines across the country. For example, in the ANI, the implementation of more than 20 development and tourism projects was getting delayed due to the unavailability of land for compensatory afforestation.¹²⁷ With more than 90%

¹²¹ *Id.* 4.3.

¹²² *Lafarge Umiam Mining (P.) Ltd. v. Union of India*, (2011) 7 SCC 388.

¹²³ Ritwick Dutta, *Anything but Green*, THE HINDU (May 17, 2018), <https://www.thehindu.com/opinion/op-ed/anything-but-green/article23906285.ece>.

¹²⁴ MoEF&CC, HANDBOOK OF GUIDELINES FOR EFFECTIVE AND TRANSPARENT IMPLEMENTATION OF THE FOREST (CONSERVATION) ACT, 1980, at 45 (2019), http://parivesh.nic.in/writereaddata/FC/HANDBOOK_GUIDELINES/HANDBOOK_GUIDELINES18_03_2019.pdf.

¹²⁵ Forest Conservation Rules, 2003, rule 6.

¹²⁶ MoEF, HANDBOOK OF GUIDELINES ON FOREST (CONSERVATION) ACT, 1980, GUIDELINES & CLARIFICATIONS 38 (2004), <http://uppwd.gov.in/site/writereaddata/siteContent/Forest%20Clearance.pdf>.

¹²⁷ Ranjan Srivastava, *In a First, Compensatory Afforestation of Projects in Andaman to be Done*

of the Island's geographical area under forest cover and 7.71 sq.km revenue land available for developmental purposes, identifying sufficient land for compensatory afforestation is difficult.¹²⁸

Accordingly, the environment ministry in October 2020 had written to the State Governments of Madhya Pradesh, Kerala, Rajasthan, and Uttar Pradesh requesting identification of land for carrying out compensatory afforestation on the behalf of the ANI. Accordingly, 1,000 degraded forest sites over 40,000 hectares were identified in Madhya Pradesh.¹²⁹ According to ecologist Dr. T. R. Shankar Raman, this implies that biologically rich forests will be destroyed in a unique island ecosystem and a false replacement—probably using just two or three totally inappropriate species not native to either ecosystem—will be created over 2,000 km away in the middle of India in a totally different bioclimatic zone.¹³⁰ The case of Goa is equally interesting. The Goa Forest department had written to the Karnataka forest department for making 800 hectares of degraded forest land available for carrying compensatory afforestation.¹³¹ Around 70% of Goa's geographical area is covered with forest and tree cover. The rest of the area is not available for afforestation as it is covered under Coastal Regulation Zone, riverine/water bodies, habitation, agriculture etc. Even the low-density forest areas are not conducive for afforestation as these are covered with laterite rocks.¹³² Activists have questioned the logic of offsetting the damage of forests in Goa by taking afforestation in Karnataka.¹³³ Given that the very basis of

in MP, HINDUSTAN TIMES (Jan. 08, 2021), <https://www.hindustantimes.com/environment/in-a-first-compensatory-afforestation-of-projects-in-andaman-to-be-done-in-mp/story-sj4M5uBp5dURvxyO8y0lJN.html>.

128 *Id.*

129 *Id.*

130 T.R. Shankar Raman, *India's Revenant Forests*, OUTLOOK (Jun. 14, 2021), <https://www.outlookindia.com/magazine/story/india-news-indias-revenant-forests/304618>.

131 *Forests Cut in Goa to be Afforested in Karnataka, Activists Question Logic*, HINDUSTAN TIMES (Feb. 28, 2020), <https://www.hindustantimes.com/india-news/forests-cut-in-go-to-be-afforested-in-karnataka-activists-question-logic/story-APsQpBQnRGtT0FxE9prjL.html>.

132 FOREST CONSERVATION DIVISION, MoEF&CC, MINUTES OF THE MEETING OF THE FOREST ADVISORY COMMITTEE (FAC) MEETING HELD ON 28TH NOVEMBER, 2019, at 9 (Nov. 28, 2019), http://forestclearance.nic.in/writereaddata/FAC_Minutes/121111121612151Minutes28thNovember20191.PDF.

133 *Forests Cut in Goa to be Afforested in Karnataka, Activists Question Logic*, HINDUSTAN TIMES (Feb. 28, 2020), <https://www.hindustantimes.com/india-news/forests-cut-in-go-to-be-afforested-in-karnataka-activists-question-logic/story-APsQpBQnRGtT0FxE9prjL.html>.

forest clearance-compensatory afforestation has a problematic implementation, the government needs to think deeply before it takes a decision to open India's forest land in such unique ecosystems for oil palm expansion.

3.4. The Wildlife (Protection) Act, 1972 (WLPA)

Diversion of land from national parks¹³⁴, wildlife sanctuaries¹³⁵, and conservation reserve¹³⁶ for purposes such as cultivation of oil palm would require prior recommendation from the SC NBWL. Community reserves are beyond the scope of the SC NBWL, and diversion of land from these reserves will be regulated by the management plan prepared by the relevant Conservation Reserve Management Committee.¹³⁷

The WLPA also provides for notification of areas as Tiger Reserves.¹³⁸ They may encompass National Parks, Wildlife Sanctuaries and even Reserve Forests. All tiger reserves include a core or critical tiger habitat, and a peripheral buffer area.¹³⁹ Proposals which involve diversion of areas from notified tiger reserves would require prior recommendation of the SC NBWL and recommendation from the National Tiger Conservation Authority (NTCA).¹⁴⁰

3.5. The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition Of Forest Rights) Act, 2006 (FRA):

In the north-east, around 55% of the recorded forest is categorised as 'unclassified' or 'unclassified'.¹⁴¹ They are categorised in a way that they are not notified as Reserved or Protected Forests under the Indian (Forest) Act, 1927 (or its states versions). Nagaland

134 The Wildlife Protection Act, 1972, § 35 (6); MoEF, Guidelines for Taking Non-Forestry Activities in Wildlife Habitats, (Issued on Dec. 19, 2012), at 2 <https://www.ndrdgh.gov.in/NDR/pdf/Wildlife%20Guidelines.pdf>.

135 World Wide Fund for Nature-India v. Union of India & Ors, Unreported Judgements, Writ Petition (Civil) No. 337 of 1995, decided on Apr. 15, 2013 (SC).

136 MoEF, Guidelines for Taking Non-Forestry Activities in Wildlife Habitats, (Issued on Dec. 19, 2012), at 2 <https://www.ndrdgh.gov.in/NDR/pdf/Wildlife%20Guidelines.pdf>.

137 The Wildlife (Protection) Act, 1972, § 36(D).

138 *Id.* § 38V(1).

139 Bindra, *supra* note 105, at 297.

140 The Wildlife (Protection) Act, 1972, sched. 1.

141 C.R. Bijoy, *Why India's North-east Could See FRA as a Way to Protect Its Community Forests*, THE WIRE (Aug. 16, 2019), <https://thewire.in/environment/why-indias-north-east-could-see-fra-as-a-way-to-protect-its-community-forests>.

has a sizable 97.29% in this category while all others have a one-third or more of their forests, with exceptions being Sikkim (0%) and Mizoram (20.53%).¹⁴² It is believed that these unclassified or unclassified forests include traditionally community-controlled forests¹⁴³ and if these areas are diverted for large-scale commercial oil palm plantations, it will transfer land ownership to a few influential individuals, exacerbating socio-economic inequalities and threatening livelihood security.¹⁴⁴ The provisions of the Forest Rights Act are relevant here. The Act not only recognises individual and community rights of communities traditionally dependent on forest land for their livelihoods but also recognises their right to conserve, manage and protect their customary common forest land.¹⁴⁵

The FRA includes unclassified forests in its definition of forest land, along with undemarcated forests, existing or deemed forests, protected forests, reserved forests, sanctuaries and national parks.¹⁴⁶ The Act also includes a provision which specifically caters to the north-eastern region which states that “rights which are recognised under any state law or laws of any autonomous district council or autonomous regional council or which are accepted as rights of tribal under any traditional or customary law of the concerned tribes of any State.”¹⁴⁷ The Gram Sabha (village council) is the principal institution under the FRA and is not only responsible for initiating the process of filing claims over forest rights¹⁴⁸ but also for the management of the traditional forest resources.¹⁴⁹ It is important to note that before a forest land is proposed for diversion to support non-forestry purposes such as oil palm, not only a prior informed consent from the Gram Sabha is necessary but rights have to be fully settled as well.¹⁵⁰

142 *Id.*

143 *Id.*

144 Srinivasan *et al.*, *supra* note 35, at 447.

145 The Forest Rights Act, 2006, § 3.

146 *Id.* § 2(d).

147 *Id.* § 3(1)(j).

148 *Id.* § 6(1).

149 *Id.* §§ 3(1) & 5.

150 MoEF, F.No. 11-9/1998-FC(pt), Diversion of Forest Land for Non-forest Purposes under the Forest (Conservation) Act, 1980 -Ensuring Compliance of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, (Issued on Aug. 8, 2009), [http://forestsclearance.nic.in/writereaddata/public_display/schemes/981969732\\$3rdAugust2009.pdf](http://forestsclearance.nic.in/writereaddata/public_display/schemes/981969732$3rdAugust2009.pdf); C.R. Bijoy, *How Land Diversion Laws Threaten*

3.6. Air (Prevention and Control of Pollution) Act, 1981 and Water (Prevention and Control of Pollution) Act, 1974:

Considering the life cycle of oil palm production as a whole, it is not possible to ignore its contribution to pollution at every stage of the process from “*cradle to gate*”.¹⁵¹ Intense haze episodes resulting from burning down forests for oil palm plantations are known to be a big cause of air pollution in tropical countries.¹⁵² Particularly, the burning of peat bogs for palm oil plantations have been reported as an important source of GHG emissions resulting in climate change.¹⁵³ Studies have shown such slash and burn practices to have a severe impact on the respiratory and cardiovascular health of vulnerable populations in south-east Asia.¹⁵⁴ In India, the Air (Prevention and Control of Pollution), Act, 1981 (Air Act), governs issues related to air pollution. According to the Air Act, an industrial establishment may be set up in a “air pollution control area” as declared by the State Pollution Control Board (SPCB),¹⁵⁵ only after obtaining the consent to establish (CTE) prior to initiating construction of the plant and consent for operation (CFO) after site inspection by the SPCB.¹⁵⁶ Further, the Act also restricts the emission of air pollutants in excess of standards laid down by the SPCB,¹⁵⁷ a violation of which is an offence punishable with imprisonment or fine.¹⁵⁸ Thus, any oil palm mill set up must comply with the emission standards established by the state board.

Forests and Forest Dwellers, INDIA SPEND (Sept. 25, 2020), <https://www.indiaspend.com/how-land-diversion-laws-threaten-forests-and-forest-dwellers/>.

151 Halimah Muhamad *et al.*, *Life Cycle Assessment for the Production of Oil Palm Seeds*, 25 TROPICAL LIFE SCIENCES RESEARCH 43 (2019).

152 Denis. J. Murphy *et al.*, *Oil Palm in the 2020s and Beyond: Challenges and Solutions*, 2 CABI AGRICULTURE AND BIOSCIENCE39 (2021), <https://cabiagbio.biomedcentral.com/track/pdf/10.1186/s43170-021-00058-3.pdf>.

153 Amanda J Tonks *et al.*, *Impacts of Conversion of Tropical Peat Swamp Forest to Oil Palm Plantation on Peat: Organic Chemistry, Physical Properties and Carbon Stocks*, 289 GEODERMA 36, 37 (2017).

154 Sowmya Kadandaleet *al.*, *The Palm Oil Industry and Non-communicable Diseases*, 97 BULLETIN OF WORLD HEALTH ORGANIZATION 118, 123 (2019); Royston Uninget *al.*, *A Review of Southeast Asian Oil Palm and its CO₂ Fluxes*, 12 SUSTAINABILITY 5077 (2020).

155 The Air (Prevention and Control of Pollution) Act, 1981, § 19(1).

156 *Id.* § 21(1).

157 *Id.* § 22.

158 *Id.* § 37.

A life cycle assessment (LCA) study of oil palm production conducted by the Malaysian Palm Oil Board, outlines the entire supply chain of the production process starting from the palm oil seed generation unit to the oil palm refinery, noting the emissions resulting at each stage.¹⁵⁹ During this process, the fresh fruit bunches (FFBs) brought from the palm trees, which serve as raw material for the mills, are sprayed with fungicides and chemicals detergents and disinfectants to avoid their contamination at seed production units. The seeds are then packed in polythene sacks in preparation for germination.¹⁶⁰ In the sterilization and clarification stage, they are also treated with a heavy volume of fresh water, which is then released as effluents, otherwise known as palm oil mill effluent final discharge (POME FD).¹⁶¹ Further, the waste from the milling process is generated in the form of suspended solids from the sterilizer condensate and the sludge separator. The presence of soluble organic material in the solid waste reduces the oxygen levels of the water when released into water bodies.¹⁶² Issues related to water pollution are governed under the Water (Prevention and Control of Pollution) Act (Water Act), 1974. The Water Act prohibits the use of a stream or well for disposing poisonous, toxic or polluting matter by any person.¹⁶³ It further lays down that no person shall establish an industry, operation or process which is likely to discharge sewage or trade effluent into a stream or well or sewer or land, without first obtaining the CTE prior to initiating construction of the plant and CFO after site inspection by the SPCB.¹⁶⁴ The SPCB's key functions under the Water Act involve laying down standards of sewage and effluent discharge as well as standards of sewage and effluent treatment, evolving efficient methods of disposing sewage and trade effluents. The SCPCBs also have the power to make an application to courts for restraining pollution of streams and wells where apprehended.¹⁶⁵ The establishment and operation of the oil palm mills under the NMEO-OP are likely to attract the above provisions of the Water Act, with respect to the release of mill effluents into surrounding water bodies.

159 Muhamad *et al.*, *supra* note 151, at 44.

160 Seyed Ehsan Hosseini & Mazlan Abdul Wahid, *Pollutant in Palm Oil Production Process*, 65 JOURNAL OF THE AIR AND WASTE MANAGEMENT ASSOCIATION 775 (2013).

161 *Id.*

162 *Id.*

163 The Water (Prevention and Control of Pollution) Act, 1974, § 24.

164 *Id.* § 25.

165 *Id.*

The consent to establish and operate industrial units is determined based on the category under which the industry is classified.¹⁶⁶ This classification of industries was done by a working group comprising members of the CPCB and SPCB in 2010, based on the level of pollution generated by them, into red, orange, green and white categories with varying requirements for obtaining CTE and CFO.¹⁶⁷ Vegetable oil manufacturing (including the extraction of solvent and refinery) initially appeared under the 'Red Category' assigned to highest polluting industries under the first list released by the CPCB in 2012.¹⁶⁸ Subsequently, it was shifted to the 'Orange Category' assigned to the second highest polluting category of industries in a revised list released by the CPCB in 2016, with a caveat that industries generating waste water greater than 100 kilo litres per day would be reclassified as Red category industries.¹⁶⁹ The siting requirements (for e.g. buffer zones from protected areas, water bodies, highways etc.,) and documents for obtaining CTO and CFO for each of the categories are determined by each state individually.¹⁷⁰ The establishment of oil palm manufacturing and refining units would thus have to comply with guidelines for Orange category industries.

The matter of non-compliance with air and water pollution control measures was recently considered by the National Green Tribunal (NGT) in the case of *Isanaka*

166 CENTRAL POLLUTION CONTROL BOARD (CPCB), FINAL REPORT BY THE WORKING GROUP ON INVENTORIZATIONS OF 17 CATEGORY/ RED CATEGORY/ GPI INDUSTRIES 6-10(2010), <https://cpcb.nic.in/displaypdf.php?id=Q1BBL0ZpbmFsUmVwb3J0X29uSW52ZW50b3JpemF0aW9ub2YxN0NhdGVnb3J5R1BJUmVhZ2F0ZWdvcnlJbmRlc3RyaWVzLnBkZg==>.

167 *Id.*

168 CPCB, F.No. B-29012/1/2012/ESS, Directions under Section 18(1)(b) of the Water (Prevention and Control of Pollution) Act, 1974, Regarding Classification of Industries into Red/ Orange and Green Categories (Issued on Jun 4, 2012), at 21, <https://mpcb.gov.in/sites/default/files/consent-management/committees-constituted/CategorizationCPCB01042020.pdf>.

169 MoEF&CC, *Environment Ministry Releases New Categorization of Industries*, PRESS INFORMATION BUREAU (Mar. 5, 2016), <https://pib.gov.in/newsite/printrelease.aspx?relid=137373>.

170 Andhra Pradesh Pollution Control Board (APPCB), *Consent Management Guidelines*, <https://pcb.ap.gov.in/content-management-cfe.aspx>, (last visited Jan 6, 2022); APPCB, Consent for Operation Orange Category (water & air Act) and Authorisation under Hazardous Waste Rules, <https://www.apindustries.gov.in/APIndus/Data/ClearancesDocuments/CLR054.pdf>, (last visited Jan 5, 2022); Karnataka State Pollution Control Board, Siting Guidelines for Orange and Green Categories, <https://kspcb.karnataka.gov.in/consent-management/siting-guidelines>, (last visited Jan 6, 2022).

*Vedavathiv. Union of India*¹⁷¹ where a cluster of seven edible oil industries in Andhra Pradesh (AP) were found to be in violation of the conditions of the consent for operation issued by the AP pollution control board. Here the NGT established a joint committee comprising members of the Central and AP Pollution Control Boards in order to inspect the refinery units to ensure compliance with effluent transfer and treatment and sludge disposal. Based on their inspection, the joint committee reported continued non-compliance with respect to hazardous waste disposal, fly-ash dumping, which affects the ambient air quality of the surrounding settlements, groundwater treatment and real time transmission of emissions data to the APPCB. Based on this report submitted in 2021, the committee recommended to the NGT, to direct the refinery units to pay an environmental compensation of Rs. 110.06 lakhs to the APPCB.¹⁷² The case remains pending before the NGT.

SECTION 4: OIL PALM CULTIVATION IN NON-FOREST ECOSYSTEMS: SAVING INDIA'S OTHERWISE NEGLECTED ECOSYSTEMS:

In case India attempts to save its forests and shifts expansion of oil palm to non-forest-based ecosystems, it may threaten its other ecosystems such as grasslands, savannahs, arid, semi-arid scrubland, and wetlands such as peatlands. Unlike wooded forests which are widely acknowledged as *important conservation zones*, habitats such as grasslands and wetlands are often *neglected and unappreciated*.¹⁷³

4.1. Can Grasslands Support Oil Palm?

Studies conducted to gauge the feasibility of expanding oil palm in ANI have signaled their intention for diverting grasslands in ANI to support oil palm plantations. As per the studies, *existing grass in the islands is not of any use and is being burnt every year to avoid snakebites*. The studies further said that the soil and climatic conditions were suitable for oil palm plantations, with high rainfall reducing reliance on groundwater for irrigation.¹⁷⁴ Such statements echo a common belief in conservation

171 Isanaka Vedavathiv. Union of India and MoEFCC, O.A No. 221/2015.

172 REPORT OF THE JOINT COMMITTEE IN THE MATTER OF O.A No. 221/2015, at 21-23 (2021) https://greentribunal.gov.in/sites/default/files/news_updates/22115_3.pdf.

173 Mridula Mary Paul, *The Vanishing Grasslands and Wetlands of India*, ROUND GLASS SUSTAIN (May 03, 2021), <https://sustain.round.glass/conservation/grasslands-wetlands-india/>.

174 Priscilla Jebaraj, *Palm Oil Plan for North-east, Andaman a Recipe for Disaster*, Say Activists,

policy-making that grasslands are empty, unproductive and barren.¹⁷⁵ The Wasteland Atlas of India classifies large swathes of grasslands and scrublands as ‘wastelands’ ignoring the fact that they are one of the most productive ecosystems in the world.¹⁷⁶ Grasslands occupy 75% of the land area in the following islands of ANI: Little Andaman, Katchal, Baratang, Kamorta, and Teresa.¹⁷⁷ Grasslands not only provide important ecosystem services such as water and climate regulation in support of agriculture, biogeochemical cycling, carbon storage, cultural and recreational services, they also support the livelihoods of pastoral communities.¹⁷⁸ Survival of several endangered species such as Indian Rhinoceros, Wild Buffalo, Pygmy Hog, Brow-Antlered Deer, Swamp Deer, Barking Deer, Hog Deer, Bengal Florican is closely linked to the fate of their grassland habitats in the north-east.¹⁷⁹ Yet, owing to their wasteland categorisation, grasslands are often the first ones to get diverted to support developmental and industrial projects.¹⁸⁰ Given the neglected state of grasslands in India, any decision to divert them for oil palm expansion must be based on utmost caution.

Conversion of non-forest ecosystems such as tropical savanna grasslands and shrublands for oil palm cultivation appears to be an under-examined issue worldwide. This is because wooded forests normally dominate the global attention for conservation. The 2018 report: “Palm oil and Biodiversity: A situational analysis by the IUCN Palm oil Task Force”¹⁸¹, clarified that even though tropical savannas

THE HINDU (Aug. 21, 2021), <https://www.thehindu.com/news/national/oil-palm-plan-for-north-east-andamans-a-recipe-for-disaster-say-activists/article36165229.ece>.

175 *Id.*; Ahmed, *supra* note 63.

176 DEPARTMENT OF LAND RESOURCES, MINISTRY OF RURAL DEVELOPMENT, WASTELANDS ATLAS OF INDIA: CHANGE ANALYSIS BASED ON TEMPORAL SATELLITE DATA OF 2008-09 AND 2015-16, at 2 (2019); Kadambari Devaraja, *Ecologically and Culturally Rich Deserts, Swamps and Grasslands Must not be Labelled ‘Wastelands’*, THE HINDU (Nov. 7, 2020), <https://www.thehindu.com/sci-tech/energy-and-environment/ecologically-and-culturally-rich-deserts-swamps-and-grasslands-must-not-be-labelled-wastelands/article33037900.ece>; ATREE, REPORT ON THE GRASSLANDS POLICY WORKSHOP, (unpublished Jan. 29, 2018).

177 Jebaraj, *supra* note 174.

178 ENVIS, ECOLOGY AND MANAGEMENT OF GRASSLAND HABITATS IN INDIA 11 (2016), http://wiienvs.nic.in/WriteReadData/Publication/19_Grassland%20Habitat_2016.pdf.

179 *Id.*

180 ATREE, *supra* note 176.

181 E MEIJAARD ET AL., PALM OIL AND BIODIVERSITY: A SITUATION ANALYSIS BY THE IUCN PALM OIL TASK FORCE 20 (2018), <https://portals.iucn.org/library/sites/library/files/documents/2018-027-En.pdf>.

and shrublands are less biodiverse than tropical forest ecosystems, they support numerous unique and threatened species. Therefore, their diversion for oil palm plantations would result in substantial biodiversity loss. The Task Force, therefore, recommends differentiating between natural savannahs, natural shrublands, and open degraded land covers. These areas should be mapped on natural indicators (e.g., biodiversity, critical habitats, or integral landscapes) and anthropogenic gradients such as livelihood support to pastoralists.¹⁸²

Colombia's Llanos regions hold some lessons on the possible biodiversity impact of converting savannahs to oil palm plantations. The Llanos of Colombia cover about 17 million hectares of natural savannahs and wetlands with occasional forested areas. This mixture of ecosystems gives rise to exceptional biodiversity which includes nearly 40% of Colombia's avifauna, the endemic Llanos long-nosed armadillo, and the endemic Orinoco crocodile.¹⁸³ However, this biodiversity is under threat from land-use changes owing to the intensification of cultivation of rice, sugarcane, and oil palm, the land use in Llanos has changed considerably.¹⁸⁴ Oil palm, alone, is identified as one of the major drivers for the alteration of natural savannahs in the Llanos. The coverage of oil palm in the Llanos has increased from 31 sq. km in 1987 to 162 sq. km in 2007.¹⁸⁵ Studies have found that on diversion, terrestrial mammalian diversity is greatly reduced in oil palm plantations as compared to the nearby savanna.¹⁸⁶ Oil palm plantations were more likely to be used by generalist mesopredators, anteaters, and deer, whereas seed dispersers, omnivores such as armadillos, and marsupials were less likely to use oil palm, suggesting their sensitivity to diversion.¹⁸⁷ Another study estimated the impact on the abundance and diversity of local bird species. Out of the 140 bird species identified by the research team, an alarming 41.5% were found

182 IUCN, *supra* note 13.

183 WORLD WILDLIFE FUND, THE TRIPLE CHALLENGE: SYNERGIES, TRADE-OFFS AND INTEGRATED RESPONSES TO MEET OUR CLIMATE, FOOD AND BIODIVERSITY GOALS 28 (2020), https://www.wwf.org.uk/sites/default/files/publications/Oct20/WWF%20TRIPLE%20CHALLENGE%20REPORT_1.pdf.

184 *Id.*

185 Lain E Pardo Vargas *et al.*, *Impacts of Palm Oil Agriculture on Colombia's Biodiversity: What We Know and Still Need to Know*, 8(3) TROPICAL CONSERVATION SCIENCE 828 (2015).

186 Megan Stannard, *A green desert: Mammals Take a Hit in Colombia's Oil Plantations*, MONGABAY (Sept. 16, 2018), <https://news.mongabay.com/2019/09/a-green-desert-mammals-take-a-hit-in-colombias-oil-palm-plantations/>.

187 Vargas *et al.*, *supra* note 185, at 829.

only in the savanna and not on the oil palm plantations, including two species of conservation concern, the Bearded Tachuri (*Polystictus pectoralis*) and the Crestless Curassow (*Mitotementosum*). The results suggested that conversion of natural savannahs to oil palm plantations was having a *rapid and deleterious impact* on bird diversity in the region.¹⁸⁸

4.2. Saving Peatlands:

Peatlands is another category of non-forest ecosystem which is susceptible to diversion for cultivating oil palm. The International Peatland Society defines peatlands as “terrestrial wetland ecosystems in which waterlogged conditions prevent plant material from fully decomposing. Consequently, the production of organic matter exceeds its decomposition, which results in the net accumulation of peat”.¹⁸⁹ Peatlands in the world’s largest oil palm growing regions i.e. Peninsular Malaysia, Borneo, and Sumatra cover 14.7 million hectares of land.¹⁹⁰ It is estimated that by 2015, 21% of this original peatland land area was covered by oil palm plantations.¹⁹¹ Peatlands occupy a mere 2.84% of the earth’s land surface, however, they sequester more carbon than any other type of terrestrial ecosystem, including world’s forests.¹⁹² Nevertheless, peatlands are often drained to support agricultural activities such as oil palm cultivation.¹⁹³ During drainage, the organic material decomposes rapidly (due to oxidation) which results in carbon emissions. Drained peatlands contribute approximately 10% of greenhouse gas emissions from the land use sector. Annual carbon emissions from drained peatlands are estimated at 1.3 gigatonnes.¹⁹⁴ The

188 Lina Lopez Ricaurte *et al.*, *Impacts of Oil Palm Expansion on Avian Biodiversity in a Neotropical Natural Savanna*, 213 BIOLOGICAL CONSERVATION 225 (2017).

189 *What are Peatlands*, INTERNATIONAL PEATLAND SOCIETY, <https://peatlands.org/peatlands/what-are-peatlands/> (last visited Sept. 30, 2021).

190 MARK BARTHEL *ET AL.*, STUDY ON THE ENVIRONMENTAL IMPACT OF PALM OIL CONSUMPTION AND ON EXISTING SUSTAINABILITY STANDARDS: FINAL REPORT FOR THE EUROPEAN COMMISSION 17 (2018), https://ec.europa.eu/environment/forests/pdf/palm_oil_study_kh0218208enn_new.pdf.

191 *Id.*

192 *What are Peatlands*, *supra* note 189.

193 INSTITUTE FOR EUROPEAN ENVIRONMENTAL POLICY (IEEP), THE ECONOMIC OF ENVIRONMENT AND BIODIVERSITY FOR WATER AND WETLANDS 49 (2013), <https://www.cbd.int/financial/values/g-ecowaterwetlands-teeb.pdf>.

194 *Peatlands and Climate change*, IUCN, <https://www.iucn.org/resources/issues-briefs/peatlands-and-climate-change> (last visited Sept. 30, 2021).

conversion of lowland deep peat forests mostly in eastern Sumatra for oil palm, and pulp and paper plantations is the most prominent example of peatland degradation and is considered as a major contributor to global carbon emissions.¹⁹⁵ Draining of peatlands also results in biodiversity loss as peat swamps provide habitat to a large number of globally threatened species.¹⁹⁶ For example, the decline of the Bornean Orangutan population by 60% within a sixty year period is largely attributed to the loss of its peat swamp habitat.¹⁹⁷

In India, peatlands have been documented in Kerala, Arunachal Pradesh, Himachal Pradesh, north Sikkim and some parts of Western Ghats. The country's many deltas and mangroves also have the propensity to develop into peat, however, these are yet to be recorded.¹⁹⁸ Peatlands are categorized as wetlands under India's Wetland (Conservation and Management) Rules, 2017 which prohibits conversion of wetlands for non-wetland uses.¹⁹⁹ However, this provision will not automatically apply to all peatlands recorded across the country. This is because the wetland rules offer legal protection only to Ramsar sites (wetlands of international importance) and wetlands notified by the Central Government, State Government, and Union Territory Administration.²⁰⁰ In order to protect peatlands from getting drained and converted to support oil palm, they should be documented in the north-east and ANI, and be notified under the Wetland Rules on a priority basis.

SECTION 5: THE WAY FORWARD - RECOMMENDATIONS FOR SUSTAINABLE OIL PALM CULTIVATION

5.1. Strategic Environmental Assessment (SEA)

(i) Relevance of SEA to Oil Palm Issue

Our primary recommendation is for the government to undertake a Strategic Environmental Assessment of the NMEO-OP. The UNEP defines SEA as a "formal

195 *Id.*

196 BARTHEL ET AL., *supra* note 190, at 17.

197 *Peatlands and Climate Change*, *supra* note 194.

198 Karthik Chandramouli, *Environmentalists in India are Trying to Map Peatlands. How will This Help Combat Climate Change?*, SCROLL IN (Dec. 22, 2019), <https://scroll.in/article/947089/environmentalists-in-india-are-trying-to-map-peatlands-how-will-this-help-combat-climate-change>.

199 Wetland (Conservation and Management) Rules, 2017, rule 2 (1) (g).

200 *Id.* rule 3.

and systematic process to identify, evaluate and address the environmental effects of policies, plans and programs, and other strategic initiatives.”²⁰¹ The IUCN recommends that SEA should be undertaken for large-scale proposals, i.e., proposals consisting of multiple projects or large-scale land-use proposals.²⁰²

SEA differs from an EIA which is normally conducted in India. As compared to an EIA which is project-specific, SEA extends to the highest levels of decision making. At these levels, major alternatives are still open and there is far greater scope to integrate environmental considerations into the larger policy, and their consequent plans and programs.²⁰³ SEA allows concerns of environmental degradation to be addressed at their “upstream source i.e. in policy and plan-making process”, rather than mitigating their “downstream symptoms or project level impacts”.²⁰⁴ Lastly, SEA also provides ways for anticipating the cumulative adverse impacts on the environment that can emerge from multiple activities occurring within one geographical region. These include projects lingering from the past, concurrent present projects, and foreseeable projects.²⁰⁵

SEA is very relevant to the oil palm case for various reasons. First, the announcement of NMO-OP can at best be termed as still a plan. This plan sets out actions and measures to implement the larger policy objective of Self-Reliant India. Specific oil palm cultivation projects are yet to be decided. Second, oil palm is known worldwide as a major driver of deforestation and biodiversity loss, and its expansion is currently being planned in the Andaman and Nicobar Islands and North-east. Since these are highly biodiverse landscapes and home to numerous globally threatened species, the ecological impact of oil palm in these areas might be irreversible and long lasting. These effects must be emphasized upon at the planning stage itself. Lastly, in

201 HUSSEIN ABABA ET AL., ENVIRONMENTAL IMPACT ASSESSMENT AND STRATEGIC ENVIRONMENTAL ASSESSMENT: TOWARDS AN INTEGRATED APPROACH 66 (2004), https://wedocs.unep.org/bitstream/handle/20.500.11822/8753/Environmental_impact_assessment.pdf?sequence=3&camp%3BisAllowed=.

202 IUCN, WORLD HERITAGE ADVICE NOTE: ENVIRONMENTAL ASSESSMENT 2 (Nov 18, 2013), https://www.iucn.org/sites/dev/files/import/downloads/iucn_advice_note_environmental_assessment_18_11_13_iucn_template.pdf.

203 HUSSEIN ABABA ET AL., *supra* note 201, at 66.

204 *Id.*

205 DEEP OCEAN STEWARDSHIP INITIATIVE, STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA): ENVISIONING ITS APPLICATION TO MARINE AREAS BEYOND NATIONAL JURISDICTION (ABNJ) (Sept. 2018), <http://dosi-project.org/wp-content/uploads/2018/05/DOSI-SEA-Brief-1.pdf>.

ANI, megacity development plans are already looking to destroy its pristine forest cover, and divert habitats of critically endangered and endemic species. Hence, the cumulative impact of city-building and oil palm cultivation must be considered at the higher decision-making levels.

(ii) Need for an Explicit Regional-level Mapping Exercise

Within the overarching framework of SEA, we recommend the government to undertake a regional level mapping focused on ANI and North-east to document critical ecosystems, earmark primary and secondary forests, agricultural areas, non-arable fallow lands, and degraded lands. Areas favourable for oil palm must be assessed based on climatic conditions, rainfall, water balance, land profile and biodiversity.²⁰⁶ While protected areas must be a complete no-go for oil palm plantations, attention must be given to biodiversity-rich areas outside the protected areas network as well. IUCN recommends overlaying the potential future oil palm distribution with known ranges of threatened amphibian, bird, and mammal species, as well as with biodiversity hotspots and key biodiversity areas.²⁰⁷ Neglected ecosystems such as grasslands and wetlands should be given due consideration. Lastly, traditional agricultural landscapes (such as shifting cultivation) must also be spared from oil palm expansion.

The People Biodiversity Registers prepared under the Biological Diversity Act, 2002²⁰⁸ can greatly aid the government authorities in this mapping exercise. These registers prepared at the level of every local body (be it urban or rural), contain comprehensive records of the local biodiversity and the associated traditional knowledge.

Existing agricultural areas and non-arable fallow areas can be considered to support oil palm plantations. However, such trade-offs must be explored at a more regional/local level.²⁰⁹ A recent study²¹⁰ suggests identification of land suitable for oil palm that is 'marginal' in terms of rice, and focus expansion of oil palm onto these lands. While the study does not advocate replacing all of India's marginal rice areas with oil palm, it provides an example of many possible explicit mapping exercises that the

206 Sagar & Chandra, *supra* note 4, at 7.

207 E MEIJAARDET AL., *supra* note 181, at 74.

208 Biological Diversity Rules, 2004, rule 22(6).

209 Sagar & Chandra, *supra* note 4, at 7.

210 Srinivasan, *supra* note 35, at 444.

government can take before it opens areas occupied under high conservation value land cover.

5.2. Pathways to Sustainable Oil Palm Cultivation

i.) Upholding India's international commitments towards biodiversity conservation

India is a party to the internationally binding Convention on Biological Diversity (CBD) which is based on the primary objective of conservation of biological diversity.²¹¹ The National Biodiversity Action Plan (NBAP) is an important instrument to give effect to the convention and to ensure its implementation.²¹² Some of the action points of the Plan prepared by India are noteworthy; “strengthen the protection of areas of high endemism of genetic resources (biodiversity hotspots....)” “Ensure conservation of ecologically sensitive areas, which are prone to high risk of loss of biodiversity due to natural or anthropogenic factors.”²¹³ Both ANI and North-east are ecologically fragile landscapes and form part of global biodiversity hotspots. Provisions of NBAP, therefore, need to be kept in mind before expanding oil palm in these areas.

Further, as a part of the Strategic Plan for Biodiversity 2011-2020, India adopted the Aichi Biodiversity Targets. These targets emphasized reducing the rate of loss of all natural habitats by at least half (and close to zero where feasible), and minimizing their degradation and fragmentation by 2020.²¹⁴ The targets also stressed that by 2020, areas under agriculture and forestry should be managed sustainably, ensuring conservation of biodiversity.²¹⁵ To ensure achievement of the Aichi Targets, India formulated its corresponding National Biodiversity Targets (NBTs). Given oil palm's history with deforestation and the heavy forest coverage in ANI and North-east, some of the NBTs are worth mentioning. NBT 3 states that “strategies for reducing the rate of degradation, fragmentation and loss of all natural habitats are finalized and action put in place by 2020...” Further, NBT 5 states that “by 2020, measures

211 The Convention on Biological Diversity, June 5, 1992, 1760 U.N.T.S. 69.

212 *National Biodiversity Action Plan*, NLSABS, <https://nlsabs.com/?p=798>, (last visited Sept 29, 2021).

213 MoEF&CC, NATIONAL BIODIVERSITY ACTION PLAN (NBAP), 2008: ADDENDUM 2014 TO NBAP 2008, at 5 (2014), <https://www.cbd.int/doc/world/in/in-nbsap-v3-en.pdf>.

214 The Strategic plan for Biodiversity (2011-2020) and Aichi Biodiversity Targets, (2010), UNEP/CBD/COP/DEC/X/2.

215 *Id.*

are adopted for sustainable management of agriculture, forestry...”.²¹⁶ This target specifies indicators that analyses agricultural policies adversely affecting ecosystem services, and trends in promotion of products derived from sustainable sources. ICFRE and ICAR are some of the agencies responsible for the achievement of this target.²¹⁷ Lastly, NBT 6 states that “ecologically representative areas...of particular importance to species, biodiversity and ecosystems are conserved effectively ...by 2020.”²¹⁸ Even though 2020 was a cut-off date for achievement of Aichi targets (and the NBTs), the “Zero Draft on the Post 2020 Global Biodiversity Framework” builds on the 2011-2020 framework and keeps the Aichi Targets as a baseline for the future targets.²¹⁹ Therefore, in view of the relevance of Aichi Targets, adherence to its NBTs is still important for India.

India is also committed towards the United Nations Strategic Plan on Forests (UNSPF) 2017-2030. One of the primary goals of the Plan is to increase the world's forest area by 3% and to halt deforestation, restore degraded forests and increase afforestation and restoration by 2020. Correspondingly, India has pledged to restore 26 million hectares of forests by 2020.²²⁰ Clearly, diversion of forest ecosystems to support oil palm will not be in conformity with the goal. The Forest Survey of India which regularly conducts surveys and assessments of forest resources in the country can be given the responsibility (and the authority) to monitor deforestation due to oil palm cultivation in the protected areas. Therefore, India's international commitments and targets can provide a good basis to check diversion and degradation of its natural habitats.

ii.) Framing India's regulation on sustainable oil palm cultivation:

Noting the obvious benefits of oil palm cultivation and India's enormous dependency

216 MoEF&CC, *supra* note 213 at 5; MoEF&CC, IMPLEMENTATION OF INDIA'S NATIONAL BIODIVERSITY ACTION PLAN: AN OVERVIEW 86 (2019), <https://www.cbd.int/doc/world/in/in-nbsap-other-en.pdf>.

217 MoEF&CC, *supra* note 213, at 67.

218 *Id.*

219 UNEP, *Post-2020 Global Biodiversity Framework: Discussion Paper*, (Jan 25, 2019, Paper No. CBD/POST2020/PREP/1/1); UNEP, *Update of the Zero Draft of the Post-2020 Global Biodiversity Framework*, (Aug 17, 2020, No. CBD/POST2020/PREP/2/1).

220 MoEF&CC, ANNOUNCEMENT OF INDIA'S NATIONAL CONTRIBUTION TO ACHIEVE THE GLOBAL FOREST GOALS FOR THE UNITED NATIONS STRATEGIC PLAN ON FORESTS (UNSPF) 2017-2030 (Dec. 2019), <https://www.un.org/esa/forests/wp-content/uploads/2020/01/India-VNC-Dec2019.pdf>.

on this cash crop, the authors advocate for a sustainable regulation of oil palm cultivation rather than a complete ban, as in the case of Indonesia's 2018 moratorium on oil palm.²²¹

India's international commitments pertaining to biodiversity and forests are important frames of reference for the government to introduce a domestic policy or regulation on sustainable oil palm cultivation. Based on the criticism already attracted by the NMEO-OP, procedural transparency in implementing oil palm cultivation will be an important issue in India. Sustainable certification is a crucial step in this regard, to monitor a qualitative compliance with the required environmental assessments and procedures, by the executing authorities of the scheme. While many such certification schemes exist, the certification provided by the Roundtable on Sustainable Palm oil (RSPO) launched in 2004 is the most widely known scheme. It brings together producers, processors and traders, banks, investors and environmental NGOs. While the RSPO only covers about one-fifth of globally traded palm oil, accounting for only 19% of palm oil production, it has proven to control deforestation in the palm oil producing countries.²²² It has reportedly brought down deforestation by 33% in Indonesia by 2018.²²³ To become certified under the RSPO standard, applicants must first comply with its key standards and criteria. They are then audited annually in addition to being assessed by an RSPO- accredited certification body every five years. In its most recent amendments in 2018, the RSPO has extended its principles and criteria to include deforestation on peatlands. It has also increased protection of human rights for workers and communities.²²⁴ According to the standards assessments carried out by the Forest People's Programme (FPP), the RSPO was shown to have the strongest requirements from an indigenous rights perspective.²²⁵

221 Sheany, *Jokowi Imposes Three-Year Moratorium on New Palm Oil Plantation Licenses*, JAKARTA GLOBE (Sept. 21, 2018), <https://jakartaglobe.id/news/jokowi-imposes-three-year-moratorium-on-new-palm-oil-plantation-licenses/>.

222 Ritchie & Roser, *supra* note 8.

223 Sagar & Chandra, *supra* note 4, at 7.

224 *A Global Standard for Palm Oil*, ROUNDTABLE ON SUSTAINABLE PALM OIL, <https://www.rspo.org/certification> (last visited on Sept 29, 2021).

225 FOREST PEOPLE'S PROGRAMME, A COMPARISON OF LEADING PALM OIL CERTIFICATION STANDARDS⁶ (2017), <https://www.forestpeoples.org/en/responsible-finance-palm-oil-rspo/report/2017/comparison-leading-palm-oil-certification-standards>.

In the absence of strong regulatory frameworks at the national level, certification remains crucial in promoting palm oil sustainability. Therefore, recognising and endorsing the RSPO certification schemes through appropriate policies is of crucial importance to India. A relevant example in this regard is the Committee on Sustainable Palm Oil (CIPS) established by the Government of Ecuador, which oversees the Sustainable Palm Oil Action Plan for the Amazon Basin, as part of its REDD+ National Action Plan. The CIPS was established with support from the private sector, civil society and NGOs such as WWF and RSPO, whose representatives collectively participate in decision-making of the Committee.²²⁶ The RSPO scheme has also introduced certification standards for smallholders of oil palm in 2019.²²⁷ This is a crucial development for India, considering the potential difficulty of small-scale farmers in the North-east to comply with certification standards on par with commercial scale cultivators and corporations.

CONCLUSION

While it is easy to understand the economic rationale behind creating self-sufficiency in production of palm, one cannot deny the fact that the launch of the new centrally sponsored scheme was based primarily on financial considerations with scant regard to ecological concerns. Cultivation of oil palm is notorious for causing deforestation, fragmenting forest, endangering species, diverting biodiversity-rich hotspots such as savannahs, grasslands, and draining peatlands that release tonnes of carbon emissions. These considerations become all the more pressing as currently oil palm is proposed for expansion in the North-east and ANI. These biodiversity-rich landscapes are known to harbour numerous endangered and endemic species.

The sustainability of palm oil also becomes questionable in the wake of unpredictable rainfall patterns and extreme weather as a result of climate change impacts. Water scarcity becomes significant especially if one looks at the drying of water springs in the north-east. The government must contemplate their further decisions on palm oil only after being completely certain of its possible ecological impact.

226 Maria Amparo Albam, *Ecuador Takes Steps Towards Sustainable Palm Oil*, UN-REDD PROGRAMME (Jun 1, 2018), <https://www.un-redd.org/news/ecuador-takes-steps-towards-sustainable-palm-oil>.

227 *RSPO Smallholders*, ROUNDTABLE ON SUSTAINABLE PALM OIL, <https://rspo.org/smallholders#:~:text=than%2050%20hectares.-,Smallholder%20Certification,of%20sustainable%20practice%20in%20operations> (last visited Sept. 29, 2021).

This certainty should be established using the best science available. It is also important to remember that the north-east has a rich cultural history of community-based biodiversity conservation and that ANI is home to multiple tribal groups such as Great Andamanese, Onge, Jawara, Sentinelese, Shompen, and Nicobarese. It is therefore of paramount importance that the nature-dependent community (especially tribals) must be given meaningful opportunities to participate in the decision-making process. Since the new mission on oil palm is still a plan and specific projects are yet to be unveiled, we strongly recommend a comprehensive strategic environmental impact assessment. Last but not the least, the government must not lose sight of its international commitments towards the conservation of biodiversity, increase of the world's forest cover and the practice of sustainable agriculture.

ENVIRONMENTAL DEVELOPMENT IN CAMEROON: IMPLICATIONS FOR HUMAN RIGHTS

*Edumebong Smith Naseri**

ABSTRACT

Cameroon has a plethora of laws that seek to protect the environment. These laws are seen as an attempt by the country to enhance its attempts towards achieving sustainable development. This article critically examines the legal protection of the right to a healthy environment in Cameroon, through an elaboration of the various laws that seek to ensure both substantive and procedural rights in the country. This article begins by establishing a connection between human rights and the environment, as well the rights and obligations entailed in environmental rights. Human rights standards are chosen based on the UNDP human rights principles. The paper further examines and provides an understanding of the definition and an idea of the right to a healthy environment. The article also critically examines the various laws that protect the right and finally provides a critique of the protection of the right to a healthy environment in Cameroon through the various substantive and procedural rights entailed by the laws.

Key words: Environmental Rights, Sustainable Development, Right to Healthy Environment.

INTRODUCTION

Traditionally, environmental rights have been categorised as third generation or solidarity rights after civil and political rights (first generation) and socio-economic rights (second generation).¹ The right to a healthy environment,

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specifically, is typically formulated as a collective right.² However, not all human rights practitioners accept such a classification of rights, as they opine that it detracts from the realization of civil, political and socio-economic rights as a matter of priority, as well as waters down the notion of human rights.³

CONNECTING HUMAN RIGHTS AND THE ENVIRONMENT

The interrelationship between human rights and the environment has manifested in various forms, based on which an approach is chosen towards environmental sustainability. Firstly, there is an approach which is primarily interested in utilizing or emphasizing on the relevant human rights guarantees to draft international environmental instruments.⁴ Secondly, the anthropocentric approach to environmental rights favours the ‘greening’ of existing human rights, which directs environmental protection and conservation efforts towards protecting human life, property, privacy and health.⁵ For example, civil and political rights such as the rights of access to information and access to a remedy empowers aggrieved individuals to seek redress for environmental damage that causes harm to a person or their property and also affords them the opportunity to influence decision-making in environmental matters.⁶

The third approach aims to incorporate the environmental agenda fully into human rights by formulating a new human right to an environment that is not defined in purely anthropocentric terms, an environment that is not only safe for humans, but one that is ecologically-balanced and sustainable in the long term.⁷

1 Ben Boer & Alan Boyle, *Human Rights and the Environment – Background Paper for the 13th Informal ASEM Seminar on Human Rights*, (Sydney Law School Research Paper No. 14/14 2013); See also, Philip Alston *Conjuring Up New human Rights: a Proposal for Quality Control*, 78 AMERICAN JOURNAL OF INTERNATIONAL LAW 607 (1984).

2 UNITED NATIONS, A/HRC/22/43, REPORT OF THE INDEPENDENT EXPERT ON THE ISSUE OF HUMAN RIGHTS OBLIGATIONS RELATING TO THE ENJOYMENT OF A SAFE, CLEAN, HEALTHY AND SUSTAINABLE ENVIRONMENT, JOHN KNOX ¶ 12(2012).

3 Boer & Boyle, *supra* note 1, at 14.

4 TIM HAYWARD, CONSTITUTIONAL ENVIRONMENTAL RIGHTS (2005).

5 Michael Andersen, *Human Rights Approaches to Environmental Protection*, in ALAN E. BOYLE & MICHAEL R. ANDERSEN (EDS), HUMAN RIGHTS APPROACHES TO ENVIRONMENTAL PROTECTION 15 (1996).

6 Boer & Boyle, *supra* note 1, at 11-13.

7 JAN HANCOCK, ENVIRONMENTAL HUMAN RIGHTS: POWER, ETHICS AND LAW (2003).

This paper does not however delve into the debate as to the best way in which the integration between human rights and the environment should be implemented. However, it is our view that human rights entail the right to protection of the environment as was the view of Ken Saro-Wiwa when he postulated that, “The Environment is Man’s First Right”⁸ Principle 1 of the Stockholm Declaration emphasised the right of man “to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being”.⁹ Environmental rights have been defined as the rights of the individual to environmental protection as “proclamation of a human right to environmental conditions of a specified quality”.¹⁰

UNDP (UNITED NATIONS DEVELOPMENT PROGRAMME) HUMAN RIGHTS PRINCIPLES

The human rights-based approach to development has been the go-to strategy for the practical application of development. Julia Hausermann defines the human rights approach to development as one that ‘puts people first and promotes human-centered development, recognises and promotes equality between women and men, promotes equal opportunity and choices for all, promotes national and international systems based on economic equity, equity in the access to public resources and social justices, and promotes mutual respect between people’¹¹

The African Commission in the *Endorois* case, held that; “... the right to development requires fulfilling five main criteria: it must be equitable, non-discriminatory, participatory, accountable, and transparent, with equity and choice as important, over-arching themes in the right to development.”¹²

8 Ken Saro-Wiwa, *Stand by Me and the Ogoni People*, 10 EARTH ISLAND JOURNAL 35 (1995).

9 Declaration of the United Nations on the Human Environment, 16 June 1972, A/Conf 48/14/Rev 1, 3.

10 Dinah Shelton, *Developing Substantive Environmental Rights*, 1 JOURNAL OF HUMAN RIGHTS AND THE ENVIRONMENT 89 (2010).

11 JULIA HAUSAMANN, A HUMAN RIGHTS APPROACH TO DEVELOPMENT. LONDON: RIGHTS AND HUMANITY 32 (1998).

12 African Commission on Human and Peoples’ Rights, Communication No. 276/2003, *Centre for Minority Rights Development (Kenya) and Minority Rights Group International on behalf of the Endorois Welfare, Council v. The Republic of Kenya*, para.277, https://www.hrw.org/sites/default/files/related_material/2010_africa_commission_ruling_0.pdf.

In this light, the UNDP has developed three key areas of intervention, which helps in human rights mainstreaming within development programming at all levels.¹³ These include;

- (i) Supporting the strengthening of national human rights systems;
- (ii) Promoting the application of a human rights-based approach to development programming;
- (iii) Greater engagement with the international human rights machinery

These areas of intervention make sure that the national development programmes of each nation are in compliance with the international human rights standards.

The UNDP being the main development agency of the United Nations, has adopted a set of principles which it considers as the 'fundamental recurring principles' in the various international human rights instruments, especially in the International Bill of Rights.¹⁴ These four sets of principles will be analysed separately to demonstrate their relevance within the development agenda. These also demonstrate the human rights-based approach to development theory which the UNDP applies and encourages the adoption of development policies and implementation processes.

- (i) Universality and indivisibility; Article 5 of the Vienna Declaration 1993 states that, "All human rights are universal, indivisible, interdependent and interrelated. The international community must treat human rights globally in a fair and equal manner, on the same footing, and with the same emphasis. While the significance of national and regional particularities and various historical, cultural and religious backgrounds must be borne in mind, it is the duty of States, regardless of their political, economic and cultural systems, to promote and protect all human rights and fundamental freedoms."

Universality of rights basically provides that every person, woman, man or child has these rights bestowed on them by virtue of their humanity. These rights are equal across the board all over the world and must not apply to particular groups, in

13 UNDP Human Rights in UNDP: *Practice Note*.(2005) https://www.undpg.org/content/undp/en/home/librarypage/democratic-governance/human_rights/hrinundpg.html. (last visited Feb. 14, 2021).

14 See, UNDP, *A Human Rights-based Approach to Development Programming in UNDP – Adding the Missing Link.*, https://www.undp.org/content/dam/aplaws/publication/en/publications/democratic-governance/dg-publications-for-website/a-human-rights-based-approach-to-development-programming-in-undp/HR_Pub_Missinglink.pdf (last visited Mar. 10, 2022).

exclusion of others. Indivisibility presupposes that each right basically depends on the other. The implementation of a particular right depends on the implementation of another rights. This avoids picking and chooses which rights overrides the other.

Donnelly notes that, “Indivisibility” suggests that a life of dignity is not possible without something close to the full range of internationally recognized human rights.¹⁵ As such, civil, political, economic, social and cultural rights must be implemented concurrently.

(ii) Equality and non-discrimination; Article 2 of the Universal Declaration of Human Rights (UDHR) states that every human being is entitled to all rights and freedoms “without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status”. The Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)¹⁶ also provides for the prohibition of discriminatory practices. Non-discrimination is also provided for in the ICCPR and ICESCR.

Equality is an important concept in the fulfilment of international human rights instruments. Equality suggests equal access to resources, participation and enjoyment of the benefits such as participation. The aspects of equality and non-discrimination are especially important in aspects of human development.

(iii) Participation and Inclusion; Substantive equality includes strengthening agency, voice, and participation of women and other disadvantaged groups in the development process.¹⁷ The preamble of the Declaration on the Right to Development provides the definition of development as “a comprehensive economic, social, cultural and political process, which aims at the constant improvement of the well-being of the entire population and of all individuals on the basis of their active, free and meaningful participation in development and the fair distribution of benefits resulting therefrom.”

Article 2 of the Declaration further insists on the human person being the central subject of development and as such, ‘should be the active participant and beneficiary of the right to development.’

15 JACK DONNELLY, *UNIVERSAL HUMAN RIGHTS IN THEORY AND PRACTICE* 31 (3d ed. London: Cornell University Press 2013).

16 The Convention on the Elimination of All Forms of Discrimination Against Women, 1979 art. 11(e) and 14.

17 U. N WOMEN, *PROGRESS OF THE WORLD’S WOMEN 2015-2016: TRANSFORMING ECONOMIES, REALIZING RIGHTS* (2015).

Stiefel and Wolfe describe participation as an ‘organized efforts to increase control over resources and regulative institutions in given social situations on the part of groups and movements hitherto excluded from such control.’¹⁸ The right to participation, which also reflects inclusivity, ensures that every individual is included in the design, planning and implementation process of development activities. This is important because, it enables the persons involved, to have a voice in actions and activities that affect them.

- (iv) Accountability and the rule of law; In a report titled, *The rule of law and transitional justice in conflict and post-conflict societies*, the UN Secretary General refers to the rule of law as, “a principle of governance in which all persons, institutions and entities, public and private, including the State itself, are accountable to laws that are publicly promulgated, equally enforced and independently adjudicated, and which are consistent with international human rights norms and standards. It requires measures as well to ensure adherence to the principles of supremacy of law, equality before the law, accountability to the law, fairness in the application of the law, separation of powers, participation in decision-making, legal certainty, avoidance of arbitrariness, procedural and legal transparency.”¹⁹

This definition of the rule of law is an expanded and more comprehensive view than that which was offered by Professor V.A Dicey in his *Law of the Constitution*. Dicey offered three principles which constitute the rule of law that directly relates to this work provides that, ‘every man, whatever be his rank or condition, is subject to the ordinary law of the realm and amenable to the jurisdiction of the ordinary tribunals.’²⁰

From the above definitions, rule of law is an aspect of equality and therefore ensures access to justice, due process, and ensuring a path towards obtaining remedy for the violation of rights and freedoms through strengthening the voices of the marginalised, poor and underprivileged.

Accountability forms a part of the rule of law as seen in the definition provided by the

18 MATTHIAS STIEFEL& MARSHALL WOLFE, A VOICE FOR THE EXCLUDED: POPULAR PARTICIPATION IN DEVELOPMENT: UTOPIA OR NECESSITY?(1994).

19 UN SECRETARY-GENERAL REPORT TO THE SECURITY COUNCIL, DOC. S/2004/616, THE RULE OF LAW AND TRANSITIONAL JUSTICE IN CONFLICT AND POST-CONFLICT SOCIETIES 4 (2004).

20 DICEY A. V. INTRODUCTION TO THE STUDY OF THE LAW OF THE CONSTITUTION 181 (3ded. Macmillan and Co. 1915).

United Nations Secretary General, as indicated above.²¹ Holding people accountable and providing an avenue for citizens to seek justice for violation of their rights is an integral part of accountability. The state is recognised as the primary duty-bearer to respect, protect and fulfil human rights. As such, each state has to be accountable to the citizens to whom they owe the duty.

OBLIGATIONS ENTAILED IN ENVIRONMENTAL RIGHTS

According to Knox and Ramin Pejan,²² there are three categories of obligations associated with the right to a healthy environment. Procedural obligations, substantive obligations, and obligations towards those particularly vulnerable to environmental harm.²³

As described by Marcos Orellana, "...substantive obligations sustain an environmental quality conducive to a life of dignity. This substantive dimension of the right to a healthy environment links directly with the conditions that enable a healthy planet..."²⁴ The Brundtland Report further asserts that "The law alone cannot enforce the common interest. It principally needs community knowledge and support, which entails greater public participation in the decisions that affect the environment."²⁵

After the World Conference on Human Rights in Vienna, with the adoption of the Vienna Declaration and Programme of Action, more attention emerged for the discussion on the formulation of a human right to a healthy living environment. A right to a healthy living environment had been formulated in several human rights treaties. The most explicit among them was the 1981 African Charter on Human and Peoples' Rights which referred to a "general satisfactory environment favourable to their development."²⁶ As in the case of the right to development, questions arise as to who are the beneficiaries and who are the protectors of the right to a healthy environment and what are the parameters of this right.²⁷

21 U. N WOMEN, PROGRESS OF THE WORLD'S WOMEN 2015-2016: TRANSFORMING ECONOMIES, REALIZING RIGHTS (2015).

22 JOHN H KNOX & RAMNIN PEJAN, THE HUMAN RIGHT TO A HEALTHY ENVIRONMENT (2018).

23 *Id.*, at 18.

24 *Id.*, at .290.

25 BRUNDTLAND COMMISSION, OUR COMMON FUTURE (1987).

26 African Charter on Human and Peoples' Rights, 1981 art. 24; the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights, 1999 art. 11.

27 SUMUDU A. ATAPATTU, EMERGING PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 9-

Procedural rights deal with the process through which a decision (administrative or judicial) is taken and typically encompass public consultation, information provision and access to the courts.²⁸ The core issues involved are procedural fairness, allowing people to be part of the process, and community empowerment, enabling people to take an active role in decisions affecting their lives.

Environmental procedural rights refer to the right of access to information, the right to public participation, and access to justice (participatory rights).²⁹ It is important to note that these rights provide for practical ways to promote environmental protection and to achieve sustainable development.³⁰ In doing so, environmental procedural rights establish the linkage between practical rights, such as those relating to information and participation in decision making, and the harder to grasp complex substantive rights included in the right to a healthy environment.³¹ Environmental procedural rights are generally viewed as a mechanism for ensuring the protection of fundamental rights to a clean environment.³²

Razzaque asserts that “participatory rights create a sense of ‘ownership’ in the decision itself. Involving people at the early stage of decision-making processes creates greater trust in the process. Accountability of public bodies and participation of all stakeholders remain a crucial but underdeveloped component of resource rights, for example the right to food and water.”³³ This decreases the chances of conflicts on processes and outcomes as individuals participate fully in the process.³⁴ This is

21 (2006).

28 Jonas Ebbesson, *The Notion of Public Participation in International Environmental Law*, 8 YBIEL 5(1997).

29 Maria Lee & Carolyn Abbot, *The Usual Suspects? Public Participation Under the Aarhus Convention*, 66 MODERN LAW REVIEW 80(2003).

30 R Mwebaza, *Enhancing Environmental Procedural Rights in Uganda*, in MARIANELA CEDEÑO BONILLA, FRANÇOISE BURHENNE-GUILMIN (EDS), ENVIRONMENTAL LAW IN DEVELOPING COUNTRIES: SELECTED ISSUES 4(2004).

31 STEPHEN STEC & SUSAN CASEY-LEFKOWITZ, THE AARHUS CONVENTION: AN IMPLEMENTATION GUIDE 29 (2000).

32 Eckhard Reh binder, *Democracy, Access to Justice and Environment at the International Level*, in MICHEL PRIEUR, VERS UN NOUVEAU DROIT DE L'ENVIRONNEMENT UNIVERSITÉ DE LIMOGES 134(2003).

33 Jona Razzaque, *Information, Public Participation and Access to Justice in Environmental Matters*, in SHAWKAT ALAM ET AL., HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 138. (2013).

34 PATRICIA BIRNIE, ALAN BOYLE & CATHERINE REDGWELL, INTERNATIONAL LAW AND THE ENVIRONMENT 288 (3d ed., Oxford: Oxford University Press, 2009).

akin to the right to development which we have discussed earlier and the concept of development that seeks to involve the individual or community into the development process. Thus, procedural environmental rights concentrate on the limited canon of right to information, to access to justice and participation, substantive environmental rights may encompass the realisation of further individual rights and obligations, such as the right to health, clean and fresh drinking water, sanitation, and even to environmental conditions of a particular quality.

IDEA AND DEFINITION OF THE RIGHT TO A HEALTHY ENVIRONMENT

The idea of a human right to a healthy environment has been heavily theorized before its acceptance both at international law, and at the national level. In the field of human rights, Stammers³⁵ identifies environmental human rights, along with women's rights, as one of the areas in which there is a debate about how the International Bill of Rights should be extended, while Langlois³⁶ speculates on the possibility of there being a 'human right to an adequate environment'. In green theory, Robyn Eckersley³⁷ notes the attractiveness of the rights framework whereby rights supersede lesser considerations, and thus the possibility that environmental rights could guarantee ecological outcomes.

The definition of a healthy environment is a problem in international environmental law³⁸ and indeed international human rights law. There already exists a problem of definition of concerning the meaning of environment. The problem of definition can be attributed to the fact that there are several understandings as to what should include a healthy environment. With more than 120 nations and territories recognising the right to a healthy environment in some shape or form,³⁹ and also international

35 Neil Stammers, *Social Movements and the Social Construction of Human Rights*, 21 HUMAN RIGHTS QUARTERLY 980 (1999).

36 ANTHONY LANGLOIS J., *THE POLITICS OF JUSTICE AND HUMAN RIGHTS: SOUTHEAST ASIA AND UNIVERSALIST THEORY*, (2001).

37 Robyn Eckersley, *Greening Liberal Democracy: the Rights Discourse Revisited*, in B. DOHERTY & M. DE GEUS (EDS), *DEMOCRACY AND GREEN POLITICAL THOUGHT: SUSTAINABILITY, RIGHTS AND CITIZENSHIP* 212 (1996).

38 See, Yann Agulia, *Right to a Healthy Environment*, IUCN (Oct. 29 2021), <https://www.iucn.org/news/world-commission-environmental-law/202110/right-a-healthy-environment>.

39 David Boyd, *The Right to a Healthy and Sustainable Environment*, in Y AGUILA & J.E. VIÑUALES, *A GLOBAL PACT FOR THE ENVIRONMENT-LEGAL FOUNDATIONS* (2019).

instruments such as the African Charter on Human and Peoples' Rights, as well as the Arab Charter of Human Rights enshrining these rights within the instruments, there is bound to be a difference in understanding.

It is also necessary to determine whether a 'healthy environment' is defined in terms of human health, ecosystem health, or both (the first component raised earlier). The anthropocentric route to define a 'healthy environment' may appear more obvious. Popovic claims that a right to a healthful environment "refers to an environment conducive to human health"⁴⁰ and Nickel refers to a safe environment "meaning an environment that is not destructive of human health".⁴¹ Furthermore, the non-binding reference to a human right to environment in the Aarhus Convention is clearly formulated in anthropocentric language. However, as will be seen, human rights institutions have not always interpreted a healthy environment so narrowly.

In the African context, Elements of the right to healthy and/or satisfactory environment can be traced back at the regional level, to the African Convention on Conservation of Nature and Natural Resources 1968. This has been made concrete in the African Charter with its Article 24 stating that "All peoples shall have the right to a general satisfactory environment favourable to their development." Even though the right is broadly expressed, and that there is no stipulation of correlative legal obligations of States' parties, legal obligations in the African Charter could be derived from general provisions.⁴² Also, there seems to be an ambiguity in the phrasing of Article 24, which has raised questions as to its importance to the protection of the rights of rights-owners and the existence of the right to a healthy environment in the first place.⁴³

40 Neil Popović, *In Pursuit of Environmental Human Rights*, 27 COLUMBIA HUMAN RIGHTS LAW REVIEW 487, 524 (1996).

41 James Nickel, *The Human Right to a Safe Environment: Philosophical Perspectives on Its Scope and Justification*, 18 YJIL 284 (1993).

42 Such provision includes Article 26 of the Charter which establishes that "States parties to the present Charter shall have the duty to guarantee the independence of the Courts and shall allow the establishment and improvement of appropriate national institutions entrusted with the promotion and protection of the rights and freedoms guaranteed by the present Charter."

43 For details on this debate, See Michael Anderson, *Human Rights Approaches to Environmental Protection: An Overview*, in ALAN BOYLE & MICHAEL ANDERSON (EDS.), HUMAN RIGHTS APPROACHES TO ENVIRONMENTAL PROTECTION (1996).

The African Charter also links the right to a satisfactory environment to the issue of development through article 24. According to Maluwa, the relationship between the environment and development is a controversial relationship which is both contributory and remedial. In the contributory sense, environmental degradation is often caused by aspects relating to development and industrialisation. On the other hand, measures employed to remedy environmental degradation are often related to development processes.⁴⁴ The right as provided for by the African Charter potentially runs the risk of being negatively balanced by the right to development. In considering the African Commission's previous restrictive interpretations, this could have had as consequence that the right to a satisfactory environment in the *SERAC* communication could only be invoked in the event that it will not infringe on the requirements of social and economic developments.⁴⁵

The role of defining a healthy environment has been largely left to the interpretative role of human rights institutions. This flexibility of human rights is especially pertinent in the environmental context, with Shelton noting that, "the variability of implementation demands imposed by the right to environment in response to different threats over time and place does not undermine the concept of the right, but merely takes into consideration its dynamic character". All human rights require flexibility in their deployment and a human right to a healthy environment is no different in this regard. As such, "indeterminacy is thus a problem, but not necessarily an insurmountable one."⁴⁶

LEGAL AND POLICY FRAMEWORK FOR THE PROTECTION OF THE RIGHT TO A HEALTHY ENVIRONMENT IN CAMEROON

The Constitution of the Republic of Cameroon asserts in its Preamble that, "every person shall have a right to a healthy environment. The protection of the environment shall be the duty of every citizen. The State shall ensure the

44 Tiyanjana Maluwa, *Environment and Development in Africa the 1990s: Some legal Issues*, in TIYANJANA MALUWA INTERNATIONAL LAW IN POST-COLONIAL AFRICA(1999).

45 Michael Anderson, *Human Rights Approaches to Environmental Protection: An Overview*, in ALAN BOYLE & MICHAEL ANDERSON (EDS.), HUMAN RIGHTS APPROACHES TO ENVIRONMENTAL PROTECTION(1996).

46 Boyle, *supra* note 1, at 51.

protection and improvement of the environment.”⁴⁷ The Preamble further provides for other incidental rights such as, the right to work, the right to life, physical and moral integrity, the right to development, and the right to property, which are rights that have an environmental dimension and therefore qualify as part of substantive environmental rights in Cameroon. The Ministry of Justice on elaborating on the right to a healthy environment in Cameroon notes that; “A healthy environment is protected against all forms of damages (loss of biodiversity, various forms of pollution, etc.) and that respects health standards. The right to a healthy environment involves the protection of fauna, flora, architectural heritage as well as health against the adverse effects of climate change, land degradation and all forms of pollution.”⁴⁸

SUBSTANTIVE RIGHTS

The 1990s witnessed a new dimension to environmental protection, with the international community calling on all nations to adopt policies geared toward environmental protection, in order to fight environmental challenges like climate change which is fast becoming a threat to the global environment. In response to this, and with the desire of Cameroon to contribute a fair share to the protection of the environment for the global good, Cameroon, in August 1996 adopted the first main legislation that addressed matters on environmental protection which was, Law No 96/12⁴⁹ of 05 August 1996. This important piece of legislation on environmental management is Cameroon’s main environmental document establishing Cameroons environmental policy and provides for an elaboration on the right to a healthy environment, provided for in the Constitution.⁵⁰ It seeks to guarantee the rights of everyone to a sound and safe environment and ensure a harmonious balance within ecosystems and between urban and rural zones.⁵¹ It guarantees the right of everyone to a sound environment and recognises the need for environmental laws and regulations to ‘ensure a harmonious balance within ecosystems’. To ensure sustainability, the law envisages *inter alia* the preservation and management of endangered plant and animal species.⁵²

47 Cameroon Const., pmb. ¶ 21.

48 MINISTRY OF JUSTICE REPUBLIC OF CAMEROON, NATIONAL PLAN OF ACTION FOR THE PROMOTION AND PROTECTION OF HUMAN RIGHTS IN CAMEROON (2015-2019) 87 (2018).

49 Law No 96/12 of 05 August 1996 on environmental management in Cameroon.

50 S. N. Edumebong, Connecting human rights and environmental sustainability in Africa: A Cameroonian Perspective (2021) (Unpublished PhD thesis, University of Buea).

51 Law No 96/12 art. 5 (Cameroon).

52 Law No 96/12 art. 62-64 (Cameroon).

In furtherance of the protection of the environmental right, the law prohibits pollution of any kind, to the extent that it does not adversely affect the environment. The law obliges the state to establish quality norms for air, water and soil, as well as any other norms that could be necessary to safeguard human health and the environment.⁵³

Further, the 1994 Forest and Wildlife Law⁵⁴ and its implementation Decrees⁵⁵ amongst other things seek to lay a framework for an integrated and sustainable use of forest, wildlife and fisheries resources. This law is the main forestry law in Cameroon; it was drafted to ensure the sustainable management of forest resources. The 1994 law seeks to advance sustainable forest practices in the Cameroonian forestry sector to achieve sustainable development. One of the greatest steps toward achieving such a goal is to ensure that indigenous communities who depend on the forest for their livelihood have access to forest resources and participate fully in the management and decision making as far as the forest is concerned. This will help eliminate poverty at the grass roots and such foster sustainable practices in the forestry sector. It will therefore be important to assess how the 1994 law seeks to protect indigenous people's right to management and access to forest resources.

The 1998 law governing water resources⁵⁶ enjoins all sound physical or moral owner of facilities likely to cause pollution water flow, to take all necessary measures to limit or eliminate sea effects.⁵⁷ The prohibition and repression of any discharge into the waters, of waste toxic substances are reaffirmed by the law regulating forests, fauna and fishing.⁵⁸ In line with the fight against water pollution, the Cameroonian Penal Code punishes with the imprisonment from fifteen days to six months and a fine from XAF 5,000 to 1,000,000 whoever, by their activity pollutes drinking water likely to be used by others.⁵⁹ The penalties are aggravated by the law

53 Law No 96/12 art. 10(1)(i) (Cameroon).

54 Law No 94/01 of 1994, laying down Forests, Wildlife and Fisheries Regulations (Cameroon).

55 Decree No 95/531/PM of 1995, setting the Modalities for the Implementation of Forest Regulations; Decree No 95/466/PM of 1995 setting the Modalities for the Implementation of Wildlife Regulations (Cameroon).

56 Law No. 98/005 of 14 April 1998 to Lay Down Regulations Governing Water Resources (Cameroon).

57 Law No. 98/005 art. 5 (Cameroon).

58 Law No. 94/01 art. 161(2) (Cameroon).

59 Law No. 2016/007 art. 261(a) (Cameroon).

on water regime against anyone who pollutes and alters the quality of water. In this case, the penalty of imprisonment is five to fifteen years and a fine of 10,000,000 to 20,000,000 CFA francs.⁶⁰

The Penal Code provides for punishment against the pollution of the atmosphere, “as to render to harmful to human health.”⁶¹ In line with the prohibition of pollution of water and atmosphere, there is also punishment for violations relating to the soil and subsoil. This is governed by the law on environmental management,⁶² the Mining Code,⁶³ and the law on the use of fertilizers in Cameroon.⁶⁴

At the close of the 1992 Rio Summit, Cameroon initiated its main environmental policy framework, the National Environmental Management Plan.⁶⁵ This policy incorporates goals, strategies, priorities, and objectives on biodiversity conservation, the sustainable use of its components, public participation, benefits sharing and sustainable development. National Environmental Management Plan (NEMP)⁶⁶ serves as Cameroon’s environmental policy. This policy is given full effect by Law No 96/12 of 5 August 1996 on Environmental Management.⁶⁷ Law No 96/12 established the Inter-ministerial Committee on the Environment and a National Consultative Commission on the Environment and Sustainable Development to assist the State in the formulation, coordination, implementation and monitoring of environmental policies.⁶⁸

60 Law No. 98/005 art. 16 (Cameroon).

61 Cameroon Penal Code art. 261(b) (provides that, “Whoever by his operations: (b) so pollutes the atmosphere as to render it harmful to human health, shall be punished with imprisonment for from 15 (fifteen) days to 6 (six) months, or with fine of from XAF 5000 (five thousand) to XAF 1,000000 (one million), or with both such imprisonment and fine”).

62 See Law No. 96/12 art. 36, 53, 79, 82 (Cameroon).

63 Law No. 2016/017 art. 87, 107 (Cameroon).

64 Law No. 2003/007 art. 6,7,9 (Cameroon) (to regulate activities of the fertilizer subsector in Cameroon).

65 This Plan (NEMP) was completed in 1996. The government recognises the NEMP as its official sustainable development strategy.

66 Tenets of a NEMP:

- The rational management of space, ecosystems, and resources;
- The valorisation of primary products through industrial development and the improvement of infrastructure;
- The creation of favourable conditions for human capacity development;
- The improvement of living standards in urban areas”.

67 See Law No 96/12 art. 10, 13 (Cameroon).

68 Law No 96/12 art. 10(2) (Cameroon).

The NEMP is a participative approach in the natural resource management that considers the ecological realities of different regions of Cameroon. It defines policies, objectives, and strategies for a more sustainable development in general and an ecologically sustainable industrial development in particular.

PROCEDURAL RIGHTS

Beyond these substantive environmental rights which are protected by laws, as detailed above, there are other procedural environmental rights which are relevant, to ensure that communities and in fact, all citizens can actively participate in the protection of the environment. Such procedural rights include; right to access to information, access to public participation and access to justice. These rights are essential for the achievement of sustainable development, which this present article concludes to be the integration between environmental protection and human rights standards, norms and practices. Legal instruments such as the Constitution⁶⁹, law on modern biotechnology⁷⁰ and the law on environmental management,⁷¹ have provisions allowing for the right to access to environmental information. However, as Ashukem notes, the Preamble of the Constitution provides for the freedom of expression, which he opines, “the right to freedom of expression is supportive of the right to access to information, because information is necessary for the expression of an opinion.”⁷² As we have noted above, Cameroon is signatory to several international treaties that ensure the right to access to information and by virtue of Section 45 of the Constitution. These treaties can be used to enforce this right at the domestic level. Further, the Constitution calls for the protection of the tenets imbibed in the UDHR which calls for access to information.⁷³ Article 9 of the law on environmental management provides that; “each citizen shall have access to information on the

69 Law No. 96/06 (Cameroon) (to amend the Constitution of 2 June 1972).

70 Law No 2003/006 (Cameroon) (to lay down safety regulations governing modern biotechnology in Cameroon).

71 Law No. 96/12 (Cameroon) (Relating to Environmental Management).

72 Jean-Claude N. Ashukem, *Access to Environmental Information in the Context of Development Activities in the Legal Framework of Cameroon*, 50 VERFASSUNG UND RECHT IN ÜBERSEEVRÜ/LAW AND POLITICS IN AFRICA, ASIA AND LATIN AMERICA 435, 442 (2017).

73 See CARLYN HAMBUDA & RACHEL KAGOIYA (EDS.), FREEDOM OF INFORMATION AND WOMEN’S RIGHTS IN AFRICA. A COLLECTION OF CASE STUDIES FROM CAMEROON, GHANA, KENYA, SOUTH AFRICA AND ZAMBIA 18 (2009).

environment, including information on dangerous substances and activities.”⁷⁴ The law notes that the provision of environmental information constitutes an important fact in ensuring public participation.⁷⁵

In addition, Article 7 states that:

- (1) All persons shall have the right to be informed on the negative effects of harmful activities on man, health and the environment, as well as the measures taken to prevent or compensate for these effects.
- (2) A decree shall define the conditions for exercising this right.⁷⁶

The term informed in section 7(1) above invokes the right to access to information. The law further gives the responsibility for all public and private institutions to integrate such information about the environment into the programming and making the same available to the public.⁷⁷ These provisions provide for a basis upon which citizens may request for information on environmental issues that affect them.

Another important instrument is its relation to access to information on matter relating to the environment, is the Law No. 2003/006,⁷⁸ which makes express provision on the right to access to information. The law provides that one of its objectives is to; “provide a mechanism for assessing, managing, communicating, and controlling the risks inherent in the use, release and cross-border movement of genetically modified organisms or those having new traits as a result of modern biotechnological activity that may negatively affect the environment, and by extension of conservation and sustainable use of biological resources. This shall be achieved by taking into consideration the risks to human, animal and plant health and their socio-economic effects and by fully developing the benefits of biotechnology, as opposed to traditional technology.”⁷⁹

⁷⁴ Law No. 96/12 art. 9(e) ¶ 1 (Cameroon).

⁷⁵ Law No. 96/12 art. 9(e) (Cameroon).

⁷⁶ Law No 96/12 art. 7(1) & 7(2) (Cameroon).

⁷⁷ Law No. 96/12 art. 6 (Cameroon) (provides that (1) Public and private institutions shall, within the context of their competence, sensitize all the populations on environmental problems. (2) The institutions shall consequently include programmes in their activities to provide better knowledge of the environment).

⁷⁸ Law No. 2003/006 (Cameroon) (to lay down safety regulations governing modern biotechnology in Cameroon).

⁷⁹ Law No. 2003/006 art. 4(2).

Although this law provides for the communication of information relating to “genetically modified organisms⁸⁰... that may negatively affect the environment”, it further provides in Article 12, the various situations in which this information may be divulged to the public. The law states that,

“No one shall be authorised to divulge information obtained in the performance of his duties as an inspector/controller⁸¹ or in the implementation of this law and subsequent regulatory instruments, except:

- where such information is necessary for the effective implementation of the provisions of this law or related regulatory instruments;
- for the purpose of legal proceedings within the framework of this law and subsequent regulatory instruments, where a competent court of law so rules;
- where he is authorized by the competent authority to do so.⁸²

As it relates to the right to access to public participation, this is contained in Article 9 (e) of the 1996 Law.⁸³ Under this law, the principles manifests through three points: access to information, the duty to protect the environment and consultation or public debate before certain decisions are taken. The 1996 law also obliges the owner of any project which has the capacity of injuring human health and the environment to carry out an environmental impact assessment (EIA) at the beginning of such project to assess the impact of the project on the surrounding environment and derive ways to mitigate such effect.⁸⁴ There are other legislations that embody aspects and tenets of public participation in matters relating to environmental protection and management in Cameroon. These prominently include; the 1976 Ordinance

80 *Id.* art. 5(36) (defines a genetically modified organism (GMO) as “An organism whose genetic material has been altered following a process which cannot be replicated naturally through mating and/or natural recombination, and which has the capacity to replicate and to transmit the same genetic material).

81 *Id.* art. 5(28) (defines an inspector/controller as “An accredited and sworn official of the competent service, who is well specialised in disciplines relating to biotechnology/biosafety, and whose duties consist in verifying, assessing, managing and ensuring the follow-up of risks, and control with a view to granting a prior approval and/or authorisation with full knowledge of the facts on notifications and release in the environment of genetically modified organisms and products thereof. He shall, in addition, be responsible for identifying offenders, formulating and/or proposing appropriate sanctions”).

82 Law No. 2003/006 art. 12 (Cameroon).

83 Law No 96/12 (Cameroon) (relating to Environmental management).

84 Law No 96/12 art. 17 (Cameroon).

on the Management of State Lands,⁸⁵ the 1994 Forestry, Fisheries and Wildlife Law (Forestry Law)⁸⁶ and the 2003 Modern Biotechnology Law.⁸⁷ These laws play a vital role towards the pursuit and expansion of the right to a healthy environment provided for in the constitution.

Access to justice in environmental matters is not coordinated in a particular legal text. However, pieces of information relating to access to justice can be found in various texts. As it relates to access to justice in projects that require environmental impact assessment, Section 17 of the 1996 Law Relating to Environmental Management, *inter alia*, permits citizens to be represented in environmental advisory bodies and consultation mechanisms within an EIA process.⁸⁸ Citizens are also able to access the courts by virtue of Article 11 of Decree No. 2005/0577/PM of February 23, 2005, in situations where they reasonably believe a development project may destroy the environment. Further, Article 147 of the 1994 Forestry, Wildlife and Fishery Law is to the effect that appeals shall be lodged as provided for in accordance with ordinary law procedure. The 1994 Forestry, Wildlife and Fishery Law, the Constitution of Cameroon, the 1996 Law on Environmental Management, the law on judicial organization and relevant procedure laws empowers the court to entertain various types of claims. In fact, the 1994 Forestry, Wildlife and Fishery Law provides that “disputes arising from the carrying out of any of the activities governed by this law shall be settled by the competent courts of Cameroon.”⁸⁹ Further, the 1996 Constitution of Cameroon⁹⁰ provides that judicial power shall be exercised by the Supreme Court, Courts of Appeal and Tribunals.

85 Ordinance No. 76/166 of 27 April 1976 lays down the Management of State Lands in Cameroon.

86 Law No. 94/01 (Cameroon) lays down Forestry, Fisheries and Wildlife Regulations.

87 Law No. 2003/006 (Cameroon) (to lay down safety regulations governing modern biotechnology in Cameroon).

88 Terence OnangEgute, *Modern Law and Local Tradition in Forest Heritage Conservation in Cameroon: The Case of Korup 1*, 58 (2012) (unpublished Ph.D. dissertation, Brandenburg University of Technology Cottbus–Senftenberg, Germany).

89 Law No. 94/01 art. 165 (Cameroon).

90 Law No. 96/06 art. 37(2) (Cameroon).

A CRITIQUE OF THE PROTECTION OF THE RIGHT TO A HEALTHY ENVIRONMENT IN CAMEROON

Sustainable development in Cameroon, which as we have observed is the integration between human rights and environmental protection, has manifested itself in the plethora of legislations, policies, and institutions which we have analysed in this research.

Although the right to a healthy environment is protected in the Constitution, the same does not provide for a context, in terms of responsibilities and how such rights can be enforced. Neither does the law provide for a concrete definition of a healthy environment. Owing to the lack of definition as to this right, some lower courts have only been able to decide on the issue of *locus standi* associations and organisations to represent in matters relating to the environment,⁹¹ the right to a healthy environment remains a constitutional right and the hope of its protection remains unsure before the Constitutional Court in Cameroon.⁹²

The incompleteness of laws adds to the violation and failure to effectively implement its obligation to protect and fulfil the right to a healthy environment of the citizens. This can be seen in the failure of the state to put into place, a law to implement the provision of Article 7 of Law N. 1996/12.⁹³ Several years have passed since the law has come into force, but there is no law which sets out the procedure for the access to environmental information. Without the requisite conditions and procedures, the right to access to information, including environmental information is only illusory and elusive to the extent that it hinders the possibility of properly enhancing environmental protection in Cameroon.⁹⁴

91 See Foundation for Environment (FEDEV) v. China Road & Bridge Corp., CFIB/004M/09 Unreported Judgements, 2009.

92 Carl Bruch *et al.*, *Constitutional Environmental Law: Giving Force to Fundamental Principles in Africa*, 26 COLUMBIA JOURNAL OF ENVIRONMENTAL LAW 131, 139 (2001).

93 Law No. 1996/12 art. 7 (Cameroon) (provides that, “(1) All persons shall have the right to be informed on the negative effects of harmful activities on man, health, and the environment, as well as on the measures taken to prevent or compensate for these effects. (2) A decree shall define the context and conditions for exercising this right.”).

94 Edumebong, *supra* note 50, at 376.

It has been suggested that the practical realization of the right to public participation has been shown to be more a myth than a reality.⁹⁵ It has also been indicated that rules, processes, and procedures for public participation in Cameroon are not aligned with governance practices that allow for the views of local communities to be taken into account, but the sad reality is that they are still harassed and intimidated.⁹⁶

Augustine Njamnshi *et al.* in their 2007 study for The Access Initiative found that, “government systems for providing access to public participation are intermediate.”⁹⁷ This was due to the level of involvement of local people in various developmental projects that negatively affected the environment and the surrounding population. Their study further showed that the level of involvement was based on government decision rather than on the desire for the population to be involved in these processes. This paper however found out that, these laws are relatively and sometimes grossly inadequate in protecting both the substantive and procedural environmental rights of the citizens. The Constitution fails to provide what the right to a healthy environment entails and fails to provide apposite obligations for the State in relation to same, although these have been further elaborated in subsequent laws and instruments relating to environmental protection. The Constitution also fails to mention and ensure other procedural rights such as the right to access to information and the right to access to justice.

The research further discovered that despite being able to represent communities, constituted NGOs and associations have not been able to hold the State and its agencies, accountable for certain environmental rights violations.⁹⁸ This comes from the fact that the plethora of laws fail to provide substantial obligations for the State regarding management and protection of the environment. Both the Constitution

95 Jean-Claude N. Ashukem, *Public Participation in Environmental Decision-Making in Cameroon: Myth or Reality?*, in KAMERI-MBOTE AND OTHERS (EDS) *LAW/ENVIRONMENT/AFRICA* NOMOS 357 (2018).

96 Jean-Claude N. Ashukem, *Included or Excluded? An Analysis of the Application of the Free, Prior and Informed Consent Principle in Land Grabbing Cases in Cameroon*, 29 POTCHEFSTROOM ELECTRONIC LAW JOURNAL (2016).

97 Augustine B. Njamnshi *et al.*, *Environmental Democracy in Cameroon: An Assessment of Access to Information, Participation in Decision Making, and Access to Justice in Environmental Matters*, OP. CIT. 57 (2007).

98 See Jean Claude N. Ashukem, *Connecting Human Rights and the Environment in Cameroon: Successes, Limitations and Prospects*, in MICHAEL ADDANEY&ADEMOLA OLUBORODE JEGEDE (EDS.), *HUMAN RIGHTS AND THE ENVIRONMENT UNDER AFRICAN UNION LAW* (2020).

and the law on environmental management push this burden on the general population.

CONCLUSION

In general, Cameroon has several laws and policies that seek to integrate human rights tenets into its environmental sustainability laws, policies and practices. However, there is an endemic problem of implementation and enforcement of these rights. As shown above, the current legal framework suffers from both substantive and procedural deficiencies, and arguably falls short of redressing environmental protection by means of human rights claims. These shortcomings illuminate some of the significant challenging barriers in domestic legal relationships between human rights and environmental protection. While the Preamble in the Constitution provides for the right to a healthy environment, it was clearly established that the constitutional guarantee was limited and therefore problematic since it exonerates the state from social justice and moral responsibility relating to environmental protection. It was argued that the right therefore remains as highly abstract concept. Moreover, a certain standard of environmental quality cannot be ensured by the state, as it currently has no obligation to take measures to control pollution and other environmental degradation that might negatively affect human health and private life. Presumably, such an obligation on the state, as there is on citizens, could significantly augment environmental protection and help to promote the rule of law in that context, given the state would be directly accountable for failing to regulate environmental degradation. Without such an obligation, it is impossible to hold the state accountable for its actions or failures to act.

RECOMMENDATIONS

The starting point should be the 1996 Cameroon Constitution. The right to a healthy environment should be given added value directly from the 1996 Cameroon Constitution. Clear and precise rights, and especially procedural rights, will mean constitutional environmental rights will gain unencumbered access and protection. Substantive inclusion of these rights in the constitution will avert any probable weakening of laws, increase enforcement, and increase implementation. The Cameroonian legislators should be aware of the means to enact ecologically proactive legislation. If the contents of the Preamble to the 1996 Cameroon Constitution

contain those deep-seated prerequisites of all ensuing norms, they should at least be incorporated as substantive provisions in the constitution for clarity and reliability. Actions and interactions committed to protecting human rights and the environment are often hampered by situating their points of departure from the actions of the President of the Republic. This top-down structure not only assumes an excessive overlook of duties by legislators but it equally creates a situation of nonfeasance (on the part of the legislative) and misfeasance (on the part of the executive). Legislators should appropriate themselves to the right to legislate in critical cases concerning fundamental rights, guarantees, and obligations of citizens within the scope of their legislative capabilities.

Consequently, there is a need to fundamentally reconceptualise the rights-based approach to environmental governance in Cameroon to adequately protect the environment and guarantee people's right to a healthy environment. Achieving this would require the government of Cameroon to commit to proactively protecting the environment and people's environmental right through the adoption of a rights-based approach, in the various laws and policies that promote environmental sustainability. There is also a need for the state to enable and facilitate public access to relevant environmental information through clear conditions and procedures of access as this serves to enhance the environmental paradigm and the protection of the environment and peoples' rights.

PITFALLS OF A ‘COMMON CONCERN’ APPROACH TO PRESERVATION OF BIODIVERSITY: CAN E-DNA ANALYSIS TECHNIQUES OFFER A TURNAROUND?

*Ramakash G.S.**

ABSTRACT

Despite the Convention on Biological Diversity having been in force since 1993, biodiversity loss has never subsided. The global rate of species extinction has been accelerating, and the global GHG emissions do not seem to be declining at this moment. This suggests an inadequacy in our approach to promoting biodiversity on the Earth. I argue that this inadequacy lies in how biodiversity is characterised, i.e., the conservation of biodiversity being treated as a ‘common concern’ of humankind. Treating the conservation of biodiversity as a ‘common concern’, I suggest, merely obligates States to conserve them to the extent that such loss does not reach the extent of threatening human survival. Further, the efforts to promote biodiversity through its monitoring was limited to the traditional methods of biological monitoring, which were expensive, time consuming and required considerable efforts. However, the recent advances in biological monitoring tools by assessing the environmental-DNA (eDNA) are promising to offer a fast and efficient method to examine species richness. I suggest that such technologies radically transform the manner in which biodiversity assessment is done and therefore has the potential to alter our approach to biodiversity, from being seen as a common concern to viewing it as an entity to be promoted.

Keywords: Biodiversity, Common Concern, Environment DNA, Metabarcoding, Resilience.

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INTRODUCTION: THE CRISIS OF BIODIVERSITY

The humanity is now said to be facing an impending crisis caused due to accelerating climate change, that we are said to be living in a climate emergency.¹ Over the course of evolution, it is usual that a background rate of extinction exists, wherein certain species get extinct and new species are formed. However, the current rate of extinction is said to be about 1000 times higher than this background rate of extinction.² There is an overwhelming evidence to suggest that these consequences are a result of 'developmental' activities of humans³ and that we have been pushing nature to its limits⁴. This is evidenced by the fact that, despite lockdowns imposed in different parts of the world due to the COVID-19 pandemic, we observed the Earth Overshoot Day, i.e. the date on which humanity "exhausted nature's budget" for that year, on 22 August 2020.⁵ The recent IPBES report suggests that the global rate of species extinction "is already at least tens to hundreds of times higher than the average rate over the past 10 million years and is accelerating"⁶ and the Emissions Gap Report 2021 notes that our efforts enumerated in the Nationally Determined Contributions are "highly insufficient" to limit our annual temperature increase to 1.5°C.⁷

The link between climate change and biodiversity is well known. They are said to reinforce each other; i.e. acceleration of climate change causes variations in species

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- 1 Barry Gills & Jamie Morgan, *Global Climate Emergency: After COP24, Climate Science, Urgency, and the Threat to Humanity*, 17 GLOBALIZATIONS 885, 898 (2020).
 - 2 S. L. Pimm et al., *The Biodiversity of Species and Their Rates of Extinction, Distribution, and Protection*, 344 SCIENCE 1246752 (2014).
 - 3 DILYS ROE, NATHALIE SEDDON & JOANNA ELLIOTT, BIODIVERSITY LOSS IS A DEVELOPMENT ISSUE: A RAPID REVIEW OF EVIDENCE 10 (2019).
 - 4 WWF, LIVING PLANET REPORT 2020: BENDING THE CURVE OF BIODIVERSITY LOSS - SUMMARY 3 (2020).
 - 5 In 2021, the Earth Overshoot Day was said to fall on the 29th of July, 2021; See *Earth Overshoot Day*, GLOBAL FOOTPRINT NETWORK, <https://www.footprintnetwork.org/our-work/earth-overshoot-day/> (last visited Sept 30, 2021).
 - 6 INTERGOVERNMENTAL SCIENCE-POLICY PLATFORM ON BIODIVERSITY AND ECOSYSTEM SERVICES, SUMMARY FOR POLICYMAKERS OF THE GLOBAL ASSESSMENT REPORT ON BIODIVERSITY AND ECOSYSTEM SERVICES OF THE INTERGOVERNMENTAL SCIENCE-POLICY PLATFORM ON BIODIVERSITY AND ECOSYSTEM SERVICES (2019), https://www.ipbes.net/sites/default/files/2020-02/ipbes_global_assessment_report_summary_for_policymakers_en.pdf.
 - 7 UNITED NATIONS ENVIRONMENT PROGRAMME, EMISSIONS GAP REPORT 2021: THE HEAT IS ON – A WORLD OF CLIMATE PROMISES NOT YET DELIVERED³⁴ (2021), <https://wedocs.unep.org/bitstream/handle/20.500.11822/36990/EGR21.pdf>.

distribution and population sizes, and such changes further exacerbates the effects of climate change on that ecosystem.⁸ According to the recent Living Planet Report 2020, over one-fifth of the wild species are at risk of extinction by this century even if mitigation efforts were ramped up.⁹ The loss of biodiversity is also linked to the increasing risk of disease spillover, such as COVID-19, and future epidemic outbreaks cannot be ruled out without increasing the resilience of an ecosystem.¹⁰

The Convention on Biological Diversity, whose objective was to i) ensure ‘conservation of biological diversity’; ii) ‘sustainably use the components of biological diversity’; and iii) assure ‘fair and equitable sharing of benefits arising out of the utilization of genetic resources’¹¹, entered into force on 29 December 1993. Despite the passing of nearly three decades, the statistics show no sign of improvement with regard to the resilience of biodiversity. This indicates an inadequacy in the manner in which we approach biodiversity conservation. I argue that the inadequacy lies in our very approach to biodiversity conservation, i.e., treating the ‘*conservation*’ of biological diversity as a common *concern* of humankind.¹² Specifically, I argue that the Convention does not provide an obligation on the part of the States to improve upon the diversity present within their jurisdiction but provides leeway for biodiversity rich countries to exploit their resources in a manner they deem fit. At best, the Convention requires the Parties to merely ‘conserve’ the existing biodiversity present and does not encourage their promotion.

Before engaging with the Convention, it is necessary to understand the essence of biodiversity or biological diversity, since its scope is not fully understood. Consider the definition of ‘biological diversity’ in the Convention on Biological Diversity. It is defined as “variability among living organisms from all sources” and “includes diversity within species, between species and of ecosystems”.¹³ Biodiversity should

8 See SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY, INTERLINKAGES BETWEEN BIOLOGICAL DIVERSITY AND CLIMATE CHANGE. ADVICE ON THE INTEGRATION OF BIODIVERSITY CONSIDERATIONS INTO THE IMPLEMENTATION OF THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE AND ITS KYOTO PROTOCOL (2003).

9 WWF, *supra* note 4, at 26.

10 Sara Platto et al., *Biodiversity loss and COVID-19 Pandemic: The Role of Bats in the Origin and the Spreading of the Disease*, 538 BIOCHEM BIOPHYS RES COMMUN 2 (2021).

11 Convention on Biological Diversity, art. 1, June 5, 1992, 1760 UNTS 79 [hereinafter “Convention on Biological Diversity, 1992”].

12 Convention on Biological Diversity, 1992, pmbl.

13 Convention on Biological Diversity, 1992, art.2.

not be confused with diversity alone. It does not merely refer to the diverse number of species present in an ecosystem, but also refers to the very ecosystem itself that *enables* the presence of a diverse set of species.¹⁴ Therefore, the loss of a single species or an organism does not indicate loss of biodiversity itself, as biodiversity as such is never static over time.¹⁵ Thus, biodiversity must also be looked at through a functional perspective, in terms of the “ecological functions of species or a group of species in an ecosystem”.¹⁶ This is especially relevant in the context of human induced climate change, since the loss of their ecosystem services¹⁷ is an indicator of the loss of biodiversity.

EFFECTIVENESS OF THE CONVENTION ON BIOLOGICAL DIVERSITY: IS THE ‘COMMON CONCERN’ APPROACH ADEQUATE?

Several international conventions deal with biodiversity-related issues, such as the Convention on Biological Diversity, the Ramsar Convention on Wetlands, the Convention on Conservation of Migratory Species, the International Treaty on Plant Genetic Resources for Food and Agriculture, the International Plant Protection Convention etc. Out of these, one of the most recent, comprehensive and binding Convention is the Convention on Biological Diversity. This Convention has three Protocols, namely the Nagoya Protocol on Access and Benefit Sharing, the Cartagena Protocol on Biosafety and the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety. Considering that the Convention’s subject matter ranges from biodiversity to its access and benefit sharing as well as biotechnology, it is one of the most important Conventions that can aid in mitigating climate change, apart from the UNFCCC.

The Aichi Biodiversity Targets, a set of 20 targets to be achieved by 2020, was agreed upon during the CoP-10 at Aichi, Japan. These targets were very relevant for the protection of biodiversity. They included targets which required addressing the

14 ROE, SEDDON, & ELLIOTT, *supra* note 3 at 7.

15 SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY, *supra* note 8, at 19–20.

16 *Id.* at 19.

17 For a list of ecosystem services and their links to human well-being, see MILLENNIUM ECOSYSTEM ASSESSMENT, ECOSYSTEMS AND HUMAN WELL-BEING: A FRAMEWORK FOR ASSESSMENT 5 (2003), http://pdf.wri.org/ecosystems_human_wellbeing.pdf.

causes of biodiversity loss, reducing the direct pressure on biodiversity, safeguarding ecosystems, species and genetic diversity, ensuring that the benefits derived out of biodiversity is enhanced, and integrating the knowledge of tribal communities and ensuring their participation at all levels. However, none of these targets were met by 2020.¹⁸

What has then prevented the Convention from not being able to actually *promote* biodiversity? I argue that the Convention treats the *conservation* of biodiversity as a common concern and does not aim at *promoting* biodiversity. This is not to say that the Convention did not have any positive impact at all. It firmly upheld the sovereign rights of nations over the resources in their jurisdiction¹⁹ and envisaged an access regulation framework to streamline exploitation²⁰. It also provides for access to and transfer of technology to developing countries under fair and favourable terms.²¹ But what about the *promotion* of biodiversity that is required in the present context of the climate crisis?

The Convention has several provisions that aimed at the conservation of biodiversity. For e.g., Article 5 provides for cooperation with other Contracting Parties for the conservation and sustainable use of biological diversity in areas beyond national jurisdiction. Similarly, Article 8 provides for in-situ conservation and Article 9 provides for ex-situ conservation. Article 10 also requires Parties to integrate 'conservation and sustainable use of biological resources into national decision-making'. However, all these provisions are qualified by the phrase 'as far as possible and as appropriate'. This renders the mandate in the Convention optional, thereby weakening the efforts towards conserving biodiversity.

Secondly, as Guruswamy argues, the Convention seems to reject the concept of 'sustainable development' which was given a definite form in the Brundtland Report²²

18 Patrick Greenfield, *World fails to meet a single target to stop destruction of nature – UN report*, THE GUARDIAN (Sep. 15, 2020), <http://www.theguardian.com/environment/2020/sep/15/every-global-target-to-stem-destruction-of-nature-by-2020-missed-un-report-aoe>.

19 Convention on Biological Diversity 1992, art.3.

20 *Id.*; See AlphonsaJoan et al., *Critiquing Narrow Critiques of Convention on Biological Diversity*, 53 ECONOMIC AND POLITICAL WEEKLY 7, 7 (2015).

21 Convention on Biological Diversity 1992, art16.

22 See WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE 1–8 (1987), https://sswm.info/sites/default/files/reference_attachments/UN%20WCED%201987%20Brundtland%20Report.pdf.

and codified in Article 3(1) of the United Nations Framework Convention on Climate Change, 1992.²³ The Convention recognizes in the Preamble that “economic and social development and poverty eradication are the first and overriding priorities of developing countries”. Article 20(4) of the Convention also reaffirms this statement in the context of provision of financial resources by the developed country Parties to the developing country Parties. Clearly, the environment aspect of development need not be an overriding priority for developing countries, and when read with the phrase ‘as far as possible and as appropriate’, the requirement of at least protecting and conserving biodiversity is further weakened.

The consequences of these provisions are huge. Of course, these overriding priorities provided for in the Convention must be read in light of the developmental needs of the decolonized countries. But in the present circumstances, it enables the countries with their own understanding of economic and social development to use the funds obtained through this Convention for activities that may not be necessarily environment friendly.²⁴ Combined with the fact that the ‘states have sovereign rights over their own biological resources’²⁵, the requirement of protecting and conserving biodiversity is further weakened.

The ‘common concern’ approach does not provide a legal obligation on the part of the state Parties to promote biodiversity. Yet, it seems that its ramifications have led to the placing of nature within the boundaries of the economy.²⁶ Article 11 of the Convention encourages States to “adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity”. Since economics was largely blind to the benefits of biodiversity, an initiative was launched by the environment ministers of the G8+5 group in 2007²⁷ and drew attention to the global economic benefits of biodiversity and highlighted the costs of biodiversity loss.²⁸ This led to the framing of nature into

23 Lakshman D. Guruswamy, *The Convention on Biological Diversity: exposing the flawed foundations*, 26 ENVIRONMENTAL CONSERVATION 79, (1999).

24 *Id.* at 80.

25 Convention on Biological Diversity 1992, pmb.

26 THOMAS FATHEUER, DISPUTED NATURE: BIODIVERSITY AND ITS CONVENTION 28 (2016).

27 EUROPEAN COMMUNITIES, THE ECONOMICS OF ECOSYSTEMS AND BIODIVERSITY: AN INTERIM REPORT 4 (2008), https://ec.europa.eu/environment/nature/biodiversity/economics/pdf/teeb_report.pdf.

28 *The Economics of Ecosystems and Biodiversity (TEEB)*, CONVENTION ON BIOLOGICAL

economic categories by developing ‘valuation tools’ that elicit this hidden value of biodiversity²⁹. Further, as Fatheuer notes, “considerable methodological efforts are being made...to drive forward the biophysical quantification of nature” under the System of Environmental Economics Accounting.³⁰

This reflection of common concern to the conservation of biodiversity by placing nature within the economy rather than vice-versa has several significant consequences. Of course, the inclusion of the benefits of biodiversity within an economic model is better than merely treating it as an externality. But the characterization of biodiversity by quantification is problematic on several counts. This is primarily because this quantification, or any quantification for that matter, is based not on their use-value, but on exchange value.³¹ Therefore, it is not always possible to fix a constant price for an ecosystem service over a period of time, and changes depending on the situation and circumstances. Further, it is not even easy to *accurately* quantify the significance of biodiversity³², since the extent of indirect benefits associated with such biodiversity is difficult to enumerate.

Firstly, the ‘nature-based solutions’ contemplated as a response to the loss of biodiversity and the threat of climate change need not incorporate diverse and indigenous species that positively contributes to biodiversity.³³ For e.g., Article 5 of the Paris Agreement encourages Parties to undertake activities relating to reducing emissions as well as enhance sinks and reservoirs of greenhouse gases. However, it does not require that such measures must promote biodiversity. In the absence of an obligation to promote biodiversity, when nature is subjected to capital, intensive monoculture would be preferred since it is productive in the short run, as well as could provide the raw material required for further exploitation. These monocultures do not offer the same resilience as biodiverse forests provide and are vulnerable to climatic shocks, pests and diseases.³⁴

DIVERSITY, <https://www.cbd.int/incentives/teeb/> (last visited Sept 30, 2021).

29 See *Valuation*, CONVENTION ON BIOLOGICAL DIVERSITY, <https://www.cbd.int/incentives/valuation.shtml> (last visited May 14, 2021).

30 FATHEUER, *supra* note 26, at 27.

31 See I KARL MARX, CAPITAL (DAS KAPITAL) Part I (2016).

32 FATHEUER, *supra* note 26, at 28.

33 ROE, SEDDON, AND ELLIOTT, *supra* note 3, at 17.

34 See Corsa Lok Ching Liu, Oleksandra Kuchma & Konstantin V. Krutovsky, *Mixed-species versus monocultures in plantation forestry: Development, benefits, ecosystem services and*

Secondly, the quantification and monetization of nature raises new questions concerning the interpretation of the Convention. The objective of the Convention, *inter alia*, is the conservation of biological diversity. When nature is placed within the functioning of the economy, the question that arises is how much worth of biological diversity needs to be conserved. To be more specific, since the Convention is 'concerned' about the *significant* reduction in biodiversity due to human activities³⁵, the question would be how much biodiversity, if conserved, would not require the State to conserve further. Since the Convention does not require *promotion* of biodiversity, but only conservation, a sort of barter system would be encouraged where the clearing of an ecosystem for some 'development' purpose would require them to offset an equivalent *amount* of biodiversity through some other means. It is on the basis of this flawed understanding that carbon offsetting works worldwide.

Even though it may be argued that the Convention does not intend to quantify biodiversity for the purposes of conservation, it does provide certain indicators of the extent beyond which action needs to be taken. The Preamble notes that it is "vital to anticipate, prevent and attack the causes of *significant* reduction or loss of biological diversity at source". It also notes that the precautionary principle needs to be applied when there is a "threat of *significant* reduction or loss of biodiversity". Further, Article 7 requires the Parties to identify processes and activities "that have or are likely to have *significant* adverse impacts on the conservation and sustainable use of biological diversity". Article 14 also requires Parties to conduct EIA of "proposed projects that are likely to have *significant* adverse effects on biological diversity". Therefore, the Convention requires action to be taken when there is *significant* adverse impact on biodiversity. The corollary then is that certain adverse impact is permissible, as long as it is not significant. This encourages what I call the 'threshold approach', i.e., an approach where the loss or pollution of a particular ecosystem is allowed, so long as a threshold is not breached.

Such an approach, in the context of air, water, noise etc., is observable in nearly all jurisdictions. In India, for e.g., the Central Pollution Control Board and the State Pollution Control Boards exercise power to set quality standards and the maximum limit of pollutants through environmental legislations such as the Air (Prevention

perspectives for the future, 15 GLOBAL ECOLOGY AND CONSERVATION e00419 (2018).

35 Convention on Biological Diversity 1992, pmbl.

and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.³⁶ In the context of biodiversity, while quality standards are not prescribed, the quantification of biodiversity and the requirement of offsetting can be observed in the formulation of Net Present Value and compensatory afforestation prescribed as a condition for diversion of forests for non-forest purposes.

All these do not mean that no efforts are being taken to promote biodiversity. What I have tried to describe above is merely that the Convention does not *require* promotion of biodiversity and even reduces conservation efforts to a mere option. This does not mean that the Parties cannot improve their biodiversity within their own jurisdiction. It just means that the Parties are not obligated to.

But all these could change in this decade if the recent U.N. Resolution could be successfully implemented. The Resolution, adopted by the General Assembly on 1 March, 2019, declared this decade to be the ‘Decade on Ecosystem Restoration’.³⁷ It stresses that “ecosystem restoration and conservation contribute to the implementation of the 2030 Agenda for Sustainable Development” and the achievement of the Aichi Biodiversity Targets. It also encourages Member States to mainstream ecosystem restoration, increase their adaptive capacity and build upon the existing restoration initiatives. But in order to achieve the aspirations of the U.N. Resolution, it is necessary to move beyond this threshold approach and aim at governing the economy within the boundaries of nature. This requires that the benefits of ecosystem services are valued beyond what they signify in economic terms and efforts be taken to *promote* biodiversity.

The recent COP 15 to the Convention on Biological Diversity (Kunming Declaration) reflects some step towards this direction, wherein the delegation have committed to “ensure the development, adoption and implementation of an effective post-2020 global biodiversity framework” and to “increase the application of ecosystem-based approaches to address biodiversity loss, restore degraded ecosystems, boost resilience, mitigate and adapt to climate change”.³⁸ The delegation also committed to “phase

36 See the website of the Central Pollution Control Board, www.cpcb.nic.in, that lists the various standards that it has notified.

37 G.A.Res.73/284, U.N.Doc.A/RES/73/284 (March 6, 2019).

38 Kunming Declaration “Ecological Civilization: Building A Shared Future for All Life on Earth 1, CBD/COP/15/5/Add.1, 10 (Oct. 13, 2021), <https://www.cbd.int/doc/c/c2db/972a/fb32e0a277bf1ccff742be5/cop-15-05-add1-en.pdf>.

out or reform subsidies and other incentives that are harmful to biodiversity, and create incentives aimed at mainstreaming biodiversity in key economic sectors” in the COP 14 to the Convention (Sharm El-Sheikh Declaration).³⁹

But what has actually stopped conservationists from monitoring biodiversity, so that the governments can always be nudged to move towards actually *promoting* biodiversity? Apart from the constraints imposed by the present economic world-order, I argue that the costs of measuring and monitoring diversity using traditional methods in an ecosystem act as an impediment to the promotion of biodiversity.⁴⁰ Huge costs associated with professional monitoring and the determination of diversity means that it is difficult to continuously monitor the same due to the lack of enough allocation of resources.⁴¹ Further, some monitoring techniques seem problematic “due to difficulties associated with correct identification of cryptic species or juvenile life stages, a continuous decline in taxonomic expertise, non-standardized sampling, and the invasive nature of some survey techniques”.⁴² In fact, the United Nations Environment Programme (UNEP) also expressed its displeasure at the lack of data to formally assess more than 60% of the status of environment-related SDG indicators.⁴³ It notes that some of the constraints include “limitations in national capacity in environmental statistics, deficiency in agreed methodologies for monitoring the environmental dimension of development, and challenges in data integration”.⁴⁴ It is in this context that eDNAm metabarcoding offers a solution.

39 Sharm El-Sheikh Declaration: Investing in Biodiversity for People and Planet, CBD/COP/14/12, 1(d) (Nov. 16, 2018), <https://www.cbd.int/doc/c/2000/ec3f/0cbb700fcf8f8e170b5f4afb/cop-14-12-en.pdf>.

40 See Stefano Targetti et al., *Assessing the Costs of Measuring Biodiversity: Methodological and Empirical Issues*, 9 FOOD ECONOMICS 2 (2012).

41 Sophat Seak, Dietrich Schmidt-Vogt & Gopal B. Thapa, *A Comparison Between Biodiversity Monitoring Systems to Improve Natural Resource Management in Tonle Sap Biosphere Reserve, Cambodia*, 7 INTERNATIONAL JOURNAL OF BIODIVERSITY SCIENCE, ECOSYSTEM SERVICES & MANAGEMENT 258 (2011).

42 Philip Francis Thomsen & Eske Willerslev, *Environmental DNA – An Emerging Tool in Conservation for Monitoring Past and Present Biodiversity*, 183 BIOLOGICAL CONSERVATION 4 (2015).

43 UNITED NATIONS ENVIRONMENT PROGRAMME, MEASURING PROGRESS: TOWARDS ACHIEVING THE ENVIRONMENTAL DIMENSION OF THE SDGs6 (2019), <https://wedocs.unep.org/bitstream/handle/20.500.11822/27627/MeaProg2019.pdf?sequence=1&isAllowed=y>.

44 *Id.* at 7.

POTENTIAL OF eDNA METABARCODING IN PROMOTING BIODIVERSITY RESILIENCE

Every living organism sheds some traces of DNA in the form of skin, hair, mucus etc. in their habitat. These DNAs are said to be eDNAs.⁴⁵ In other words, as Thomsen and Willerslev define it, eDNA is a “genetic material obtained directly from environmental samples (soil, sediment, water, etc.) without any obvious signs of biological source material”.⁴⁶ As per Taberlet *et al.*, this novel technique called eDNA metabarcoding involves the “automated identification of multiple species from a single bulk sample containing entire organisms or from a single environmental sample containing degraded DNA (soil, water, faeces, etc.)”.⁴⁷ This requires the creation of a reference database against which the DNA analysed is classified as belonging to a particular taxonomic group.⁴⁸ There are said to be several eDNA metabarcoding methods, such as ddPCR metabarcoding, multiplex metabarcoding and shotgun sequencing, but they all are used to identify which taxa that DNA belongs to, which in turn can be used to “infer regional biodiversity, geolocation (estimating sample provenance or origin), and, potentially, even human identification”.⁴⁹

On a survey of the literature dealing with the application of this method, it has been found that this method has worked better than traditional methods in marine environments to identify invertebrate communities, microscopic organisms as well as vertebrate communities.⁵⁰ It was also found working equally well for fish

45 Jason Chang, *Monitoring Biodiversity and Water Pollution via High-throughput eDNA Metabarcoding*, 24 BERKELEY SCIENTIFIC JOURNAL, 50 (2020).

46 Thomsen and Willerslev, *supra* note 42, at 4.

47 Pierre Taberlet *et al.*, *Towards Next-generation Biodiversity Assessment using DNA Metabarcoding*, 21 MOLECOL 2045 (2012).

48 Ashley A. Coble *et al.*, *eDNA as a Tool for Identifying Freshwater Species in Sustainable Forestry: A Critical Review and Potential future Applications*, 649 SCIENCE OF THE TOTAL ENVIRONMENT 1157, 1161 (2019).

49 Julia S. Allwood, Noah Fierer & Robert R. Dunn, *The Future of Environmental DNA in Forensic Science*, 86 APPL. ENVIRON. MICROBIOL., 2 (2020), <https://aem.asm.org/content/86/2/e01504-19>.

50 See Krista M. Ruppert, Richard J. Kline & Md Saydur Rahman, *Past, Present, and Future Perspectives of Environmental DNA (eDNA) Metabarcoding: A Systematic Review in Methods, Monitoring, and Applications of Global eDNA*, 17 GLOBAL ECOLOGY AND CONSERVATION e00547 (2019).

ecosystems⁵¹, freshwater biodiversity responses to forest practices⁵², lake sediment cores and ice cores⁵³, top-soil⁵⁴ etc.

This method of eDNAMetabarcoding is said to offer several advantages. It is said to be cost and time effective, unlike the traditional methods which is said to be tedious and time-consuming.⁵⁵ It is also able to detect rare species, first occurrence of invasive species, as well as other elusive species that occur in low densities.⁵⁶ It is also said to be capable of tracking ecosystem response to pollution, since it usually affects the microbiological communities. The presence/absence of specific organisms can be used to determine the severity of the pollution.⁵⁷ It is also said to be effective in identifying the presence of plant or animal pathogen of concern and can also be used to monitor the threat of emerging infectious diseases.⁵⁸

Despite their several advantages, they also bring in certain disadvantages as well. For e.g., Chang observes that the sample used for eDNAMetabarcoding may have certain compounds that could inhibit DNA polymerase activity, thereby hindering PCR amplification process that is required for identification and cross-reference.⁵⁹ Harper *et.al.* note that it might be difficult to distinguish recent species with historic species since both eDNAs could be accumulated at a single site.⁶⁰ Further, some information cannot be obtained by metabarcoding. For example it is not possible to determine the population size, structure, age, sex ratio etc. of a species using this method.⁶¹ Ruppert also notes the current lack of comprehensive genetic database as well as bias arising

51 See Raphaël Civade et al., *Spatial Representativeness of Environmental DNA Metabarcoding Signal for Fish Biodiversity Assessment in a Natural Freshwater System*, 11 PLOS ONE e0157366 (2016).

52 Coble et al., *supra* note 48, at 1165.

53 Kristy Deiner et al., *Environmental DNAMetabarcoding: Transforming How We Survey Animal and Plant Communities*, 26 MOLECULAR ECOLOGY 5872, 5878 (2017).

54 See Alexei J. Drummond et al., *Evaluating a Multigene Environmental DNA Approach for Biodiversity Assessment*, 4 GIGASCIENCE (2015), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4595072/>.

55 Chang, *supra* note 45, at 50.

56 Ruppert, Kline, and Rahman, *supra* note 50, at 2.

57 *Id.* at 21.

58 Coble et al., *supra* note 48, at 1160.

59 Chang, *supra* note 45, at 51.

60 Lynsey R. Harper et al., *Prospects and Challenges of Environmental DNA (eDNA) Monitoring in Freshwater Ponds*, 826 HYDROBIOLOGIA 25, 28 (2019).

61 Ruppert, Kline, and Rahman, *supra* note 50, at 5.

from taxonomic selectivity and restricted sensitivity of primers.⁶² Another significant disadvantage is that, since eDNA moves readily through the environment, it is difficult to establish its geographical source. For example it is possible that the eDNA samples taken from the downstream of a river may contain eDNA of organisms that are located upstream.⁶³ Nevertheless, eDNA metabarcoding is believed to be a unique tool that is expected to improve over time.

eDNA METABARCODING AND BIODIVERSITY CONSERVATION

eDNA metabarcoding technology has the potential to be a powerful tool to strengthen conservation measures as well as promote biodiversity. Usually, professional monitoring of certain species, as well as certain ecosystems, is carried out by scientists with techniques, tools and data analysis that are time and resource consuming.⁶⁴ This meant that the public could not engage with the government or the Courts on the basis of scientific data and could participate in conservation practices only based on their local ecological knowledge. This is also perhaps the reason why the government appoints analysts for the purpose of the Air (Prevention and Control of Pollution) Act, 1981 and Water (Prevention and Control of Pollution) Act, 1974 and such analyst is required to send reports of a sample to the State board for further action.⁶⁵ It is this report which may be used as evidence of the facts stated therein.⁶⁶ However, the advent of eDNA metabarcoding technology could enable even citizen scientists to conduct eDNA analysis of a particular ecosystem to highlight the need for conservation efforts before a Court.⁶⁷

This technology can also be used to aid conservation efforts if used while preparing People's Biodiversity Register (PBR) under Rule 22(6) of the Biological Diversity

62 *Id.* at 20.

63 Melania E. Cristescu & Paul D.N. Hebert, *Uses and Misuses of Environmental DNA in Biodiversity Science and Conservation*, 49 ANNUAL REVIEW OF ECOLOGY, EVOLUTION, AND SYSTEMATICS 209, 220 (2018).

64 Seak, Schmidt-Vogt, and Thapa, *supra* note 41, at 258.

65 See The Air (Prevention and Control of Pollution) Act, 1981 §§ 26-30; The Water (Prevention and Control of Pollution) Act, 1974 §§ 21, 22, 51-54.

66 See The Air (Prevention and Control of Pollution) Act, 1981 § 30; The Water (Prevention and Control of Pollution) Act, 1974 § 54.

67 Deiner et al., *supra* note 53, at 5888.

Rules, 2004. As is known, section 41 of the Biological Diversity Act, 2002 mandates constitution of a Biodiversity Management Committee (BMC) by every local body:

“[f]or the purpose of promoting conservation, sustainable use and documentation of biological diversity including preservation of habitats, conservation of land races, folk varieties and cultivars, domesticated stocks and breeds of animals and microorganisms and chronicling of knowledge relating to biological diversity.”

This BMC is required to prepare a PBR in consultation with the local people and must “contain comprehensive information on availability and knowledge of local biological resources” as per Rule 22(6) of the Biological Diversity Rules, 2004. However, these provisions were rarely implemented at least till 2019. After the National Green Tribunal’s order in *Chandra Bhal Singh v. Union of India*⁶⁸, BMCs have been formed in over 90% of the local bodies and PBRs being prepared in almost 1/3rd of them till January 2020.⁶⁹ If the preparation of PBRs also included using eDNA metabarcoding technology, it will not only help in creating and expanding the reference database, but could also help in easier monitoring of biodiversity in that local area.

This technology has the potential to overcome the ‘threshold approach’ that we currently employ, due to its low cost and better determination of diversity in an ecosystem. In fact, this technology is said to be adopted to aid pond conservation in U.K. and is slowly being incorporated into policy.⁷⁰ Nevertheless, there is still skepticism over its use due to concerns of false negatives and false positives, as well as potential of misrepresentation.⁷¹ Therefore, it is necessary to standardize every step that the process requires, based on the purpose for which it is to be used. In this context, the common concern approach could be helpful in bringing the States together in creating an international standard for the application of this

68 *Chandra Bhal Singh v. Union of India*, 2019 SCC OnLine NGT 2749.

69 SECRETARY, NATIONAL BIODIVERSITY AUTHORITY, REPORT IN COMPLIANCE WITH THE ORDERS OF THE HON’BLE TRIBUNAL ON 09/08/2019 (2020), IN *CHANDRA BHAL SINGH V. UNION OF INDIA AND ORS.*, O.A.No.347/2016, NATIONAL GREEN TRIBUNAL, PRINCIPAL BENCH, https://greentribunal.gov.in/sites/default/files/news_updates/MOEF%20&%20CC%20AND%20N.B.A.-FINAL%20REPORT%20IN%20OA%20347%20OF%202016.pdf.

70 Harper et al., *supra* note 60, at 36.

71 Ruppert, Kline, & Rahman, *supra* note 50, at 20; Cristescu & Hebert, *supra* note 63, at 216.

technology. As Cottier *et al.* suggest, the word ‘common’ refers to a shared problem or responsibility, and the word ‘concern’ refers to “an unresolved problem, which the States are called upon to redress”.⁷² Since the standardization of this technology could help a long way in realizing the need for preservation and promotion of biodiversity, it could find consensus among countries to deploy this technology for their own conservation purposes. In fact, this process seems to have begun in Europe through the establishment of DNAqua-Net that seeks to identify “gold-standard genomic tools and novel eco- genomic indices and metrics for routine application for biodiversity assessments and bio-monitoring of European water bodies”.⁷³ These efforts need to be extended and applied all over the world.

CONCLUSION

This paper argued that the characterisation of *conservation* of biodiversity as a common concern is inadequate and that the provisions of the Convention on Biological Diversity do not impose a mandate on the Parties to either promote or conserve their biodiversity. It also showed how the quantification of nature through the economic valuation of ecosystem benefits can potentially undermine conservation efforts and give rise to what I call the ‘threshold approach’. This paper also suggested the need to move beyond this threshold approach and aim at governing the economy within the boundaries of nature.

This paper argues that, apart from the constraints of the present economic world-order, the problem lies in the resource-intensive tools that are required to monitor diversity in an ecosystem. As a response, it suggests that eDNA metabarcoding technology has the potential to overcome these challenges and could also aid in overcoming the ‘threshold approach’ that we currently employ, by providing tools that make biodiversity monitoring easy and less-resource intense. It also suggested that the ‘common concern’ approach should bring together Parties to standardize this process and that such an initiative has already begun in Europe.

Nevertheless, even if this technology is widely used, it does not solve the fundamental issues concerning the conservation of biodiversity. With the greater use of this

72 Thomas Cottier *et al.*, *The Principle of Common Concern and Climate Change* 9 (Working Paper No 2014/18 NCCR Trade Regulation 2014).

73 *About*, DNAQUA-NET, <https://dnaqua.net/about/> (last visited Sept 30, 2021).

technology, it would become easier to track biodiversity loss and therefore easier to determine the cause for such loss. What would be its impact on the developmental agenda of middle-developed and low-developed countries, especially given that the Convention explicitly recognizes that “economic and social development and poverty eradication are the[ir] first and overriding priorities”? Further, the Convention stresses on the Parties to identify processes and activities that cause *significant* reduction or *significant* adverse impact on the biodiversity. In the context of the use of this technology, what could amount to that *significant* reduction or adverse impact? Will it offer a new way to determine the threshold of *significant* without actually considering them in monetary terms? These are some questions that require further analysis.

THE IMPACT OF RENEWABLE ENERGY PROJECTS ON WILDLIFE IN INDIA

*Palak Mehta**

ABSTRACT

As India is located in a tropical climate, it offers a lot of potential for a renewable energy transition. The government has created regulations, programs, and a liberal atmosphere in order to attract international investment and rapidly expand the country's renewable energy market, but it has failed to anticipate the negative consequences. The impact of renewable energy production on the environment and nature conservation in India is examined in this article. Despite the magnitude of benefits of renewable energy, nearly no industry has yet shown to be universally sustainable in its influence. The article reiterates the detrimental effects of Hydropower, solar power, and wind energy. Environmental damage, habitat degradation, biodiversity loss, and species extinction were all the repercussions.. As a result, renewable energy as a priority for sustainable development confronts several obstacles. Action by the government in the form of coordinated policymaking will help to mitigate the negative effects of renewable energy development.

Keywords: Renewable Energy; Energy Development Impacts; Energy Slump, Environmental Concerns

INTRODUCTION

From food to space and energy, human capital has a significant impact on our planet's ecosystems, which in turn affects global change. Even though these factors will affect the environment, final state is usually dictated by synergy. This amplifying result allows for substantial shifts in the ecosystem to be removed from the initial driver of transition, which may result in state changes that are out of synchronicity.

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Concerning other drivers of environment changes, climate change has gained favour, bringing in more funding and attention.

Human growth and increased consumption per capita are driving an increase in energy demand.¹ Reducing greenhouse gas emissions is the key goal of today's renewable energy strategy. Major initiatives have been put into this form of energy, such as hydro-based power plants as well as recent turbines and solar farms. All renewable energy is created with the intent of maintaining our existence as a sustainable species, while the construction of infrastructure may also result in a greater loss of habitats. Many people think that renewable energy production decreases the risk of endangered species going extinct, but paradoxically, the rate of extinction of those species increases. Producing renewable energy must go hand in hand with saving biodiversity to be compatible with the goal of sustainable development.

Many alternative energy sources have issues with environmental impacts, such as nuclear power, the manufacture of solar cells that can produce toxic waste, and the development of hydroelectricity, which can negatively affect water ecosystems. Technology, geography, and other factors influence the unique environmental impacts that can be caused by a certain technology.² Solar and wind power facilities and other 'clean' power projects also affect ecosystems because of the transmission lines, highways, and other types of infrastructure³, which hinders the free movement of wildlife. Environmental and commercial sectors must find strategies to communicate and take action to assess and handle their interactions with biodiversity challenges in light of the fact that energy use is expected to quadruple by 2030.⁴ Various conservation organisations are engaged in a frantic search for data to ensure that the decision is made in a timely manner. Diversity effects that have been previously identified, as well as less known effects of renewable energy, structures, including

1 A Kahan, *Global Electricity Consumption Continues to Rise Faster than Population - Today in Energy*, U.S. ENERGY INFORMATION ADMINISTRATION (EIA) (2020), <https://www.eia.gov/todayinenergy/detail.php?id=44095>.

2 *Environmental impacts of renewable energy technologies*, UNION OF CONCERNED SCIENTISTS (2008), <https://www.ucsusa.org/resources/environmental-impacts-renewable-energy-technologies>.

3 NATIONAL ACADEMIES PRESS, *THE POWER OF RENEWABLES OPPORTUNITIES AND CHALLENGES FOR CHINA AND THE UNITED STATES* 110 (2010).

4 INDEPENDENT GROUP OF SCIENTISTS APPOINTED BY THE SECRETARY-GENERAL, *GLOBAL SUSTAINABLE DEVELOPMENT REPORT 2019: THE FUTURE IS NOW – SCIENCE FOR ACHIEVING SUSTAINABLE DEVELOPMENT* (2019).

species and population composition, are reviewed here.⁵

Global renewable capacity has grown from 820 GW in 2006 to 2537 in 2019, and will continue to expand by 8% per year, with the additional 1,530 GW allocated to hydropower in 2019.⁶ India ranks at the top of rapidly growing economies on clean energy investment, development, and deployment. Having committed to a renewable energy (RE) target of 175 GW of installed capacity by 2022, India has doubled its renewable energy capacity in the last four years to 89 GW. Renewable resources allow us to sustain economic growth while minimising environmental damage. However, as the sources of renewable energy and climate change appear to complement each other, there are also a variety of issues to deal with. These projects are increasingly being opposed by local people and civil society groups because they conflict with local livelihoods and have significant environmental impacts.⁷

In this backdrop, some of the impacts of these projects in India should be examined.

CHALLENGES FOR WILDLIFE CONSERVATION

People have been made aware of resource measures such as solar, wind, biomass, and waste to maximise the usage of these alternative energy sources. In the end, renewable energy is considered better for the environment and usually less expensive than conventional energy. By 2022, India aims to be using a total of 175 GW of renewable energy which will include 100 GW from solar, 60 GW from bio-power, and 35 GW from hydropower. Investors have pledged to reach at least 270 GW of solar power capacity, which is greater than the previously stated goals.⁸ In recent years, the switch to renewable energy sources has received considerable global attention. Renewable energy sources such as wind, hydro, and solar energy can effectively replace fast-

5 Jose Antonio Sánchez-Zapata *et al.*, *Effects of Renewable Energy Production and Infrastructure on Wildlife*, in CURRENT TRENDS IN WILDLIFE RESEARCH, WILDLIFE RESEARCH MONOGRAPH 97 (2016), https://doi.org/10.1007/978-3-319-27912-1_5.

6 *Global Renewable Energy Capacity Grew 7.4 Percent in 2019, Solar Takes Biggest Share*, THE ECONOMIC TIMES (Apr. 3, 2020), <https://energy.economictimes.indiatimes.com/news/renewable/global-renewable-energy-capacity-grew-7-4-per-cent-in-2019-solar-takes-biggest-share/74958583>.

7 S Lakhnapal, *Impacts of Renewable Energy Projects*, DECCAN HERALD (Feb. 26, 2018), <https://www.deccanherald.com/content/661665/impacts-renewable-energy-projects.html>.

8 Charles Rajesh Kumar J, M.A. Majid, *Renewable Energy for Sustainable Development in India: Current Status, Future Prospects, Challenges, Employment, and Investment Opportunities*, 10ENERGY SUSTAIN Soc2 (2020), <https://doi.org/10.1186/s13705-019-0232-1>.

depleting fossil fuels, thereby drastically reducing carbon emissions, improving air quality, and enhancing human health.⁹

However, the transition to renewable energy production can have a significant impact on established weather patterns and habitat characteristics with recent studies caution which leads to a significant loss of biodiversity.¹⁰ These changes include altering species habitats, animal migration patterns, damaging croplands, and increasing human-wildlife conflict.¹¹ Furthermore, the Union Ministry of Environment, Forests and Climate Change has exempted wind power and small hydropower projects with an area of less than five hectares from the Environmental Impact Assessment criteria (EIA). EIA is an important indicator of the loss of biodiversity and wildlife in a given region, which is a major concern among conservationists. This puts the biodiversity of areas where renewable energy ventures are situated in jeopardy.

WIND ENERGY – IT BELONGS TO ALL

Wind power harvesting is one way of generating energy that is cleanest and most sustainable because no chemical pollution or global warming emissions are produced. The wind is rich, inexhaustible and cheap, making it a viable and extensive alternative to fossil fuels. Despite its enormous potential, wind generation has several environmental impacts that should be acknowledged and mitigated.¹²

Many studies around the world have reported a high incidence of bird mortality as they crash into windmills. In Gujarat and Karnataka, two of India's top states for harnessing wind energy, turbine operators have reported carcasses of more than

9 T.H. Harvard, *Renewable Energy Can Help Fight Climate Change – Here's Where to Install It for Maximum Benefits*, SCI TECH DAILY (Oct., 29 2019), <https://scitechdaily.com/renewable-energy-can-help-fight-climate-change-heres-where-to-install-it-for-maximumbenefits/#:~:text=A%20new%20Harvard%20study%20shows,Lakes%20and%20Mid%2DAtlantic%20regions.>

10 A. Stumvoll, *Shift to Renewable Energy Could Have Biodiversity Cost, Researchers Caution*, MONGABAY, (Jun. 18, 2019), <https://news.mongabay.com/2019/06/shift-to-renewable-energy-could-have-biodiversity-cost-researchers-caution/>.

11 T. Thomas, *Mining Needed for Renewable Energy Could Harm Biodiversity*, THE GUARDIAN (Sept. 1, 2020), <https://www.theguardian.com/environment/2020/sep/01/mining-needed-for-renewable-energy-could-harm-biodiversity#:~:text=The%20mining%20necessary%20for%20producing,to%20biodiversity%2C%20researchers%20have%20found.&text=Furthermore%2C%20they%20found%208%25%20of,and%2016%25%20with%20remaining%20wilderness.>

12 *Environmental Impacts of Renewable Energy Technologies*, *supra* note 2.

50 birds over a period of three years.¹³ While many major birds of prey, including vultures and raptors, have a wide field of view to cover the sky and the earth, they have also a huge blind spot above and beneath their heads. The majority have their noses pointed toward the ground, allowing them to fly into wind turbines and power lines. Studies indicate that predatory animals such as raptors are at the highest risk of collisions with windmills. Small rodents, reptiles, and other birds, live around the windmills. The ecosystem will suffer without them.

Another species harmed due to windmills are bats. Powerful sound waves are especially dangerous for bats from offshore wind turbines because the pressures of these turbines can damage the lungs. For instance, proposed energy programs such as the National Offshore Wind Energy Policy can result in large-scale collisions of birds and bats with power lines and moving turbines and disturbances to their conventional movement patterns.¹⁴ The indirect cascading effects of such projects take the livelihoods of local communities away from their farms and reduce significantly their livestock and other wildlife.

While governments have claimed that, the projects are being built on “unused property,” reports show that the land in question is used by local pastoral communities to raise goats, sheep, cows, and buffaloes.¹⁵ Notably, in Rajasthan, the expansion of power lines for these projects in ecologically sensitive areas is the “largest cause of mortality for the Great Indian Bustards,” a species that has been listed as critically endangered on the IUCN Red List and was recently included as a ‘migratory species facing extinction’ under Appendix I of the Convention on the Conservation of Migratory Species of Wild Animals (CMS).¹⁶

In light of this severely endangered species' conservation needs, the Supreme Court in

13 S. Parvatam, *Is the Drive for Clean Energy Throwing Environmental Caution to the Wind?*, NATURE INDIA (Jun. 17, 2019), <https://www.natureasia.com/en/nindia/article/10.1038/nindia.2019.78>.

14 A. Gupta, *India Soon to Have Guidelines to Save Birds from Wind Energy Farms*, EQINTERNATIONAL (May 17, 2018), <https://www.eqmagpro.com/india-soon-to-have-guidelines-to-save-birds-from-wind-energy-farms/>.

15 K. Hemalatha, *Why India's Solar Push Could Kill the Livelihood of Pastoral Communities*, BUSINESS STANDARD (Aug. 5, 2019), <https://www.indiaspend.com/why-indias-solar-push-could-kill-the-livelihood-of-pastoral-communities/>.

16 CONVENTION ON MIGRATORY SPECIES, PROPOSAL FOR THE INCLUSION OF THE GREAT INDIAN BUSTARD IN APPENDIX I OF THE CONVENTION (Meeting of the Conference of Parties, UNEP/CMS/COP13/Doc. 27.1.4, 2019).

the case of *M.K.Ranjitsinhv. Union of India*, have issued precise binding directions that must be followed in Greta Indian Bustard habitats. It makes it mandatory in the future for all power lines in the GIB's 'potential' and 'priority habitat' to be put underground.¹⁷ Bench further constituted committee (The Corbett Foundation) to assess the feasibility of high voltage underground power lines.

The disproportionate effect of such renewable energy development activities has long been overlooked by governments and project stakeholders. The Draft Environmental Impact Assessment Notification (EIA) 2020, which exempts solar parks and other sustainable projects from various approval procedures, exacerbates the crisis. The varying spatial effect trends (certain specific geographical, socioeconomic variables may be impacted more than others) and various degrees of risk of human-wildlife conflict are not taken into account by such a blanket exemption.¹⁸

SOLAR POWER

Solar energy has a much smaller but more direct and absolute land-use shift than wind energy, which has a significant but diffused effect. When forests or other natural ecosystems (such as grasslands) are cleared for construction, utility-scale solar projects can have a major effect. It also necessitates supporting infrastructure such as access roads and transmission lines, which fragment ecosystems even more.

The solar farm can have a significant impact on local biodiversity. During construction, the vegetation is cleaned up or the natural landscape is disturbed by the physical obstacles formed by the sun. As solar farms occupy enormous swaths of land, this can lead to a loss of habitat and a reduction in wildlife mobility. This may be due to changes in temperature and bird plumage distribution patterns that are noticed in some installations of solar farms.¹⁹ The movement of Grand Indian Busta (locally called Godawan) antelopes like blackbuck and chinkara could be impeded by vast areas and solar fencing in Rajasthan.²⁰

17 M.K.Ranjitsinhv. Union of India, 2021 SCC OnLine SC 326.

18 Environment Impact Assessment Notification, 2020, § 26.

19 A. Armstrong, N.J. Ostle, & J. Whitaker, *Solar Park Microclimate and Vegetation Management Effects on Grassland Carbon Cycling*, 11 ENVIRONMENTAL RESEARCH LETTERS 074016 (2016), <https://doi.org/10.1088/1748-9326/11/7/074016>.

20 A. Gawande & P. Chaudhry, *Environmental and Social Impacts of Solar Energy: A View Point with Reference to India*, 17 JHARKHAND JOURNAL OF DEVELOPMENT AND MANAGEMENT STUDIES (2019), <https://www.xiss.ac.in/JJDMS/Vol17/Issue2/pdf/5.pdf>.

As the country's "100 GW renewable energy by 2022" goal approaches, solar panels are surfacing all over the landscape. Water bodies are now anchors for the panels after they covered lush fields, obliterated wastelands, and decorated the roofs of a few houses. Governments have switched to aquatic systems to take advantage of the next wave of floatovoltaics due to land acquisition delays or other challenges relating to land availability for ground-mounted solar panels.²¹ Earlier this year, in the backwaters of the Omkareshwar Dam, the government of Madhya Pradesh declared the world's largest floating 600 MW Solar Project.²² Starting in 2022-23, the project is projected to cover about 2000 hectares of water and begin operating activities. It was announced in December 2020 that Maharashtra would build an 80 MW floating solar power plant on the middle Vaitarana dam. Renewable Energy Policy 2021-2026 for Karnataka has recently been completed, which includes a total of 7366 MW of floating solar projects on reservoirs and lakes by the end of 2020.²³ The ecosystem's structure should be preserved so that it can carry out its functions. The amount of sunlight that enters the system will be affected by the size of the solar panels. This can have a negative impact on the aquatic environment's food chain and biogeochemical processes. (Water cycle, carbon cycle, nitrogen cycle).

Photosynthetic activity in the water decreases with less sunlight available. The low photosynthesis rate contributes to loss of Phytoplankton (Microscopic Plants), macrophyte (submerged or emergent aquatic plants), and lowers DO within the water body. Stereotypes further affect aquatic fauna feeding on plants and herbivores (animals). Because of the rising temperatures caused by the breakdown of organic materials, marine species die from a lack of food. Ecological eutrophication (overabundance of nutrients in the water body) is set off by this increase in temperature and the release of nutrients like nitrates and phosphates, which will cause algal blooms (due to the proliferation of cyanobacteria). Loss of marine fauna also affects the migratory and resident-fed ecosystem of birds," explains Vidyadhar Atkore, an Indian aquatic eco-biodiversity ecologist.²⁴

21 G. Prasher, *Solar Projects on Water Could Come at a Cost to the Environment, Alert Experts*, MONGBAY, (Mar. 12, 2021), <https://india.mongabay.com/2021/03/solar-projects-on-water-could-come-at-a-cost-to-the-environment-alert-experts/>.

22 *Id.*

23 *Id.*

24 Gupta, *supra* note 14.

HYDRO – THE GIANT AMONG RENEWABLES LEADING TO GIANT FLOODS

The global renewable energy market is dominated by hydropower. A CAGR (Compound Annual Growth Rate) of 6.5 percent is expected for the hydroelectric power segment in 2020, making it the highest revenue generator in the projected period. With noteworthy projects in Colombia and Peru, the continent has seen a rise in activity during the past year. Off-grid energy generation and rural electrification in developing nations like India, China, Brazil, and Vietnam have led to a rise in the demand for small hydroelectric facilities.²⁵ Hydropower has no direct impact on air quality but it can have some adverse effects on environmental effects by constructing and running the hydropower reservoir.

Regarding marine renewable energy, while some studies have found out that sources such as wave energy transformers and underwater electrical cables do not pose significant threats to marine mammals, individual offshore initiatives can lead to physical harm impeding echolocation and other communications methods used for maritime and hunting by certain mammals.²⁶ In addition, the immediate, prolonged damage to fish populations and the sustainability of birds, mammals, amphibians as well as reptile and plant species in this region may be caused by hydroelectric projects. Arunachal Pradesh Controversial MW Etalin hydropower projects threaten precious flora and fauna in Dibang Valley – the area protected over centuries by the group of Idu Mishmi.²⁷

These traditional systems are significantly interfering with the widespread development of renewable sources, with adverse implications for the protection of animals and human livelihoods. Near ecologically sensitive areas such as wildlife, sanctuaries, and biodiversity hotspots are set up in many of these projects. A German

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- 25 C. Mittal & E. Prasad, *Renewable Energy Market by Type (Hydroelectric Power, Wind Power, Bioenergy, Solar Energy, and Geothermal Energy) and End Use (Residential, Commercial, Industrial, and Others): Global Opportunity Analysis and Industry Forecast, 2021–2030*, ALLIED MARKET RESEARCH (Sept. 2021), <https://www.alliedmarketresearch.com/renewable-energy-market>.
 - 26 A.E. Copping et al., *Potential Environmental Effects of Marine Renewable Energy Development—The State of the Science*, 8 JOURNAL OF MARINE SCIENCE AND ENGINEERING (2020), <https://doi.org/10.3390/jmse8110879>.
 - 27 D. Khurana, *Development Dawns on Dibang: Jindal Jittery, Government Persists*, THE CITIZENS (Sept. 02, 2020), <https://www.thecitizen.in/index.php/en/newsdetail/index/13/19302/development-dawns-on-dibang--jindal-jittery-government-persists>.

multinational corporation promoted and ignored many environmental permits, for example, the Andhra Lake Power Project in Maharashtra. The project, located 3,5 km away from the wildlife sanctuary in Bhimashankar, threatens the survival, at the same time, of endangered mammals, such as the Indian Giant Squirrel and the Indian leopard.²⁸

In large-scale water projects, marine biodiversity and wetland habitat can also be permanently lost. Environmentalists predict a devastating impact for the rich biodiversity in the state, including the Nilgiri langurs, tigers, and horseshoe pit vipers, for Sillahalla Pumped Storage Hydro-Electric Project in Tamil Nadu.²⁹ In the same way, the pumped hydro-storage Karnataka Power Corporation could seriously harm the fragile macaques of the lion-tailed family.³⁰

ENVIRONMENTAL RISK MITIGATION

We consider how human populations may coexist with wildlife peacefully – an exercise which is not only possible but in a long term extremely rewarding. For example, Gairdakhali communities in Uttarakhand have developed an alternative to traditional solar fencing to prevent attacks of elephants while generating green energy. The locals successfully hung up above the ground with non-lethal low-intensity shocks, using the 'tentacle' fences, to frighten wild elephants³¹. Although there are no straight jackets to address this problem, we need interdisciplinary research initiatives that go beyond the obvious effect on conservation and land use of a particular renewable energy project, but instead, make groundbreaking efforts

28 S Lakhanpal, *Unruly Landscapes: Politics of Biodiversity, Energy, and Livelihoods in India*(Dissertation, University of Illinois at Urbana-Champaign, 2016), <https://www.ideals.illinois.edu/bitstream/handle/2142/95583/LAKHANPAL-DISSERTATION-2016.pdf;sequence=1&isAllowed=y>.

29 K.A. Shaji, *Tension Builds Against Sillahalla Hydroelectric Project to Come up in Nilgiris*, THE WIRE (Nov. 05, 2020), <https://science.thewire.in/environment/sillahalla-project-nilgiris-environment-displacement-tension/>.

30 N. Patil, *How Pumped Storage Project Inside Sharavathi Valley Can Threaten Lion-Tailed Macaque*, DOWN TO EARTH (Oct. 20, 2020), <https://www.downtoearth.org.in/blog/wildlife-biodiversity/how-pumped-storage-project-inside-sharavathi-valley-can-threaten-lion-tailed-macaque-73872>.

31 Vineet Upadhyay, *Tentacle Solar Fencing: Solution to Human-Animal Conflict in Uttarakhand?*, THE NEW INDIAN EXPRESS (July 14, 2020), <https://www.newindianexpress.com/nation/2020/jul/14/tentacle-solar-fencing-solution-to-human-animal-conflict-in-uttarakhand2169791.html#:~:text=The%20fencing%20is%20designed%20to,in%20comparison%20to%20conventional%20fencing.>

to understand the unique connections between the various human and wildlife populations in various parts of the world.

Especially complex are the design, operation, and maintenance of these sources and their different effects on the wildlife environment are constantly being predicted, and estimated. Until finalising energy production sites, project engineers shall use scientific research on the behavioural habits of various organisms. When implementing mitigation plans, project developers have to avoid 'conflict zones' that have extremely high interactions between humans and wildlife. Likewise, villagers are helped to guard against animal attacks or raids while also gaining confidence by the constructive participation of local communities in wildlife-friendly solar fences installed in conflict-prone regions in Assam.³²

METHODS TO REDUCE RISK

1. Under the National Renewable Energy Laboratory, previous research is required for existing project design and operational requirements to be implemented by established mitigation strategies. One of the innovations in reducing the risk of habitat fragmentation and human-wildlife conflict at sites is to use mechanisms on the risk assessment of biodiversity, which enables project promoters, such as strategic environmental impact assessments, to take mandatory precautions (SEIAs).³³
2. Siting guidelines should be established to include a land selection mechanism that is well suited not only to renewable energy generation but to limit environmental and social impacts. *New and Renewable Energy Ministry* can establish guidelines that include criteria for identifying areas of lower impact on site selection. The guidelines are to be established in partnership with state governments, *the Ministry of Environment, Forest and Climate Change, the Panchayati Raj Ministerial, the Ministry of Rural Development, the Ministry of Social Justice and Empowerment, and the Renewable Energy industry*. Such directives would help to reduce the regulatory burden of project clearances, promote rapid and better due diligence

32 A. Sinha, *How Solar-Powered Fences Mitigated Human-Elephant Conflict in Assam*, DOWN TO EARTH (June 12, 2020), <https://www.downtoearth.org.in/blog/wildlife-biodiversity/how-solar-powered-fences-mitigated-human-elephant-conflict-in-assam-71732#:~:text=Solar%2Dpowered%20electric%20fences%20secured, and%20facilitated%20human%20Elephant%20coexistence>.

33 Dimitra G. Vagiona & Xenia Karapanagiotidou, *Strategic Environmental Impact Assessment for Onshore Windfarm Siting in Greece*, 6 ENVIRONMENTS 94 (2019), <https://doi.org/10.3901/environments6080094>.

and enable financial institutions to reduce risk exposure.³⁴

3. State governments must consider defining renewable energy preferential areas, which are considered to be the priority areas for generation and transmission capacity installation based upon RE potential and environmental and social considerations. National agencies such as the National Institute of Wind Energy and the National Institute of Solar Energy on RE potential have built significant planning and technical resources. Several instruments have been developed, such as Solar GIS, Global Solar Atlas, and Wind Atlas. These can be paired with socio-environmental standards to better identify these areas.

In those preferential regions, contaminated and polluted areas such as retired minefields, old thermal power stations, closed sites, former industrial sites, and less productive renewable energy sites such as old wind turbines are needed. These sites have additional economic advantages, such as current transmission systems and vast areas of land, which could be owned alone.

4. When examining animal changes in their movements, experts can look at the behavioural reactions in wildlife to see how they will respond to an energy project, and recommend ways of alleviating foreseeable changes. In this regard, they must consider the consequences of climate change.³⁵

Such approaches can also contribute to the responses and compatibility of potential steps with neighbouring people. Ecological certainty must be an aim of India to improve the renewable energy market, as wildlife journalist Prerna Singh states. In this context, she makes four major suggestions: the need for more de-centered renewable energies using less soil-intensive, environmentally sustainable methodologies; the value of performing environmental and social evaluations; simultaneous diversification into other sources of energy including biogas; and the balance between increasing demand and energy-efficient transmission and distribution means.³⁶

34 *Scaling up Renewable Energy Deployment in India: Pathways to Reduced Socio-ecological Risks*, THE NATURE CONSERVANCY, https://www.tncindia.in/content/dam/tnc/nature/en/documents/india/Scaling_up_Renewable_Energy_Deployment_in_India.pdf (last visited Dec. 28, 2021).

35 R. Chock, *Evaluating Potential Effects of Solar Power Facilities on Wildlife from an Animal Behaviour Perspective*, 3 CONSERVATION SCIENCE AND PRACTICE 319(2020), <https://doi.org/10.1111/csp2.319>.

36 S Shah, *India's Wildlife Crisis, and Why Hope is so Important*, EXCAVATE (Sept. 29, 2017), <https://www.indiaspend.com/indias-wildlife-crisis-and-why-hope-is-so-important-19304/>.

CONCLUSION

We need to take human-wildlife mitigation strategies that prioritise environmental protection and accommodate community concerns to address the contradictions between the growth of the renewable energy industry and biodiversity conservation. Rapid renewable energy expansion is vital to the future energy needs of India and climate change response. Projects that do not have enough sites are likely to hinder the transformation into a sustainable energy future, leading to socio-ecological conflicts. If today we proactively direct renewable energy expansion into less-incidence areas, we will grow renewable energy more than sufficient to fulfil our renewables objectives. The focus of this debate on India's renewable energy industry is the collective human inability to recognise the complex, intertwined and symbiotic relationship between sustainable development and the conservation of biodiversity. The COVID-19 pandemic is a strong warning to the world that human life and our environmental responsibilities are fragile. We need first to accept our indispensable human duty to embark on sustainable energy practises that coexist peacefully with the wildlife around us before we start on our journey into the world of renewable energy.