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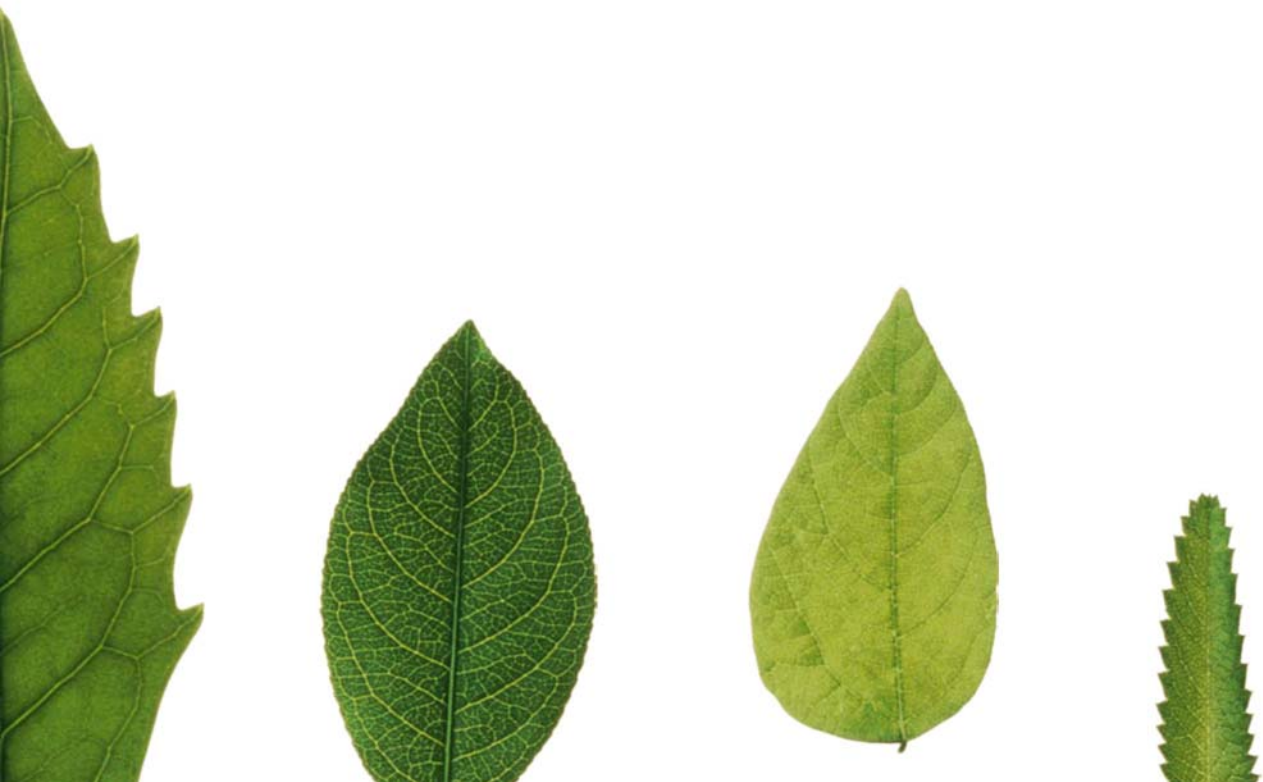

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APPROACHES TO RURAL LAND DISPUTE RESOLUTION MECHANISMS IN THE ETHIOPIAN RURAL LAND LEGISLATIONS: REGIONAL STATES BASED ANALYSIS

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1 INTRODUCTION

Land is the centre of social, economic and political life in most of developing countries and, it is a source of livelihood that is closely linked to community identity, history and culture.[1] It is valuable resource, with economic, political and cultural significance. Individuals, communities, and private sector actors use land for different purpose and seek to benefit from land.[2] Land is a critical asset, especially for the rural poor, because it provides a means of livelihood through the production and sale of crops and other products.[3] In addition to its important production and other economic values, land has political, strategic and cultural significance. Control of land is seen by many governments as critical to influence its populations and control of the nation's economic development and security.[4]

Moreover, the issue of land has not simply remained to be an economic affair but also it is extremely connected with the people's culture and identity. It is an important social asset that is closely connected to community identity, history and culture.[5] Some communities, who may occupy land and other land based resources under their own customary systems of land governance, regard their relationship to those resources as critical to their cultural identity.[6] Those resources compose their environment, their living space, and their patrimony. It is for this reason that some scholars consider that, 'in order to reform land sector; at the outset, it is vital to identify who is buried on that respective land'.[7] This scholars validates that, 'Land tenure and attempts to change or reform it cannot be understood without knowing who is buried on that land, and what sorts of kin groups or other entities claim attachment to those meaning laden graves'.[8] What we can deduce from this is that, the issue of land is highly coupled with the peoples' culture and identity.

Land is a major source of disputes in rural societies in whole over the world and the reasons for this may vary across the world.[9] While land remains largely fixed asset, the demand upon land generally increases with resulting tensions. This possibly creates competition for land and this in turn generates land disputes. All land disputes, no matter how peaceful or violent they may be, produces negative consequences for individuals as well as for society as a whole.[10] For the

1 Joost Van Der Zwan, 'Conflict Sensitive Land Policy and Land Governance in Africa: Peace Building Essentials for Economic Development Practitioners, Strengthening the Economic Dimensions of Peace Building Practice Note Series', (2010) 2 <https://www.international-alert.org/sites/default/files/Economy_Peacebuilding-EssentialsPracticeNote7_EN_2011.pdf>.

2 ibid.

3 Ruth Meinzen-Dick, 'Property Rights for Poverty Reduction?' (2009) DESA Working Paper No. 91, 1 <https://www.un.org/esa/desa/papers/2009/wp91_2009.pdf>.

4 John Bruce and Sally Holt, 'Land and Conflict Prevention: Conflict Prevention Hand Book Series' (2011) 11 <https://www.land-links.org/wp-content/uploads/2016/09/USAID_Land_Tenure_2012_Liberia_Course_Module_2_Land_and_-Conflict_Prevention_Handbook_Bruce_and_Holt.pdf>.

5 United Nations Development Programme, Toolkit and Guidance for Preventing and Managing Land and Natural Resources Conflict - Conflict Prevention in Resource-Rich Economies (2011) <https://www.un.org/en/land-natural-resources-conflict/pdfs/Resource%-20Rich%20Economies.pdf>.

6 ibid.

7 Parker Shipton, Mortgaging the Ancestors: Ideologies of Attachment in Africa (Yale University Press 2009) iv.

8 ibid.

9 Food and Agriculture Organization, Land and Property Rights: Junior Farmer Field and Life Schools Facilitator's Guide modules (2010) <http://www.fao.org/rural-employment/resources/detail/en/c/317992/>.

10 Babette Wehrmann, Land Conflicts: A Practical Guide to Dealing with Land Dispute (Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH 2008) 8 <https://www.commdev.org/pdf/publications/A-practical-guide-to-dealing-with-land-disputes.pdf>.

land management to be sustainable, land disputes settlement must be effective and efficient, and this has a bearing on economic growth and enhances national unity.[11] To this end, well-functioning institutions and land dispute resolution mechanisms can play vital role on improving the development of the sector. It relation to this, the article has examined the approaches to rural land dispute resolution mechanisms utilized in the rural land legislations of Ethiopia by taking the comparative aspect of rural land legislations of Oromia, Amhara, SNNPR and Tigray regional states.

2 BRIEF OVERVIEW ON THE DEFINITION AND CAUSES OF RURAL LAND DISPUTES

Land disputes can be defined as a social fact in which at least two parties are involved, the roots of which are difference in interest over the property right to land; the right to use the land, to manage the land, to generate an income from the land, to exclude others from the land, to transfer it and the right to compensation for it.[12] Thus, from this definition what we can discern is that, land dispute is disagreement between two parties and which can arise due to the existing variance between the two parties to use land and other related rights on land.

Given the economic, political and cultural significance of land, access and rights to land are the key factors that underlay land related tensions and conflicts. There are various conditions that create vulnerability to conflicts, such as acute land scarcity, insecurity of tenure and longstanding land grievances between groups. In essence, scholars mention many causes that perpetuate for land disputes.[13] The first cause that exacerbates land dispute is related with politics. Change in political and economic systems, like nationalization or privatization of land; introduction of (foreign, external) institutions that are not popularly accepted; and political corruption, state capture and land grabbing among others cited as political causes for land disputes. Another cause of land dispute is related with economic aspect. Here, evolution of land markets, increasing land prices, and limited capital markets are those that triggers for land conflicts. Socio-economic factors can be also taken as another cause for land disputes. Poverty and poverty-related marginalization; extremely unequal distribution resources (including land); and lack of microfinance options for the poor are some of the socio-economic factors that brings for land disputes. Another mentionable cause of land dispute is demographic problem. Rapid population growth and new and returning refugees can be a demographic related cause for land disputes. Legal causes could also be taken as another cause for land disputes. Legislative loopholes, legal pluralism, traditional land laws without written records or clearly defined plot and village boundaries can fall under this category. In addition to legal causes, administrative reasons such as, administrative corruption, limited/ non-existent public participation especially in land use

11 Geoffrey Nyamasege and others, 'Alternative Dispute Resolution as a Viable Tool in Land Conflicts: A Kenyan Perspective' (Annual World Bank Conference on Land and Poverty, Washington DC, March 2017) 4 <https://land.igad.int/index.php/documents-1/countries/kenya/conflict-3/530-alternative-dispute-resolution-as-a-viable-tool-in-land-conflicts-a-kenyan-perspective/file>.

12 Wehrmann (n 10) 9.

13 ibid 27 & 28.

planning and demarcation of concession land, and insufficient staff and technical/financial equipment at public agencies can be mentioned as administrative causes for land disputes.[14]

In the present day Ethiopia, shortage of agricultural land in the face of high population pressure and very limited alternative means of livelihood can form one root cause for the present rural land disputes.[15] This can be manifested in the form of boundary conflicts, encroachment and land grab of community owned land, and land transaction related conflicts (inheritance, donation and land rental contracts) and corruption by land administration officers can be mentioned.[16] It is not strange now to see Courts in many parts of the country being congested with land related cases.[17] Hence, effective land administration institutions and land dispute settlement mechanism is vital in order to govern this demanding resource in the country.

3 APPROACHES TO RURAL LAND DISPUTE RESOLUTION MECHANISMS

Approaches or Modalities to resolve disputes in relation to rural land may vary across the countries depending on the land tenure history, culture and stage of development of a given country. Different countries employ different modalities to resolve disputes on rural land. In essence, the modalities employed to resolve rural land disputes can be broadly classified as formal, informal or mixed approaches. The details of the three approaches are dealt herewith.

3.1 Formal Approaches to Rural Land Dispute Resolution Mechanism

Formal land dispute resolution mechanism which is also termed as 'Non-Consensual Land Dispute Resolution Mechanism' is a state based dispute resolution modality which is characterized by the involvement of third party from the side of the state in the decision making process.[18] One of the prominent formal dispute resolution approaches is court litigation. It is the state along with its machinery backed up with all of its substantive and procedural laws, recruited judges and employees which will play a leading role in the resolution of the dispute. In this approach, overall procedures of the litigation up to the decision making process may follow the formal procedural rules laid down by the procedural laws. There will also be a winner and loser and this fact unlikely re-establishes any pre-existing relationship between the parties. In relation to this, formal dispute resolution system therefore always be taken as a method of last resort for dispute resolution.[19] It is also hindered in many countries because of the fact that it creates case overload before the courts.

3.2 Informal Approach to Rural Land Dispute Resolution Mechanism

The main point of distinction between the informal and formal dispute resolution mechanisms mainly rests on the principal actors of the dispute one hand and on the hosting institutions of the dispute on the other. Informal land dispute resolution institutions can be grouped under such generic terms as indigenous, customary or local.[20] These are institutions those have their own rules that shape human

14 ibid.
15 Zerfu Hailu, 'Land Governance Assessment Framework Implementation in Ethiopia' Country Report (World Bank 2016) 40.
16 ibid.
17 ibid.
18 Vinod Agarwal and Bolaji Owasanoye, Alternative Dispute Resolution Methods (United Nations Institute for Training and Research 2001) <https://www.dphu.org/uploads/attachements/books/books_3829_0.pdf>.
19 ibid.
20 Claudia Williamson and Carrie Kerekes, 'Securing Private Property: Formal Versus Informal Institutions' (2011) 54 Journal of Law and Economics, University of Chicago 559, 537-572.

behaviour but are outside of government and are not part of a written legal framework.[21] Sometimes informal land dispute resolution system is termed as 'Consensual Land Dispute Resolution Mechanism'. Informal approaches to rural land dispute resolution are alternative to dispute resolution mechanisms of formal adjudication or litigation. The ADR (Alternative Dispute Resolution) and CDR (Customary Dispute Resolution) system can be categorized under the informal land dispute resolution mechanisms.

Informal land dispute resolution approaches are those conflict resolution strategies which aims to find compromise acceptable to all parties involved, and which can best re-establish peace, respect and friendship between the parties.[22] Negotiation, Mediation, Conciliation and Arbitration can be categorized under the informal land dispute resolution mechanism approaches.

Negotiation is a consultation that refers to the efforts of the parties themselves to resolve an area of contention before resorting to calling in a third party.[23] In the case of negotiation, the parties to the dispute themselves try to resolve their difference through discussion without the need to the moderator third party.

Mediation is a consensual dispute resolution process by which a party brings in a neutral party to help them to find solution to a dispute.[24] The role of the mediator is not judgmental, nor do they take a position on behalf of one party or another.[25] In the case of mediation, the mediator serve as the role of facilitator without having any power neither imposing a decision nor suggesting a solution and hence, solution emanate from the disputant parties themselves. With regard to land disputes, mediation can be conducted by a professional mediator or by a land expert who has received special training in mediation.[26] They are responsible for the entire process of negotiation, first talking separately to each party, and then moderating the negotiation at large.

Conciliation is other face of informal land dispute resolution modality and which refers to the process by which one or more independent person(s) is selected by the parties to bring about a settlement by employing various techniques.[27] The conciliator basically discusses the matters to the issue separately with each of the conflicting parties, with the aim of producing basis for direct talks. The role of a conciliator is a bit larger than the mediator to the extent he/she can suggest a solution on top of its facilitative role that he/she will portray.[28]

Arbitration is a method of dispute resolution mechanism whereby the parties choose conciliator of their own, and submit their case to that party. Arbitration differs in many respects from other informal dispute resolution systems and shares much commonality with judicial dispute resolution mechanism especially when the output is concerned. Just like a court, the third party arbitrator becomes involved in the decision-making process. The only difference in the case of arbitration is that, the third party is jointly selected by the parties in dispute.

3.3 Mixed Approaches to Rural Land Dispute Resolution Mechanism

This is the third facet of rural land dispute settlement scheme and as to this approach, both formal and informal dimensions of rural land dispute resolution machineries serve for the purpose of land dispute

21 ibid.
22 Agarwal and Owasanoye (n 18).
23 Daugherty Rasnic, 'Alternative Dispute Resolution Rather than Litigation? A Look at Current Irish and American Laws' (2004) 4(2) Judicial Studies Institute Journal 187, 182-198.
24 United Nations Development Programme (n 5).
25 Rasnic (n 23).
26 ibid.
27 United Nations Development Programme (n 5).
28 Alessandra Sgbuni and others, 'Arbitration, Mediation and Conciliation: Differences and Similarities from an International and Italian Business Perspective' <www.mediate.com/articles/sgubiniA2.cfm>.

resolution. This hybrid nature helps many gains to access to justice since it makes up for an underdeveloped formal system while offering a system that is both faster and more flexible than a purely state system.[29] Many countries including Ethiopia have developed systems for resolving land disputes that combine informal and their formal institutions. In this approach, courts or other administrative organs intervenes only when the informal dispute resolution machineries fails to achieve the desired result.[30] This mixed approach to land dispute settlement is also established within the rural land legislations of regional states of Ethiopia and the legislations oblige mandatory conciliation for the parties before land cases go to the court of law.

4 APPROACHES TO RURAL LAND DISPUTE RESOLUTION MECHANISMS IN THE RURAL LAND LEGISLATIONS OF ETHIOPIA

Based on the provisions on the FDRE Constitution pertaining to land, the current government of Ethiopia has issued the first rural land proclamation No. 89/1997 in 1997. However, this proclamation was amended and a new federal rural land administration and use proclamation was issued in 2005 which is cited as 'Federal Rural Land Administration and Use Proclamation No. 456/2005'. This proclamation has bestowed the regional state governments the power to enact regional rural land administration and use laws and establish institutions within the regional states so as to implement proclamation No. 456/2005 in the regions.[31] This stipulation is based on FDRE constitution that stipulates regional states to have the power to administer land and other natural resources in accordance with federal laws.[32] After the adoption of the federal framework proclamation No. 456/2005, regional states have enacted their own land administration and use legislations in line with the framework proclamation. Accordingly, this section has dealt the approaches to rural land dispute resolution mechanisms adopted within the rural land legislations of regions, i.e., (Oromia, Amhara, SNNPRS and Tigray) in great detail.

4.1 Oromia Regional State

Oromia regional state has enacted three proclamations before the enactment of the current federal framework proclamation No. 456/2005. After the enactment of the federal framework proclamation, the regional state has issued the current rural land administration and use proclamation No. 130/2007. There were three proclamations enacted in the region before the enactment of the federal framework proclamation No. 456/2005.

Proclamation 56/2002 is the first proclamation issued in the region in order to administer rural land. Article 25 of this proclamation has given due emphases to dispute resolution system. According to sub-article one of this provision, any conflict or dispute that arose on farmland boundaries or land holding shall be resolved by appealing first to local social court and the party who has complaint on the decision given by local social court can further appeal to the ordinary woreda court. Sub-article two of article 25 reads that, the decision is considered as final if the decision given by Woreda court is similar to the social court. But, if

29 Noah Coburn, 'Hybrid Forms of Dispute Resolution and Access to Justice in Afghanistan: Conceptual Challenges, Opportunities and Concerns' (Hamida Barmaki Organization for the Rule of Law Working Paper No.2015/03, 2015) 1.

30 ibid.

31 Article 17(1) (2) of Federal Rural Land Administration and Use Proclamation No. 456/2005.

32 Article 52(2d) of FDRE Constitution, Proclamation No. 1/1995.

the decisions given by local social court and Woreda ordinary court are different, the complainant has the right to appeal to the higher court, whose decision will be final. Thus, from this legal construction what we can deduce is that, Kebele social courts have initial jurisdiction of hearing rural land disputes and Woreda Courts may hear and pass decisions on them as appellate jurisdiction. One mentionable challenge of the proclamation is that it didn't provided the possibility of taking cases to the court of cassation of the region after the second appeal even though there might be basic error of law.

The other two proclamations enacted after issuance of proclamation 56/2002, are proclamation No. 70/2003 and 103/2005 but did not amended article 25 of proclamation concerning rural land dispute resolution system though it did amend many other provisions.

The current rural land proclamation of the region that is enacted in accordance with the federal framework proclamation No. 456/2005 is proclamation No. 130/2007. This proclamation has totally erased the jurisdiction of the social courts that is given for them within the previous three proclamations. The proclamation has introduced another form of conflict and dispute resolution mechanisms by sending the initial jurisdiction of social courts to arbitrary elders.

Article 16 of the proclamation No. 130/2007 is concerning conflict and dispute resolution mechanisms of rural land and this provision reads that; any conflict or disputes arising on land shall be resolved as follows:[33]

(a) First application shall be submitted to the local Kebele Administration;

(b) The parties shall elect two arbitrary elders each;

(c) Chairpersons of arbitration elders are elected by the parties or by the arbitral elders. If not agreed up on shall be assigned by local Kebele administrator;

(d) The Kebele Administration to whom the application is lodged shall cause the arbitrary elders to produce the result of the arbitration in 15 days;

(e) The result given by the arbitration shall be registered at the Kebele Administration, and a sealed copy shall be given to both parties.

(f) A party, who has complaint on the rating elders, has the right to institute his case to the Woreda Court attaching the result of arbitration elders within 30 days as of the date registered by the Kebele Administration.

(g) Woreda Court should not receive the suit if the result given by the arbitration is not attached to it.

(h) The right of further appeal to the High Court is reserved for the party dissatisfied by the decision given by the Woreda Court.

(i) If the High Court reversed the decision rendered by the Woreda court, the dissatisfied party may appeal to the Supreme Court.

(j) The decision given by the Supreme Court shall be the final.

The proclamation has given initial jurisdiction on rural land dispute to arbitrary elders. It gives for the parties a chance of electing two arbitrators each from both sides. The proclamation also mandates the parties a chance to appoint chairperson of arbitrator elders and in cases where the parties fail to agree to appoint a chair arbitrator, s/he shall be assigned by the local Kebele administrator. Another improvement of proclamation is on granting the rights of appeal. There is a clear difference on the right to appeal of land holders between the previous land proclamations and Proclamation No. 130/2007. The previous land proclamations tried to cut the resolution of land disputes within the woreda court level if the woreda court has confirmed the decision of the kebele social courts. But when we come to the current proclamation No. 130/2007, the party can further lodge appeal to the high court of the region even if the woreda court confirms the decision of arbitrary elders. If the high Court reversed the decision rendered by the Woreda

33 Article 16(1) (a-j) of Oromia Rural Administration and Use Proclamation, Proc. No. 130/2007.

court, then dissatisfied party may appeal to the Supreme Court and the decision rendered by the Supreme Court shall be final. Hence, we can say that this proclamation is in harmony with the civil procedure code of the country while entertaining disputes on rural land.

Even if the proclamation has given wide right for the parties, we can grasp some gaps that need further illustration from proclamation No. 130/2007. In the first place, the type of informal dispute resolution modality employed in the proclamation is vague. This is true especially in the English version of the proclamation and article 16(e) of this proclamation has seemingly connoted 'elders council' as 'arbitral tribunal'. But the arbitrary elders who are elected by the disputant parties in no way play the role of arbitrators. They cannot give a binding decision like an award reached on arbitration tribunal rather than facilitative role. So, the term arbitration used in the English version of the proclamation misplaced connotation. In essence, we can equate the role of arbitrary elders with conciliator by taking in to account the role played by the elders. Arbitrary elders guide the parties to reach on a decision even by making proposals for the parties to reach on a terms of settlement.[34] If the result of elders to the dispute is not accepted by the parties then the arbitrary elders report the fact to the kebele administration and kebele administration register the result and send it to Woreda court.[35] Hence, from these facts what we can corroborate is that, the informal dispute resolution modality employed in the proclamation is conciliation rather than arbitration.

In addition, article 16(1)(f) of the proclamation mandates the parities who aren't satisfied by the result of arbitrary elders to initiate a proceeding in a Woreda court within 30 days of the registration of the elders result in the Kebele Administration. But one of the critical questions unanswered here is that, what if the parties do not bring a suit within 30 day time interval? Here, the proclamation has not indicated the effect of non-observance of this period of time.

The other issue that is hidden and needs clarification within the proclamation is the status of elders finding. Does the finding of elders is treated as a report or binding decision? Does the result bind the court? Can the court totally reject it and frame other new issues? Accordingly, the proclamation has not indicated the resultant weight that the elders finding got within the eyes of the court.

4.2 Southern Nations Nationalities and Peoples Region State

Southern Nations Nationalities and Peoples Region State (hereinafter termed as SNNPRS) has issued its first rural land proclamation in 2003. The proclamation was cited as, SNNPRS rural land administration and utilization proclamation 53/2003 and article 25(1) of this proclamation reads as, 'controversies or disputes arising with respect to the boundaries of farmlands, the right of possession, damage caused on the right of possession, etc. shall be settled in accordance with the rule to be issued'. But article 25 of the proclamation No. 53/2003 was silent as to which institutions shall be responsible to resolve rural land disputes, according to which law the disputes are to be resolved, and at the same time the mechanisms to be employed in resolving the disputes was missed. This proclamation was replaced by the current land proclamation No. 110/2007 which is enacted in accordance with the federal framework proclamation No. 456/2005.

Proclamation No. 110/2007 has dealt the manner and organ of resolution of rural land disputes in a much better fashion compared to proclamation No. 53/2003. Article 12 of the proclamation is devoted to rural land dispute resolution mechanism. This article articulates that, parties are expected to submit their dispute to the Kebele land administration and use committee and the committee will let the parties to resolve their dispute by negotiation and arbitration to be chosen by the parties to the dispute.[36] Initially the proclamation obliges the parties to submit their case to kebele land administration committee rather than kebele administrations as to that of Oromia. As to

34 Article 18(10) of Oromia Region Rural Land Administration and Land Use Regulation, Reg. No.151/2013.

35 ibid Art 18(11).

36 Article 12(1) of SNNPRS Rural Land Administration and Use Proclamation, Proc. No. 110/2007.

the proclamation, the role of Kebele land administration committee is not to entertain the dispute and dispose it of thereby rather it should try to persuade the parties to resolve their dispute amicably through negotiation. If the dispute is not resolved by negotiation, the matter would be referred to the arbitration channel composed of the elderly people. Like to the rural land proclamation of Oromia, the English version of proclamation No. 110/2007 has adopted arbitration channel as the initial body to resolve land dispute but the corresponding Amharic version has seemingly employed and replaced the wording of the English version with mediation and conciliation. The wording of the Amharic version seems sound compared to the arbitration channel of the English version because the elders' council elected by the disputant parties in no way play the role of arbitration.

Another demarcation within the proclamation No. 110/2007 is that, it has not clearly set out the time limit that the arbitrary elders needs to dispose the case and this fact may create unnecessary delay on the disposition of the case in the informal land dispute resolution machineries. In addition, the proclamation has not set out the timeframe that the aggrieved party on the disposition of elders finding brings the case to the woreda court. Hence, this fact can raise question like that, does it is to mean that the proclamation has mandated the party dissatisfied by the finding the elders to make appeal at any time? Here, the silence of the proclamation is unclear and can hamper effective justice system.

Another stipulation of article 12 of proclamation No. 110/2007 is the jurisdiction of regular courts. This provision dictates that, anyone who is not satisfied by the decision made by the elders shall appeal the case to woreda court.[37] Sub-article 3 of the same provision also discloses that, anyone who does not agree with the decision made by the woreda court, shall appeal the case to the high court. If anyone who doesn't agree with the decision made in the high court, shall appeal the case to the Supreme Court and the decision made at this stage shall be final.[38]

What we can deduce from this provision is that, the jurisdiction of the regular courts under proclamation No 110/2007 are only in the form of appellate jurisdiction. None of the regular courts can have a first instance jurisdiction over rural land disputes. Apparently, due to the economic and cultural importance of rural land, proclamation No. 110/2007 has given sufficient room for the parties in order to lodge their case. The proclamation has not intended to cut disputes on rural land in short rather it has given the parties to bring appeal twice even if this is contrary to the civil procedure law of the country that grants only one appeal right on civil cases if the previous decision is confirmed by the next avenue court. Hence, the whole message of article 12 of the proclamation is that, the case initiated at Kebele level can be taken on appeal even up to the Supreme Court of the region. Finally, if it is believed that there is fundamental error of law on the decision made by the supreme court of the region then the case shall be seen by regional Supreme Court of Cassation.[39]

4.3 Amhara Regional State

The Amhara regional state has proclaimed its first rural land administration proclamation No. 46/2000 in July 2000. Article 22 of the proclamation is dedicated to the process of presentation of petitions relating to rural land disputes and the processes of their resolution and hence has provided three alternative ways of resolving rural land disputes. Accordingly, it has given mandate for the parties in order to select any of the three alternative mechanisms to resolve their land disputes alternatively but not hierarchically.

The first mechanism that the proclamation has provided was amicable resolution which is enshrined under article 22(1) (a) of it. Under this mechanism, the

37 ibid Art 12(2).

38 ibid Art 12(4).
39 ibid Art 12(5).

parties to the dispute themselves have to resolve their disputes without involving neutral third parties. The second alternative dispute resolution mechanism provided under the proclamation under article 22(1) (b) is, resolution of the dispute through the involvement of neutral third parties who are chosen by the parties. The third alternative mechanism that the proclamation provided for in article 22(1) (c) is dispute resolution through judicial organs.

Following the enactment of the federal framework proclamation No. 456/2005, the Amhara regional state has issued a current rural land proclamation, entitled: 'The Revised Amhara National Regional State Rural Land Administration and Use Proclamation No. 133/2006'. The proclamation even gives recognition for customary rules and norms for the resolution of rural land disputes. This is one of mentionable feature of the proclamation on resolution of rural land dispute. The proclamation made compulsory for the parties to first try to resolve their disputes through arbitration. Article 29(1) of the proclamation provides that, any civil dispute that may arise in connection to landholding or use right shall firstly be seen and resolved in arbitration. The message of this provision is that, no civil dispute arising from, or connected with, the holding or use of rural land may be submitted to a regular court before it is submitted to custom based arbitration and the result of such arbitration is known. In this provision, one can see inconsistency between the Amharic and English version. The Amharic version of this article provides for reconciliation whereas the English version provides for arbitration. The wording of the Amharic version is sound compared to the English one because, the elders tribunal selected by the disputant parties cannot have the role and mandate that will be exercised by the arbitration channel which gives binding decision on the parties case. So, the wording of the English version is mistranslated connotation.

The proclamation has also indicated the way for the parties how to select the arbitrators. Article 29(2) of the proclamation provides that, the selection of arbitrators and the process of the resolution agreement may be executed by the agreement of the parties based on the customary procedures of each surrounding.

A year and three months after promulgation of proclamation No. 133/2006, an amendment proclamation No. 148/2007 cited as: 'The Revised Amhara National Regional State Rural Land Administration and Use Determination Amendment Proclamation' is issued. The main reason that necessitated the amendment of the proclamation is the contradiction of proclamation 133/2006 with other laws with respect to resolving disputes and adjudicating civil matters that are created in relation with possession and use of rural land thereof.[40] Article 33 of the proclamation No. 148/2007 which is captioned with pending cases provides that, civil matters related with possession and use of rural land which have been examined under the jurisdiction of the Kebele social courts and that have not been resolved upon the consent of the parties shall be transferred to relevant regular courts and thereby get the final decision.

The region has also issued rural land regulation which is cited as, 'Amhara National Regional State Rural Land Administration and Use System Implementation Regulation No. 51/2007' that clearly indicates the manner of rural land dispute resolution system. The regulation provides that, all civil disagreements and disputes emanating from or relating to land possession and use right shall primarily be resolved amicably between the parties.[41] In order to realize amicable resolution of rural land disputes arising between landholders and users; the regulation obliges the Kebele land administration and use committee so as to establish tribunals of elders elected popularly in every community and surrounding.[42] In addition, the regulation also mandates the selection of elders and the process of reconciliation followed by them should have to abide with the customary norms of the society.[43] In essence, the regulation attempts to make dispute settlements reached through elders as final and binding and no new suit may be initiated nor an appeal lodged in relation to a land related dispute

40 Preamble of the revised Amhara National Regional State Rural Land Administration and Use Determination Amendment Proclamation, Proc. No. 148/2007.
41 ibid Art 35(1).
42 ibid.
43 ibid Art 35(2) [emphasis added].

resolved through tribunals of elders.[44] Article 35(4) of the regulation provides mechanism when a party institutes his/her case to the respective woreda court of law. As per this sub-provision, where the dispute is not resolved at this level, it may be possible to bring a petition to the respective woreda court within thirty days from the date of termination of resolving effort in agreement. But, here the proclamation has not indicated the effect, if the aggrieved party is unable to bring the case to the woreda court within this period of time. Basically, the regulation has limited the right of the individuals to visit the next avenue courts. As we know, individuals in the elders tribunal are non-lawyers and this paves a way for them to act opportunistically, like favouring their relatives and the one on their side. Since this is the case, the regulation has mistaken by opting to cut land disputes in the elders tribunal level. One can believe that, it is not easy for the tribunal to grasp and entertain the legal provision of the region's land laws since they are non-lawyers and this fact fundamentally hampers the effective justice system.

Article 37(1) of the regulation provides that people of a given locality by holding meetings and after discussions, resolve land related disputes in accordance with the customary norms of that specific locality. However, article 37(2) of the regulation provides condition for the implementation of sub-article one of this provision and thus, the agreement envisaged may only be put into implementation if the chosen customary norms do not conflict with regional or federal laws. This sub-provision of the regulation is important for protecting the land rights of women, children and other groups in rural societies of the region.

Above all, the Amhara rural land administration and use proclamation and regulation proclaims to the effect of establishment of a council at each sub-Kebele under the supervision of the Kebele land administration committee. This is one of typical achievement of the land legislations of the region compared to other regional states. These elderly councils elected from each sub-Kebele can primarily dispose any rural land related disputes.

44 ibid Art 35(3).

4.4 Tigray Regional State

The first rural land administration proclamation was issued before other regional states of the country has enacted their own legislations. The proclamation is cited as proclamation No. 23/1997 which was issued following the issuance of federal rural land administration proclamation No. 89/1997. The proclamation has not effectively addressed the dispute resolution system on the rural land and was amended by proclamation 55/2001. Like to its predecessor proclamation, the proclamation 55/2001 also didn't address the resolution of disputes arising on rural land.

After the enactment of the federal framework proclamation No. 456/2005, Tigray regional state has issued rural land administration proclamation No. 97/2006 which is in line with the tenets of the federal framework legislation. Unlike the two preceding proclamations, proclamation No. 97/2006 did address the issue of dispute resolution in relation to rural land. Article 26 of the proclamation provides that, where a dispute emanates in relation to the right of possession of rural land, the concerned parties shall endeavour to resolve the dispute amicably. Where the dispute could not be resolved amicably, it shall be resolved either by elders chosen by the parties or those appropriate bodies at various levels. Where a dispute is resolved either through elders or through an appropriate body, the parties shall be bound by the resolution without prejudice to the right to lodge an appeal to a court that would have had an appellate jurisdiction to review the case on appeal. The message of the proclamation is that, in the case of dispute over rural land, first effort must be taken to resolve it amicably or through agreement as between the parties. But if the dispute is not resolved as between the parties, the next avenue to resolve dispute is through the involvement of elders or other appropriate body may be kebele administrators or woreda land administrations organs.

But what the provision of the proclamation has lacked clarity concerning rural land dispute resolution is that; the provision does not make the involvement of elders in resolving rural land disputes compulsory. As to the readings of sub-article (1) of Article 26 of the proclamation, it would be up to the disputing parties to either take their dispute to elders of their choice or

to an appropriate body if their dispute could not be resolved amicably as between themselves. Neither does the proclamation make it compulsory for disputing parties to take their cases to the appropriate governmental body in the event that their endeavour to amicably resolve them have failed. Thus, the proclamation has failed to specify the dispute resolution organs hierarchically.

Another rural land administration and use proclamation of the region that come to picture after the enactment of the federal framework proclamation No. 456/2005, was proclamation No. 136/2007. Article 28 of the proclamation provides that; when disputes arise in relation to rural land use, first efforts shall be made by the parties to resolve the dispute amicably; and where endeavours to have the dispute resolved amicably fails, they shall have to be resolved the usual ways of the surrounding through elders or through reconciliation.[45]

Where the parties have failed to reach agreement on either of the alternatives provided under article 28(1) of the proclamation, sub-article two of the same provision has provided an alternative mechanism for the parties to get remedy for their land dispute. Where either of the parties or both of them do not reach agreement on the alternative in sub-article (1), first the parties shall have to lodge their case to the Kebele rural land administration committee and the committee should have to pass decision on the matter. The parties dissatisfied by the decision of the Kebele rural land administration committee may, within 15 days, submit an appeal to the Woreda Court and the Court shall decide the case in 30 days. When the Woreda Court confirms the decision of the kebele rural land administration committee, its decision shall be final. Where the court either amends or totally alters the decision of kebele rural land administration committee, the party dissatisfied by the decision may lodge an appeal to the zonal high court and the decision of the zonal high court shall be final.[46]

Another and the recent rural land administration proclamation in the region is proclamation No. 239/2014. This proclamation is the revised rural land administration and use proclamation that come to picture by amending the previous proclamation No. 136/2007 and its implementation regulation No. 48/2007. The proclamation has not incorporated rural land dispute resolution mechanism like that of its predecessor proclamation No. 136/2007 rather the region has enacted a separate proclamation that dictates the manner of rural land dispute resolution mechanism. This proclamation is termed as, 'A Proclamation to Provide the Power and Duties of Kebele Rural Land Adjudication Committee Proclamation No. 240/2014'. As to this proclamation, kebele rural land adjudication committee can have first instance jurisdiction on civil disputes that arose on rural land.[47] The proclamation provides that, before entertaining the case, the committee should have to order the parties to resolve their case through negotiation or mediation by the help of third parties. If the parties has reached consensus through negotiation or mediation, they should have to notify their consensus to kebeles' rural land adjudication committee within thirty days in a written form.[48] But if the parties have not reached on consensus, then they can lodge their case to the kebeles rural land adjudication committee.

Proclamation No. 240/2014 further established procedural setup that the parties to the dispute and the committees should have to follow while entertaining their case. For example the proclamation indicates that the parties pleading should have to incorporate all material facts and required evidences (eye witness or documentary evidences) while lodging their case to the committee.[49] The proclamation in a similar way paves a way for the defendant party in order to submit his/her defence for the claim submitted by the plaintiff.[50] The proclamation further incorporated the procedure that endows the defendant

45 Article 28(1) of the Revised Tigray Regional State Rural Land Administration and Use Proclamation No. 136/2007.

46 ibid Art 28(2) (a)(b)(c).

47 Article 17(1), a Proclamation to Provide the Power and Duties of Kebele Rural Land Adjudication Committee of Tigray National Regional State, Proc. No. 240/2014.

48 ibid Art 17(3) (a)(b).

49 ibid Art 18(3).

50 ibid Art 18(4).

party in order to raise preliminary objection for the statement of claim instituted by the plaintiff. For example, if the committee has no jurisdiction or if the subject-matter of the suit is res-judicata or if the claim is to be settled by arbitration or if the suit is barred by limitation or if party claiming the suit is not qualified/has no interest for acting in the proceedings then the party can raise these issues as a preliminary objection for the committee.[51] But if the preliminary objection is not based on necessary evidence and if the party has raised objection that shouldn't be raised under preliminary objection then the committee can pass decision on the objection and asks the defendant party whether or not he/she admits on the claim.[52] If the defendant denies the allegation of the plaintiff then the committee orders the plaintiff to call his/her evidences in support of the allegation and if the evidences of the plaintiff has confirmed the allegation of the plaintiff then the committee give similar chance for the defendant to call his/her defence evidences in order to disprove the allegation of the plaintiff.[53] After fulfilling all these and other procedural process, the committee can give decision within a short period of time.[54]

If the party is not satisfied by the decisions of rural land adjudication committee then he/she can appeal the case to woreda court within fifteen days after the rendition of the decision by the committee.[55] But, the proclamation has not shown the effect of none observance of this timeframe to bring an appeal. If the woreda court fully confirms the decision of the committee, then nobody can lodge further appeal to other level of court. However, if there is basic error of law on the decision rendered, then that party can bring the case to the cassation bench.[56] If the woreda court fully or partially reverses the decision of the rural land adjudication committee, the aggrieved party can bring his/her appeal to the zonal high court within fifteen days. But, the proclamation has not indicated from when counting of this fifteen day starts. In addition to this, the proclamation has not also specified the effect of none observance of this period of time. The decision rendered by the zonal high court should be final and no party can claim appeal from the decision of zonal high court.[57] But this does not bar the party from lodging his claim to the court of cassation if there is basic error of law.

Under this proclamation No. 240/2014, one can notice many essential facts which are not incorporated within the previous repealed proclamations and regulations. The proclamation has not only incorporated rural land dispute resolution system hierarchy but also it has depicted all of the necessary procedures that the party and kebele rural land adjudication committee should have to follow while entertaining their case. The proclamation has clearly incorporated the required procedures that the party and the committee should have to follow starting from institution of suit to the enforcement of the decision rendered by the committee. The proclamation has also established an incentive mechanism for kebele rural land adjudication committee. As to the proclamation, rural land adjudication committee can have a per diem for the duty they perform in their office.[58]

The proclamation has also avoided the discrepancy that was made on the previous proclamation No. 136/2007 and its implementation regulation No. 48/2008. The discrepancies/confusion within the proclamation and regulation emanated in relation to the organ that have initial jurisdiction on rural land dispute resolution is concerned. On one hand, article 28 of proclamation No. 136/2007 gives kebele rural land administration committee to have first instance jurisdiction on rural land dispute settlement whereas the implementation regulation No. 48/2007 under article 48(2) of it mandates Kebele rural land dispute adjudication committees to have initial jurisdiction in all civil disputes arising from rural land. This has made discrepancy between the proclamation and the regulation. But proclamation No. 240/2014 has avoided this discrepancy by fully mandating kebele rural land adjudication committee to have first instance jurisdiction on civil disputes arising on rural land.

51 ibid Art 18(5).
52 ibid Art 18(6).
53 ibid Art 18 (7).
54 ibid Art 23(1).
55 ibid Art 25(1).
56 ibid Art 25(6).
57 ibid Art 25(5).
58 ibid Art 32.

5 MAKING COMPARISON ON THE MODALITIES OF RURAL LAND DISPUTE RESOLUTION MECHANISMS WITHIN THE REGIONAL STATES

All of the regional states share some common features on the approach of rural land dispute resolution mechanisms. The first thing that makes most of the regional states similar on the dispute resolution mechanisms is that, they give priority to informal dispute resolution mechanisms before the parties go to the Kebele rural land dispute adjudication committee or court. The rural land proclamations of the three regions namely Oromia, Amhara and SNNPRS give the matter either to the informal dispute resolving organ, most notably reconciliation if the parties to the dispute cannot reach agreement amicably or through negotiation. For example arbitration councils in Amhara region and conflict mediators or arbitrary elders in Oromia and SNNPR state are mandated to look into land disputes before land disputes are taken to Woreda courts. But Tigray regional state has established a separate committee called rural land dispute adjudication committee by a proclamation No. 240/2014 that can hear civil disputes on rural land before aggrieved party goes to the regular court.

The other thing that the regional states rural land proclamations share in common pertaining to rural land dispute resolution mechanism is that; they have given the power to resolve rural land disputes to special administrative organ. For example, kebele administrators and rural land administration committees at the kebele level are endowed with rural land dispute resolution functions. Basically, some of the basic explanations are due to the proximity of these parties to the area of the dispute. The presumption is that, the committees are more close to the place where the land under dispute is situated and this makes the disputed matter clear and understandable to the committee in order to give effective justice for the parties. The committee members are believed to be in a better position to understand the nature of the dispute. In addition to this, most rural land disputes by their very nature involve a dispute in fact rather than dispute in law. These factual issues can easily be settled by a body that has a closer know-how on the disputed fact. Accordingly, the more the venue of the committee becomes close to the place where the disputed land is situated, the less complicated will be the matter and more clear and understandable to the committee.

Though there are similarities in the modalities of rural land dispute resolution mechanisms in the regional states, there are also differences on the legal frameworks of the regional states pertaining to dispute resolution mechanism. When we see their difference in relation to the organ that renders first instance jurisdiction; Oromia rural land use and administration proclamation No. 130/2007 assigned first instance jurisdiction for conflict mediators/elders by snatching it from social courts, Amhara regional state rural land administration proclamation No. 133/2007 gives it for arbitration council, and conflict mediators in SNNPR state like that of Oromia regional state are empowered by the regions' rural land proclamations. But when we see this in the case of Tigray regional state, the region's state councils has established a committee called Kebele rural land adjudication committees by a proclamation that fully prescribes the power and duties of the committee while entertaining the case. The proclamation fully incorporates all of the procedural matters that the party and the dispute adjudication committee should have to follow starting from initiation of the suit to the enforcement of the decision reached by the committee. Not only this but also the proclamation has depicted the manner of appointment of the kebele rural land dispute adjudication committee members, the qualification that mandates an individual to assume position for the committee, the term of office of the committee members and the way how the committee members get awareness on resolution of the parties case.[59] The proclamation has also established an incentive mechanism for the committee members while they perform their official duty imposed by the

59 See (n 47) Art 10, 11, 12 and 31.

proclamation.[60] Thus, this can be a good lesson for other regions of the country in order to make dispute resolution system on rural land more effective.

Another point of disparity on the dispute resolution mechanism within the regions is on granting appeal right for the parties. For example, rural land proclamation of SNNPR has given the parties to bring their appeal twice which is not supported by the civil procedure code of the country. As it is indicated under article 12 of this proclamation, the case that commenced at Kebele level can be taken on appeal even up to the Supreme Court of the region.

But, when we see article 25(1) (6) of Tigray regional state rural land adjudication committee's proclamation No. 240/2014, parties dissatisfied by the decision of the Kebele rural land adjudication committee may, within 15 days, submit an appeal to the Woreda Court. When the Woreda Court confirms the decision of the kebele rural land adjudication committee, its decision shall be final. Where the court either amends or totally alters the decision of kebele rural land adjudication committee, the party dissatisfied by the decision may take an appeal to the zonal high court and the decision of the zonal high court shall be final. Hence, from this we can deduce is that, the proclamation has given only one appeal rights as of right.

When we see the scenario in the Amhara regional state, article 35(3) of the regional state's rural land administration and use regulation No. 51/2007 provides that; dispute settlements that is reached through elders by the choice of the parties is final and binding. No new suit may be initiated nor an appeal taken in relation to land related disputes resolved through tribunals of elders. The party may only institute an appeal to the next avenue where an effort to resolve dispute is not resolved at this level. This regulation has limited appeal rights of the parties though land is taken as backbone for the economic well-being of mass population of the region.

When we see the set-up of Oromia regional state, the proclamation has followed the normal procedural process in line with the civil procedure code. The right of further appeal to the high court is reserved for the party dissatisfied by the decision given by the Woreda Court. If the high court of the region has reversed the decision rendered by the Woreda court, then the aggrieved party may appeal to the Supreme Court. This is to mean that, if the high court of the region has confirmed the decision of the woreda court then the aggrieved party has no right to bring another appeal rather than lodging the case to cassation division if the case has contained basic error of law.

6 CHALLENGES FOR RURAL LAND DISPUTE RESOLUTIONS MECHANISMS IN ETHIOPIA

6.1 Challenges Related with Land Laws

All of the rural land administration proclamations and their implementation regulations have given first instance jurisdiction on rural land disputes to the informal dispute settlement organs. But the laws have not illustrated how these informal dispute settlement organs are constituted and what procedures that the organs and parties to follow while entertaining land disputes. It is only Tigray regional state that has depicted the manner of appointment of the kebele rural land dispute adjudication committee members, the qualification that mandates an individual to assume position for the committee, the term of office of the committee members and the way how the committee members get awareness on resolution of the parties' case.[61]

In addition to these, federal and regional land laws enacted prior to 2008 are attempted to address land issue of highland or agricultural areas. The country has considerable pastoral lands for which the current regional land laws are inapplicable. Regional states have not yet issued pastoral land legislation in support of these areas. Pastoral lands are administered by

60 ibid Art 32.

61 See (n 47) Art 10, 11, 12 and 31.

customary laws. There are no separate laws in response to administration and dispute resolution mechanism of pastoral lands. This needs to be reconsideration to have an effective dispute resolution mechanism both in the highland and pastoral areas.

6.2 Institutional Based Challenges

Rural land dispute resolution organs especially at the kebele level such as rural land administration committees, rural land dispute adjudicating committees and kebele administrators may not effectively handle cases because they are non-paid institutions. Thus, to have an effective dispute resolution system, it is imperative for the law to make adjustments including supporting these organs with adequately trained and full time paid experts and making arrangements to train them on the substantive and procedural elements of the law. Establishing an incentive mechanism for these organs in order to effectively handle rural land cases is also crucial to have an effective land dispute resolution system.

Another institutional based challenge in the kebele level that hampers effective rural dispute resolution also lays on rural land administration/adjudication committees themselves. In most of the regional states, rural land administration/adjudication committees are structured within the kebele level only and for this reason, it is not easy for the parties to find these organs. In order to alleviate this problem, the law should have to establish an alternative mechanism. This might be achieved for example to establishing land administration committees even at sub-kebele level like the (Amhara and Tigray regional state) rather than establishing them only at kebele level for the parties to easily submit their case and to avoid their unreasonable embarrassment.

6.3 Existence of Double Holding Certificates within the Same Plot of Land

Double holding certificate is also one of the pivotal problems for the effective dispute resolution mechanism in the current days. There is disguised land sale in most of the regional states of the country especially in areas where adjacent to cities. Hence, the seller and buyer can have a land holding certificate within the same plot of land. The author of this article on a research he conducts on Oromia regional state has found that double holding certificate is a big challenge to have an effective dispute resolution system.[62] The buyer and/or the person who take the land on rental bases lobby the concerned stakeholders in order to get landholding certificates. Even they give bribes in order to get the landholding certificates and this fact is highly challenging the courts while investigating the rightful possessor of a certain plot.[63]

6.4 Challenges Related with Gender

Most of the rural land proclamation and their implementation regulations are silent with regard to the participation of women under the informal dispute resolution organs. It is believed that participation of women is crucial for them to safeguard their land rights and paves a way for them to have a say on the derogatory customary practices. The land laws and their implementation regulations in Oromia, Amhara and SNNPRS regions have not specified quotas for women under the informal dispute resolution machineries. It is only Tigray regional state that has reserved necessary quota for women in the informal dispute resolution organs. Article 14(1) of the proclamation No. 240/2014 mandatorily reserves fifty percent of the position for women under the rural land adjudication committee. Even sub-article two of the same provision obligates that, it is mandatory for at least one woman to follow every trial that the committee conducts at the time of disposing the dispute.

62 Solomon Girma and Temesgen Solomon, 'Legislative Based Analysis on the Implementation of Rural Land Laws in Oromia Region' (2019) 10 Beijing Law Review 822, 806-828.

63 ibid.

7 CONCLUSION AND THE WAY FORWARD

Disputes in relation to rural land in most regional states of Ethiopia are entertained by informal institutions before they are taken to court of law. It is mandatory for the parties in order to take their dispute to this informal dispute resolution institution before they go to court of law. Thus, land disputes can be taken to the court of law (i.e. woreda courts) by the aggrieved party in the form of appeal.

Even though rural land administration and use proclamations and their implementation regulations in Ethiopia have given first instance jurisdiction on land matters to the informal dispute resolution institutions, but the laws have not illustrated on how these informal institutions are constituted, which body is responsible to organize them, and what procedures that the institutions and parties to the dispute follow while entertaining land cases. It is only Tigray regional state that has enacted a proclamation that clearly shows how rural land adjudication committee within the kebele level are recruited or appointed, what procedure they would follow while entertaining their duties, their term of office and an incentive mechanism for their office duties.

The other fact that thwarts effective rural land dispute resolution mechanism in Ethiopia is the absence of separate land legislations for the highland and pastoral areas. There are no separate laws that regulate land dispute resolution mechanism in the pastoral areas and this fact is hampering the development of the sector. Federal and regional states have not yet issued pastoral land legislation in support of these areas and land related issues in the pastoral areas are prone to customary laws.

In addition to this, challenges related with institution especially in the informal land dispute resolution machineries like the establishment of the institutions at the kebele level only, the level of expertise of stakeholders in these institutions, and absence of incentive mechanism for these organs is another factor that significantly challenge the effective implementation of land dispute resolution mechanism in the country. Challenges related with gender and existence of double landholding certificates in Ethiopia can also be mentioned as one of the critical challenges that are impeding effective land dispute resolution mechanism in the country.

Therefore, to have an effective land dispute resolution mechanism, the following gap filling recommendations should be devised.

i. Rural land proclamations of regional states have devised informal dispute resolution machinery for rural land disputes before the parties resort their case to the woreda court. But, some of the regional states land proclamations has not indicated the time frame that this organs dispose the case. For example, the SNNPR rural land proclamation No. 110/2007 does not clearly set out the time limit that the arbitrary elders channel needs to dispose the case. In addition, the proclamation has not set out the period of time that the aggrieved party on the disposition of elders finding brings the case to the woreda court. Hence, the proclamation should to show this timeframe clearly.

ii. Some regional states rural land proclamations have depicted a provision for the aggrieved party by the result of arbitrary elders to initiate a proceeding in a Woreda court. For example, when we take the Oromia regional state rural land administration and use proclamation No. 130/2007, it mandates the aggrieved party to initiate a proceeding in a Woreda court within 30 days of the registration of the elders result in the Kebele administration. In addition, when we take the Amhara regional state rural land administration regulation No. 51/2007, where the dispute is not resolved at the level of arbitral assembly, it may be possible for the parties to bring a petition to the respective woreda court within thirty days from the date of termination of resolving effort in agreement. But, both of the Oromia and Amhara regional states rural land legislations have failed to indicate the effect of failure to submit the petition within this period of time. Thus, it is imperative to specify the effect of non-

observance of this period of time clearly within the proclamations and regulations governing rural land.

iii. In some regional states for example, (Oromia and SNNPRS) the informal dispute resolution organs are not institutionalized at the kebele level. If there is dispute on rural land then the party to the dispute make an application for the kebele administration as of Oromia and kebele land administration committees as of SNNPR. After the application is made to these organs, they help the parties so as to select individuals of their choice that facilitates the resolution of the dispute. Thus, this is to mean that, individuals that help the conciliation process are selected by the parties but they are not institutionalized in the kebele level. It is only Tigray regional state that has institutionalized informal land dispute resolution organs at the kebele level. Therefore, to make the informal land dispute resolution mechanism more effective in the kebele level, it is imperative to institutionalize these organs in the kebele level like to that of Tigray regional state.

iv. To have an effective informal rural land dispute resolution mechanism, it is essential for the regional states to support informal land dispute resolution institutions with adequately trained and full time paid legal and land administration experts so as increase their awareness. Establishing an incentive mechanism for these organs is also vital to have an effective informal land dispute resolution system. The other regional states namely (Oromia, Amhara and SNNPR) can craft a good lesson from Tigray regional state that has established an incentive mechanism for the rural land adjudication committees for their office duties.

v. Rural land legislations should have also reserve mandatory quotas for women in the informal land dispute resolution organs. Rural land legislations (i.e. Oromia, Amhara and SNNPR) states are silent with regard to participation of women in the informal land dispute resolution institutions. It is believed that participation of women in the informal dispute resolution organs paves a way for them to have a say on the derogatory customary practices. Hence, it is essential for the regional states rural land legislations to show necessary quotas for women under the informal land dispute resolution institutions.

ARTICLE

THE EVOLUTION OF THE UNFCCC ENVIRONMENTALLY SOUND TECHNOLOGY DEVELOPMENT AND TRANSFER FRAMEWORK

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INTRODUCTION

The 2015 United Nations Climate Change Conference held in Paris, France, is widely lauded as an epochal stride in the race against climate change. The Paris Agreement has been described as 'historic, durable and ambitious'.[1] In many ways, the applause is justified. At the very least, there was a chink in the South – North divide which had hitherto prevented concrete undertakings by Parties. Now, both developing and developed States have committed themselves to hold the 'increase in the global average temperature to well below 2°C above pre-industrial levels' and strive for the 1.5°C mark.[2] This chink notwithstanding, the dichotomy remains. It remains in the glaring developmental disparity between the global South and North; it remains in the different emphases of Parties as to how climate change mitigation and adaptation is to be achieved; it remains in the South's insistence for 'more' commitments from industrialized States and the North's unreadiness to yield; most importantly, it remains in the conflicting normative underpinnings of Parties' positions.[3] No doubt, the Paris Agreement (PA) is a product of compromise. But, what sort of compromise? A 'compromise based on solidarity' or a 'compromise induced by power'?[4] The UNFCCC Environmentally Sound Technology development and transfer (EST transfer) framework and its chequered history is an apposite case study to explore the kind of compromise at play in the global climate regime.[5]

The Intergovernmental Panel on Climate Change (IPCC) describes EST transfer as a 'broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change amongst different stakeholders … (comprising of) the process of learning to understand, utilise and replicate the technology, including the capacity to choose it and adapt it to local conditions and integrate it with indigenous technologies'.[6] At minimum, IPCC's description of EST transfer provides a vision of what such transfer should entail. It is a transfer that should transcend hardware transfer, facilitate sustainability, emphasize capacity building, adaptability and replicability of ESTs, and leverage a polycentric cooperative approach to EST development and transfer. In this article, I demonstrate how the UNFCCC EST transfer framework has historically failed to satisfy the above objectives. Identifying five phases of evolution of the UNFCCC EST development and transfer framework, I seek to unmask the continuing normative and structural flaws which have made EST development both inequitable and ineffective. In part II, I attempt to situate TWAIL in

1 Fiona Harvey, 'Paris Climate Change Agreement: The World's Greatest Diplomatic Success' (The Guardian, 14 December 2015) <https://www.theguardian.com/environment/2015/dec/13/paris-climate-deal-cop-diplomacy-developing-united-nations>.

2 Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) UNTS 54113 art 2(1)(a).

3 As shown later in this article, compared to the relatively clear divide between developed and developing States at the 1992 United Nations Conference on the Environment and Development (UNCED), the divide is currently less defined. See Jane Bulmer, Meinhard Doelle and Daniel Klein, 'Negotiating History of the Paris Agreement' in Daniel Klein and others (eds), The Paris Agreement on Climate Change: Analysis and Commentary (Oxford University Press 2017) 50-3.

4 Karin Mickelson, 'Leading Towards a Level Playing Field, Repaying Ecological Debt, or Making Environmental Space: Three Stories About International Environmental Cooperation' (2005) 43 Osgoode Hall Law Journal 137.

5 The 'EST development and transfer framework' is used in this article interchangeably with 'transfer regime'. It is distinct from its more restrictive usage under Article 10 of the Paris Agreement.

6 IPCC, Methodological and Technological Issues in Technology Transfer (Cambridge University Press 2000) 15-6.

the EST Transfer context. I reflect on the evolution of the UNFCCC EST regime, commonalities and differences in the different phases of evolution, and the extent to which the current structure recycles previous arrangements in part III. In part IV, I conclude by highlighting key lessons from the evolution of the transfer framework.

2

EST TRANSFER AND TWAIL: AN OVERVIEW

TWAIL has no defined or generally accepted methodology, approach or argument.[7] Rather than being a 'monolithic collegium',[8] it is more like 'a chorus of voices that blend though not always harmoniously, in attempting to make heard a common set of concerns'.[9] This 'common set of concerns' forms the core of TWAIL as a theoretical tradition and the band, however elastic, that links its proponents. At the core of the TWAIL orientation is the acknowledgment that hegemony and domination in international relations and law is a present and continuing reality.[10] TWAIL scholars, therefore, deconstruct the history, structure and process of international law from a third world perspective, with the aim of giving 'meaning to international law in the context of the lived experiences of the ordinary peoples of the third world in order to transform it into an international law of emancipation'.[11]

The terms 'developing states', 'global south' and 'third world', used interchangeably here, need to be unpacked given their currently contested status. While the Group of 77 and China (G77) purport to represent the interest of the 'global South' in the climate change regime, it is now contestable if there is any such functional union. For example, while there was a relatively effective collegium of G77 countries at the 1992 UNFCCC negotiations, years leading to the 2015 Paris Agreement saw the segmentation of the group into autonomous negotiating entities with distinct interests.[12] Particularly, the economic resurgence of Brazil, South Africa, India and China (BASIC States) have raised the question of the correctness of categorizing these countries as 'developing'. While these contentions are questionable, more so as the determination of 'development' is primarily anchored on a 'growing' macro-economy with little reference to the quality of life of the citizenry, the developing – developed categorization as used here is more nuanced. The distinction is employed as what Rajagopal has described as a 'counter-hegemonic discursive tool'.[13] In this article, the global south is representative of an 'alternative and oppositional stance' for a 'fundamental rethinking of international relations'.[14] In this sense,

7 Antony Anghie and BS Chimni, 'Third World Approaches to International Law and Individual Responsibility in Internal Conflicts' (2003) 2 Chinese Journal of International Law 77.

8 Obiora Chinedu Okafor, 'Newness, Imperialism, and International Legal Reform in Our Time: A Twail Perspective' (2005) 43 Osgoode Hall Law Journal 23.

9 Karin Mickelson, 'Taking Stock of TWAIL Histories' (2008) 10 International Community Law Review 355; Luis Eslava and Sundhya Pahuja, 'Between Resistance and Reform: TWAIL and the Universality of International Law' (2011) 3 Trade, Law and Development 103.

10 Makau Mutua, 'What is TWAIL?' (2000) 94 Proceedings of the American Society of International Law Annual Meeting 31; Karin Mickelson, 'Rhetoric and Rage: Third World Voices in International Legal Discourse' (1998) 16 Wisconsin International Law Journal 353.

11 BS Chimni, 'The Past, Present and Future of International Law: A Critical Third World Approach' (2007) 8 Melbourne Journal of International Law 499.

12 For the PA negotiation rounds, however, about twelve diverse 'factions' emerged. These alliances are in accordance with developing countries' 'changing political and socio-economic conditions'. See Bulmer, Doelle and Klein (n 3) 50 – 53.

13 Balakrishnan Rajagopal, 'Locating the Third World in Cultural Geography' (2000) 15 Third World Legal Studies 1.

14 Mickelson, 'Rhetoric and Rage: Third World Voices in International Legal Discourse' (n 10).

countries, like the BASIC States, are not automatically 'Southern' by reason of their geographical location, history or economic status.[15] For example, the status of BASIC States as 'third world' is dependent on the extent to which they reproduce and reinforce the hegemonic ideals of the North. Ideals built on neoliberalism, pre-eminence of the market, and what Adrian Parr describes as the wrath of capital.[16] This approach, while still potentially qualifying entities in TWAIL's traditional domains (Africa, Asia and Latin America) as 'third world', also allows for the bolstering of third world ranks either through the inclusion of entities in the 'traditional north' or the exclusion of 'backsliding' States in the 'traditional South'. The counter-hegemonic and alternative narrative spoken of here should not be mistaken for singleness of position, but rather diverse positions unified by a non-capitalistic paradigm.[17] To be clear, the argument against the centrality of the market does not mean that the market is irrelevant. Rather, as Polanyi has argued, the economy is a socially embedded reality and the 'social good' not the market should be in the driving seat of the economy.[18]

TWAIL, as applied here, is even more important in EST development and transfer discourse. While ESTs are not climate change's silver bullet, they are essential to both climate mitigation and adaptation. In Figueres's words, humanity's 'survival depends on our improvement of technology'.[19] Should such technologies be subject to the normal workings of the market and intellectual property (IP) rules? The situation is even direr given the necessity to make ESTs fitting to the peculiarities of places. According to Shabalala, developing countries 'do not present sufficient markets for private actors to develop technologies to serve their needs; and where technologies exist and are protected by IP, they do not present sufficient markets for right-holders to sell or licence their technologies'.[20] And one might be quick to indict multinational companies (MNC) in the 'global north', it is worth querying how 'global south' MNCs have fared. While emerging economies like China and India are becoming increasingly dominant in the global EST industry,[21] there appears to be no marked difference in their approach to EST development and transfer.[22] But does the emergence of China and India mean they should have the same level of responsibility as 'developed States'? Is there a middle category between the 'South' and the 'North' that such emerging economies can occupy?

15 Balakrishnan Rajagopal, 'International Law and Its Discontents: Rethinking the Global South' (2012) 106 Proceedings of the American Society of International Law Annual Meeting 176.

16 Adrian Parr, 'The Wrath of Capital: Neoliberalism and Climate Change Politics – Reflections' (2015) 62 Geoforum 70.

17 Following Wright, capitalism as used here refers to an economic system influenced by class relations and relentlessly driven by profits. See Erik Olin Wright, Envisioning Real Utopias (Verso 2010) <https://www.aacademica.org/erik.olin.wright/46.pdf>.

18 Karl Polanyi, The C^reat Transformation (2nd edn, Beacon Press 2001) <https://inctpped.ie.ufrj.br/spiderweb/pdf_4/Great_Transformation.pdf> 46 – 47.

19 Christiana Figueres, former Secretary General to the United Nations Framework Convention on Climate Change (UNFCCC) quoted by Catherine Saez, 'Human Survival Depends On Shared Technology, Says New UN Climate Chief' (Intellectual Property Watch, 2010) <https://www.ip-watch.org/2010/09/03/human-survival-depends-on-technology-says-new-un-climate-chief/>.

20 Dalindyebo Shabalala, 'Technology Transfer for Climate Change and Developing Country Viewpoints on Historical Responsibility and Common but Differentiated Responsibilities' in Joshua D Sarnoff (ed), Research Handbook on Intellectual Property and Climate Change (Edward Elgar 2016) 172.

21 Brett Relander, 'Investing in Green Technology' (Investopedia 2019) <https://www.investopedia.com/articles/investing/040915/investing-green-technologythe-future-now.asp>.

22 See generally Frauke Urban, 'China's Rise: Challenging the North-South Technology Transfer Paradigm for Climate Change Mitigation and Low Carbon Energy' (2018) 113 Energy Policy 320.

The relevance of considering the history of the EST transfer regime under the UNFCCC is aptly captured by B.S. Chimni, who notes that 'the road to the future … winds its way through the past'.[23] The unmasking that TWAIL's emphasis on history and continuity of trends fosters, is crucial in climate change scholarship. Attempts to narrate the history of the climate regime, however, often divorce the regimes from their larger socio-political context. Such historical accounts take, as their starting point, either the 1972 Stockholm Convention or the 1992 Rio Convention.[24] This trend is, however, not unique to climate change scholarship, as other areas of international law have been criticized for 'cherry-picking' history, divorcing them from their broader contexts and equating western history to global history.[25] Crucial to the TWAIL agenda is the unmasking of presumptions and representations that underpin the global governance structure – in this case, the UNFCCC EST transfer regime. Part III applies TWAIL's historical approach to take a more extensive look at the evolution of the UNFCCC EST transfer framework.

3

THE EVOLUTION OF THE UNFCCC TECHNOLOGY TRANSFER FRAMEWORK

Although the EST regime has evolved in form over the years, I argue that common trends have been replicated over its various evolutionary phases. Examples include the developed-developing States dichotomy and right - responsibility based differentiation debate. These, in turn, have resulted in similar substantive results across the various phases. I have grouped the evolution of the UNFCCC EST transfer into five phases. The period considered covers years leading to the making of the 1992 UNFCCC to the establishment of the technology framework under the 2015 Paris Agreement. It is worth noting that the phases considered below are not insular. The different periods bleed into one another. They have, however, been phased in the manner below to capture major initiatives designed to drive EST development and transfer. Whereas not all transfer initiatives are covered, the underneath phases represent key initiatives from pre-1992 period to shortly after the 2015 Paris Agreement. The regime continues to evolve. This article, in part, provides a normative frame with which the ongoing evolution can be studied in future works.

3.1 The Pre-1992 UNFCCC Phase

The 'oil crisis' and the failed attempt to enact an International Code of Conduct on the Transfer of Technology (ICCTT), provides a start-point for the analysis of the evolution of the UNFCCC technology transfer framework. These two events occurred between the 1960s and 1980s, a period marked by the 'independence' of colonized States and a gradual sensitization of the world to the consequences of North-induced global environmental degradation. The argument is made below that the features of these two events have, to varying extents, characterised the various phases of the EST transfer regime, including the current framework.

Attending the independence of colonized States in the 1960s was their realization of the need to have control over the natural resources within their territories, particularly, oil and gas. Prior to this, developed States, through multinational oil companies (MNOCs), dominated these industries.[26] The

23 Chimni, 'The Past, Present and Future of International Law: A Critical Third World Approach' (n 11) 499.

24 See for example Daniel Blobel and others, United Nations Framework Convention on Climate Change Handbook (Climate Change Secretariat (UNFCCC) 2006) <https://www.ecologic.eu/de/1911> 17-20.

25 Chimni, 'The Past, Present and Future of International Law: A Critical Third World Approach' (n 11) 500-502.

26 'OPEC/ : Brief History' (OPEC 2020) <https://www.opec.org/opec_web/en/about_us/24.htm>; Ian Mann, 'Shaky Industry That Runs the World' (archive.vn, 2010) <http://archive.vn/ZOHoz>.

formation of OPEC and the recognition of the permanent sovereignty of States over their natural resources by the United Nations(Resolution 1803(XVII)), along with the heavy dependence of the North on fossil fuel from developing States, set the stage for the oil-rich developing States to leverage their control over oil and gas supply as a tool of political persuasion of the North. This has been referred to as the 'oil weapon'.[27] Developing countries, at various times, including 1956, 1967 and 1973, employed the 'oil weapon'.[28] The effects of the 1973 oil embargo exemplify the far-reaching implications of these actions and the eventual influence they had on the North.[29]

Incidences like the 1973 embargo led to the establishment of the Energy Coordinating Group (ECG) under the umbrella of the Organization for Economic Cooperation and Development (OECD) in 1974.[30] The ECG's central mandate was '…(the) shift from a seller's market to a buyer's market by the enforcement of oil-saving measures and the switch to other energy sources'.[31] As reiterated in the enabling instrument of the International Energy Agency (IEA) (which replaced the ECG), OECD countries agreed to undertake 'long-term cooperative efforts on conservation of energy, on accelerated development of alternative sources of energy, on research and development in the energy field…'[32] Hence, recourse to 'renewable energy' and 'energy efficiency', two of the most prominent categories of ESTs, became central to OECD member states' energy policy.

The above, in part, qualifies for a vital but often untold part of the history of how renewable energy gained its prominence in the North, and invariably, the world. Economic imperatives actuated the actions of the West in respect to sustainable technologies, not environmental concerns. The need for energy security informed the recourse to renewable energy and efficiency practices.[33] This economic underpinning remains extant today, although the more altruistic rhetoric of environmental sustainability is harped on. Take, for example, Germany's energy transition programme – energiewende – of the six reasons given for the transition, five pertained to the German economy.[34] On green economy, the publication on the programme notes that 'Germany … is positioning itself as an innovator in green technologies … exports made up for 65 percent of German PV production in 2013 … and the target is 80 percent in 2020'.[35] The point is not that the economy cannot benefit from sustainable energy, but that if the economy is given a 'first-line-charge' right, the environment, and by extension, humanity, will end up holding the shorter end of the stick. To frame the development and management of ESTs in the context of economic

27 Defined as 'any manipulation of price and/or supply of oil by exporting nations with the intention of changing the political behavior of the consumer nations'. See Hanns Maull, 'Oil and Influence: The Oil Weapon Examined: Introduction' in G Treverton (ed), Energy and Security (Gower Publishing 1980) 3.

28 The 1956 Suez Canal crisis, 1967 Suez Carnal blockade, 1973 Arab-Israeli war and the perceived anti-Arab stance of western countries resulted in Organization of Arab Petrol Exporting Countries (OAPEC) cutting back supplies of oil to the west. See generally Sanam S Haghighi, Energy Security (Hart Publishing 2007).

29 ibid 54.

30 The ECG later became the International Energy Agency (IEA). See Richard Scott, The History of the International Energy Agency 1974 – 1994: Origins and Structure, vol 1 (OECD 1994) 47-8.

31 Henri Simonet, 'Energy and the Future of Europe' (1975) 53 Foreign Affairs 454.

32 Agreement on an International Energy Program (as amended 30 November 2007), Preamble IEP.

33 Winston Churchill is reputed to have remarked that 'on no one quality, on no one process, on no one country, on no one route and on no one field must (the United Kingdom) be dependent. Safety and certainty in oil lie in variety and variety alone'. Quoted in Daniel Yergin, The Prize: The Epic Quest for Oil, Money and Power (Simon and Schuster 1999) 160.

34 Craig Morris and Martin Pehnt, The German Energiewende Book (Heinrich Boll Stiftung 2017) <https://lifeaftercoal.org.za/wp-content/uploads/2017/07/Morris-et-al-German-Energy-Transition.pdf>5.

35 ibid 11.

dominance and GDP growth invariably impacts how such technologies are dealt with. The stronger the economic objective, the lesser the willingness to have a non-market-oriented transfer structure.

Another development that attended the 'independence' of developing States in the 1960s is the formation of the G77 in 1962.[36] At 'independence', previously colonised States realised that political autonomy in itself does not translate into development.[37] They indicted the North-centric international order which had been designed, without the input of the South, to advance the interest of the North.[38] Hence, they called for a reformed international order which guarantees the South's right to development.[39] According to Doudou Thiam, this right mandates the tearing down of practices, institutions and rules on which unjust and exploitative international economic relations are based.[40] Subsequently, the Declaration on the Establishment of a New International Economic Order (NIEO) was made in 1974.[41] The Declaration, in part, demanded access to the 'achievements of modern science and technology' and the creation of indigenous technologies in accordance to procedures suited to their economies.[42] To operationalize the NIEO Declaration, the UNGA adopted a programme of action.[43] Item IV of the Programme requires that efforts must be made to formulate and draft the International Code of Conduct on the Transfer of Technology (ICCTT).[44]

The negotiation of the ICCTT was extensively impacted by the developed – developing States dichotomy. While the G77 proposed a mandatorily couched code which covers all forms of technology transfer regardless the status of parties (e.g. private or public bodies), developed States proposed a non-binding instrument with clear distinction between parties.[45] Again, there was an all-out contradiction in the normative bases of both groups' negotiating positions. While the North advocated for a regime based on liberal economic principles, 'the South considered technology as the common heritage of all mankind'.[46] The position on intellectual property

36 g77, 'Origin of The Group of 77' (2020) <http://www.g77.org/paris/history/pdf/historyG77.pdf>.

37 Mutua (n 10) 34.

38 See generally M Rafiqul Islam, 'History of the North–South Divide in International Law: Colonial Discourses, Sovereignty, and Self-Determination' in Carmen G Gonzalez and others (eds), International Environmental Law and the Global South (Cambridge University Press 2015) <https://www.cambridge.org/core/books/international-environmental-law-and-the-global-south/history-of-the-northsouth-divide-in-international-law-colonial-discoursessovereignty-and-selfdetermination/CF4988C74A64BEA8FCB9E4CC363B92EF> 23 – 49. See also BS Chimni, 'Customary International Law: A Third World Perspective' (2018) 112 American Journal of International Law 1.

39 Daniel J Whelan, '"Under the Aegis of Man": The Right to Development and the Origins of the New International Economic Order' (2015) 6 Humanity: An International Journal of Human Rights, Humanitarianism, and Development 93.

40 Doudou Thiam's (former Senegalese Foreign Minister) Address to the UNGA, UNGA Off. Records. 21st Sess., 1414th Plenary Meeting, September 23, 1966 cited in Whelan, ibid.

41 See, UN General Assembly Resolution 3201 (S-VI), Declaration on the Establishment of a New International Economic Order, 1 May 1974, UN Doc A/RES/S-6/3201 (NIEO Declaration).

42 ibid para 4(p).

43 UN General Assembly Resolution 3202 (S-VI), Programme of Action on the Establishment of a New International Economic Order, 1 May 1974, UN Doc A/RES/S-6-3202.

44 For a comprehensive commentary on the history of the ICCTT, See generally Surendra J Patel, Roffe Pedro and Abdulqawi A Yusef (eds), International Technology Transfer, the Origins and Aftermath of the United Nations Negotiations on A Draft Code of Conduct (Kluwer Law International 2000) <https://lrus.wolterskluwer.com>.

45 Dennis Thompson, 'An Overview of the Draft Code' in Patel, Pedro and Yusef (eds), ibid 52-8.

46 Joel Davidow and Debra Miller, 'Antitrust at the United Nations: A Tale of Two Codes' in Patel, Pedro and Yusef (eds), ibid 86.

rights (IPRs) is also telling. While the South contended stridently that IPRs are constricting development and technology transfer, the North took the position that IPRs and the monopolies they engender are 'necessary evil to foster invention'.[47] The attempt of the South to negotiate technology transfer outside the aegis of the World Intellectual Property Organization (WIPO) was also resisted by the North.[48] Importantly, although in one breath calling in aid the autonomy of Transnational Companies (TNCs) vis-à-vis the right to transfer technologies, developed States represented the interests of the TNCs in the negotiations.[49] And, although it failed, the final draft of the ICCTT represented, in the main, the position of developed States, with developing States either having to forego their positions or water them down for acceptability.[50] However, even the compromises made by developing States had to be pro-economy before they could be accepted.[51]

The above features substantially characterise the EST transfer regime. This is not surprising, as the same normative bearings of States informed the positions taken at the negotiation of the climate regime. This reinforces the argument earlier made that developed States' climate initiatives are primarily market centric. This conclusion would have been different if the existential implications of climate change had influenced a position different from the one taken by developed States in the more generic ICCTT negotiation. Put together, the two pre-1992 events considered above form the foundation of the subsequent phases of the global EST transfer regime. A position well explained by Derrick Bell's Interest Convergence Dilemma Theory.[52] Although proffered in a context of the critical race movement, the theory can be aptly applied to the climate change discourse. Bell argues that 'the interest of blacks in achieving racial equality will be accommodated only when it converges with the interests of the whites'.[53] Applied in the climate change context, the dilemma implies that until the North's economic and hegemonic agenda is served, it generally lacks the will to contribute to non-economic causes.[54]

3.2 Pre-Expert Group on Technology Transfer Phase (1992 – 2000)

The 1992 UNFCCC, the Rio Declaration and Agenda 21 provide the 'gold standard' for global EST transfer, a standard which has been increasingly fallen short of. The concept of differentiation was most evident in this era. The UNFCCC, and subsequently, the Kyoto Protocol, generally delineated States Parties into Annex

47 ibid 86-7.

48 ibid 88.

49 As noted elsewhere, in the ICCTT negotiations '…most highly industrialized States, … either identified with the needs of suppliers (TNCs) or responded to their lobbying'. ibid 86. See also, UNCTAD Secretariat, 'The Rationale for Regulatory Action' in Surendra J Patel, Pedro Roffe & Abdulqawi Yusuf (eds), International Technology Transfer: The Origins and Aftermaths of the United Nations Negotiations on a Draft Code of Conduct (Kluwer Law International 2001) 3-16.

50 Davidow and Miller (n 46) 84-85.

51 For example, while the South clamoured for a binding instrument, the North want a non-binding instrument. In reaching a consensus on a 'non-binding' ICCTT, developed countries agreed with OPEC nations to completely exclude intergovernmental cartels from being caught by the anti-trust code under the Restrictive Business Practices (RBP) Code. See ibid. 83.

52 Derrick A Bell, 'Brown v. Board of Education and the Interest-Convergence Dilemma' (1980) 93 Harvard Law Review 518.

53 ibid 6, 8.

54 A similar point was made in respect of the overall acceptance and popularity of the Montreal Protocol. Harris notes that the U.S industry was the first to develop substitutes for ozone depleting substances, and the economic incentives that industry had, were some of the reasons for the success of the Montreal Protocol. See Paul Harris, 'Collective Action on Climate Change: The Logic of Regime Failure' (2007) 47 Natural Resources Journal 195. 211.

I, Annex II and non-annex States.[55] While Annex I included developed States and other countries described as economies-in-transition (EIT), annex II was primarily made up of developed States.[56] In the EST transfer context, this distinction is important, as it helps to understand the obligations agreed to by States under the climate framework. Art. 4(1)(c) of the Convention starts by mandating all States to promote and cooperate in the development and diffusion of ESTs. But as noted above, Art. 4 (5) of the Convention more particularly provides that 'the developed country Parties and other developed Parties included in Annex II shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to (ESTs)'. Further, under the UNFCCC, there is a clear linkage between EST transfer and finance and it explicitly makes the effective implementation of developing States' commitments under the Convention contingent on the effective implementation of developed country parties' financial and technology transfer commitments.[57] Article 4(3) and (5) of the UNFCCC is the product of the same contestations between developing and developed States which characterized and, arguably, led to the failed attempt to enact the ICCTT.

The Rio Declaration and Agenda 21 are not binding instruments. However, they provide more clarity and specificity on the EST transfer commitments of parties under the UNFCCC.[58] Principle 9 of the Rio Declaration admonishes states to co-operate in strengthening endogenous capacity building, in improving scientific understanding and enhancing the development and transfer of technologies. Chapter 34 of Agenda 21 provides captures the understanding of State Parties on EST transfer in Rio.[59] The difficult and tactful melding of different positions of developing and developed States is evident in various paragraphs of Chapter 34. For example, paragraph 34.14 states that the objectives of Chapter 34 include the promotion, facilitation and financing of EST transfer on concessional and preferential terms and the protection of IPR. Paragraph 34.14 embraces the insistence of developing States on the transfer of technology on 'concessional and preferential terms',[60] even as developed States pressed for the protection of IPRs.[61] Agenda 21 attempts to provide workable solutions in response to these seemingly irreconcilable differences. The proposed initiatives include:

i. The development and linkage of international information networks through regional clearing-houses.[62]

ii. Provision of incentives by developed countries to companies, purchase of patents to transfer to developing countries and the prevention of the abuse of IPRs.[63]

iii. Establishment of international ESTs research centers.[64]

iv. The promotion of joint ventures between suppliers and recipients of technologies.[65]

55 See generally UN Framework Convention on Climate Change (UNFCCC), New York, 9 May 1992, 1771 UNTS 107, art. 4, Annexes I & 2; Kyoto Protocol to the United Nations Framework Convention on Climate Change, Kyoto, 11 December 1997, 2303 UNTS 162, arts. 1(7) & 11(2).

56 See UNFCCC (n 55) Annexes I and II.

57 See UNFCCC (n 55) art. 4(3), (5) & (7).

58 It has been argued that although unbinding, the Rio Declaration has 'the same potential as did the Universal Declaration of Human Rights', which (UDHR) later became deemed as part of customary international law. See RS Pathak and Akshay Jaitly, 'Rio Declaration - Economic Issues for Developing Countries' (1992) 1 Review of European Community & International Environmental Law 267.

59 Agenda 21, para 34.6 states that the chapter is 'without prejudice to specific commitments and arrangements on transfer of technology to be adopted in specific international instruments'.

60 See for example Statement of HE Mr Ali Hassan Mwinyi, President of the United Republic of Tanzania, Report of the United Nations Conference on Environment and Development, Statements Made by Heads of State or Government at the Summit Segment of the Conference, A/CONF.151/26/Rec.1 (Vol. III).

61 See United States Submission, Report of the United Nations Conference on Environment and Development, A/CONF.151/26 (vol. IV).

62 Agenda 21, Report of the UN Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, UN Doc A/CONF.151/26, para 34.15.

63 ibid para 34.18(e).

64 ibid para 34.21.

65 ibid para 34.28.

The non-actualization of the lofty aspirations of Chapter 34 cannot be divorced from the divergence between developed and developing States on the principles that should underpin EST transfer. For example, while developing States at UNCED emphasised the relationship between development and environment and the responsibility of the North to do away with policies which impede the transfer of ESTs, western countries emphasised market policies, with Germany and the United Kingdom particularly referencing the then ongoing negotiations on the General Agreement on Tariffs and Trade (GATT), and subtly tying aid to 'policies which encourage inward investment, including …the principles of good government'.[66] It was in the light of this unresolved conflict that the Secretary-General of UNCED, Maurice Strong, noted that while there was an agreement on technology transfer, there was unclarity on the principles of the agreement.[67]

Indeed, after the coming into force of the UNFCCC in 1994, the unreadiness of State Parties to implement the agreement, principles and action plan on EST transfer became apparent. It is worth noting that in the phase under consideration, the SBSTA was the body overseeing EST transfer initiatives. This is instructive, as the Subsidiary Body on Scientific and Technological Advice (SBSTA) is only an advisory rather than an implementing body. Thus, the focus of the UNFCCC in this phase was essentially consultative. Issues that recurred in the various COP Decisions on EST transfer included the need for Annex II countries to include in their national communications measures taken for the transfer of technology; the need for technology needs assessment (TNA) of developing countries; the need for the development of international technology information centres (clearing houses); and the central role of the private sector in facilitating transfer.[68] There was, however, a subtle shift from emphasising provision of information by home and host States to the development of the local absorptive capacity of the host state at COP 4 in Buenos Aires.[69] COP 4 led to the development of the Buenos Aires Plan of Action and the establishment of a consultative process under the SBSTA.[70]

Despite these activities, little was done as regards implementation. This can be gleaned from SBSTA's compilation of parties' submissions in 1999[71] and report on the status of the consultative process (submissions from parties) in 2000.[72] For example, the position paper of the G77 mirrored, substantially, where developing countries were in 1992.[73] As in 1992, developing countries were still clamouring for inventories of ESTs from developed States, establishment of a technology transfer clearinghouse, provision of financial assistance, the initiation of pilot projects and the establishment of a dedicated fund within the financial mechanism to aid capacity building and effective transfer in the year 2000.[74] Again, the developed – developing States tension was evident in this phase. For example, while the G77, in their 2000

66 See the submissions of the Heads of Governments/ States of India, Malaysia, Tanzania, Vanuatu and G77 (n 60) 1-3, 230-3, 187, 208 and 152-5. respectively. See also the submissions of Germany and Great Britain. See (n 61) 28 and 27.

67 See Statement of Maurice F Strong, Report of the United Nations Conference on Environment and Development, A/CONF.151/26 (vol. IV).

68 See Decision 12/CP.1, FCCC/CP/1995/7/Add.1; Decision 7/CP.2, FCCC/CP/1996/15/Add.1; Decision 9/CP.3, FCCC/CP/1997/7/Add.1; Decision 4/CP.4, FCCC/CP/1998/16/Add.1 and Decision 9/CP.5, FCCC/CP/1999/6/Add. 1.

69 See Decision 4/CP.4, FCCC/CP/1998/16/Add.1, paras 1 and 4.

70 See ibid Decision 1/CP.4, ibid & Decision 4/CP.4, para 9.

71 SBSTA, 10th Sess., (1999) Development and Transfer of Technologies – Submissions from Parties: Part One, FCCC/SBSTA/1999/MSC.5.

72 SBSTA, 13th Sess., (2000) Development and Transfer of Technologies – Status of the Consultative Process (Submission of Parties) <https://unfccc.int/resource/docs/2000/sbsta/misc04.htm>.

73 See, Paper No. 3: Group of 77 and China, ibid.

74 ibid.

communication, noted that the Clean Development Mechanism (CDM) under the 1997 Kyoto Protocol 'shall not be seen as a mechanism to implement Article 4.5 of the Convention',[75] the United States portrayed the CDM as providing 'important incentives to enhance the transfer of ESTs and the implementation of Article 4.5'.[76] Again, the G77 demanded the establishment of a Transfer of Technology Mechanism with institutional and funding sub-mechanisms;[77] a proposal which did not garner the support of developed States. As noted earlier, one of the emphases of the COP decisions between 1995 and 2000 was the conduct of TNAs in developing States. There were, however, no commensurate implementing initiatives to assessed needs. For example, in 1998, the SBSTA conducted a survey of technology needs with an extensive participation of developing States.[78] The survey highlighted energy, transportation, agriculture, forestry and coastal zone management as the key areas of needs of surveyed countries.[79] As will be seen later, successive TNAs conducted in subsequent years made similar findings, indicating that little or nothing was done in actioning the TNA findings made.

3.3 The Expert Group on Technology Transfer Phase (2001–2007)

COP 7 which was held in Marrakesh in 2001 is generally believed to be another landmark in the international climate regime. The Marrakesh Accords, which included extensive decisions on capacity building and EST transfer, were some of the stand-out features of the Conference. More importantly, however, is the establishment of the Expert Group on Technology Transfer (EGTT) and adoption of the Framework for Meaningful and Effective Actions to enhance the Implementation of Article 4(5) of the Convention (Framework).[80] The terms of reference of the EGTT included analysing and identifying 'ways to facilitate and advance technology transfer activities'.[81] The Expert Group was to report to the SBSTA, and its progress and continued relevance were to be appraised after five years (COP 12).[82] Arguably, the framework established under COP 7 marked the clearest transition in the focus of the global EST transfer regime. It is worth recalling that under the UNFCCC and Rio 21, there was a recognition that while developing countries must develop absorptive capacities and enabling environment, a responsibility lies with developed States to ensure access to and availability of ESTs. Under the COP 7 Technology Transfer Framework, however, it was stated under the header 'Overall Approach', that 'the successful development and transfer of ESTs and know-how requires a country-driven, integrated approach, at a national and sectoral level'.[83] Consistent with this focus, the Framework emphasised TNA, technology information, enabling environments, capacity building and mechanisms for technology transfer, as its five components.[84]

The argument here is not as to the inappropriateness of the identified components, but more on the reversal of roles. Indeed, while reference was made to the 'supportive' role to be played by developed countries, these roles were, at best, only passively framed.[85]

75 ibid.
76 SBSTA (n 72).
77 ibid.
78 SBSTA, 8th Sess., 1998, Development and Transfer of Technologies – Technology and Technology Information Needs Arising from the Survey of Developing Country Parties, FCCC/SBSTA/1998/INF.5.
79 ibid.
80 See Decision 4/CP.7, FCCC/CP/2001/13/Add.1, paras 1 & 2.
81 ibid para 2. See also, 'Terms of Reference to Expert Group on Technology Transfer', Appendix to Decision 4/CP.7, FCCC/CP/2001/13/Add.1.
82 ibid.
83 'Framework for Meaningful and Effective Actions to Enhance the Implementation of Article 4, Paragraph 5, of the Convention', Annex to Decision 4/CP.7, FCCC/CP/2001/13/Add.1, para 2.
84 ibid paras. 3-22.
85 For example, the Framework stated that '…… Developed country parties … are urged to facilitate and support the needs assessment process, recognising the special circumstances of least developed countries'. ibid para 5 & 6.

Although the Framework nibbled at various provisions in Chapter 34 of Agenda 21, it marked a substantial move away from Agenda 21's lofty aspirations. For instance, it was silent on the initiatives to be taken by developed States to get around the patent barrier which Chapter 34 clearly articulated. Worth noting also is that while financial support was referenced under different components, it was not made a stand-alone component. When it is appreciated that when the G77 proposed the technology transfer mechanism in 2000, it identified funding as one of two sub-components,[86] the ancillary role given to it under the Framework becomes more suspect. Despite the foregoing, the EGTT phase signalled a step away from the inertia of the pre-EGTT phase. Significantly, in attempting to meet Chapter 34's recommendation of the establishment of an information clearinghouse, an online platform - TT: CLEAR – was developed in 2001. Like the Framework, however, TT: CLEAR is another example of the watering down of the intentions of Chapter 34. The platform contains more information on the institutional working of the UNFCCC and its specialized bodies, than it does on information on 'available technologies, their sources, their environmental risks, and the broader terms under which they may be acquired'.[87]

The EGTT's most substantial achievement is, perhaps, the standardization of the TNA process for developing countries.[88] Further to this, the first synthesis report on the technology needs of developing States was published in 2006.[89] It is necessary to point out the similarities in the findings reached in the 1998 TNA survey and 2006 synthesis report. For example, both inquiries indicated energy, transportation, industry, agriculture and forestry as the primary mitigation sectors identified by developing countries.[90] Again, finance and information were ranked as the major barriers in both reports.[91] The second and third synthesis reports compiled in 2009 and 2013 respectively made similar findings as the 1998 and 2006 findings.[92] This informs a couple of conclusions. One is that, as noted earlier, it shows that little or no action was taken on identified needs, hence, the recurrence of the same needs over a span of about fifteen years. Two, it unmasks as incorrect, the representation that TNAs are more pivotal to EST transfer than the responsibilities of developed States. Again, like the pre-EGTT phase, no substantial progress was made to facilitate actual transfer of ESTs during the EGTT phase. This said, however, one of the phase's bright spots is the recognition of the need to more effectively link the technology and financial mechanisms. Hence, it was emphasised in COP 13 in Bali that the Global Environment Facility (GEF), 'as an operating entity of the financial mechanism of the Convention, should provide financial support for the technology transfer framework'.[93]

3.4 The Poznan Strategy Phase (2007–2020)

While the EGTT was reconstituted for five more years in 2007,[94] a more momentous development was the establishment of the Poznan Strategic Programme in

86 SBSTA (n 72).

87 See 'About TT: CLEAR' <http://unfccc.int/ttclear/about>. See also, Agenda 21, para 34.15.

88 See R Gross and others, Conducting Technology Needs Assessments for Climate Change (UNDP 2004). See a more recent version – Sarwat Chowdhury and others, Handbook for Conducting Technology Needs Assessment for Climate Change (UNDP 2010).

89 Synthesis Report on Technology Needs Identified by Parties not Included in Annex 1 to the Convention, SBSTA, 24th Sess, FCCC/SBSTA/2006/INF.1 (2006) (First Synthesis Report).

90 See Framework for Meaningful Actions (n 83). See also ibid 31.

91 ibid.

92 See generally, Second Synthesis Report on Technology Needs Identified by Parties not Included in Annex 1 to the Convention, SBSTA, 30th Sess, FCCC/SBSTA/2009/INF.1 (2009) (Second Synthesis Report) & Third Synthesis Report on Technology Needs Identified by Parties not Included in Annex 1 to the Convention, SBSTA, 39th Sess, FCCC/SBSTA/2013/INF.7 (2013) (Third Synthesis Report).

93 Development and Transfer of Technologies under the Subsidiary Body for Scientific and Technological Advice, Decision 3/CP.13, UNFCCCOR, 2007, FCCC/CP/2007/6/Add.1, 12 at 14.

94 ibid para 3.

Technology Transfer (PSP) by the GEF.[95] The PSP was the result of Decision 4/CP.13 reached in Bali requesting the GEF to, 'in consultation with interested Parties … elaborate a strategic programme to scale up the investment for technology transfer to help developing countries…'[96] Further to this mandate, the GEF designed the PSP where it highlighted 'three funding windows' to be supported under the programme – TNAs, piloting priority technology projects, and the dissemination of GEF experience and successfully demonstrated technologies.[97] The GEF committed about $50 million to these windows, with the technology demonstration (pilot) component allocated four-fifth of the fund.[98] Given its limited fund, eligible countries were limited to receiving not more than $1 – $3 million for a maximum of one project. In 2010, the GEF proposed a Long-Term Program on Technology Transfer (LTP) to COP 16.[99] The LTP added two windows to the PSP: public-private partnerships (PPPs) for technology transfer and support for climate technology centres and a climate technology network.[100] Arguably, the PSP and LTP are the closest developing States have gotten to their clamour for a special fund for technology transfer since the inception of the climate change regime. It is worth noting that the PSP and LTP are also the first deliberate efforts to give effect to the TNA conducted in or by developing States, as both programmes tailored funding to TNA findings.[101] An obvious let-down, however, is the project and funding constraint in the programmes. It appears that the State-by-State funding model of the GEF is inefficient considering its limited resources. The prioritization of regional capacity building and transfer of technology projects might be a more sustainable pattern. For example, making an investment in a research and development facility in the West African region seems more effective than funding specific technologies per country.[102]

Although designed to facilitate technology transfer, Poznan is primarily anchored on investment strategies. The Technology Executive Committee (TEC) in its 2015 review of Poznan notes that 'only one of the programme framework documents for the approved programmes directly refers to technology transfer'.[103] The mobilization of private investment is essential to Poznan's operations. Hence, its climate technology transfer and finance centres are in multilateral development banks (MDB).[104] With the exception of the Finance and Technology Transfer Centre for Climate Change of the European Bank for

95 The PSP was originally named 'Strategic Program to Scale Up the Level of Investment in the Transfer of Environmentally Sound Technologies' by the GEF, before it was changed by the COP. See Development and Transfer of Technologies, Decision 2/CP.14, UNFCCCOR, FCCC/CP/2008/7/Add.1, 3.

96 See Development and Transfer of Technologies Under the Subsidiary Body for Implementation, Decision 4/CP.13, UNFCCCOR, 2007, FCCC/CP/2007/6/Add.1, para 3.

97 Elaboration of a Strategic Program to Scale up The Level of Investment in the Transfer of Environmentally Sound Technologies, GEF, GEF/C.34/5. Rev. 1 (2008), 14 – 16.

98 ibid 14-15.

99 GEF, Implementing the Poznan Strategic and Long-Term Programs on Technology Transfer (GEF 2012) <https://www.thegef.org/sites/default/files/publications/GEF_PoznanTT_lowres_final_2.pdf>6.

100 ibid 6.

101 GEF (n 97) 15.

102 While developing States possess unique technological needs, a review of the 1st, 2nd, and 3rd TNA synthesis reports show some common trends in the needs identified by these countries. See SBSTA, 'Synthesis Report on Technology Needs Identified by Parties not Included in Annex I to the Convention' 24th Sess., 18 – 26 May, 2006, FCCC/SBSTA/2006/INF.; SBSTA, 'Second Synthesis Report on Technology Needs Identified by Parties not Included in Annex I to the Convention' 30th Sess., 1 – 10 June 2009, FCCC/SBSTA/2009/INF.; SBSTA, 'Third Synthesis Report on Technology Needs Identified by Parties not Included in Annex I to the Convention' 39th Sess., 11 – 16 November 2013, FCCC/SBSTA/2013/INF.7. See also Christina Chaminade and Hjalti Nielsen, Transnational Innovation Systems (ECLAC-GIZ 2011).

103 Subsidiary Body of Implementation, Evaluation of the Poznan Strategic Programme on Technology Transfer: Final Report by the Technology Executive Committee, 43rd sess., FCCC/SBI/2015/16, para 33.

104 ibid para 19. The Inter-American Development Bank, European Bank for Reconstruction and Development, Asian Development Bank, and African Development Bank, house Poznan's four regional pilot centre projects.

Reconstruction and Development (EBRD), the MDB centres only facilitated access to finance rather than offering financial instruments.[105] Hence, there are no investments on African Development Bank and Inter-American Development Bank generated projects.[106] The TEC notes that 'without access to finance, project generation will lose momentum, and their added value through ability to function as project accelerators risks being cast in doubt'.[107] Making private investment core to Poznan's operation skews its relevance and effectiveness among developing countries. Least developed countries stand lesser chance of benefiting considering their less attractive markets. In 2015, while 14 per cent (mitigation) and 25 per cent (adaptation) of total international public climate finance went to least developed and low-income countries, 65 per cent (mitigation) and 43 per cent (adaptation) were committed to middle income countries.[108] To prevent climate finance and technology transfer from becoming another domain of the rich – poor divide, structures like Poznan must be refashioned. Applying equal requirements to unequal countries will increasingly foster an inequitable climate finance and technology transfer regime.

3.5 The Technology Mechanism and Framework Phase (2010 - 2020)

The EGTT phase came to an end at the 2010 COP 16 in Cancun, two years before it was due for appraisal.[109] The premature termination of the EGTT was essentially due to dissatisfaction with its non-implementation role.[110] In 2008, the G77 and China submitted a proposal to the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA) which had been constituted the year before at Bali, Indonesia. A review of this proposal is key to appreciating its difference from the eventual make-up of the mechanism. According to the G77, such mechanism is needed given the urgent need for access to ESTs and the inhibition of barriers to transfer including limited financing.[111]

With this preface, a two-body mechanism made up of an Executive Body on Technology (EBT) and Multilateral Climate Technology Fund (MCTF) was proposed. The EBT was to be made a subsidiary body of the Convention and should be supported by: Strategic Planning Committee (SPC), Technical Panels, Verification Group and Secretariat.[112] The MCTF on the other hand was to 'provide technology-related financial requirements as determined by the Executive Body'. The proposal further envisaged a Technology

105 Technology Executive Committee, Updated Evaluation of the Poznan Strategic Programme on Technology Transfer, 18th Meeting, TEC/2019/18/4, para 67.

106 ibid para 68.

107 ibid para 69.

108 Paul Steele, 'Development Finance and Climate Finance – Achieving Zero Poverty and Zero Emissions' (2015) International Institute for Environment and Development Discussion Paper <https://pubs.iied.org/pdfs/16587IIED.pdf>. This is also the trend under the Green Climate Fund (GCF), which has committed 65 per cent of its fund to middle income countries like Mexico and India, while only 18 per cent have gone to the poorest countries. See Sennan Mattar, Stephen Kansuk and Tahseen Jafry, 'Global Climate Finance is Still Not Reaching Those Who Need it Most' (The Conversation, 2019) <http://theconversation.com/global-climate-finance-is-still-not-reaching-those-who-need-it-most-115268>.

109 Reports of the Conference of the Parties on its Sixteenth Session, held in Cancun from 29 November to 10 December 2010, Decision 1/CP.16, UNFCCCOR, 2010, FCCC/CP/2010/7/Add.1, para 124, (Decision 1/CP.16).

110 Shabalala (n 20) 184.

111 Proposal by the G77 & China for A Technology Mechanism under the UNFCCC http://unfccc.int/files/meetings/ad_hoc_working_groups/lca/application/pdf/technology_proposal_g77_8.pdf>.

112 The SPC is to develop strategy for EST transfer; technical panels are to generate and compile expert information on subjects relating to capacity building and transfer; verification group is to verify financial and technological contributions and the Secretariat is to 'support and facilitate the activities of the Executive Body'. ibid 2.

Action Plan (TAP) which would 'include clear actions and dates for the first three years, and will be updated for successive three-year periods'.[113] The TAP was to 'support all stages of the technology cycle' and develop policies on public domain technologies, patented technologies and future technologies.[114] The proposal also identified accessibility, affordability, appropriateness, adaptability, provision of full incremental costs, adequacy and predictability of funds and the removal of barriers for EST transfer, as the guiding criteria of the mechanism.[115] It is interesting to note that TNA was not part of this proposal. Given its exclusion, it is not farfetched to contend that developing States do not give the same pride of place to TNAs as done by developed States and the UNFCCC.

The G77 and China's proposed mechanism was, in the actual sense, not novel, as it only summarised their position from the ICCTT negotiation phase. It was, therefore, not surprising that developed countries rejected it. As noted elsewhere, developed countries largely took a more commercial perspective to EST transfer and were particularly 'wary of concessions in the technology discussions which could adversely impact their competitiveness' in light of China and India's growing technological capacity.[116] A compromise, in principle, was however reached at COP 15 in Copenhagen, where parties agreed to a Mechanism consisting of a Technology Executive Committee (TEC) and a Climate Technology Centre and Network (CTCN).[117] These two components were essentially a break-up of the G77 proposed EBT, with the MCTF component completely removed. Despite this relative progress, various vital issues were unresolved in Copenhagen. Chief among these are linkage of the mechanism to finance[118] and intellectual property rights.[119] While G77 and China wanted an explicit linkage between the financial and technology mechanisms, and the provision of new and additional funding to meet the full incremental costs of mitigation and adaptation, developed countries wanted both regimes to remain distinct.[120]

Again, while developing States wanted the mechanism to recognise IPRs as a barrier and sought the creation of initiatives like a 'Global Technology Intellectual Property Rights Pool for Climate Change that promotes and ensures access to Intellectual Property protected technologies and the associated know-how…', developed States insisted that no reference should be made to IPRs in the text, preferring that issues pertaining to IPRs are dealt with in the World Trade Organization (WTO) context.[121] Unsurprisingly, the developed countries prevailed. Neither was there a link between the technology and financial mechanisms nor was any reference made to IPRs in the Technology Mechanism (TM) agreed to at Cancun in 2010. Although the linkage between the technology and financial mechanisms has been part of ongoing

113 ibid 3.

114 ibid.

115 ibid 3.

116 ICTSD, 'The Climate Technology Mechanism: Issues and Challenges' (2011) ICTSD Information Note Number 18< https://www.ictsd.org/downloads/2011/04/technologymechanism.pdf>3.

117 Outcome of the Work of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention: Draft Conclusions Proposed by the Chair, Draft Decision -/CP.15, UNFCCCOR, 2009, FCCC/AWGLCA/2009/L.7/Add.3, paras 7 - 20.

118 ibid paras 8, 14.

119 ibid para 17.

120 See Heleen de Coninck and Ambuj Sagar, 'Technology Development and Transfer (Article 10)' in Klein and others (eds) (n 3) 248, 263.

121 ICTSD (n 116) 17.

conversations,[122] progress has been slow.[123] Hence, 'securing sustained funding' has remained the CTCN's most festering challenge.[124] The TM also marks a break from Chapter 34 of Agenda 21. For example, the preamble to the TM which merely stated that 'recalling the commitments under the Convention, in particular Article 4, paragraphs 1, 3, 5, 7, 8 and 9'.[125] Contrariwise, virtually every other COP decision prior to Cancun (COP 16) referenced Chapter 34. The content of the TM leads to the presumption that the exclusion of Chapter 34 was not indeliberate. Arguably, whereas the TM was conceived to remedy the bare policy making status of the EGTT, it appears to have reincarnated it. Again, although the CTCN is represented as the implementation arm of the TM, while the TEC is to be the policy making arm, the CTCN has been slow in occupying this implementation space. As aptly put by Shabalala, '…the CTCN does not have an implementation mandate and, for the moment, appears limited to providing advisory services to developing countries'.[126]

The Paris Agreement established a technology framework (TF) to provide 'overarching guidance to the work of the technology mechanism'.[127] The adoption text of the Paris Agreement provides a cue as to what 'overarching guidance' means. The Framework is expected to facilitate, inter alia, the undertaking of technology needs assessment, enhanced implementation of their results, enhanced financial and technical support, assessment of technologies for transfer, and the enhancement of enabling environments to address barriers to development and transfer of socially and environmentally sound technologies.[128] While it is too early to assess whether the TF has succeeded in facilitating the foregoing, the extent to which it reflects these features can be assessed. Arguably, TF's themes – innovation, implementation, enabling environment and capacity building, collaboration and stakeholder engagement, and support – address the issues identified in the Decision 1/CP. 21.[129] However, compared to the far-reaching contents of its negotiating text, the TF in various ways reproduced previous trends. For example, the negotiating text refers to increasing the effective participation of developing States in collaborative research, development and demonstration; enabling access to ESTs in the private sector through incentives to technology providers; concrete targets, timelines, transformation metrics, and reporting; development of methodology to identify

122 See UNFCCC, Linkages Between the Technology Mechanism and the Financial Mechanism of the Convention, <https://unfccc.int/sites/default/files/resource/cp24_auv_TM%20FM.pdf>.

123 It was reported that the president of COP 24 indicated dissatisfaction with the lack of progress as per the linkage between the technology and financial mechanisms. See 'Linkage between the Technology and Financial Mechanisms and the Informal Consultation Effectiveness' <https://sunyclimatechange.wordpress.com/2018/12/12/linkage-between-the-technology-and-financial-mechanisms-and-the-informal-consultation-effectiveness/>. See SBSTA & SBI, 'Joint Annual Report of the Technology Executive Committee and the Climate Technology Centre and Network for 2018' FCCC/SB/2018/2, para 108 – 109. The absence of assured source of funding has been a recurrent complaint of the CTCN. See Joint Annual Report of the Technology Executive Committee and the Climate Technology Centre and Network for 2016, SBSTA & SBI, 45th sess, FCCC/SB/2016/1 (2016); and Joint Annual Report of the Technology Executive Committee and the Climate Technology Centre and Network for 2017, SBSTA & SBI, 47th sess, FCCC/SB/2017/3 (2017).

124 SBSTA & SBI, 2018 Joint Annual Report, ibid para 129.

125 UNFCCCOR (n 109) 18. See also Coninck and Sagar (n 120) 2 – 3.

126 Shabalala (n 20) 184. See also Margaretha Wewerinke-Singh and Curtis Doebbler, '"The Paris Agreement" Some Critical Reflections on Process and Substance' (2016) 39 UNSW Law Journal 1486.

127 Paris Agreement 2015, art 10(4).

128 Decision 1/CP. 21, Adoption of the Paris Agreement, FCCC/CP/2015/Add. 1, para 67. (Decision 1/CP. 21).

129 Technology Framework under Article 10, para 4 of the Paris Agreement, FCCC/CP/2018/L3 (annex).

technologies ready to transfer; linkage of the technology and financial mechanisms; and the provision of enhanced financial and technical support for the implementation of TNAs.[130] The outright rejection or watering down of the proposals in the negotiating text in favour of a Framework which is considerably light on details, reaffirms the interest convergence dilemma earlier referred to. Generally, while exhortatory and non-committal provisions are retained in the TF, prospectively obligational provisions are either made voluntary or rejected altogether.[131]

While the above historical analysis might not be exhaustive, it provides a basis for certain conclusions on the dynamics of the UNFCCC EST transfer structure. Evidently, despite the different labels, little has changed between the 1960s when the NIEO was conceived and 2015 when the Paris Agreement was signed. The positions of developing and developed States have not changed, developed States' positions still shape and inform the regime, and economic considerations still override existential concerns. Further, there has been more focus on an appearance of progress than actual progress. This is about the only explanation for the reiteration of policies which have been ineffective and the willingness of developed States to only consent to proposals which have no concrete impacts. What defies comprehension, however, is why developing States, have over the years, consented to 'white-elephant' agreements. A similar question was posed by Miller and Davidow when the 'global south' agreed to the Restrictive Business Practices Code, despite it reflecting neo-liberal ideals and substantially leaving out proposals by developing countries.[132] These writers suggest that such an agreement represented a shift, however little, from where the countries were and after various stalemates, it gives an appearance of foreign policy gains to their domestic audience.[133]

One must, however, be careful not to brand 'neoliberalism' as a wholly 'western' construct; a 'grand scheme' in which developing States are unwilling or induced participants. Randeria drew the line between developing states which are genuinely weak and others which she describes as 'cunning states' – developing states which have the capacity to invoke their sovereignty in opposing policies or initiatives they consider inimical.[134] While it is also true that there is often considerable external political and economic pressure which informs the international commitments of developing States, there are also instances, as Randeria illustrates in the case of India, where developing States push back against international organizations and developed States.[135] The key question is what inspires developing States to wield the scimitar of sovereignty? As found by Randeria and others, the interest of 'capital' is a major determinant of when and

130 See generally, SBSTA, Updated Draft of the Technology Framework under Article 10, para 4, of the Paris Agreement (6 September 2018) SBSTA 48.2, Agenda Item 5. (Updated Draft).

131 For example, rather than adopting the recommendation for a linkage between the technology and finance frameworks (Updated Draft, para 43(a)), the TF refers to 'enhancing the collaboration …' (TF, para 25(a)); and instead of 'collaboration with private sector and strengthened partnerships between public and private sectors', (Updated Draft, para 37(b), the TF introduced the qualification 'on a voluntary basis' (TF, para 20(b)).

132 Davidow and Miller (n 46) 85.

133 ibid.

134 Shalini Randeria, 'Cunning States and Unaccountable International Institutions: Legal Plurality, Social Movements and Rights of Local Communities to Common Property Resources' (2003) 44 European Journal of Sociology / Archives Européennes de Sociologie 27.

135 ibid.

howdeveloping States exercise their sovereignty.[136] Arguably, if the 'actualized experience of (third world) peoples and not merely that of the states which represent them' were at the core of the engagements of the developing States,[137] the demands and concessions made by developing States in the international climate sphere would be radically different.[138]

4 CONCLUSION: LESSONS FROM HISTORY

No doubt, structures, initiatives, and processes have changed under the UNFCCC EST transfer regime over the years. However, the regime is still actuated by similar principles and orientations which grounded previous structures. The unreadiness to adopt a non-market centric approach to the development and transfer of technologies, the shielding of private entities in the global north from transferring ESTs, the opposition of developed states to addressing IPR connected barriers to EST transfer, and the rejection of proposals with prospects of making developing States partners in the development of ESTs rather than recipients, are as relevant as they were during the failed negotiation of the ICCTT in the 1980s, as they were in 2018 when the UNFCCC Technology Framework was adopted. Indeed, it is arguable that as far as EST transfer is concerned, the current Technology Mechanism and Framework phase represents a drawback on the gains made in Rio in 1992.[139] The mutation of the differentiation principle under the Paris Agreement has little or no positive impact on EST transfer.[140] As Ferreira notes, 'the principle of differentiation in IEL does not fulfil the function of promoting a just global socio-economic and political order'.[141]

The EST transfer regime reflects the normative clash between the North and the South. Whereas the North has insisted on the dominance of the marketplace, developing states emphasise the right to develop, the

136 ibid 47. Chimni also refers to the dominance of transnational capitalists in emerging economies. He notes that the transnational capitalist class 'used its economic clout and ideological primacy to shape the foreign economic policy of emerging powers'. Chimni argues that this is a reason for the downward trend in opposition from emerging economies to the 'structures of global capitalism and international laws and institutions that support it despite continuing to be subjected to imperialist exploitation'. See BS Chimni, 'Capitalism, Imperialism, and International Law in the Twenty-First Century' (2012) 14 Oregon Review of International Law 17.

137 Anghie and Chimni (n 7) 78.

138 See for example Julia Dehm's criticism of the carbon trading mechanisms under the Kyoto Protocol. She notes that while commitments made by developed states to reduce their emissions by 5 per cent was a result of political negotiation, the flexibility mechanisms (carbon trading, clean development mechanism and joint implementation) were underpinned by the imperative of aggregate economic efficiency. The mechanisms were 'based on the premise that mitigation should take place where it is cheapest to do so'. See Julia Dehm, 'Carbon Colonialism or Climate Justice: Interrogating the International Climate Regime from a TWAIL Perspective' (2016) 33 Windsor Yearbook of Access to Justice 129.

139 For example, while Agenda 21 recommended the provision of incentives to EST right holders, the recommendation was rejected and excluded from the Technology Framework. See Agenda 21, para 34.18(1)(e)(i); Draft Technology Framework, para 28(d).

140 Differentiation is a foundational principle of the international climate change regime. It is captured by the concept – common but differentiated responsibility principle (CBDR). A principle which recognizes the different contributions of countries (particularly developed countries) to global emissions and the capacity to respond to mitigation (and adaptation needs). See Paris Agreement 2015, art 2(1)(c); See Lavanya Rajamani, Differential Treatment in International Environmental Law (Oxford University Press 2006) 86.

141 Patricia Galvao Ferreira, 'Differentiation in International Environmental Law' in Cameron SG Jefferies and others (eds), Global Environmental Change and Innovation in International Law (Cambridge University Press 2018) 21. For a more detailed critique of the Paris Agreement, particularly on its iteration of the principle of differentiation, see Julia Dehm, 'Reflections on Paris: Thoughts towards a Critical Approach to Climate Law' (2018) 1 Revue québécoise de droit international 61.

liability of the North, and the existential needs of their people. But the regime's history is also the story of Northern victory. The victory of neoliberalism and commercialism in a realm (climate change) that admittedly threatens life as it is presently known. Worse still is the supposition that developed States have committed themselves to the climate change cause for altruistic reasons, or that there is the will to do what needs to be done to roll back the scourge. The above analysis, from the pre-1992 phase to the current technology mechanism phase, reveals that developed States neither have the will nor interest in taking the required steps in an imperilled world. Concessions are made and proposals are supported by developed States insofar as they do not implicate private entities or impose obligations. And as demonstrated through Bell's interest convergence dilemma and Olson's collective action theory, developed States are also more likely to support initiatives that confers benefits on them. For example, the CDM was framed as a quid pro quo arrangement. In return for climate change mitigation projects, developed countries are awarded certified emission reductions (CER). Although the 'sustainable development' of developing States was stated in Article 12 of the Kyoto Protocol and developed states had referred to the CDM as a platform for the transfer of technology,[142] it has been noted that 'the … driver of CDM is not technology transfer but the generation of CERs to assist Annex I parties to close the gaps in Kyoto commitments and in the EU Emissions Trading Scheme'.[143] Hence, of the 1000 projects surveyed in 2011, only about 20 per cent of renewable energy projects conducted under CDM resulted in 'some level' of technology transfer.[144]

It is, indeed, contestable that the climate regime is a product of North – South compromise.[145] While this might have some semblance of truth at the level of one-off initiatives and projects, it appears less true at the normative level. Aptly rendered elsewhere, 'there is a stark difference between cooperation based on power, and cooperation based on solidarity'.[146] What has been at play in the climate change regime is the 'cooperation of power'. The norm of the powerful prevails, while the cherrypicked and modified requests of subaltern states are consented to. But these 'consents' are still defined and operated through the norm of the powerful. The neoliberal ideal which underpinned the North's approach to the failed ICCTT in the 1970s remains the same today. This neoliberal norm is well articulated by B.S. Chimni who adapted Karl Marx's views on alienation to argue that 'the intrinsic and sacred unity between man and nature is subjected to market fundamentalism, leading to the dysfunctional commodification of nature … (objectification of) both humans and nature in the pursuit of profit … Unsurprisingly, international environmental law is unable to seriously respond to the global ecological crisis'.[147] For example, the American delegates to UNCED argued that 'the American life-style is not up for negotiation'.[148] Whether directly said or subtly implied, this has, to various degrees, been the position of the North. For example, while there is consensus that energy sources must change, and efficient habits must be cultivated, this must be done using the existing neoliberal

142 SBSTA (n 71) 5, 15.

143 Gary Cox, 'The Clean Development Mechanism as a Vehicle for Technology Transfer and Sustainable Development - Myth or Reality?' (2010) 6 Law, Environment and Development Journal 181.

144 Igor Shishlov and Valentin Bellassen, '10 Lessons from 10 Years of the CDM' (2012) Climate Report 27 <https://hal.archives-ouvertes.fr/hal-01151437>. Elsewhere, Seres notes that about 30 per cent of projects under the CDM involved some form of technology transfer. See S Seres, E Haites and K Murphy, The Contribution of the Clean Development Mechanism under the Kyoto Protocol to Technology Transfer (UNFCCC Secretariat 2010).

145 Lavanya Rajamani, 'Ambition and Differentiation in the 2015 Paris Agreement: Interpretative Possibilities and Underlying Politics' (2016) 65 International and Comparative Law Quarterly 493 506.

146 Mickelson, 'Leading Towards a Level Playing Field, Repaying Ecological Debt, or Making Environmental Space' (n 4) 170.

147 ibid 504.

148 Philip Elmer-Dewitt, 'Summit to Save the Earth: Rich vs. Poor' (TIME, 1992) <http://content.time.com/time/magazine/article/0,9171,975656-9,00.html>.

economic template.[149] However, as noted by Mickelson, 'if the economy is ever-present and its centrality unquestioned … the environment is almost completely absent'.[150] This argument is not that economic development negates environmental sustainability, but that the latter must enjoy primacy over the former.

The structure of the UNFCCC EST transfer regime also attests to the normative fault lines of the regime. As shown above, while the present technology mechanism and framework introduce new bodies (CTCN and TEC), the bodies are yet encumbered by similar challenges as their forebears (e.g. SBSTA and EGTT). Particularly, the inadequacy of funding.[151] The transition from one body to another appears to be transitions in names but not in substance. The G77 2008 proposal had the potential to reverse the trend, but it was opposed by the developed States. Again, proposals made in the draft technology framework which touch directly on incentivizing private entities to transfer ESTs, and the participation of developing States in the development of transformational technologies were rejected.[152] While the need to link the technology and financial mechanisms have been recognised by the UNFCCC, the resistance of developed States to a hard linkage between both mechanisms further exemplifies absence of will. The absence of such linkage is made evident by Dehm who notes, in respect of the UNFCCC and World Bank (which serves as the trustee of the Green Climate Fund), that 'a split between the political and the economic in international law provides authorization for different international institutions to address themselves to different aspects of an international issue'.[153] The 'political' – 'economic' dichotomy is also evident in the role played by the WTO as the economic sphere on intellectual property rights and the UNFCCC as the domain of political negotiation. The absence of functional integration among these bodies is a major structural fault line.

The proliferation of bodies with similar mandates which end up being underfunded is another feature of the UNFCCC EST regime. For example, despite their similar mandates, the Poznan Strategy and the TM exist and operate separately. Hence, TNAs are conducted under the GEF (Poznan), TEC, and the CTCN; Poznan has its own distinct climate technology centres and climate technology network different from the CTCN;[154] and the GCF operates its own distinct National Designated Authorities separately from the CTCN's National Designated Entities.[155] Another example is the separation of technology transfer from capacity building, despite that the former is deemed to include the latter. Indeed, the Paris Agreement envisages a different institutional arrangement to oversee capacity building.[156]

149 Henri-Count Evans and Rosemary Musvipwa, 'The Sustainable Development Goals, the Paris Agreement and the Addis Agenda: Neo-Liberalism, Unequal Development and the Rise of a New Imperialism' in Tor Halvorson and Hilde Ibsen (eds), Knowledge for Justice: Critical Perspectives from Southern African-Nordic Research Perspectives (African Minds & Southern African-Nordic Centre 2017) 49.

150 Mickelson, 'Leading Towards a Level Playing Field, Repaying Ecological Debt, or Making Environmental Space' (n 4) 165.

151 See Coninck and Sagar (n 120) 263.

152 SBSTA (n 130) 7, 9.

153 Dehm (n 138)143.

154 GEF (n 99).

155 GCF, 'What are the NDAs' <https://www.greenclimate.fund/about/partners/nda>.

156 See Paris Agreement 2015, art. 11(5). In its 2019 review of Poznan, the TEC recommended the linkage of different national entities (NDA, NDE, GEF focal point, regional focal point and other national UNFCCC focal points). It further admonished that the institutional linkages between Poznan and the CTCN be strengthened. It, however, notes that 'other than convening meetings, no other institutional linkages were supported by the GEF'. See TEC (n 117), para 117(c), (d).

Mickelson's analogy of how Americans rejected aerosols to fight ozone layer depletion in the 1970s vis-à-vis the approach taken in respect of climate change, sums up the arguments made in this work. She notes that 'changing deodorants is a far cry from changing lifestyles, and it is the latter that may be required if a meaningful response to climate change is to be crafted'.[157] So far, what appears to have happened in respect of the UNFCCC EST transfer regime is akin to 'changing deodorants'. Different 'fragrance', the same 'system'. After a while, the fragrance wears off, and the 'odour' of ineffectiveness and inequity of the current regime hits our collective 'nostrils'. Even after then, we only change the deodorant, as has been done with the extant EST transfer framework. For progress to be made in respect of global EST development

157 Mickelson, 'Leading Towards a Level Playing Field, Repaying Ecological Debt, or Making Environmental Space' (n 4) 169.

Article

GAALMUKT DHARAN, GAALYUKT SHIVAR (TANK DESILTATION) SCHEME IN MAHARASHTRA, INDIA: POLICY CONCERNS AND THE WAY FORWARD

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1 INTRODUCTION

The introduction section sets the tone for the paper by highlighting the critical role the reservoirs and tank systems play in human life and the broader ecosystem. The section presents the critical concerns and challenges faced in the tank management system and the chronology of policy push by the state for revitalising reservoirs and desilting tanks. It concludes with the research concern for undertaking this study.

1.1 Role of Reservoirs and Tank Systems in Human Life and the Larger Ecosystem

Reservoirs, artificial or natural, play a vital role in securing water for all forms of life and livelihoods. In India, tank development and management have a long tradition. India has about 580,000 tanks of various sizes spread over across the country, of which 150,000 tanks are located in the semi-arid region of Deccan plateau.[1] In Maharashtra alone, there are highest number (42 per cent) of irrigation dams.[2] These tanks are located in hydrologically favourable sites effectively capturing the rainfall and serving multiple uses, with irrigation having the major share. John Ambler aptly describes the usefulness of tank systems as it recharges the local groundwater, serves as a source of drinking water for livestock, and importantly, an irrigation system for crops.[3] These tanks are also a useful source of silt for fertilisation and construction material. Therefore, the tank is not merely an irrigation system that starts from the reservoir down but a wide complex system of natural resources, physical facilities, land use patterns, and managerial institutions to manage the water within. Tanks have thus a rich heritage on account of long historical antecedents in various regions of India. Over centuries, tanks and ponds constituted an important supplementary source of water to the distressed poor.[4] Even in the 21st century, tanks are relevant (in fact critical) in following the Integrated Water Resources Management (IWRM) practices, especially in the Indian context.

Community-based tank rejuvenation is of critical importance, mainly in drought-prone and arid as well as semi-arid regions. With growing water scarcity, it is an essential way in which water can be conserved for both surface and groundwater irrigation. With limited water resources, vagaries of monsoon and looming water scarcity in many parts of India, water conservation and use through such structures have received greater importance.

1.2 Critical Concerns in Tank Management

Tank irrigation systems are simple but fragile structures.[5] They have to be continuously maintained, promptly repaired and continuously monitored. Even

1 A Gurunatha, CR Shanmugham and KT Ramappa, 'Irrigation Tanks and Their Traditional Local Management: A Remarkable Ancient History of India', National seminar on water and culture, Hampi (Karnataka) (2007).

2 PK Viswanathan, M Dinesh Kumar and A Narayanamoorthy, Micro Irrigation Systems in India: Emergence, Status and Impacts (Springer 2016).

3 John Ambler, 'Basic Elements of an Innovative Tank Rehabilitation Programme for Sustained Productivity' [1992] unpublished paper, Ford Foundation, New Delhi.

4 Niranjan Pant and RK Verma, Tanks in Eastern India: A Study in Exploration (IWMI 2010).

5 Bellamkonda Sravan and Kumar R Waseem, 'Restoration of Irrigation Tank (A Case Study on Kunta Chervu in Warangal District)' (2016) 4 International Journal for Scientific Research & Development 74.

more challenging is sharing the scarce water amongst its users, particularly the farmers. Since the pre-British era, local communities took keen interest and collective efforts in periodic repair and maintenance of these structures.[6] Thus there was a feeling of ownership of these structures by communities. However, the existence of community-led practices of the tank management and engagement of local institutional arrangements by the community in managing tank systems is also questioned by authors like Davis Moore. They argue that the traditional pre-British tank management system was dominated by a handful of resource-rich people.[7]

In post-independent India, the tanks came under the ownership purview of the state government. Their management functions came under the different line departments with no integral approach and less involvement of communities, which led to the decline of these irrigation systems. The tank management system almost collapsed owing to poor maintenance and lack of interest from the state. Due to the centralised system, the community steadily lost its interest in the management of the tank systems.[8] At the other side, since decades, equity and judicious rights in tank benefits have been crucial issues of concern, the local issues such as caste and political affiliation, kinship and institutional membership are observed as deciding factors in tank benefits.[9]

1.3 Policy Push for Revitalising Reservoirs and Desilting Tanks

There have been continuous efforts to revitalise the tank systems and improve their utility. Most of these efforts may be categorised at the level of beneficiary groups, community as a whole, by state, Non-Government Organisations (NGOs), and Corporate Social Responsibility (CSR) interventions. After the independence, the percolation tanks, village tanks and lakes, which could irrigate less than 100 hectares of land, came under the jurisdiction Zilla Parishad or district administration.[10]

Intending to revitalise the tank system, the state government took many steps from time to time. In Maharashtra, through the Employment Guarantee Scheme (which later converted in Mahatma Gandhi National Rural Employment Guarantee Act and taken at the national level), during drought years, work on tank construction, silt removal and repair and maintenance were taken on a large scale. Even under Jalyukt Shivar Abhiyan (JSA), a flagship program of the state government initiated in 2016, desilting and rejuvenating of different water bodies have been taken

6 Shri Krishan, 'Water Harvesting Traditions and the Social Milieu in India: A Second Look' (2011) 46 Economic and Political Weekly 87.

7 David Mosse, 'Colonial and Contemporary Ideologies of "Community Management": The Case of Tank Irrigation Development in South India' (1999) 33 Modern Asian Studies 303.

8 M Gireesh, N Nagaraj and MG Chandrakanth, 'Rehabilitation of Irrigation Tanks in Eastern Zone of Karnataka- An Economic Analysis' (1997) 52 Indian Journal of Agriculture Economics 231-243.

9 Nicholas B Dirks, The Hollow Crown: Ethnohistory of an Indian Kingdom (University of Michigan Press 1993); Edmund Ronald Leach, Pul Eliya: A Village in Ceylon (Cambridge University Press 1961); David Ludden, 'Peasant History in South India. By David Ludden. Princeton: Princeton University Press, 1985. Xix, 310 Pp. Maps, Figures, Tables, Notes, Glossary, Bibliography, Index. $45' (1987) 46 The Journal of Asian Studies 189.

10 Aparna Pallavi, 'Restore Malgujari Tanks to Irrigate Eastern Vidarbha: Study' (Down to Earth 2015).

at large scale in the state. At the culmination of these programs, the state designed and has been implementing a specific program for desiltation purpose known as 'Gaalmukt Dharan, Gaalyukt Shivar Yojana' (literally, silt free water reservoirs and silt applied farms) policy since 2017. It has set up a 'Desilting Policy Committee' which recommended that 31,459 small dams and water tanks be desilted in the state. The revised state water policy in 2019 promotes GDGS as an important strategy for drought mitigation.[11] This initiative has a huge potential for improving drought resilience in the state. Since the last few years, many CSRs, NGOs, and private donors have aggressively initiated desiltation active at large scale in the state, mostly in Marathwada region where drought is a common phenomenon.

1.4 Desilting of Reservoirs and Tanks

Many studies, especially done in the southern Indian states of Andhra Pradesh, Telangana, Karnataka, and Tamil Nadu have recorded benefits of desilting of these tanks and the subsequent application of silt in the farms.[12] These benefits include a substantial reduction in chemical fertiliser application, an increase in the water retention capacity of the soil (thus reducing the water required for irrigation), while significantly improving crop yield. The cropping area of the main crops has increased along with the irrigated area and cropping intensity. Improved agriculture has also led to higher employment among non-farm labour. The benefit-cost ratio was positive, thus showing that the desiltation of tanks is an economically viable option.

However, most of the studies have focused on the economic aspects of the desiltation activity like the benefit-cost ratio, improved yields and income for the farmers. Some studies throw light on larger concerns

11 Government of Maharashtra, Maharashtra State Water Policy 2019 <https://wrd.maharashtra.gov.in/Site/Upload/PDF/State%20Water%20Policy%-2005092019.pdf>.

12 A Deivalatha, P Senthilkumaran and NK Ambujam, 'Impact of Desilting of Irrigation Tanks on Productivity of Crop Yield and Profitability of Farm Income' (2014) 9 1833; Rakesh Tiwari and others, 'Irrigation Tank Silt Application to Croplands/ : Quantifying Effect on Soil Quality and Evaluation of Nutrient Substitution Service' (2014) 3, International Journal, pp 001-010 ; Adithya Dahagama and others, 'Final Report De-Silting Minor Irrigation Ponds in South India/ : The Sustainability of Decentralized Resource Distribution' (University of Michigan 2014); K Lenin Babu and S Manasi, 'Estimation of Ecosystem Services of Rejuvenated Irrigation Tanks: A Case Study in Mid Godavari Basin' (International Water Management Institute Conference, Hyderabad, 2008) ; K V Padmaja and others, 'Economic Assessment of Desilted Sediment in Terms of Plant Nutrients Equivalent: A Case Study in the Medak District of Andhra Pradesh. Global Theme 3: Water, Soil and Agrodiversity Management for Ecosystem Resilience Report No. 4' (2003) 2; M Osman, YS Ramakrishna and Haffis Shaik, 'Rejuvenating Tanks for Self-Sustainable Rainfed Agriculture in India' (2007) 64(5) Agricultural Situation in India 67.

and precautions to be taken while desiltation.[13] Other important concerns like equitable distribution of silt, overall impacts of the desiltation activities on environment and downstream, and most importantly the institutional mechanism for program implementation, as well as technical assessments while implementing the work have not been studied in detail. The current study has looked into these aspects with a lens of normative concerns framework, putting sustainability, participation, equity, efficiency at the centre, and based on the experiences, suggested suitable policy modifications to make the program more robust.

1.5 The Research Concerns

In drought prone regions, the increased runoff from degraded land, due to growing erratic rainfall and lack of proper rainwater harvesting leaves very little water for the dry season.[14] The increased runoff extends the scope of soil erosion, and thus the degradation of the land. In the long run, there are few important tangible benefits of desiltation activities but environmental, equity, sustainability, efficiency and participation concerns need to be well studied. As the state has come with an important policy intervention like the GDGS, this study explores the different aspects of the scheme. GDGS has wider opportunities, but at the same time, it is necessary to evaluate this policy based on its implementation and make necessary modifications to avoid the unintended implications. Such modifications can make the provisions more practical and workable, considering the larger benefits of the GDGS scheme to farmers and villagers, ensuring environmental, equity and sustainability concerns. In this context, the present paper, based on the analysis of first-hand data from seven desiltation projects, provides the science-based recommendations for modifying the GDGS guidelines to upscale it effectively.

2 METHODOLOGY

In this section, we elaborate the research design applied in the study, the characteristic of study areas and tanks selected for the study, as well as data collection tools applied.

2.1 Research Design

The present study was an exploratory research to investigate the impact of tank desiltation on-farm production and water availability. These benefits and impacts are further analysed with lenses of equity and sustainability with institutional dimensions. A multidisciplinary approach was taken to assess this impact. Mixed methods that utilise both the qualitative and quantitative tools were used for data collection. The data was further triangulated using Geographic Information System (GIS) based analysis and the economic viability of the activity was assessed through cost-benefit analysis. In addition, secondary data on desiltation activity pertaining to input costs, beneficiary details, and work details were obtained from the local NGOs for analysis.

2.2 Context of the Region and Study Location

The state of Maharashtra in India has 36 districts, of which more than 20 districts in the north-western,

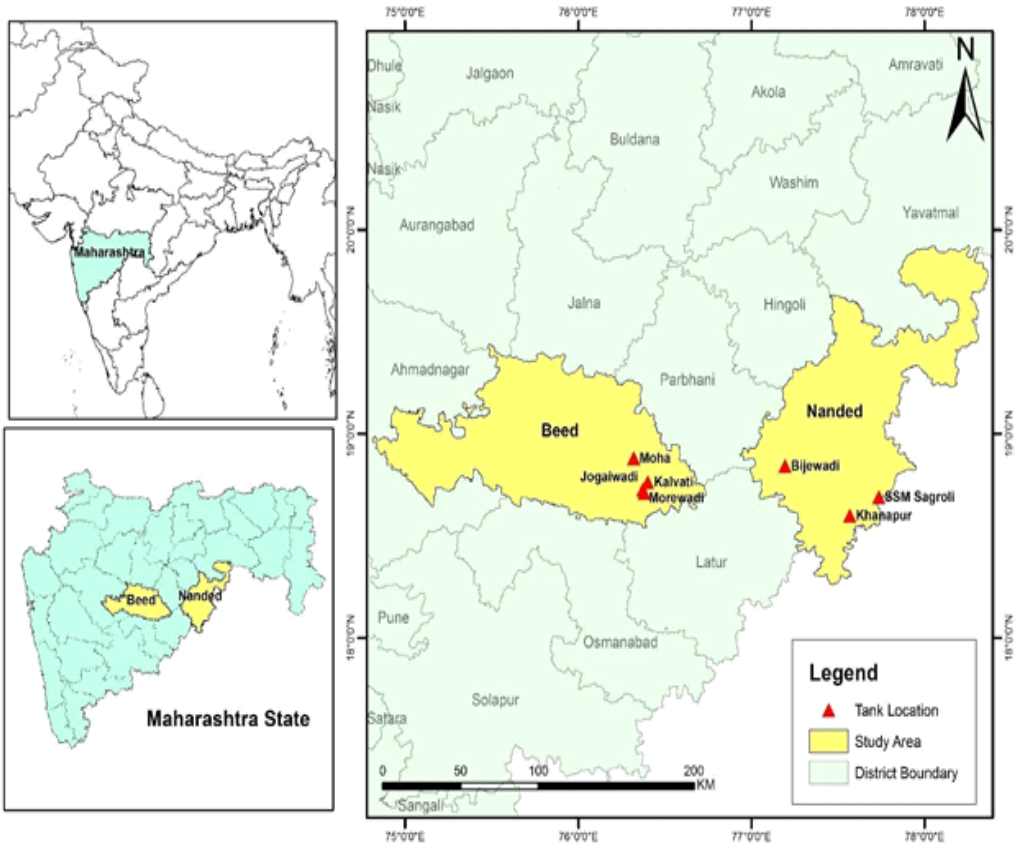
13 K Palanisami, 'Sustainable Management of Tank Irrigation Systems in India' (2006) 1 Journal of Developments in Sustainable Agriculture 34; Gyanprakash Soni, 'Conservation of Lakes - Myths and Realities of Desilting' (2010) <https://www.indiawaterportal.org/articles/conservation-lakes-myths-and-realities-desilting>; Ishwara Bhat and BB Hosetti, 'Benefits And Challenges Of Desiltation And Development On The Avifauna Of Anekere Pond, Karkala, Udupi District, Karnataka' <http://wgbis.ces.iisc.ernet.in/energy/lake2016/Faculty/12_Paper%20for%20Lake%202016%20@%20Alvas%20college.-pdf>.

14 Anil Agarwal, Sunita Narain and Indira Khurana, Making Water Everybody's Business: Practice and Policy of Water Harvesting (Centre for Science and Environment 2001).

northern, as well as southern and central part of the state face regular droughts, adversely impacting communities that depend on agriculture as their primary income source. Almost 42.5 per cent area of the state is drought-prone.[15] During 2018-19, the Government of Maharashtra declared drought in 151 talukas in 26 districts affecting 85.76 lakh ha of land. Out of these, 112 talukas had severe drought.[16] The lack of adequate water has had a cascading effect on the socio-economic and environmental conditions in the region.

The research study was carried out in Beed and Nanded districts of Marathwada region. It is one of the most drought-affected regions of Maharashtra state and is characterised by regular water scarcity, frequent droughts, and consequent crop losses. Seven percolation tanks desilted by the local NGOs were selected for the study. The location of the tanks is shown in Map 1. All these tanks were desilted during the summer months (April and May) of 2016. The characteristics of the desilted tanks are provided in Table 1.

Map 1: Location Map of the Study Area



15 Maharashtra State Water Policy (n 11).

16 Government of Maharashtra, 'Economic Survey of Maharashtra 2018- 19' (2019).

Table 1: Details of Selected Tanks for the Study

S. No	Tank Name/Taluka	District	Year of Construction	Total Storage Capacity (TCM)	Total quantity of silt removed (in cu.meter)	Total cost of desiltation (in Rs.)	No. of villages benefited from silt use
1	Jogaiwadi Talab/ Ambajogai	Beed	1977	1.564	27882.4	2,63,110	13
2	Kalvati Talab/ Ambajogai	Beed	2001	167.79	5446	52166	2
3	Bada Talab (Morewadi)/ Ambajogai	Beed	Pre-independence	-	37217.6	2,61,804	14
4	Moha Dam/ Parali (V)	Beed	1979	2.37	65354.8	4,91,474	2
5	Bijewadi/ Kandhar	Nanded	1973	123	23864	2,50,000	1
6	Khanapur/ Deglur	Nanded	Pre-independence	240	26980	2,00,000	1
7	SSM Sagroli/ Biloli	Nanded	Pre-independence	210	10948	1,50,000	2

2.3 Rainfall Pattern in the Study Area

While analysing the project impact data, we need to also keep in mind the rainfall data of these two districts over the last few years. As seen in Table 2, 2015 (reference year for pre-intervention data) was a drought year. Beed and Nanded districts received much less rainfall than in a normal year.

Table 2: Rainfall History of the Last Six Years

Year	Beed				Nanded			
	District yearly rainfall (mm)	Normal rainfall (mm)	No. of Rainy days	No. of dry spell days*	District yearly rainfall (mm)	Normal rainfall (mm)	No. of Rainy days	No. of dry spell days*
2012	461.1	743.4	43	61	662.7	1017.5	61	64
2013	729.9		70	40	1111.9		71	35
2014	423.4		34	106	436.5		38	63
2015	459.6		51	58	599		61	42
2016	824.7		59	30	1124.8		66	38
2017	706.1		58	45	641.8		56	39

*Source: http://maharain.gov.in, (*Days where rain received 0 => 2.5 mm)*

In 2016, both these districts received more rainfall than normal. In 2017, there was a deficit in rainfall in both these districts. Similarly, the number of dry spell days was less and the number of rainy days was more in 2016 when compared to 2015. These changes have an impact on vegetation growth and water availability and the data is interpreted in this light.

2.4 Tools of Data Collection

The data was collected during the month of December 2017. A total of 292 farmers were interviewed, accounting for 52 per cent of the farmers who took silt from these seven tanks. Stratified sampling based on the landholding categories (small and marginal, medium and large) was used for selecting these farmers. A structured questionnaire was used to elicit information on demographics, land ownership, crop input and production, water sources and availability, economic aspects etc. Informed consent was taken from the respondents before the interviews. In addition, five Focus Group Discussions (FGD) were conducted in villages with the beneficiary farmers and two FGDs were conducted with the implementing NGO representatives to understand the intervention details, institutional aspects and benefits of the programme.

In order to assess the change in soil fertility after the silt application, two soil samples were collected from farms for each of the seven tanks locations. The first sample was taken from the silt applied farm and the second from a control farm of the same farmer but with no silt application. Thus, a total of 14 soil samples were collected. These soil samples were tested for 19 physicochemical parameters. To assess the economic feasibility of tank desiltation, cost-benefit analysis was carried out. The Replacement Cost method of evaluation was used to do the analysis.

The GIS-based analysis was also undertaken to understand the changes in vegetation and water spread area. The year 2016-17 was chosen to see the changes post-desilting and 2013-14 was chosen to know the situation before desilting. The criteria for selecting the pre-desilting year was based on the rainfall. Mean rainfall was seen from the year 2012 to 2017 for the two districts Beed and Nanded, where the tanks are located. The year that had rainfall closest to the year 2016 was chosen for assessing the situation pre-desilting. Table 3 provides the framework of key variables used to understand the research issues in the study.

Table 3: Key Variables for the Study

Components for evaluation	**Variables**
Agriculture	Land-use changes, crop area, production and yield, fertiliser and pesticide costs
Soil	Physicochemical properties of the soil and its fertility
Water	Recharge time of wells, the area under irrigation, plant water stress, water spread area, groundwater levels, rainfall
Socio-economic	Household income, migration, institutions, local contribution, distribution of benefits, livelihoods, equitable benefits, cost of excavation activity, the process of different activities in desiltation work, efficiency of work
Others	Ecosystem benefits/losses, changes in biodiversity

3 RESULTS AND DISCUSSION

This section provides the findings from the interviews conducted of 292 farmers who benefited from the desiltation activity in terms of silt use and increased well water recharge. Data from FGD with villagers and interactions with NGO functionaries are also applied in the analysis.

In total, the 292 surveyed farmers applied the tank silt on 472.5 acres of land. On average, this is about 1.6 acres per farmer. In most of the cases, tractor trolleys were used for transportation of silt as their charges are comparatively cheap. Few other farmers used tippers or hiwa (vehicles with more silt carrying capacity). The average distance between the tank and the silted farm is 2.4 km. In total, 50,131 trips were reported, which comes to an average of 172 trips per farmer. In most cases (84 per cent) farmers mixed the silt with existing soil as the silt has more clay content than farm soil. Farmers were of the opinion that mixing of the silt and existing soil also helps crop roots to take hold firmly. Half of the farmers reported an increase of 3-6 inches in the soil layer after silt application.

3.1 Economic Cost of Desiltation

The total quantity of silt removed from the seven tanks was 1,97,693 m^3 (cubic meter). The total cost for excavating this silt was Rs. 16,68,554. This cost includes the machine work, operator and diesel costs incurred by the NGOs for this work. Table 4 provides the tank-wise details of the total quantity of silt removed and the cost involved.

Table 4: Tank-wise Details of the Total Quantity of Silt Removed and Cost Involved

S. No.	Tank name	The total quantity of silt removed (in m^3.)	The total cost of desiltation (in Rs.)
1	Moha	65355	4,91,474
2	Morewadi	37218	2,61,804
3	Jogaiwadi	27882	2,63,110
4	Kalvati	5446	52,166
5	Bijewadi	23864	2,50,000
6	Khanapur	26,980	2,00,000
7	Sagroli	10948	1,50,000

The beneficiary farmers had to bear the transportation cost and the cost of spreading silt and levelling their farms. The total cost borne by the farmers included in the survey was Rs. 1,64,75,397 which is approximately Rs. 56,423 spent per farmer. Of this, a greater part (87 per cent) was spent on transportation of silt from the tank to the farm. The remaining amount was spent on spreading silt on the farm and levelling it. A large number of farmers (58.2 per cen) who took silt for farm applications belong to the small and marginal category having less than 5 acres of land. About 16 per cent of the beneficiaries were large farmers who own more than 10 acres of land. Since the silt application is a capital intensive activity, 44 per cent of the beneficiaries had to take a loan. A significant number of farmers (65 per cent) who took loans were from the small and marginal category. In the case of large farmers, only 11 per cent took loans. Most of the loans were availed from the bank but many farmers borrowed money from informal sources like friends, relatives or money lenders as reported during the group discussions. About five farmers also reported selling livestock or farmland to meet the expenses.

3.2 Changes in Key Physicochemical Properties of Soil

The pH range of tank soils was neutral to slightly alkaline whereas the Electrical Conductivity (EC) was in the normal range as seen in Table 5. The Organic Carbon (OC) content of Sagroli tank silt was very low while in Jogaiwadi and Bijewadi tanks it was in the low category. The available nitrogen content in the Sagroli tank silt was also found to be low but was high in the other two tanks' silt. The very low organic carbon and available nitrogen content recorded in the Sagroli tank soil might be due to a very high sand percentage as compared to silt and clay. The available phosphorus content in all three tanks was low. The available potassium content was low in the case of Jogaiwadi and very high in Sagroli and Bijewadi tanks.

Table 5: Soil Properties Deposited in the Tanks

Tank Name	pH	EC (dS/m)	OC %	Bulk density (g/cc)	Sand (%)	Silt (%)	Clay (%)	N (Kg/ha)	P (Kg/ha)	K (Kg/ha)	CaCo3 (%)
Jogaiwadi	7.23	0.24	0.27	1.19	43.05	40.52	16.35	189	12.7	102.45	7.63
Sagroli	7.19	0.26	0.09	1.3	76.75	17.67	5.88	63	13.8	534.42	3.88
Bijewadi	7.82	0.22	0.3	1.18	23.71	52.23	22.87	210	12.5	608.35	9.5

The results obtained from soil analysis show that the silt application had a mixed impact on soil texture, bulk density and water holding capacity of the farm soil and it varied from the tank to tank. In a few cases, an increase in silt and decrease in sand percentage was observed and this is a positive change. The water holding capacity of the soil was calculated based on the contents of sand, silt and clay in the soil.[17] When clay and silt content is more in the soil then its water holding capacity is also more. The control farms of Moha, Khanapur and Bijewadi shows higher water holding capacity than silt applied farms because of higher organic carbon, silt and clay percentage in the control plots.

Application of silt from Kalvati, Morewadi, Sagroli, and Bijewadi tanks improved organic carbon content in the soil as compared to control farms. However, the pH of the soil was not much affected by the silt application.

17 Thomas Scherer, David Franzen and Larry Cihacek, 'Soil, Water and Plant Characteristics Important to Irrigation' (NDSU 2017) <https://www.ag.ndsu.edu/publications/crops/soil-water-and-plant-characteristics-important-to-irrigation>.

Table 6: Changes in Soil Properties When the Silt Applied in the Farms

Soil properties	Kalvati		Moha		Morewadi		Jogaiwadi		Sagroli		Khanapur		Bijewadi	
	S*	C*	S	C	S	C	S	C	S	C	S	C	S	C
pH	7.44	7.24	7.28	7.20	7.28	7.29	7.21	7.48	7.25	7.55	7.17	7.55	7.45	7.38
OC (%)	0.57	0.18	0.30	0.39	0.24	0.18	0.18	0.48	0.60	0.27	0.30	0.45	0.57	0.30
Sand (%)	42.27	51.3	55.81	37.77	44.82	51.81	39.14	16.91	34.01	16.15	51.32	26.15	48.24	20.2
Silt (%)	39.71	29.84	26.90	39.44	36.37	30.39	44.38	33.45	46.86	65.1	32.26	53.18	29.82	58.7
Clay (%)	17.93	18.79	17.19	22.71	17.89	17.72	16.39	49.56	19.05	18.67	16.24	20.59	21.85	21.03
N (Kg/ha)	399	126	210	273	168	126	126	336	420	189	210	315	399	210
P (Kg/ha)	12.28	12.06	11.84	12.28	11.62	12.06	12.5	11.84	12.50	12.06	12.72	12.06	12.28	13.16
K (Kg/ha)	57.03	184.8	426.6	594.6	453.0	463.6	594.6	453.0	67.59	637.92	280.94	713.96	421.4	709.74
CaCo3 (%)	10.13	12.13	12.25	9.38	13.25	11.38	11.25	12.13	9.62	11	9.38	10.63	10.75	7.25
WHC (%)	72.82	56.64	60.1	73.01	58.13	58.35	65.6	62.86	70.03	68.43	58.23	78.91	58.48	75.84

*(*S= Silt applied farm, C= Control farm)*

The calcium carbonate content in the soil decreased in silt-applied farms in Khanapur, Sagroli, Jogaiwadi, and Kalvati. This may be due to low calcium carbonate composition in silt deposited in tanks and the quantity of silt applied in a unit area. The trends in available nitrogen, phosphorus and potassium content in silt-applied soil were varied due to variations in the composition of nutrients in tank silt (Table 6).

3.3 Impact on Water Availability and Irrigation

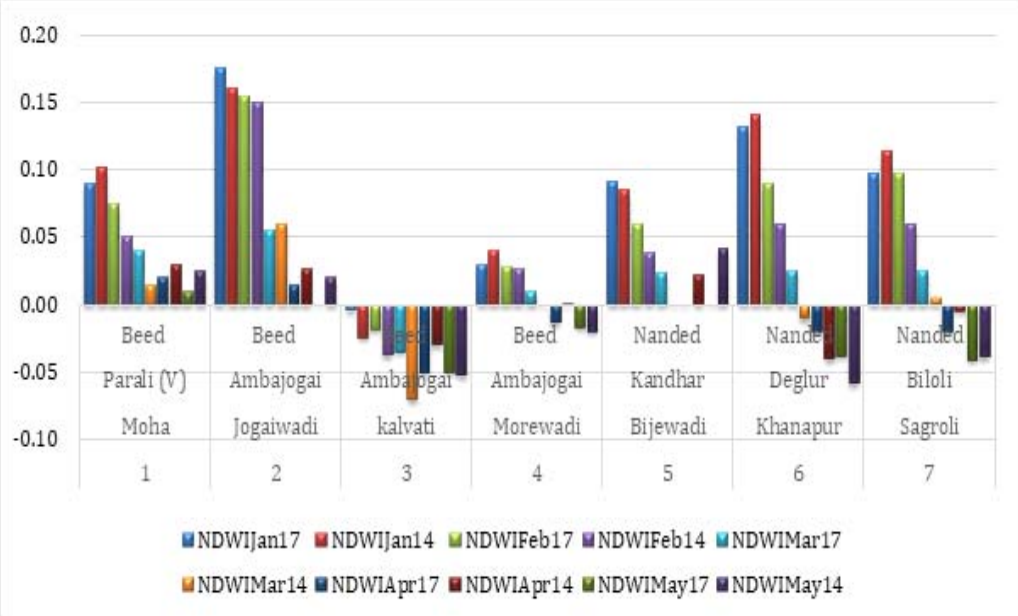
Within the 292 households surveyed, 33 have a well or borewell and these are used only for irrigation. All of these are located downstream of the tanks, mostly within a 2 km distance. Most of the wells are less than 40 feet deep whereas the borewell depth ranges between 200-400 feet. The average recharge time of the wells during the Rabi season (November) has decreased by four hours (from 11 hours to 7 hours) and for the summer season (March) by two hours (from 14 hours to 12 hours). Desiltation of the tanks has helped recharge the groundwater tables. During group discussions, farmers said the duration of water availability in the tanks had increased during summer months due to their increased storage capacity. The area under irrigation (of 33 households) increased from 57 acres to 75.3 acres (32 per cent) in the Kharif season for the three main crops (cotton, soybean, and bajra). The number of irrigations provided to main crops

has moderately reduced. A similar trend is observed in the Rabi season where the irrigated area of the three main crops (jowar, wheat and Bengal gram) increased from 18.7 acres to 26.7 acres (43 per cent).

This trend is also reflected in the opinions of the farmers. During the group discussions, farmers reported that desiltation has led to an increase in water percolation from the tanks. There is an observable increase in water levels of wells in a radius of about 1-2 km from the tanks. Farmers believe that the irrigated area has increased due to increased water availability. This has enabled them to cultivate Rabi crops in larger areas.

The GIS analysis also highlights that the region was less water-stressed after desilting in the months of February and March. Figure 1 shows Normalised Difference Water Index (NDWI) for the months January to May (15th of 1st month to 15th of 2nd month) for 2017 and 2014. In general, Kalvati and Morewadi have higher water stress. From the figure, it is evident the NDWI values are lower in 2014 as compared to 2017, except in the months of January, April, and May. Although water stress is much lower in the month of February and March, there is no impact of desilting in January and April and May. One reason for this is that there is usually water available in the month of January even without desilting and there is no water in April and May, even after desilting. The figure shows that the difference between months in 2017 is smaller as compared to the difference between the same months in 2014. This indicates that the region was less water-stressed in 2017 and that the transition to a water-stressed situation was more gradual than in 2014.

Figure 1: Normalized Difference Water Index for the Selected Tanks After Desiltation



The following Figure 2 provides the surface area of the water in the reservoirs in February of 2017 and 2014. There is no clear trend. Three of the reservoirs (Jogaiwadi, Khanapur and SSM Sagroli) show a higher surface area and the other four show lesser areas. There could be many reasons for this, including the relative proportion of the tanks desilted, desilting locations within the tank, and the topography of the tank surface.

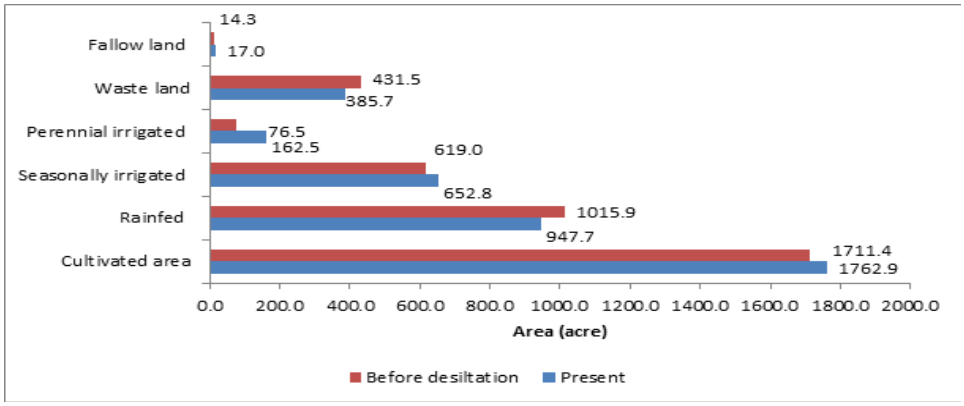
Figure 2: Area of Water Body Compared for February 2014 to 2017 in Selected Tanks

With desilting, as the storage of the tanks increases, they retain more water and even have some water left in February. Thus, more water is available in the tanks during drier months.

3.4 Impact on Land Use

Figure 3 indicates that the area under cultivation and seasonally irrigated area increased 3 per cent and 5 per cent respectively. The perennially irrigated area showed

Figure 3: Changes in Land Use Pattern in the Study Area

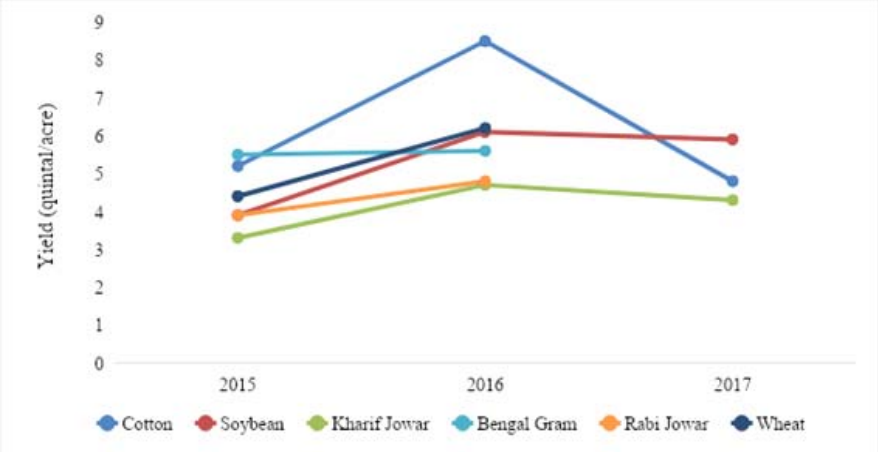


a significant increase of 112 per cent. Rainfed area and wasteland reduced by 7 per cent and 11 per cent respectively.

3.5 Changes in Agriculture Production and Inputs

Soybean, jowar, black gram, and green gram are the main Kharif crops in the area. Other crops grown in Kharif are marigold, sunflower, seed cotton, sesame, and safflower. Bengal gram, jowar, and wheat are the main Rabi crops. Cotton, turmeric and pigeon pea are the main two seasons-crops. Apart from these, farmers also cultivate groundnut, safflower, and onion during Rabi season. Figure 4 highlights the changes in yield for the main crops grown in the region for three years.

Figure 4: Changes in Yield of Main Crops



The area under cultivation of cotton, soybean and black gram shows an increase of 6 per cent, 39 per cent and 31 per cent respectively in Kharif 2016 as compared to Kharif 2015. A corresponding increase in the yield is also observed during this period. The increase in yield in 2016 is a result of silt application as well as good rainfall. The base year 2015 was a rainfall deficit year and hence the yield was below average. In 2017, the cotton crop suffered from a pink bollworm pest attack which affected production. During the group discussions, it was seen that the farmers had a positive perception of the benefits of silt application. They felt that silt application increases production by about 50 per cent and at the same time reduces the fertiliser cost by about half. The crops also look visibly healthy. Farmers also mentioned a change in cropping pattern – there is a shift towards cash crops with more households cultivating soybean and cotton.

Few farmers reported cultivating summer crops (groundnut) and fodder crops which were not taken before. A positive change is observed in the area under intercropping. This has increased from 48.2 acres to 192.5 acres in the Kharif season (+300 per cent). Pigeon pea is generally sowed between cotton, jowar, black gram, soybean and green gram. Intercropping provides guaranteed income in case of crop failure and is also beneficial for soil health while preventing soil erosion.

The group discussions revealed farmers' anxiety about using silt for the first time. Farmers have invested significant money in silt application and feared if the production was not good it would lead to a loss. Hence, few applied fertilisers in the farms where silt was applied (even though it was not needed). Farmers

were also of the opinion that silt application reduces weed growth and hence the de-weeding cost is reduced.

A slight reduction in chemical fertilisers use is observed for the major crops. The per acre cost of chemical fertiliser usage has reduced by 8 per cent and 9 per cent in the case of cotton and soybean respectively for the Kharif season. For the Rabi season, per acre cost has reduced by 15 per cent and 6 per cent for jowar and Bengal gram respectively. In the case of perennial crop sugarcane, a marked reduction in per acre cost by 31 per cent is reported for chemical fertilisers. There is no change observed in the per acre cost of pesticides for cotton. However, the cost shows an increase of 10 per cent and 20 per cent for Bengal gram and soybean respectively. This may be due to an increase in pest attacks.

3.6 Cost-benefit Analysis

The cost-benefit analysis was carried out for three out of seven reservoirs. For the rest, this was not done as the soil sample could not be taken from the tanks. The tanks were filled entirely with water during the survey period. The expenses incurred by the NGOs for excavating the silt were considered as the cost. This includes the machine work, diesel and operator costs. The value of the silt excavated from the tank was quantified in terms of fertiliser equivalent cost of different nutrients (N, P, K, Zn, Cu, and Fe) retrieved from it. This was considered as the benefits of desiltation. The values were calculated based on the current market prices of fertilisers which would have been needed to replenish the equivalent quantity of nutrients applied through the silt as shown in Table 7.

Table 7: Benefit in Terms of Value of Nutrients from the Silt Excavated

Tank	Value of nutrients in terms of rupee equivalent						
	N	P	K	Zn	Cu	Fe	Total
Jogaiwadi	45823	13279	49250	6094	66499	111231	292176
Sagroli	5998	5666	100876	2440	19706	10894	145580
Bijewadi	43578	11186	250305	3682	94501	57724	460976

(Note: The cost of urea, single super phosphate, muriate of potash, zinc sulphate, copper sulphate, ferrous sulphate is Rs. 600, Rs. 900, Rs. 1,600, Rs. 4,500, Rs. 18,000 and Rs. 2,200 respectively for 100 kg)

The benefit-cost ratio (BCR) of the tanks was calculated under two scenarios- first with only the silt excavation as the cost and second with excavation, transportation and application cost considered. The benefits of silt application in terms of crop production accrue for about five years as reported by the farmers. Hence the BCR was also computed at the end of year one and year five as shown in Table 8.

Table 8: Benefit-cost Ratio Calculated at Year One and Year Five Under Two Scenarios

Tank	B:C Ratio in Year 1		B:C Ratio in Year 5	
	With excavation cost	With excavation, transportation, application cost	With excavation cost	With excavation, transportation, application cost
Jogaiwadi	1.11	0.11	5.55	0.54
Sagroli	0.97	0.12	4.85	0.61
Bijewadi	1.84	0.21	9.22	1.03
Average	1.31	0.15	6.54	0.73

In the first scenario, the BCR of the three tanks was 1.31 and 6.54 at the end of year one and year five respectively. This indicates that the desiltation activity was economically viable even when only the fertility of silt from the tanks is considered as the benefit. In the second scenario, the average BCR at the end of year 5 is 0.73. Here, indirect benefits of desiltation such as increased water storage capacity, improved soil texture and water holding capacity are not considered. The BCR will be more if these indirect benefits are also taken into account.

Apart from the cost benefit analysis, the average gross annual income of farmer was also enquired. The per farmer average gross annual income from the land with silt application (472.5 acres) increased from Rs. 37,489 to Rs. 92,855. The high value in the post-desiltation period could be a result of a silt application coupled with good rainfall. The rainfall in 2015 was below average, resulting in lower production and income losses for the farmers.

3.7 Concerns of Participation, Sustainability, and Equity

Effective and inclusive institutions and capacity building of beneficiary groups is the key to ensure that the project activities get implemented in a judicious manner as well as the impacts of it sustain for a longer period. At the institutional level, although Government Resolution (GR) on GDGS clearly mentions that in each village where tank desiltation is planned, the 'Village-level Monitoring Committee' has to be formed for planning, executing and monitoring tank desiltation activities. However, we observed that in only two project villages Moha and Bijewadi, committees comprising local people were formulated. Here, the committees were formulated mainly due to proactiveness and interest of villagers rather than a mandatory process during the desiltation activities and strong push by NGO. To ensure transparency, Moha village implemented additional steps like making public announcements to inform people, using a coupon system for paying the vehicle owners and making payments through the bank. All farmers who registered their names got the silt as required. In Moha, women SHG were of great help to needy farmers when they provided timely loans which were channelised through gram panchayat. In the rest of the villages, there was no consultation and the desiltation activities were planned with village key leaders, Sarpanch and their close followers. Therefore, the inclusive committees comprising diverse interest groups, such as rainfed farmers and small landholders were not visualised and practised in the desiltation activities in most villages.

Of the total sample of 292 households that benefited from seven desilted tanks, there are 170 small, 75 medium and 47 large farmers. When it comes to the amount of silt imported and applied in farms, large farmers have used the highest quantity of silt. Even, there is no evidence reported where the landless and artisans, such as pottery makers, local and non-commercial brick kiln makers etc. benefited from the silt that was removed from the tanks. When rainfed farmers and small landholders were asked about not having the more benefits of silt, the common answer was that the importing silt is a costly affair and they did not have the money to pay tractor operators when the work was in progress. Another challenge reported by farmers was the absence of proper roads, as the vehicle carrying silt had to travel through another farmer's land. In a few cases, landowners charged money for allowing the vehicle to transit through their farm which also increased the transportation costs. Even, we found villagers were not well aware of whether the water harvesting potential created through desilting tanks will affect the water flows in downstream and will change the water allocation in the cluster of villages. In a nutshell, we found the clear lack at institutional level in most villages and hence no measures were visualised for sustaining the benefits, for example taking measures so that tanks don't get silted again in the short run.

3.8 Other Benefits

During the group discussions, it was reported that a slight reduction in migration was observed. In village Moha, it was reported that within one year of desiltation, farm prices have doubled as they are more fertile and have increased water availability. Farmers were of the opinion that silt application helped the growth of crops and increased biomass. Hence, the farms are yielding more crop residue. This has led to more fodder for the livestock. In Bijewadi and Sagroli, people were of the opinion that the greenery surrounding the tanks has also increased. In the Sagroli tank, many birds were also sighted during the field visits. As an income-generating avenue, commercial fishing has been done in the tanks of Moha and Sagroli since the last few years. The contracts are given to local persons and the revenue generated is shared between the person and local village government body.

4 POLICY ANALYSIS OF GDGS

In this section, based on the above analysis, field observations and authors' experiences of working in this sector over the years, specific modifications are proposed to revise the main provisions made in the two important Government Resolutions (GR) issued by the government of Maharashtra on the GDGS scheme.

These two GRs are,[18]

1)GR-1: Government Resolution (dated May 6, 2017)- Government of Maharashtra (GoM) (Code number of GR is 201704101302368426) for Tank Desiltation

2)GR-2: Government Resolution (dated December 6, 2017)- Government of Maharashtra (GoM) (Code number of GR is 201712061616303426) for Village Monitoring Committee for Tank Desiltation

4.1 Criteria and Process for Selecting the Tank for Desiltation

Selection of the tank for desiltation is an important process in the GDGS scheme, and in the GR-1 mentioned above, criteria for selecting the tanks are specified. In addition to present criteria of age of the tank and its command area, while prioritising tank for desiltation, we propose the groundwater recharge potential of the tank also should be assessed for

18 Implementing Gaalmukt Dharan and Gaalyukt Shivar (GDGS) Yojana 2017 ; Formation of monitoring committee at village level for GDGS scheme 2017.

suitability. If it is not taken into consideration, then the excess water stored after desiltation works will be exposed to evaporation leading to water losses. There are certain situations where the GR prohibits undertaking or selecting the tanks for desiltation work, such as tank with irrigation potential of 0 to 100 hectare, tank area under private ownership of a farmer or when there is no clarity about land ownership. Here, we propose that along with the irrigation potential of the tank, the amount of silt deposited should also be considered as important criteria for selecting the tank. If tanks are silted to around 75 per cent of its full water storing capacity, then the government should consider desiltation. Tanks under private ownership should also be considered for desiltation as it results in groundwater percolation benefits and silt availability. For the approval purposes, the Gram Panchayat may take the written permission from the owners of land prior to submission of the proposal to the Tahsildar.

The GR made a positive provision that tanks with more quantity of sand will not be considered for desiltation. Further, a negative list of tanks constructed by the Revenue Department should be created where there is presence of sand in the structures. To strengthen this provision, we propose that the negative list should be put in the public domain so that it is accessible to all stakeholders and to ensure that the provision is not violated. In addition to these criteria, we propose that the quality of silt in the tank should be tested by a responsible NGO/Agency, in case it is planned to be applied on farmlands. This is to ensure that it does not negatively affect the existing quality of soil and crop production.

4.2 Institutional Issues

For the effective implementation of the tank-desiltation work in villages, the GR-2 has suggested formation of a Village-level Monitoring Committee (VMC) and has mentioned the proposed structure of the committee and its responsibilities. The composition of the committee is proposed as i) Village Sarpanch-as President, ii) Gram Panchayat member (One)- as Member, iii) Farmers Representative- as Member, iv) NGO representative- as Member, v) Talathi/Gramsevak- as Member, vi) related Section Engineer- as Member and Secretary. Besides these, we recommend that the VMC may also have representation of women SHG, women farmers, landless households, and of minority communities (SC/ST/OBCs). All village level members of VMC should be selected through Gram Sabha. Along with the formation of VMC, there should be clear provisions about conducting periodic meetings and documenting the procedure of meeting during the project. In addition to the existing responsibilities mentioned in the GR, the VMC must i) undertake awareness activities in the village regarding the desiltation plan, ii) display and update information about the plan and execution of the desilting activity daily at the public places during the work in progress, so that people are well informed, iii) in case of surplus silt, nearby villages, may also be invited to take away the silt for their farms, iv) sort out the issues concerned to making temporary roads where it requires, vi) suggest ways and means to compensate the farmers getting affected by temporary roads, as it affects the farmland of farmers, vii) giving priority to small and marginal farmers for silt import and ensuring that all sections of farmers benefit from this activity.

4.3 Planning, Execution, Monitoring

For implementation of the activities, the GR states that the Sub-Divisional Officer (SDO-Prant) from the Revenue Department will be the implementing officer of this scheme. In cases where the farmers or NGOs submit a proposal for transporting silt, the Tahsildar, after technical scrutiny, must send the proposal for administrative sanction to the SDO. In cases where the farmer/NGO spends own funds to excavate and transport silt, prior notice related to tank desiltation activity should be given to Tahsildar/ Talathi/Deputy Engineer (Dams) along with the schedule of work by farmers or NGO. We strongly recommend that the concerned Gram Panchayat should be the central decision-making body in project submission and implementation along with the VMC. The SDO should be the project sanctioning authority and the Gram Panchayat should work closely with him for project implementation. Following steps are proposed in this regard to follow. i) Farmers or NGO approaches the respective Gram Panchayat expressing their interest in tank desiltation. They should prepare a detailed proposal of the desiltation work and present it in Gram Sabha for approval. ii) The Gram Panchayat has to give prior notice to the Tahsildar or the designated officer regarding the tank to be desilted. 3) Then the

engineers help the Gram Panchayat to estimate the tank's suitability for desiltation and the quantity of silt available 4) accordingly, the VMC under the guidance of Gram Panchayat prepares the list of farmers surrounding the tank and other farmers of the village. 5) Willingness and readiness of these farmers along with their consent and the quantity of silt demanded needs to be obtained by the VMC. 6) The list of farmers who apply for importing the silt and who are allowed for import should be displayed at a public place along with the budget of the activity. 7) Engineers responsible for monitoring and supervision should visit periodically to ensure that siltation work is being implemented as per the guidelines.

For monitoring and evaluation, the GR proposes that the tank under desiltation should be inspected regularly by the Deputy Engineer, Junior Engineer and Executive Engineer from time to time and the work be stopped immediately if desiltation activity threatens the safety of the tank. The work will also be monitored and evaluated by third-party agencies. Here it is proposed that to get the complaints of farmers addressed at primary level, these Engineers/VMC functioning under GP be assigned the function of hearing the farmers' grievances and resolving them. The Engineers monitoring the desiltation activities should be accountable if the safety of the tank is compromised. Regarding evaluation of work, VMC and the representative of Tahsildar should jointly monitor the desiltation work, along with external/ third party. Mid-term evaluation, during the work progress, should be mandatory by the agency to rectify any violation of norms. If any party (farmers/ villagers/contractors) have complaints regarding ongoing work, there should be appropriate authority nominated by the Sub- Divisional Officer (SDO) to register or hear these complaints and sort them out. Regarding the provision of payment instalment terms, in case of delays for releasing payment to NGOs after submission of all necessary documents, the additional interest for the delayed period should be paid by the government.

4.4 Inclusive Benefits

As a precondition of participation, the GR specifies that the farmers will bear the expenses required for transportation of silt from percolation tank to their farm. Our data and observations show that the most silt benefits are taken by large farmers as they imported and applied large amounts of silt compared to medium and smallholding farmers. Therefore, it is suggested that partial grant/support or interest-free loans need to be provided to small and marginal farmers to ensure the equitable benefits of public money on tank desiltation to all sections of the community. The temporary approach road made from the tank to the existing public road which passes through the private land of many farmers-must be demarcated by the VMC with the help of the Talathi, and if required, the Tahsildar as it is one of the issues of dispute among farmers. Also, there should be a financial provision in the project that once the desiltation of the tanks gets completed, the temporary approach road made in the fields of farmers should be cleared as it affects agricultural farms severely.

4.5 Ensuring the Ecosystem Health

The GR specifies precautions to be taken while work is under progress such as ban on excavation of murum and sand and not restricting desiltation to a certain distance from the walls depending on the tank size. To make this provision stronger and ensure its effective implementation, we propose that there should be a provision of cancelling the license or imposing a penalty on machine operators, implementing NGO and the Engineers responsible for monitoring. Only that quantity of silt should be excavated which would help to restore the original water storage capacity of the tank. Along with this, while deciding the depth for desiltation, the hydro-geology in terms of groundwater recharge capacity of the submerged area needs to be factored. These precautions are essential because changes in the topography and hydrology of the area around the tank due to its desiltation may impact the sustainability of downstream flows affecting the biodiversity and ecosystem; hence care must be taken that downstream flows don't get affected negatively.

5 RECOMMENDATIONS AND CONCLUSION

The cost-benefits analysis clearly indicates that when silt is mixed with topsoil in farmland, it helped farmers to cut down their input cost for chemical fertilisers, hence at level of economic returns, the GDGS program is much viable. However, to address and enhance the important concerns of community participation, equitable benefits, accountability, and transparency as well as environmental sustainability, we propose that the GDGS programme needs major restructuring, particularly at the level of ground implementation. At the principal level, since the cost of desiltation activities (apart from silt transportation) comes from public investment, it needs to be ensured that benefits of silt application go across different sections of farmers, i.e., including rainfed, small and marginal farmers. The criteria for selecting the tank for desiltation is a crucial aspect, along with the silt deposited in the tank, the geo-hydrology of the water storage area needs to be assessed to realise the water percolation possibilities of potential stored water after desiltation.

At institutional as well as monitoring and evaluation level, the programme needs a broader restructuring. When it comes to institutions, there needs a drastic shift in the programme. The inclusion of village-level representatives such as representatives of women farmers, rainfed farmers, SHGs and resource-poor will undoubtedly ensure that the VMC addresses the issues of all categories of villagers. Rather than NGOs and groups of farmers, Gram Panchayat needs to be treated as an important agency to approach Tahsildar and as the key agency in planning and executing the desilting activities with help of VMC. As the fields of farmers get affected because of silt transport by tractors, the issue needs to be sorted out by paying compensation to such farmers to repair their farmland.

Expecting that GDGS, a stand-alone programme, will deliver or be sustainable in the long run does not seem feasible. There are already enough observations that programs such as Jalyukt Shivar Abhiyan (JSA), where its focus is on specific activities of desilting and deepening streams and rivers, have not resulted in sustainable and judicious outcome.[19] Therefore, since there is no provision for treatments of the catchments in GDGS, as in the case of a comprehensive watershed development and management programme, the tanks would get filled up with silt in no time. So, we propose the need to make GDGS as a part of an Integrated Watershed Management Programme (IWMP) at the national level.

At the level of state, the existing policy instruments in the water and agriculture sector, such as Maharashtra Irrigation Act, 1976, Maharashtra Water Resource Regulatory Authority Act, 2005 and, Maharashtra Management of Irrigation Systems by Farmers Act, 2005 do not fit well with the tank desiltation activities carried under GDGS. As in the last few years, desiltation of tanks and lakes as well as rivers and streams under GDGS and Jalyukt Shivar Abhiyan have become the central issue of concern, there is a need for a special comprehensive law devoted to the desiltation issues (rather than issuing periodic GRs). Such law is essential to regulate the overall desiltation planning and execution activities which at one hand will be beneficial to the diverse set of stakeholders engaged in these activities and at other, will ensure that desilting activities don't affect ecosystem services and integrity in the long run.

19 Neha Bhadbhade and others, 'Can Jalyukt Shivar Abhiyan Prevent Drought in Maharashtra?' (2019), Vol 54 Economic and Political Weekly 12-14.

ARTICLE

JUST SUSTAINABILITIES AND SUSTAINABLE DEVELOPMENT GOALS IN THE TIME OF COVID-19

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1 INTRODUCTION

This article Is written in the time of Covid-19. It is unusual for authors to identify their scholarship through time. It suggests a defined chronological lifespan thereby contradicting the anticipation of extended academic relevance. But these are exceptional times. The impact of the virus is global, multi-various, and multi-dimensional. Nevertheless, a common expectation is that when the virus is controlled there will be a return to what is increasingly described as the 'new normal'. For some, the expectation is a reset, a return of historic patterns, albeit over time. For others, there is no 'before'. It no longer exists for practical purposes. A common prognosis recognises a dynamic and fundamental change in our ways of seeing, experiencing, thinking, planning, organising, and living. It is already established that its negative effect upon the poor and the vulnerable is disproportionate.[1] We as individuals, communities, and, governments will rethink our previous norms and structures. This 'new normal' is uncertain but it is predicted that the terms 'equity' and 'justice' will attract significant attention during the reconstruction processes. Post-COVID-19 offers a progressive opportunity to question and change our thinking and relationships with each other and with our planet. Further, the established Sustainable Development Goals (SDGs) provide a widely-accepted framework for the creation and establishment of the 'new normal'.

No discipline can claim sole responsibility for addressing the crisis. Disciplines are subject to intellectual boundaries that promote intense inward thinking but simultaneously hinder the contribution of external scholars and their specialised literature. We are in danger of becoming prisoners of our own discipline. A consequence of this is likely blindness and appreciation of the 'other'.

This article is based on 'joined-up thinking' that encourages scholars from geography, urban planning, public policy and development, social and ecological sciences, and law to recognise the relationship between Professor Julian Agyeman's Just Sustainabilities (JS) paradigm[2] and SDGs.[3] This form of thinking and planning is essential for the understanding and effective implementation of the SDGs. In this broader context, sustainability and sustainable development are not simply about the environment. Social and economic dimensions must be recognised as equal partners alongside the environment to implement the SDGs. Thus, appreciating Agyeman's paradigm embedded within the SDGs framework helps re-orientate and clarify thinking, both during and in post-Covid-19 'new normal' times.

The article has five sections. Sections 2 unpacks, explores, and characterises the radical JS paradigm developed by Agyeman in the early 2000s. The JS paradigm links and engages with environmental and sustainability discourses, focusing on issues of equity and (social) justice. Section 3 locates JS alongside SDGs through an 'embedded lens' approach. JS is a paradigm while SDGs offer an international, operational framework. Aspects of environmental sustainability within the 'embedded lens' are identified. Core elements and the relationship between JS and the SDGs are identified by common key terminology and implied meaning and mapped in tabular form for ease of appreciation. Section 4 illustrates the relationship

1 Helen Pidd, Caelainn Barr and Aamna Mohdin, 'Calls for Health Funding to be Prioritised as Poor Bear the Brunt of Covid-19' The Guardian (1 May 2020) <https://www.theguardian.com/world/2020/may/01/covid-19-deaths-twice-as-high-in-poorest-areas-in-england-and-wales>; Carolina Sánchez-Páramo, 'Covid-19 Will Hit the Poor Hardest. Here's What We Can Do About It' World Bank Blogs (23 April 2020) <https://blogs.worldbank.org/voices/covid-19-will-hit-poor-hardest-heres-what-we-can-do-about-it>.

2 Julian Agyeman (a), Sustainable Communities and the Challenge of Environmental Justice (New York University Press 2005); Julian Agyeman (b), Introducing Just Sustainabilities: Policy Planning and Practice (Zed Books 2013).

3 UN General Assembly Resolution 70/1, Transforming our World: The 2030 Agenda for Sustainable Development, UN Doc. A/RES/70/1 (2015).

between Covid-19 and the 'embedded lens' with an illustrative focus on environmental goals. Section 5 carries the conclusion.

2 JUST SUSTAINABILITIES PARADIGM

Just Sustainabilities (JS) provides a transformative paradigm for a more inclusive and fairer route, directing society radically into a more sustainable trajectory. Agyeman's JS paradigm is a bridge, 'joined-up' thinking of environmental justice and sustainability discourses. JS operates alongside environmental justice discourse, a bottom-up communitarian discourse, that identifies and mobilises the disproportionately negatively affected groups to correct wrongs and address unjustly imposed burdens.[4] However, for Agyeman, the theorisation resulted in environmental justice being 'reactive-focused on stopping environmental bads as they threatened the [poor] community'[5] rather than being 'proactive in distribution and achievement of environmental goods by creating sustainable communities'.[6]

JS also resolves the 'equity deficit' in the sustainability discourse.[7] Agyeman states that the components of equity and justice and their interlinkage with environmental, economic, and social issues are weak or non-existent in sustainability, leading to an 'equity deficit'.[8] Agyeman's critique is based on a holistic conception of sustainability. To quote, 'sustainability… cannot be simply a 'green' or 'environmental' concern, important though 'environmental' aspects of sustainability. A truly sustainable society is one where wider questions of social needs and welfare, and economic opportunity are integrally related to environmental limits imposed by supporting ecosystems'.[9] This may be necessary to 'proactively and properly address the structural imbalances, power differentials, race-based inequalities [equities], and other social justice challenges that could otherwise undermine sustainability initiatives in the

4 Agyeman (a) (n 2) 16, 80-81; see also Michael Walzer, Spheres of Justice (University of California Press 1983) 6; Harry Brighouse, Justice (Polity Press 2004) 2; Laura Pulido, Environmentalism and Economic Justice (University of Arizona Press 1996) xv-xvi.

5 Agyeman (a) (n2) 3.

6 ibid 26. For selective literature on environmental justice discourse see, Axel Honneth, 'Integrity and Disrespect: Principles of a Conception of Morality Based on the Theory of Recognition' (1992) 20(2) Political Theory 187–201; Kristin Shrader-Frechette, Environmental Justice: Creating Equity, Reclaiming Democracy (Oxford University Press 2002) 8-12; Ryan Holifield, Michael Porter and Gordon Walker, Spaces of Environmental Justice (John Wiley 2011) 6; Nancy Fraser, 'Rethinking Recognition' (2000) 3 New Left Review 107–120; Martha Nussbaum, Women and Human Development: The Capabilities Approach (Cambridge University Press 2001); David Schlosberg, Defining Environmental Justice: Theories, Movements and Nature (Oxford University Press 2007) 5. It is suggested by Schlosberg (pages 6-7 and chapter 8) that the environmental justice framework should include ecological justice. However, this article does not address the concept of ecological justice.

7 Agyeman (a) (n 2) 44; Sustainability is often considered symbolic due to the trade-off between the three pillars and its impact on the lives of marginalised communities. For example, intense agriculture in Amazon leads to negative reactions and affects forest conservation and protection. Fortunate Machingura and Steven Lally, Case-Study Report: The Sustainable Development Goals and Their Trade-offs (Overseas Development Institute 2017); International Council for Science, A Guide to SDG Interactions: From Science to Implementation (ICSU 2017) 227; Additionally, sustainability has been expropriated in land and resource grabbing cases due to power inequalities. Sally Jeanrenaud, The Future of Sustainability: Have Your Say! Summary of the IUCN E-Discussion Forum 2006 (IUCN 2007) 7-8; For selective literature on sustainability/sustainable development discourse, see Melissa Leach and others, 'Equity and Sustainability in the Anthropocene: A Social–ecological Systems Perspective on Their Intertwined Futures' (2018) 1 (e13) Global Sustainability 1; Justice Mensah and Sandra Casadevall, 'Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review' (2019) 5 (1) Cogent Social Sciences 1, 5; Klaus Bosselmann, The Principle of Sustainability (Ashgate 2008); John Dernbach and Federico Cheever, 'Sustainable Development and its Discontents' (2015) 4(2) Transnational Environmental Law 247.

8 Agyeman (a) (n 2) 44.

9 Agyeman (b) (n 2) 4.

long run'.[10] As a transformative paradigm, JS requires sustainability to adopt a redistributive function, thereby moving equity and justice to the centre-stage in the discourse.[11]

The goal of JS is 'to ensure a better quality of life for all, now, and into the future, in a just and equitable manner, while living within the limits of supporting ecosystems'.[12] However, he uses JS in the plural, it 'acknowledges the relative, culturally and place-bound nature of the concept'.[13]

JS is an elaborate, alternative paradigm, 'not rigid, single, and, universal…but is both flexible and contingent'.[14] It develops a common agenda to create just and sustainable communities for now and in the future: 'The sustainability transition, from where we are now to where we need to go, should be accompanied by both an increase in equity and justice and an increase in environmental quality'.[15]

Agyeman's central premise is the inter-dependence of social justice, economic well-being, and environmental stewardship to develop greater social equality and sustainable communities. He advances three reasons supporting his position.[16] First, increased carbon footprints and negative environmental externalities are a consequence of high consumerism. Second, equal societies enjoy strong social cohesion and trust levels, leading towards the common good. Third, developing sustainable communities needs higher levels of adaptability, innovation, and creativity.

The JS paradigm moves towards policy, planning, and practice and has 'an analysis and theory of change with strategies to transform the way in which we treat each other and the planet'.[17] The main proposition is to develop sustainable communities through the adoption of tools, techniques, and strategies based on equity and justice. JS advocates a coherent 'new economics' involving 'sufficiency' both at the national and international levels.[18] For Agyeman, sufficiency suggests 'an optimal level of consumption to meet material and non-material needs… but not damage other needs such as environmental quality, social equality, or individual health'[19] and 'richest people (national level) and the richer countries (global level) bear a greater share of transitional costs'.[20]

The JS paradigm involves four essential elements for a sustainable future.[21]

2.1 Improving the Quality of Life and Well-being

Greater justice and equality enhance the quality of life and well-being and stabilises economies. Employing Sen's capabilities approach, Agyeman states that justice implies people have the capability to flourish rather than merely survive. Flourishing encompasses the core concepts of 'functionings' and 'capability' to improve the quality of life and well-being.[22] 'Functionings' includes multiple activities and forms of existence. 'Capability' refers to combinations of functions to

10 Nathan Bennett and others, 'Just Transformations to Sustainability' (2019) 11 (3881) Sustainability 1, 10.
11 Agyeman (a) (n 2) 6.
12 Agyeman (b) (n 2) 5; Julian Agyeman, Robert Bullard and Bob Evan (eds), Just Sustainabilities: Development in an Unequal World (Earthscan 2001) 5.
13 ibid 5.
14 Agyeman (a) (n 2) 6.
15 ibid 43. See also the recent literature on 'transformation towards sustainability' wherein the scholars are increasingly engaging with the themes of justice and equity - Bennett (n 10); Leah Temper and others, 'A Perspective on Radical Transformations To Sustainability: Resistances, Movements and Alternatives' (2018) 13 Sustainability Science 747; James J Patterson and others, 'Political Feasibility of 1.5 C Societal Transformations: The Role of Social Justice' 2018 (31) Current Opinion in Environmental Sustainability 31.
16 Agyeman (b) (n 2) 6.
17 ibid 7.
18 Agyeman (a) (n 2) 103.
19 Agyeman (b) (n 2) 32.
20 Agyeman (a) (n 2) 103.
21 Agyeman (b) (n 2) 7.
22 Amartya Sen, The Idea of Justice (Allen & Lane 2009).

which a person has effective access. This includes political freedoms, economic facilities, social opportunities, transparency guarantees, and protective security.[23] The central measure of justice is to 'transform primary goods into functionings'.[24]

Capability/ies provide an alternative way of understanding equity and justice. Equity and justice are not only about achieving an appropriate distribution of things but includes people being able to live at a level considered valuable and worthwhile. Thus, capabilities are crucial for growth and well-being. For Agyeman, conventional economic growth models are unreliable, perpetuate inequality, and are detrimental to well-being. Generational entitlement of a higher standard of living, increased consumption patterns, and environmental degradation (notably climate change) due to economic and development activities have resulted in unsustainable communities. Agyeman argues that these growth (development) models exacerbate income-inequality and decrease well-being not just of the poor and the disadvantaged but for the very existence of society.[25]

Evidence shows that development leaves the poorest behind, thereby facing 'intersecting inequalities'.[26] A 2020 UN Report states that,

> inequality within countries is very high. While inequalities between average national incomes are large, considerable disparities are also found among people at the bottom and at the top of the income distribution across and within countries…high or growing inequality not only harms people living in poverty and other disadvantaged groups, it affects the well-being of society at large.[27]

Inequalities in poor and disadvantaged communities undermine the environmental aspects of sustainability. Lack or limited financial resources, education, skills, and decision-making structures impact the poor disproportionately.[28] Unsustainable ecological footprints are 'destructive to the natural capital inheritance of future generations'.[29] Instances include 'purchasing inefficient energy appliances or polluting vehicles, weakening of community cohesion bonds to protect the environment due to inferior access to information and opportunities, failure to invest in individual or community environmental education, non-respect for environmental law, and encouraging illegal behaviour such as littering, recycling, and hazardous waste disposal'.[30] Reducing dysfunctional inequalities due to 'economic insecurity, lack of access to opportunity, unjust treatment, and impoverished well-being are basic challenges for [just] sustainability'.[31]

Agyeman advocates JS to improve the quality of life and well-being. Quality of life depends on improving conditions and capabilities regarding people's health, environmental conditions, education, and participatory voices that reflect life satisfaction.[32] Well-being entails

23 Amartya Sen, 'Human Rights and Capabilities' (2006) 6(2) Journal of Human Development 151, 154.

24 Schlosberg (n 6) 30-31.

25 Agyeman (a) (n 2) 58; Agyeman (b) (n 2) 8-13. See also Thomas Piketty, Capital and Ideology, (Belknap Press 2020).

26 Veronica P Arauco and others, 'Strengthening Social Justice to Address Intersecting Inequalities Post-2015' (ODI 2014) viii.

27 United Nations World Social Report, Inequality in a Rapidly Changing World (UN Department of Social and Economic Affairs 2020) 20.

28 Sharon Beder, 'Costing the Earth: Equity, Sustainable Development and Environmental Economics' (2000) 4 New Zealand Journal of Environmental Law 227, 228.

29 Joan Hoffman, 'Sustainability and Inequality: Confronting the Debate' (2017) 9(3) International Journal of Urban Sustainable Development 359, 361.

30 ibid 361-362; see also Elisabetta Magnani, 'Public and Private Goods Environmental Innovation, Security vs Risk, Environmental Protection, Inequality, and Institutional Change' (2011) 1219 Annals of the New York Academy of Sciences 197.

31 Hoffman (n 29) 363.

32 Agyeman (b) (n 2) 15.

adopting alternative models that ensure additional jobs and fulfilling employment in terms of income, personal, and social needs, redistribution of private and public capital ownership, change in the content of purchase and consumption such as green consumerism, promoting local food systems, corporate social responsibilities through their supply chains, and creating a vibrant local community that co-produces the goods and services they consume and protects the environment.[33] Such a society will have 'a healthy public sphere and healthy environment…'.[34]

The JS paradigm provides a theoretically energetic basis for improving quality of life and well-being for sustainability. Accepting and following this path involves a substantial personal change in the routine and character of our lifestyles. Mobilising a diverse community is challenging, especially if there is no widespread commitment to equity as a goal, nor if there is any current readiness to reject rampant consumerism.[35]

2.2 Meeting the Needs of Both Present and Future Generations

The second JS essential element focuses on inter-generational and intra-generational equity. Equity implies fairness, evenness, and justice and is found in international agreements.[36] Inter-generational equity means the 'needs of the present generation are met equitably and without sacrificing the ability of future generations to meet their needs'.[37] Intra-generational equity is applied 'across communities and nations within one generation…each generation has the right to inherit the same diversity in natural and cultural resources enjoyed by previous generations and have equitable access to the use and benefits of these resources'.[38] Attaining equity implies achieving evenness and fairness for sustainable development and sustainability.[39]

For Agyeman, justice as in fairness involves the distribution of both environmental benefits and burdens. The uneven distribution of environmental resources (renewable and non-renewable), scarcity, and over-exploitation perpetuate inequality, thereby damaging the capability to flourish and the ability to meet the needs of present and future generations.[40]

In this context, JS recognises the importance of 'social identity' in terms of specific groups, race, ethnicity, locality including place and place attachment. This helps to better understand 'needs and resource scarcity' in terms of the 'spatial and cultural dimensions of environmental injustices for present and future generations… such attachment is a basic human need, a crucial element of well-being, or a capability; undermining it constitutes an injustice'.[41]

33 ibid 15-19.

34 ibid 18.

35 Oscar Gandy, 'Wedging Equity and Environmental Justice into the Discourse on Sustainability' (2013) TripleC 221, 232.

36 World Commission on Environment and Development, Report of the World Commission on Environment and Development: Our Common Future (United Nations General Assembly document A/42/4271987) Chapter 2(1); Rio Declaration on Environment and Development, 14 June 1992, UN Doc A/CONF.151/26/Rev. 1 (Vol. I), Annex II (1992), principle 3.

37 Lisa M Smith and others, 'Relating Ecosystem Services to Domains of Human Well-Being: Foundation for a U.S. Index' (2013) 28 Ecological Indicators 79. Smith addressed the concept of 'needs' (basic, subjective, economic and environmental) through indicators of well-being.

38 Edith B Weiss, In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity (Transnational Publishers 1989).

39 Brian Preston, 'What's Equity Got To Do With the Environment?' (2018) 92 Australian Law Journal 257; Otto Spijkers, 'Intergenerational Equity and the Sustainable Development Goals' (2018) 10 (3836) Sustainability 1, 8.

40 Agyeman (b) (n 2) 22, 35-37.

41 Julian Agyeman and others, 'Trends and Directions in Environmental Justice: From Inequity to Everyday Life, Community, and Just Sustainabilities' (2016) 41 Annual Review of Environment and Resources 321, 334.

Climate change and land grabbing are examples of injustices affecting poor, vulnerable communities due to natural resource extraction and its scarcity. The Global Resources Outlook Report identifies resource extraction as the principal cause for climate change and biodiversity loss, thereby causing increased displacement and migration within and among nations.[42] For example, the controversial POSCO Indian project tells the story of a human rights and sustainability crisis induced by a mega-development project.[43]

Thus, exploitation and displacement challenges are core issues that side-step equity and justice in the resource extraction and scarcity debate, thereby resulting in unsustainable communities. Agyeman, citing Walker, argues that to establish just, sustainable communities, the distribution of environmental goods or burdens must include the key distributive dimensions of vulnerability, need, and responsibility.[44] These distributive aspects must be supplemented by procedural justice and recognition. Development of assessment methodologies, governance mechanisms including indigenous peoples' rights over their lands, territories, and natural resources, and responsive institutions will help to protect the needs of both present and future generations.

2.3 Equity and Justice in Terms of Recognition, Process, Procedure and Outcomes

Agyeman adopts a multidimensional approach to explaining JS being underpinned by equity and justice. Acknowledging Sen and Nussbaum,[45] Agyeman accepts that notions of capabilities for flourishing are central to the justice discourse.[46] The "'capability" of functioning focuses on the qualities that enable individuals to have a fully functioning life…[includes] both the qualities and capabilities held by people and their ability to express and exercise those capabilities in a functioning life'.[47] Individuals will prosper in a just environment provided there are effective institutions and resource availability.

Equity and justice must include a fairer distribution of material income and consumption and involve social factors in the construction of a just society. For Agyeman, material outcomes and wealth are real capabilities to meet the needs for shelter and security.[48] Material maldistribution leads to inequality, thereby causing stress, insecurity, and impacts the quality of life. However, this distributional approach for achieving justice would cause more injustice unless it examines the underlying causes of maldistribution and identifies those excluded from the actual distribution.[49] Thus, 'lack of recognition is a harm - an injustice- as much as a lack of adequate distribution of goods'.[50]

Accordingly, justice as recognition, is critically important to JS, particularly for diverse cultural societies with poor, vulnerable, indigenous people, and communities. Recognition is a 'vital human need'[51] and a 'concern for distributive justice'.[52] Damage to indigenous communities' traditional land and resources because of economic and development activities produces misrecognition and injustice. Recognitional injustice is manifested by insults, degradation, devaluation, oppression, disrespect, and threats to individual, community, cultural, and group

42 International Resource Panel, Global Resources Outlook 2019: Natural Resources for the Future We Want (UNEP 2019) 5.

43 International Human Rights Clinic ESCR-Net, The Price of Steel: Human Rights and Forced Evictions in the POSCO-India Project (NYU School of Law 2013) 1-3.

44 Agyeman (b) (n 2) 37.

45 Martha Nussbaum and Amartya Sen (eds), The Quality of Life (Clarendon 1993); Martha Nussbaum, Frontiers of Justice: Disability, Nationality, Species Membership (Harvard University Press 2003).

46 Agyeman (b) (n 2) 38.

47 Schlosberg (n 6) 30.

48 Agyeman (b) (n 2) 39.

49 ibid 38.

50 Schlosberg (n 6) 18.

51 Charles Taylor, 'The Politics of Recognition' in Amy Gutmann (ed), Multiculturalism: Examining the Politics of Recognition (Princeton University Press 1994) 25, 26.

52 Iris M Young, Justice and the Politics of Difference (Princeton University Press 1990).

identities.[53] Consequently, this leads to distributional inequity, exclusion, and devastated communities. Recognitional approach advances the 'functioning' and 'flourishing' of people, culture, identity, and communities in terms of their capabilities and control. Thus, access to land, resources, and technologies are basic capabilities for development and poverty alleviation.[54] It is crucial in recognitional justice to identify the 'why' of injustice and inequality, to both understand and remedy it.

Food security, indigenous communities and their cultural identities attract the attention of the JS paradigm with respect to recognitional (in)justice. These communities are increasingly unsustainable due to growing inequality, vulnerability, and limited or no access to land or resource rights. For instance, Vandana Shiva criticised the links between globalisation of food supply and cultural threats that not only destroy local production and market services but also impact cultural identities.[55] Examples of recognitional and cultural injustices include the ban of various base cooking oils from different local Indian regions and the importation of soya bean oil, destruction of the local farming process by highly engineered technology and the introduction of genetically modified BT cotton, seed monopolisation by Monsanto multinational corporation, and suicide by Indian farmers.[56] Recognition of traditional food practices, secure access to land rights, and cultural diversity are basic human needs, and undermining them constitutes injustice.

The recognition of the environment as a human right is a prospective tool for JS. Interlinkage between the right to life and a healthy environment ensures conditions for a fully functioning life. The relationship between human rights and the environment has gained prominence at international and national levels.[57] By 2020, 337 States recognised the right to a healthy environment through constitutional protection (110 States), environmental legislation (more than 101 States), and regional human rights treaties and environmental treaties (ratified by more than 126 States).[58]

In 2018, John Knox recognised that the 'greening' of human rights contributes to improvements in health and well-being.[59] Knox called for global recognition of the right to a safe and healthy environment and recommended the Framework Principles on Human Rights and the Environment. In 2020, David Boyd highlighted good practices (substantive and procedural elements) in the recognition and implementation of the human right to a safe, clean, healthy, and sustainable environment.[60]

The 'recognition of a right' does not necessarily guarantee its enforceability and execution. According to Knox, there are country-specific challenges and

53 Schlosberg (n 6) 14.

54 Agyeman (b) (n 2) 42.

55 Michael Specter, 'Seeds of Doubt' The New Yorker (18 August 2014) <https://www.newyorker.com/magazine/2014/08/25/seeds-of-doubt>.

56 Schlosberg (n 6) 87; Ian Lowe and Jouni Paavola, Environmental Values in a Globalizing World: Nature, Justice and Governance (Routledge 2007) 108.

57 See generally, Alan Boyle, 'Human Rights and the Environment: Where Next?' (2012) 23 (3) European Journal of International Law 613; Donald Anton and Dinah Shelton, Environmental Protection and Human Rights (Cambridge University Press 2011); Francesco Francioni, 'International Human Rights in an Environmental Horizon' (2010) 21 European Journal of International Law 41; Stephen Turner, A Substantive Environmental Right- An Examination of the Legal Obligations of Decision-makers Towards the Environment (Kluwer 2009); Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds), The Oxford Handbook of International Environmental Law (Oxford University Press 2007) Chapters 28 and 29.

58 David Boyd, Right to a Healthy Environment: Good Practices Report (UN Doc. HRC/43/53, 2020) 4.

59 John Knox, Framework Principles Report (UN Doc. HRC/37/59, 2018) 18.

60 Boyd (n 58) 128. The substantive elements include - clean air, safe climate, safe water and sanitation, healthy and sustainably produced food, non-toxic environments, and healthy biodiversity and ecosystems. The procedural elements are access to information, public participation, and access to justice and effective remedies (4-18).

obstacles regarding the effective implementation of the right to an environment.[61] For example, according to the State of India's Environment Report 2019,[62] air pollution accounts for 12.5 per cent of annual deaths in India. More than 100,000 children, under five, die due to bad air. Both the surface and the groundwater are under stress. Between 2010 and 2014 India experienced a 22 per cent increase in greenhouse gas (GHG) emissions of which the energy sector was the major contributor. These figures illustrate disturbing shortcomings and continuing challenges. They reflect 'a flawed regulatory regime, poor management of resources, inadequate use of technology, and absence of a credible, effective enforcement machinery'.[63]

For Agyeman, there are two critical elements in the JS paradigm: democracy and accountability. Democracy is a minimum requirement and a necessary capability for a just sustainable community. For people to prosper they must participate as competent citizens in processes and decisions that affect their lives. The 'process of deliberative, democratic, and enhanced engagement is essential to the process of developing sustainable communities'.[64]

A broad understanding of JS involves meaningful participation in environmental sustainability debates to help ameliorate 'issues of inequality, recognition and the larger question of capabilities and functioning of individuals and communities'.[65] International treaties and agreements, including Principle 10 of the Rio Declaration[66] and UNEP Guidelines for the Development of National Legislation on Access to Information, Public Participation and Access to Justice in Environmental Matters,[67] recognise meaningful participation through procedural rights.

Although 'individuals have the right to participate in decisions affecting their world, there exists a distance between the procedural right to participate and to be consulted and the extent to which individual rationalities and values can shape public decisions'.[68] For example, Victoria Tauli-Corpuz, Special Rapporteur on the Rights of Indigenous Peoples, stressed the failure of States, especially in Asia and Africa, to recognise the voices of indigenous people regarding encroachment by extractive industries and infrastructure megaprojects.[69]

Accountability is the second and related critical element of a just sustainable community. Agyeman argues that in the context of JS, the role of the state and non-state actors, such as companies, raises the question of accountability. It involves 'respect for human rights, environmental and social impacts of corporate activities. Without controls over the activities of corporations, justice is unachievable and inequality will continue to grow'.[70] He supports the need for regulatory frameworks for governance and investment to provide accountability. The OECD Guidelines for Multinational Enterprises for Responsible Business[71] and the United Nations Guiding Principles on

61 Knox (n 59) 3-4.

62 Sunita Narian and others, State of India's Environment 2019 (Centre for Science and Environment 2019).

63 Ministry of Environment, Forest and Climate Change, High Level Committee on Forest and Environment Related Laws Report (Government of India 2014) 8,22.

64 Agyeman (a) (n 2) 67-68.

65 Schlosberg (n 6) 8.

66 Rio Declaration on Environment and Development, 14 June 1992, UN Doc A/CONF.151/26/Rev. 1 (Vol. I), Annex II (1992).

67 UNEP, Guidelines for the Development of National Legislation on Access to Information, Public Participation and Access to Justice in Environmental Matters (UNEP, 2011).

68 Chiara Armeni, 'Participation in Environmental Decision-making: Reflecting on Planning and Community Benefits for Major Wind Farms' (2016) 28(3) Journal of Environmental Law 415.

69 Victoria Tauli-Corpuz, Rights of Indigenous Peoples (UN Doc. A/72/186, 2017) 6-7, 11, 20-21.

70 Agyeman (b) (n 2) 45.

71 OECD, Guidelines for Multinational Enterprises (OECD Publishing 2011); OECD, Due Diligence Guidance for Responsible Business Conduct (OECD Publishing 2018).

Business and Human Rights[72] offer progressive guidelines.

The growing reach and impact of multinational enterprises (MNCs) in developing countries have raised questions about the role and accountability of state and non-state actors including multilateral trade organisations. For example, the anti-WTO movements in the late 1990s questioned the credibility of the WTO. According to People Global Action, the WTO served the interest of MNCs and promoted corporate globalisation leading to exacerbated inequality in developing countries. It resulted in the marginalisation of traditional producers, creation of markets to cater to their elite-few, unfair distribution of resources, destruction of rural societies, increased bonded labour, environmental destruction, and cultural neglect.[73]

In India, economic globalisation has created opportunities for investment that result in unsustainable development and more negatively affected communities. For 'ease of doing business' and to create a conducive environment for investors, regulatory frameworks are either ignored or short-circuited to speed economic returns and corporate interests. It manipulates and subverts laws that safeguard and protect human rights including access to ownership and control over land, environmental and social aspects of the poor and the marginalised.[74] For example, the controversial mining extraction by Vedanta Resources in India produced injustice, inequity, and discrimination against the poor and the marginalised, particularly the tribal people.[75]

Agyeman generates a valuable resource for claims of equity and justice through a comprehensive appreciation of the terms. Accordingly, JS creates an inclusive process wherein distribution, recognition, capabilities, and participation are inter-related and inter-dependent at individual, group, and community levels.

2.4 Living within Ecosystem Limits

The concept of living within ecosystem limits builds on long-standing debates that address 'limits on planet Earth'.[76] An ecosystem limit is a boundary beyond which exploitation of nature will have significant deleterious effects. The term 'planetary boundaries' was introduced by Johan Rockström.[77] The planetary boundaries concept presents 'a set of nine planetary boundaries within which humanity can continue to develop and thrive for future generations and if crossed, would be hostile to human prosperity'.[78]

According to Agyeman, in distributional terms, the inequalities and consumption patterns of the developed world leads to environmental degradation and pollution. There is a need to distribute environmental resources in a fair and equitable manner. Though the poor cause less environmental damage, paradoxically they remain the worst affected and most vulnerable to environmental ill-effects, for example, climate change. A fundamental shift of values would ensure a transition from a growth-centered society to one acknowledging the biophysical limits and safe operating space for humanity to thrive.[79] Tools like

72 United Nations Human Rights Council Resolution 17/4, Human Rights and Transnational Corporations and other Business Enterprises (UN Doc. A/HRC/RES/17/4, 2011).

73 World History Archives, 'People's Global Action against 'Free' Trade and the World Trade Organisation' (Chapter 95 1997) Hartford Web Publishing <http://www.hartford-hwp.com/archives/25a/024.html>; Schlosberg (n 6) 86.

74 Gitanjali N Gill, Environmental Justice in India: The National Green Tribunal (Routledge 2017) 4.

75 Orissa Mining Corporation v MoEF (2013) 6 SCC 476; Vedanta Resources v Lungowe [2019] UK SC 20.

76 Dennis Meadows, The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind (Universe Books 1972); Katrina Brown, 'Global Environmental Change II: Planetary Boundaries—A Safe Operating Space for Human Geographers?' (2016) 41(1) Progress in Human Geography 118.

77 Johan Rockström and others, 'Planetary Boundaries: Exploring the Safe Operating Space For Humanity' (2009) 14 (2) Ecology and Society 32.

78 ibid. The planetary boundaries include climate change, biodiversity loss, the nitrogen cycle, the phosphorus cycle, stratospheric ozone depletion, ocean acidification, global freshwater use, land use change, atmospheric aerosol loading, and chemical pollution.

79 Agyeman (a) (n 2) 95-96; Agyeman (b) (n 2) 46-55.

environmental space,[80] ecological footprints,[81] and ecological debt[82] are insightful in understanding and promoting JS. The use of these tools operationalises the concept of equity and justice by imposing general limits to produce a fair share of environmental resources on which the quality of life and well-being depend and support the sustainable growth of economies. They demonstrate that the consumption of environmental resources has the 'minimum dignity floor and maximum sustainability ceiling'.[83] The aims are to eliminate inequalities between the nations and provide foundations for resource consumption and 'sufficiency' measures thereby making living and lifestyles sustainable.[84]

In summary, JS can be understood as 'an overarching societal value'[85] with an equity-based agenda. It seeks to influence policy at the global level. For example, the Earth Charter presents an inclusive, integrated value-based framework of global interdependence and universal responsibility for the present and future generations.[86] It includes respect and care for the community of life (Principle 1), ecological integrity (Principle 2), social and economic justice (Principle 3), and democracy, non-violence, and peace (Principle 4).

Agyeman selects examples to bind JS scholarship and praxis. These include food, energy, climate, land use, urban planning, transportation, solid waste, and displacement. They highlight the crucial relationship between the environment, social needs, and well-being by placing equity and justice under a prioritising spotlight to achieve sustainable communities at the national and global levels.

3 JUST SUSTAINABILITIES AND SUSTAINABLE DEVELOPMENT GOALS

Section 2 identifies the centrality of Agyeman's paradigm. This section addresses JS and its embedded association with the SDGs.[87] It addresses this relationship by identifying and mapping in tabular form the core concepts and common terminology employed by JS, UN Resolution 2015, and the resultant SDGs and targets. A comprehensive account of the 17 SDGs is beyond the scope of this article.

The SDGs dominate the sustainability agenda to 'heal and secure our planet and shift the world on a sustainable and resilient path'.[88] The SDGs contain 17 goals and 169 targets with a focus on equity, inclusion and leave no one behind. All SDGs, a set of global priorities and objectives, are by design inter-related and inter-dependent, though trade-offs are inevitable. The SDGs are bold, integrated, and transformative steps that balance the three dimensions of sustainable development: the economic, social, and environmental. They are structured around the five pillars of Agenda 30: People (Goals 1-5), Planet (Goals 6, 7, 12-15), Prosperity (Goals 8-11), Peace (Goal 16), and Partnership (Goal 17). The SDGs Report 2019 recognises the limited progress made in some areas

80 Duncan McLaren, 'Environmental Space, Equity and the Ecological Debt' in Julian Agyeman, Robert Bullard and Bob Evan (eds), Just Sustainabilities: Development in an Unequal World (Earthscan 2001) 19.

81 Mathis Wickernagel and William Rees, Our Ecological Footprint: Reducing Human Impact on the Earth (New Society Publishers 1996).

82 Acción Ecológica,'No More Plunder, They Owe Us the Ecological Debt!' (1999) Bulletin of Acción Ecológica 78.

83 Agyeman (b) (n 2) 48.

84 McLaren (n 80) 22; Janez Potocnik and others, Sufficiency: Moving Beyond the Gospel of Eco-efficiency (Friends of the Earth Europe 2018) 4-6.

85 Julian Agyeman and Bob Evans, 'Sustainability and Democracy: Community Participation in Local Agenda 21' (1995) 22(2) Local Government Policy Making 35, 36.

86 The Earth Charter <https://earthcharter.org/wp-content/uploads/2020/03/echarter_english.pdf?x28510>.

87 UN General Assembly Resolution 70/1, Transforming our World: The 2030 Agenda for Sustainable Development, UN Doc. A/RES/70/1 (2015).

88 ibid 1.

including 'reducing poverty, immunisation, and access to electricity… however challenges include environmental deterioration, climate change, and increased inequalities within and between nations'.[89]

3.1 An 'Embedded Lens'

The key question is 'are the SDGs and JS integrated?' The answer is yes. JS is 'embedded' in the SDGs as an 'institutional agenda'.[90] The 'embedded lens' envisions a fairer and inclusive society and provides a plural and comprehensive understanding of sustainability trajectories. The basic message and resolve for 'a just, equitable, tolerant, open, and socially inclusive world'[91] evidence SDGs and JS are integrated to drive a sustainable future.

In the context of environmental sustainability, the JS and SDGs are synergetic and complementary. Goals 6, 7, 12, 13, 14, and 15 specifically and directly focus on environmental sustainability. The 'embedded lens' places equity and justice on the centre-stage to improve environmental quality for a sustainable future. For example, Goal 6 ensures the availability of clean water for 'all' and 'equitable' sanitation and hygiene for 'all'. Distributional equity is reflected by addressing water scarcity and ensuring its availability to meet the needs of the present generation. The element of procedural justice is evidenced by strengthening the participation of local communities in water and sanitation management.

Goal 7 ensures access to affordable, accessible, sustainable energy for 'all' including the developing and the least developed countries. The 'materiality of everyday life and redistributing'[92] ensures that the basic needs are met through energy production and its availability. It also reflects the elements of recognitional and distributive justice emphasising the issue of energy poverty and improving opportunities for a sustainable life. For example, an uninterrupted supply of clean cooking fuel and reduced dependency on biomass, especially in poor countries, would support equitable justice.

Goal 12 aims to ensure sustainable consumption and production patterns. The 'food movement: local food, sustainable agriculture, food supply chains, anti-hunger, and others'[93] is a narrative wherein equity and justice are framed to address 'food insecurity, inequality, and insensitivity to cultural difference'.[94] The 'sufficiency' norm of optimal consumption promoting green consumerism increases well-being and also acts as a 'multiplier with 'efficiency' measures that reduce the environmental impact of each unit of production'.[95] Resource management and efficiency curb over-exploitation of critical materials, thereby promoting inter and intragenerational equity. The concept of environmental space allows equitable resource allocation and consumption within the planet's carrying capacity. This facilitates understanding and an action towards a fairer distribution and availability of resources. Fossil fuel extraction for developmental purposes contributes towards energy needs and securities that help the capabilities of nations, particularly developing countries, to meet their basic needs and flourish. The extraction process should be equitable by preventing environmental degradation,

89 United Nations, The Sustainable Development Goals Report 2019 (United Nations 2019). For a critique on SDGs see, Mary Menton and others, 'Environmental Justice and the SDGs: From Synergies to Gaps and Contradictions' (2020) Sustainability Science 1; C Allen and others, 'Initial Progress in Implementing the Sustainable Development Goals (SDGs): A Review of Evidence from Countries' (2018) Sustainability Science 13; Helen Kopnina, 'The Victims of Unsustainability: A Challenge to Sustainable Development Goals.' (2015) 23 (2) International Journal of Sustainable Development & World Ecology 113.

90 Agyeman (n 41) 335.

91 United Nations (n 87) para 8.

92 Agyeman (n 41) 332.

93 Agyeman (b) (n 2) 59.

94 ibid 62.

95 ibid 32.

protecting the poor and marginalised by ensuring their human rights regarding their land, livelihood, identity, and culture.[96] The adoption of sustainable practices by MNCs would promote distributive, equity and spatial justice and ensure a better future for the present and generations. Accountability, as in fairness, mandates MNCs to declare their sustainability practices. Sustainable tourism encourages 'culturally inclusive spaces and practices'[97] and embodies the elements of equity and justice. It contributes towards recognising the local culture and products through identity recognition, meaning, and values and provides a platform for inclusiveness and integration.

Goal 13 focuses on urgent action to combat climate change and its impact, particularly on the developing (small island) and the least developed countries. Notions of equity and justice are acknowledged in the Paris agreement, 2015.[98] Climate equity includes building global regimes that take into consideration 'distributional justice (e.g. equal pollution/emission rights for all citizens), recognitional justice (e.g. recognition of historical legacies, critiquing the role of capitalism as a structural cause of climate change), and intergenerational justice (e.g. ecological debt of the global North to the global South for contributions to climate change over the last century)'.[99] Climate change equity focuses on procedural fairness for advancing inclusive, effective, and equitable development. This includes meaningful participation and access to information to hear the voices of the poor and the marginalised communities in decision-making. The equity lens can be used in climate change by providing access to land ownership and securing livelihoods for the marginalised communities that support forest conservation that also act as carbon sinks. Another emerging strand of equity and justice considers 'deontic (moral) aspects of climate action… provide a way of connecting (seemingly distant) future impacts to present-day decision-making and moral responsibilities in societies'.[100]

Goal 14 relates to sea life. Enhancing the conservation and sustainable use of oceans, seas, and marine resources promote global good. The equity discourse advocates 'strategy that prevents over-extraction and pollution, protects biodiversity, and the climate, ensures employment for coastal communities, and supports global food security'.[101] The UNFAO Blue Growth Initiative aims to better manage the living aquatic resources and foster equitable benefits for communities through distributive and participatory mechanisms in decision-making.[102] Equity, as in fairness, for small-scale artisanal fishers encompasses place-based recognition that includes 'uniqueness of places—in terms of local resources, assets, people's capacities, knowledge, and preferences'.[103] It contributes to SDGs through the promotion of equitable and inclusive practices that sustainably manage and protect marine and coastal ecosystems.

Goal 15 protects life on land by ensuring the conservation, restoration, and sustainable use of terrestrial and inland freshwater ecosystems and their services, with a focus on forests, wetlands, mountains, and drylands. An equity-justice discourse places people and collective identities (indigenous and marginalised) on the centre-stage to manage land systems. The place of sense, values, and cultural diversity recognises the involvement of the local communities to pursue

96 Sivan Kartha, Michael Lazarus and Kevin Tempest, 'Fossil Fuel Production in a 2°C World: The Equity Implications of a Diminishing Carbon Budget' (Discussion Brief 2016) Stockholm Environment Institute.

97 ibid 154-156.

98 Paris Agreement, Paris, 12 December 2015, in Report of the Conference of the Parties on its Twenty-First Session, UN Doc FCCC/CP/2015/10/Add.1.

99 Patterson (n 15) 4.

100 ibid 5.

101 World Resources Institute, 'Sustainable Development Goal 14' <https://www.wri.org/sdg-14>.

102 Food and Agriculture Organisation of the United Nations, 'Blue Growth' (Policy and Governance Getaway) <http://www.fao.org/policy-support/policy-themes/blue-growth/en/>.

103 Sara Grenni, Katriina Soini and Lummina Geertruida Horlings, 'The Inner Dimension of Sustainability Transformation: How Sense of Place and Values Can Support Sustainable Place Shaping' (2020) 15 Sustainability Science 411.

sustainable livelihood opportunities. Nearly 1.6 billion people are dependent on forests for their livelihood.[104] This interdependence is indicative of an emotional, intellectual, sentient bond. A multi-stakeholder orientation and participatory approach is productive to better protect and manage forests and improve the livelihoods of forest-dependent people. In this context, people's control over forest resources includes the right of ownership, access to collect, use, and dispose of forest produce, community rights, and habitat rights for indigenous groups and communities.[105] Local knowledge and skills in exercising forests management allow the forest-dependent people to make decisions that promote conservation activities and rehabilitate degraded lands. Simply put, they know what works and what does not within their local environment. As repositories of traditional knowledge and related skills, an equity-based approach promotes fair and equitable sharing of the benefits arising from the utilization of genetic resources. This further creates employment opportunities and income generation for the local communities, thereby improving their well-being or capabilities. In natural resource management, the equity-justice based agenda provides 'benefits which people have legitimate, effective command and which are instrumental in achieving well-being. These benefits may include direct uses in the form of commodities, such as food, water, or fuel; the market value of such resources or of rights to them; and the benefits derived from environmental services, such as pollution sinks, or the properties of the hydrological cycle'.[106]

However, sustainability is 'simply not about green or environmental concern'.[107] Environmental sustainability is inextricably linked with elements of social development and economic progress. The integration, indivisibility, and balance of three elements (economic, social, and environmental) provide the foundation for a human development agenda. There are strong synergistic effects among the 17 goals. For example, lack of access to safe water and sanitation (environmental, social) due to poverty (economic) increases health risks and severely affects the lives of people(social), thereby making SDGs ever more distant. The importance of embedding 'equity and justice' into human development improves societies and strengthens social cohesions, thereby promoting a sustainable society.

3.2 Mapping the 'Embedded Lens'

The author has in a tabular form mapped the 'embedded lens' i.e. Agyeman's essential elements (equity, meeting the needs of present and future generation, justice in terms of recognition, and living within ecosystem limits) alongside those of the UN SDGs (2015 resolution and the targets). This formulation is achieved by identifying keywords with equivalent meanings. The commonality of these essential elements that bind JS and SDGs are recognised as the key integrants. They promote the movement from theory to action. Addressing the wider formulations and interlinkages of these integrants helps explore the equity and justice aspects in a holistic manner. It moves beyond the 'singular' environmental element of sustainability and includes other vital elements, being economic and social. The integrated dimensions 'offer a "just", rounded, and equity-focused definition of sustainability and sustainable development, while not negating the very real environmental threats'.[108]

104 United Nations Environment Programme, 'Goal 15: Life on Land' <https://www.unenvironment.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-15>.

105 Gitanjali N Gill, 'Feminization of Poverty: Indian Rural Women and the Environment' (2012) 63(2) Northern Ireland Legal Quarterly 291.

106 Melissa Leach, Robin Mearns and Ian Scoones, 'Environmental Entitlements: Dynamics and Institutions in Community- Based Natural Resource Management' (1999) 27(2) World Development 233.

107 Agyeman (b) (n 2) 4.

108 ibid 4.

3.2.1. Equity

Agyeman's 'equity deficit' is recognised and replaced by 'equity sufficiency' in the Agenda 2030. Acknowledging and reconstructing the work of Leach,[109] the following table presents the elements of equity and justice.

JS (Equity, Equality, Fair, Just, For All)	**UN Resolution 2015**	**SDGs and Targets**
Poverty	*People*- End poverty in all their forms and dimensions; ensure all human beings can fulfil their potential in dignity and equality (paras 3 and 24)	Ensure equal rights to economic resources to all (men, women, and the poor and vulnerable (Goal 1-Target 1.4)
Food and hunger	*People*- end hunger and achieve food security as a matter of priority for all; end all forms of malnutrition (para 24)	Double the agricultural productivity; secure and equal access to land; promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge (Goal 2-Targets 2.3 and 2.5)
Health	*People*- equitable health care where physical, mental, and social well-being are assured (para 7); achieve and access universal health coverage and quality health care (para 26)	
Education	*People*- inclusive, equitable, and universal access to quality education at all levels (paras 7, 20 and 25)	Ensure free, equitable, and quality primary and secondary education to all; ensure affordable, equitable, and quality technical, vocational and tertiary education for all (Goal 4-Targets 4.1,4.3 and 4.5)
Water and Sanitation	*Planet*- the human right to safe drinking water for all, sanitation, and improved hygiene (para 7)	Achieve universal and equitable access to safe and affordable drinking water, sanitation, and hygiene for all (Goal 6-Targets 6.1 and 6.2)
Energy	*Planet*- Universal access for all to affordable, reliable, and sustainable energy (para 7)	
Decent work	*Prosperity*-Decent work for all (para 9); equal opportunities for employment (para 20)	Achieve equal pay for work of equal value (Goal 8- Target 8.5)
Infrastructure	*Prosperity*-Sustainable urban development and management are crucial to the quality of life of our [all] people (para 34)	Develop quality, reliable, affordable, sustainable, and resilient infrastructure and equitable access for all (Goal 9-Target 9.1)
Land	*Planet*- Resources [land] to developing rural areas and sustainable agriculture supporting smallholder and women farmers (para 24)	Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources (Goal 15- Target 15.6)
Peace	*Peace*- Build peaceful, just, and inclusive societies that provide equal access to justice, respect for human rights, effective rule of law and good governance, and transparent and accountable institutions (para 35)	Promote the rule of law ... and ensure equal access to justice for all (Goal 16- Target 16.3)
Means of Implementation	*Partnership*- Lives of all will be profoundly improved and our world will be transformed for the better (para 53)	Promote a universal, rules-based, open, non-discriminatory, and equitable multilateral trading system (Goal 17- Target 17.10)

109 Leach and others (n 7) 6.

3.2.2 Improving Quality of Life and Well-being: JS paradigm to improve the quality of life and well-being in the society and its reflection in the SDGS.

JS (Quality of life and well-being)	**UN Resolution 2015**	**SDGs and Targets**
Capability/ies	*People*- All human beings can fulfil their potential in dignity and equality (People, para 4); equal opportunity permitting the full realization of human potential and contributing to shared prosperity (para 8); *Planet*- nurturing environment for the full realization of their rights and capabilities (para 25); *Prosperity*-build a better future for all people, including the millions who have been denied the chance to lead decent, dignified and rewarding lives and to achieve their full human potential (para 50)	*People*- Create pro-poor and development policies/strategies at national/regional/ international levels (Goal 1-Target 1.4); full, effective and equal participation/opportunities for leadership at all levels of decision-making (Goal 5-Target 5.5); *Prosperity*- empower and promote the social, economic and political inclusion of all (Goal 10-Target 10.3); adopt fiscal, wage and social protection policies, and achieve greater equality (Goal 10-Target 10.4)
Quality of life	*People*- Ensure that all human beings can enjoy prosperous and fulfilling lives; eradicating poverty, hunger, disease, and want, where all life can thrive (Preamble, paras 2, 3 and 7); equitable and universal access to quality education at all levels; equitable health care and social protection (paras 7, 24 and 26); *Prosperity*-sustainable urban development and management are crucial to the quality of life of our people (para 34)	*People*- End hunger and all forms of malnutrition; access to safe, nutritious and sufficient food all especially the poor/vulnerable (Goal 2-Target 2.1 and 2.2); healthy lives and promote well-being for all (Goal 3); inclusive and equitable quality education and lifelong learning opportunities for all (Goal 4); *Planet*- availability of water and sanitation for all (Goal 6)
Well-being	*Prosperity*- Inclusive and sustainable economic growth and decent work for all by addressing income inequality (para 9); a healthy and well-educated workforce with the knowledge and skills needed for productive and fulfilling work and full participation in society (para 27); *Planet*- promoting sustainable consumption and production patterns, and financial and technical assistance to strengthen developing countries' scientific, technological and innovative capacities towards sustainable societies (para 28)	*People*- sustainable food production systems and resilient agricultural practices that increase productivity. production, and maintain ecosystems (Goal 2-Target 2.4); *Prosperity*-promote sustained, inclusive and sustainable economic growth; full and productive employment and decent work for all (Goal 8); build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Goal 9); make cities and human settlements inclusive, safe, resilient and sustainable including public spaces (Goal 11-Targets 11.1,11.2 and 11.7); *Planet*- sustainable consumption and production patterns that include use of natural resources, reduce food losses along production and supply chain, substantially reduce waste generation through prevention, reduction, recycling, and reuse, and encourage companies, especially large and transnational companies, to adopt sustainable practices (Goal 12);

3.2.3 Meeting the Needs of Both the Present and Future Generations

The following Table represents the elements from the JS paradigm and the SDGs framework.

JS (meeting the needs of present and future generations)	**UN Resolution 2015**	**SDGs and Targets**
Inter-generational equity	*Planet*- Protect the planet and taking urgent action on climate change, to support the needs of all- the present and future generations (Planet, paras 18 and 53)	No direct reference in the goals and targets
Intra-generational equity	*People*- Realise the human rights of all (Preamble); no one will be left behind and Goals and targets met for all (nations and peoples) (paras 4 and 5); a world with equitable and universal access to quality education (paras 7 and 25); a just, equitable, tolerant, socially inclusive world, universal respect for human rights/dignity (para 8); *Planet*- the principle of common but differentiated responsibilities (para 12); Climate change is one of the greatest challenges of our time (para 14); build a better future for all people, dignified and rewarding lives and to achieve their full human potential (para 50);	*People*-Equal rights to economic resources and access to basic services (Goal 1- Target 1.4); resiliency building of the poor and vulnerable; reduce their exposure/vulnerability to climate-related extreme events (Target 1.5); ensure access nutritious and sufficient food for all (Goal 2- Target 2.1); healthy lives/well-being for all (Goal 3); inclusive/equitable education for all (Goal 4); *Prosperity*-decent work for all (Goal 8- Target 8.5); reduce inequality within/among countries (Goal 10); access to housing, transportation and public spaces (Goal 11- Targets 11.1,11.2 and 11.7); *Planet*- universal and equitable access to safe and affordable drinking water, sanitation and hygiene for all (Goal 6- Target 6.1 and 6.2); universal access to affordable, reliable and modern energy services (Goal 7- Target 7.1); combat climate change and its impact in all countries (Goal 13); Promote fair and equitable sharing of the benefits (Goal 15- Target 15.6)

3.2.4 Equity and Justice in Terms of Recognition, Process, Procedure and Outcomes
The elements of equity and justice and corresponding SDGS are identified in the following Table.

JS (Equity and justice in terms of recognition, process, procedure, and outcomes)	**UN Resolution 2015**	**SDGs and Targets**
Recognition	*People*- Respect for race, ethnicity, cultural diversity, indigenous people, disabled, refugees/migrants (Paras 8, 23 and 36); right of self-determination (Para 35)	*People*- poor, vulnerable, women, indigenous, family farmers, pastoralists, and fishers have equal rights to economic resources, as well as access to basic services (Goals 1- Targets 1.4 and 2.3); *Prosperity*- protect and safeguard the world's cultural and natural heritage (Goal11- Target 11.4)
Distributive	*Prosperity*- access to economic resources (Para 20)	*People*- poor, vulnerable, and women have equal rights to economic resources, access to basic services, ownership and control over land and other forms of property, inheritance, natural resources (Goal 1-Target 1.3 and Goal 5- Target 5.a); *Planet*- promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources (Goal 15-Target 15.6); provide access for small-scale artisanal fishers to marine resources and markets (Goal 14- Target 14.b).
Capabilities (Human rights as a prospective tool for JS)	*People*- human rights of all (Preamble); build peaceful, just and inclusive societies (Para 3); *Planet*- the human right to safe drinking water and sanitation and improved hygiene; food security including sufficiency, safe, affordable and nutritious food Paras 7 and 24); universal access to affordable, reliable and sustainable energy (Para 7)	*People*- Access to food, food security, improved nutrition (Goal 2); *Planet*- universal and equitable access to safe and affordable drinking water and sanitation and hygiene for all (Goal 6- Targets 6.1, 6.2 and 6.3); ensure universal access to affordable, reliable and modern energy services (Goal 7- Target 7.1); *Prosperity*- access to adequate, safe and affordable housing, basic services and sustainable transport systems for all (Goal 11- Targets 11.111.2)
Democracy	*Planet*- Democracy and the rule of law, and an enabling environment (Para 9); affirm international conventions, specifically, the Rio Declaration (Paras 11 and 12)	*People*- equal opportunities for inclusive, participatory, and representative decision-making at all levels (Goal 5-Target 5.5, and Goal 16- Target 16.7); *Planet*- ensure that people have the relevant information and awareness for sustainable development and lifestyles in harmony with nature (Target 12. 8); *Peace*- broaden and strengthen the participation of developing countries in the institutions of global governance (Goal 16.8)
Accountability	*Peace*- Role of governments/ international organizations/business sector/non-State actors/ individuals (Para 28); States strongly urged to refrain from promulgating and applying any unilateral economic, financial or trade measures, not in accordance with international law and the Charter of the United Nations (Para 30)	*Peace*- Develop effective, accountable and transparent institutions (Goal 16- Target 16.6); *Partnership*-promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the WTO (Goal 17- Target 17.10)

3.2.5 Living within Ecosystem Limits

The following Table represents the JS element of living within ecosystem limits and the respective SDGs.

JS (living within ecosystem limits)	UN Resolution 2015	SDGs and Targets
Planetary boundaries (limits)	*Planet*- Protect the planet, its planetary boundaries from degradation, and sustainable management of its natural resources (paras 3, 33 and Our world today); combating inequality within/among countries and preserving the planet (para 13)	
Equal resource sharing and consumption	*Prosperity*- inclusive and sustainable economic growth is essential for prosperity… equal wealth sharing and addressing income inequality (para 27)	*Prosperity*- Equal rights to economic resources (Goal 1-Target 1.4); *Planet*- implementing policies/plans towards inclusion/resource efficiency/mitigation/ adaptation to climate change; resilience to disasters (Goal 11-Target 11.b); promote fair and equitable sharing of the benefits arising from the utilization of genetic resources
Sustainable use of resources and consumption	*Planet*- sustainable consumption, production, and management of its natural resources; urgent action on climate change to support the needs of the present and future generations (Planet and para 9); common but differentiated responsibilities (para 28)	*Planet*- Global resource efficiency in consumption/production; endeavour to decouple economic growth from environmental degradation (Goal 8-Target 8.4); sustainable management and efficient use of natural resources; encourage multi-national companies to adopt sustainable practices and to integrate sustainability information into their reporting cycle; rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions (Goal 12-Targets 12.2,12.6 and 12.c); conserve and sustainably use the oceans, seas, and marine resources for sustainable development (Goal14)

These tables identify the essential common terms, being equity and justice, and their appearance and usage within JS and SDGs. The fusion of the paradigm and the framework produces a working vocabulary reflecting the importance of universalism, collectivism, and the commitment to 'leave no one behind'. It offers the basis for data targets that address the current lacuna that makes groups, communities, and individuals 'invisible' and vulnerable. Without such focus identification, effective policy and decision-making are more difficult.

4 COVID-19 AND THE 'EMBEDDED LENS'

The Covid-19 pandemic makes the 'embedded lens' of JS in the SDGs relevant and important in these unprecedented, challenging times. From an environmental sustainability point of view, Covid-19 impacts all dimensions of our lives and highlights

how growing inequities and injustices affect the most vulnerable. For example, access to water and sanitation (Goal 6) has been severely affected. Limited access to clean water and handwashing with soap facilities has further exposed the poor and the marginalised to Covid-19. According to the UNICEF factsheet, basic handwashing facilities are unavailable to 40 percent (3 billion people) of the world's population.[110] Inadequate or disruption to water supplies and contaminated surfaces of communal taps have been identified as the ill-effects of Covid-19 affecting the poorest.[111]

Covid-19 calls attention to conserve ecosystems and wildlife (Goal 15). The outbreak of Covid-19 identified because of illegal wet markets trading in wildlife, including pangolins, has introduced a man-made disaster. Nature has its own way of responding to humanity. The transmission of pathogens (virus) to humans has a disastrous effect on people's lives and livelihoods (particularly the poor and indigenous communities), resulting in an uncertain future and a degraded ecosystem. Research suggests humanity's destruction of biodiversity has led to the outbreak of animal-borne diseases including Ebola, SARS, bird-flu, and Covid-19.[112] The 2019 first Global Assessment of the State of Biodiversity and Ecosystem Services report highlights that the ability to achieve SDGs is dependent on transformative changes between humans and nature.[113]

Food security (Goals 2 and 12), in times of Covid-19, has serious implications for the world's poorest people and nations as documented in the World Food Programme Report.[114] The reasons include restrictions on the movement of food transportation, health inspections, staff unavailability, and panic buying. Efforts must be made to ensure that 'tens of millions of people [from poor countries] already on the verge of starvation do not succumb to this virus or [its] economic consequences'.[115]

For climate change (Goal 13), Covid-19 offers temporary respite. The initial studies predict a fall in emission levels, clearer skies, and reduced noise levels.[116] However, to maintain low carbon societies and ensure transformational sustainability, the adoption of 'green recovery measures' is important. These include a carbon tax, developing road spaces for pedestrians and cyclists, and improving public

110 UNICEF, 'Fact-Sheet, Handwashing with Soap Critical in the Fight Against Coronavirus, is Out-of-Reach for Millions' <https://www.unicef.org/press-releases/fact-sheet-handwashing-soap-critical-fight-against-coronavirus-out-reach-billions>.

111 Martin Keulertz and others, 'The Impact of COVID-19 on Water and Food Systems: Flattening the Much Bigger Curve Ahead' (2020) 45 (5) Water International 430; Water Aid, 'Four Things That Help Water Services to Combat the COVID-19 Pandemic' <https://washmatters.wateraid.org/blog/four-things-that-help-water-services-to-combat-the-covid-19-pandemic>.

112 Ruchi Tiwari and others, 'COVID-19: Animals, Veterinary and Zoonotic Links' (2020) 40(11) Veterinary Quarterly 69; John Vidal, 'Tip of the Iceberg: Is Our Destruction of Nature Responsible for Covid-19?' The Guardian (UK, 18 March 2020) <https://www.theguardian.com/environment/2020/mar/18/tip-of-the-iceberg-is-our-destruction-of-nature-responsible-for-covid-19-aoe>.

113 IPBES, Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES Secretariat 2019) 44.

114 World Food Programme, Covid-19: Potential Impacts on the World's Poorest (World Food Programme 2020).

115 ibid 5; Serafim Bakalis and others, 'Perspectives from CORE: How COVID-19 Changed Our Food Systems and Food Security Paradigm' (2020) 3 Current Research in Food Sciences 166.

116 Corinne Le Quéré and others, 'Temporary Reduction in Daily Global CO_2 Emissions During the COVID-19 Forced Confinement' (2020) 10 Nature Climate Change 647; World Economic Forum, 'Why a 17 per cent Emissions Drop Does Not Mean We Are Addressing Climate Change' <https://www.weforum.org/agenda/2020/05/why-a-17-emissions-drop-does-not-mean-we-are-addressing-climate-change>.

transport.[117] A global solidarity narrative will promote international cooperation including financial and technological assistance.

Affordable and clean energy (Goal 7) particularly for the developing and the least-developed worlds are crucial in controlling the pandemic. According to Damilola Ogunbiyi, Special Representative of the UN Secretary General for Sustainable Energy, '840 million people mostly in sub-Saharan Africa are living without electricity…reliable, affordable electricity is needed to keep people connected at home and to run life-saving equipment in hospitals'.[118] The global pandemic reveals an uncertain future for environmental sustainability and the SDGs unless a transformative approach is adopted encompassing the mandate of 'leaving no one behind'.

Covid-19 has exposed the vulnerability of our fractured societies, being ill-equipped under-prepared nations. The situation is exacerbated by existing and ever-increasing inequities and injustices. The poor and marginalised people within and between countries face an increased risk from Covid-19. It is time to re-think our lifestyles and our current production and consumption patterns. The 'virus' is changing the way societies function and lessons must be learnt as to how sustainability can be achieved. The 'new norm' calls for innovative models that move 'toward rebuilding communities, restarting [sustainable] services and local economies, and creating resilient, engaged, and cohesive communities capable of withstanding and thriving despite the upcoming challenges'.[119]

117 Jochen Markard and Daniel Rosenbloom, 'A Tale of Two Crises: COVID-19 and Climate' (2020) 16 (1) Sustainability: Science, Practice and Policy 53; Gaia Vince, 'After the Covid-19 Crisis, Will We Get a Greener World?' The Guardian (UK, 17 May 2020) <https://www.theguardian.com/environment/2020/may/17/after-the-covid-19-crisis-will-we-get-a-greener-world>.

118 Damilola Ogunbiyi, 'Power in a Pandemic - Why Energy Access Matters During Coronavirus' Thomson Reuters Foundation News (UK, 31 March 2020) <https://news.trust.org/item/20200331134807-w6a0h>.

119 Public Health England, Beyond the Data: Understanding the Impact of Covid-19 on BAME Groups (PHE Publications 2020) 10.

5 CONCLUSION

Any suggestion that Covid-19 is a 'black swan' event[120] or the manifestation of 'future shock'[121] that has taken us by surprise is incorrect. The explanation is we have made the wrong choices and politicians have undervalued our environmental priorities and health care systems, misunderstood strategic sustainable production, and underused our normative social structures. Basic errors of judgment promoted this pandemic which in turn is disproportionately affecting the underprivileged people and the developing nations. For some, the future has never been less certain. Conversely, the seismic virus challenges provide multiple open-ended opportunities to respond constructively. We are experiencing major shifts in functions and actions associated with state governance, work, global availability of food and industrial supply chains, long term unemployment, and environmental degradation, all occurring within a growing global economic and fiscal recession. Domestically, house building, space allocation, public and private transport, roads, high street shopping, education, leisure, entertainment, isolation, mental and physical well-being, valuation of work, and the overall quality of life are being scrutinised. We are experiencing a vibrant local spirit as neighbours help neighbours and communities recognise, value, and support healthcare workers and other low-waged workers who underpin our daily lives. People are reviewing their established patterns of behaviour and their expectations of needs and consumption. An RSA survey shows that only 9 per cent wish to return to the 'old normal'. 85 per cent have experienced personal and social change, 51 per cent have experienced cleaner air, 40 per cent have a stronger sense of local community, 42 per cent value

120 Nassim Nicholas Taleb, The Black Swan: The Impact of Highly Improbable (Penguin 2007).

121 Alvin Toffler, Future Shock (Bantam 1970).

food more, 38 per cent are cooking more from scratch, and 33 per cent are throwing away less food.[122] Former values are being reconsidered and for many, they are found wanting. A discussion is occurring about an economy-based upon need rather than a consumption-based approach. There is growing interest in the implementation of a green agenda within a circular economy. Questions are being asked about what matters and what does not.

A changing society, not by choice but by necessity, simultaneously creates the space to broadcast a fresh message that allows 'equity and justice' to be moved to centre-stage. The combination of JS and SDGs constitutes an opportunity for a framework built on equity and justice. This framework has already received world-wide state recognition. Its realisation would reduce disparities of opportunity, health, and power differentials within and among countries. It offers a pathway to sustained, inclusive, and sustainable economic growth within a transformed world. When we release ourselves from the pandemic crisis the challenge will be to apply this framework with ever greater commitment.

122 RSA FFCC, YouGov Survey (RSA 17 April 2020) <https://drive.google.com/file/d/1d60r6cdZ8-YXDjyAeVK_rLb82bg2r8yT2/view>; RSA, 'Brits See Cleaner Air, Stronger Social Bonds and Changing Food Habits Amid Lockdown', (YouGov 2020) <https://www.thersa.org/about-us/media/2019/brits-see-cleaner-air-stronger-social-bonds-and-changing-food-habits-amid-lockdown>.

ARTICLE

INTEGRATING MARINE SPATIAL PLANNING IN GOVERNING KENYA'S LAND-SEA INTERFACE FOR A SUSTAINABLE BLUE ECONOMY

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1 INTRODUCTION

The land-sea interface is a common heritage resource that must be sustainably managed for the benefit of all.[1] Also referred to as the Coastal Transition Zone (CTZ), it encompasses the area 'where terrestrial activities importantly impinge on the marine environment and where marine activities importantly impinge on the land'.[2] Governance of this zone is vital as it is endowed with diverse resources, including mangrove forests, coral reefs, seagrass beds, and a number of island archipelagos.[3] These resources provide critical habitat for many endangered species as well as important ecosystem services such as carbon sequestration, shoreline protection, regulating freshwater output through evapotranspiration, and carbon storage.[4] These natural resources are essential in delivering a sustainable blue economy[5] by supporting livelihood activities such as aquaculture, mariculture, fisheries, tourism, and recreation.

Globally, the land-sea interface contributes to socio-economic transformation with over 3 billion people relying on coastal and marine biodiversity for their livelihoods.[6] Seafood is one of the key economic products with more than 3 billion people depending on the oceans for this important source of protein.[7] The market value of coastal and marine resources and industries is estimated at US$3 trillion per year, that is, about 5 per cent of global Gross Domestic Product (GDP).[8] It is estimated that the global marine fisheries, directly or indirectly, have employed more than 200 million people.[9] Across Africa, the blue-economy serves as the main engine for economic growth and livelihoods for about three-quarters of the continent's population. The total gross value of the African coastal and marine fisheries is estimated to be US$24 billion per year, that is, about 1.26 per cent of the combined GDP of all African countries.[10] Estimates indicate that if properly managed and sustainably used, the

1 Jakob Granit and others, Water Governance and Management Challenges in the Continuum from Land to the Coastal Sea – Spatial Planning as a Management Tool (SIWI Paper 22, 2014) 1-17 <https://www.siwi.org/wp-content/uploads/2015/09/Paper-22-Spatial-Planning-Land-to-Coast-web.pdf>.

2 Wilhelm Schäfer, *Ecology and Paleoecology of Marine Environments* (Irmgard Oertel and G Y Craig (trs), 1st edn in 1962, German ed, University of Chicago Press 1972); Drew M Talley and others, 'Research Challenges at the Land-sea Interface' (2003) 58(4) Estuarine Coastal and Shelf Science 699.

3 Food and Agriculture Organization of the United Nations, Survey Findings: Overview of Kenya's Coastal Area (FAO 2018) <www.fao.org/docrep/field/003/AC574E/AC574E03.htm>.

4 Kariuki Muigua, Didi Wamukoya and Francis Kariuki, '*Natural Resources and Environmental Justice in Kenya*' (Glenwood Publishers Limited 2015) 472; R Ramesha and others, 'Land–Ocean Interactions in the Coastal Zone: Past, Present & Future' (2005) 12 Anthropocene 85.

5 The World Bank defines blue economy to refer to the sustainable use of ocean resources for economic growth, improved livelihoods and jobs, and ocean ecosystem health. World Bank and the United Nations Department of Economic and Social Affairs, The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries (World Bank 2017) vi and 1-9 <https://openknowledge.worldbank.org/bitstream/handle/10986/26843/115545.pdf?sequence=1&is-Allowed=y>.

6 United Nations Development Programme, Blue Economy: Community Solutions (UNDP 2018) 9.

7 ibid 9.

8 ibid 9.

9 United Nations Environment Programme, why do Sustainable Development Goals matter? Goal 14: Life below water (Data and Statistics/Facts and Figures, UNEP 2018) subpara 6;<https://unenvironment.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-14>.

10 African Ministerial Conference on the Environment, Advancing the Sustainable Blue (Ocean-Based) Economy in Africa (Item 5 (d) of the provision agenda, AMCEN/17/6, AMCEN 2019) 3; United Nations Economic Commission for Africa, Africa's Blue Economy: Opportunities and Challenges to bolster Sustainable Development and Socioeconomic Transformation (Issue Paper, UNECA 2019) 11.

contribution of the land-sea interface to the blue economy could lead to a surplus of US$2 billion in an environmentally sustainable and socially inclusive way for its economies.[11]

Within the Western Indian Ocean region which includes Kenya, the economic value of coastal and marine goods and services is estimated to be over US$22 billion per year.[12] Kenya's share marginally stood over US$4.1 billion per year, which was about 20 per cent of the joint countries in the Western Indian Ocean.[13] This is a contribution of 6.8 per cent to the country's annual GDP US$60 billion.[14] The coastal tourism takes the largest share, 90 per cent (US$3.7 billion) annually, of Kenya's ocean economy.[15] Since Kenya lies in the lucrative tuna belt,[16] it is estimated to have an annual 150,000-350,000 metric tonnes of fish in her expansive maritime territory of 230,000 square kilometers and a distance of 200 nautical miles offshore, which currently remains underexploited.[17]

Nonetheless, projections indicate an acceleration in economic activity in the oceans at US$3 trillion in value added by 2030, regardless of the global ocean still being under stress from pollution, over-exploitation, declining biodiversity, and climate change.[18] The Western Indian Ocean inclusive of Kenya is not exempted from this phenomenon. Its coral cover, which provides food, habitat, storm protection, medicine, revenue from fishing, and tourism, is assessed to have declined to 30 per cent as of 2017.[19] Thus, the prospects of the land-sea interface to keep supporting a sustainable blue economy seems to be jeopardized. Sustainable blue economy refers to an emerging concept that seeks to promote better stewardship of our oceans and seas, encompassing all their associated coastal and marine resources and their related activities, but not limited to tourism, fisheries, mining, energy, aquaculture, and maritime transport.[20] It advocates a multi-sectoral and integrated approach towards the sustainable management of these activities in realizing socio-economic transformation.[21] In particular, it endeavors to encourage economic growth, social inclusion and preservation, and improvement of livelihoods, whereas at the same time guaranteeing the environmental sustainability of oceans and seas.[22]

Consequently, generating the full economic potential of the land-sea interface demands more accountable and sustainable approaches.[23] This will be in line with the Sustainable Development Goal 14, which requires states to conserve and sustainably use the oceans, seas, and marine resources for development.[24] The trail to sustainability can be attained if the blue economy is leveraged for sustainable development.[25] In other words, pivotal to the blue economy approach, states should rationalize socio-economic development against the degradation of coastal and marine

11 African Ministerial Conference on the Environment (n 10) 2.

12 United Nations Development Programme, 'Leveraging the Blue Economy for Inclusive and Sustainable Growth' (Policy Brief on Sustainable Blue Economy Conference, Issue No: 6/2018, UNDP April 2018) 5.

13 ibid 5.

14 Africanews, 'Importance of a Sustainable Blue Economy: Statistics and Facts' *Africanews* (Brazzaville, 26 November 2018) <www.africanews.com/2018/11/26/importance-of-a-sustainable-blue-economy-statistics-and-facts//>.

15 David Obura, Kenya's Blue Economy – What Now? (CORDIO East Africa, 24 August 2017) <https://cordioea.net/kenyas-blue-economy-what-now/>.

16 Africanews (n 14).

17 ibid; United Nations Development Programme, Leveraging the Blue Economy for Inclusive and Sustainable Growth (n 12) 5.

18 Mercator Ocean International, What is the Blue Book: Copernicus for a Sustainable Ocean? (Mercator Ocean International 2019) 2, 23.

19 African Ministerial Conference on the Environment (n 10) 4.

20 John O Kakonge, 'Kenya and the Blue Economy: The Way Ahead' (2019) 8(10) International Journal of Innovative Research & Development 369; African Ministerial Conference on the Environment (n 10) 1.

21 United Nations Economic Commission for Africa (n 10) 2.

22 World Bank and United Nations Department of Economic and Social Affairs (n 5) 4.

23 Mercator Ocean International (n 18) 23.

24 UN General Assembly Resolution 70/1, Transforming our World: The 2030 Agenda for Sustainable Development, UN Doc. A/RES/70/1 (2015).

25 United Nations Development Programme, Leveraging the Blue Economy for Inclusive and Sustainable Growth (n 12) 5-7.

environments and ecosystems through marine spatial planning.[26] Marine spatial planning provides an effective approach that can be used to promote sustainable management of the land-sea interface. This is because spatial planning enables reconciliation of uses, provision of the right site for the right use, and controlling of development.[27] Through the preparation of a spatial development plan, this management approach provides a pro-active strategic framework for preventing harmful development and mitigating the impact of potentially polluting developments on land or the territorial sea space. The resultant spatial plans will create a potential nexus and synergy between socio-economic development and coastal and marine conservation as well as rehabilitation.[28] This will in turn lead to an increase in the sustainability of the ocean economy while harnessing its benefits.[29]

Therefore, the question that this paper grapples with is the extent to which Kenya has incorporated marine spatial planning within its land-sea interface governance framework. The paper argues that the framework does not adequately focus on the need for integrated planning of land and sea uses. Instead, the law continues with the traditional focus on land use planning at the expense of sea use planning, hence, compromising the quest for sustainable management of the coastal and marine resources, a crucial requirement in ensuring a sustainable blue economy. The paper concludes that to achieve a sustainable blue economy, Kenya's law and planning practices must incorporate the prerequisites of marine spatial planning, which have been adopted in other jurisdictions with similar circumstances, as a framework for integrated planning.

26 United Nations Development Programme, Blue Economy: Community Solutions (n 6) 9-11.

27 T O Ilegbune, The Relationship between Planning Law and Environmental Law (Unpublished MPhil Seminar Paper, Faculty of Law University of Lagos 2000).

28 ibid.

29 Mercator Ocean International (n 18) 23.

2 POLLUTION CHALLENGES FACING THE LAND-SEA INTER-FACE IN KENYA

Under Kenya's constitutional framework, the land-sea interface is categorized as public land covering the territorial sea, the exclusive economic zone, the sea bed, the continental shelf, and all the land between the high and low watermarks.[30] Kenya's coastline entails an approximate 600 km stretch along the seafront, stretching from the Ikashani border of Somalia to the north (Longitude 1° 41' S) up to the Vanga border of Tanzania's in the south (Longitude 4° 40' S).[31] The Kenyan coast has a narrow (5-10km wide) coastal plain with various coastal and marine ecosystems that are rich in biodiversity.[32] It is characterized by a fringing reef running parallel to the shoreline at distances ranging from 500m-2km offshore.[33] Under the devolved system, the coastal zone traverses the boundary of five counties including Mombasa, Kilifi, Kwale, Tana River, and Lamu – *see figure 1*. Land and sea-based activities that include tourism (45 per cent), ports and shipping (15 per cent), agriculture (11 per cent), forestry (4 per cent), and mining (2 per cent) continue to thrive within the interface.[34] Other activities include mariculture and aquaculture, fisheries, salt production, oil and gas exploration, industrial development, service infrastructure (road, rail, energy, water, sewer), and human settlements.[35]

30 The Constitution of Kenya 2010, art 62(j), (k) and (l).

31 Government of Kenya, State of the Coast Report: Towards Integrated Management of Coastal and Marine Resources in Kenya (National Environment Management Authority 2009) 1.

32 Government of Kenya, Pollution Prevention and Control Guidelines for the Coastal and Marine Environment of Kenya (National Environment Management Authority 2012) 2-4; Government of Kenya, State of the Coast Report (n 31) 1.

33 Pollution Prevention and Control Guidelines for the Coastal and Marine Environment of Kenya, ibid 1-5; Government of Kenya, State of the Coast Report (n 31) 8-11.

34 Government of Kenya, State of the Coast Report (n 31) 31.

35 ibid 37-45.

More often than not, these diverse uses conflict with and undermine each other, leading to pollution.[36] It is estimated that 82 per cent of marine pollution is land-based, originating from sewage outlets, industrial effluents, runoff from urban stormwater and agricultural activities, water-borne and air-borne pollution, and litter.[37] In Kenya, the main sources include point-source pollution such as discharge from sewage and different industries and non-point source pollution emanating from unregulated or unchanneled sources, which includes run-off from agricultural activities, drainage or discharge, as well as atmospheric deposition.[38] For instance, some hospitality developments use the ocean to dump untreated wastewater, leading to pollution.[39] It is estimated that only 20 per cent of the population within the coastal zone has sewage disposal, with the rest of the untreated sewage finding its way into the ocean.[40] Another use of the interface, which contributes to pollution, is port and shipping. The only estimates of the amount of pollution caused by port and shipping are those that were carried out in 1993. These estimates indicated that oil pollution from regular spills and leaks at the port was valued at 10 tons per day, leading to values that range from 0.1 mg/l to 7.0 mg/l in the water column.[41]

Additional pollution within the interface is also manifested by the proliferation of unplanned uses that have led to development with little consideration of the long-term impacts of the activities.[42] There are salt mining companies that have built dykes, which interfere with the free flow of water from the sea.[43] Similarly, freshwater sources from which the surrounding community traditionally drew its water have been contaminated by underground salt seepages.[44] The land-sea interface is also experiencing a proliferation of tourism activities that have generated demand for both land and ocean space, creating conflicts over use and having a significant impact on the environment.[45] This has led to the destruction of endangered marine ecosystems (coral reefs, lagoons, and fragile sandy beaches).[46] The overall impact is that Kenya's land-sea interface is not sustainably governed but rather threatened by over-exploitation resulting in pollution. To address this situation, Kenya uses different spatial planning tools such as land use planning, zoning ordinances, sectorial management plans, development control permits, and environmental impact assessments and audits to regulate the impact of land and sea-based uses.[47]

36 United Nations Environment Programme, Training Manual on International Environmental Law (Manual, UNEP 2006) 1-392 <https://wedocs.unep.org/handle/20.500.11822/20599>.

37 ibid 147; Yousef H Almutairi, Protection of the Marine Environment under International Law and Kuwaiti Criminal Law (SJD Dissertation, Pace University School of Law 2016).

38 Government of Kenya, Pollution Prevention and Control Guidelines for the Coastal and Marine Environment of Kenya (n 32) 13-61.

39 D Munga and others, Land-Based Activities, Pollution Sources and Levels in Water and Sediment in the Coastal and Marine Area of Kenya (Technical Report, Kenya Marine and Fisheries Research Institute 2006) <http://hdl.handle.net/1834/6888>; Government of Kenya, Pollution Prevention and Control Guidelines for the Coastal and Marine Environment of Kenya (n 32) 50-55.

40 Government of Kenya, Pollution Prevention and Control Guidelines for the Coastal and Marine Environment of Kenya (n 32) 7 and 39; Mweu Nguta, Marine Pollution and Research in the Coastal Lagoons of Kenya (Conference Paper, Kenya Marine and Fisheries Research Institute 1993) 88 <www.oceandocs.org/bitstream/handle/1834/7152/ktf0148.pdf?sequence=1>.

41 Nguta, ibid 86.

42 John S Akama, The Efficacy of Tourism as a Tool for Economic Development in Kenya (1990) <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.603.7432&rep=rep1&type=pdf?>.

43 Kenya National Commission on Human Rights, Economic Interests Versus Social Justice: Public Inquiry into Salt Manufacturing in Magarini, Malindi District (KNCHR 2006) 18.

44 ibid 28.

45 Coast Development Authority, Towards Integrated Management and Sustainable Development of Kenya's Coast (CDA 1996) 1-88; Akama (n 42) 3-4; Government of Kenya, State of the Coast Report (n 31) 51-52.

46 Akama (n 42) 3-4.

47 Nixon Sifuna, 'Public Regulation of the Use of Private Land: Opportunities and Challenges in Kenya' (2009) 5(1) Law, Environment and Development Journal 38, 40-56 <http://www.lead-journal.org/content/09038.pdf>; Philip Olale, Collins Odote and Robert Kibugi, 'Assessing Efficacy of Kenya's Spatial Planning Tools Towards Sustainable Management of the Land-Sea Interface' (2019) 4(5) International Journal of Innovative Research and Knowledge 33 <http://ijirk.com/issue_image/IJIRK-4.05.04.pdf>.

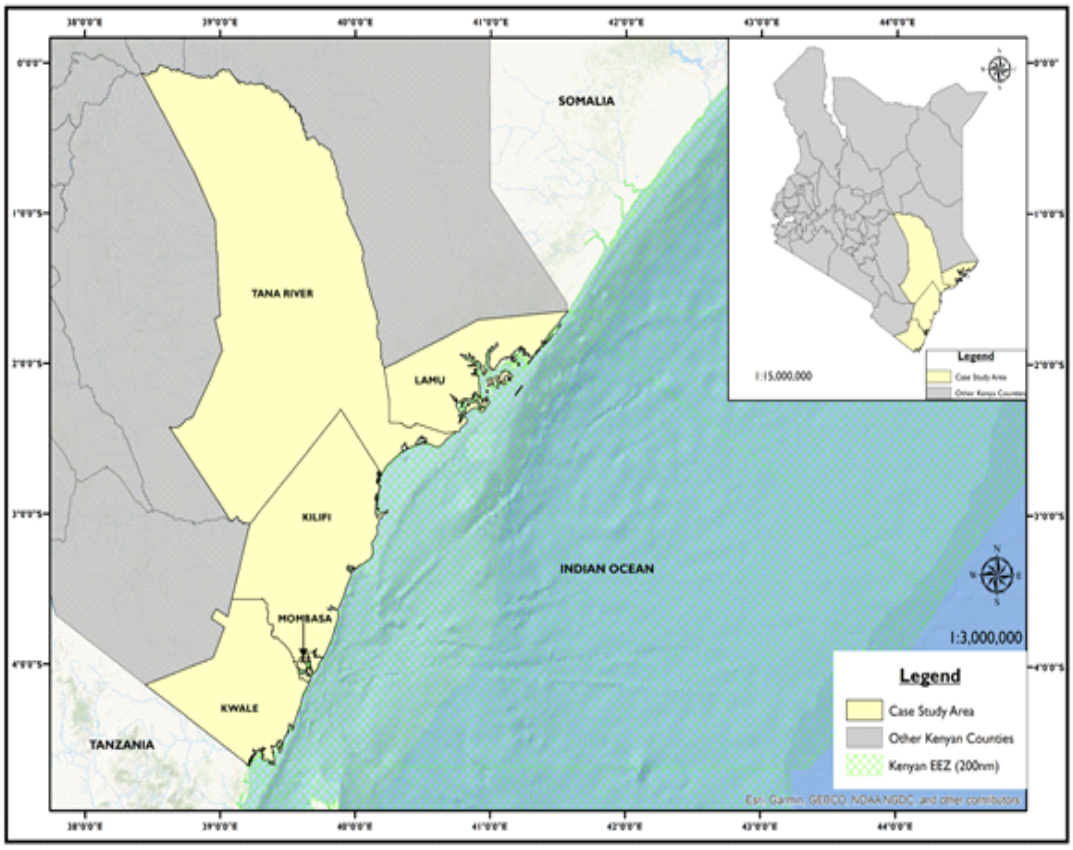

Figure 1:Map showing the land-sea interface in Kenya

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3

SPATIAL PLANNING FRAMEWORK FOR THE LAND-SEA INTERFACE IN KENYA

The United Nations Convention on the Law of the Sea (UNCLOS) bestows on all Coastal States including Kenya exclusive jurisdiction within a 200-nautical mile called the exclusive economic zone (EEZ).[48] Within this EEZ such states have sovereign rights to utilize natural resources, carry out specific economic activities such as fishing and tourism, ensure environmental protection, and also carry out marine research.[49] Under the auspices of the Sustainable Development Goals, such States are called upon to sustainably use and manage terrestrial and marine resources.[50] Target 14.1 provides that by 2025 parties shall 'prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution'.[51] Moreover, UNCLOS

48 United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982, 1833 UNTS 3 art 57.

49 ibid art 58 and 77.

50 Sustainable Development Goals and Targets, in UN General Assembly Resolution 70/1, Transforming our World: The 2030 Agenda for Sustainable Development, UN Doc. A/RES/70/1 (2015), goals #14-15.

51 ibid, goal #14.1.

has obligated coastal states to take measures to minimize pollution from dumping, control pollution caused by the use of technologies, and to protect and preserve rare or fragile ecosystems. Meeting these obligations require states to regulate the uses of land adjacent to seas in order to control pollution and promote sustainability. Spatial Planning can act as a useful tool for regulating land use activities in Kenya as well as within the expanded constitutional definition of land that includes marine waters in the exclusive economic zone.

Due to the importance of the land-sea interface, Kenya has an obligation to manage it for the benefit of present and future generations.[52] The Constitution of Kenya provides that such land resource is held by the national government in trust for the people and administered on their behalf by the National Land Commission.[53] Further, the Constitution obligates the state to ensure sustainable exploitation, utilisation, management, and conservation of such a natural resource and ensure an equitable sharing of the benefits accrued.[54] This is in compliance with article 42 of the Constitution which provides that every person has a right to a clean and healthy environment. Thus, the state is obligated to manage the land-sea interface resources by increasing the mangrove forest cover to at least 10 per cent, protecting indigenous resources and biological diversity, public participation, environmental impact assessment, environmental audit, and monitoring the environment.[55]

The police power of a state is an important tool to ensure sustainable management of such resources and an equitable sharing of the accruing benefits. According to Havran, police power refers to the powers of the state to regulate and control the use of property to secure general safety, public welfare, order, and good morals of the community.[56] Sifuna notes that in Kenya, police power is implemented through a number of tools including land use planning, zoning, prohibition of certain activities through development control, and licensing of proposed land use activities.[57] Hence, while adopting the 2010 Constitution, Kenya focused on extending police power to land use planning. Today, the Constitution gives the state the power to 'regulate the use of any land, or any interest in or right over any land, in the interest of defence, public safety, public order, public morality, public health, or land use planning'.[58] With respect to the land-sea interface, the Constitution expanded the definition of land to include all water bodies and marine waters in the territorial sea and the exclusive economic zone.[59] Therefore, the state has the inherent power to regulate the use of the land-sea interface through spatial planning.

Spatial planning in Kenya is regulated by the Constitution of Kenya, 2010, the National Land Use Policy 2017, and the two main statutes: the Physical and Land Use Planning Act of 2019 and the Environmental Management and Coordination Act (EMCA).[60] Within the land-sea interface, other sectoral laws, including Wildlife Conservation and Management Act No. 47 of 2013, Forest Conservation and Management Act No. 34 of 2016, National Museums and Heritage Act No. 6 of 2006, Fisheries Management and Development Act, 2016 and Kenya Maritime Authority Act Cap 370, also apply in regulating the respective activities. Understanding Kenya's spatial planning approach requires a review of its institutional framework for administration; types and content of plans, plan preparation, and implementation procedures.

3.1 Institutional Framework

In 2010, Kenya promulgated a new Constitution which provided overarching provisions on spatial planning. The Constitution of Kenya, 2010 redefined the practice of spatial planning and development control. Accordingly, the Kenyans settled for a multi-dimensional approach to the organization and management of governance and state power and hence, the devolved system of government.[61] Thus, the

52 The Constitution of Kenya 2010 art 42.
53 The Constitution of Kenya 2010 art 62(3).
54 The Constitution of Kenya 2010 art 69(1)(a).
55 The Constitution of Kenya 2010 art 69(1).
56 T D Havran, 'Eminent Domain and the Police Power' (1930) 5 Notre Dame L Rev 380.
57 Nixon Sifuna (n 47) 49.
58 The Constitution of Kenya 2010 art 66.
59 The Constitution of Kenya 2010 art 260.
60 Environmental Management and Coordination Act 1999.
61 The Constitution of Kenya 2010 art 10(2)(a).

Constitution created two levels of government, namely, national and county governments.[62] It assigned functions to the two levels of government, allocated finances, and demarcated the geographical territory for each county.[63] As a result, the preparation of spatial plans, which was hitherto preservation of the national government, was devolved giving county governments more responsibility in the preparation and implementation of spatial plans.[64] The Constitution also established the National Land Commission (NLC) with the responsibility to monitor and oversee the land use planning throughout the country.[65] In relation to the land-sea interface, the Constitution provides that such land shall be held by the national government and administered by the NLC.[66]

The diverse socio-economic activities and natural resources found in Kenya's land-sea interface call for additional sectorial government agencies for its planning and regulation. The leading agencies dealing with coastal and marine-related issues include Kenya Wildlife Services (KWS), which manages Marine parks and reserves through management plans;[67] Kenya Forest Service (KFS), which is mandated to conserve, protect, and manage all public forests including the mangrove forests;[68] National Museums of Kenya, which are responsible for forests within the coastal zone declared as protected areas and also for monuments;[69] the Fisheries Department (FD), which is responsible for development, management and conservation of fishery resources and also for aquaculture development, fish safety, and quality assurance;[70] the Kenya Marine and Fisheries Research Institute (KMFRI), which is responsible for all aspects of aquatic research including biological, physical, and chemical oceanography, pollution, fisheries, aquaculture, fishing technology and fish processing; and the Kenya Maritime Authority, which is responsible for monitoring, regulating and coordinating the maritime activities in the country.[71]

There is the National Environment Management Authority (NEMA) with the responsibility of general supervision and coordination of all matters relating to the environment.[72] NEMA is mandated to co-ordinate various environmental management activities being undertaken by leading agencies and may direct such agencies to perform such roles as related to environmental management.[73] Such co-ordination by NEMA is supposed to realise the integration of environmental considerations into development policies, plans, programmes and projects for proper management and rational utilization of environmental resources.[74] Thus, the Authority is mandated to ensure that all proposed developments undergo an environmental impact assessment to demonstrate their impacts on the environment.[75] In doing so, the Authority is supposed to ensure stakeholder participation by publishing the report in the Gazette and in newspapers to enable people to submit their comments.[76] The Authority also involves other sectoral agencies by requiring them to comment on the proposed developments within their areas of jurisdiction.[77]

3.2 Types of Spatial Plans

The Physical and Land Use Planning Act, 2019 provides for different levels and types of spatial plans, hereinafter termed as physical and land use development plans. These spatial plans include the national physical and land use development plans,[78] the inter-county physical and land use development plans,[79] the county physical

62 The Constitution of Kenya 2010 art 175.
63 The Constitution of Kenya 2010 art 186.
64 The Constitution of Kenya 2010 sch 4.
65 The Constitution of Kenya 2010 art 67.
66 The Constitution of Kenya 2010 art 62(3).
67 Wildlife Conservation and Management Act 2013, ss 6 and 7.
68 Forest Conservation and Management Act 2016, ss 7 and 8.
69 National Museums and Heritage Act 2006, s 25.
70 Fisheries Management and Development Act 2016.
71 Kenya Maritime Authority Act 2006 (KMA 2006) cap 370 s 5(1)(b).
72 Environmental Management and Coordination Act 1999, ss 7 and 9.
73 ibid, ss 9 and 12.
74 ibid, s 9.
75 ibid, s 58.
76 ibid, s 59.
77 ibid, s 60.
78 Physical and Land Use Planning Act 2019, s 21.
79 ibid s 30.

and land use development plans,[80] and the local physical and land use development plans.[81]

Spatial planning at the national level includes the preparation of broad planning policies and strategies that lay down directions and areas of emphasis.[82] Such plans provide guidance and information regarding all planning and development decisions on any land in Kenya and become binding upon approval.[83] All decisions with regard to planning, management, and development must be aligned with the national plans and strategies of the nation as contained in the national physical and land use development plan.[84] Thus, plans prepared at this level provide a framework for harmonization and the subsequent formulation of lower-level plans.[85] In 2015, Kenya adopted its first such plan called the National Spatial Plan (NSP) 2015-2045. The geographical scope of the plan covers the entire territory of Kenya measuring approximately 582,646 km² including 21km² of the Exclusive Economic Zone (EEZ).[86] With respect to coastal areas, NSP calls for strict regulation of marine resources through the preparation of coastal management plans. For example, it provides that spatial development plans should be prepared to guide the implementation of flagship projects for the tourism sector.

The inter-county physical and land use development plans are another level of planning which involves preparing plans for areas covering two or more counties.[87] This level of planning provides a typology of spatial plans that can be used for managing the land-sea interface in Kenya. This is because the land-sea interface traverses the boundary of five counties (Mombasa, Kilifi, Tana River, Lamu, and Taita Taveta). Therefore, in line with the provisions of section 29 of the Physical and Land Use Planning Act[88] read together with the NSP requirement for the preparation of a coastal management plan, these counties are supposed to formulate an inter-county physical and land use development plan to regulate all land and sea uses within the land-sea interface. The scope of the plan is to be determined by the participating counties as provided by section 30.[89] The danger of this provision is that unless the counties consider the land-sea interface a priority, they may exclude it from the scope of the plan.

The other type of plan that can be used to regulate activities at the land-sea interface is the County Physical and Land Use Development Plan.[90] The Act mandates each county government to prepare a county spatial plan to guide, harmonize, and facilitate development within each county.[91] These plans provide an opportunity for all the four coastal counties to formulate a county spatial plan. However, the law still focusses on land uses and therefore, the plans are supposed to indicate desired patterns of land use, provide strategic guidance in respect of the location and nature of development, set out basic guidelines for a land use management system, set out a capital investment framework for the county's development programs, contain a strategic assessment of the environmental impact of the spatial development framework, and indicate the areas designated for conservation and recreation for which the land-sea interface would be considered.[92] These provisions under the Physical and Land Use Planning Act have not been cross-referenced with similar provisions in the County Government Act 2012. The lack of cross-referencing has a potential for conflict as both these Acts provide for two different plan typologies in the same jurisdiction. For example, the Physical and Land Use Planning Act requires preparation of a County Physical and Land Use Development Plan while the County Government Act 2012 requires preparation of a county spatial plan.

80 ibid s 36.
81 ibid s 45.
82 ibid s 22 (1).
83 ibid s 22 (2).
84 ibid s 22 and 27.
85 ibid s 27.
86 National Spatial Plan 2015, ch 1 (pt 1.3).
87 Physical and Land Use Planning Act 2019, s 2.
88 Provides for the formation of an inter-county joint physical and land use planning committee to oversee the formulation of the inter-county physical and land use development plan.
89 Mandates the definition of scope and geographical area of the inter-county physical and land use development plan.
90 Physical and Land Use Planning Act 2019, s 36.
91 County Governments Act 2012, ss 107 and 110.
92 ibid s 110(2).

In 2016, Lamu County adopted and approved a County Spatial Plan, which recognized both the terrestrial and the territorial sea space as part of the planning area with important benefits to its blue economy. The Lamu spatial plan has zoned the land-sea interface as a conservation zone with only compatible uses permitted under strict development control regulations.[93] In addition, the plan has provided for land use regulations that seek to integrate urban development, economic activities such as fishing and tourism with the natural heritage of the ocean ecosystem.[94] Other than Lamu County, the rest of the remaining four coastal counties (Mombasa, Kilifi, Tana River, and Kwale) do not have county spatial plans. This implies that these four counties have not complied with schedule 4 of the Constitution of Kenya, which allocates the role of preparation of county spatial plans to the respective county governments. The lack of county spatial plans for these four coastal counties limits the integration of the land-sea interface planning and regulation in their operations, leading to unregulated land and sea uses.

In addition to the above plans, there are a number of laws that provide for the preparation of sector-specific management plans for specific natural resources. A management plan establishes direction and goals for the management, conservation, and utilization of a specific resource land area. For example, Section 55(2) and (3) of EMCA mandates NEMA to prepare a survey of the Coastal Zone and thereafter, develop an integrated national coastal zone management plan every two years. The survey and plan should contain an inventory of all structures, roads, excavations, harbours, outfalls, dumping sites, and other works located in the coastal zone; an inventory of the state of the coral reefs, mangroves, and marshes found within the coastal zone; an inventory of all areas within the coastal zone of scenic value or value for recreational and cultural purposes; and an estimate of the extent, nature, causes, and sources of coastal pollution and degradation.[95] The other management plan targets mangrove forests and is prepared under the Forest Conservation and Management Act No. 34 of 2016.[96] The Kenya Forest Service has the overall mandate to prepare it.[97] However, there are also other forests within the coastal zone declared as protected areas by the National Museums of Kenya.[98] Another sector management plan prepared within the land-sea interface is the wildlife management plan prepared under the Wildlife Conservation and Management Act, 2013.[99] It applies to marine national parks and marine national reserves which are found within the land-sea interface.[100]

3.3 Plan Preparation and Implementation Procedures

Preparing physical and land use development plans constitute four critical stages, which include plan initiation, plan development based on situational analysis, plan approval, and plan implementation.[101] Plan initiation involves an official declaration of the intention to plan and is articulated through an advertisement by the Government.[102] The main aim of this procedure is to inform the public of the intention to plan so as to allow them an opportunity to participate in the plan development and later implementation. Plan development involves an analysis of the existing data on the planning area to aid the formulation of future scenarios for development and the requisite regulations to guide such development.[103] Public participation in the process is ensured through the publication of notices of plan completion, which allows the stakeholders to

93 County Government of Lamu, Lamu County Spatial Plan (10 Year Spatial Plan, Vol II, County Government of Lamu 2016), ch 4. <http://www.kpda.or.ke/documents/County_Spatial_Plans/Lamu%20-County%20Spatial%20Plan%20ARBRIDGED%-20VERSION%20Vol%20II.pdf>.

94 ibid ch4.

95 Environmental Management and Coordination Act 1999, s 55(4).

96 Forest Conservation and Management Act 2016, s 47.

97 ibid s 42.

98 National Museums and Heritage Act 2006, s 25.

99 Wildlife Conservation and Management Act 2013, s 3A.

100 ibid s 3A.

101 Ministry of Lands and Physical Planning and Council of Governors, County Spatial Planning Guidelines: Towards Sustainable Development and County Effectiveness (Government Printer 2018) 1-79.

102 ibid 36 and 64.

103 ibid 22-33.

access the draft plans from the respective county offices for comments.[104]

After the plan is developed, it undergoes approval and adoption to finally become a legally enforceable document. This phase involves the holding of a public hearing, approval and adoption of the plan by the relevant authority under which it was prepared, and a public gazette notice of the approved plan. Plan implementation involves regulating land and sea uses to ensure that operations on land conform to the approved spatial development plans as well as other policy guidelines, regulations, and standards. This includes enforcement through the process of development control.

4 REGULATORY GAPS AND CHALLENGES

The spatial planning framework has a number of regulatory gaps in relation to the sustainable management of the land-sea interface. These include a sectoral approach that limits institutional liability, numerous sectoral laws with conflicting mandates, lack of a specific type of spatial planning for the land-sea interface, inadequate integration to environmental impact assessment, lack of integration of Marine Protected Area planning framework, and lack of harmonization of an offence relating to development permits.

4.1 Sectoral Approach that Limits Institutional Liability

There is the challenge of institutional liability due to the lack of a specific institution mandated with overall responsibility of spatial planning and development control within the land-sea interface and especially within the territorial waters. Okidi argues that the agency responsible for local and regional physical and environmental planning in the marine area of Kenya should be specified.[105] He particularly notes that due to this limitation, there is potential for conflict within the continental shelf among legally permissible activities such as exploration and production of oil, laying of submarine cables, and mariculture.[106]

Spatial planning for a land-sea interface would involve the county governments in which the interface lies. In the Kenyan case, these are the counties of Mombasa, Kilifi, Tana River, Lamu, and Taita Taveta. However, a part of the interface is the territorial sea, the control of which is outside the jurisdiction of counties as per the Constitution, which vests it on the National Government. This would mean that a purely county-led planning approach would not adequately address the prerequisites of the land-sea interface. There are also multiple other institutions responsible for various aspects of the land-sea interface, making it difficult to determine the institution with the overall or coordinating function.

4.2 Sectoral Laws with Conflicting Mandates

Within the land-sea interface, there are also other laws governing sectoral aspects such as tourism activities[107], marine parks,[108] mangrove forests,[109] and antiquities.[110] Thus, the land-sea interface has had a sectoral approach to spatial planning, management, and enforcement of development control, where each activity is separately managed by a different legal framework.[111] Each of the national agencies has its own separate legislation, resulting in overlapping and sometimes conflicting mandates in addressing the

104 Physical and Land Use Planning Act 2019, ss 23(1)(c), 40 and 55(1)(g).

105 Charles O Okidi, P Kameri-Mbote and Migai Akech (eds), *Environmental Governance in Kenya: Implementing the Framework Law* (East African Educational Publishers 2008) 1-554.

106 ibid 1ff.

107 Tourism Act 2011, s 1-124.

108 Wildlife Conservation and Management Act 2013, s 3A.

109 Forest Conservation and Management Act 2016, s 42.

110 National Museums and Heritage Act 2006, s 38.

111 Government of Kenya, State of the Coast Report (n 31) vii-ix and 69-70.

coastal and marine issues.[112] This challenge is manifested in the regulations on pollution and its control, which are spread over several Acts with different enforcing agencies.[113] For instance, Kenya Wildlife Services (KWS) has the mandate to manage Kenya's marine parks and reserves while the Fisheries Department oversees the exploitation and management of the fisheries within the marine parks and reserves. In this scenario, it is notable that while the Fisheries Department promotes sustainable use, KWS only allows preservation. This conflict in the management approach has resulted in confusion on the ground in terms of what activities to permit and what to prohibit.[114] As noted by Granit *et al,* the resulting overlaps or inconsistencies in sectoral planning, regulation, and management often make the implementation and monitoring of planning frameworks for pollution regulation difficult at the local, national, and transboundary levels.[115]

4.3 Lack of Specific Type of Spatial Plan for the Land-sea Interface

While there are plans that can be used to regulate the land-sea interface, they do not expressly speak on the interface as a distinct geographical level requiring a specific spatial planning approach. Therefore, their application within the land-sea interface means that the unique issue of linkages between land and sea is not taken into consideration from a planning perspective. Despite the lack of an outright level of spatial planning at the land-sea interface, section 52 of the Physical and Land Use Planning Act, 2019 indirectly embraces the opportunity for the land-sea interface to be planned as a special planning area.

The Act provides that a special planning area can be declared if: that area has a unique development, natural resource, environmental potential or challenges; the development of that area might have a significant effect beyond that area's immediate locality; and if the declaration is meant to guide the implementation of strategic national projects or the management of internationally shared resources.[116] In line with these provisions, the land-sea interface may arguably be considered as a special planning area due to its unique role as a coastal transition area that links both terrestrial and marine environments and biodiversity. The danger is that the law does not recognize an explicitly integrated planning of the land-sea interface or the internationally recognized framework of marine spatial planning, which provides an approach for integrated land and sea use planning.

4.4 Inadequate Link to Environmental Impact Assessment

The EMCA provides that any activity out of character with its surroundings, any structure of a scale not keeping in with its surroundings, and any major changes in land use ought to be subjected to the EIA.[117] Thus, the repealed Physical Planning Act of 1996 required all development applications for industrial location, dumping sites, sewerage treatment, quarries, or any other development activity, with the potential to injuriously impact the environment, to submit an environmental impact assessment report before the issuance of a development permit.[118] However, this provision was not included in the substantive sections of the new Act. Nonetheless, it is contained in the third schedule of the Act, which requires applications for major developments to be subjected to environmental and social impact assessment. The challenge here is that the law does not define what 'major development' means, which could lead to the counties issuing development permits to some developments not considered major and likely to injure the environment.

The need for linking environmental impact assessment and approval of developments for construction was

112 David O Obura, *'Kenya'* (2001) 42(12) Marine Pollution Bulletin 1264.

113 ibid 1264-1278.

114 R Swanson, K Menczer and G Michaels, Kenya Forest and Coastal Management Programs: Mid Term Evaluation (2006) 1 <http://pdf.usaid.gov/pdf_docs/PDACJ-160.pdf>.

115 Granit and others (n 1) 5.

116 Physical and Land Use Planning Act 2019, s 52.

117 Environmental Management and Coordination Act 1999, sch 2.

118 Physical Planning Act 1996, s 36.

canvassed in *Kwanza Estates Ltd v Kenya Wildlife Services.*[119] In this case, the plaintiff argued that the respondent had commenced construction of a public toilet on the beachfront, which was adjacent to his property, without conducting an Environmental Impact Assessment (EIA). The plaintiff prayed for temporary restraining orders arguing that when in full use, the public toilet would have adverse environmental consequences as a result of the discharge of effluents emanating from the toilet into the sea eventually devaluing his property. In determining the case, the Judge noted that other than the issue of EIA, none of the parties had addressed the law pertaining to land use as contained in the Physical Planning Act. This assertion by the Judge demonstrates the weak link of land use planning and environmental impact assessment. The Judge ruled that the absence of an Environment Impact Assessment (EIA) denied the plaintiff and the court an opportunity to know how the effluents from the said toilet are to be disposed of or treated before draining the same to the ocean. The Judge reiterated the need for the approval of the proposed development from NEMA before proceedings with the construction.

A similar point was made by the court in *Mohamed Ali Baadi v. Attorney General,* concerning a failure to subject the Lamu Port-South Sudan Ethiopia-Transport Corridor project (LAPSSET) spatial masterplan to adequate environmental and social impact assessment (ESIA), and a lack of strategic environmental assessment (SEA).[120] The LAPSSET project is a large-scale transportation and infrastructure development project with distinct infrastructure components including a railway, oil pipelines, oil refineries, tourism development, and a 32-berth port at Manda Bay in Lamu. The plaintiffs claimed that the government was going ahead with the implementation of the project without conducting a SEA, which would have enabled them to understand the comprehensive environmental and social impacts of the project. The respondents argued that SEAs were not legally required until 2015 when amendments to the EMCA took effect. However, the Court found the SEA to be legally required at the time, and even though it was not specified in the EMCA, it was still mandatory as per the NEMA regulations of 2003. Therefore, it did not need backing from a specific statutory text to be effective. Now SEAs are required for 'plans' under section 58A of the EMCA. This implies that even the county spatial plans would require SEAs as a part of their approval for implementation.

4.5 Lack of Integration of Marine Protected Area Planning Framework

Marine protected area planning relates to planning carried within the on-shore or offshore area set aside for management and conservation measures or within areas where some degree of protection, whether enacted or not, is exercised at the land-sea interface.[121] In Kenya, this is carried out through the Protected Areas Planning Framework (PAPF), developed and adopted by the Kenya Wildlife Services (KWS) in 2006.[122] KWS is mandated to prepare and implement management plans for all marine parks within the coastal land-sea interface.[123] It is envisaged that the preparation and adoption of these management plans shall encompass wider consultation with the county wildlife conservation committee and participation of the neighboring communities.[124] However, there is no provision requiring consultation with the County Government which is in charge of spatial planning and development control within the entire county where these marine protected areas are found. Also, the Physical and Land Use Planning Act, 2019 does not have any provisions requiring coordination and linkage of the marine management plans with the wider county spatial plans.

119 *Kwanza Estates Ltd v Kenya Wildlife Services* [2013] eKLR 133 (HC Civ Div).

120 *Mohamed Ali Baadi and others v Attorney General & 11 others* [2018] eKLR 22 (HC).

121 Alan T White, Catherine A Courtney and Albert Salamanca, 'Experience with Marine Protected Area Planning and Management in the Philippines' (2002) 30(1) Coastal Management 1.

122 Kenya Wildlife Service, Protected Area Management Plans (2007) <http://www.kws.go.ke/content/protected-area-management-plans-0>.

123 Wildlife Conservation and Management Act 2013, s 3A.

124 ibid s 3A.

4.6 Lack of Harmonization of Offence Relating to Development Permitting

The Physical and Land Use Planning Act, 2019 has expressly prohibited carrying out of development without a development permit issued by the county.[125] The Act provides that any person who has commenced any type of development without obtaining the development permit is liable to pay a fine not exceeding five hundred thousand shillings or to incarceration for a term not exceeding two months or both.[126] However, the penalties under section 57 are different than those under section 67 for the similar offence of commencing a development project when the development permit has been revoked. The penalties under section 67 are heavier than those under section 57, whereupon conviction such a person may get a fine of not less than one million shillings or imprisonment for a term of not less than 5 years or both. This portends a challenge in the application of the law especially in litigations where developers have carried out development activites along the land-sea interface without obtaining development permits. More importantly, the lack of provisions for the preparation of a specific spatial plan for the land-sea interface renders application of offences and penalties null and void due to lack of an approved plan which forms the basis for seeking a development permit.

5 CONCLUSION: A MOVE TOWARDS MARINE SPATIAL PLANNING

While the 2010 Constitution has provided a wider scope for spatial planning by including territorial waters as a part of 'land' to which the state's police power applies, the applicable planning law of 2019 has not adequately provided the framework for realizing this constitutional provision. Analysis of Kenya's spatial planning framework has demonstrated a weak link and focus on integrated spatial planning, which is critical for effective regulation of activities within the land-sea interface. There is still a continued focus on terrestrial planning, despite the Constitution and the National Land Use Policy recognizing the need for inclusion of spatial planning of the coastal zone. The applicable Physical and Land Use Planning Act of 2019 neither recognizes 'land' to include the territorial sea nor does it expressly provide that it regulates uses both on land and on the sea. This traditional focus on planning land-based activities, without deliberate recognition of how these developments affect the sea and vice-versa, continues to jeopardize the sustainable management of the land-sea interface and by large, the blue economy.

A review of planning approaches from other jurisdictions with similar coastal zones has demonstrated that marine spatial planning (MSP) is an appropriate tool to ensure sustainable and integrated management of human activities within the land-sea interface.[127] This is because MSP provides a framework for identifying the most appropriate area for different uses to reduce or mitigate environmental impacts and facilitate a sustainable blue economy through reasonable utilization as well as increased socio-economic efficiency and ecological security. It also provides an opportunity for long-term planning so that the process of controlling development becomes predictable and transparent. This will ensure that there is greater certainty in development permissions and allocation of uses for both developers and environmental managers. Thus, the result of the MSP

125 Physical and Land Use Planning Act 2019, s 57(1).
126 ibid s 57(2).

127 A Deidun, S Borg and A Micallef, 'Making the Case for Marine Spatial Planning in the Maltese Islands' (2011) 42 (1-2) Ocean Development & International Law 136; Charles N Ehler and Fanny Douvere, Visions for a Sea Change. Report of the First International Workshop on Marine Spatial Planning (Intergovernmental Oceanographic Commission and Man and the Biosphere Programme, UNESCO 2007) <http://www.jodc.go.jp/jodcweb/info/ioc_doc/Manual/153465e.pdf>; Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014, Establishing a framework for maritime spatial planning (OJL 257/135 2014) <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.257.01.0135.01.ENG%20>.

process will be an extensive and all-inclusive spatial plan for Kenya's land-sea interface.

An integrated land-sea planning approach can help mitigate many of the potential problems associated with increased human activity in coastal communities by addressing the human use of land, freshwater, and marine resources while also working to maintain the integrity of terrestrial, aquatic, and marine/estuarine ecosystems.[128] Commentators have continued to demonstrate the benefits of integrating terrestrial and marine planning systems due to the interdependence of land and offshore systems.[129] In this regard, MSP is considered as a sustainable and integrated management framework of human activities at land and sea.[130] Marine spatial planning has increasingly been identified as a solution to resolving tensions on the coasts and in the seas by enabling development whilst providing improved protection of the marine environment.[131]

Various countries, particularly in the densely used marine areas of Northwest Europe, are developing and applying MSP.[132] Germany, the Netherlands, and Belgium, for example, have developed marine spatial plans for their territorial seas and exclusive economic zones.[133] Other countries are creating legislation or new policy frameworks that will enable MSP in the near future. The United Kingdom, for example, has passed a Marine and Coastal Access Act that aims at ensuring clean, healthy, safe, productive, and biologically diverse oceans and seas.[134] Enander *et al* state that MSP (referred to as marine planning in the UK) has been proposed as one of the tools to deliver the aims of the Marine and Coastal Access Act.[135]

Marine spatial planning incorporates a public process of analysing and allocating the spatial and temporal distribution of human activities in coastal and marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process.[136] It is a framework for achieving integration between different objectives, managing competing demands on the marine area, taking an ecosystem approach, enabling the coexistence of compatible activities wherever possible, and integrating with terrestrial planning.[137] Through MSP, the maritime dimension of some coastal uses or activities and their impacts are integrated to provide a strategic vision for the land-sea interface.[138]

In addition, MSP plays a critical role in addressing the interdependency of land and offshore economic sectors and different interests including identification of conflicts and synergies, evaluation of trade-offs among multiple uses and interests, and proposing different development options.[139] It does this by bringing together multiple users of the land-sea interface – including tourism, energy, industry, government, conservation, and recreation – to make informed and coordinated decisions about how to use the resource sustainably.[140] In many cases, users

128 P Crist and others, Integrated Land-Sea Planning: Technical Guide to the Integrated Land-Sea Planning Toolkit (EBM Tools Network 2009) < https://repositories.lib.utexas.edu/handle/2152/31894>.

129 Granit and others (n 1) 10-12; Kristina Veidemane and Olgerts Nikodemus, 'Coherence between Marine and Land Use Planning: Public Attitudes to Landscapes in the Context of Siting a Wind Park Along the Latvian Coast of the Baltic Sea' (2015) 58(6) Journal of Environmental Planning and Management 949; Hance D Smith and others, 'The Integration of Land and Marine Spatial Planning' (2011) 15 Journal of Coastal Conservation 291.

130 Deidun and others (n 127) 136ff; Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 (n 127).

131 Anne-Michelle Slater, 'What is Marine Spatial Planning?' (2012) 14(1) Environmental Law Review 1.

132 Sue Kidd and Geraint Ellis, 'From the Land to Sea and Back Again? Using Terrestrial Planning to Understand the Process of Marine Spatial Planning' (2012) 14(1) Journal of Environmental Policy & Planning 49.

133 ibid 49ff.

134 Coastal and Marine Access Act 2009, s 1-325.

135 G Enander and others, Better Management of the Marine Environment (Final report developed for the Swedish Government 2008).

136 Nguyen Chu Hoi and Bui Thi Thu Hien, Integrated Spatial Planning and Management for Marine and Coastal Sustainability in Vietnam (International Union for Conservation of Nature and Natural Resources 2014) 5.

137 ibid 2 and 5-6.

138 Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 (n 127).

139 Veidemane and Nikodemus (n 129) 949ff.

140 Harris Heap and Whiteway Post, 'Application of Biophysical Information to support Australia's representative Marine Protected Area Program' (2008) 51(10) Ocean & Coastal Management 701.

have free access to marine resources, including space that leads to excessive overuse and eventual destruction of resources, necessitating regulation.[141]

Therefore, there is a need to amend the Physical and Land Use Planning Act of 2019 to ensure that there are express provisions committing both the national and respective county governments to apply marine spatial planning as a framework for planning activities within the land-sea interface. The Act should be amended to include a clear definition of land, encompassing all water bodies as well as the territorial sea as provided in the Constitution of Kenya, 2010.[142] This will ensure that the law addresses itself to the unique spatial planning prerequisites of the land-sea interface, which include multiple and increasingly expanding and conflicting uses that transcend the land-sea interface continuum.

Thus, marine spatial planning should be provided for in the Act as one of the plan typologies that addresses the planning needs of Kenya's land-sea interface and the wider coastal marine ecosystem. The MSP framework for Kenya should facilitate integration across sectors, agencies, and levels of government. This can be achieved by designating the lead role in matters of planning and development control to a focal level of government. For example, the National Land Commission which is mandated with the administration of the land-sea interface by the Constitution should assume this role.[143]

The National Land Commission should, therefore, be charged with the preparation of a marine spatial plan for the entire geographical stretch of Kenya's land-sea interface. This spatial plan would then provide the basis for approval of all proposed developments to be processed by the respective county governments. When it comes to development approvals based on the adopted marine spatial plan, the county governments should have a special committee that has representation from the National Land Commission and all the sector agencies as a part of the evaluation team that would recommend the approval of a proposed development. Based on the comprehensive marine spatial plan, all counties within the coastal zone should also prepare specific county spatial plans which would give a detailed framework for governing the land-sea interface within their areas of jurisdiction. These marine spatial plans would ensure that the land-sea interface is effectively managed and a sustainable blue economy realized.

141 ibid 701ff.
142 The Constitution of Kenya 2010 art 260.
143 ibid art 62(3).

ARTICLE

TACKLING COOKSTOVE EMISSIONS IN INDIA: TOWARDS AN ENABLING POLICY ENVIRONMENT AND MORE EFFECTIVE LEGAL SOLUTIONS*

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1 INTRODUCTION

Household air pollution resulting from cookstove emissions poses a serious threat to human health and well-being and is a significant contributory factor in local and global climate change.[1] Household cookstoves are used for cooking and heating on a large scale in many parts of the world. It has been estimated that around three billion people (some 40 per cent of the total global population) rely on traditional use of biomass or heavy fossil fuels for cooking, either using open fires or simple stoves.[2] The negative effects of household cookstove emissions are massive and well-known.[3]

India is home to the world's second largest population with 1.3 billion people. It has been estimated that 819 million people in India use traditional biomass cookstoves for their cooking needs.[4] In other words, over 60 per cent of the country's population relies on traditional use of biomass for cooking and heating.[5] This puts India at the bottom in terms of global ranking by the percentage of the population that has access to clean cooking.[6]

India has had national air quality and clean-cooking programs since the 1950s and these have increased in recent decades. The Air Act[7] and supporting legislation[8] have been in place for several decades, subsidies for cleaner energy for cooking[9] have been introduced, and awareness-raising campaigns initiated.[10] Despite these multiple multi-level regulatory efforts, the big picture on household cooking emissions has not seen a radical change for the better. The current regulatory and policy situation regarding reducing emissions from cookstoves in India is characterized by the interplay of a number of different objectives, policy instruments, actors, and levels of governance. This has led to uncoordinated actions and poorly monitored and ineffective programs. In addition, cookstove emissions have remained a somewhat marginalized problem despite accumulating evidence of its significant negative effects. The reasons for this are manifold, including the dispersed nature of the issue, deep links to poverty and gender gaps, social and cultural factors inherent in the utilization of cookstoves, etc.

1 F G Lacey and others, 'Transient Climate and Ambient Health Impacts due to National Solid Fuel Cookstove Emissions' (2017) 114(6) Proceedings of the National Academy of Sciences of the United States of America (PNAS) 1269; Y Huang and others, 'Global Radiative Effects of Solid Fuel Cookstove Aerosol Emissions' (2018) 18 Atmospheric Chemistry and Physics 5219; World Health Organization (WHO), Burden of Disease From Household Air Pollution for 2016 (WHO 2018) <www.who.int/airpollution/data/HAP_BoD_results_May2018_final.pdf?ua=1>.

2 International Energy Agency (IEA), Energy Access Outlook 2017: From Poverty to Prosperity (IEA 2017) 58.

3 ibid section 2.

4 International Energy Agency, World Energy Outlook 2016 (IEA 2016).

5 IEA (n 2) 61.

6 IEA (n 4) 57.

7 The Air (Prevention and Control of Pollution) Act, No. 14 of 1981.

8 In particular, the Environmental (Protection) Act, No. 29 of 1986. For the regulatory initiatives on air quality, see, Ministry of Environment, Forest and Climate Change, National Clean Air Programme (GOI 2019); Ministry of Environment, Forest and Climate Change, National Ambient Air Quality Standards (GOI 2017).

9 These have often been connected with clean cooking programs, either subsidizing the purchase of improved cookstoves or cleaner energy for cooking. See, e.g., S Arun and I H Rehman, 'Can Subsidies be a Tool for Strengthening the Improved Cookstoves Market'? (The Energy and Resources Institute (TERI) 2015) <www.teriin.org/policybrief/files/SUBSIDIES_spread/files/downloads/SUBSIDIES_spread.pdf>; N Mittal, A Mukherjee and A Gelb, Fuel Subsidy Reform in Developing Countries: Direct Benefit Transfer of LPG Cooking Gas Subsidy in India (Center for Global Development 2017) <www.cgdev.org/sites/default/files/fuel-subsidy-reform-developing-countries-india.pdf>.

10 The awareness-raising campaigns have been either government-led or organized by other actors such as the global Clean Cooking Alliance (see <www.cleancookingalliance.org>). See e.g. M Zahno and others, 'Health Awareness and the Transition towards Clean Cooking Fuels: Evidence from Rajasthan' (2020) 15(4) PLoS ONE e023193.

Household air pollution and black carbon emissions resulting from cookstoves, including within the Indian context, have been the subject of a fair amount of research and publications. Various studies and reports on the health risks of cookstove emissions have been published, which deal with the role of black carbon generally[11] and within the Indian context, specifically.[12] In the same vein, air pollution[13] and climate change effects[14] of cookstoves have been explored. The studies have concluded that there is an urgent need to adopt effective measures to tackle the problems caused by emissions from household cookstoves. Many studies have focused on presenting different technical solutions and innovations to reduce emissions produced by cookstoves[15] or have explored the issue as a question of changing energy sources.[16] Some previous studies have reviewed past programs for cleaner household cookstoves in India and analysed why they have generally failed.[17] In addition, the roles of, among others, the following economic and social solutions in promoting cleaner cooking have been explored: government subsidies,[18] commercialization

11 N Scovronick, Reducing Global Health Risks Through Mitigation of Short-Lived Climate Pollutants: Scoping Report for Policy-makers (WHO 2015) <https://apps.who.int/iris/bitstream/10665/189524/1/9789241565080_eng.pdf?ua=1>; WHO, Burning Opportunity: Clean Household Energy for Health, Sustainable Development, and Wellbeing of Women and Children (WHO 2016) <www.who.int/iris/bitstream/10665/204717/1/9789241565233_eng.pdf?-ua=1>, 2018a; Lacey and others (n 1); World Health Organization, 'Household Air Pollution and Health' WHO (8 March 2018) <www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health>.

12 R Ray and T Lahiri, Health Effects of Chronic Exposure to Smoke from Biomass Fuel Burning in Rural Households: A Study in Northern and Eastern India (Central Pollution Control Board (CPCB) 2012) <https://cpcb.nic.in/uploads/healthreports/Health-effects-of-chronic-exposure-smoke-2012.pdf> ; Ministry of Health and Family Welfare, Report of the Steering Committee on Air Pollution and Health Related Issues (GOI 2015) <https://main.mohfw.gov.in/sites/default/files/5412023661450432724_0.pdf>; Public Health Foundation of India (PHFI) and Centre for Environmental Health, Air Pollution and Health in India: A Review of the Current Evidence and Opportunities for the Future (2017) <www.ceh.org.in/wp-content/uploads/2017/10/Air-Pollution-and-Health-in-India.pdf>.

13 A Stohl and others, 'Evaluating the Climate and Air Quality Impacts of Short-lived Pollutants' (2015) 15 Atmospheric Chemistry and Physics 10529. Within the Indian context, see, e.g. B R Gurjar, R Khaiwal and A S Nagpure, 'Air Pollution Trends over Indian Megacities and Their Local-to-global Implications' (2016) 142 Atmospheric Environment 475; A P Grieshop and others, 'Emission Factors of Health- and Climate-relevant Pollutants Measured in Home during a Carbon-ûnance-approved Cookstove Intervention in Rural India' (2017) 1 GeoHealth 222.

14 Lacey and others (n 1) 1269.

15 Within the Indian context, see, e.g., Venkataraman and others, 'The Indian National Initiative for Advanced Biomass Cookstoves: The Beneûts of Clean Combustion' (2010) 14 Energy for Sustainable Development 63; R Hanna, E Duflo and M Greenstone, 'Up in Smoke: The Influence of Household Behavior on the Long-Run Impact of Improved Cooking Stoves' (2016) 8(1) American Economic Journal: Economic Policy 80.

16 WHO, Burning Opportunity (n 11). Within the Indian context, see, e.g., M Bansal, R P Saini and D K Khatod, 'Development of Cooking Sector in Rural Areas in India – A Review' (2013) 17 Renewable and Sustainable Energy Reviews 44; S Patnaik and S Tripathi, Access to Clean Cooking Energy in India: State of the Sector (Council on Energy, Environment and Water 2017) <www.ceew.in/sites/default/files/CEEW-Clean-Cooking-Energy-Access-in-India-21Oct17.pdf>; WHO, Opportunities for Transition to Clean Household Energy: Application of the Household Energy Assessment Rapid Tool (HEART) in India (WHO 2018) <https://apps.who.int/iris/bitstream/handle/10665/274280/9789241513999-eng.pdf?sequence=1&isAllowed=y>.

17 B Sinha, 'The Indian Stove Programme: An Insider's View – the Role of Society, Politics, Economics and Education' 48 Boiling Point (2002) 23; The National Programme for Improved Cookstoves , Ingredients for Sustainable Cookstove Interventions: Lessons Learned from the Indian National Programme for Improved Cookstoves (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH 2013); M Khandelwal and others, 'Why Have Improved Cook-Stove Initiatives in India Failed?' (2017) 92 World Development 13.

18 Within the Indian context, see, e.g., Arun and Rehman (n 9); Mittal and others (n 9).

of improved cookstoves,[19] carbon financing,[20] and social drivers and networking.[21]

This paper provides a legal and policy analysis of the current Indian regulatory setting with regard to reducing emissions from household cookstoves. The study identifies the so far largely incomplete or failed international and national efforts to tackle cookstove emissions. The analysis results in the identification of conditions, elements, and tools (also an 'enabling policy environment') for more effective and integrated future policy-making and regulation for reducing cookstove emissions. In this paper, the term 'enabling policy environment' denotes the general conditions and characteristics of the policy-making processes in terms of the applicable policy and regulatory approaches and their implementation. In other words, it is the large-scale framework within which certain policy goals are pursued. A good policy environment creates conditions within which the establishment and implementation of measures, from broad overarching policies to concrete regulatory instruments, is made easier and can be achieved more effectively.

The research results of this paper are presented within the Indian context but have applicability also beyond the Indian context: people in many developing countries rely on cookstoves for cooking and heating and the resulting emissions form a remarkable environmental, social, and human health problem.

This paper is structured as follows. After an introduction, section two frames the problem of cookstove pollution in India, briefly describing the sources and impacts of the pollution. Section three reviews the relevant international and national regulatory setting and the legal and policy measures applied to address cookstove emissions within the Indian context. The section also discusses the multiple objectives and regulatory actors seeking to tackle the problem of cookstove emissions in the country. Section four maps out elements of an enabling policy environment for controlling household air pollution by cookstove emissions in India, and provides recommendations on the roles of different regulatory tools in this context. The concluding section draws together the paper's main arguments and findings.

2 THE PROBLEM OF COOKSTOVE EMISSIONS IN INDIA

Household cookstoves that burn biomass or fossil fuels produce many types of air pollutants. The most significant of these are carbon dioxide (CO_2), carbon monoxide (CO), and small particles. The particles primarily emitted during incomplete combustion are generally called black carbon since they are composed mainly of carbon. Black carbon is referred to as a short-lived climate pollutant (SLCP), which means that the lifetime of the particles in the atmosphere is short, usually from days to weeks.

Household air pollution, resulting from emissions of stoves used for cooking and heating, is a serious

19 R Bailis and others, 'Arresting the Killer in the Kitchen: The Promises and Pitfalls of Commercializing Improved Cookstoves' (2009) 37(10) World Development 1694; K Rai and J McDonald (eds), Cookstoves and Markets: Experiences, Successes and Opportunities (GVEP International 2009);G Shrimali and others, 'Improved Stoves in India: A Study of Sustainable Business Models' (2011) 39 Energy Policy 7543; O E Freeman and H Zerriffi, 'Complexities and Challenges in the Emerging Cookstove Carbon Market in India' (2015) 24 Energy for Sustainable Development 33; J J Lewis and others, 'Piloting Improved Cookstoves in India' (2015) 20 Journal of Health Communication 28.

20 O E Freeman and H Zerriffi, 'Carbon Credits for Cookstoves: Trade-offs in Climate and Health Benefits' (2012) 88(5) The Forestry Chronicle 600; G L Simon, A G Bumpus and P Mann, 'Win-win Scenarios at the Climate–development Interface: Challenges and Opportunities for Stove Replacement Programs through Carbon Finance' (2012) 22 Global Environmental Change 275.

21 Within the Indian context, see, e.g., V H Honkalaskar, U V Bhandarkar and M Sohoni, 'Development of a Fuel Efficient Cookstove through a Participatory Bottom-up Approach' (2013) 3(16) Energy, Sustainability and Society 4; P Kumar and others, 'Adoption and Sustained Use of Cleaner Cooking Fuels in Rural India: a Case Control Study Protocol to Understand Household, Network, and Organizational Drivers' (2017) 75 Archives of Public Health 70; P Kumar and L Igdalsky, 'Sustained Uptake of Clean Cooking Practices in Poor Communities: Role of Social Networks' (2019) 48 Energy Research & Social Science 189.

and widespread problem in India. The country has a huge and growing population, the majority of which uses cookstoves daily. It has been estimated that in 2015, more than 70 per cent of the energy used in households in India was for cooking.[22] Cooking will continue to be a significant source of energy consumption well into the future in India and thus, it is of crucial importance that cleaner solutions are found in this field. The following section briefly discusses the impacts of household cookstoves in order to demonstrate why reduction of their emissions is so important from environmental, human health, and social perspectives.

Reduction of indoor air pollution has been the primary motivator of past efforts to curb cookstove emissions at the national level.[23] Household air pollution, including black carbon emissions, give rise to serious and wide-ranging human health risks and costs. The WHO estimates that 3.8 million premature deaths attributable to household air pollution occurred in 2016. In terms of years of healthy life lost, household air pollution is the single most important environmental health risk factor worldwide – more important even than lack of access to clean water and sanitation.[24] India bears the heaviest burden in this respect with more than one million premature deaths from household air pollution each year.[25]

Cookstove combustion is a source of both long-lived greenhouse gases and a range of short-lived pollutants that have a strong climate forcing (heating effect). SLCPs such as black carbon impact the global climate system through several mechanisms. The main impact mechanism changes the Earth's radiative balance. Black carbon particles absorb solar radiation and reduce reflectivity, thus increasing heat absorption. On snow and ice, black carbon facilitates increased melting and diminishes their reflective capacity.[26] Compared to CO_2, for instance, the impacts of SLCPs are also typically more local in character given their short-lived quality.[27] Overall, however, scientific uncertainties remain regarding the exact impacts that black carbon and other SLCPs have on the climate system.[28]

As described above, air quality and climate change are closely related. Thus, improving air quality can make a significant contribution in tackling the climate change problem.[29] In the specific case of reducing emissions from cookstoves, positive climate effects, interestingly, result not only from a lesser amount of greenhouse gases and SLCPs being emitted but often also from reduced deforestation, since the amount of (often unlawfully) collected and burnt wood is reduced and possibly replaced by other, less emitting fuels.[30]

The use of household cookstoves and the resulting emissions have, in addition to the human health and climate effects, negative social impacts.[31] Women and children are disproportionately affected by smoke and emissions,[32] leading arguably to a 'gender paradigm

22 International Energy Agency, India Energy Outlook (IEA 2015) 66.

23 Lacey and others (n 1) 1269.

24 WHO, Burning Opportunity (n 11) 16. Research has shown that household air pollution causes noncommunicable diseases including stroke, ischemic heart disease, chronic obstructive pulmonary disease (COPD) and lung cancer. In addition, close to half of deaths due to pneumonia among children under 5 years of age are caused by particulate matter inhaled as a result of household air pollution.

25 WHO, Burning Opportunity (n 11) 17.

26 Scovronick (n 11) 29.

27 Lacey and others (n 1) 1269.

28 For instance, the absorbent or reflective effects (the warming or cooling effect) and interactions between aerosols and clouds are issues that need further study and modelling. See, e.g., ibid 1269; and for a recent study on quantifying the net global radiative effects of black and organic carbon aerosols from global and Indian solid fuel cookstove emissions, see Huang and others (n 1) 5219.

29 United Nations Environment Programme, Air Pollution in Asia and the Pacific: Science-based Solutions (UNEP 2019)<wedocs.unep.org/bitstream/handle/20.500.-11822/26861/Air_pollutionAP_ES.pdf?sequence=1&isAllowed=y>.

30 Indian governments have for quite a long time favored and subsidized liquefied petroleum gas (LPG) for cleaner household cooking energy. Other alternatives to fuel wood include biogas and piped natural gas. See, e.g., Patnaik and Tripathi (n 16) 1.

31 See, generally, e.g., Putti and others, The State of the Global Clean and Improved Cooking Sector (World Bank Technical Report 007/15 2015) 34-38 <https://openknowledge.worldbank.org/bitstream/handle/10986/21878/96499.pdf?sequence=1&isAllowed=y>.

32 WHO, Burning Opportunity (n 11) 3.

for indoor air pollution health impacts'.[33] In addition to the gender perspective, the health risks of cookstoves are strongly correlated with poverty. For cooking, low-income households tend to depend on solid fuels, which cause the most severe pollution but may be freely gathered.[34] Generally, it is important to recognize that not only rural areas but also urban slums must be targeted when household air pollution is being placed within the regulatory loop.[35]

In total, it was estimated in 2015 that the mid-range economic value of the negative externalities posed by household cookstove emissions globally stood at over USD 120 billion annually against a scenario of shifting all solid fuel users to high performing improved cookstoves.[36] Although a conservative estimate, the figure gives an idea of the global scale of the problem in economic terms.

The overview of the effects of household air pollution and the role of cookstoves therein on global and Indian scales set out above clearly shows that the problem is huge, acute, and serious. It is curious, then, that the problem – or 'crisis' as the WHO has put it[37] – of household air pollution is still largely overlooked. This may be explained by reference to several unfortunate factors: the effects of the problem often materialize slowly, the greatest impacts are felt by the most marginalized people in society (the rural poor, women and children), and simply the fact that people have accepted smoke as an unavoidable nuisance associated with using cookstoves.[38] It is also important to note that emissions from cookstoves mean that air pollution is not only a problem in cities in developing countries but an acute issue in rural areas as well.

A 2011 UNEP report on short-lived climate forcers concluded that focusing on cookstoves is the most cost-effective strategy to achieve black carbon abatement.[39] Within the Indian context, household emissions are deemed to be the largest contributor to ambient small particle (PM2.5) exposure.[40] It has been modelled that if the use of biomass for cooking was completely mitigated, it would result in a 17.5 per cent reduction in the nation-wide, population-weighted average annual ambient PM2.5 exposure. This would, then, lead to a 6.6 per cent reduction in Indian premature mortality.[41]

Great potential exists for the dissemination of improved cooking technologies and alternative fuels and raising public awareness within the Indian context. It appears, however, that the required changes will not happen spontaneously or through market developments alone. Accordingly, the establishment and maintenance of an enabling policy environment and effective regulatory tools to successfully tackle the problem is needed.

3 THE MULTIPLICITY OF POLICIES, LAWS AND INSTITUTIONAL FRAMEWORKS ON COOKSTOVES IN INDIA

The multidimensionality of the issue of reducing and controlling household air pollution in India is reflected in the array of policy and regulatory tools currently in use to address the problem. As discussed below, the current regulatory framework includes legislation, air

33 UNEP Air Pollution (n 29) 20.
34 WHO, Burning Opportunity (n 11) 17.
35 See also Report of the Steering Committee (n 12) 100-1.
36 Putti and others (n 31) 18.
37 WHO, Burning Opportunity (n 11) 3.
38 ibid 19.
39 United Nations Environment Programme, Near-term Climate Protection and Clean Air Benefits: Actions for Controlling Short-Lived Climate Forcers (UNEP 2011) <wedocs.unep.org/bitstream/handle/20.500.11822/8048/-Nearterm%20Climate%20Protection%20and%20-Clean%20Air%20Benefits_%20%20Actions%20for%20-Controlling%20Short-Lived%20Climate%20-Forcers%20-%20A%20UNEP%20Synthesis%20Report-20111080.pdf?sequence=3&isAllowed=y>.
40 S Chowdhury and others, 'Indian annual ambient air quality standard is achievable by completely mitigating emissions from household sources' (2019) 116(22) PNAS 10711-6.
41 ibid 10711-6.

quality standards and programs, clean cookstove initiatives and programs, health policy instruments, subsidy policies, and clean cooking campaigns. The variety of regulatory and policy tools in play is strikingly broad, and this variety extends to the legal status, level of detail, and subjects of the various forms of regulation in use. In addition to traditional command and control forms of regulation, financial instruments and information-based regulatory tools are also in use.

In addition to using different types of regulation, policy-making with respect to cookstove emissions takes place at different levels. The international regulatory framework sets the stage and motivates many pieces of national regulation. Currently in India, most of the regulation relevant for controlling cookstove emissions has been issued at the federal or central government level. However, state and city-level action and regulation are also increasing in volume and significance.

3.1 The International Regulatory Context

The overall framework and impetus for action on cookstove emissions are provided by key international legal and policy developments. The Paris Agreement (2015)[42] does not directly mention SLCPs or black carbon emissions, but some countries have included them in their nationally determined contributions (NDCs),[43] in which Parties specify their periodical emissions reduction commitments.[44] The Paris Agreement represents an opportunity to include cookstove emissions in India's internationally recognized emissions reduction commitments.

Under the international climate policy, the clean development mechanism (CDM) provides a financing mechanism for cookstove projects in developing countries. India has hosted numerous such projects where carbon credits have provided funding to cleaner cookstove projects. Generally, these are often regarded as 'win-win' projects with many benefits for the parties and the climate. However, a closer look reveals that the sustainability of the projects easily leaves room for improvement.[45] Within the Indian context, the experiences on the benefits of cookstove CDM projects are mixed.[46]

India joined the Climate & Clean Air Coalition (CCAC)[47] in 2019. The CCAC is a voluntary

42 Paris Agreement to the United Nations Framework Convention on Climate Change (12 December 2015); American Society of International Law, International Legal Materials (Vol. 55, Cambridge University Press 2016) 740.

43 NDCs are documents that Parties are obliged to prepare, communicate and maintain under the Paris Agreement. They detail the efforts of each country to reduce national greenhouse gas emissions and to adapt to the impacts of climate change.

44 For instance, Mexico specifically mentions black carbon together with greenhouse gases in its NDC pledge; the country is committed to reducing black carbon by 51 per cent by 2030. The reduction target may rise to 70 per cent contingent on international support. Chile announced its updated NDC in spring 2020, accordingly, the country is committed to reducing black carbon emissions by 25 per cent in 2030. For all NDCs, see, UNFCCC, NDC Registry <www4.unfccc.int/sites/NDCStaging/Pages/Home.aspx>.

45 Simon, Bumpus and Mann (n 20) 275; Freeman and Zerriffi, 'Complexities and Challenges' (n 19) 28; L Sanford and J Burney, 'Cookstoves Illustrate the Need for a Comprehensive Carbon Market' (2015) 10 Environmental Research Letters 084026. Sustainability has been undermined by imbalances between the climate and health benefits of the projects, by lacking cost-effectiveness etc. Freeman and Zerriffi, 'Complexities and Challenges' (n 19) 42.

46 Freeman and Zerriffi, 'Carbon Credits for cookstoves' (n 20) 600; T W Aung and others, 'Health and Climate-Relevant Pollutant Concentrations from a Carbon-Finance Approved Cookstove Intervention in Rural India' (2016) 50(13) Environmental Science & Technology 7228; Warnecke and others, Vulnerability of CDM Projects for Discontinuation of Mitigation Activities: Assessment of Project Vulnerability and Options to Support Continued Mitigation (German Emissions Trading Authority 2017) <https://newclimate.org/wp-content/uploads/2017/05/vulnerability-of-cdm.pdf>.

47 See, Climate and Clean Air Coalition <ccacoalition.org/>.

organizations, businesses, scientific institutions, and civil society organizations and focuses on climate protection and air quality improvement through actions that reduce SLCPs.[48] Joining the CCAC can be expected to significantly strengthen India's capacity to create and implement effective policies to reduce cookstove emissions. Upon joining, the Indian government stated that India will work under the CCAC to 'adopt cleaner energy sustainable production and consumption patterns' and will also work on best practices and experiences for the effective implementation of India's National Clean Air Programme (NCAP) (UN Environment, 2019). CCAC does not directly impose any regulatory measures for reducing emissions, but its value in the present context is in providing an important platform for sharing of experiences, learning, and adoption of best practices in reducing greenhouse gases and air pollution.

Overall, the international regulatory context provides an important framework and forms part of the overarching set of rules by which governance on cookstove emissions is to be achieved. Significantly, it brings private and voluntary sector actors and activities into the regulatory setting. The CCAC provides an important platform for cooperation, sharing of experiences, learning, and adopting best practices from other countries.

3.2 National Regulation

The National Clean Air Programme (NCAP)[49] is a recent governmental initiative, launched in January 2019 by the Ministry of Environment, Forest and Climate Change (MoEFCC). The Programme focuses on the most polluted Indian cities which are to prepare action plans with time-bound targets to prevent, control, and reduce emissions. The NCAP marks the first time that the government has established a time-bound target for particulate matter reduction. The NCAP is not legally binding, but it relies on actions that can be realized under the Air Act. The focus of the NCAP is on ambient air pollution, leaving the problem of cookstove emissions largely to one side.

The Indian National Ambient Air Quality Standards, which also concern fine particulate matter (black carbon), were adopted in 2009. The standards are part of the Environmental (Protection) Rules[50] and thus, legally binding in nature. However, there is no legal enforcement mechanism in place to tackle non-compliance with these Standards. The accompanying National Air Monitoring Programme (NAMP) concentrates on outdoor air pollution, mainly from industrial point sources, leaving out diffuse sources and indoor air pollution.

The National Air Quality Index was launched in 2015. Its main purpose is to be a tool for effective communication of air quality status to those living in India. The Index covers information on eight pollutants, including two different particulate matters, but gives no information as to the sources of the particular types of emissions covered.

Over the years, India has implemented several national programs targeting cookstove emissions.

- The National Programme on Improved Cookstoves (NPIC) was operational from the 1980s to the early 2000s. It had the dual objective of fuelwood conservation and smoke reduction in kitchens, especially in rural areas. Millions of improved cookstoves were installed under the NPIC, but the real long-term benefits of the Programme remain questionable.[51]

- The National Biomass Cookstoves Initiative (NBCI), which commenced in 2009 and is administered by the Ministry of New &

48 See ibid.

49 Ministry of Environment, Forest & Climate Change, National Clean Air Programme (GOI 2019) <moef.gov.in/wp-content/uploads/2019/05/NCAP_-Report.pdf>.

50 Ministry of Environment and Forests, Government of India, The Environment (Protection) Rules (1986) <https://upload.indiacode.nic.in/showfile?actid=AC_-MP_74_308_00003_00003_1543231806694&type=rule&-filename=ep_rules_1986.pdf>.

51 Sinha (n 17) 23; Khandelwal and others (n 17) 13 The long-term impacts remained modest due to, inter alia, poor maintenance of the new stoves and people's reluctance to give up their traditional stoves and cooking habits. ibid.

Renewable Energy (MNRE), is a more recent program. Its primary aim is to enhance the availability of clean and efûcient energy for the energy deûcient and poorer sections of the country.[52]

- The Unnat Chulha Abhiyan (UCA) Programme, also run by the MNRE, promoted biomass cookstoves in the country during the period from 2012 to 2017. The objectives of this programme were to mitigate both social inequities and climate change by reducing the levels of black carbon and other emissions resulting from burning biomass for cooking.[53]

- India's Ministry of Petroleum and Natural Gas (MOP&NG) also runs a program targeting cookstove emissions. The Pradhan Mantri Ujjwala Yojana initiative, launched in 2016, provides cooking gas, i.e. liquid petroleum gas (LPG), connections to women from poorer households.

- The National Biogas and Manure Management Programme (NBMMP), run by the MNRE, is a scheme for setting up biogas plants for use in households to meet cooking energy needs. The main objectives of the Programme are to reduce firewood consumption as well as indoor air pollution and greenhouse gas emissions.[54]

The national programs have not had lasting impacts. Some of them managed to distribute a large number of improved cookstoves to households at affordable prices, but too many challenges persisted in the implementation of the programs.[55] For a long time, the public demand for improved cookstoves was very low.[56] Then again, the government had many motives for encouraging the adoption of improved cookstoves. These, sometimes disparate, motives have included improving health, addressing a fuelwood crisis and deforestation, releasing women from domestic labour, educating girls, and preventing climate change.[57] Cleaner cookstove policy indeed has multiple objectives, which places high requirements for their communication to the public, and for finding the most appropriate design and ways for implementation of the policy and regulation. There have been problems in the administration and budgeting of the Indian cookstove programs,[58] in the operation of the specific government subsidies,[59] and in monitoring and evaluation.[60]

Many reasons for the failure of the past Indian clean cookstove program are not related to the regulatory design, as such, in a narrow sense (design of the instruments) but to the supporting and operating environment and social factors (esp. tackling poverty and gender issues), on one hand, and to the design and functionality of the new stoves and their supporting services, on the other hand. Common to all these factors is the need for coordination and mutual supportiveness of different relevant policy fields and goals, and the importance of knowing and meeting the needs of the users of the stoves.[61]

To date, little attention has been paid to emissions from cookstoves within the context of the Indian national climate change policy. For example, neither the National Action Plan on Climate Change, issued in 2008, nor the Indian NDC under the Paris Climate Agreement mention cookstoves or black carbon.

52 Ministry of New and Renewable Energy (MNRE), National Biomass Cookstoves Initiative (2009) <https://mnre.gov.in/national-biomass-cookstoves-programme>.

53 ibid.

54 MNRE, Biogas <https://mnre.gov.in/biogas>.

55 Numerous studies on the Indian clean cookstoves programs of the past have been conducted. For key literature, see WHO Report (n 11).

56 Khandelwal and others (n 17) 13.

57 ibid 15.

58 Sinha (n 17) 23.

59 ibid; Douglas F Barnes and others, Cleaner Hearths, Better Homes: New Stoves for India and the Developing World (Oxford University Press 2012). For references, see (n 12).

60 GIZ (n 17) 5.

61 ibid; See generally, Honkalaskar and others (n 21); Khandelwal and others (n 17) 23.

The Indian government has been preparing a new National Energy Policy. The draft document (as of 27 June 2017) sets out the key objective of providing clean cooking fuel to everyone living in India within a reasonable timeframe. To support that goal, the document provides for the establishment of a National Mission on Clean Cooking.

The Indian national health policy increasingly takes household air pollution explicitly into consideration. The Vision Statement on Environment and Human Health (2003) recognized the negative effects of incomplete solid fuel combustion and called for the improvement of air quality monitoring systems, specifically covering respirable particulate matter (item 4.1.5). The 2017 National Health Policy[62] included, for the first time, the reduction of indoor and outdoor air pollution as a priority area for action (section 3.2). Significantly, the policy document calls for coordinated action in this field across sectors.

The main piece of legislation dealing with air pollution in India is the Air (Prevention and Control of Pollution) Act, enacted in 1981. The Act generally provides for the prevention, control, and abatement of air pollution. It does not address household air pollution as such but establishes the overall regulatory framework and institutions for addressing air pollution in the country.

Certain other legal acts have more indirect impacts on the regulation of cookstove emissions. For instance, the 1986 Environmental (Protection) Act established the general legal and institutional framework for taking nation-wide environmental protection measures. The Act empowers the central government to establish authorities for environmental protection and to take measures, for example, in terms of 'laying down standards for emission or discharge of environmental pollutants from various sources whatsoever' (section 3(2)(iv)). The Environmental (Protection) Rules prescribe standards for emissions, but these do not relate to household cookstoves.

India's Constitution declares that the state is committed to the protection and improvement of the environment (Article 48A). The relevant article is a 'directive principle of state policy' (reflecting the title of Part IV of the Constitution), representing the socio-economic goals that the nation is expected to achieve.[63] Thus, Article 48A is not directly legally enforceable. However, it has been applied together with other constitutional provisions, to give effect to the right to a healthy environment. Most importantly, the right to clean air has, through judicial interpretation, been identiûed as an element of the right to life under Article 21 of the Constitution.[64] In addition, the Supreme Court of India has observed that Articles 39(e), 47 (on people's health) and 48A of the Constitution, by themselves and collectively, impose a duty on the state to secure the health of the people or to improve public health and to protect and improve the environment.[65] Thus, people living in India do have recognized legal rights to environmental protection and clean air. Naturally, the precise implications of these constitutional rights are subject to interpretation.

India has a long tradition of subsidizing the transition towards cleaner energy. In respect of cookstove combustion, a number of residential LPG subsidy programs[66] have been initiated to tackle the wide-spread affordability challenges faced by households in shifting to cleaner fuels. LPG has been the Indian government's clean cooking fuel of choice since the 1970s.[67] The LPG subsidy programs have addressed the cleaner fuel aspect of the challenge of reducing cookstove emissions in India, while the improved cookstove initiatives discussed above have approached the issue from a technical entry point, sometimes coupled with a financial subsidy in relation to the cost

62 Ministry of Health and Family Life, Government of India, National Health Policy (2017) <www.nhp.gov.in/nhpfiles/national_health_policy_2017.pdf>.

63 A De and V Madhok, 'Constitutional Provisions and Environment Protection in India: A Legal Insight' (2015) 1(2) Plebs Journal of Law <www.researchgate.net/publication/311922823_CONSTITUTIONAL_PROVISIONS_AND_ENVIRONMENT_PROTECTION_IN_INDIA-_A_LEGAL_INSIGHT>.

64 P P Bhave and N Kulkarni, 'Air Pollution and Control Legislation in India' (2015) 96(3) Journal of Institution of Engineers India Ser. A 259.

65 De and Madhok (n 63).

66 For a summary, see, e.g., WHO, Opportunities for Transition (n 16) 19-20.

67 Patnaik and Tripathi (n 16) 1.

of an improved stove. India has also been pioneering provincial level LPG programs.[68]

In addition to government-led programs and initiatives for cleaner cooking, there have been several campaigns either based on a public-private partnership or fully realized through non-governmental actions.[69] The international Clean Cooking Alliance is one example of this and seeks to foster clean cooking solutions and create demand and supply for improved stoves and cooking practices worldwide. The Alliance is active in India with several projects implemented and on-going.[70]

3.3 Multiple Objectives and Actors

Efforts to reduce and control air pollution in India are characterized by multiple regulatory levels and instruments as described above. Regulation has been largely free-standing, uncoordinated, and polycentric in nature. The wide variety of objectives and the multitude of actors involved in initiating, developing, and implementing such regulation adds to the challenges involved. As regards household air pollution from cookstoves, direct legal regulation is scarce.

As noted above, multiple objectives lie behind the policies on cookstove emissions in India. Protection of human health is an important objective, and often the overriding one. This is understandable: the effects of cookstove emissions on health are significant, both in terms of human suffering and economic costs. The climate change impacts of cookstove emissions, resulting from greenhouse gas emissions and particulate matter pollution, are also severe. The negative social effects of biomass combustion in cookstoves entail different types of social inequality. The use of cookstoves is also an important energy issue and offers an opportunity to promote domestic energy sources (supporting national energy security) and cleaner energy solutions. Finally, estimates of the economic costs of the effects of cookstove emissions and of the different alternatives are always in the background in relation to policy-making in this area.

Due to the multi-objective nature of the issue, a number of ministries have endorsed policy measures that are relevant to tackling indoor air pollution caused by cookstoves in India. The MoEFCC is responsible for traditional pollution control and monitoring. Among other things, it carries out the NCAP and oversees and coordinates the national climate change mitigation policy. The MNRE is responsible for the national improved cookstove initiatives, which focus on promoting and facilitating access to new technology cookstoves, coupled with cleaner energy solutions and policies. The main contribution of the MOP&NG to reducing black carbon emissions from household cookstoves has been through the facilitation of access to LPG as cooking energy. The Ministry of Health and Family Welfare (MoHFW) addresses cookstove emissions through the national health policy. The Ministry has made considerable efforts in recent years to promote the incorporation of health considerations into policy-making concerning air pollution and cookstoves.[71] Finally, the Central Pollution Control Board (CPCB) serves as a regulatory, advisory, and monitoring body in relation to air pollution in India.

At the state-level, State Departments of Environment and State Pollution Control Boards or Committees are responsible for improving environmental quality and implementing various pollution control acts and rules.

Indian cities – especially the populous mega-cities, which suffer from severe pollution problems – represent a further level on which action is taken to mitigate air pollution. Many Indian cities have awakened to the problems posed by poor air quality and are becoming increasingly active in finding solutions to this challenge. For instance, Delhi has prepared a long-term comprehensive action plan for

68 WHO, Opportunities for Transition (n 16) 13-21.

69 For the action of Clean Cooking Alliance, see, Khandelwal and others (n 17) 13; Lewis and others (n 19) 28.

70 Clean Cooking Alliance, 2019 Annual Report (2020) <www.cleancookingalliance.org/reports2/2019AnnualReport/CCA-annual-report-2019.pdf>. India is among the focus countries of the organization's work.

71 See especially, the National Health Policy (n 62); Report of the Steering Committee (n 12).

air pollution control.[72] The role of cities in this area can be expected to grow in the future. Current city-level efforts tend to focus on tackling air pollution caused by industrial and transport-related emissions[73] and consequently, cookstoves have not been at the centre of the efforts made. However, household air pollution is also a problem in urban areas and should not, therefore, be left unaddressed in city-level action plans on air pollution.

Members of the general public are, ultimately, the most important actors in the efforts to control household air pollution. They are the people who use cookstoves and make decisions on their qualities and the fuels used. Individuals and households may participate in policy-making through civil society groups and non-governmental organizations, which have been active in relation to the issue of clean cooking in India in recent years.

Business and industry players (most importantly, cookstove designers and manufacturers) naturally play a key role in planning and implementing policies designed to limit cookstove emissions. Businesses work with the government or invest in new technologies on their own initiative, often in response to an enabling environmental policy. In addition, international development agencies and other financing organizations provide resources for projects to reduce household air pollution. Different forms of private carbon financing are also important sources of support that allow cookstove emission reduction projects to be realized.

As a conclusion, it can be said that control of cookstove emissions in India entails multiple levels of governance, ranging from federal to local, together with connections at the international regulatory level. The responses that have been adopted involve both public and private actors. To date, the governance of cookstove emissions in India has been rather centrally led, in that the federal government has been in charge of most regulatory and policy actions. This has the benefit of potentially ensuring some overall coherence in policy-making and preventing stagnation in times of crisis.[74] However, the set-up involves a risk that progress will be slow in curbing emissions if the federal regulation is slow in coming, unambitious, or without follow-up and enforcement. It is interesting, then, that the 2019 NCAP specifically targets Indian cities, requiring them to take more action in mitigating air pollution. This could be interpreted as recognition of the failure of past federal regulatory efforts in promoting clean cooking and of the growing regulatory role of (large) Indian cities in tackling the vast air pollution problem in the country.

4 TOWARDS AN ENABLING POLICY ENVIRONMENT AND EFFECTIVE REGULATORY INSTRUMENTS

4.1 Enhancing Cross-sectoral Cooperation and Coordination

Household air pollution is an issue the regulation of which cannot be the responsibility of only one governance unit or authority. Air pollution caused by cookstove emissions has direct links with climate

72 Comprehensive Action Plan for air pollution control with the objective to meet ambient air quality standards in the National Capital Territory of Delhi and National Capital Region, including states of Haryana, Rajasthan and Uttar Pradesh (2017).

73 S K Guttikunda, R Goel and P Pant, 'Nature of Air Pollution, Emission Sources, and Management in the Indian Cities' (2014) 95 Atmospheric Environment 501-510. For instance, the draft Air Action Plan on Abatement of Air Pollution in the Delhi National Capital Region (2017) presents a total of 12 action points, 5 of which concern transport, 2 industry and construction and 2 households (actions on crop stubble burning and solid waste management). The Comprehensive Action Plan for air pollution controlling the National Capital Territory of Delhi and National Capital Region, including states of Haryana, Rajasthan and Uttar Pradesh (2017) is likewise focused on controlling transport and industry emissions but addresses shortly also cookstoves (action point 2.10: Domestic chulha burning and open eateries).

74 R Gillard and others, 'Can National Policy Blockages Accelerate the Development of Polycentric Governance? Evidence from Climate Change Policy in the United Kingdom' (2017) 45 Global Environmental Change 174, 180.

change, health, social, and development policies. Household cookstove emissions, as is the case in respect of SLCP mitigation generally, is a cross-cutting issue: it is impossible for any single governance framework to focus specifically on this issue in a dedicated and cohesive manner.[75] Therefore, the policy response to it should be based on an integrated approach in which policies and regulatory measures in relation to the environment, energy, human health, and social issues (esp. poverty and gender aspects) inform each other and function in a coordinated manner. This will help to avoid overlap of institutional barriers and achieve benefits through synergies, as well as potentially increasing awareness of the issue. Taking an integrated approach may also help in securing adequate financing for policy measures.

In India, the situation regarding the governance of air pollution and cross-sectoral cooperation is mixed. The main responsibility for the NCAP, for instance, lies with the MoEFCC, but the Programme will be implemented with the help of other ministries. Clean cooking fuel policies have been implemented by the two Energy Ministries, but even between them, a lack of coordination has largely prevailed.[76]

In recent years, there has been increasingly active discussion on the need to better integrate air pollution and public health policies in India.[77] The public health administration has criticized the current policy-making related to emissions standards for pollution control from different sources for not requiring a review of health information, a health impact assessment, or a health cost-benefit analysis to guide policy action.[78] In the same vein, it has been pointed out that the MoEFCC and the MOP&NG have no mechanism for cooperating with the MoHFW to share information or incorporate health messages in their information and communication strategies.[79] These are well-grounded arguments, given the ministries' shared objectives of reducing air pollution in the country.

Lack of institutional cooperation and coordination is also reflected in the policy instruments that (could) indirectly address household air pollution. The full potential of these instruments is not being utilized. For instance, India's clean fuel programs do not have clear policy drivers targeted at household pollution management.[80] Furthermore, policy documents such as the Smart Cities Mission Statement and Guidelines (2015) and the draft National Energy Policy either ignore air pollution altogether or contain merely a cursory mention of the issue.[81] Effective cross-sectoral cooperation would allow the environmental, social, and human health impacts of these policy instruments to be fully accounted for and their potential to achieve air pollution mitigation to be better utilized.

4.2 Applying a Household and Community-based Approach

Any policy seeking to address cookstove emissions needs to target action at the household-level. In order to achieve success, this approach requires special knowledge and tools. The policy-making and regulatory approach cannot be overly top-down in nature; it must account for user preferences, different local conditions, etc. This may require considerable changes being made in the relevant policy-making processes. It is often the case that energy development

75 See UNEP, Near-term Climate (n 39) 52.

76 The draft National Energy Policy document (2017,19) refers to clean cooking fuel as 'the biggest casualty of lack of coordination between different energy Ministries'.

77 Report of the Steering Committee (n 12). In late 2019, the Union Minister of Minister of Environment, Forest and Climate Change was openly criticized by the WHO for having denied the correlation between air pollution and impacts on people's health. See, Kerean Watts, 'Javadekar Criticised by the WHO Over Pollution Claims' Heath Issues India (11 December 2019) <www.healthissuesindia.com/2019/12/11/javadekar-criticised-by-the-who-over-pollution-claims/>.

78 Report of the Steering Committee (n 12) 107.

79 WHO, Opportunities for Transition (n 16) 35.

80 Report of the Steering Committee (n 12) 108.

81 PHFI and Centre for Environmental Health (n 12) 28. The draft National Energy Policy has been in the making for several years. Interestingly, the new policy would most likely propose an integration of all energy ministries into one, thereby responding very concretely to the call for greater inter-ministerial coordination in the energy sector and regulation. See, e.g., Anshu Sharma, 'New National Energy Policy to propose merger of ministries and regulators' CNBCTV18 (3 December 2019) <www.cnbctv18.com/energy/new-national-energy-policy-to-propose-merger-of-ministries-and-regulators-4805141.htm>.

and health authorities, which work with cookstove emissions governance, are not particularly accustomed to addressing issues at the household level.[82] The same may apply to environmental authorities.

The majority of the air pollution regulation and policy-making currently in existence in India is targeted at industry-level, leaving households in a secondary position. Therefore, it is important to devote efforts to developing best practices in addressing this issue at the household level. Social acceptability is a major precondition for effective cookstove regulation. It is important to recognize this dimension of the issue, which may require unconventional thinking and broader consultation on the part of the governing actors.

4.3 Investing in Effective Implementation and Ensuring Compliance

Strengthening of the science-policy interface is necessary in order to achieve improvements in air pollution regulation, generally, and the mitigation of cookstove emissions, in particular. The relevant information in this regard includes scientific and observed information on the formation and impacts of the emissions, on different stove technologies, on the household cooking practices, etc. A good understanding of the relevant science can also help in aligning priorities across other sectors that are primary contributors to emissions.[83] The 2014 WHO Guidelines for indoor air quality: household fuel combustion[84] states that a national needs assessment is a key tool in the relevant policy-making (section 5.3). In respect of air pollution caused by cookstoves, this assessment information already exists to a large degree. What is needed is better communication of the information among governance units and stakeholders and genuinely utilizing this information as the basis of ambitious policy-making.

Monitoring air pollution and air quality is another key task for public authorities in planning and implementing policies to control emissions. Routine monitoring and assessments provide important support to make informed decisions. These can be facilitated by clear targets and indicators. Within the Indian context, it has been contended that routine air pollution monitoring, to the extent that it has happened, has almost exclusively been confined to large cities. This has made it difficult to grasp the full extent of the problem.[85] The organization of comprehensive monitoring of air pollution by cookstoves is challenging to organize,[86] but scientific modelling, for instance, could be part of the solution.[87]

82 J Rosenthal and others, 'Clean Cooking and the SDGs: Integrated Analytical Approaches to Guide Energy Interventions for Health and Environment Goals' (2018) 42 Energy for Sustainable Development 152, 153.

83 PHFI and Centre for Environmental Health (n 12) 28.

84 World Health Organisation, WHO Guidelines for Indoor Air Quality: Household Fuel Combustion (WHO 2014) <www.who.int/airpollution/guidelines/household-fuel-combustion/en/>.

85 Report of the Steering Committee (n 12) 44; Balakrishnan and others, 'Addressing the Burden of Disease Attributable to Air Pollution in India: The Need to Integrate across Household and Ambient Air Pollution Exposures' (2014) 122(1) Environmental Health Perspectives A6-A7.

86 Due to, inter alia, a very large number of the sources of pollution, the nature of indoor air pollution, and different fuels being used and cooking habits followed.

87 In many cases, modelling can be a good and cost-efficient alternative or complement to physical measurement as a means of obtaining an adequate knowledge base for addressing indoor air quality. See, e.g., S Silva and others, 'Modelling Indoor Air Quality: Validation and Sensitivity' (2017) 10 Air Quality, Atmosphere & Health 643–652. Such modelling has been conducted also in cases of indoor air pollution from cookstove emissions. See, M Johnson and others, 'Modeling Indoor Air Pollution From Cookstove Emissions in Developing Countries Using a Monte Carlo Single-box model' (2011) 45(19) Atmospheric Environment 3237-3243; M Tagle and others, 'Monitoring and modeling of household Air Quality Related To Use Of Different Cookfuels in Paraguay' (2018) Indoor Air 1-11. In the study by M Johnson and others, the used model combines stove emission rates with expected distributions of kitchen volumes and air exchange rates in the developing country context to produce a distribution of indoor air pollution concentration estimates. The authors recognize that their model ended up underestimating some indoor air pollution concentrations and overestimating others. Nevertheless, such models are a good start; they can be finetuned with new elements or more accurate assumptions of relevant elements. Overall, scientific modelling can be used in the development of national policies aiming to reduce exposure to household air pollution.

Proper implementation of and compliance with given policies and regulations are crucial in order for their objectives to be achieved. Much of the regulation of indoor air pollution in India is founded on non-legally binding soft law instruments and thus, their implementation is not legally backed up. Nevertheless, proper implementation measures are needed in order to bolster the credibility of these programs and standards.

Within the Indian context, ensuring compliance in a strict sense would require the explicit integration of binding emissions standards or cookstove requirements into the statutory framework represented by the Air Act and supporting legislation. Currently, national air quality standards are routinely violated[88] because they lack legal enforcement mechanisms. The NCAP has also been criticized for its lack of legal mandate and accountability mechanisms.[89] Moreover, monitoring plays a crucial role in ensuring proper implementation of clean cookstove policies.[90]

Furthermore, it would be beneficial to have mechanisms in place to hold the governing units accountable for progress. The diffusion of responsibilities in the polycentric Indian governance system relating to cookstove emissions makes it challenging to hold policy-makers accountable for their performance. To many, the whole governance system may appear obscure, and it may be difficult to discern the responsibilities of various governing actors.

4.4 Strengthening Linkages with the International Level Actions

Effective governance of black carbon emissions produced by household cookstoves is usually regarded as, first and foremost, a national issue. It is the national context that matters most to households targeted by pollution mitigation policies. However, there are clear benefits in establishing explicit links between national, regional, and international clean air goals. For instance, the WHO guidelines for indoor air quality, which focuses on household fuel combustion and includes emission rate targets for particulate matter and carbon oxides (Recommendation 1), is intended as the basis for developing national standards.

It should be recognized that black carbon and its impacts can indeed effectively spread beyond national boundaries.[91] Therefore, it is advisable to take concerted action to limit emissions. The international climate change regime, with its latest addition, the Paris Agreement, is an appropriate context in which such endeavours may be made. Explicitly including black carbon emissions in the NDCs under the Agreement help to raise the national and global status of the issue.[92]

The Sustainable Development Goals (SDGs), agreed in 2015, form another global framework for action

88 National Clean Air Programme (n 49) 16-17 <https://cpcb.nic.in/uploads/Non-Attainment_Cities.pdf>.

89 S Ghosh and others, Comments on the National Clean Air Programme (Centre for Policy Research 2019) <https://cprindia.org/sites/default/files/Comments%20on%20the%20NCAP%20-%20CPR%20-%2017052018.pdf>; A Roychowdhury, 'National Clean Air Programme: Good Idea but Weak Mandate' Down to Earth Blog (11 January 2019) <www.downtoearth.org.in/blog/air/national-clean-air-programme-good-idea-but-weak-mandate-62785>. It is to be noted that Ghosh and others did not comment the final version of the NCAP whereas Roychowdhury did..

90 Projects carried out under the CDM could offer a model for ensuring effective implementation of national clean cookstove policies. In general, CDM projects must comply with a pre-defined monitoring and evaluation program. CDM cookstove projects monitor their results and include, for example, the maintenance of new stoves as part of their implementation.

91 See, e.g., Kühn and others, 'Effects of black carbon mitigation on Arctic climate' (2020) 20(9) Atmospheric Chemistry and Physics 5527–5546.

92 Compared with CO_2, emissions of SLCPs/black carbon are not equally well-known at country-level, which makes their inclusion in NDCs challenging. India is currently the second-largest emitter of black carbon in the world, with emissions projected to rise steadily in the coming decades. A Rana and others, 'Black Carbon Aerosol in India: A Comprehensive Review of Current Status and Future Prospects' (2019) 218 Atmospheric Research 207-230. There is recent research on the magnitude of black carbon emissions in the country as well as on their sources, climate impacts and key areas for improvement in terms of further research and policy-making. Consequently, India should consider including black carbon in its future NDCs. See also, C Venkataraman, S Ghosh and M Kandlikar, 'Breaking out of the Box: India and Climate Action on Short-Lived Climate Pollutants' (2016) 50 Environmental Science &Technology 12527-12529.

towards limiting air pollution. Reduction of cookstove emissions is inherently linked to several SDGs: Goal 7 ('Access to clean & affordable energy to everyone by 2030'); Goal 3 ('Ensure health and well-being for all'); and Goal 5 ('Achieve gender equality and empower all women and girls'). These are important broader objectives for Indian clean cookstove policies, and also offer the potential to create inter-linkages between policy fields and attract additional investments to tackle indoor air pollution.

4.5 Strengthening Legislation and Soft Law Instruments

In addition to enhancing the relevant policy environment, it is important to identify the concrete means and regulatory tasks and strategies through which emissions from household cookstoves can be effectively reduced. Put simply, the key issues are cleaner energy solutions and cleaner stove technologies. There are also informational and social tasks that need to be addressed in the context of the relevant policies and regulatory tools. These include the facilitation of changes in cooking traditions and community-level thinking,[93] facilitating the affordability of clean fuels and cookstoves, and making the detrimental effects of indoor air pollution known to the target groups. In this light, the mitigation of cookstove emissions is not only of a multi-objective nature but it also involves multiple regulatory tasks or strategies that are being applied simultaneously. It is important that these tasks are identified ahead of introducing new regulation and that the anticipated effects of each instrument on different tasks get assessed.

India has had a specific law on air pollution for quite some time. The Air Act does not, however, provide much leverage for addressing indoor air pollution and cookstove emissions. Then again, it is not even feasible to try to establish very detailed legislation that would, in practice, force millions of households to follow a specific path in order to reduce the emissions that they produce by cooking. The circumstances on the ground are so diverse and the issue of household air pollution so multi-dimensional that a single national legal act would be incapable of effectively addressing the whole range of issues involved. However, what the legislation could do is to establish a more comprehensive legal framework and stipulate certain legally binding elements for a national policy on mitigating cookstove emissions. For instance, there could be an obligation for the state to apply standards for indoor air pollution (in practice: for cookstoves), to update them regularly, and to create a monitoring and enforcement system to this effect.[94] Generally, a policy that targets upstream (manufacturers) may have a better chance of success than downstream, where the consumers are dispersed.

There is also a potential for strengthening other relevant existing legal acts besides the Air Act. For instance, the WHO has suggested that the Indian deforestation regulations should be enforced to curb tree-cutting for firewood. This would contribute to enabling a shift to use alternative, cleaner fuels for cooking.[95] However, this kind of approach could face legitimacy problems since vulnerable groups collecting firewood for daily sustenance would be targeted, at the same time when corporations are regularly engaged in deforestation activities on a much larger scale.[96] It

93 WHO, Opportunities for Transition (n 16) 16-17.

94 Globally, standards for cookstoves are currently being developed. This is not a simple task since such standards should be developed in a transparent and inclusive manner and have an agreed-upon and harmonized methodology and reporting criteria; strong and accessible organizations who can conduct rigorous and independent testing; data sharing using common metrics; and the appropriate combination of regulations and policies for standards and labeling from governments and organizations. White Paper No. 4, 'Solutions – Standards, Testing, Technology, Policy, Financing', (Stoves Summit: Addressing Black Carbon and Other Emissions from Stoves Globally: Used for Both Heating and Cooking and Using Coal for Heating, Warsaw, Poland, 29-30 May, 2017) <warsawstovesummit.org/wp-content/uploads/2017/03/WP4-Solutions-final-0617.pdf> For the current global situation, see, ISO Technical Committee 285, Clean Cookstoves and Clean Cooking Solutions (2013)<www.iso.org/committee/4857971.-html>.

95 WHO, Opportunities for Transition (n 16) 21.

96 It is a common argument that traditional cookstove use causes deforestation in India, but up-to-date data on the extent of this problem is lacking. Khandelwal and others (n 17) 16.

would seem that when addressing household cookstove emissions, public education and promotion of alternative fuels would be better tools to address the fuelwood collection problem than strict enforcement of deforestation regulation.

In addition to legislation, non-legally binding regulation continues to play an important role in guiding behaviour towards reduced household air pollution. A relatively wide range of soft law instruments, that deal with air pollution, is currently in existence in India.[97] However, they mostly target ambient air pollution and thus, have limited relevance to household air pollution by cookstoves. The NCAP is a good platform on which further action to address cookstove emissions can be built. The NCAP focuses on large Indian cities that are to develop action plans to prevent, control, and reduce emissions. These action plans could be made to include actions to curb cookstove emissions. Moreover, household air pollution is also a serious problem outside major cities, in rural and semi-rural areas in India, and the use of an instrument to address air pollution in these areas would be of benefit. The nation-wide elements of the NCAP could be strengthened to complement the current regional and city-level action plans. They could consolidate and prioritize a large number of national actions and establish national and sub-regional targets for the reduction of air pollution. In addition, the NCAP could have explicit connections with other country-wide plans for sustainable development and other national priorities.[98] This would better enable addressing SLCPs and household air pollution. The strengthened NCAP could act as an improved umbrella under which air pollution issues could be addressed in a comprehensive way, and coordination can be enhanced in the national governance of air pollution.

4.6 Continuing to Use Complementary Instruments

Economic incentives have played a major role in the past efforts to mitigate emissions from household cookstoves in India. The government has subsidized cleaner fuels and new cookstoves that use improved technology. While these subsidies have not achieved their full potential in terms of results, they have had positive impacts. Since the majority of Indian cookstove users have low incomes, these subsidies have supported the market and made improved cookstoves available to a larger part of the population than would otherwise have been the case.[99] However, subsidies may also have negative effects which should be recognized: they may distort the market by devaluing the product, discourage the uptake of the stove once subsidies dry up, and lead to possible leakage or misdirection of the program funds.[100] Therefore, care should be taken to ensure that subsidization works as intended and that the markets will function properly after the subsidy program has ended. Regarding the latter aspect, a tapering subsidy program might work best, allowing simultaneously for commercialization and more balanced market development.

It has been said that '[o]nly a well-informed consumer will purchase the clean cookstove or fuel, and only a well-trained consumer will use the cookstove in the correct way so that the benefits can be realized'.[101] This summarizes very well the significance of information and education for the effective realization of clean cooking policies. It is end-users, individual people – usually women[102] – who make the decisions about shifting to use a new cookstove and/or an alternative cooking fuel.

In support of clean cooking policies, information must be provided and public awareness strengthened on the formation of mechanisms of emissions, their effects, cleaner fuels, and improved user practices. The introduction of clean cooking options has a win-win character: less-polluting cookstoves benefit human

97 These include air quality programs and action plans at different administrative levels.

98 UNEP, Near-term Climate (n 39) 35.

99 Arun and Rehman (n 9) 1.

100 ibid 1.

101 Global Alliance for Clean Cookstoves, Igniting Change: A Strategy for Universal Adoption of Clean Cookstoves and Fuels (2011) 24 <www.cleancookingalliance.org/binary-data/RESOURCE/file/000/000/272-1.pdf>.

102 Women are often in a key role in relation to the adoption of cleaner cooking solutions. Provision of information and education can encourage them to choose less polluting stoves and fuel, or position stoves in such a way as to maximize smoke/pollutant dispersion. UNEP, Air Pollution (n 29) 20.

health, climate, and air quality and directly benefit people. For example, clean cooking options lead to less time having to be spent collecting firewood. This in turn reduces the rate of deforestation, which then produces additional and broader benefits including improved climate change adaptability of the environment.

Participation is closely linked to the provision of information and education. It is important that people are not only passively receiving information but that they can also express their preferences. In the case of household cookstove emissions, the source of pollution strongly involves social and cultural traditions, lifestyle issues, etc. Within this kind of a setting, people want to be a part of the solution and meaningfully participate in policy-making.

5 CONCLUSION

More than 800 million people in India cook on traditional biomass cookstoves. The negative effects of household cookstove emissions are massive and well known. The country has had cookstove programs since the 1950s, but they have not led to a clean cooking break-through. The current regulatory and policy situation is characterized by polycentric governance involving the interplay of a number of different objectives, policy instruments, actors, and levels of governance. This tackles the multi-dimensionality of the problem but also tends to lead to uncoordinated actions and poorly monitored and ineffective regulation.

This paper has identified the elements of an enabling policy environment and of effective regulatory instruments by which India could better address the problem of household cookstove emissions. From this perspective, continuity and coordination are two key aspects that need to be present in any scheme to reduce cookstove emissions. Furthermore, it is important to recognize the multi-objective nature of the problem and its solution concepts as well as the linkages between different governance and thematic levels. Co-benefits is the buzzword: the different governing actors and stakeholders should be increasingly aware of the air quality, climate, and developmental co-benefits that can be gained through better design and implementation of clean cooking policies and regulation.[103]

Both top-down and bottom-up approaches have their place in the Indian setting of governing cookstove emissions. The Indian government has, to a degree, exercised deliberate delegation of responsibility in this issue by handing over major responsibility for the implementation of the NCAP to the most polluted cities. However, there are also signs of a more spontaneous bottom-up type of governance emerging in the cookstove sector, such as local projects and voluntary campaigns for clean cooking.

In addition to strengthening the legislation, which has been a rather under-used instrument in addressing household air pollution in India, it is advisable to use the recently adopted NCAP as a platform for further regulatory action. However, the instrument should be complemented by enforceable targets and clear obligations to address the current discrepancies of clean cooking policies in the country.

103 World Health Organisation, WHO Guidelines for Indoor Air Quality: Household Fuel Combustion (WHO 2014) 55-58.

Comment

A LEGISLATIVE COMMENT ON CAMEROON'S EIA REGULATORY REGIME

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1 INTRODUCTION

Environmental Impact Assessment (EIA) is a planning and management tool employed to ensure that all critical information, to anticipate the future impact on the environment, are considered in the decision-making process in order to avoid the implementation of any activity that may have significant negative impacts on the environment as well as enhance positive impacts. Thus, the implementation of an EIA is pivotal to achieving sustainable development.

The foundation stone of EIA was laid in the United States National Environmental Policy Act of 1969 that included requirements for assessing the environmental impacts of a wide range of Federal 'actions', covering projects, policies, plans, and programmes; the aim was to protect the environment.[1] Subsequently, many other countries started introducing EIA, including Canada and Australia in 1973 and 1974 respectively. In Europe, the European Union (EU) Directive 85/EC/337 made EIA for projects, a requirement in all EU member states.[2]

While EIA legislation in the above-mentioned countries was endogenous, the same cannot be said of developing countries.[3] EIA was initially foisted on developing countries by Multilateral Development Banks,[4] such as the World Bank[5] and the African Development Bank, which have EIA requirements in their eligibility criteria.[6] As time rolled on, the attitude of developing countries, in general, and Sub-Saharan Africa, in particular, towards EIA metamorphosed.[7]

In view of the merits associated with EIA, the government of Cameroon has deployed a panoply of regulations with the aim of safeguarding the environment. This commentary seeks to explore the

1 National Environmental Policy Act 1969, ss 4321-4370(f).

2 Thomas B Fischer and Obaidullah Nadeem, 'Environmental Impact Assessment Course Curriculum for Tertiary Level Institutions in Pakistan' (2013) National Impact Assessment Programme Pakistan 18 <www.iaia.org/pdf/FullEIAcurriculumFischer-NadeemSeptember2013-with%20corrections.pdf>.

3 United Nations Environment Programme, Assessing Environmental Impacts – A Global Review of Legislation (UNEP 2018) <https://wedocs.unep.org/bitstream/handle/20.500.11822/22691/Environmental_Impacts_Legislation.pdf?sequence=1&isAllowed=y>; In developing countries there was resistance to EIA on grounds of economic and technological development. First, developers resisted and argued that it was anti-development because laws and policies supporting it dictated that lands developments causing negative impacts should be discontinued. Second, EIA was considered as a means by which industrialized nations intend to keep developing countries from breaking the vicious cycle of poverty. Third, the experts in the developing countries were foreigners who were viewed as agents of colonization. see Mohammad A Bekhechi and Jean-Roger Mercier, 'The Legal and Regulatory Framework for Environmental Impact Assessments: A Study of Selected Countries in Sub-Saharan Africa' (2002) The World Bank: Law, Justice and, Development Series <http://documents1.world-bank.org/curated/en/573451468002164226/pdf/multi0page.pdf>.

4 ibid, United Nations Environment Programme 17.

5 The World Bank, Environmental and Social Framework (The World Bank 2017) 18.

6 African Development Bank, Environmental and Social Assessment Procedure: Basics for public sector operations (ADB Compliance & Safeguards Division) <www.afdb.org/fileadmin/uploads/afdb/Documents-/Generic-Documents/ESAP%20Basics%20Guide%-20%28En%29.pdf>.

7 This volte-face was influenced by the following factors: (a) increasingly onerous costs of environmental problems that could have been prevented at low cost; (b) a general increase in awareness of environmental problems and issues; (c) the autochthon development of important environmental legislation, including EIA regulations, without the involvement of donor agencies; and (d) the inclusion of environmental legislation reform as part of an overall legal reform agenda, see Bekhechi and Mercier (n 3) 6.

extent to which these regulations may facilitate the actualisation of the benefits that consort with EIA. The commentary flags off with an introduction. Next, it lays down the regulatory framework for EIA in Cameroon. The focus then shifts to the types of impact assessment and culminates with a conclusion.

2 REGULATORY FRAMEWORK IN CAMEROON

After the Rio Summit of 1992, the Government of Cameroon undertook a number of regulatory and institutional reforms to incorporate developments in international environmental law into domestic legislation, in particular, the provisions of international conventions and conference decisions echoing environmental management and sustainable development without importing foreign legislation.[8] Cameroon's organic law, the 1996 Constitution provides the point of departure on environmental protection. The preamble to the Constitution provides 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 protection and improvement of the environment'.[9]

EIA in Cameroon is regulated by a combination of laws,[10] decrees[11] and orders.[12] Although the Environmental Management Law (EML)[13] is the fundamental law on the EIA process the head start to EIA was the forestry law that prescribed EIA for projects that posed a danger to the environment.[14] For its part, the EML provides:

> The promoter or owner of any development, labour, equipment or project which may endanger the environment owing to its dimension, nature or the impact of its activities on the natural environment shall carry out an impact assessment pursuant to the prescription of the specifications. This assessment shall determine the direct or indirect incidence of the said project on the ecological balance of the zone where the plant is located or any other region, the physical environment or quality of life of populations and the impact on the environment in general.[15]

8 For instance, Cameroon has ratified the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change together with its Protocol. These Conventions enjoin Parties to require EIAs of proposed projects that are likely to have significant adverse effects on the environment with a view to avoiding or mitigating such effects. Similarly, Principle 15, 17 and part of 10 of the Rio Declaration and Agenda 21 are reflected in Cameroon's EIA regulatory regime.

9 Constitution of the Republic of Cameroon 1996, art 65.

10 Laws are prepared by the different Ministries and sent to the National Assembly for adoption and are promulgated thereafter by the Head of State.

11 To be applied, a law needs regulatory instruments which are known as implementing decrees. The Ministries that have prepared the law also prepare the decrees, which are then signed by the Prime Minister.

12 Decrees sometimes require details which are known as implementing orders. The orders are drafted by the Ministry that prepared the decree and signed by the Minister.

13 Environmental Management Law 1996.

14 Wildlife and Fisheries Regulations 1994, s16 (2). It states that 'The initiation of any development project that is likely to perturb a forest or aquatic environment shall be subject to a prior study of the environmental hazard'; Other sectoral laws prescribe the conduct of EIA in the face of the likelihood of a danger to the environment. See Mining Code 2016, s135(2). It states that 'Apart from non-industrial mining license, the exploration permit and the license for non-industrial quarry mining for domestic purposes, the granting of mining titles, quarry licenses and permits shall be subject to the prior conduct of an environmental and social impact assessment... as provided for by the laws and regulations in force in matters relating to the protection and sustainable management of the environment'; Petroleum Code 2019, s92(1). It requires the conduct of ESIA.

15 Environmental Management Law 1996, s17(1).

The EML was complemented by the now-repealed 2005 Decree.[16] The annulled Decree[17] mandated the Minister in charge of the environment (the Minister) to determine the various categories of activities subjected to an EIA and to specify the Terms of Reference (ToR) of an EIA. As a consequence, two Orders were adopted: the 2005 Order[18] and the 2007 Order.[19] Given that the implementing regulations of the EML were completed eleven years after the latter was enacted, one may conclude that the EIA regime became complete in 2007.

EIA legislation did not remain static; modifications were mainstreamed to mirror developments in global environmental assessments. As a consequence, the 2013 Decree was adopted.[20] This Impact Assessment Decree (IAD) changed the nomenclature hitherto employed by its predecessor from EIA to Environmental and Social Impact Assessment (ESIA). Other innovations introduced were the assessment tools of the Strategic Environmental Assessment (SEA) and Environmental Impact Statement (EIS). The IAD directed the Minister to establish a list of activities subject to ESIA and SEA.[21] Armed with this mandate, the Minister passed an Order determining the activities that required an ESIA and SEA.[22] Furthermore, the IAD obligated the Minister to fix the standard outline for the ToR for ESIA, SEA, and EIS.[23] As a result, the Minister issued an Order giving partial effect to the IAD.[24] The Minister's Order applied to EIS but excluded ESIA and SEA, thus maintaining the ToR Order of 2007.[25]

A cursory look at Section 17 (1) of the EML together with the Operational Categories Order[26] indicates that the activities subject to ESIA and SEA are defined on the basis of the type and scale of the activities concerned. The Operational Categories Order is laudable as it gives foreknowledge to a project proponent that the activity under contemplation is subject to ESIA or SEA. The regulation is on all four with Principle 2 of UNEP's recommendation which states:

> The criteria and procedures for determining whether an activity is likely to significantly affect the environment and is therefore subject to an EIA, should be defined clearly by legislation, regulation and other means, so that subject activities can be quickly and surely identified, and EIA can be applied as the activity is being planned.[27]

A problem associated with the Operational Categories Order is its legality. This preoccupation is premised on the general rule of law that a delegate cannot sub-delegate his functions, expressed by the Latin maxim 'delegatus non potest delegare' unless he is otherwise authorised.[28] Our discomfort hinges on the EML which provides:

16 Environmental Impact Assessment Decree No. 2005/0577/PM (23 February 2005). It Lays Down the Terms and Conditions for Conducting Environmental Impact Assessment.

17 ibid arts 6 (1) & (2).

18 Order No.0070/MINEP (22 April 2005). It establishes the Different Operational Categories whose Conduct is Subject to an EIA.

19 Order No. 0001/MINEP (3 February 2007). It specifies the Terms of Reference of Environmental Impact Assessment (ToR Order).

20 Environmental Impact Assessment Decree No. 2013/0171/PM (14 February 2013). It lay down the terms and conditions for Conducting Environmental and Social Impact Assessment (Environmental Impact Assessment Decree). Art. 31 of this Decree repealed its predecessor.

21 ibid art 8 (1).

22 Order No. 00001/MINEPDED (08 February 2016). It establishes the different Operational Categories whose Conduct is Subject to a SEA or an ESIA (Operational Categories Order). Art. 7 of this order repealed its predecessor.

23 Environmental Impact Assessment Decree (n 20) art 8(3).

24 Order No. 00002/MINEPDED (9 February 2016). It lays down the model format for the Terms of Reference and Content of an Environmental Impact Notice. EIS and Environmental Impact Notice are used interchangeably (Impact Notice Order).

25 Environmental Impact Assessment Decree (n 20) art 8(3).

26 Operational Categories Order (n 22) arts 3-5.

27 United Nations Environment Programme, The Goals and Principles of Environmental Impact Assessment (UNEP/GC.14/L.37-B 1987) Principle 2.

28 For an examination of the rule against sub-delegation, see Ese Malemi, Administrative Law: Cases and Materials (1edn, Grace Publishers Inc 2004) 98.

> The list of the various categories of operations whose implementation is subject to an impact assessment as well as the conditions under which the impact assessment is published shall be laid down by an enabling decree of this law.[29]

The Parliament, that adopted the EML, conferred the power to determine the list of subject activities on the Authority competent – the Prime Minister – to so act by way of a decree. Thus, it is only the Prime Minister who is competent to legislate pursuant to Section 19(1) on behalf of the Parliament. A reading of Section 19(1) indicates that there is no express or implied authority to sub-delegate the power to the Minister to determine the list of subject activities, given that this section expressly states that 'The list … shall be laid down by an enabling decree of this law'. The employment of the word 'shall' render this duty mandatory and not permissive. The Prime Minister elected to further delegate his functions to the Minister.[30] In the case of Allingham v Minister of Agriculture and Fisheries, Lord Goddard CJ while reviewing the principle of delegatus non potest delegare said:

> In other words, they delegated to the executive officer the task of deciding the land which was to be served. I can find no provision, any order having statutory effect or any regulation which gives the executive committee power to delegate that which the Minister has to decide and which he has power to delegate to the committee to decide for him. If he has delegated as he has, his power of making decisions to the executive committee, it is the executive committee that must make the decision, and, on the ordinary principle of delegatus non potest delegare, they cannot delegate their powers to some other person or body.[31]

Therefore, it is submitted that the Operational Categories Order is ineffective in law.

The legal framework recognises three types of impact assessments: ESIA, SEA, and EIS. The proponent whose activity is subjected to an EIA is required to carry out an impact study in order to determine the direct and indirect incidence of the said project on the environment.[32] The conduct of an ESIA or SEA is mandatory for projects requiring impact assessment.[33] In The Struggle to Economise Future Environment (SEFE) v S.G. Sustainable Oils Cameroon Ltd,[34] the Plaintiffs brought an action to restrain the respondents from exploiting the forest resources of the area in their vast oil palm project without an environmental impact assessment of the project. The High Court per Forbang J stated that:

> …The conduct of the environmental impact assessment is a pre-condition for carrying out any project of the magnitude of that which is envisaged by the applicants who are defendants in the substantive action.

2.1 Environmental and Social Impact Assessment

ESIA is defined as 'a systematic approach to determine the potential for and adverse effects of a project on the environment…'.[35] This definition does not capture the word 'social' and mirrors the 2005 definition of

29 Environmental Management Law 1996, s 19(1).

30 Environmental Impact Assessment Decree (n 20) art 18. It provides that 'The list of activities subject to the environmental and social impact assessment, to the strategic environmental assessment shall be drawn up by order (sic) Minister in charge of environment'.

31 Allingham v Minister of Agriculture and Fisheries (1948) All ER 780 A.G. Ex parte; McWhirter v IBA (1973) QB 629. (Emphasis added).

32 Environmental Management Law 1996, s17(1).

33 Environmental Impact Assessment Decree (n 20) arts 3(3), 25(1). Penal sanction is reserved for transgressors, see Environmental Impact Assessment Decree (n 20) art 79; Environmental Impact Assessment Decree (n 20) art 7.

34 Struggle to Economise Future Environment (SEFE) v S.G. Sustainable Oils Cameroon Ltd (2013)1 CCLR 1-126 80.

35 Environmental Impact Assessment Decree (n 20) art 2 para 1.

an EIA. The definition should be read together with the EML.[36]

ESIA may be either in the form of a summary or detailed.[37] ESIA is carried out only once in the duration of a venture and applies to the entire project. However, in case a project is executed in phases or is being expanded or renovated, each phase, expansion, or renovation shall be subject to another ESIA.[38]

2.1.1 Procedure for Obtaining Approval

The proponent seeking approval of his project is required to submit the general project file[39] and pay the prescribed fees[40] to the line ministry and the Ministry of Environment, Protection of Nature and Sustainable Development (MINEP).

The assessment of the file is to be undertaken within prescribe deadlines, absent which the ToR will be deemed to be admissible.[41] Next is for the proponent to develop an ESIA study. This can be done with the help of a consultant approved by the Minister. In case of equal competence between national and foreign consultants, national consultants shall take precedence over foreigners.[42] The involvement of the Minister in the approval of consultants underscores the importance of the impact assessment. One would favour a situation where if the consultant is a foreigner, there should be an obligation for the consultant to make use of a quotient of competent local expertise as a way of capacity building.

ESIA is carried out with the participation of the population through stakeholder engagement (public consultations), in order to elicit the views of the population on the subject.[43] Stakeholder engagements consist of meetings during the study in the area where the project is to be located.[44] However, not all projects requiring ESIA are subject to stakeholder engagements; projects relating to security or national defence are exempted from this process.[45] The exoneration accorded projects relating to national defence is understandable as it seeks to shield defence secrets.[46]

Before embarking on the study, the proponent is compelled to send the approved programme of the stakeholder engagement to the representatives of the population at least 30 days before the date fixed for the first meeting.[47] Each meeting shall be given adequate publicity and is evidenced by the minutes of the meeting which shall be co-signed by the project proponent/representatives, and representatives of the population.[48]

36 Environmental Management Law 1996, s 4 para 11. It defines environment as '…the natural or artificial elements and bio geological balances they participate in, as well as the economic, social and cultural factors which are conducive to the existence, transformation and development of the environment, living organisms and human activities'; Environmental Management Law 1996, s 17 (1); ToR Order (n 19) art 2. It defines environment in terms of the physical environment, biological environment and socio-economic and human environment.

37 Environmental Impact Assessment Decree (n 20) art 3(1).

38 ibid art 3 (2).

39 Environmental Impact Assessment Decree (n 20) art 13(1). The general project file shall include the following documents: an application for carrying out an ESIA indicating company name, capital, sector of activity and the number of proposed employees, ToR of the study accompanied by a description of the proposed project and justification of the project, with emphasis on preservation and reasons for choosing the site, and proof of payment of the cost of assessment into the accounts of the National Environmental and Sustainable Development Fund (NESDF); ToR Order (n 19) art 2.

40 Environmental Impact Assessment Decree (n 20) art 17(1). The sums are CFA F 1.5 million ($ 3 000) and CFA F 2 million ($ 4 000) for a summary and detailed ESIA respectively.

41 ibid art 13(5). The MINEP has 30 days to respond.

42 Environmental Impact Assessment Decree (n 20) arts 14(1)-(2). Pursuant to art 14 (1) of this Decree those who can undertake the study are consultants, consulting firm, a non-governmental organisation or an association.

43 ibid art 20 (1).

44 ibid art 20 (2).

45 ibid art 23.

46 Environmental Management Law 1996, s 17(1) para 2. However, where the project is undertaken on behalf of national defence services, the Minister in charge of defence is empowered to 'disseminate the impact assessment under conditions compatible with national defence secrets'.

47 Environmental Impact Assessment Decree (n 20) art 21(1). The programme consists of the dates and place of the meetings, the specifications, project brief and objectives of the consultations.

48 ibid art 21(2). The minutes shall be annexed to the ESIA report.

When the ESIA study is complete, the proponent is enjoined to submit 2 copies of the report to the line ministry and 20 copies to the MINEP[49] together with proof of payment of examination fees to the NFESD.[50] Upon receipt of the ESIA report, a joint team comprising of officials from the MINEP and the competent Administration shall be established and entrusted with the twin responsibility of descending to the project site 'to substantially support the information contained in the said assessment and to gather the opinion of the people concerned'; and prepare an evaluation report.[51] This report enables the MINEP to rule on the admissibility of the ESIA report.[52] If the report is adjudged to be inadmissible, the reasons for rejection shall be communicated to the proponent within 20 days of its non-admissibility. In case of default, the assessment shall be considered admissible.[53]

Following the approval or deemed approval of the report, a broad public hearing shall be held under the auspices of the MINEP.[54] This meeting is meant to publicize the assessment, record any opposition, and allow the public to comment on the conclusions of the assessment.[55] An ad hoc committee will be established to draw up an evaluation report of the public hearings, which shall be annexed to the ESIA report within 30 days for transmission to the Minister and the ICE.[56] Public hearings are organized only for projects that require a detailed ESIA.[57]

The ICE has 20 days to review the EISA report considered admissible and advise the Minister accordingly. Beyond this period the said statement shall be deemed favourable.[58] Meanwhile the Minister has 20 days following the opinion of the ICE to give a reasoned decision on the ESIA.[59] The Minister's decision may take one of the three forms: (a) in case the response is favourable, a CEC shall be issued to the proponent; (b) if the decision is conditional, the Minister shall recommend to the promoter measures to be adopted to ensure conformity so as to obtain the CEC; and (c) a negative response means the promoter is prohibited from embarking on the project.[60]

The foregoing discussion portrays the stages through which an ESIA goes. I shall now undertake a synthesis of the regulations.

First, we stated that an ESIA study is undertaken by a consultant. The law is silent on the penal responsibility of consultants entrusted with the responsibility of conducting the study. The threat of criminal sanctions is vital, for it serves as a deterrent to consultants who may paint a positive outlook in order to have the study approved.[61]

Second, during the stakeholder engagement, ESIA is carried out with the participation of the public. 'Public', as employed in the regulation, means the population in the locality concerned by the project.[62] It is submitted that stakeholder engagement should not be limited to the affected communities; participation should be expanded to accommodate interested parties

49 ibid art 18(1).

50 ibid art 17(1). The sums are CFA F 3 million ($ 6 000) and CFA F 5 million ($ 10 000) for a summary and detailed ESIA respectively.

51 ibid art 18(2).

52 ibid art 18(4)(a) para 1. If the assessment is admissible MINEP shall publicise it in the press, radio, television or any other means.

53 ibid art 18(4)(b).

54 Ministry of Environment, Nature Protection and Sustainable Development, Manual for the General Procedure of Environmental Impact Assessments and Audits (MINEP 2010).

55 Environmental Impact Assessment Decree (n 20) art 20(3). During these hearings (a) the report of the impact assessment is made available to the public for consultation in reading rooms set up for this purpose; (b) it gives the public the opportunity to learn more about the impact assessment and mitigating measures proposed; and (c) observations and other public memoirs are collected from the registers in the reading rooms; Manual for the General Procedure of Environmental Impact Assessments and Audits (n 54).

56 Environmental Impact Assessment Decree (n 20) art 22.

57 Manual for the General Procedure of Environmental Impact Assessments and Audits (n 54).

58 Environmental Impact Assessment Decree (n 20) art 24 (2).

59 ibid art 26(1).

60 ibid art 26(2) – (4).

61 However, the Penal Code criminalises 'False Expert Report'. See Cameroon Penal Code, s 165.

62 Environmental Impact Assessment Decree (n 20) art 20(2).

such as civil society and environmental NGOs that are more knowledgeable in environmental matters than the affected population. Their presence and inputs could enrich the quality of the decisions that are made and, therefore, be beneficial for environmental governance. The presence of civil society and NGOs are crucial, given that the presence of the affected population in these meetings is usually minuscule.

Third, the law refers to 'meetings' with the population during stakeholder engagement but it is usually a single meeting that is held with the affected community[63] before submission of the report (for a summary study), which does not afford the affected population the opportunity to know whether their inputs have been reflected in the report or not. This concern is aggravated by the fact that there is no legal requirement prescribing publication of the report.

Fourth, upon receipt of the ESIA report, a joint team comprising officials from the MINEP and the line ministry are expected to visit the project site for validation of the report and to ensure that the report captures the thoughts of the affected population. Visits of this nature are not frequent owing to financial constraints[64] and this does not augur well for environmental management and sustainable development.

Fifth, we stated that subsequent to the submission of the ESIA report a public hearing is organised for projects that require a detailed study under the auspices of the MINEP. This is a policy decision, given that it is not supported by any legal provision. Two categories of meetings are prescribed: (a) stakeholder engagement, whose rationale is to inform the affected population about the positive and negative aspects of the project and 'to know the opinion of the latter on the project'; and (b) public hearings, whose aim is to 'publicize the assessment, record any opposition and allow the public to comment on the assessment's conclusion'.[65] The Decree does not provide anywhere that the public hearing is for a detailed study only. The MINEP's practice of not having a public hearing for projects, subject to a summary study, is in flagrant violation of the law and does not augur well for environmental management and sustainable development.

Sixth, the public hearings organized for projects requiring a detailed study is commendable, for it includes the people, NGO's, trade unions, opinion leaders and other organised groups involved in the project among the participants.[66] This has the potential of enhancing the quality of the proposal emanating from the hearing. However, the outcome of the hearing could be further strengthened if an executive summary of the assessment could be sent to the participants at least a month before the hearing to enable them to prepare for the event. The present method whereby participants acquaint themselves with the assessment during the hearing (although it lasts one week) is not good enough.

Seventh, while the IAD empowers the Minister to issue the CEC,[67] the EML asserts the contrary. The law vests the authority to issue a CEC on the competent Administration. It provides: 'Any impact assessment shall give rise to a reasoned decision by the competent Administration, after approval by the Inter-ministerial Committee provided for by this law under pain of the absolute nullity of the said decision'.[68] In short, any CEC that is not issued by the competent Administration following approval by ICE is a nullity.[69]

63 Interview with two persons who have taken part in EIA process-a former company employee in charge of EIA and a worker with MINEP (April 6 & 9 respectively). The reason for having a single meeting is to reduce cost given that the bills are bankrolled by the proponent; Environmental Management Law 1996, s 17(3); Environmental Impact Assessment Decree (n 20) art 6.

64 ibid. In some instances the officials take part in stakeholder engagements.

65 Environmental Impact Assessment Decree (n 20) arts 20(1) – (3).

66 ibid art 10 para 8.

67 Environmental Impact Assessment Decree (n 20) arts 20(1) – (3).

68 Environmental Management Law 1996, s 20(1).

69 In the hierarchy of legal norms, a law pre-empts a decree. See Mohammed v FRN (2013) LPELR – 21384 (CA) 14 paras B-G (Nigeria); Ugboji v State (2017) LPER – 43427 (SC) 23 paras B-D (Nigeria).

Eighth, the maximum deadline for a decision to be made on EIA is 4 months from the date of notification of the impact assessment. Beyond this timeline and in the event of silence from the administration, the promoter may begin his activities.[70] This is commendable as government officials cannot employ bureaucratic delays to frustrate the proponent. Further, the requirement of a reasoned decision rejecting the impact assessment provides the proponent with ammunition to challenge the decision.

2.2 Strategic Environmental Assessment

A SEA is a systematic, formal, and comprehensive process for assessing the environmental effects of a multi-component policy, plan, programme, or project.[71] The procedure for carrying out a SEA is analogous to an ESIA and the fees are akin to a detailed ESIA[72] but the content of the SEA report is different.[73]

70 Environmental Management Law 1996, s 20(1).

71 Environmental Impact Assessment Decree (n 20) art 2 para 3. The EML enjoins MINEP to ensure the inclusion of environmental concerns in all economic, energy, land and other plans and programmes and that urban development plans should take into consideration environmental protection while choosing locations for economic activity and residential and leisure zones. See Environmental Management Law 1996, ss 14 (1) & 40; A SEA has been prescribed for the following: (a) policies; (b) plans; (c) programmes; (d) multi-component projects to wit: creation and management of industrial zones, creation of projects to be executed in phases, creation of industrial-ports complex, creation of new towns, projects comprising several individual components subject to ESIA and spread in several Regions of the country; and (e) setting up of several projects within the same zone. See Operational Categories Order (n 22) art 3.

72 Environmental Impact Assessment Decree (n 20) art 17(1).

73 The SEA report includes: the summary of the report in English and French, the ToR of the policy, plan, programme and its alternatives, a description of the institutional and legal framework related to the policy, plan and programme, identification of key stakeholders and their concerns, evaluation of possible environmental impacts, and a prescription of the relevant environmental management recommendations and measures in an Environmental and Social Management Plan (ESMP). See Environmental Impact Assessment Decree (n 20) art 11.

2.3 Environmental Impact Statement

As stated here before, activities subjected to an EIA are determined by the type and scale of the activities concerned. Activities that fall below the threshold values for ESIA or an environmental audit but which may have significant adverse impacts on the environment are subject to EIS.[74] The EIS may be undertaken either before the commencement of the project, establishment, or facility or during its operation.[75] The proponent thus has a binary decision to make: to carry out impact assessment either before establishing the project or to embark on the study subsequent to the commencement of his activities.

The visa accorded to the proponent to commence his activities before carrying out an EIS runs counter to the raison d'être of impact assessment, viz. to anticipate and mitigate environmental damage. Although the competent Council may, after scrutinizing the impact statement submitted by the proponent, suspend the activities of the establishment where the project is adjudged to be dangerous,[76] the damage resulting from such activity could have been consummated. The possibility of a danger to the environment is aggravated by the fact that there is no prescribed deadline for the proponent to carry out the study after the commencement of the activity. The subsequent suspension of the activity may be belated without being able to reverse the harm done to the environment.

Articles 5[77] and 19 (1) of the AID are at variance. Article 19 (1) states that 'Any proponent of a project or establishment doing an EIS shall obtain from the competent Council…an Attestation of Environmental Compliance (AEC) of his project or establishment before the start of works or for the operation of his establishment'. Given that Article 19

74 ibid art 2 para 2. The list of activities subject to EIS is to be established by the Council on the advice of the Divisional Head of decentralized services of MINEP; ibid art 8(2).

75 Environmental Impact Assessment Decree (n 20) art 5.

76 ibid art 19(3) para 3.

77 Environmental Impact Assessment Decree (n 20) art 5.

(1) is a subsequent provision, it supersedes Article 5. The proponent is obligated to obtain an AEC before commencing his activity.[78]

2.3.1 Procedure for the Conduct of EIS

The proponent or establishment, whose activity is subject to an EIS, is required to submit six copies of the general project file to the Council of his locality.[79] Following the approval or deemed approval of the ToR, the proponent shall engage the services of any person (natural or legal) competent to carry out the study.[80] This approach contrasts sharply with the position required for ESIA or SEA, where the consultant must be approved by the Minister. It would be judicious if the head of the Council (Mayor) could approve the consultant in order to ensure that the consultant is qualified to do the assessment.

The study is carried out with the participation of the local population through stakeholder engagement.[81] However, the modus operandi of the engagement is not prescribed. The Council's decision is reminiscent of the Minister's for ESIA or SEA.[82]

Public participation during ESIA, SEA, or EIS commences after the proponent has submitted the ToR; it is recommended during the screening stage.[83]

2.4 Follow-up Measures

The EIA process does not stop with an EIA approval decision granted by the competent authority. Whereas the pre-decision phase (prior to the issuance of a CEC) focuses on predicting environmental impacts with the aim of mitigating for significant impacts, the follow-up phase aims to ensure that the actual impacts of the project – whether predicted or not – are mitigated where negative, and enhanced where positive and that the mitigation measures that are prerequisites for approving the EIA are complied with.[84]

Any project that requires an ESIA, SEA, or EIS shall be subjected to administrative and technical follow-up by the competent administrative department.[85] The administrative and technical surveillance is based on the ESMP included in the ESIA, SEA, and EIS report. It shall be the subject of a joint report by officials of the MINEP and the competent ministry in order to ascertain whether the ESMP is being effectively implemented.[86]

The proponent is bound to submit biannual compliance reports to the Minister for review in accordance with the ESMP.[87] However, the content of the report has not been prescribed by the legislation, which renders the review problematic and varied because of the absence of guidelines. The review of the compliance report is undertaken by the Divisional Committee.[88] The Divisional Committee is required to meet and carry out site visits to verify whether the

78 This viewpoint finds support in the golden rule of interpretation which will consider the object of the statute. See The State v Governor of OSUN State & Ors (2006) LPELR-ca/1/161/98 (Nigeria).

79 The general project file shall include the following documents: an application to conduct the EIS that should state the name, registered capital, sectors of activity and number of jobs to be created; the ToR of the EIS attached to a description and justification of the project with emphasis on the preservation of the environment and the reasons for choosing the site; and proof of payment of the file examination fees to the Council Revenue Collector; Environmental Impact Assessment Decree (n 20) art 15(1)-(2). The file examination fees cannot be superior to CFA F 50000 ($ 100); Impact Notice Order (n 24), art 6.

80 Environmental Impact Assessment Decree (n 20) art16.

81 ibid art 12(6).

82 Environmental Impact Assessment Decree (n 20) arts 19(3) & 20(1)-(3).

83 UNEP (2018) (n 3) 52.

84 ibid 72.

85 Environmental Impact Assessment Decree (n 20) art 27(1). Administrative and Technical Surveillance Committees have been established in each Division; Order N° 0010/MINEP (3 April 2003) art 1. It concerns the Organization and Functioning of Divisional Committees for Monitoring the Implementation of Environmental and Social Management Plans (Divisional Implementation Committee Order).

86 Environmental Impact Assessment Decree (n 20) art 27(2).

87 ibid art 27(3).

88 Divisional Implementation Committee Order (n 85) art 2. Membership of the Divisional Committee includes 2 representatives of the communities and 1 representative of non-governmental organisations; Divisional Implementation Committee Order (n 85) art 3(1).

ESMP is being implemented and reports to the Ministry on a quarterly basis.[89] Based on the biannual and quarterly reports from the proponent and the Divisional Committee respectively, corrective or additional measures may be adopted by the MINEP following the approval of the ICE to reflect effects not initially or insufficiently appreciated in the ESIA, SEA, or EIS.[90]

The costs incurred in compliance inspection, including the convening of the review committee, site inspection, and transport expenses are underwritten by the budget of the MINEP.[91] Monitoring the proponent's compliance with the ESMP may be undermined, given that the government is under-resourced.

An implementation challenge, that may dilute the efficient discharge of the follow-up functions of the Divisional Committee, is mostly related to the lack of capacity. However, this seeming deficiency appears to have been cured by the IAD,[92] which empowers the Divisional Committee to hire an independent person with the relevant expertise to follow-up the proponent's implementation of ESMP. As referenced above, the financial obligations may hamper the hiring of consultants.

A problem associated with the follow-up stage is the phoney public involvement, for the representatives of the communities and non-governmental organizations on the Divisional Committee are government appointees;[93] they lack legitimacy to represent their constituencies. Further, the monitoring report submitted by the project owner and the Divisional Committee is not made public, thus it is difficult to vouch for its veracity.

The effectiveness of the EIA process hinges on two pillars: good governance and enforcement measures. Regarding good governance, Cameroon's scorecard is not impressive[94] and this casts a shadow over the effectiveness of the EIA. For its part, enforcement measures require that the validity of environmental approvals ceases in case of non-compliance with permit conditions as well as a penalty regime.[95] Cessation of activities and penalties is, therefore, coterminous and a sine qua non for an effective and efficient EIA enforcement regime. Cameroon law is inadequate in this regard. When the proponent defaults in the reporting obligations or fails to comply with the ESMP, the MINEP is helpless in suspending or cancelling the EIA, if approval has not been provided for in the legislation.[96] The failure to prescribe suspension or cancellation of a CEC or AEC for non-compliance strikes at the heart of the rationale behind EIA, which is to mitigate the impact of the project and to comply with the mitigation measures that were prerequisites for the approval of the EIA.

3 SETTLEMENT OF ENVIRONMENTAL DISPUTES RELATING TO EIA

Environmental law has special procedures that differ from the ordinary dispute settlement procedures applicable in civil and penal matters. The following

89 ibid art 5(1) & 6(4).
90 Environmental Impact Assessment Decree (n 20) art 28.
91 Divisional Implementation Committee Order (n 85) art 9.
92 ibid art 29.
93 Divisional Implementation Committee Order (n 85) art 3 (2).
94 The World Bank, Country Policy and Institutional Assessment (2018) <http://datatopics.worldbank.org/cpia/country/cameroon> Cameroon's ranking for Transparency, Accountability and Corruption in the Public Sector was 2.5; Transparency International, Corruption Perception Index (2019) <https://www.transparency.org/country/CMR> Cameroon ranked 153 out of 180 countries with a score of 25/100.
95 UNEP (2018) (n 3) 74.
96 Environmental Management Law 1996, s 79. Penalties are prescribed for: (a) those who implement subject activities without carrying out impact assessment (b) those who implement a project that does not conform to the criteria, norms and measures spelled out for the impact assessment; and (c) those who obstruct checks and analyses provided by the EML or its implementing regulation.

dispute settlement mechanisms are recognised: settlement, arbitration, and litigation.

3.1 Locus Standi

The EML has broadened the common law doctrine of locus standi in environmental law matters. It provides:[97]

> Authorized grassroots communities and associations contributing to all actions of public and semi-public institutions working for environmental protection may exercise the rights of plaintiff with regard to facts constituting a breach to the provisions of this law and causing direct and indirect harm to the common good they are intended.

Tempting as this may sound, the drawback with this provision is that that it tends to bar individuals from bringing lawsuits to protect the environment. However, the Constitutional edict states that '… The protection of the environment shall be the duty of every citizen…',[98] giving individual standing in environmental disputes. Those having the legal stand to sue to protect the environment are authorised grassroots communities, associations, and individuals.[99]

3.2 Administrative Proceedings

The decision to not issue a CEC or to issue a CEC in breach of the law, for instance, may be appealed to the Administrative Court on the ground of the administrative act being ultra vires.[100]

A precondition for the admissibility of a petition by the Administrative Court is that the proponent must first submit a pre-litigation complaint to the authority that issued the challenged act or to the authority empowered by a statutory instrument to represent the public body or the concerned public establishment.[101] In Foretia Justine Mancha v The State of Cameroon (Rep. by the Divisional Officer Buea),[102] the Administrative Court of the South-West Region-Buea declared the action instituted by the petitioner inadmissible due to the lack of a pre-litigation complaint. The pre-litigation complaint merely slows the wheel of justice for the complaint is frequently ignored.

Following the rejection of the complaint,[103] the petitioner must seize the court within the prescribed timeline, otherwise, the action shall be foreclosed by default.[104] The time limits are a matter of public policy and must scrupulously be respected, failing which the action shall become inadmissible. This principle was affirmed by the Supreme Court of Cameroon in Doh

97 ibid s 8 (2).

98 Constitution of the Republic of Cameroon 1996, Preamble.

99 For an examination of standing to sue in environmental disputes, see Geetanjoy Sahu, 'Implications of Indian Supreme Court's Innovations for Environmental Jurisprudence' (2008) 4(1) Law, Environment and Development Journal 1; Tumai Murombo, 'Strengthening Locus Standi in Public Interest Environmental Litigation: Has Leadership Moved from the United States to South Africa?' (2010) 6(2) Law, Environment and Development Journal 163.

100 Ultra vires acts are acts that are invalid for the following reasons: they are bad in form, they were made without jurisdiction, they infringe a legal provision or regulation and they constitute an abuse of authority; Organisation and Functioning of Administrative Courts 2006, s 2(3)(a).

101 ibid s 17(1).

102 Foretia Justine Mancha v The State of Cameroon (Rep. by the Divisional Officer Buea) Judgment No 012/ 2018 (Cameroon).

103 The rejection of a pre-litigation complaint may be express or implied. It is express if the authority informs the petitioner in writing that the complaint has been rejected. It is implied if no response is received within 3 months from the date the complaint or claim was lodged, see Organisation and Functioning of Administrative Courts 2006, (n 100) s 17(2).

104 The time limits applicable to a pre-litigation complaint are as follows: (a) three (3) months from the date of publication or service of the challenged decision; (b) six (6) months from the date of cognizance of the loss in respect of which damages are claimed; and (c) four (4) years from the date when the authority that was legally bound to act failed to act, see Organisation and Functioning of Administrative Courts 2006, (n 100) s 17(3)(a)-(c) respectively.

Francis v Sama Tita Fomunung.[105] In Stephen Ashu Tanyimbi v The State of Cameroon and anr,[106] the Administrative Court of the South-West Region-Buea declared the action inadmissible for filing the pre-litigation complaint out of time. The Court unanimously held, per Mbu P, that:

> … it is clearly borne out in the petition that it was on 23/12/2009 that petitioner went to his farm to harvest crops for Christmas and discovered that heavy equipment had levelled his entire farm destroying everything. Why he waited up to 26/08/2013 before filing a pre-litigation complaint is only known to him. This is clearly an incurable defect on the procedure …

A major drawback of the pre-litigation complaint is that it considerably abridges the time limits for the commencement of court action,[107] thus amounting to a denial of justice.

An appeal against the decision of the Administrative Court lies in the hands of the Administrative Bench of the Supreme Court.[108]

3.3 Settlement

Settlement (compromise) is a non-litigious regulatory process provided by law to offer violators of environmental legislation an opportunity for an out-of-court settlement. The MINEP is empowered to bring about a settlement. Settlement, as a means of dispute resolution, is laudable as it encourages a pacific settlement of disputes, minimizes cost, and accelerates dispute resolution.

3.4 Arbitration

The law also prescribes arbitration as an alternative dispute settlement mechanism.[109] Parties resort to arbitration when they wish to settle the dispute out of court.

3.5 Litigation

Failure to settle the dispute through settlement triggers litigation; settlement is a precondition to the commencement of court action under the pain of nullity.[110] The offender's act or omission may lead to the institution of criminal proceedings and to a civil action if the MINEP has suffered loss resulting from the commission of an offence.

Environmental offences are mostly misdemeanours and, in some cases, felonies.[111] The Court of First

105 Doh Francis v Sama Tita Fomunung Judgment No 10 of 9 November 1978, Supreme Court Report No 40 1979, 6135.

106 Stephen Ashu Tanyimbi v The State of Cameroon and anr. Judgment No 009/2017.

107 Environmental Management Law 1996, s 92. In English speaking Cameroon (common law jurisdiction) actions for contractual and non-contractual claims are time barred after six years; in French speaking Cameroon (civil law jurisdiction) the limitation period is thirty years while commercial claims in Cameroon irrespective of the legal tradition are statute barred after five years. See English Statute of Limitations 1623 applicable by virtue of Southern Cameroons High Court Law 1955, s 11; Relating to General Commercial Law, see Cameroon Civil Code, art 2622. OHADA Uniform Act on General Commercial Law, art 18. The limitation period contrasts sharply with time limits applicable to administrative dispute.

108 Organisation and Functioning of Administrative Courts 2006, (n 100) s 116; Organisation and Functioning of the Supreme Court 2008, ss 78 – 81.

109 Environmental Management Law 1996, s 92.

110 Environmental Management Law 1996, s 91(3).

111 The Cameroon Penal Code 1931, s 21. Misdemeanour is defined as 'an offence punishable with loss of liberty or with fine, where the loss of liberty may be for more than ten days but for not more than ten years, and a fine of more than twenty-five thousand francs'. For its part a felony is 'an offence punishable with death or loss of liberty for a maximum of more than ten years and a fine where the law so provides'.

Instance and the High Court are competent to hear and determine environmental disputes.[112]

With respect to procedure, the EML[113] provides that the offence report prepared by the MINEP officials, for any matter relating to environmental impact, is to be considered correct unless proved otherwise. Thus, the offence report shifts the burden of proof onto the accused (proponent).

4 CONCLUSION

The foregoing discussion indicates that the EIA regulatory regime in Cameroon is not fundamentally flawed. There is no shortage of regulations in Cameroon, however, major challenges remain. Compliance with legislative stipulations by public authorities remains a challenge and this must be intertwined with good governance.[114] Another challenge is the shortage of human resources needed to monitor compliance with ESMP. The Government needs to build capacity to remedy this deficiency. There is a need to return to legality. The Prime Minister is the competent authority to adopt regulations listing activities subject to impact assessment. Similarly, the competent Administration is the authority responsible for issuing a CEC. Addressing these weaknesses can go a long way in protecting the environment.

112 The CFI is invested with jurisdiction to try simple offences and misdemeanours while felonies and related misdemeanours and simple offences come within the province of the High Court. In civil matters the CFI has the legal authority to hear and determine matters where the amount of damages claimed does not exceed CFA F 10 million ($ 5 000) while the High Court is competent to hear matters where the amount claimed is superior to CFA F 10 million ($ 5 000). See Cameroon Criminal Procedure Code, ss 289 & 407; On Judicial Organisation, see Law No. 2006/015 (29 Dec 2006), ss15(1)(b) &18(1)(b).

113 Environmental Management Law 1996, s 89.

114 SEFE v. S.G. Sustainable Oils (n 34), there were no prosecutions although the law was overtly violated and penalties are prescribed for transgressors; Organisation and Functioning of Administrative Courts 2006, (n 100) s 17(1).

Book Review

TRACY-LYNN FIELD, STATE GOVERNANCE OF MINING, DEVELOPMENT AND SUSTAINABILITY (EDWARD ELGAR PUBLISHING LIMITED 2019)

***Reviewed by*: Roopa Madhav, PhD Scholar, SOAS, University of London**

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Tracy-Lynn Field, *State Governance of Mining, Development and Sustainability* (Edward Elgar Publishing Limited 2019)

Mineral endowed countries struggle to balance optimal extraction of mineral resources during boom market cycles with that of protecting citizens and environment from harmful effects of such rapid extraction. These competing societal values and goals require to be meditated by the State through effective governance tools. However, in the past few decades, the State as the primary arbiter of conflicting values is increasingly supported by an industry conscious of the need for a more responsible management of extractive resources. Against this background, Tracy-Lynn Field's book, State Governance of Mining, Development and Sustainability provides critical insights into contemporary discourses around mining, development, and sustainability in both developed and developing countries.

Remarkably, the book covers a wide swathe of research on mining discourses bringing together literature from a broad spectrum including academic research, reports from multilateral international bodies, industry and activist groups. Divided into eight chapters, the initial chapters set up the scaffolding for the book outlining the favourable and dissenting discourses on mining, development, sustainability and the role of the state.

The competing discourses are detailed in Chapters 2 and 3 - four 'pro-mining discourses" (sustainable mineral development consensus, responsible mining, non-extractivism, and critical and strategic minerals) and five 'discourses of mining dissent' (resource curse thesis, Indigenous Peoples rights, environmental justice, mining and human rights and feminist critiques of mining). As the author notes, these discourses originate and are sustained by a variety of interest groups including industry, IFIs, industry, mining affected communities, NGOs and academics. Chapters 4 and 5 deal with mining, taxation and property; chapters 6 and 7 deal with mining, environment assessment and mining closure The final or concluding chapter is devoted to the author's take on post extractivism tying it up with the chosen analytical frame of Polyani's double movement theory.

The underlying thesis of the book is that this global system of "unsustainable mineral extraction" persists because of the dynamic relationship between contending social forces advancing and resisting mining. The author picks an interesting analytical frame to examine the persistence of unsustainable mineral extraction - Polyani's double movement theory – to argue that 'there is a dynamic relationship between contending social forces advancing and resisting mining'.[1] At its core the double movement theory argues that the interplay between two organizing principles, one aimed at establishing a self-regulating market and the other, the principle of social protection primarily aimed at conservation of man and nature, as well as productive organization, relying on the varying support of those most immediately affected by the deleterious action of the market – and using protective legislation, restrictive associations and other instruments of interests as its methods.

The book also provides a comparative perspective outlining the laws from various countries on issues of taxation, property rights, environmental assessments and mine closure, in Chapters 4 to 7. While the range of coverage is impressive and presentation of massive literature is useful from a research or academic perspective, the author does not attempt to keep the comparative exercise consistent by looking at select countries. Besides the wide range of literature – while neatly boxed into categories – is not subject to the promising analytical framing of Polyani's double movement theory in Chapters 4 to 6. That analysis is reserved for the last concluding chapter. Inconsistent treatment of the analytical framework – it is patchy at best – makes you wonder if it is an afterthought.

1 The double movement, a concept put forward by Karl Polanyi in his 1944 work, The Great Transformation', stands for the conflicting principles of promoting mining but protecting society from its worst impacts. It organizes societal positions but manifests most acutely through the state. The double movement is part of Polanyi's broader explanatory framework for the emergence and persistence of the market economy and 'market society'. The market society troubled Polanyi, as he believed the fictitious commoditization of land, money and labour causes tremendous damage to society.

Ultimately, this book shows how the promotional and protective role of the State constituted by the advocacy, policies and laws of international financial institutions, industry associations, activists, and mineral-rich jurisdictions supports an unsustainable system of global mining production. Progressive in its approach, the book concludes with insightful thoughts on the paradigm of post-extractivism. It explains why the double movement is only superficially balanced and does not guard against predatory relations and practices. It shows that overcoming extractivism/neo-extractivism will necessitate a great undoing

> - at the level of technical frameworks that translate into legal rights and obligations;
>
> - at the level of narratives that justify extraction with reference to other grand and globalized human quests (development, sustainability), and
>
> - at the level of understanding how the use of minerals relates to ideas and assumptions, such as a Cartesian knowledge system, restriction of ethical values to the human sphere, the duality of society and nature and the onward march of 'progress'.

The book fails to note the inconsistency – most of the debates have been co-opted and spearheaded by the industry to stem dissent – be it the social license to contract or the discourse around sustainable or responsible mining. Civil society creating the double movement is at times a myth.

Despite the few cavils, the book is an extraordinary resource and a useful addition for an under-researched area of state governance of mineral resources. It fills a critical gap in literature as it provides the most comprehensive engagement with the wide range of critical debates around mining and sustainability. The engagement with the two difficult cross cutting themes of taxation and property rights are an extremely useful addition to the literature. The range of the coverage of critical debates around mining and key issues such as property rights, taxation, environmental assessment and mine closure are explicated in great detail making this voluminous book an ideal reader for academics and researchers. Its reach for practitioners and policy makers would require a more carefully edited version.

Book Review

DINA L TOWNSEND, *HUMAN DIGNITY AND THE ADJUDICATION OF ENVIRONMENTAL RIGHTS* (EDWARD ELGAR PUBLISHING LIMITED 2020)

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Dina L Townsend, *Human Dignity and the Adjudication of Environmental Rights* (Edward Elgar Publishing Limited 2020)

In Human Dignity and the Adjudication of Environmental Rights, Dina L. Townsend asks (p. 2): 'What role does or should human dignity play when we face conflicts about the use or value of the environment?' Dr Townsend is a distinguished environmental lawyer and scholar. Her chief argument is that advancement of human dignity should lie at the centre for human rights cases when environmental issues are in play.

One of Dr Townsend's chief tropes concerns 'our humanness as being constructed in important ways by the environment.' (p. 2) That is to say, we are not solely autonomous, disconnected beings, but are constituted both by our relations with other humans, and by our relations with the nonhuman world. According to Dr Townsend, dignity 'can help us bring the environment into the core of our judicial reasoning – as constituting its own reason or justification – by drawing a bright line connecting our understanding of our own humanness and the environment.' (p. 33) Human dignity – i.e. (my interpretation) our common moral worth and inherent value — is particularly at risk now in light of growing threats from environmental degradation, and could help counter that degradation if employed more widely in human rights cases.

Dr Townsend examines the particular role that human dignity can bring to cases where indigenous peoples assert legal claims rooted in special connections to land and resources, and where the human rights of future generations are at stake. As a result of her wide-ranging discussion, she concludes that 'dignity offers new ways of thinking about problems of anthropocentrism, individualism, and the constrained temporality of human rights law.' (p. 271) Dr Townsend focuses her analysis on the jurisprudence of key domestic and international courts, because judges leave a clear, written record on their thinking, because they 'seem to be in a dialogue, of sorts, with one another around the concept of dignity,' and, presumably, because her analysis could help these courts, who hold so much power over how citizens live their lives, bring the concept of human dignity into environmental matters.

After some initial brush clearing – about what 'environment' means, about whether human rights are an unfortunately anthropocentric and Western-centred concept, in Chapter 2, Dr Townsend provides a history of 'dignity' in Western thought. She argues that 'dignity' is, in fact, an environmental concept, used to differentiate us from other animals and also to situate us in a hierarchy in the 'natural order.' We place above other creatures, and below gods – but nonetheless 'closer to God than to plants.' (p.63) The (unfortunate) environmental outcomes of this philosophy mean we have duties to other dignity holders – i.e. each other – but not to the nonhuman world. She explores cosmologies in the Americans and Africa, and finds in these regions many examples of close connections between conceptions of dignity and dependence on and relationship with the natural world, and perhaps a model for how we might fulfil human rights by a notion of dignity that is rooted in relationship with the nature around us.

In Chapter 3, the book explores how 'dignity' functions in human rights jurisprudence. Townsend posits 'dignity' as a universal value that undergirds human rights law. Thus, if dignity is a shared value common to all domestic legal systems, the concept could also reach across those systems as a foundational value for exploring the human rights impacts or liabilities portended, for example, by climate change. Here, I believe the book might have found a broader audience, had she stuck to straightforward analysis of jurisprudence without the need for quite so much philosophical analysis and jargon. Of course, scholars write the book they want to write, not the book the reviewer wishes they had written; but I did find that sections like 'I argue that one can understand dignity as contrapuntal, and as a concept that is both multifaceted and evolving in response to new threats and understandings. Dignity is, on this account, universal and foundational, but this is, in a sense, a functional foundationality' (p. 71) a bit off-putting.

In Chapter 3, Dr Townsend addresses a concern I had as I was reading: Scholars she cites in her section entitled 'Dignity Means Nothing and Can Be Deployed on Both Sides of Any Argument' (p. 100) suggest 'that dignity is a concept with no meaning beyond the meaning assigned to it by each user as and when they use it.' (p. 95) This, to me, was the main problem with

this impressive volume: I could never quite get a handle on what 'dignity' was — or, rather, was not (More on this below). As a 'legal pragmatist', (p. 103) Townsend sees 'judges as engaged in creative problem-solving, rather than deriving correct answers from overarching principles…'. That is to say, rather than believing that there is some external moral concept that is the 'right' way to understand dignity, she is concerned with how the term is actually wielded in the courtroom: What do we argue in the name of 'dignity'? As portrayed here, 'dignity' is not a relativist concept: Townsend describes her approach as 'contrapuntal,' i.e. different lines of jurisprudence merge to form a comprehensible harmony. I believe 'constructivist' would be a suitable term, because philosophers and, especially, judges across the world have considered each other's reasoning and are building a similar set of meanings with which they have imbued the term.

In Chapters 5 and 6, Dr Townsend applies her contrapuntal conception to show how judges may be converging on the idea that dignity includes an understanding that we are fundamentally connected to, and dependent upon, the natural world. Dignity, for Townsend, is relational: It can only be understood in how we interact with others, where 'others' includes the nonhuman world around us. Underlying environmental human rights cases are claims that harm to the environment is harm to us; this relational notion of 'dignity' that is a constructed universal underpinning for human rights jurisprudence supports and reinforces that environmental issues are human rights issues, and vice versa. She argues that judgments from the Inter-American Court of Human Rights on indigenous peoples' land rights rely too much on a Western notion of 'right to property.' Because 'dignity has been used by courts in human rights reasoning as a concept concerned with our self-understanding and with our right both to assert our own identities and to live lives in accordance with those identities,' (p. 231) a conception of dignity that honours the multifaceted relationship between peoples and their lands would be a more epistemologically accurate and legally sustainable approach.

But from this fascinating, well-researched chapter, I remained sceptical that we need 'dignity's' central role in ensuring that courts take claims of 'a connectedness to land seriously and see such claims as neither legally irrelevant nor merely evidentiary of other rights claims' (p. 231). Dr Townsend writes: 'What dignity does, however, is require indigenous peoples and their view of the environment to be incorporated into environmental decision-making in a manner that takes claims to an environmental identity seriously. It also requires that debates about best uses of resources, about what is in the public interest about who gets to be the arbiter of that public interest, remain open' (p. 231). The problem here is that the cases she cites seem to be doing exactly what she seeks, without 'dignity' playing a central, unifying role.

In her chapter on intergenerational justice, Townsend argues that 'an intergenerational dignity approach is one that might bring future interests and impacts into the heart of environmental human rights reasoning' (p. 234). As she concludes the chapter, 'we seem to have the possibility that future generations might be recognised as dignity bearers, meriting both respect and recognition' (p. 270). As in the rest of the book, I learned a *lot* from this chapter about the way courts in diverse fora have thought about (or failed to think about) the rights of future generations; I am just not sure that 'dignity' is a necessary or useful unifying concept to secure the rights of future generations to a sustainable planet. One could substitute 'bearers of human rights,' for which 'dignity' would be an underlying criterion… But then 'dignity' adds little in particular to the discussion.

In the end, I am entirely convinced of her thesis that 'in different ways, that by reconceptualizing humanness as environmentally constituted, human rights courts can better deploy human rights law to protect the environment' (p. 232). But the core problem with the book is that one can do that without recourse to the notion of 'dignity,' which, as critics she cites in this book point out, is so protean that anything may fall under its aegis. I finished the book less sure I understood what 'dignity' meant than when I opened the book.

I do not mean to be too critical here. I am quite impressed by the depth and breadth of Dr Townsend's scholarship on the history of the idea (legal and otherwise) of 'dignity,' of her mastery of comparative jurisprudence in domestic and international courts, and of her clear and compelling writing. My thoughts were provoked by her discussions on just about every page. The reader will learn a tremendous amount not

just about the history of human rights jurisprudence in all its forms, but about the comparative law of indigenous environmental human rights, and rights for future generations. Furthermore, the comparative lens, including substantial jurisprudence from the global South, is most welcome. I certainly recommend the book to any practitioner or scholar interested in the current and future state of environmental human rights jurisprudence.

Book Review

CARLA SBERT, *THE LENS OF ECOLOGICAL LAW: A LOOK AT MINING* (EDWARD ELGAR PUBLISHING LIMITED 2020)

***Reviewed by*: Roopa Madhav, PhD Scholar, SOAS, University of London**

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Carla Sbert, *The Lens of Ecological Law: A Look at Mining* (Edward Elgar Publishing Limited 2020)

Environmental jurisprudence, a piecemeal response over time, to several ecological disasters and specific environmental concerns, is working towards a more holistic, eco-centric (as opposed to anthropogenic) rethink. There is steady movement within environmental jurisprudence to a more cohesive whole in response to the global ecological crisis, not dissimilar to the trends witnessed in economics towards a degrowth economic theory. Sbert's work is to be read against this background. In the way ecological economics sought to address the limitations of environmental economics, the rule of ecological law attempts to rethink contemporary environmental law.

Ecological law is not an evolution from environmental law. Rather, it is departure from law's role in mitigating the negative effects of economic activities to addressing its root causes: a paradigm shift from anthroprocentricity to interconnectedness and ecocentrism.[1] Ecological law rests on the assumption that infinite economic growth is not possible because it is incompatible with a finite planet, and therefore ecological law prioritizes respect of the planet's ecological limits.[2] The rethink was triggered by the Club of Rome's introduction of the Limits to Growth debate and the response of the UN WECD in putting together the idea of Sustainable Development.

The book is divided into three parts – in Part I the author builds an argument for a shift towards ecological law as new legal paradigm for an ecologically just society. This section also explores the close links between indigenous legal systems and the Green Legal Theory. In Part II, the author proposes an analytical tool to help improve the understanding of what such a shift would entail. A more focused exploration of the normative underpinnings of ecological law helps the author identify three core principles – ecocentrism, ecological primacy and ecological justice[3]- as being critical for building an analytical framework i.e. the lens of ecological law.

In Part III, the author applies the analytical framework to three critical mining case studies, testing and laying bare the strengths and weaknesses of the approach, to point towards the hurdles in shifting to the ecological paradigm. The first case study explores the use of the lens of ecological law to probe current law governing mining in El Salvador. El Salvador banned all metal mining becoming the very first country in the world to ban all sub-surface mining and this key legislation is analysed from the ecological lens. The second case study examines the legal framework for mineral extraction proposed in the Ring of Fire, Ontario, in particular Treaty 9 and provisions of the Constitution, with the lens of ecological law and sustainability. The third and the final case study examines the two key concepts recognized in Bolivian law - the concept of living well (bien vivir – an Andean concept) and the rights of Mother Earth - to glean their significance for ecological law with a particular focus on Bolivia's lithium industrialization project in the Salar de Uyuni.

In building the analytical framework of an ecological lens, the author draws support from a range of key thinkers in the field. The author relies on Cullinan's Wild Law to build arguments a new kind of jurisprudence – the Earth Jurisprudence (EJ). EJ, through a multi-disciplinary approach from the fields of theology, philosophy and the law, aims to develop a jurisprudence that is consistent with the laws of the universe. Cullinan's limitation, however, is that he does not engage with a critique of the economic growth paradigm. That critique is offered by Samuel Alexander who argues that EJ, by placing itself outside the growth paradigm, provides an 'alternative conceptualization of 'nature' in law, especially property law, where human-centered economic analysis dominates'.[4]

It is Graver who attempts to find a middle path by choosing the term 'ecological law' to emphasize the primacy of ecological integrity over economic and social concerns and argues that this term avoids the ambiguity associated with the term 'sustainability'. Bosselmann argues for ecological integrity to be the grundnorm.[5]

1 Pg 42.
2 Pg 32.
3 Pg 78.
4 Pg 26.
5 Pg 40.

The author takes forward and builds on the work of Graver and Bosselmann. The lens of ecological law proposed in Chapter 9 builds on the core principles identified as important to ecological law and on an approach proposed by Graver as the 'rule of ecological law', a tool in constraining economic growth as an initial goal but more long term as an ecological approach to the law itself. In sum, the author views the ecological lens as a new and effective jurisprudential approach in law, to address today's ecological crisis.

Admittedly the analytical tool is too broad and needs further narrowing down and sharpening for it to be effective. But then there are deeper issues to tackle. For instance, the understanding of mineral resources as property needs a fundamental shift for it to be considered from an ecological lens and the case studies demonstrate the difficulties of rethinking the underlying grid which is primarily economic to one that is ecological. In other words, fitting the ecological lens onto existing frameworks without undoing the entire economic frame is the primary challenge before this analytical tool. The task, therefore of countermapping the existing (largely economic framework) approach with the ecological lens, is only partially successful as the author's beginning point of study is not the dismantling of the existing approach to lay bare the fault lines and the more entrenched conceptual roots that need uprooting. In other words, for Graver's ecological lens to be operational, must engage with Cullinan's Earth Jurisprudence at some point, chipping away at existing paradigms to build alternative paradigms.

Aside from the lack of effective countermapping, the author also highlights the issue of implementation. For instance, in the Bolivian case study where ecological integrity is the basis for the framework law, the author concludes that there is a bigger challenge of implementation of such a framework, as the institutional shift to an alternative paradigm should also coincide with the larger paradigm shift globally as the interlinking of economies is an inescapable reality in a globalized world. The other identified issue is that the principles are too broad, general, and at times overlapping, making its application difficult and imprecise. The author also falters in drilling down the core contents of the principles into several workable sub-components so as to be an effective enquiry.

The opportunities for examining or re-examining the ecological values underpinning our laws to promote ecological justice, is at the heart of the author's exploration. It is a commendable effort. This book is a useful addition to the emerging discourse on ecological law and offers a new methodological tool to explore and further refine.

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