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The Planetary Future

Climate Change as an Existential Threat: Translating Global Goals into Action

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Abstract. Climate change is the greatest existential challenge for the humanity and this makes the implementation of the SDG 13 'Climate Action' and Paris Agreement on Climate Change crucial for our survival. This article begins by elaborating the concept of implementation of international law, makes a comparison between the legal character of the Paris Agreement on Climate Change and the SDGs. It argues that the Paris Agreement creates the necessary legal framework, transparency, technology transfer, accountability, capacity building, financing and other mechanisms to implement SDG 13. However, the lack of political will and ignorance by some governments has led to a lack of progress, which may jeopardize not only Climate Action, but other SDGs too. The article ends with the argument that UN member-states should undertake urgent action to mitigate climate change, adapt to its negative consequences and co-operate towards an effective global climate governance, and for that matter it would be helpful, if climate action is formulated as a new and separate purpose in the UN Charter.

Keywords: Climate change, implementation, international law, Paris Agreement, SDG 13, global governance, UN charter, existential crisis

1. Introduction: Dangerously Heated Planet

Climate change, a direct result from coal-mining, deforestation, burning fossil fuels, industrial animal farming, over-consumption and other human activities, produces drastic negative effects, experienced first-hand by most countries in the world. Greenhouse gas emissions continue to rise and are now more than 50% higher from the 1990 level.[1] The year 2023 was the warmest ever since the introduction of regular air temperature measurement: on average 0.52 C warmer than 1991–2020 average, 1.15 C warmer than the entire 20th century average, and 1.32 C warmer than the pre-industrial (1850–1990) average.[2] In the second half of 2023 every single day had a higher global average air temperature, compared with the same day in 2022. The Copernicus Climate Change Service reported that in 2023 'climate records tumbled like dominoes,'[3] and every single day was at least with 1 C

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1 Joint SDG Fund, *Goal 13: Climate Action*; https://www.jointsdgfund.org/sustainable-development-goals/goal-13-climate-action.

2 NOAA (2024). *Yearly Global Surface Temperatures Compared to Different Long-Term Averages. [Graph]* https://www.climate.gov/media/15808.

3 A. Mooney et al. (2024). "*Climate Record Tumbled* '*Like Dominoes*' *During World's Hottest Year*",' Financial Times, January 9; https://www.ft.com/content/fafaf4cc-4f93-46fd-ab94-2f90165cef9f.

warmer that the pre-industrial average.[4] Sea surface temperatures also overpassed previous highs.[5] This brought the world closer to breaching the internationally agreed climate maximum temperature rise target of 1.5 C, as established in the 2015 Paris Agreement on Climate Change[6] and estimations show that this can happen as soon as in 2027.[7]

The rising temperatures are not only meteorological statistics, they are felt worldwide by billions of people. Severe heatwaves in all continents, rapid wildfires, prolonged cycles of droughts are followed, paradoxically, by similarly strong cyclones and huge flooding. Extreme weather events happened in the past, but were never so intense, frequent and disastrous for lives and livelihoods, displacing so many thousands of people[8] causing such massive and indiscriminate devastation all over the world,[9] like in recent years.

Human-induced climate change is not new, it has been scientifically known for a very long time. It is already 200 years since the French physicist Joseph Fourier[10] discovered the greenhouse gas effect[11] At the end of the 19th century – having already the technology to measure temperatures with high precision – Svante Arrhenius became the first scientist to conclude that human-caused CO_2 emissions from fossil-fuel burning and other combustion processes are large enough to cause global warming. Ironically, living in a cold country like Sweden, Arrhenius did not regard this as bad news. It took further hundred years until the world, repeatedly alarmed by scientific warnings of the catastrophic consequences from climate change, in 1992 agreed to the UN Framework Convention on Climate Change (UNFCCC)[12] In 2015 the UN General Assembly adopted the Sustainable Development Goals (SDGs),[13] with Goal 13 appealing for 'Climate Action'. Later that year the Paris Agreement on Climate Change was signed, and soon after ratified by the majority of the countries in the world.

2. Implementation of International Law

The problem with climate change – as well as with other international legal agreements - is not in codification, rather in implementation of international law. The codification of international law has significantly developed over the last century, but this progress has not been paralleled with similar progress in implementation. Few examples: the UN Charter in 1945[14] prohibited aggressive wars, but one of the five 'guardians' of peace, Russia, abused this status and the right of veto, given by the same Charter, and brutally invaded Ukraine, its peaceful de-militarised neighbour, committed numerous war crimes and threatened the rest of the world with nuclear weapons. The UN member-states agreed and signed tens of treaties and conventions to protect human rights, but still millions of people suffer from disregard of human rights in many parts of the world. The codification of international humanitarian law (IHL) has admirably advanced after World War II with the adoption of the 1948

4 The Copernicus Climate Change Service. (2023, August 8). *Global Sea Surface Temperature Reaches a Record High.* https://climate.copernicus.eu/global-sea-surface-temperature-reaches-record-high.

5 *Ibid.*

6 For detailed discussion on the 2015 Paris Agreement, see V. Popovski(Ed.). (2018). "*The Implementation of The Paris Agreement on Climate Change*", Routledge.

7 F. Harvey (2023). "*World Likely to Breach 1.5C Climate Threshold by 2027, Scientists Warn*", The Guardian. May 17; https://www.theguardian.com/environment/2023/may/17/global-heating-climate-crisis-record-temperatures-wmo-research.

8 Global Climate Change. (2024). "*Extreme Weather and Climate Change*", January 30; https://climate.nasa.gov/extreme-weather/.

9 World Meteorological Organization. (2023). "*2023- A Historic Climate Year, as WMO Secretary-General Taalas Successfully Completes his Mandate.*" December 22; https://wmo.int/news/media-centre/2023-historic-climatic-year-wmo-secretary-general-taalas-successfully-completes-his-mandate.

10 J. Fourier (1824a). "Remarques Générales Sur Les Températures Du Globe Terrestre Et Des Espaces Planétaires", *Annales de Chimie et de Physique*, 27: 136–167.

11 S. Weart (2008). "*The Carbon Dioxide Greenhouse Effect;*" CO2.pdf (aip.org).

12 UNFCCC. (1992). United Nations Framework Convention on Climate Change. https://unfccc.int/resource/docs/convkp/conveng.pdf.

13 United Nations. (2015). Transforming Our World: The 2030 Agenda for Sustainable Development. https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf.

14 United Nations. (1945). Charter of the United Nations. https://www.un.org/en/about-us/un-charter/full-text.

Genocide Convention,[15] the 1949 Geneva Conventions and 1977 Additional Protocols,[16] but the implementation of IHL has lagged behind and still many civilians die in armed conflicts.

The absence of global government and limited global law enforcement is one reason for the lack of implementation in international law. In domestic law, if crimes happen, the law enforcement and the judiciary would normally be capacitated to deal with these crimes. However, when states violate international law, the only hope is, if the UN Security Council takes measures against those states. Occasionally, the Security Council indeed adopted resolutions to impose sanctions[17] on states, but not always these were effective to exercise the necessary pressure. Some states disregarded the sanctions and smuggled prohibited goods. More viciously, because of the right of veto, the permanent members of the Security Council and their friends could never be sanctioned when they violated international law.

The adoption of the SDGs was a significant achievement in codification of common goals and targets, and a lot of efforts have been since made to build capacity for implementing these goals through specific commitments and entitlements of the parties. As climate change continues to endanger communities in most of the countries on every continent, the SDG 13 Climate Action and its implementation becomes predominant. Although the threat is common, the past history of emissions, industrialization, economic exploitation and disparities make the responsibilities of states different. Accordingly, principles such as "Polluter Pays", "Common but Differentiated Responsibilities", "Economic Ability" are considered, and states agree that developed countries, by contributing more to CO2 emissions, should have greater responsibility, due to their historically high emissions to climate change and their respective economic ability to contribute to mitigation and adaptation to climate change. For developing countries, the CO2 might be regarded as "survival emissions", whereas for the developed countries these are "luxury emissions."[18]

3. SDG 13 Climate Action

The adoption of SDG 13 Climate Action is unique, it does not simply advance sustainable development and improve human security and well-being, but is also instrumental for the entire planetary survival. SDG 13 has three parts: a) mitigation, keeping global temperature rise below 2°C; b) adaptation to consequences of climate change; and c) strengthening governance institutions and mechanisms to address climate change.[19] The specific targets and indicators of SDG 13 are actionable and measurable: Target 13.1 is to strengthen resilience and adaptive capacity to climate hazards and natural disasters, reduce direct casualties from disasters. It is measurable by number of victims from natural disasters, number of countries developing national disaster risk reduction strategies, and proportion of local governments that adopt and implement local disaster risk reduction strategies. Target 13.2 is to integrate climate change measures into national policies and planning. It requests states to communicate the establishment and operationalization of integrated strategies, increase the ability to adapt to adverse impacts, foster resilience and low CO2 emissions development in a manner that does not threaten food production and other indicators. The third target 13.3 is to improve education, raise human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. It is measurable by the number of countries that integrate these into their primary, secondary and tertiary education; by countries that communicate the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer.[20]

15 United Nations General Assembly. (1948). Convention on the Prevention and Punishment of the Crime of Genocide: https://www.un.org/en/genocideprevention/documents/atrocity-crimes/Doc.3_Convention%20on%20the%20Prevention%20and%20Punishment%20of%20the%20Crime%20of%20Genocide.pdf.

16 International Committee of the Red Cross. (1977). Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I). https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/INTRO/470?OpenDocument.

17 United Nations Security Council. (1992). Resolution 748 (1992). https://undocs.org/en/S/RES/748(1992); United Nations Security Council. (2006). Resolution 1718 (2006). https://undocs.org/en/S/RES/1718(2006).

18 Lavanya. Rajamani (2012). "The Principle of Common but Differentiated Responsibility and the Balance of Commitments under the Climate Regime" in *Review of European Community & International Environmental Law*. 9(2): 128–129.

19 Global Goals. (n.d.). Goal 13: Climate Action. https://www.globalgoals.org/goals/13-climate-action/.

20 *Ibid.*

SDG 13 sets an ambitious target to mobilize $100 bn annually from both public and private sources in a Green Climate Fund (GCF)[21] to channel finance to developing countries. The GCF was created in 2010 and launched its initial resource mobilization in 2014, but so far gathered insufficient amounts than the SDG 13 projection. The GCF is aligned with the priorities of developing countries through the principles of local ownership and direct access modality so that national and sub-national organisations can receive funds directly, without international intermediaries. SDG 13 and the GCF make an emphasis on the least developed (LDC) and small-island developing states (SIDS), by promoting mechanisms for raising capacity, including focus on women, youth, local and marginalized communities. The SIDS have played a leading role in raising awareness and advocating for strong climate action, notably through the Alliance of Small Island States (AOSIS). Despite their heterogeneity, they succeeded in building a common diplomatic discourse, influencing strategy, mobilizing political leaders as well as talented negotiators and advisors. They succeeded to codify their special circumstances as vulnerable countries, demonstrated leadership in raising ambition to secure long-term goals, and advanced the complex debate on loss and damage.

4. Paris Agreement on Climate Change

The Paris Agreement on Climate Change (Paris Agreement) was negotiated and adopted in 2015. In terms of international law, it can be regarded as a 'hybrid' type of a treaty, consisting of both 'hard law' and 'soft law' provisions. The Paris Agreement allows states to decide voluntary nationally-determined commitments (NDCs), but once they pledge, these commitments become legally binding. In a previous book,[22] entirely devoted to the implementation of the Paris Agreement, the author of this article argued for a fundamental rethinking of the distinction between hard and soft law, and for adoption of '*eco v. ego*' approach towards climate and environmental agreements. Anne-Marie Slaughter formulated this as 'Paris Approach to Global Governance,'[23] whereas Richard Falk more sceptically wrote about 'Voluntary International Law,'[24] pointing to the lack of sanctioning measures for non-compliance. International law has traditionally advanced through top-down codifying norms and rules, by imposing sanctions on states that fail to live up to these norms. The Paris Agreement is fundamentally different, instead of 'Sanctions Committee', it established a 'Facilitation Committee', inviting a synergy between binding obligations towards climate goals with opportunities to facilitate the implementation through transparency, free access to technology, financing, respect to specific circumstances. States make commitments in a voluntary manner, they can re-adjust this over time, all players demonstrate good will, accountability, facilitate the process.

Such approach to global governance is more conducive to long-term normative agenda, it allows individual states a great deal of autonomy to interpret and enact targets within a clearly articulated long-term collective goal. It demands constant interaction, communication, information sharing and facilitation towards implementing the targets. The SDGs and the Paris Agreement follow a path of previous international environmental agreements – for example the 1987 Montreal Protocol prohibiting substances depleting the ozone layer - that did not envisage sanctioning measures to punish states for non-compliance, rather inviting states to comply based on ethical and reputational competition. More than a century ago a Japanese philosopher Tsunesaburo Makiguchi in his 1903 book *Geography of Human Life*[25] after surveying traditional forms of competition—military, political and economic—concluded that these competitions exhaust human energy and do not bring peace and happiness. He called for a new type of 'humanitarian competition' synergizing humanitarian concerns and competitive energies. This is a radical transformation from a winner-takes-all competition, to one conducted within consciously acknowledged win-win mode. The humanitarian competition effectively reconciles co-operation and competition, it sets aside egoistical motives and protects not only our own life and wealth, but also the life and wealth of all other people.

21 Green Climate Fund. (n.d.). News. https://www.greenclimate.fund/news.

22 Vesselin Popovski (2018), Ed., *The Implementation of the Paris Agreement on Climate Change.* Routledge.

23 A.-M. Slaughter (2015). The Paris Approach to Global Governance. Project Syndicate. https://www.project-syndicate.org/commentary/paris-agreement-model-for-global-governance-by-anne-marie-slaughter-2015-12?barrier=accesspaylog.

24 R. Falk, (2016). Voluntary International Law and the Paris Agreement. Global Justice in the 21st Century. https://richardfalk.wordpress.com/2016/01/16/voluntary-international-law-and-the-paris-agreement/.

25 T. Makiguchi (1903). Complete Works of Tsunesaburo Makiguchi (Vol. 2). Daisan Bunmeisha. https://www.tmakiguchi.org/geographer/asgeographer/geographyhuman.html.

The Paris approach to global governance considers a world of very diverse state and non-state actors, where top-down obligations and sanctions might not work. This approach shifts to bottom-up NDCs, and requires governments, corporations, civil society to come together and determine what can be reasonably achieved domestically. Instead of blaming or sanctioning each other internationally for failure to comply with targets, states and people are expected to co-operate addressing a shared problem. The transparency mechanisms in the Paris Agreement support such shift to bottom-up commitments, allowing citizens, climate experts, NGOs and businesses to engage in debates, publicize successes and failures, solicit help and advice, and offer support.

The Paris Agreement is complex in legal characterization: it is written in a broad language to express the expected behavior of states and varies from clear legal obligations to recommendations and general statements. It contains hard law, soft law and non-law, it does not prescribe quantifiable rules at individual state level. States themselves must individually or collectively quantify their climate commitments, create expectations and obligations to be fulfilled. Such voluntarism would be unimaginable in domestic legal systems, but in international law this mixed approach is not uncommon. Many legal theories do not establish a minimal level of specificity, accountability, justiciability and enforceability to clearly separate law from non-law. Although not highly specific, the Paris Agreement creates legal expectations, it can constraint state behavior, therefore, in this author's opinion, it qualifies as international law.

5. Comparing the implementation of SDG 13 and Paris Agreement

The implementation of the SDGs is of a different nature, some goals are formulated as very specific and time bound. For example, SDG 1.1 is to eradicate extreme poverty (living on less than $1.25 a day) for all people everywhere by 2030. However, these specific targets do not translate into individualized normative expectations, the SDGs do not contain an obligation for states to produce anything comparable to NDCs, they only encourage ambitious national responses and regular progress reviews. Both the SDGs and the Paris Agreement are firmly grounded in normative context and express shared ambitions that contribute to the recognition of international society as a collective supra-state entity. Such goal-setting agreements advance international law to become a global law of humankind. States can safeguard their sovereign interests, but in parallel they increasingly acknowledge their overarching global interests and ambitions at supranational level.

The drafters of the SDGs set the implementation of clear-cut ambitions, expressed in binding and non-binding form, for a clear time period from 2015 till 2030. They referred to human rights and environmental goals as a concretization of rights and obligations, expressed in less specific manner. Many economic, social and cultural rights, for example the right to housing, the right to health, or education, do not contain specific targets. Equally, environmental treaties - for example management of transboundary water systems - do not contain much detail about the level of ambition or time-limit. The SDGs, in contrast, put concrete timeframe inducing stakeholders to set agendas, express concrete ambitions and strategies, and show substantial progress annually until 2030.

The Paris Agreement is essentially a statement of good intentions, setting forth aspirational goals. It is very different from traditional international legal documents, such as treaties banning certain weapons or landmines, establishing International Criminal Court (ICC), regulating arms trade etc. The drafters realized that the Paris Agreement, tackling a problem as complex and fast-moving as climate change, would be unthinkable and unacceptable, if it contained rigid binding commitments, accordingly, there is no specific timetable as to when states undertake what type of action, rather the timetable is determined with scientific models for various pathways to ensure mitigation. If more action is taken in the last five years, less will be needed in the next five; and *vice versa* if less action is taken now, more and more costly action will be needed later. The Paris Agreement leaves the concrete decision on commitments to individual parties, but this does not disqualify it from being a legal document. It does contain specific timetables for procedural issues, such as periodical submission of performance data to the Conference of Parties (COP); the renewal of NDCs every five years, etc. From 2023 global stock-takes takes place every five years to assess whether the aggregate implementations of the NDCs is sufficient to meet the goals.

The mechanisms for implementation and review of the SDGs are predominantly political and exercised at national or subnational level. The global review of implementation is left to the High-Level Political Forum

(HLPF),[26] which meets under the auspices of ECOSOC annually, and every four years the level is raised to Heads of State and Government for Comprehensive Policy Review under the auspices of the UN General Assembly. The SDGs have predominantly political and aspirational character, which is reflected in the absence of accountability mechanisms, with the exception of the follow-up and review mechanisms through the HLPF. To assess the Climate Action (SDG 13) implementation, global, regional and national indicators are developed. Usefully, an SDG tracker[27] was established to monitor constantly the implementation of all goals, including SDG 13, by all countries in the world. The tracker is useful as everyone at every single moment can see how states implement the goals, and this creates reputational benefits and costs.

The Paris Agreement developed essential mechanisms on implementation and review at several levels. The COP is responsible for reviewing the implementation through global stock-take. States are obliged to submit information to the UNFCCC Secretariat to be reviewed by technical experts. Art. 15 of Paris Agreement established an expert-based mechanism to facilitate implementation and promote compliance. In fact, contrary to the non-compliance procedure of the Kyoto Protocol, the Paris Agreement has no penalties for non-compliance. It is entirely facilitative and non-adversarial. If the Kyoto Protocol was binding for 41 developed countries,[28] required to reduce emissions by at least 5% over 1990 levels in the period 2008–2012, the Paris Agreement is binding only with respect to submitting NDCs every five years and reporting.

Both the Paris Agreement and the SDGs were adopted in high-level meetings of heads of states, underlying the importance of authority and legitimacy, essential to create a compliance pull. Highly legitimate commitments would normally lead to better implementation than those with low legitimacy.[29] Whether legitimacy is static, or evolving over time, has been debatable.[30] The SDGs were adopted with a strong momentum for carrying Agenda 2030 forward, but skepticism increased soon after as to whether the implementation can be jeopardized by national and international bureaucracies. With the Paris Agreement it was exactly the opposite: there was a lot of scepticism before its adoption about its achievability, but states quickly ratified it and over time most of them raised their ambition.

The justiciability of the SDGs is weak, it is unlikely that any goal's implementation can be invoked before arbitrations and tribunals. Enforcement cannot be enticed through sanctions, as there are no supranational mechanisms to do this. However, some limited legal effect may arise, if references are brought to clarify state obligations in environmental or human rights instruments. The Paris Agreement is also weak in judicial enforcement, but it has an elaborate system to ensure accountability. State parties realize that a regime, in which substantial obligations are formulated in an open manner as obligation of conduct rather than of final result, needs relatively strong procedures to monitor, supervise and correct the conduct of parties. The Paris Agreement adopts a layered approach, where states have various reporting obligations, these reports go through expert-based assessment, which can address specific non-compliant behaviour, and, finally, the COP plays a supervisory role. Paris Agreement is still weaker than Kyoto Protocol's very specific, quantifiable targets, including the option of issuing penalties in case of serious non-compliance. The system of individual NDCs every five years encourages parties to submit increasingly stringent revisions, based on their own judgment. The idea of compliance, as a stamp of legality and legitimacy, is abandoned, which is a radical departure from the historic job of lawyers and tribunals to determine whether or not a signatory to an agreement is complying with obligations.

The Paris Agreement essentially adds transparency into compliance. It creates an enhanced transparency framework (Art.13) to build mutual trust and promote effective implementation. Its compliance mechanism (Art.14) assessment teams mix climate scientists and policy experts, not just lawyers. It is a facilitative, non-punitive mechanism, functioning in transparent, non-adversarial manner. The compliance mechanism does not look as a disciplinary committee, it is more of a supportive body.

26 United Nations (n.d.). *High-Level Political Forum on Sustainable Development*. https://sustainabledevelopment.un.org/hlpf.

27 SDG Tracker. (n.d.). Climate Change. https://sdg-tracker.org/climate-change.

28 UNFCCC. (1998). *Kyoto Protocol to the United Nations Framework Convention on Climate Change*. https://unfccc.int/resource/docs/convkp/kpeng.pdf.

29 T. Franck (1990). The Power of Legitimacy Among Nations. Oxford University Press.

30 V. Popovski (2012). Legality and Legitimacy of International Criminal Tribunals. In Popovski, V. et al. (Eds.), Legality and Legitimacy in Global Affairs. Oxford University Press.

A comparison in specificity of the normative content between the SDGs and the Paris Agreement shows that more specific or precise a provision is, less room is left for self-interpretation and discretion in application. One may think that a more precise provision would be preferable, to avoid doubt about the expected behavior of actors. A specific percentage of CO2 emission reduction might seem a clear legal solution, but in fact it addresses only a small part of the problem, as there are other greenhouse gases, deforestation is not included, prescribing individualized reduction percentages creates a static situation and does not allow for adaptation to new ecological realities. More openly formulated targets and rules of conduct allow for continuous discussion and adaptation to what is perceived as necessary without having to make formal changes in the Paris Agreement. Such broad approach creates a normative process that hinges on binding, due-diligence obligations. Whether this is effective depends on the inclusiveness and legitimacy of the process and the willingness of parties to engage in a genuine effort to reach jointly determined goals.

6. Making Appropriate Choices

Both SDGs and Paris Agreement are designed to serve commonality rather than individuality in international society. States face dilemmas when making choices to serve common interests: inclusive versus exclusive; broad versus specific; legal versus political; content versus process; interstate versus supranational. Achieving common goals, if only a minority of states participate, will be difficult, if not impossible. However, to keep everybody aboard will require compromises, which may reduce the level of ambition and produce a very low-common-denominator. Adopting more specific language may either lead to fewer participants, or become impossible to implement. More abstract language may create space for ambivalence and self-interpretation in the lack of supranational authority.

The choice of predominantly political or legal forms is linked to such considerations. For example, when a political form is chosen, such as UN General Assembly (GA) resolutions, it is easier to reach consensus. States consider these legally non-binding and avoid political difficulties at home as the resolutions do not require ratification. However, this does not mean that states adopting GA resolutions do not intend to impose legally relevant normative expectations. When a legal treaty is chosen this can signify a higher level of ambition and commitment which can be used both internationally to put pressure on other states to comply, and domestically by urging co-operation of all actors for legally bound actions.

Another choice can be between focus on substantive commitments and results, or focus on process of co-operation with less certain results. The UNFCCC is an example of the latter: it did not create substantive obligations for parties, but was fundamental to start the process of developing a global climate governance model. The Paris Agreement is part of that process, which in itself creates some substantive expectations and contributes to further strengthening of the governance model. A further dilemma is whether states are willing to engage in a more supranational governance model, or to stay within the strict confines of interstate governance. They can choose to give up some prerogatives by being subject to the scrutiny of an independent expert committee, or to accept binding third-party dispute settlement procedures. Depending on the issue, the sense of urgency, the general political climate and other factors, hard choices need to be made and compromises found when facing these dilemmas.

The traditional binary approaches in international law - black-and-white interpretations, guilty-nonguilty verdicts, legal-illegal judgements - might not help solve the pressing global challenges of climate change, pandemics or sustainable development. The determination what is legally binding cannot always be binary, there could be degrees ranging from nonbinding in form and content at one end, to fully legally binding in form and content at the other. A formal treaty with high legitimacy and authority may be lacking in substantive content and meaningful compliance mechanism, effectively a hard law, but with soft content, or a "softness of hard-law."[31] In contrast, there could be texts without any formal legal fulfilment, for example proceedings from international conferences, but these may have a very precise content, a high degree of authority and legitimacy - a 'hard soft' law. Both are categorized as international legal agreements, even though they may lack justiciability and enforceability.

31 Bharat H. Desai (2004). Institutionalizing International Environmental Law (pp. 117). Ardsley, NY: Transnational Publishers.

The international law has evolved from serving the self-interests of states in anarchical society into increasingly representing the common interests of the entire humankind. The SDGs and the Paris Agreement manifest how interstate law evolves into global law, how did soft law become a pragmatic choice, when elaborate sharp binding commitments are not feasible. For the challenge of climate change the choice was a framework treaty, UNFCCC, while for developmental challenges, the SDGs became a more realistic choice. Although different in format, both are soft instruments without sanctions, but both reflect the willingness of states to accept behavior-constraining measures. The choice between pragmatic and principled approaches is mainly a matter of theoretical perspectives on the nature of international legal order. Clarifying these may help the implementation of global law in situations where the legal obligations are not straightforward in content and status.

In sum, the SDGs and the Paris Agreement can be placed on a continuum between hard and soft law, they elaborate theoretically and practically the global law. Their supranational authorities can determine the nature and extent of legal expectations and constraints, or - in more traditional terms - the rights and obligations of the parties.

The SDGs New York Summit[32] in September 2023 and the Dubai COP 28[33] in November 2023 continued to appeal for urgent action, pointing to continuous fossil-fuel subsidies, insufficient funding and technology transfer, non-commitment of large emitters, lack of capacity in least-developed countries etc. Even after the parties submitted ambitious NDCs, a question remains as to how they will sustain and implement these commitments. For example, a big challenge is how to satisfy the growing energy needs in developing countries by introducing renewable energy at strategic level, where many people in rural areas still lack access to electricity. The dominant electricity model in these regions remains centralized power generation connected to extensive national transmission grids.[34] While this model worked well for more than a century in developed countries, it has drawbacks that penalize developing countries that are yet to provide access to a large part of their population through extending the grid. With the cost-reduction of renewable energy technologies and more energy-efficient end-use appliances, an increasingly viable option is the decentralized power generation and distribution. There are estimates that by 2030, 70% of rural areas will be connected either to mini-grid (65%) or stand-alone off-grid solutions (35%).[35]

The challenges to implementation are not only financial or technological. Even when there is sufficient awareness and commitment, governments may lack the capacity to ensure that the public sector will create an enabling environment for investments. Knowledge and political clout might be missing to create and enact appropriate regulations and tariffs, allowing bottom-up initiatives to unfold and grow. Potential entrepreneurs might be discouraged by bureaucratic processes or lack of resource to provide a timely public administration. Public utilities might be heavily indebted, or suffer from mismanagement and corruption.

7. Role of Multiple Actors

A crucial feature of the new global governance model, exemplified by the Paris Agreement and the SDGs, is that in addition to governments it involves closely the business sector, civil society, academia, municipal authorities like C-40, a network of the world's megacities committed to combat climate change. The implementation of SDG 13 is too important to be left to states only, because the survival of the planet depend on it. The Paris Agreement deepens and sophisticates the connections between state and non-state actors, creating an architecture of hybrid multi-stakeholder governance. It contains two governance channels: the state-led actions defined and stipulated by the parties through their NDCs, and the efforts by the UNFCCC to orchestrate transnational climate efforts. In both of these the non-state actors are formally and informally woven into the Paris Agreement, performing a

32 Bharat H. Desai, (2023). "The 2023 New York SDG Summit Outcome: Rescue Plan for 2030 Agenda as a Wake-up Call for the Decision-makers", *Environmental Policy and Law*, 53(2023): 221–231. https://www.iospress.nl/journal/environmental-policy-and-law/.

33 Bharat H. Desai (2023). "Averting the Climate Change Catastrophe @COP28 and Beyond: A Wake-up Call by the UN Secretary-General", *EPL Blog*, December 4; https://www.iospress.nl/journal/environmental-policy-and-law/

34 International Energy Agency. (2010). Energy Poverty - How to Make Modern Energy Access Universal? Paris: http://www.se4all.org/wp-content/uploads/2013/09/Special_Excerpt_of_WEO_2010.pdf.

35 *Ibid.*

range of increasingly important functions. The civil society huge mobilizing potential has been recognized with its rallies and actions, intended to gain influence through media and by disrupting the 'business as usual'.

The Paris Agreement and the SDGs differ in terms of inclusion of non-state actors. The first was negotiated by states and creates obligations exclusively for states, with no explicit role for non-state actors. In contrast, the SDGs rely on a wider group of stakeholders, creating a global partnership of multiple actors for implementation. The multi-actors climate governance complicates — perhaps even render superfluous — traditional categorizations of 'top-down' and 'bottom-up' initiatives which are common in the usual policy practices. The implications of this complex architecture is still to emerge by evaluating how non-state actors will contribute to three parameters - justice, legitimacy, and effectiveness - of the Paris Agreement. (1) Justice: how non-state actors generate *agency*, gain *access*, and alter *allocations*. (2) Legitimacy: how non-state actors promote *participation*, strengthen *representation*, and foster *accountability*. (3) Effectiveness: how non-state actors enhance *transparency*, augment *compliance*, and affect *outcomes*. The hybrid governance unpacks non-state actors' participation as structured, facilitated, and hampered to secure the broad goals of the Paris Agreement.

The presence and prominence of non-state actors within the Paris Agreement reflects a broader shift across the climate governance landscape in which business groups, think tanks, trade unions, cities, private governance arrangements, transnational networks, and sub-state authorities assume active roles in limiting the negative effects of climate change. The hybrid climate governance is already bewilderingly complex and over-populated. What is needed is to put climate change first in the agenda of all international and national actors – not simply in terms of discussion, but also in terms of operationalization, actions and orchestration. It would be good if non-state actors are increasingly active not only within the UN and COPs, but also within the Convention on Biological Diversity and environmental partnerships, such as the Renewable Energy and Energy Efficiency Partnership (REEEP), REN 21, Asia-Pacific Partnership on Clean Development and Climate (APP) etc. Hopefully, non-state actors and private sector can act and make a significant contribution to SDG 13 Climate Action, even if some governments remain reluctant and ignorant.

8. SDG 13 and Vulnerable Communities

The interconnected social consequences of climate change help to apprehend the urgency of addressing, mitigating and adapting to climate change, as a complex issue that requires comprehensive solutions. One of the well-established consequences of climate change is its disproportionate influence on vulnerable communities. Under-privileged and discriminated populations, indigenous and marginalized groups often suffer the most severe pain from environmental changes. Extreme weather events, cyclones, floods, droughts, can lead to devastating outcomes for such communities, already struggling with poverty, discrimination and inadequate infrastructure. It is not surprising that such communities are heavily reliant on food-producing sectors, such as agriculture and fisheries. And these are exactly those, that are the most vulnerable from the effects of climate change. The dramatic rise of temperatures, frequent changing precipitation, sea level rise are proven to be already causing the most serious negative effects on vulnerable people and groups, leading to severe food shortages, reduction of income, increased spread of diseases. When vulnerable farmers face challenges like uncertain rainfall, fast changing temperatures, unpredictable crop growing, dissemination of pests, all these severely affect negatively not only their current livelihood, but also their longer-term resilience.

A recent report by the World Bank[36] addressed the social dimensions of climate change and argued that "certain social groups are particularly vulnerable to crises, for example, female-headed households, children, persons with disabilities, indigenous peoples and ethnic minorities, landless tenants, migrant workers, displaced persons, sexual and gender minorities, older people, and other socially marginalized groups. The root causes of their vulnerability lie in a combination of their geographical locations; their financial, socio-economic, cultural, and gender status; and their access to resources, services, decision-making power, and justice."[37]

36 The World Bank. (2023, April 1). *Social Dimensions of Climate Change*. https://www.worldbank.org/en/topic/social-dimensions-of-climate-change.

37 *Ibid.*

The social fabric of vulnerable communities can be seriously disrupted as they grapple with the consequences of climate-related disasters. Flooding, draught, fires lead to displacement and breach of social networks, to heightened stress and mental health problems. All these produce a cycle of vulnerability, worsening an already unequal distribution of resources. This cycle is difficult, if not impossible, to break, moreover, where vulnerabilities and existing social inequalities deepen, and where new inequalities may emerge, based on gender, exclusion, discrimination, psychological stress, disabilities etc.

The economic consequences of climate change are deeply intertwined with social dynamics, often exacerbating existing disparities and creating new challenges.[38] Sectors such as agriculture, fisheries, and tourism are particularly vulnerable to climate impacts, affecting the livelihoods of millions of people, especially in developing countries. Small-scale farmers, who often lack the resources to adapt to changing climate conditions, face declining crop yields and increased uncertainty. This can inflict a spiral of poverty, as communities dependent on agriculture struggle to maintain their way of life. In coastal areas, where many communities rely on fishing for sustenance and income, rising sea levels and ocean acidification pose existential threats to both nature and people, both ecosystems and livelihoods. Furthermore, the economic consequences of climate change can contribute to social unrest and conflict. Competition for dwindling resources, such as water and arable land, can escalate tensions within and between communities. This is particularly evident in regions already grappling with political instability and economic challenges.[39]

9. Global Governance for Climate Action

One significant gap in the UN Charter, 80 years after its drafting, is the absence of any reference to environment. Climate change, biodiversity loss, pollution, etc. were not regarded as security issues in 1945, but today these are serious challenges, affecting the whole Earth system, and urgent multilateral action is urgently needed. Fortunately, solutions exist, but the political will to implement what has already been agreed is lacking. Governments in industrial countries, which are the most responsible for polluting and emitting CO2, need to demonstrate accountability and liability. The principles "Polluter Pays" and "Common but Differentiated Responsibilities" must apply to build a global understanding and consensus and secure a sustainable, climate-resilient future. A revised UN Charter must recognise the Earth system management as a fourth pillar of the UN, alongside peace and security, socio-economic development, human rights, and extend global governance institutions to meaningfully cover this fourth pillar.

The UN should be enhanced with capacity to pass binding legislation to protect the planetary environmental system and the common goods with the necessary enforcement and dispute settlement mechanisms. For too long in materialistic societies the industrial over-production and profit-making have also driven a culture of over-consumption.[40] This has pushed human impact beyond most of the scientifically established nine planetary boundaries[41] for survival, undermining the natural capital upon which people depend for their very existence, including the already codified human right to a healthy, clean and sustainable environment. Suggestions for establishing new international mechanisms – such as a Global Environment Agency (GEA), a Climate Change Council,[42] a Global Resilience Council[43] etc. - have demonstrated the need for innovative global thinking and actions.

The Nobel Peace Economist William Nordhaus demonstrated such innovative thinking with his 'Climate Club' idea,[44] a measure to eliminate the free-riding problem with the implementation of the Paris Agreement.

38 T. A. Carleton, & S. M. Hsiang (2016). "*Social and Economic Impacts of Climate*", Science., September 9; https://www.science.org/doi/10.1126/science.aad9837.

39 K. J. Mach et al. (2019). "Climate as a Risk Factor for Armed Conflict", *Nature*, 571: 193–197. https://doi.org/10.1038/s41586-019-1300-6.

40 N. Klein (2014). *This Changes Everything: Capitalism v. The Climate.* Simon and Schuster

41 Stockholm Resilience Centre. (n.d.). *Planetary Boundaries*; https://www.stockholmresilience.org/research/planetary-boundaries.html.

42 V. Popovski (2020). "*Towards Multiple Security Councils*", Stimson Centre Issue Brief, June 18, 2020; https://www.stimson.org/2020/js2020-towards-multiple-security-councils/.

43 Global Resilience Council. (n.d.). *A 'Security Council' for Non-Military Threats*. https://www.foggs.org/grc-global-resilience-council/.

44 W. Nordhaus (2015). "Climate Clubs: Overcoming Free-Riding in International Climate Policy", *American Economic Review*, 105(4): 1339-1370.

The members of the Climate Club receive proportionate privileges depending on their climate contributions. They agree to undertake emission reductions aimed to meet the 1.5 C goal and, importantly, to fix international carbon price in the Club agreement. For example, countries might agree that each will implement policies that produce a minimum domestic carbon price of $50 per metric ton of CO2 and that target price might rise over time.[45] Reluctant states staying away from the Club, are penalized, for example by uniform tariffs on imports from Club members. With such tariffs on nonparticipants, Nordhaus argues, the Climate Club would create a situation in which countries acting in self-interest would choose to enter the Club and undertake ambitious emission reductions because of the structure of the payoffs.[46]

The crucial time we live in has been exemplified by Christiana Figueres and Tom Rivett-Carnac in "The Future we Choose: Surviving the Climate Crisis" (2020), taking a hard look at the frightening realities of climate change, but concluding that humanity can still deal with this threat, suggesting 10 concrete actions that each individual can take to create a better future, such as: Be citizen not consumer; Reforest the earth; Invest in clean economy; Use technology responsibly; Build gender equality; Engage in politics[47], etc.

In addition to the recognition of climate change as an existential threat and making it a fourth pillar of global attention and action in the UN Charter, it is encouraging to see how many courts in the world followed the precedent-setting *Urgenda v. Netherlands* case[48] and ruled in favour of citizens urging governments to fulfil their obligations towards climate change mitigation.[49] Vanuatu created a coalition of UN members-states requesting the International Court of Justice to issue an advisory opinion to clarify the states' obligations towards climate action and legal consequences from climate change.[50]

The COP-28 made a significant advance by formulating the need to end the fossil fuel era.[51] It addressed the urgent triple planetary crisis – climate change, pollution, and biodiversity loss and took note of the 2023 State of the Climate Report, written by leading scientists, which listed 20 out of 35 vital signs of the planet have reached record extremes.[52] It provided further extensive evidence that the humanity is now endangering the conditions of our Earth system and argued that at the centre of the triple planetary crisis is the broken relationship between humanity and Nature. The view that Nature is at the service of humanity, as it has been reflected over centuries, has led to the depletion of life on Earth and the disruption of natural cycles through production and consumption patterns that violate the Earth's limits and break the ecological balance. The global answer to this planetary crisis requires an urgent shift from a human-centred worldview to an Earth-centred or non-anthropocentric worldview. To this end, under a program called "Harmony with Nature", the UNGA has promoted an Earth-centred worldview to sustainable development, including Earth jurisprudence and ecological economics.[53]

Nature is finally gaining more prominence in the UN vocabulary, from the promise in the SDGs to ensure that "economic, social and technological progress occurs in harmony with nature"[54] to the plea in the 2022 Kunming-Montreal Global Biodiversity Framework, which aims to ensure that "by 2050, the shared vision of living in harmony with nature will be fulfilled."[55]

45 Climate Club. (n.d.). *The Climate Club*. https://climate-club.org.

46 W. Nordhaus (2020) "A Climate Club: How to Fix a Failing Global Effort", *Foreign Affairs*, May-June; The Climate Club: How to Fix a Failing Global Effort (foreignaffairs.com).

47 Christiana Figueres and Tom Rivett-Carnac. (2020). The Future We Choose: Surviving the Climate Crisis. Knopf.

48 rgenda Foundation v. State of the Netherlands, 2015 HAZA C/09/00456689. Retrieved from https://climatecasechart.com/non-us-case/urgenda-foundation-v-kingdom-of-the-netherlands/.

49 Sabin Centre for Climate Change Law. (n.d.). *Global Climate Change Litigation*. https://climatecasechart.com/non-us-climate-change-litigation/.

50 Vanuatu ICJ. (n.d.). *Vanuatu ICJ Initiative*. https://www.vanuatuicj.com.

51 UNFCCC. (2023). *COP28 Agreement Signals* "*Beginning of the End*" *of the Fossil Fuel Era*; https://unfccc.int/news/cop28-agreement-signals-beginning-of-the-end-of-the-fossil-fuel-era.

52 W. J. Ripple, et al. (2023). "The 2023 State of the Climate Report: Entering Uncharted Territory", *BioScience*, 73(12): 841–850. https://doi.org/10.1093/biosci/biad080.

53 Harmony with Nature. (n.d.). *Harmony with Nature: United Nations* http://www.harmonywithnatureun.org/.

54 United Nations. (2015). *Resolution Adopted by the General Assembly on 25 September.* https://documents.un.org/doc/undoc/gen/n15/291/89/pdf/n1529189.pdf?token=vIBeaXDwqoAZdjoOpG& fe=true.

55 UNEP. (2021). *Report of the Conference of the Parties to the Convention on Biological Diversity on its Fifteenth Meeting.* https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf.

Given the urgency of action to address the rapidly growing impact of climate change, a possible first step towards the acceptance of binding global legislation could be to give the UN Environment Assembly (UNEA)[56] with its universal membership the authority to legislate to protect the planetary boundaries as defined by science. It can equitably allocate responsibility to countries and other entities for CO2 emission reductions. The same can be done for other planetary boundaries, such as biosphere integrity, land system change, excess use of nitrate, phosphorus, plastic and others. Arthur Dahl recently pointed to a serious dilemma: "To save us from a climate cataclysm, all new development of fossil fuel resources should stop immediately, and their use should be eliminated completely by 2050. Yet they are still highly subsidised, and producing countries and companies are expanding production and making enormous profits. Like a drug addiction, we cannot stop even though renewable energy sources are now cheaper than fossil fuels. No one wants to abandon proven energy sources and systems that are so profitable, and we still need technological breakthroughs for some uses and major transformations in present infrastructure and products."[57] He appealed for scientific advisory mechanism for the Earth system to be created.

The Club of Rome 2022 Report "Earth for All: A survival guide for humanity" defined five turnarounds in transformational economics necessary to avoid economic and social collapse: eliminate poverty, reduce inequality, empower women, transform food systems, and turn around the energy system.[58] It showed that most countries have become more unequal, producing deeply dysfunctional, polarised societies, and developed a wellbeing index as an alternative to GDP, with new indicators that support a shift away from unsustainable consumption as a key driver of growth in high-income countries.[59]

Similarly, the 2023 Report of the Earth Commission "*A Just World on a Safe Planet: First Study Quantifying Earth System Boundaries*"[60] demonstrated clearly that the Club of Rome 1972 *Limits to Growth* projection was broadly right, and that most of the nine planetary boundaries have been already crossed.[61] It made a solid scientific assessment of the state of the planetary health not only in terms of Earth System stability and resilience, but also in terms of human wellbeing, equity and justice. The way people farm, transport and consume food affects more planetary boundaries than anything else. The food systems need a comprehensive redesign, as to become regenerative and sustainable. The energy systems are at the beginning of the most disruptive transformation over the last century. Within a generation most countries can achieve energy security for the first time. Solutions to halve emissions in a decade are available, affordable and ready to scale rapidly. Urgent action is needed to implement these solutions. Not least, gender equality is an essential factor for a stable planet. Massive investment in education for girls and economic security for women are critically important for full gender equity in terms of agency, rights, resources, participation in both law and employment.[62]

10. Conclusion

The urgency of the climate crisis, among others, leaves no time for the present laborious pace of intergovernmental negotiation requiring consensus, pushing to the lowest common denominator, or agreements undertaken voluntarily as with international conventions, allowing free-riders who benefit without making any effort. UNEP and the UNEA have many relevant competencies, but they are under-resourced and can only catalyse and coordinate, not legislate and enforce. In a similar way the European Union advanced: it started with Coal and Steel Community, later adding European Atomic Energy Community, later - the European

56 UN Environment Assembly. (n.d.). *The United Nations Environment Assembly*. https://www.unep.org/environmentassembly/.

57 A. Dahl (2023). Climate Change & World Economy: When an Irresistible Force Meets an Immovable Object, July 21.

58 S. Dixson-Declève et al. (2022). *Earth for All: A Survival Guide for Humanity*. Club of Rome. https://earth4all.life/the-book/.

59 *Ibid.*

60 Earth Commission. (2023). A Just World on a Safe Planet: First Study Quantifying Earth System Boundaries. Retrieved from https://example.com/report-url.

61 J. Rockström, et al. (2023). "Safe and Just Earth System Boundaries", *Nature*, 619: 102-111. https://www.nature.com/articles/s41586-023-06083-8.

62 Global Governance Forum. (n.d.). *Gender Equality is Crucial to Solving the Most Pressing Contemporary Challenges*. https://globalgovernanceforum.org/global-issues/gender-equality/.

Economic Community.[63] All these were then unified and integrated into a single European Community, which transformed then into a fully integrated politically and fiscally European Union. UNEP, UNFCCC, UNEA, GEA (if established) can also be integrated into a global climate governance institution.

A good start would be to amend the UN Charter and add a new environmental purpose to the traditional three purposes of the only comprehensive (both in membership and in functions) global organization. Under the Global Governance Forum, a group of activists and scholars (with this author being one of them) is already working on revising the UN Charter, suggesting specific amendments.[64] Article One of the UN Charter could start with focus on climate change and climate action, a crucial existential threat to human life in the 21st century. In September 2024, the UN Member States will gather in New York for the "Summit of the Future."[65] It would be an excellent moment to revise the 1945 UN Charter though it appears inconceivable in a highly polarized world.

63 European Union, "Jean Monnet: the Unifying Force Behind the Birth of the European Union"; eu-pioneers-jean-monnet_en.pdf (europa.eu).

64 Global Governance Forum. (n.d.). *A Call for the UN Charter Reform*. https://globalgovernanceforum.org/a-call-for-un-charter-reform/.

65 UN (2022), Modalities for the Summit of the Future, General Assembly resolution 76/307 of September 8, 2022; available at: Resolutions of the 76th Session - UN General Assembly (accessed on October 08, 2023). Also see Desai, Bharat H. (2023), n. 32 at 23.