ARTICLE

Reconsidering the Effectiveness of International Environmental Regimes in the Anthropocene

YASEMİN KAYA

Bursa Uludağ University, Türkiye
ORCID No: 0000-0002-4601-1341

ABSTRACT *Despite the increased number of International Environmental Regimes (IERs), gradually worsening environmental indicators have made the effectiveness of regimes a current and controversial issue. Doubtlessly, regimes are one of the most significant tools of global environmental governance. Enabling interstate cooperation, increasing knowledge about ecological problems, keeping these problems on the agenda, and providing relative improvement in some issue areas are the positive outcomes of regimes. However, IERs are institutions that are currently based on the stable and predictable earth system conditions of the Holocene Epoch. Therefore, IERs are unlikely to operate effectively under the unpredictable and unstable conditions of the new, Anthropocene era. Based on this argument, this article attempts to reveal that the effectiveness of regimes depends on their capacity to cope with the challenges of the Anthropocene. Regimes can confront these challenges by adopting a holistic earth system perspective based on the integrity of socio-ecological systems and planetary boundaries.*

Keywords: International Environmental Regimes, Anthropocene, Earth System, Effectiveness, Planetary Boundaries

Insight Turkey 2022
Vol. 24 / No. 2 / pp. 113-133

Received Date: 22/4/2022 • **Accepted Date:** 13/6/2022 • **DOI:** 10.25253/99.2022242.7

Introduction

At the dawn of the 50th anniversary of the 1972 Stockholm Conference on March 18, 2022, a turning point in the development of international environmental policies, unprecedented temperatures were recorded simultaneously in the polar zones of Earth. In the face of the abnormal 40°C and 30°C above-average temperatures in Antarctica and the Arctic respectively, calling attention to unpredictable extremes, climatologists highlighted that the temperature expectations in the polar zones should be revised –yet again.[1] Almost every day, extreme weather events, such as heavy rainfall, floods, tsunamis, hurricanes, tornados, landslides, heat waves, and forest fires, occur in different parts of the world. These catastrophic events reveal that the permanent and far-reaching impact of human activity on the planet is causing serious and unpredictable changes in the biophysical processes of the earth system. The magnitude of these human-driven changes has led many scientists to believe that we are about to enter into (or have entered) a new geological epoch called the Anthropocene: an era in which human activity is the dominant factor influencing the climate and the environment,[2] and the stable and predictable conditions of the Holocene are left behind.

The international community has been working to overcome the difficulties of implementing global environmental governance and generating solutions to environmental problems for over 50 years, particularly through International Environmental Regimes (IERs) and the multilateral environmental agreements (MEAs) that set the basis of these regimes. The International Environmental Agreements Database includes over 1,300 MEAs and over 2,200 bilateral environmental agreements.[3] In spite of these efforts and the huge number of IERs, ongoing, rapid increases in environmental change are a paradoxical phenomenon. Thus, the effectiveness of IERs has always been a matter of controversy.

The present study suggests that the scope of mainstream discussions over the effectiveness of IERs should be expanded to consider the earth system perspective, since the contextual conditions in which IERs function are changing fundamentally in the Anthropocene. The earth system perspective refers to a holistic approach that can deal better with the complexities and inherent uncertainties of the Earth System. A generally accepted final determinant of regime effectiveness is a match between the institutional structure of the regime and the problem it tackles.[4] However, it is difficult to claim that IERs are institutions that can confront the challenges brought about by today's unprecedented earth system conditions since IERs are grounded on the stable and predictable earth system conditions of the Holocene and an international system consisting of sovereign states that are territorially separated from each other.[5]

The earth system perspective refers to a holistic approach that can deal better with the complexities and inherent uncertainties of the Earth System

IERs are organized around the purpose of reducing the pressure on ecosystems and leaving a healthy and balanced environment for future generations. Such a concern not only puts off the problem temporarily but is far from comprehending the interconnectivity between the elements of the ecosystem, the complex socio-ecological processes at work within that system, and the new systemic conditions that are emerging as a result of excessive human intervention. In addition, relations among states are gradually being more affected by changes in the earth system than by political changes. Many problems on the horizon due to the transformation of the earth system, such as the disappearance of small island states from the world stage, massive migrations, the marginalization of vulnerable communities, economic collapse, increased poverty and inequality, are problems that will be caused more and more by changes in the earth system rather than primarily by political change.[6]

Aiming to draw attention to the importance and necessity of the earth system perspective in the effectiveness of IERs, the present study consists of three sections. The first focuses on mainstream discussions over the effectiveness of environmental regimes. The second defines the new trends in organizing the institutional structure of environmental regimes. The final section explains IER features that may prevent them from coping with the challenges of the Anthropocene and presents viable recommendations for the inclusion of the earth system perspective into environmental regimes.

Traditional Discussions over the Effectiveness of IERs

The number of IERs has rapidly increased since the 1972 Stockholm Conference, which strongly highlighted the importance of multilateralism in the environmental field. Studies evaluating the effectiveness of environmental regimes have been noticeable, particularly since the 1990s, and have been conducted mainly within the discipline of International Relations (IR). As a result, the question of effectiveness has been approached from a state-centered understanding in line with the general framework of the IR discipline, which focuses its analysis on the question of how states act/would act under different conditions. As an extension of this understanding, regimes are seen as a set of rules that define how actors behave when faced with certain problems or situations. Krasner's definition of a regime is significant since it reflects this perspective clearly: "Regimes can be defined as sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations."[7]

A man carries sign reading "Anthropocene the last scene" as more than 3,500 people demonstrate against climate change in Toulouse, on November 6, 2021. Demonstrations across the world were organized to put maximum pressure on politicians, industries, and companies as the COP26 was taking place in Glasgow, Scotland.

ALAIN PITTON / NURPHOTO via Getty Images

The key fact that stands out in different definitions is that regimes are tools that regulate and coordinate the behavior of state and non-state actors in an established manner.[8] In definitions and studies concerning international regimes, the function of regimes to resolve problems generally remains in the background. This naturally raises the question: What indicator should be measured when evaluating the effectiveness of a regime? A significant dichotomy is obvious in discussions over the evaluation of the effectiveness of environmental regimes in the literature:[9] Should evaluations be based on whether the regime solves the problem it deals with –or whether it makes the desired change in the behavior of the actors concerned (namely states)? There is a tacit consensus in the literature that the final indicator of effectiveness should be the solution to the problem at stake.[10] However, both because it is considered difficult to conduct an effectiveness analysis of this indicator, and because such an analysis is seen as being outside the main focus of the discipline (analysis of the state's behavior), it is nonetheless a common trend to consider behavioral indicators in the evaluation of effectiveness.

The question as to whether environmental indicators or behavioral indicators should be considered in the evaluation of the effectiveness of environmental regimes gives rise to two separate concepts of effectiveness: environmental effectiveness and institutional effectiveness. Environmental effectiveness addresses the contribution of the regime to the solution of the environmental problem it deals with. However, conducting effectiveness analyses of problem-solving is a challenging task for several reasons.[11]First, if the assessment

is based on problem-solving, many environmental regimes would be qualified as unsuccessful. This would make both the existence of the regimes and the gains they have achieved in the process of their problem-solving efforts meaningless. At this point, the focus can be placed on *relative* development or improvement. The contribution made by the regime to the solution of the problem can be determined by using different methodologies to compare the existing conditions with hypothetical conditions in which the regime is not present or to compare the conditions before the regime intervened with the existing conditions, or to measure the gap between the existing conditions and the collective optimum.[12] In this case, however, the lack of environmental data, as a critical obstacle, would restrict a sound evaluation. The second reason is the difficulty of determining the extent to which a change occurring in the environment can be attributed to the regime. Corollary to that, some changes in environmental conditions can be clearly measured, but are in no way related to the actions of the regime. For example, it would be misleading to view the effect of the economic recession during the COVID-19 period on reduced carbon emissions as a success of the climate regime.

Environmental regimes are developed in response to certain environmental problems and their final aim is to generate solutions to these problems by regulating actors' behaviors in the issue area

Given these difficulties, the focus is generally on the institutional context of effectiveness. Institutional effectiveness suggests that a regime creates a change in an actor's behavior that would not occur without the regime in the context of a well-functioning institutional structure and cooperation.[13] In this regard, the main framework of an effectiveness analysis is formed by such questions as whether the regime provides the development of a cooperative behavioral model between the parties or whether the regime affects a change in the ongoing behaviors of the actors. Here, the focus is placed on the institutional functioning of the regime rather than the solution to the problem in evaluating the effectiveness of the regime.

Regimes institutionally assume many important functions in the international system. These include providing a basis for cooperation, reconciling interests, increasing knowledge concerning the problem, and sharing experiences among parties. However, such outcomes of a regime are not generally sufficient in solving the problem that is the reason for the existence of the regime. IERs cannot be reduced to institutions that are established to steer states' behavior in order to overcome the anarchy intrinsic in the structure of the international system in such an issue area where mutual dependency and joint interests are in question. Environmental regimes are developed in response to

Regimes that can achieve optimal balance among different options related to their institutional structure tend to be more effective

certain environmental problems and their final aim is to generate solutions to these problems by regulating actors' behaviors in the issue area. The problem-solving capacity of regimes is closely related to their institutional designs as well. Therefore, an effectiveness evaluation that is not based on problem-solving would not contribute to revealing the conditions under which regimes can be more successful. Yet, the new and unique conditions imposed by the ecological crisis necessitate an expectation of performance beyond behavioral adaptation to the rules of the regime. Trying to explain actors' behavior alone would remain insufficient in evaluating the effectiveness of environmental regimes without analyzing how effectively an international problem is tackled or how it could be tackled in a more effective way.[14] Hence, environmental and institutional indicators should be dealt with together when evaluating the effectiveness of environmental regimes.

Another issue that comes up in evaluations concerning regime effectiveness is that of comparing regimes in terms of effectiveness. Comparing different regimes in terms of effectiveness is considered beneficial to explore the qualities or conditions that make regimes successful.[15] Comparative analyses are important in discovering whether certain qualities pertaining to the institutional structure are specific to certain contexts or not. This is because some institutional qualities function well under certain conditions, yet yield negative results under other conditions. Thus, many researchers think that it is impossible to understand the difference between the effectiveness of two regimes without analyzing the difference in the nature of the problem.[16] Therefore, the most critical determinant of the effectiveness of a regime is considered to be the structure of the problem with which the regime deals.

The structure of the problem at stake determines both the institutional structure of the regime and the context in which the regime is functioning. Solving the problem becomes more difficult and the effectiveness of the regime decreases when, for example, there is a high level of scientific uncertainty about the problem, the problem results from economic activities and affects the states' economic interests, or there is a lack of consensus among parties on the policies regarding a solution.[17] However, the fact that the problem is challenging to solve does not necessarily mean that the regimes in the given field are doomed to ineffectiveness. Many researchers concentrate on institutional structure as opposed to problem structure in determining regime effectiveness. Claiming that strong institutional structures that approach the problem in all its aspects can succeed in solving difficult problems, they address the importance of institutional structure in the effectiveness of regimes.[18]

A significant dimension of studies on evaluating regime effectiveness is made up of identifying the factors that determine the effectiveness of the regime. While this effort is extremely important in terms of creating more effective regimes, it does not seem possible to define standard elements regarding the factors that determine the effectiveness of a regime. Each regime has its own specific context, and the factors determining its effectiveness differ from one regime to another. Studies conducted in the field tend to focus on three areas regarding the factors determining the effectiveness of a regime: Some researchers point out the importance of non-regime factors in the effectiveness of a regime, others focus on the regime building and negotiation processes while others look into the institutional structure of the regime itself.[19] Extrinsic factors mainly refer to the context in which the regime is functioning. In this regard, such factors as a reliable international environment, sensitivity to environmental issues, a strong political will, sufficient willingness, and the capacity of state parties are considered to increase the effectiveness of regimes.

Still another factor that can measure the effectiveness of IERs involves the dynamics pertaining to the building process of regimes. Regarding the problem underlying the regime, disagreement in the interests and priorities of the parties, differences in the cost of the regime for the parties, and conflicts between the parties over the importance and cause of the problem affect the regime's rules, and thereby its effectiveness.[20] In addition, the inability to create the opportunity for equal representation in negotiations and failure to see solutions for the problem as legitimate and fair reduce regime effectiveness by influencing the parties' relations with the regime from the very beginning.[21]

Another factor affecting regime effectiveness is the structure of the regime itself. In fact, since the structure of a regime is a consequence of the building process of the regime, these two factors should not be evaluated independently of each other. In analyses focusing on the regime structure, several institutional qualities that can make regimes effective are highlighted, such as the nature of the rules of the regime, its decision-making procedures, processes for monitoring, auditing, enforcement, financing, and compliance mechanisms, the power of the secretariat, and the regime's relationship with non-state actors. Strong rules that deal with the problem in all aspects are generally accepted as a factor in increasing the effectiveness of a regime. However, the fact that regime rules require significant, comprehensive, and costly behavior changes may challenge the compliance level of the parties with the regime. In other words, strong rules may not always bring about the desired effect. It is highly important that the rules of the regime are fair or at least perceived as fair by the parties in terms of burden-sharing.

Another factor that could be considered within the context of the institutional structure of a regime is its decision-making procedure. A decision-making

procedure that relies on unanimous voting increases the regime's legitimacy and positively affects the applicability of its decisions. However, since unanimity requires that all parties agree upon the decision, it may hinder the regime from making stronger decisions. Similar dilemmas surround issues such as the role of the secretariat and the quality and rigor of monitoring and compliance mechanisms. Such problems concerning the institutional structure of a regime should be resolved considering the nature of the problem tackled by the regime and the context in which the regime is functioning. Regimes that can achieve optimal balance among different options related to their institutional structure tend to be more effective.[22]

One important factor in evaluating the effectiveness of environmental regimes is the attitude of the parties toward the regime since the effectiveness of a regime is not only dependent on its structure, but also on the compliance of the parties with the regime. The willingness and capacity of the parties are as important as the structure or the quality of the regime for the parties to implement a regime effectively. Therefore, it is highly important in terms of effectiveness analysis to assess the compliance of state parties with a given regime and determine the reasons why they succeed in or fail to fulfill their obligations.[23]

New Trends in International Environmental Regimes

One of the most important properties of IERs is dynamism. Environmental regimes may make changes in their institutional structures and function depending on developments emerging over time. For instance, they may arrange new agreements or protocols, include new organs within their bodies, and add new mechanisms to their institutional structures. The history of environmental regimes, which can no longer be considered short, enables them to proceed by learning from their previous experiences. Over the past 50 years, new ideas have come out as to which methods and tools to use to overcome the bottlenecks and deadlocks encountered by regimes and how to make more progress.

It is possible to group the changes observed in the institutional structure of environmental regimes, as the most critical tools of global environmental governance, under a few topics. One of the main tendencies involved in the process of change concerns the nature of the rules of the regime. Documents of soft law that are non-binding, and goal setting but not rulemaking have attracted growing interest. Parallel with this, the second tendency is to strengthen the regime's procedures of transparency and accountability. Another tendency is to create a profile revealing that environmental justice concerns are taken into consideration in the regime outcomes in line with the empowered environ-

mental justice movement. Finally, increasing interventions to strengthen the connections of the regime with stakeholders has proven effective in recent years.

Environmental regimes may make changes in their institutional structures and function depending on developments emerging over time

The year 2015 is significant in terms of marking tangible examples of regimes that engage in goal setting but not rulemaking. The Paris Agreement, the UN Sustainable Development Goals (SDGs), and the Sendai Framework for Disaster Risk Reduction are the most visible examples of this approach. Unlike the others, the Paris Agreement is a legally binding arrangement that requires ratification and envisages a supervision process. Yet similar to the SDGs and the Sendai Framework for Disaster Risk Reduction, the Paris Agreement provides guiding principles for voluntary action or contribution.[24]

Studies conducted on environmental regimes in earlier periods frequently note the following shortcomings: the regime rules did not involve strict or specific obligations, and the provisions of the agreement were ambiguous and constituted an overall call for the parties. Such characteristics further caused environmental agreements to be qualified as 'lowest common denominator agreements. The lowest common denominator refers to the bottom line of the measure to which the parties could consent for participating in the regime. The state(s) whose participation is essential for the solution of the problem, but whose interest and thereby willingness to participate is the lowest determine the lowest common denominator.[25] Such regimes enhance participation while producing little or no effect. The fact that a regime is supposed to clarify the expected/desired behavior to differentiate compliance from non-compliance was also among the issues reported by early studies.[26]

Based on these criticisms, it has been stressed that there is a need for stronger, more specific, and binding arrangements for the success of environmental regimes. Increased demands in this direction have inspired a number of interventions aiming to strengthen environmental regimes. The Kyoto Protocol, the Montreal Protocol, the Basel Ban Amendment, and the Basel Protocol on Liability are interventions that constitute examples of the effort to strengthen regimes and clarify liabilities. However, except for the Montreal Protocol, it is not possible to suggest that these strengthening interventions have managed to achieve the expected effect. Problems encountered, particularly in participation in and compliance with the regime, have resulted in stepping back on this path.

The bottleneck experienced in this regard gave rise to a new approach in the field of environmental regimes: A more flexible structure functioning over

It should be underlined that there is a strong social movement for environmental justice, which places serious pressure on environmental regimes

non-binding commitments and voluntary contributions has been rising as a current trend in environmental regimes. It is assumed that a solution process based on flexible, voluntary contributions instead of top-down, compulsive arrangements would produce more effective results. It is also possible to consider these soft law regimes as subsets of IERs.[27]

This new approach is thought to have certain superiorities in ensuring parties' participation in and compliance with the regime. Stricter arrangements where liabilities are determined by the regime in a top-down manner are considered less desirable since they restrict the actors' behaviors and even their sovereignty. However, participation, especially that of key actors, is a critical factor for regime effectiveness. In order to achieve this, it is thought that instead of regimes that almost justify actors' existing behavior or do not require any radical behavior change, significant changes can be made with goal-setting, soft-law regimes over time. In this respect, it can be said that goal-setting, soft-law regimes have such advantages as focusing on the subject, improving the learning process, accelerating efforts, and achieving a higher level of participation and compliance.

It will become clear in time whether regimes that are non-binding in terms of commitment or based on voluntary contributions will produce more effective results or not. It is too early to make a final judgment about these regimes at this time. With that said, the data obtained from existing implementations show that soft-law regimes have so far failed to produce results that are as successful as expected or assumed.[28] For instance, although the Paris Agreement set the main goal to limit temperature increases to 1.5-2°C compared to the pre-industry period, the voluntary contributions of countries are, unfortunately, at a level that could cause temperature increases of 3-3.5°C by the end of the century. Similarly, Wanners's case study on the effectiveness of soft laws reports that while these regimes are successful in achieving widespread participation, the issue of parties' compliance with the regime remains ambiguous.[29]

One trend that has attracted increasing attention in environmental regimes is the development of effective and strong supervision mechanisms that do not involve enforcement in ensuring and monitoring the parties' compliance with the regime. The strengthened transparency framework, functioning on the basis of the accountability principle to eliminate the deficiencies of the existing reporting liability, is an important step taken in this direction. It is among the main agenda topics to develop verification procedures to increase

Climate activists block access to the Salle Pleyel concert hall in Paris, where a shareholder meeting of French energy giant TOTAL Energies was held on May 25, 2022.

BERTRAND GUAY / AFP via Getty Images

the reliability of self-reports in order to provide confidence among the parties and facilitate compliance through capacity building and incentives instead of forcing parties into compliance or punishing non-compliance.

Normative values like justice and equality have gradually increased in importance in environmental regimes since these values directly affect such parameters as states' being a party to the regime, parties' compliance with the regime, and overall regime effectiveness. However, it is controversial whether IERs include these values or not. Environmental regimes appear to adopt the principle of "common but differentiated responsibility;" this principle ensures that environmental standards envisaging different responsibilities suitable for the capacities of the states are adopted and implemented, and form a basis for financial and technical support mechanisms that can help underdeveloped and developing countries fulfill their commitments.[30]

Adoption of this principle is an unquestionably important step. However, the principle does not cover all of the injustice and inequality integral to the problem tackled by environmental regimes. Environmental justice, as a comprehensive and flexible concept, recapitulates ongoing systemic injustice and inequality in many fields and expresses the demands for justice in relation to the elimination of these problems. For example, corrective and compensatory justice demands attention to the vulnerable groups that are affected in a disproportionate and unfair way by the problem tackled by the regime; intergenerational justice makes demands that bring up the rights of future generations;

With a state-centric perspective, it is not possible to define the problem correctly or to develop ambitious norms that actually correspond to the nature of the problem

procedural justice demands that emphasize the opportunity of equal representation in negotiations and ecological justice demands that the rights of all non-human elements be brought together under the roof of environmental justice.

It is not possible to say that the justice demands associated with different aspects of environmental justice can be met in environmental regimes.[31] Nonetheless, it should be underlined that there is a strong social movement for environmental justice, which places serious pressure on environmental regimes. The acceleration of the environmental justice movement, particularly in the Conferences of the Parties of environmental regimes, and the intense interest of the media and society in the movement have made it difficult for regimes to stay indifferent to the issue. In this regard, it could be suggested that environmental justice, albeit not in operational terms, has come into consideration at a discourse level in environmental regimes.

Another tendency in the development of environmental regimes is to strengthen the regime's ties with stakeholders. Problems dealt with by environmental regimes are considerably complex. Many actors take part both in causing and in the solution of the problem. Although regimes are social institutions that include states and non-state actors, states are still the dominant actors in the ratification and operation of regimes. This is an important question for both designing effective regimes and ensuring their implementation. In addition to governments, mechanisms that would ensure more effective participation of non-governmental organizations (NGOs), inter-governmental organizations, private sector institutions, local governments, epistemic communities, and even individuals are extremely important in regime development and implementation.

Some regimes have made significant steps to this end. For instance, the climate regime has made calls for strengthening the roles of stakeholders, particularly of cities and local governments, and has conducted joint operations with scientific advisory bodies like the Subsidiary Body for Scientific and Technological Advice (SBSTA), which it includes within its structure, in addition to the Intergovernmental Panel on Climate Change (IPCC), a strong epistemic community. Moreover, the cooperation established by the Basel Convention with Interpol and the World Customs Organization in tracking illegal waste transfer, and with waste-producing multinational companies in waste revaluation are other examples revealing the inclusion of external stakeholders in the process. Similarly, strong and formal connections established by natural

protection regimes with NGOs as independent compliance monitoring bodies can be assessed as examples of strengthening the roles of external stakeholders in the regime. Other stakeholders to mention are doubtlessly other environmental regimes that operate in a similar issue area. Mutual interaction and synergy among climate and ozone regimes, for example, and regimes in the field of natural protection and the regulation of hazardous substances, wastes, and chemicals is a significant field of cooperation that can increase the effectiveness of regimes.

The Challenge of the Anthropocene: Changing the Operational Context for IERs

Considering the deep, sweeping, and permanent impact humans have been making on the planet for a long time, scientists have proposed the designation of a new geological period –the Anthropocene Epoch– which sees humanity as a power affecting the biophysical processes of the planet. The Anthropocene designation would signal the end of the Holocene Epoch, which has lasted 11,700 years and has provided favorable and stable conditions to enable humans to develop and civilization to reach its current state in earth's history.[32] The Anthropocene concept stresses that human activity has caused permanent changes in the earth system and highlights that humans have played and continue to play a determining role in the dynamics of the earth system.

Whether the present era receives a new name or not, there is little doubt that new planetary conditions emerging from human activity have changed the context in which regimes must operate. It is no longer possible to talk about an external, given, and stable planet. There is a need for designing planetary governance tools that address the complex, nonlinear, interconnected, and unpredictable earth system context and its uncertain parameters, which humans have shaped with their own activities.[33] Adapting to the planetary context of the Anthropocene is a critical issue for the effectiveness of IERs. Many researchers working in the field of regime effectiveness, primarily Underdal, suggest that the key determinant of effectiveness is an institutional structure that corresponds to the nature of the problem.[34] Unfortunately, IERs are not designed to respond to the challenges brought about by the Anthropocene Epoch. It would be beneficial to underline certain implicit qualities of environmental regimes to show why IERs are unable to cope with the challenges of the Anthropocene and point toward potential directions for improvement.

In the first place, the fact that the establishment and operational processes of IERs are at present state-centric in their approach inhibits the adoption of an earth system perspective, which is needed for coping with the challenges of the Anthropocene.[35] A state-centric structure imposes parameters for action that

have to do with territorial and geopolitical concerns. However, the earth system perspective requires moving beyond the boundaries of territorial sovereignty and thinking in an unprecedented, transnational way. As stated earlier, when the rules of the regime turn into the outcomes of a negotiation process where states' interests are reconciled, the result obtained fails to go beyond the least common denominator. With a state-centric perspective, it is not possible to define the problem correctly or to develop ambitious norms that actually correspond to the nature of the problem. Therefore, an inclusive democratic setting, where decisions, in their broadest sense, are taken by those who are affected by them, is essential for regime effectiveness. Transparent and inclusive decision-making processes that set a basis for regimes to be seen as legitimate would enhance the adaptive capacity of the regime. Envisioning democratic practices that encompass the whole planet would offer a new initiative in this direction.

Another intrinsic property of environmental regimes is that these regimes depend on the human/nature dichotomy. An anthropocentric motive is dominant in environmental regimes, which prioritizes human health, well-being, and interests. This leads to neglect of the integrity of socio-ecological processes and the interconnectivity and complex relations between human and non-human elements.[36] Since it is not possible to define the problem correctly in the context of the false dichotomy between humans and the natural elements surrounding them, the solution to the problem is impossible to find.

Another feature of IERs that prevents them from responding appropriately to the challenges of the Anthropocene is that they refer to the stable conditions of the Holocene.[37] Under the stable conditions of the Holocene, adaptation to ecological dynamism was accepted as an issue far removed from being a question of the regimes.[38] Yet, going beyond the planetary boundaries that define the safe operating space for humanity means a future where uncertain, indecisive, complex, and unpredictable conditions dominate the earth system.[39] Regimes that are designed according to the stable, predictable Earth perception are unfortunately unlikely to be successful under the unpredictable conditions of the Anthropocene.

Another property of IERs that does not match up with the actual conditions of the Anthropocene is that they scale and separate environmental problems. In environmental regimes, problems are defined either within spatial borders or in the context of specific issue areas. This reductive approach is the exact opposite of the holistic approach required by the earth system perspective. The lack of a holistic approach in IERs has resulted in "problem shifting rather than problem-solving," because a policy implemented as a solution within a given regime may lead to ecological problems of a different type.[40] The global interconnectivity of problems exceeds the scope of specific environmental

policymaking prevalent in environmental regimes. In short, environmental regimes lack an inclusive perspective based on ecological integrity.

It is difficult to claim that social inequalities among people, nations, and communities are taken into consideration by environmental regimes

One of the topics marginalized by IERs is structural or systemic inequality and injustice, which are in fact closely related to environmental problems. It is difficult to claim that social inequalities among people, nations, and communities are taken into consideration by environmental regimes. Yet planetary thinking practices cannot be considered separately from social justice. The nature of global environmental change, which walks hand in hand with increasing injustice and inequality, indicates that these problems are in fact intertwined and inseparable. Thus, the effectiveness of IERs in the Anthropocene will depend on their efforts for not only a safe but also a fair world. In addition, paying attention to concerns about justice in environmental regimes would be a response to criticism of the Anthropocene concept. The Anthropocene concept has often been criticized for holding 'humanity' as a general category responsible for the damage without considering the ongoing injustice and inequalities throughout history, and for covering up inequalities.[41] Therefore, it is important that inequality concerns be taken into consideration in order for regimes to be seen as legitimate global governance tools. Although the term planetary justice mainly refers to social justice, the intertwined nature of the socio-ecological systems in the Anthropocene requires thinking about our obligations owed to nonhuman entities within the framework of justice. Humans' responsibility to non-human elements and the rights of nature form the basis of the planetary justice concept.[42]

Although the Anthropocene has not yet been officially declared as a geological epoch, the discursive power of the concept has an actuating potential. The Anthropocene argument confronts humans with the consequences of their activities and makes them face a number of questions and problems concerning the continuity of life and, more importantly, with the increasingly urgent responsibility of generating solutions.[43] From this point of view, the Anthropocene can be said to have a potentially strong transformative effect on political aims and preferences as well as ethical values and beliefs. Biermann defines the transformative potential of the Anthropocene as a 'constitutional moment' for generating more radical and effective models in global environmental governance.[44]

In order to develop effective environmental regimes that can cope with the challenges of the Anthropocene, then, the earth system perspective should be made an intrinsic property of the institutional structure and functioning of regimes. There are varying ideas about how this should be achieved. Fernandéz

A session to discuss local actions to combat climate change at the COP26, a gathering of all the countries signed on to the UNFCCC and the Paris Climate Agreement. The conference aims to commit countries to net-zero carbon emissions by 2050.

JEFF J MITCHELL / Getty Images

and Malwé suggest that a framework convention based on the planetary boundaries can be a guide for IERs.[45] Kim and Bosselmann address the importance of specifying an integrative ultimate goal for international environmental law: "The protection of Earth's ecological integrity has emerged as a common denominator among international environmental law instruments."[46] Maintaining ecological integrity requires complying with the planetary boundaries to keep the planet in a Holocene-like state. Thus, ecological integrity can be used as a key criterion of legitimacy for states' behaviors.

There are many MEAs devoted different environmental problems and it is so important to coordinate between them. It is actually not a new idea to coordinate MEAs, which are the constituent elements of IERs, each of which is directed to a different goal. The need for integration and coordination has long been pointed out by criticizing global environmental governance composed of the fragmented structure of MEAs. What is new at this point is achieving this integration on the basis of the planetary boundaries. Similarly, the concept of ecological integrity is included in important international arrangements such as the World Charter for Nature (1982), the Rio Declaration on Environment and Development, and Agenda 21 (1992). The establishment of the necessary conditions for the ecological integrity to be an ultimate goal has been made possible through increased data and scientific research on the functions of the earth system, planetary boundaries, and the challenges of the Anthropocene.

A remarkable general recommendation for including an earth system perspective based on the planetary boundaries into IERs is through soft law arrangements. As is well known, the legal basis and constituent element of IERs are MEAs. However, it would be misleading to reduce IERs to MEAs that require ratification to take effect. The whole institutional structuring of MEAs constitutes the main context in which a regime emerges and develops; this context includes legally binding norms as well as more flexible, softer arrangements and customs. The flexibility and adaptation capacity provided by soft arrangements offer a more convenient ground in this respect. Some issues that cannot be expressed explicitly due to certain legal criteria can be expressed implicitly in soft arrangements. For instance, normative suggestions that could be rather radical for such hard law arrangements as rights of nature, ecological democracy, earth system governance and law, and earth system integrity may provide a framework and basis for the creation of much more ambitious norms.[47] More flexible rules within a regime may sometimes yield more effective results than strict laws. In areas that are not regulated by legal texts, ethical and philosophical initiatives that direct our behavior are also a part of the regime. These inspiring ideas, values, and beliefs cannot find a place within the self-constraint criteria of mainstream legal texts. Thus, institutionalizing them through soft arrangements may be a more applicable option under current conditions.

A remarkable general recommendation for including an earth system perspective based on the planetary boundaries into IERs is through soft law arrangements

Conclusion

IERs are the most significant tools of environmental governance at present. Many MEAs that set the legal foundations of regimes have long been in effect. A number of states are parties to these agreements and MEAs are major examples of global cooperation in the field of environment. Many MEAs have evolved into inclusive, institutional regimes over time through the creation of new scientific and technical advisory bodies, the development of new mechanisms for compliance, supervision, and capacity-building, and strengthening cooperation with external stakeholders. While setting the framework of the fight against environmental problems, regimes also help forma public opinion by providing scientific knowledge and data about the problem and keeping it on the agenda. In short, regimes undoubtedly matter.

On the other hand, environmental indicators show that global environmental change has reached a dramatic level despite the ongoing efforts of regimes.

The fact that IERs, whose raison d'être is to generate solutions for environmental problems through cooperation, have not achieved sufficient success in this respect makes the effectiveness of environmental regimes a controversial issue.

Effectiveness is a core topic for IERs. Thus, steps intended to increase regime effectiveness are being taken continuously within the institutional structure of regimes. Increasing transparency and accountability, including environmental justice concerns and enhancing cooperation with external stakeholders, are among the interventions intended to increase regime effectiveness. One of the latest trends is to develop a more flexible system that operates through bottom-up voluntary contributions instead of obligations specified in a top-down manner. However, it is debatable whether such flexible arrangements will increase the effectiveness of regimes or not.

Indeed, despite all these efforts, it is difficult to say whether IERs will be successful under current conditions for one unavoidable reason: IERs lack the earth system perspective that can help them confront the challenges brought about by the Anthropocene. The Anthropocene requires the development of a holistic perspective that will enable us to see the earth system as a single, intertwined socio-ecological system. However, environmental regimes are state-centric institutions based on the human/nature dichotomy; they depend on the stable conditions of the Holocene and approach environmental problems with a reductive perspective by separating them from each other. These intrinsic properties of regimes render them ineligible for generating responses to the challenges of the Anthropocene. Yet the effectiveness of regimes depends on their ability to adapt to the new and unique context in which they exist and to transform in such a way that they can respond to the challenges facing the planet today.

Endnotes

1. Fiona Harvey, "Heatwaves at Both of Earth's Poles Alarm Climate Scientists," *The Guardian*, (March 20, 2022) retrieved March 30, 2022, from https://www.theguardian.com/environment/2022/mar/20/heatwaves-at-both-of-earth-poles-alarm-climate-scientists.

2. Paul J. Crutzen and Eugene F. Stoermer, "The Anthropocene," *IGBP Newsletter,* Vol. 41, (2000), pp. 17-18.

3. "International Environmental Agreements (IEA) Database Project," *University of Oregon*, retrieved February 22, 2022, from https://iea.uoregon.edu/.

4. Arild Underdal, "One Question, Two Answers," in Edward L. Miles, *et al.*, (eds.), *Environmental Regime Effectiveness: Confronting Theory with Evidence*, (Cambridge: MIT Press, 2001), pp. 3-45; Ronald B. Mitchell, "Problem Structure, Institutional Design, and the Relative Effectiveness of International Environmental Agreements," *Global Environmental Politics*, Vol. 6, No. 3 (2006), pp. 72-89.

5. Davor Vidas, Jan Zalasiewicz, and Mark Williams, "What Is the Anthropocene and Why Is It Relevant for International Law?" *Yearbook of International Environmental Law*, Vol. 25, No. 1 (2015), pp. 3-23; Louise du

Toit and Louis J. Kotzé, "Reimagining International Environmental Law for the Anthropocene: An Earth System Law Perspective," *Earth System Governance,* Vol. 11, (2022), pp. 1-10.

6. Vidas, *et al.*, "What Is the Anthropocene," p. 20; Frank Biermann, "The Future of 'Environmental' Policy in the Anthropocene: Time for a Paradigm Shift," *Environmental Politics,* Vol. 30, No. 1-2 (2021), p. 74, pp. 61-80.

7. Stephen D. Krasner, "Structural Causes and Regime Consequences: Regimes as Intervening Variables," in Stephen D. Krasner (ed.), *International Regimes*, (London: Cornell University Press, 1991), pp. 1-21, p. 2.

8. Ernst B. Haas, "Words Can Hurt You: Or, Who Said What to Whom about Regimes?" in Stephen D. Krasner (ed.), *International Regimes*, (London: Cornell University Press, 1991), pp. 23-59, p. 27; Martin List and Volker Rittberger, "Regime Theory and International Environmental Management," in Andrew Hurrell and Benedict Kingsbury (eds.), *The International Politics of the Environment*, (Oxford: Oxford University Press, 1992), pp. 85-109.

9. Sofia Frantzi, "What Determines the Institutional Performance of Environmental Regimes? A Case Study of the Mediterranean Action Plan," *Marine Policy*, No. 32 (2008), pp. 618-629; Gabriela Kütting, *Environment, Society and International Relations: Towards More Effective International Environmental Agreements*, (London: Routledge, 2000), p. 30.

10. Oran R. Young and George J. Demko, "Improving the Effectiveness of International Environmental Governance Systems," in Oran R. Young, *et al.* (eds.), *Global Environmental Change and International Governance*, (Hanover, NH: University Press of New England, 1996), pp. 229-246; Underdal, "One Question, Two Answers," pp. 3-45; Kütting, *Environment, Society and International Relations*, p. 32; Oran R. Young, "Effectiveness of International Environmental Regimes: Existing Knowledge, Cutting-Edge Themes, and Research Strategies," *PNAS*, Vol. 108, No. 50 (2011), pp. 19853-19860, p. 19854.

11. Oran R. Young, "Inferences and Indices: Evaluating the Effectiveness of International Environmental Regimes," *Global Environmental Politics*, Vol. 1, No 1. (2001), pp. 99-121, p. 102; Peter M. Haas and Jun Sundgren, "Evolving International Environmental Law: Changing Practices of National Sovereignty," Nazli Choucri (ed.), *Global Accord: Environmental Challenges and International Responses*, (MIT Press, 1993), pp. 401-430, p. 409.

12. Oran R. Young, "Evaluating the Success of International Environmental Regimes: Where Are We Now?" *Global Environmental Change*, Vol. 12, (2002), pp. 73-77, p. 73; Carsten Helm and Detlef Sprinz, "Measuring the Effectiveness of International Environmental Regimes," *Journal of Conflict Resolution*, Vol. 44, No. 5 (2005), pp. 630-652; Underdal, "One Question, Two Answers," pp. 7-8.

13. Kütting, *Environment, Society and International Relation*, p. 4; Kal Raustiala, "Compliance and Effectiveness in International Regulatory Cooperation," *Case W. Res. Journal of International Law*, Vol. 32, No. 387, (2000), pp. 387-440, p. 394.

14. Kütting, *Environment, Society and International Relation*, p. 140.

15. Mitchell, "Problem Structure," pp. 72-89.

16. Jon Birger Skjærseth and Jørgen Wettestad, "Understanding the Effectiveness of EU Environmental Policy: Haw Can Regime Analysis Contribute?" *Environmental Politics,* Vol. 11, No. 3 (2002), pp. 99-120, p. 109; Underdal, "One Question, Two Answers," pp. 3-4.

17. Jørgen Wettestad, *Designing Effective Environmental Regimes: The Key Conditions*, (Cheltenham: Edward Elgar Publishing, 1999), pp. 1-2.

18. Harold K. Jacobson and Edith Brown Weiss, "Compliance with International Environmental Accords: Achievements and Strategies," in Mats Rolén, *et al*. (eds.), *International Governance on Environmental Issues*, (Dordrecht: Kluwer Academic Publishers, 1997), pp. 78-110, pp. 95-97; Wettestad, *Designing,* pp. 9-10; Young and Demko, "Improving the Effectiveness," pp. 230-234; Young, "Effectiveness of International Environmental Regimes," p. 19855.

19. Yasemin Kaya and Sezgin Kaya, "Uluslararası Çevre Rejimlerinde Etkinlik Sorunu," *Uluslararası İlişkiler*, Vol. 8, No. 30 (2011), pp.125-148, pp. 137-138.

20. Gail Osherenko and Oran R. Young, "The Formation of International Regimes: Hypotheses and Cases," in Oran R. Young and Gail Osherenko (eds.), *Polar Politics Creating International Environmental Regimes*,

(New York: Cornell University Press, 1993), pp. 1-22; Oran R. Young and Gail Osherenko, "International Regime Formation: Findings, Research, Priorities, and Applications," in Young and Osherenko (eds.), *Polar Politics*, pp. 223-266.

21. Nazli Choucri and Robert C. North, "Global Accord: Imperatives for the Twenty-First Century," in Nazli Choucri (ed.), *Global Accord*, (MIT Press, 1993), pp. 506-507; Lawrence Susskind, "What Will It Take to Ensure Effective Global Environmental Management? A Reassessment of Regime-Building Accomplishments," in Bertram I. Spector, *et al.* (eds.), *Negotiating International Regimes,* (Norwell, MA: Kluwer Academic Publishing, 1994), pp. 221-232.

22. Jørgen Wettestad, "Designing Effective Environmental Regimes: The Conditional Keys," *Global Governance*, Vol. 7, No. 3 (2001), pp. 317-341; Wettestad, *Designing Effective Environmental Regimes*, pp. 1-41.

23. Edith Brown Weiss and Harold K. Jacobson (eds.), *Engaging Countries: Strengthening Compliance with International Environmental Accords*, (MIT Press, 1998).

24. Maximilian S. T. Wanner, "The Effectiveness of Soft Law in International Environmental Regimes: Participation and Compliance in the Hyogo Framework for Action," *International Environmental Agreements*, Vol. 21, (2021), pp. 113-132, p. 114.

25. David Leonard Downie, "Global Environmental Policy: Governance through Regimes," in Regina S. Axelrod, *et al.* (eds.), *The Global Environment*, (Washington: CQ Press, 2005), pp. 64-82, p. 72; Kütting, *Environment, Society and International Relation*, p. 52.

26. Michael Faure and Jürgen Lefevere, "Compliance with Global Environmental Policy," in Axelrod, *et al.* (eds.), *The Global Environment,* pp. 163-180; Jocobson and Weiss, "Compliance with International Environmental Accords: Achievements and Strategies," pp. 78-110; Young and Demko, "Improving the Effectiveness of International Environmental Governance Systems," pp. 229-246.

27. Wanner, "The Effectiveness of Soft Law," p. 114.

28. Oran R. Young, "Research Strategies to Assess the Effectiveness of International Environmental Regimes," *Nature Sustainability*, Vol. 1, (2018), pp. 461-465, p. 464.

29. Wanner, "The Effectiveness of Soft Law," p. 128.

30. Philippe Sands and Jacqueline Peel, "Environmental Protection in the Twenty-first Century: Sustainable Development and International Law," in Axelrod, *et al.* (eds.), *The Global Environment*, p. 55.

31. Yasemin Kaya, "Paris Anlaşmasını İklim Adaleti Perspektifinden Değerlendirmek," *Uluslararası İlişkiler*, Vol. 14, No. 54 (2017), pp. 87-106.

32. Paul J. Crutzen, "Geology of Mankind: The Anthropocene," *Nature*, Vol. 415, (2002), p. 23.

33. Louis J. Kotzé, *et al.*, "Earth System Law: Exploring New Frontiers in Legal Science," *Earth System Governance*, Vol. 11, (2022), pp. 1-9.

34. Underdal, "One Question, Two Answers," pp. 3-45.

35. Du Toit and Kotzé, "Reimagining International Environmental Law for the Anthropocene," p. 3.

36. Frank Biermann, "The Future of 'Environmental' Policy in the Anthropocene: Time for a Paradigm Shift," *Environmental Politics*, Vol. 30, No. 1-2 (2021), pp. 61-80, p. 64.

37. Du Toit and Kotzé, "Reimagining International Environmental Law for the Anthropocene," p. 4.

38. John S. Dryzek, "Institutions for the Anthropocene: Governance in a Changing Earth System," *British Journal of Political Science*, Vol. 46, (2014), pp. 937-956, p. 938.

39. Johan Rockström, *et al.*, "Planetary Boundaries: Exploring the Safe Operating Space for Humanity," *Ecology and Society*, Vol. 14, No. 2 (2009), p. 32; Will Steffen, *et al.*, "Planetary Boundaries: Guiding Human Development on a Changing Planet," *Science*, Vol. 347, No. 6223 (2015), pp. 1-10.

40. Du Toit and Kotzé, "Reimagining International Environmental Law for the Anthropocene," p. 4.

41. Rohan D'Souza, "Nations without Borders: Climate Security and the South in the Epoch of the Anthropocene," *Strategic Analysis*, Vol. 39, No. 6 (2015), pp. 720-728; Jason W. Moore, "The Capitalocene, Part I: On the Nature and Origins of Our Ecological Crisis," *The Journal of Peasant Studies*, Vol. 44, No. 3

(2017), pp. 594-630; Andreas Malm and Alf Hornborg, "The Geology of Mankind? A Critique of the Anthropocene Narrative," *The Anthropocene Review,* Vol. 1, No. 1 (2014), pp. 62-69.

42. Du Toit and Kotzé, "Reimagining International Environmental Law for the Anthropocene," p. 6; Biermann, "The Future of 'Environmental' Policy," pp. 67-68; Frank Biermann and Agni Kalfagianni, "Planetary Justice: A Research Framework," *Earth System Governance,* Vol. 6, (2020), pp. 1-10.

43. Yasemin Kaya, *Ekolojik Güvenlik*, (Bursa: Dora Yayınevi, 2019), p. 114.

44. Frank Biermann, *et al.*, "Navigating the Anthropocene: Improving Earth Systems Governance," *Science*, Vol. 335, (2012), pp. 1306-1307; Louis J. Kotzé, "The Anthropocene's Global Environmental Constitutional Moment," *Yearbook of International Environmental Law*, Vol. 25, No. 1 (2015), pp. 24-60.

45. Edgar Fernández Fernández and Claire Malwé, "The Emergence of the 'Planetary Boundaries' Concept in International Environmental Law: A Proposal for a Framework Convention," *RECIEL,* Vol. 28, (2019), pp. 48-56.

46. Rakhyun E. Kim and Klaus Bosselmann, "International Environmental Law in the Anthropocene: Towards a Purposive System of Multilateral Environmental Agreements," *Transnational Environmental Law*, Vol. 2, No. 2 (2013), pp. 285-309, p. 288.

47. Duncan French and Louis J. Kotzé, "Towards a Global Pact for the Environment: International Environmental Law's Factual, Technical and (Unmentionable) Normative Gaps," *RECIEL,* Vol. 28, (2019), pp. 25-32, p. 32.

THIS IS OUR WORLD

Turkuvaz Media Group is the leading group of companies which deals with broadcasting, publishing and distribution activities in Turkey. Most reputable national and international magazines, best selling local and national newspapers and prestigious tv channels create the most powerful synergy in Turkish media.

The opportunity to utilize this power for your advertisements is in your hands. Why not use it?

TURKUVAZ
MEDIA GROUP