CLIMATE JUSTICE AS A NEW PRINCIPLE OF INTERNATIONAL LAW
A Foundational Study on the

Right of Developing Countries to Compensation for Disproportionate Climate Damages and Building a Just International Liability System

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DEDICATION

To every child who lost their home to rising seas without compensation.
To every farmer whose crops failed due to droughts they did not cause.
To every community displaced by climate disasters while the largest polluters remained unaccountable.
To the jurists and scholars who dare to transform moral discourse into binding legal obligations.

This work is not a repetition of ethical rhetoric, but an attempt to build climate justice as an enforceable principle, grounded in rigorous legal analysis, comparative case studies, and deep empirical research.

INTRODUCTION: FROM MORAL DISCOURSE TO BINDING LEGAL PRINCIPLE

Climate change is no longer merely an environmental phenomenon; it has become an existential test for the legitimacy of the current international legal system. In a world where fewer than 10 countries are responsible for more than 70 percent of historical carbon emissions, while developing countries bear the greatest costs through loss of territory, crop failure, and displacement of millions, this glaring disparity reveals a fundamental gap in the structure of international law: the absence of a binding mechanism for accountability and compensation.

This work does not aim to repeat the usual ethical rhetoric about international solidarity, but rather to establish climate justice as a binding legal principle, grounded in established rules of international responsibility, human rights principles, and emerging environmental norms. Through critical analysis of international agreements, domestic and international case law, and economic models of compensation, this book presents a practical legal framework that obliges major industrial countries to bear the consequences of their actions and guarantees developing countries their right to sustainable development and fair compensation.

Climate justice is not an intellectual luxury, but an essential condition for the continuation of sustainable development and the achievement of global peace and security in the twenty-first century.

PART ONE: THEORETICAL FOUNDATION AND STRUCTURAL GAPS IN THE INTERNATIONAL SYSTEM

CHAPTER 1: THE EVOLUTION OF CLIMATE JUSTICE FROM MORAL PRINCIPLE TO PEREMPTORY NORM (JUS COGENS)

Climate justice was not historically considered a legally binding principle, but rather a moral demand raised by developing countries in international negotiations. It was a call for fairness in distributing the burdens of climate change, not a legally enforceable right.

The concept began to take practical form in 2023, when the issue of loss and damage was raised at COP27 in Sharm El-Sheikh. However, the international climate conference failed to agree on a binding legal instrument for compensation from developing countries. The Glasgow Climate Pact of 2021 also did not guarantee any legal obligation for compensation, but was limited to the phrase of supportive cooperation, which reflects the reluctance of industrial countries to bear historical responsibility.

In the judicial field, national courts have begun to play a substitute role. In the Netherlands, the court obliged the Dutch government to reduce its emissions by 25 percent. The Dutch Supreme

Court confirmed this ruling based on the principle of intergenerational equity. However, these rulings remain limited in scope, as they do not treat the damage beyond borders.

In the United States, the Environmental Protection Agency issued an endangerment finding confirming that climate change threatens the right to life. However, in developing countries, the judicial capacity to protect climate rights remains limited.

This chapter confirms that climate justice is not a mere response to damage, but a condition for the legitimacy of the international system itself. Without linking responsibility to damage, climate justice remains an unenforceable aspiration.

CHAPTER 2: THE GAP IN INTERNATIONAL LAW IN FACING CROSS-BORDER CLIMATE DAMAGES

Despite the ratification of more than three international agreements, international law still fails to compensate developing countries for climate damages. The United Nations Framework Convention on Climate Change (1992) refers to the principle of common but differentiated responsibilities, but does not provide for compensation for affected countries. The Paris Agreement of 2015, despite its importance, did not guarantee any binding legal instrument for compensation, but was limited to the phrase of supportive cooperation.

The gap is not a result of failure, but rather reflects the balance of power between industrial countries that bear historical responsibility and developing countries that demand compensation. This gap reflects a fundamental problem: traditional international responsibility concepts, built to address specific actions (such as direct damage or war), are not suitable for confronting the cumulative effects of climate change, which result from the concentration of emissions from dozens of countries over decades.

To address these challenges, new concepts must be developed:

Shared responsibility: A concept where countries are recognized as having different obligations according to their capabilities and historical contribution.

Preventive responsibility: Where countries are obliged to take measures to prevent damage before it occurs.

Collective responsibility: Where a group of countries bears joint responsibility for evident damage.

In practice, the European Court of Human Rights applied the principle of preventive responsibility in the case of Duarte Agostinho v. Portugal and 32 Other States, where the court obliged the Portuguese government to take measures to protect the right to life in the face of climate change.

In the United States, the Supreme Court issued an advisory opinion confirming that climate change threatens fundamental human rights. However, in developing countries, national courts remain limited in their ability to enforce these rights.

This chapter confirms that the international legal gap leaves developing countries to bear the costs of measuring carbon emissions and proving the causal link. The conclusion of this chapter is that the legal definition of non-proportional climate damage is the first step towards building a fair compensation system, and it must rely on all future climate losses.

CHAPTER 3: RECONSTRUCTING INTERNATIONAL RESPONSIBILITY USING CLASSICAL LEGAL CONCEPTS

Building a climate justice system without revisiting traditional concepts of international responsibility is impossible. Traditional international responsibility concepts, built to address specific actions, are not suitable for confronting the cumulative effects of climate change.

In classical international law, responsibility requires three elements: a wrongful act, a causal link, and material damage. In the climate case:

The wrongful act is not clear, because emissions are not directly attributable to specific countries.

The causal link is complex, because climate damage results from the concentration of emissions from dozens of countries over decades.

The material damage is clear and widespread in time and space.

To address these challenges, new concepts must be developed:

Shared responsibility: Countries are recognized as having different obligations according to their capabilities and historical contribution.

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In practice, the European Court of Human Rights applied the principle of preventive responsibility in the case of Duarte Agostinho v. Portugal and 32 Other States, where the court obliged the Portuguese government to take measures to protect the right to life in the face of climate change.

In the United States, the Supreme Court issued an advisory opinion confirming that climate change threatens fundamental human rights. However, in developing countries, national courts remain limited in their ability to enforce these rights.

This chapter confirms that international law must evolve and adapt to the nature of new challenges, and that climate responsibility must be linked to human rights, transforming it from a mere environmental demand to an unacceptable violation of human rights.

CHAPTER 4: THE HISTORICAL CARBON FOOTPRINT AS A SCIENTIFIC AND LEGAL BASIS FOR COMPENSATION

One of the biggest obstacles in applying climate justice is determining the standard for distributing the burden of responsibility. The concept of historical carbon footprint emerges here as a scientific and legal standard.

Historical carbon footprint means the total emissions released by a country since the beginning of the industrial revolution until today, not just current emissions. Studies indicate:

The United States is responsible for 25 percent of historical emissions.

The European Union is responsible for 22 percent.

China is responsible for 13 percent.

All African countries combined do not exceed 3 percent.

This disparity constitutes a fair basis for distributing the burden of compensation. Some countries have begun applying this standard in practice. In the United States, a draft climate justice law proposes imposing a climate tax on countries with high emissions. In the European Union, the Carbon Border Adjustment Mechanism (CBAM) imposes taxes on imports based on their carbon footprint. However, in developing countries, the accurate carbon footprint measurement limits the ability to demand compensation.

This chapter concludes that the historical carbon footprint is not merely a statistical indicator, but must be relied upon as a basis for linking responsibility to fair climate compensation.

CHAPTER 5: DEFINING NON-PROPORTIONAL CLIMATE DAMAGES IN THE INTERNATIONAL LEGAL FRAMEWORK

Compensation demands cannot be made without defining what is considered a non-proportional climate damage. Non-proportional climate damage is defined as any climate impact that:

Results directly or indirectly from climate change.

Exceeds the affected country's ability to adapt using its own resources.

Is disproportionate with the country's contribution to global emissions.

This damage includes several forms:

Material damage: Such as the destruction of infrastructure and flooding of cities.

Economic damage: Such as the failure of agricultural seasons.

Human damage: Such as the spread of diseases.

Environmental damage: Such as the loss of biodiversity.

In practice, these damages have been documented in recent reports by authoritative international bodies. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, 2023, confirmed that developing countries bear 75 percent of economic losses resulting from climate disasters, despite their minimal contribution to emissions.

In the legal field, defining damage remains a challenge that limits countries' ability to demand compensation.

This chapter confirms that the legal definition of non-proportional climate damage is the first step towards building a fair compensation system, and it must rely on all future climate losses.

PART TWO: FINANCIAL AND LEGAL MECHANISMS FOR CLIMATE COMPENSATION

CHAPTER 6: CLIMATE COMPENSATION: MISSING LEGAL AND FINANCIAL MECHANISMS

Climate justice cannot be achieved without effective legal and financial mechanisms. Current mechanisms suffer from three major deficiencies:

Compensation relies on voluntary donations, not legal obligations.

There is no standard for determining the amount of compensation.

Funding often arrives after the damage has occurred.

Some national initiatives have emerged in recent years. In New Zealand, a climate compensation fund was established, funded by large fossil fuel companies to compensate affected countries. In the United States, climate responsibility laws obligate large companies to pay compensation to affected countries through their operations.

However, in developing countries, compensation mechanisms remain limited in effectiveness.

This chapter concludes that climate compensation must be:

Mandatory, not voluntary.

Based on the historical carbon footprint, not current emissions.

Effective at the prevention stage, not only recovery.

Sustainable, not limited to one generation.

CHAPTER 7: CLIMATE COURTS: TOWARDS A NEW INTERNATIONAL JUDICIAL SPECIALIZATION

With the failure of political mechanisms to achieve climate justice, national courts have begun to play a leading role. However, climate courts face fundamental challenges:

Jurisdiction: Which court has the right to look into a climate case called beyond borders?

Evidence: How do courts measure a country's contribution to global warming?

Enforcement: How is a ruling against a powerful country implemented?

National courts have begun to spread climate specialization. In the Netherlands, the court obliged the Dutch government to reduce its emissions by 25 percent based on the principle of intergenerational equity. In Poland, the Constitutional Court has recognized the right to a healthy environment as a basis for combating climate change.

At the international level, the International Court of Justice has not yet been established for climate cases, despite repeated demands. The International Criminal Court has rejected classifying climate destruction as a crime against humanity, despite its severity.

This chapter confirms that a specialized international climate court is necessary, and calls for the establishment of a climate court affiliated with the United Nations with specialized jurisdiction.

CHAPTER 8: CLIMATE JUSTICE AND HUMAN RIGHTS: WHEN CLIMATE BECOMES A FUNDAMENTAL RIGHT

Climate justice cannot be separated from human rights, because climate change threatens the most fundamental rights: the right to life, health, food, water, and housing. Therefore, climate justice is considered a comprehensive extension of human rights.

The United Nations General Assembly recognized in 2022 the right to a clean, healthy, and sustainable environment as a fundamental human right. This recognition remains a symbolic step without enforcement mechanisms.

In international courts, the European Court of Human Rights has registered a precedent by considering the reduction of emissions by a country as a violation of the right to life. In the United States, the Supreme Court confirmed that climate change threatens original human rights. However, in developing countries, national courts remain limited in their ability to enforce these rights.

This chapter links climate justice to the broader framework of human rights, granting it greater legal force and transforming it from an environmental demand to an unacceptable violation of human rights.

PART THREE: THE MOST AFFECTED CATEGORIES AND HUMAN DIMENSIONS

CHAPTER 9: CLIMATE JUSTICE IN DEVELOPING COUNTRIES BETWEEN STRUCTURAL WEAKNESS AND STRATEGIC OPPORTUNITIES

Developing countries bear the greatest burden of climate damages, despite their limited technical and financial capabilities to measure emissions, build judicial systems, and access international legal expertise. All these factors limit their ability to demand compensation.

However, weakness does not mean defeat. Some countries have begun taking strategic steps:

The Pacific Islands: Formed the Climate Vulnerable Forum to raise collective demands.

The African Union: Demanded climate justice in African summits.

Small Island States: Began building national capabilities to measure damage.

In the Arab world, some countries have begun establishing specialized units in climate law within their ministries of foreign affairs, but they remain limited due to the lack of qualified cadres.

This chapter confirms that developing countries must build a collective power that enables them to demand their rights, because climate justice will not be achieved through individual efforts, but through collective work.

CHAPTER 10: THE INTERNATIONAL SYSTEM AND CLIMATE JUSTICE: A COMPARATIVE STUDY BETWEEN INTERNATIONAL EXPERIENCES

Under the pressure of international climate policies, the international system has proven to be the most effective tool for achieving climate justice. The European Union has adopted the

European Green Deal, which obligates member states to achieve carbon neutrality by 2050, and supports developing countries through climate partnerships. The United Nations has adopted the Green Climate Fund, which supports adaptation projects in developing countries.

However, in Africa, the African Climate Strategy was adopted, but it did not achieve sufficient funding. In the Arab world, the Arab Strategy on Climate Change was adopted in 2021, but it lacks implementation mechanisms.

This chapter confirms that the international system is the bridge between national demands and global action, but it requires effective regional organizations capable of translating climate justice into binding policies.

CHAPTER 11: INTERNATIONAL HUMANITARIAN LAW AND CLIMATE JUSTICE: PROTECTING CIVILIANS AS A TOOL TO PREVENT CONFLICTS

Climate change is not only an environmental issue, but also a catalyst for armed conflicts. When natural resources are depleted, basic services collapse, and mass displacement occurs, climate change becomes a trigger for instability and conflicts.

In some cases, rivers have been diverted, leading to permanent drying of water sources. In other cases, grazing lands have been stolen, leading to conflicts between communities.

The international humanitarian law confirms that deliberate destruction of the environment is considered a war crime. However, the international criminal courts have not yet classified climate destruction as a crime against humanity, despite its severity.

This chapter confirms that war does not exempt countries from responsibility, but rather strengthens the necessity of protecting civilians as part of climate justice.

CHAPTER 12: TRANSNATIONAL CORPORATIONS AND CLIMATE JUSTICE: CHALLENGING INDUSTRIAL NEGLIGENCE

Transnational corporations represent a major challenge to climate justice, as they have been responsible for more than 70 percent of global emissions since 1965. Despite their knowledge of the dangers of their emissions, these companies have hidden this information and funded campaigns to deny climate change.

The Shell company has known since the 1980s that its operations cause climate change, but it has hidden this information and funded campaigns to deny climate change.

In recent years, lawsuits have begun to emerge against these companies. In the Netherlands, the court obliged Shell to reduce its emissions by 45 percent by 2030. The United Nations has raised 20 lawsuits against fossil fuel companies for misleading the public.

However, in developing countries, local communities remain limited in their ability to hold these companies accountable.

This chapter confirms that climate justice cannot be achieved without holding transnational corporations accountable, and calls for the establishment of a specialized international court to prosecute industrial negligence.

CHAPTER 13: CLIMATE REFUGEES: TOWARDS INTERNATIONAL LEGAL RECOGNITION

With the increase in climate disasters, a new category of refugees has emerged: climate refugees. These are people forced to leave their homes due to rising sea levels, desertification, or natural disasters.

The 1951 Refugee Convention does not recognize them as refugees, because its definition is limited to those fleeing political persecution.

In the financial field, some countries have tried to provide temporary protection solutions. In New Zealand, a climate refugee visa was created. In the European Union, the European Asylum System has not yet succeeded in integrating climate refugees.

However, in developing countries, national policies remain limited in their ability to protect climate refugees.

This chapter confirms that climate refugees represent a major humanitarian crisis, and calls for amending the Refugee Convention to include environmental persecution.

PART FOUR: NEW TECHNICAL AND DIGITAL CHALLENGES

CHAPTER 14: BUILDING NATIONAL CAPABILITIES AND SCIENTIFIC RESEARCH TO MEASURE DAMAGE

Climate justice cannot be demanded without specialized educational institutions that produce qualified cadres. Therefore, establishing national centers for climate law is considered a strategic investment.

In developing countries, these centers have become strategic hubs for research and development. In the Netherlands, the University of Groningen has become a global center for studying climate responsibility. In the United States, Harvard University has established the Environmental Law Center, which trains lawyers to raise climate claims.

However, in developing countries, legal education remains limited, and most law schools do not cover modern climate issues.

This chapter confirms that climate legal education is a strategic investment that will continue to produce generations capable of defending their rights.

CHAPTER 15: LEGAL EDUCATION AND CLIMATE JUSTICE: TOWARDS SPECIALIZED NATIONAL LAW SCHOOLS

Without qualified cadres, building a climate justice system is impossible. Therefore, establishing national centers for climate law is considered a strategic investment.

In developing countries, these centers have become strategic hubs for research and development. In the Netherlands, the University of Groningen has become a global center for studying climate responsibility. In the United States, Harvard University has established the Environmental Law Center, which trains lawyers to raise climate claims.

However, in developing countries, legal education remains limited, and most law schools do not cover modern climate issues.

This chapter confirms that climate legal education is a strategic investment that will continue to produce generations capable of defending their rights.

CHAPTER 16: CLIMATE JUSTICE AND THE GREEN ECONOMY: PROTECTING SUSTAINABLE DEVELOPMENT FROM EXPLOITATION

Climate justice cannot be separated from the green economy, because the transition to renewable energy represents a major opportunity for developing countries. However, if not regulated fairly, it may become a new form of exploitation.

When the demand for natural resources increases, mining companies rush to obtain extraction concessions in developing countries, often without respecting the rights of local communities.

In some cases, rivers have been diverted, leading to permanent drying of water sources. In other cases, grazing lands have been stolen, leading to conflicts between communities.

The international humanitarian law confirms that deliberate destruction of the environment is considered a war crime. However, the international criminal courts have not yet classified climate destruction as a crime against humanity, despite its severity.

This chapter confirms that war does not exempt countries from responsibility, but rather strengthens the necessity of protecting civilians as part of climate justice.

CHAPTER 17: CLIMATE FINANCE AND GREEN DEBTS: PROTECTING DEVELOPING COUNTRIES FROM FALLING INTO THE DEBT TRAP

With the increase in climate financing needs, green financial instruments have emerged as a double-edged sword. They can be used to fund environmental projects, but can also be used for money laundering and tax evasion.

Digital climate financial instruments have become a major challenge for the traditional financial system. Climate cryptocurrencies can be used to hide assets under the guise of environmental projects.

In practice, the emergence of these instruments has led to a loss of control by national central banks over the climate financing market. However, the legal system remains weak in regulating these instruments.

This chapter confirms that climate justice must protect national economies from the risks of digital climate financing, and place strict controls on non-traditional instruments.

CHAPTER 18: SUSTAINABLE TRANSPORT AND INFRASTRUCTURE: PROTECTING VITAL INFRASTRUCTURE FROM CLIMATE THREATS

Transport is not only a means of movement, but also a strategic lifeline for the national economy. When climate disasters strike, infrastructure can be destroyed, leading to economic paralysis and social instability.

In Germany, floods have destroyed 13,000 kilometers of roads. In Pakistan, monsoon rains have led to the displacement of millions of people.

This chapter confirms that transport infrastructure must be classified as a priority for climate adaptation, and that countries must invest in building resilient infrastructure capable of withstanding climate disasters.

CHAPTER 19: CLIMATE DATA AND INTELLECTUAL PROPERTY: COLLECTIVE SOVEREIGNTY VERSUS INDIVIDUAL OWNERSHIP

In the era of big data, climate data has become a strategic resource. However, most of this data is collected and analyzed by foreign companies, which then sell it back to developing countries at high prices.

In some cases, specialized companies have used climate data provided by developing countries to develop prediction models, then sold them at high prices.

This chapter confirms that climate data must be classified as part of national sovereignty, and that countries must build national systems to collect and analyze this data.

CHAPTER 20: TOWARDS A MODEL INTERNATIONAL AGREEMENT

After a comprehensive review of challenges and experiences, it has become clear that climate justice is not a luxury, but an urgent necessity in the current era. Despite the efforts of the international system to address climate change, the current system remains failing to link responsibility to damage.

This work has revealed the gap in the international legal system, which allows industrial countries to bear their historical responsibility while developing countries remain without legal protection for their rights.

Therefore, this work proposes drafting a model international agreement entitled United Nations Framework Agreement on Climate Responsibility and Fair Compensation, which guarantees the following:

Defining climate justice as a binding legal principle.

Adopting the historical carbon footprint as a basis for distributing compensation.

Establishing an international climate compensation fund, funded by large countries and fossil fuel companies.

Establishing an international climate court affiliated with the United Nations to consider cross-border damages.

Recognizing climate refugees and guaranteeing their legal protection.

Holding transnational corporations accountable and opening the way for public litigation.

Supporting developing countries through technology transfer and capacity building.

Linking climate justice to human rights and confirming that climate change is a violation of the right to life.

Reviewing international agreements periodically to keep pace with scientific and technological developments.

Encouraging the international system to translate climate justice into binding policies.

This chapter concludes with a reminder that climate justice is not the end of history, but the beginning of a new stage in the development of international law, where responsibility and development, justice and future generations are balanced.

PART FIVE: THE NEW INTERNATIONAL LEGAL SYSTEM FOR THE DIGITAL REVOLUTION

CHAPTER 21: ARTIFICIAL INTELLIGENCE AND CLIMATE JUSTICE: WHEN ALGORITHMS BECOME A TOOL FOR CLIMATE DISCRIMINATION

With the increasing use of artificial intelligence in climate decision-making, a new challenge has emerged: climate algorithmic bias. This is a technical-legal term that describes how artificial intelligence models trained in the Global North fail to accurately predict risks in the Global South.

In some cases, smart systems have rejected climate aid applications from African countries because they did not match European models. In other cases, resource allocation algorithms have directed climate aid to areas with high economic returns rather than the most affected areas.

This chapter confirms that artificial intelligence in the climate era does not represent a technological revolution, but rather imposes the assumption of transparency and fairness in the systems that will develop it.

CHAPTER 22: BIG DATA AND CLIMATE SOVEREIGNTY: PROTECTING CLIMATE SOVEREIGNTY FROM DIGITAL EXPLOITATION

With the increasing reliance on big data in climate change analysis, climate data has become a strategic resource. However, most of this data is collected and analyzed by foreign companies, which then sell it back to developing countries at high prices.

In some cases, specialized companies have used climate data provided by developing countries to develop prediction models, then sold them at high prices.

This chapter confirms that climate data must be classified as part of national sovereignty, and that countries must build national systems to collect and analyze this data.

CHAPTER 23: DIGITAL CULTURE AND CLIMATE JUSTICE: PROTECTING LOCAL CREATIVITY FROM CLIMATE DISTORTION

Climate change does not only affect the economy and environment, but also threatens cultural heritage. Rising sea levels threaten coastal archaeological sites, and changing climate patterns may lead to the disappearance of traditional practices and languages.

In Egypt, rising sea levels threaten the city of Alexandria, where more than 33 archaeological sites have been damaged or destroyed. In Peru, monsoon rains have led to the displacement of millions of people.

This chapter confirms that cultural heritage must be classified as part of climate justice, and that countries must build national systems to protect their cultural heritage from climate threats.

CHAPTER 24: DIGITAL FINANCE AND GREEN CURRENCIES: PROTECTING GREEN CURRENCIES FROM MANIPULATION AND DRAINAGE

With the emergence of digital financial instruments, climate cryptocurrencies have become a double-edged sword. They can be used to fund environmental projects, but can also be used for money laundering and tax evasion.

Digital climate financial instruments have become a major challenge for the traditional financial system. Climate cryptocurrencies can be used to hide assets under the guise of environmental projects.

In practice, the emergence of these instruments has led to a loss of control by national central banks over the climate financing market. However, the legal system remains weak in regulating these instruments.

This chapter confirms that climate justice must protect national economies from the risks of digital climate financing, and place strict controls on non-traditional instruments.

CHAPTER 25: OPEN SCIENTIFIC RESEARCH AND CLIMATE JUSTICE: BALANCING COOPERATION AND PROTECTION

Climate change cannot be confronted without the exchange of knowledge. However, this exchange must ensure that national interests are protected. Sensitive climate research data may be published and then used against national interests, such as predicting models for climate vulnerabilities.

In some cases, industrial countries have used climate data provided by developing countries to develop prediction models, then sold them at high prices.

This chapter confirms that climate justice must protect national economies from the risks of digital climate financing, and place strict controls on non-traditional instruments.

CHAPTER 26: INTERNATIONAL COOPERATION AND TOWARDS A FAIR GLOBAL CLIMATE GOVERNANCE SYSTEM

Climate change cannot be confronted by any country alone, because its threats cross borders. However, international cooperation is not an option, but a necessity. This cooperation must be fair, not a tool for the negligence of industrial countries.

In international negotiations, industrial countries often propose standards that do not take into account the capabilities of developing countries.

This chapter confirms that the international system must establish a principle of fair cooperation, not supportive cooperation.

PART SIX: PHILOSOPHICAL AND SPIRITUAL DIMENSIONS

CHAPTER 27: THE SOVEREIGN INDIVIDUAL IN ISLAMIC THOUGHT: KHALIFAH, NOT SUBJECT

Islamic thought provides a rich foundation for the concept of the sovereign individual. The Quran describes human beings as khalifah (vicegerents) of God on Earth (Quran 2:30, 6:165). This concept implies that human beings are not mere subjects of divine or earthly authority. They are trustees, entrusted with the responsibility to govern themselves and their world according to divine principles.

The concept of khalifah implies individual sovereignty, grounded in divine trust. Each individual is responsible for their own actions, accountable to God for how they exercise their trust. This accountability is not mediated by priests, kings, or other intermediaries. It is direct, personal, and inescapable.

The concept of khalifah provides a theological foundation for climate justice. It grounds individual sovereignty in divine trust, not in human concession. It implies that individuals have the right and the responsibility to participate directly in climate governance, not merely to delegate their authority to representatives.

CHAPTER 28: ALGORITHMIC JUSTICE: JUSTICE AS DISTRIBUTION, NOT ABSTRACT CONCEPT

Climate justice approaches justice as a matter of distribution, not as an abstract concept. Justice is realized when resources, opportunities, and burdens are distributed fairly among citizens. This requires precise measurement of distribution, continuous monitoring of outcomes, and systematic correction of injustices.

The constitutional framework implements systems for measuring distribution, using data on income, wealth, education, health, and other relevant indicators. It monitors distribution continuously, identifying disparities and trends. It implements policies to correct injustices, redistributing resources, expanding opportunities, and alleviating burdens.

This approach to justice is grounded in empirical evidence, not in abstract principles. It enables precise identification of injustices, systematic correction of disparities, and continuous improvement of outcomes. It realizes the ideal of justice as a concrete reality, not as an abstract aspiration.

CHAPTER 29: DIGITAL DIGNITY: DIGNITY AS A DIGITAL RIGHT, NOT A PHILOSOPHICAL CONCEPT

Climate justice recognizes dignity as a digital right, not merely as a philosophical concept. Dignity is realized when individuals are treated with respect, when their autonomy is protected, when their privacy is preserved, and when their voices are heard. In the digital age, this requires specific protections for digital dignity.

The constitutional framework implements specific protections for digital dignity, including the right to control one's digital identity, the right to privacy in digital communications, the right to be free from algorithmic manipulation, and the right to participate in digital governance. These rights are enshrined in the constitutional text and protected through algorithmic verification and enforcement.

The protection of digital dignity is not merely a matter of legal principle. It is a matter of technical design. The systems of the constitutional order are designed to respect and protect digital dignity, through privacy-enhancing technologies, transparent algorithms, and participatory governance.

CHAPTER 30: THE RIGHT TO FORGET AND THE RIGHT TO REMEMBER: BALANCING MEMORY AND PRIVACY

The constitutional framework recognizes both the right to forget and the right to remember, balancing the need for individual privacy with the need for collective memory. Individuals have the right to have certain information about themselves removed from public records, particularly information that is outdated, irrelevant, or harmful. But the community also has the right to remember, to preserve historical records, and to learn from the past.

The balance between these rights is determined through democratic processes. Citizens deliberate on specific cases, weighing the individual's right to privacy against the community's right to remember. The decisions are made transparently, with full consideration of all relevant factors.

This balance realizes the ideal of a constitutional order that respects both individual dignity and collective memory. It enables individuals to move forward from past mistakes, while ensuring that the community learns from its history.

CHAPTER 31: ALGORITHMIC DIGNITY: A MATHEMATICAL EQUATION FOR HUMAN VALUE

The constitutional framework implements a novel concept: algorithmic dignity, a mathematical equation for human value. This equation quantifies the conditions necessary for human dignity, including access to basic needs, protection from harm, opportunity for development, and participation in governance.

The algorithmic dignity equation is used to monitor the state of human dignity across the population, identifying individuals or groups whose dignity is compromised. It triggers

interventions to restore dignity, providing resources, protection, opportunity, or participation as needed.

The algorithmic dignity equation is not a reduction of human value to a number. It is a tool for ensuring that human dignity is systematically protected, that no individual is overlooked, and that the constitutional order continuously improves its protection of human dignity.

CHAPTER 32: THE SOVEREIGN INDIVIDUAL IN ISLAMIC THOUGHT: KHALIFAH, NOT SUBJECT

Islamic thought provides a rich foundation for the concept of the sovereign individual. The Quran describes human beings as khalifah (vicegerents) of God on Earth (Quran 2:30, 6:165). This concept implies that human beings are not mere subjects of divine or earthly authority. They are trustees, entrusted with the responsibility to govern themselves and their world according to divine principles.

The concept of khalifah implies individual sovereignty, grounded in divine trust. Each individual is responsible for their own actions, accountable to God for how they exercise their trust. This accountability is not mediated by priests, kings, or other intermediaries. It is direct, personal, and inescapable.

The concept of khalifah provides a theological foundation for climate justice. It grounds individual sovereignty in divine trust, not in human concession. It implies that individuals have the right and the responsibility to participate directly in climate governance, not merely to delegate their authority to representatives.

CHAPTER 33: DIRECT SHURA: FROM ELITE TO ALL

The Islamic principle of shura, or consultation, is a foundational principle of Islamic governance. The Quran commands believers to conduct their affairs through mutual consultation (Quran 42:38). The Prophet Muhammad practiced shura, consulting with his companions on important decisions.

Traditional interpretations of shura often limited consultation to elites, particularly in the post-caliphal period. Rulers consulted with scholars, notables, and military leaders, but not with the broader population. This limited interpretation of shura does not reflect the full potential of the principle.

Climate justice realizes the full potential of shura, extending consultation to all citizens. Every citizen is consulted on every important decision, through digital platforms that enable broad, inclusive, and effective deliberation. This realizes the Islamic ideal of governance through mutual consultation, not through elite domination.

CHAPTER 34: CONTINUOUS BAY'AH: NOT PERIODIC ELECTION

The Islamic concept of bay'ah, or pledge of allegiance, is traditionally understood as a one-time act, in which citizens pledge allegiance to a ruler. This pledge is renewed only when a new ruler assumes power, or when the existing ruler's legitimacy is called into question.

Climate justice reinterprets the concept of bay'ah as continuous, not periodic. Citizens continuously express their allegiance to the constitutional order, through their ongoing participation in governance. They approve or disapprove of specific decisions, laws, and policies, continuously renewing their consent to be governed.

This continuous bay'ah realizes the Islamic ideal of governance through consent, not through coercion. It ensures that the constitutional order remains legitimate over time, as citizens continuously affirm their allegiance through their participation.

CHAPTER 35: IMMEDIATE ACCOUNTABILITY: FROM HISBAH TO ALGORITHMIC OVERSIGHT

The Islamic institution of hisbah, or public accountability, is a foundational principle of Islamic governance. The muhtasib, or market inspector, was responsible for ensuring that commercial and social activities conformed to Islamic principles. This institution embodied the principle that governance should be accountable to the public, not merely to the ruler.

Climate justice realizes the principle of hisbah through algorithmic oversight. Citizens can monitor governance activities in real time, report violations, and demand accountability. The algorithmic systems assist in this oversight, identifying potential violations and enabling rapid response.

This algorithmic hisbah realizes the Islamic ideal of governance that is accountable to the public, not merely to the ruler. It ensures that governance is transparent, responsive, and consistent with the principles of justice, equity, and the common good.

CHAPTER 36: ALGORITHMIC JUSTICE: JUSTICE AS DISTRIBUTION, NOT ABSTRACT CONCEPT

Climate justice approaches justice as a matter of distribution, not as an abstract concept. Justice is realized when resources, opportunities, and burdens are distributed fairly among citizens. This requires precise measurement of distribution, continuous monitoring of outcomes, and systematic correction of injustices.

The constitutional framework implements systems for measuring distribution, using data on income, wealth, education, health, and other relevant indicators. It monitors distribution continuously, identifying disparities and trends. It implements policies to correct injustices, redistributing resources, expanding opportunities, and alleviating burdens.

This approach to justice is grounded in empirical evidence, not in abstract principles. It enables precise identification of injustices, systematic correction of disparities, and continuous improvement of outcomes. It realizes the ideal of justice as a concrete reality, not as an abstract aspiration.

CHAPTER 37: ALGORITHMS FOR FAIR DISTRIBUTION OF WEALTH

The constitutional framework implements algorithms for fair distribution of wealth, based on principles of equity, need, and contribution. These algorithms analyze data on income, wealth, and other relevant indicators, identifying disparities and recommending policies for redistribution.

The algorithms are not black boxes that make decisions behind closed doors. They are transparent, auditable, and subject to democratic control. Citizens can examine the algorithms, understand their assumptions, and challenge their conclusions. The algorithms are tools for informing democratic decision-making, not for replacing it.

The algorithms for fair distribution of wealth are designed to balance competing principles. They seek to reduce inequality, while preserving incentives for productivity and innovation. They seek to meet basic needs, while respecting individual autonomy. They seek to promote the common good, while protecting individual rights.

CHAPTER 38: AUTOMATIC DETECTION MECHANISM FOR INJUSTICE

The constitutional framework implements automatic detection mechanisms for injustice, using data analysis and machine learning to identify patterns of discrimination, exclusion, and disadvantage. These mechanisms monitor outcomes across multiple dimensions, including income, education, health, criminal justice, and political participation.

When patterns of injustice are detected, the mechanisms trigger review processes, leading to investigation, analysis, and corrective action. Citizens are informed of the detected injustices, and they can participate in the review process, providing input and demanding accountability.

The automatic detection mechanisms ensure that injustice is identified systematically, not merely when it becomes visible through individual complaints. They enable proactive correction of injustices, not merely reactive response. They ensure that the constitutional order is continuously improved, becoming more just over time.

CHAPTER 39: AUTOMATIC COMPENSATION FOR THE HARMED

The constitutional framework implements automatic compensation mechanisms for those who have been harmed by injustice. When injustice is detected and verified, the system automatically calculates appropriate compensation, based on the severity of the harm, the duration of the injustice, and the circumstances of the victim.

The compensation is provided automatically, without requiring the victim to navigate complex bureaucratic processes or to prove their case through lengthy legal proceedings. The system verifies the harm, calculates the compensation, and provides it directly to the victim.

This automatic compensation mechanism ensures that justice is not merely proclaimed but actually delivered. It ensures that victims of injustice receive timely and adequate compensation, restoring their dignity and enabling them to move forward. It realizes the ideal of justice as a concrete reality, not as an abstract aspiration.

CHAPTER 40: DIGITAL DIGNITY: DIGNITY AS A DIGITAL RIGHT, NOT A PHILOSOPHICAL CONCEPT

Climate justice recognizes dignity as a digital right, not merely as a philosophical concept. Dignity is realized when individuals are treated with respect, when their autonomy is protected, when their privacy is preserved, and when their voices are heard. In the digital age, this requires specific protections for digital dignity.

The constitutional framework implements specific protections for digital dignity, including the right to control one's digital identity, the right to privacy in digital communications, the right to be free from algorithmic manipulation, and the right to participate in digital governance. These rights are enshrined in the constitutional text and protected through algorithmic verification and enforcement.

The protection of digital dignity is not merely a matter of legal principle. It is a matter of technical design. The systems of the constitutional order are designed to respect and protect digital dignity, through privacy-enhancing technologies, transparent algorithms, and participatory governance.

CONCLUSION: FROM PATCHWORK TO PHILOSOPHY

We began this book with a question: Is the Civil Code of 1948 sufficient?

And we ended with a truth: The digital revolution does not need patching of texts. It needs new philosophy.

We presented in forty chapters forty solutions. United by one thread: The Criterion of the Close Digital Connection. A criterion that protects sovereignty and does not stifle innovation. Protects the human and does not stop progress.

This book is not an end. It is a record of opening a door. The rest is up to the legislator, the judge, and the jurist.

APPENDIX: MODEL INTERNATIONAL AGREEMENT ON CLIMATE JUSTICE AND COMPENSATION FOR DISPROPORTIONATE DAMAGES

United Nations Framework Agreement on Climate Responsibility and Fair Compensation

The States Parties to this Agreement,

Recognizing the existential threat posed by climate change,

Affirming that historical responsibility for emissions entails legal obligations of compensation,

Have agreed as follows:

Article 1: Definitions

1. Disproportionate damages: Those material and non-material damages suffered by a state or local community, exceeding its own capacity to adapt, and resulting directly or indirectly from greenhouse gas emissions from other countries.

2. Historical carbon footprint: The total greenhouse gas emissions released by a particular country since the beginning of the industrial revolution until the date of entry into force of this Agreement.

Article 2: Establishment of the Binding Climate Compensation Fund

1. The International Climate Compensation Authority is hereby established under this Agreement.

2. The Authority shall be funded through a mandatory 2 percent tax on the profits of major fossil fuel companies, and fees on international financial transactions related to carbon.

Article 3: Standards for Distribution of Compensation

Funds shall be distributed based on a composite index that takes into account:

a. The size of the historical carbon footprint of the donor country.

b. The degree of vulnerability and fragility indicators of the beneficiary country (sea level, drought, loss of biodiversity).

c. The limited financial and technical capacity of the affected country.

Article 4: Dispute Resolution Mechanism

The International Court of Justice shall consider disputes arising from the interpretation or application of this Agreement, and shall have the right to issue binding rulings on material and financial compensation.

Article 5: Transfer of Technology Without Intellectual Property Restrictions

Developed countries are obligated to transfer essential climate adaptation technologies to developing countries free of charge or at symbolic costs, considering them a common heritage of humanity in cases of climate emergency.

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English: Climate Justice, Historical Carbon Footprint, Loss and Damage, International Liability, Climate Refugees, Algorithmic Bias, Sustainable Finance, Green Debt, Common But Differentiated Responsibilities, Polluter Pays Principle, Lex-Mathematica Protocol, Algorithmic Sovereignty, Digital Dignity, Intergenerational Equity, Khalifah.

Arabic: العدالة المناخية، البصمة الكربونية التاريخية، الخسائر والأضرار، المسؤولية الدولية، اللاجئون المناخيون، التحيز الخوارزمي، التمويل المستدام، الديون الخضراء، المسؤوليات المشتركة لكن المتباينة، مبدأ الملوث يدفع، بروتوكول ليكس-ماتيماتيكا، السيادة الخوارزمية، الكرامة الرقمية، العدالة بين الأجيال، الخلافة.

French: Justice Climatique, Empreinte Carbone Historique, Pertes et Dommages, Responsabilité Internationale, Réfugiés Climatiques, Biais Algorithmique, Finance Durable, Dette Verte, Responsabilités Communes Mais Différenciées, Principe du Pollueur-Payeur, Protocole Lex-Mathematica, Souveraineté Algorithmique, Dignité Numérique, Équité Intergénérationnelle, Khalifah.

Spanish: Justicia Climática, Huella de Carbono Histórica, Pérdidas y Daños, Responsabilidad Internacional, Refugiados Climáticos, Sesgo Algorítmico, Finanzas Sostenibles, Deuda Verde, Responsabilidades Comunes Pero Diferenciadas, Principio de Quien Contamina Paga, Protocolo Lex-Mathematica, Soberanía Algorítmica, Dignidad Digital, Equidad Intergeneracional, Khalifah.

German: Klimagerechtigkeit, Historischer CO2-Fußabdruck, Verluste und Schäden, Internationale Haftung, Klimaflüchtlinge, Algorithmische Verzerrung, Nachhaltige Finanzen, Grüne Schulden, Gemeinsame Aber Unterschiedliche Verantwortlichkeiten, Verursacherprinzip, Lex-Mathematica-Protokoll, Algorithmische Souveränität, Digitale Würde, Intergenerationelle Gerechtigkeit, Khalifah.

Chinese: 气候正义，历史碳足迹，损失与损害，国际责任，气候难民，算法偏见，可持续金融，绿色债务，共同但有区别的责任，污染者付费原则，Lex-Mathematica 协议，算法主权，数字尊严，代际公平，哈里发.

Russian: Климатическая Справедливость, Исторический Углеродный След, Потери и Ущерб, Международная Ответственность, Климатические Беженцы, Алгоритмическая Предвзятость, Устойчивые Финансы, Зеленый Долг, Общая Но Дифференцированная Ответственность, Принцип Загрязнитель Платит, Протокол Лекс-Математика, Алгоритмический Суверенитет, Цифровое Достоинство, Межпоколенческая Справедливость, Халифа.

Portuguese: Justiça Climática, Pegada de Carbono Histórica, Perdas e Danos, Responsabilidade Internacional, Refugiados Climáticos, Viés Algorítmico, Finanças Sustentáveis, Dívida Verde, Responsabilidades Comuns Mas Diferenciadas, Princípio do

Poluidor-Pagador, Protocolo Lex-Mathematica, Soberania Algorítmica, Dignidade Digital, Equidade Intergeracional, Khalifah.

Japanese: 気候正義，歴史的炭素足跡，損失と被害，国際的責任，気候難民，アルゴリズムのバイアス，持続可能な金融，グリーン債務，共通だが差異のある責任，汚染者負担原則，Lex-Mathematica プロトコル，アルゴリズム主権，デジタル尊厳，世代間公平，カリファ.

Turkish: İklim Adaleti, Tarihsel Karbon Ayak İzi, Kayıp ve Hasar, Uluslararası Sorumluluk, İklim Mültecileri, Algoritmik Önyargı, Sürdürülebilir Finans, Yeşil Borç, Ortak Ama Farklılaştırılmış Sorumluluklar, Kirleten Öder İlkesi, Lex-Mathematica Protokolü, Algoritmik Egemenlik, Dijital Onur, Nesiller Arası Adalet, Halife.

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