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When Ecological Transition Pressures Human Rights: Equality, Localized Sacrifice, and Unequal Public Burdens

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When Ecological Transition Pressures Human Rights: Equality, Localized Sacrifice, and Unequal Public Burdens

Quando as Pressões da Transição Ecológica Incidem sobre os Direitos Humanos: Igualdade, Sacrifício Localizado e Ónus Públicos Desiguais

Cuong Viet DO[1]

ABSTRACT

Ecological transition is increasingly framed as a legal necessity, yet the measures adopted in its name can themselves place human rights under pressure. The problem is not only whether environmental action is justified, but whether its burdens are distributed on terms compatible with equality, dignity, and fair participation. This article argues that ecological governance becomes legally troubling when formally general transition measures impose severe and localized sacrifice on particular communities without adequate mitigation, participation, adjustment, or compensation. Drawing on human rights law and environmental justice, it shows that these frameworks identify the protected interests and structural inequalities at stake, but often require a more compact doctrinal vocabulary when reviewing lawful public action that produces concentrated burdens in practice. The article therefore develops unequal public burdens as an equality-based test for identifying when ecological transition becomes distributively and institutionally unjust. It proposes three indicators for legal review: severity of impact, concentration of burden, and the absence or manifest inadequacy of corrective design. Through brief illustrations from energy poverty, conservation, and climate adaptation, including planned relocation, the article shows that equality does not weaken ecological transition. It is one of the legal conditions under which ecological transition can remain publicly defensible, human-rights compliant, and just.

KEYWORDS: human rights under pressure; ecological transition; equality; unequal public burdens; localized sacrifice; environmental justice

RESUMO

A transição ecológica é cada vez mais apresentada como uma necessidade jurídica; no entanto, as medidas adotadas em seu nome podem, elas próprias, exercer pressão sobre os direitos humanos. O problema não consiste apenas em saber se a ação ambiental é justificada, mas também se os seus encargos são distribuídos em termos compatíveis com a igualdade, a dignidade e uma participação equitativa. Este artigo sustenta que a governança ecológica se torna juridicamente problemática quando medidas de transição formalmente gerais impõem um sacrifício severo e localizado a comunidades específicas, sem mitigação, participação, ajustamento ou compensação adequados. Com base no direito dos direitos humanos e na justiça ambiental, demonstra-se que esses referenciais identificam os interesses protegidos e as desigualdades estruturais em jogo, mas frequentemente exigem

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um vocabulário doutrinário mais conciso ao analisar ações públicas lícitas que, na prática, produzem encargos concentrados. O artigo desenvolve, portanto, a noção de encargos públicos desiguais como um critério fundado na igualdade para identificar quando a transição ecológica se torna distributiva e institucionalmente injusta. Propõe três indicadores para a apreciação jurídica: a gravidade do impacto, a concentração do ônus e a ausência ou manifesta inadequação de um desenho corretivo. Por meio de breves exemplos relativos à pobreza energética, à conservação e à adaptação climática, incluindo a relocalização planeada, o artigo demonstra que a igualdade não enfraquece a transição ecológica. Pelo contrário, constitui uma das condições jurídicas sob as quais a transição ecológica pode permanecer publicamente defensável, compatível com os direitos humanos e justa.

PALAVRAS-CHAVE: direitos humanos sob pressão; transição ecológica; igualdade; encargos públicos desiguais; sacrifício localizado; justiça ambiental

1. Introduction

Ecological transition is increasingly presented as a legal and political necessity, whether understood as a governed process of institutional transformation or as a broader societal response to accelerating ecological change. Climate mitigation, biodiversity protection, energy restructuring, land-use control, and conservation measures are now widely treated as indispensable responses to planetary crisis. Yet the necessity of environmental action should not obscure a harder legal question. Human rights come under pressure not only when states fail to respond to ecological harm, but also when they act through transition measures whose burdens are unevenly and locally imposed.[2] In other words, the contemporary human-rights problem is no longer exhausted by governmental inaction in the face of environmental degradation. It also arises when lawful ecological governance is designed in ways that require particular communities to bear severe costs for collective environmental ends.[3] The issue, therefore, is not simply whether ecological transition is justified, but when its concrete implementation becomes incompatible with equality and human dignity.[4]

That question matters because ecological transition is rarely socially neutral. Measures adopted in universal and environmentally justified terms often operate within societies already marked by deep inequalities of income, territory, infrastructure,

[2] BOYLE, Alan, "Human Rights and the Environment: Where Next?," *European Journal of International Law* 23, no. 3 (2012): 613–42, https://doi.org/10.1093/ejil/chs054.
[3] POLLEX, Jan, "Is It All about Distribution? – Debating the Green Deal in the European Parliament," *Journal of European Integration* 47, no. 2 (2025): 217–36, https://doi.org/10.1080/07036337.2025.2459874.
[4] BRIGHT, Claire and BUHMANN, Karin, "Risk-Based Due Diligence, Climate Change, Human Rights and the Just Transition," *Sustainability* 13, no. 18 (2021), https://doi.org/10.3390/su131810454.

labour, housing, and political voice.[5] Their effects are therefore filtered through pre-existing patterns of vulnerability. A carbon-pricing scheme may formally apply to all while disproportionately intensifying energy poverty among low-income households.[6] A conservation regime may serve a compelling public purpose while cutting off access to land, livelihoods, or subsistence resources for particular rural or Indigenous communities.[7] A managed-retreat or relocation policy may be framed as a necessary adaptation strategy while placing the heaviest social, cultural, and economic burdens on communities with the least power to shape its terms.[8] In each of these cases, the environmental rationale may remain intact, but the local experience of transition is radically unequal. Universal ecological necessity is translated into territorialised sacrifice.

This is where ecological transition becomes a human-rights pressure point. Human-rights pressure is often associated with repression, exclusion, emergency, or official neglect. But in contemporary environmental governance, pressure may emerge in a subtler yet no less serious way: through formally general measures that externalise concentrated burdens onto specific places, groups, or ways of life.[9] Such pressures may affect not only material interests, but also the conditions of dignified existence protected by human-rights law, including housing, health, livelihood, family life, participation, cultural continuity, and access to remedies.[10] The central difficulty is that environmental measures can be both normatively necessary and distributively

[5] MENTON, Mary et al., "Environmental Justice and the SDGs: From Synergies to Gaps and Contradictions," *Sustainability Science* 15, no. 6 (2020): 1621–36, https://doi.org/10.1007/s11625-020-00789-8.

[6] SOVACOOL, Benjamin K., "Who Are the Victims of Low-Carbon Transitions? Towards a Political Ecology of Climate Change Mitigation," *Energy Research & Social Science* 73 (March 2021): 101916, https://doi.org/10.1016/j.erss.2021.101916.

[7] TAULI-CORPUZ, Vicky et al., "Cornered by PAs: Adopting Rights-Based Approaches to Enable Cost-Effective Conservation and Climate Action," *World Development* 130 (June 2020): 104923, https://doi.org/10.1016/j.worlddev.2020.104923.

[8] OWEN, John R. et al., "Energy Transition Minerals and Their Intersection with Land-Connected Peoples," *Nature Sustainability* 6, no. 2 (2023): 203–11, https://doi.org/10.1038/s41893-022-00994-6.

[9] JODOIN, Sébastien et al., "Rights-Based Approaches to Climate Decision-Making," *Current Opinion in Environmental Sustainability* 52 (October 2021): 45–53, https://doi.org/10.1016/j.cosust.2021.06.004.

[10] UUTELA, Anu Lähteenmäki et al., "Planetary Boundaries Nurturing the Grand Narrative of the Right to a Healthy Environment?," *Environmental Policy and Law* 54, no. 1 (2024): 15–26, https://doi.org/10.3233/EPL-230055; HERI, Corina, "Justice in the Liminal: The Council of Europe and the Right to a Healthy Environment," *International & Comparative Law Quarterly* 73, no. 2 (2024): 319–60, https://doi.org/10.1017/S0020589324000071; CIMA, Elena, "The Right to a Healthy Environment: Reconceptualizing Human Rights in the Face of Climate Change," *Review of European, Comparative & International Environmental Law* 31, no. 1 (2022): 38–49, https://doi.org/10.1111/reel.12430.

troubling at the same time.[11] A transition measure may pursue a legitimate and urgent ecological objective, yet still do so on terms that expose some communities to losses far more severe than those borne by others.

Human rights law is indispensable for understanding what is at stake in these situations. It provides the language of dignity, vulnerability, participation, accountability, and protection against arbitrariness.[12] Environmental justice, likewise, is essential in showing that environmental burdens and benefits are not randomly distributed, but often follow lines of class, race, territory, political marginalisation, and historical disadvantage.[13] Together, these frameworks make clear that ecological governance cannot be assessed solely in terms of aggregate environmental benefit. They reveal that who pays, who is heard, and whose loss is normalised are questions internal to legality, not merely matters of policy preference.[14] Yet once the specific problem becomes one of lawful and formally general transition measures imposing severe and concentrated burdens in practice, a more precise doctrinal vocabulary is needed. The challenge is not only to describe injustice, but to identify when it becomes legally objectionable as a mode of public action.

This article argues that equality provides that sharper lens.[15] More specifically, it reconstructs and adapts the idea of unequal public burdens as a compact framework for identifying when ecological transition ceases to be a defensible public project and instead relies on concentrated sacrifice from particular communities. The claim is not that ecological measures are suspect whenever they generate social costs, nor that every unequal effect amounts to injustice. Ecological transition inevitably redistributes

[11] SOVACOOL, Benjamin K. et al., "Decarbonization and Its Discontents: A Critical Energy Justice Perspective on Four Low-Carbon Transitions," *Climatic Change* 155, no. 4 (2019): 581–619, https://doi.org/10.1007/s10584-019-02521-7; SOVACOOL, Benjamin K. et al., "Dispossessed by Decarbonisation: Reducing Vulnerability, Injustice, and Inequality in the Lived Experience of Low-Carbon Pathways," *World Development* 137 (January 2021): 105116, https://doi.org/10.1016/j.worlddev.2020.105116.

[12] LESNIKOWSKI, Alexandra et al., "Human Rights in Climate Change Adaptation Policies: A Systematic Assessment," *Climate Policy* 24, no. 8 (2024): 1050–64, https://doi.org/10.1080/14693062.2023.2261881.

[13] See SCHLOSBERG, David and COLLINS, Lisette B., "From Environmental to Climate Justice: Climate Change and the Discourse of Environmental Justice," *Wiley Interdisciplinary Reviews: Climate Change* 5, no. 3 (2014): 359–74, https://doi.org/10.1002/wcc.275; BENNETT, Nathan J. et al., "Environmental (in)Justice in the Anthropocene Ocean," *Marine Policy* 147 (January 2023): 105383, https://doi.org/10.1016/j.marpol.2022.105383.

[14] HUHTA, Kaisa, "Conceptualising Energy Justice in the Context of Human Rights Law," *Nordic Journal of Human Rights* 41, no. 4 (2023): 378–92, https://doi.org/10.1080/18918131.2023.2210443.

[15] DAVISON, Marc David, "How Fairness Principles in the Climate Debate Relate to Theories of Distributive Justice," *Sustainability* 13, no. 13 (2021), https://doi.org/10.3390/su13137302.

costs, opportunities, and constraints. But equality is engaged when those costs become sufficiently severe,[16] are concentrated on determinate groups or territories,[17] and are left without adequate participation, mitigation, adjustment, or compensation.[18] Under those conditions, the issue is no longer only one of policy design. It becomes a question of whether the burdens of pursuing common ecological goods are being allocated in a manner compatible with equal citizenship and human dignity.

The article's contribution is therefore both conceptual and doctrinal. Conceptually, it reframes ecological transition as a site where human rights may be pressured not only by environmental harm itself, but also by the legal design of responses to that harm. Doctrinally, it proposes unequal public burdens as an equality-based test for reviewing cases in which public authorities pursue legitimate ecological objectives through measures that are general in form but sharply unequal in incidence. This framework is intended neither to displace human-rights reasoning nor to replace environmental justice. Rather, it seeks to translate their concerns into a more exact legal grammar for assessing concentrated sacrifice under lawful public action.

Methodologically, the article adopts a doctrinal and normative public-law analysis situated at the intersection of environmental law, human-rights law, and equality. It proceeds in four steps. First, it explains why ecological transition should be understood as a contemporary human-rights pressure point, especially where universal ecological imperatives are implemented through locally uneven measures. Second, it examines the contributions and limits of human rights and environmental justice in addressing such cases. Third, it develops unequal public burdens as an equality-based framework, identifying severity of impact, concentration of burden, and the absence or manifest inadequacy of corrective design as its core indicators. Fourth, it briefly illustrates the framework through transition-related measures that reveal the tension between collective ecological necessity and localised human cost. Properly understood, equality does not weaken ecological transition. It supplies one of the legal

[16] MARKKANEN, Sanna and ANGER-KRAAVI, Annela, "Social Impacts of Climate Change Mitigation Policies and Their Implications for Inequality," *Climate Policy* 19, no. 7 (2019): 827–44, https://doi.org/10.1080/14693062.2019.1596873.
[17] BALD, Maria, "Climate Change and the Green Transition: Double Burden for Indigenous Sámi Reindeer Herding Communities," *Ethics and Social Welfare* 19, no. 3 (2025): 217–35, https://doi.org/10.1080/17496535.2025.2468663.
[18] MAESTRE-ANDRES, Sara et al., "Perceived Fairness and Public Acceptability of Carbon Pricing: A Review of the Literature," *Climate Policy* 19, no. 9 (2019): 1186–204, https://doi.org/10.1080/14693062.2019.1639490.

conditions under which transition can remain publicly defensible, rights-compatible, and just.

2. Ecological transition as a human-rights pressure point

Ecological transition is not only justified by reference to human rights; it may also become a source of pressure on rights in the course of its implementation. The concept itself, however, encompasses more than one form of transformation. In some accounts, ecological transition refers to a governed process through which public authorities seek to reorganise energy systems, land use, infrastructure, mobility, housing, and patterns of production in response to environmental imperatives. In others, it refers more broadly to the social and economic transformations generated by ecological change itself, including climate disruption, biodiversity decline, and shifting environmental conditions that progressively reshape human activities irrespective of deliberate policy design.[19]

Both dimensions are relevant to contemporary environmental governance. The present article is concerned primarily with the first. Its focus is not ecological transformation in general, but the distributive consequences of legal and administrative measures adopted in pursuit of ecological objectives. Nevertheless, the distinction should not be overstated. Emergent ecological transformations frequently become juridically significant through the public responses they trigger, and the pressures examined here often arise at the intersection of ecological change and governmental intervention.

Once the problem is seen in those terms, ecological transition appears not simply as an environmental programme, but as a mode of governance capable of reshaping the practical conditions under which rights are lived and exercised.[20] This point is significant because contemporary legal and political debate still tends to frame the relationship between ecology and human rights in one dominant direction that environmental degradation threatens life, health, housing, food, water, and the

[19] See FOLKE, Carl et al., "Our Future in the Anthropocene Biosphere," *Ambio* 50, no. 4 (2021): 834–869, https://doi.org/10.1007/s13280-021-01544-8.
See also IPBES, Thematic Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, IPBES secretariat, Bonn, Germany, 2024, https://doi.org/10.5281/zenodo.11382215.

[20] OLAWUYI, Damilola et al., "Beyond Just Transition: Advancing Responsible and Rights-Based Business Practices in the Energy and Extractives Sector," *Business and Human Rights Journal* 10, no. 1 (2025): 1–10, https://doi.org/10.1017/bhj.2025.20.

conditions of human dignity, and states therefore have duties to prevent or reduce such harm. That proposition is correct, but incomplete.[21] It addresses the human-rights consequences of ecological crisis while leaving relatively underexplored the pressures that may arise from the state's own response to that crisis. Yet many of the most consequential decisions now taken in the name of climate mitigation, biodiversity protection, resilience, and sustainability do not merely protect pre-existing interests. They also redistribute risks, constraints, opportunities, and losses across society.[22] In that sense, ecological transition is not only protective; it is also allocative.

That allocative dimension matters because public action rarely lands on neutral social ground. Transition measures are designed and implemented within societies already structured by uneven wealth, fragile housing, insecure work, peripheral geography, limited infrastructure, and unequal access to political influence.[23] Their legal form may be general, but their effects are filtered through these background asymmetries. As a result, the burdens of ecological transition are often localized rather than evenly shared.[24] Some communities absorb higher energy costs, stricter land-use controls, increased exposure to displacement, or reduced access to resources not because the law singles them out explicitly, but because broader patterns of vulnerability shape how formally general measures operate in practice. The pressure on rights therefore emerges less through overt exclusion than through differentiated incidence.[25]

For that reason, ecological transition should be understood as a human-rights pressure point in a specifically public-law sense. The concern is not limited to exceptional abuse or manifest arbitrariness. It extends to ordinary governance choices

[21] ABRAM, Simone et al., "Just Transition: A Whole-Systems Approach to Decarbonisation," *Climate Policy* 22, no. 8 (2022): 1033–49, https://doi.org/10.1080/14693062.2022.2108365.
[22] For instance, see AGBAITORO, Godswill A. and EKHATOR, Eghosa O., "Just Energy Transition in Africa: Towards Social Inclusion and Environmental Rights-Based Imperatives," *Business and Human Rights Journal* 10, no. 1 (2025): 34–55, https://doi.org/10.1017/bhj.2024.30; ERKUS, Hilal et al., "Energy Democracy, Environmental Justice, and the Governance Gap in the Context of Forest-Based Energy Conflicts: The Case of Akbelen Forest," *Land* 14, no. 9 (2025), https://doi.org/10.3390/land14091794.
[23] FAVRETTO, Nicola and STRINGER, Lindsay C., "Climate Resilient Development in Vulnerable Geographies," *Mitigation and Adaptation Strategies for Global Change* 29, no. 8 (2024): 90, https://doi.org/10.1007/s11027-024-10187-5.
[24] PORTNER, H. O. et al., "Overcoming the Coupled Climate and Biodiversity Crises and Their Societal Impacts," *Science* 380, no. 6642 (2023): eabl4881, https://doi.org/10.1126/science.abl4881. See also ANGUELOVSKI, Isabelle et al., "Why Green 'Climate Gentrification' Threatens Poor and Vulnerable Populations," *Proceedings of the National Academy of Sciences* 116, no. 52 (2019): 26139–43, https://doi.org/10.1073/pnas.1920490117.
[25] GIVENS, Jennifer E. et al., "Ecologically Unequal Exchange: A Theory of Global Environmental Injustice," *Sociology Compass* 13, no. 5 (2019): e12693, https://doi.org/10.1111/soc4.12693.

that are lawful in purpose, defensible in principle, and yet capable of producing severe and foreseeable burdens for particular groups. A low-carbon transport policy may enhance aggregate environmental welfare while constraining mobility in areas poorly served by public infrastructure.[26] A conservation measure may protect a fragile ecosystem while undermining local livelihood systems built around access to land or natural resources.[27] A renewable-energy project may advance decarbonization while imposing territorial disruption on communities with limited bargaining power over siting and compensation.[28] In each of these settings, the public objective remains compelling. What becomes contestable is the human cost of achieving it on particular local terms.[29]

Recent scholarship on just transition has sharpened this insight by emphasizing that ecological restructuring is not simply a technical substitution of cleaner systems for dirtier ones. It is a broader social and institutional transformation in which questions of distribution, participation, and repair become integral to legitimacy.[30] Work on rights-based energy transition reaches a similar conclusion, showing that transition can deepen exclusion where vulnerable groups have little influence over how energy is produced, located, accessed, or governed.[31] What these accounts reveal is not merely that environmental policy has social side effects, but that its legality increasingly depends on how it engages those effects. Ecological success cannot by itself settle the question of public justification where the path to that success is built on unevenly distributed sacrifice.

This is especially evident in adaptation governance. Adaptation is often presented as the most practical and least controversial dimension of climate response

[26] SOVACOOL, Benjamin K. et al., "The Decarbonisation Divide: Contextualizing Landscapes of Low-Carbon Exploitation and Toxicity in Africa," *Global Environmental Change* 60 (January 2020): 102028, https://doi.org/10.1016/j.gloenvcha.2019.102028.
[27] MANDOLOMA, Lessah et al., "Implications of Human-Nature Interactions for Livelihoods and Conservation in Kasungu, Malawi," *People and Nature* 7, no. 3 (2025): 700–714, https://doi.org/10.1002/pan3.70008.
[28] TEMPER, Leah et al., "Movements Shaping Climate Futures: A Systematic Mapping of Protests against Fossil Fuel and Low-Carbon Energy Projects," *Environmental Research Letters* 15, no. 12 (2020): 123004, https://doi.org/10.1088/1748-9326/abc197.
[29] QUARTA, Alessandra, "Social Justice and Sustainability: Private Law's Moment in the European Green Transition," *European Law Open* 5, no. 1 (2026): 125–34, https://doi.org/10.1017/elo.2025.10069.
[30] RADTKE, Jörg, "Understanding the Complexity of Governing Energy Transitions: Introducing an Integrated Approach of Policy and Transition Perspectives," *Environmental Policy and Governance* 35, no. 4 (2025): 595–614, https://doi.org/10.1002/eet.2158.
[31] SHYU, Chian-Woei, "A Framework for 'Right to Energy' to Meet UN SDG7: Policy Implications to Meet Basic Human Energy Needs, Eradicate Energy Poverty, Enhance Energy Justice, and Uphold Energy Democracy," *Energy Research & Social Science* 79 (September 2021): 102199, https://doi.org/10.1016/j.erss.2021.102199.

because it aims to reduce exposure to risk and secure future safety. But adaptation measures may also generate intense human-rights pressures when they alter the terms on which people inhabit vulnerable places.[32] Research on adaptation planning indicates that states frequently acknowledge vulnerable populations in principle while giving them little meaningful role in shaping the measures that will most affect them, and often without establishing accountability mechanisms for harms generated by adaptation action itself.[33] The tension here is acute: policies framed as protective may at the same time reproduce the political marginality and material precarity that made certain groups vulnerable in the first place.[34]

A particularly vivid example is provided by exposure-reduction measures such as planned relocation or managed retreat. These measures are often described as options of last resort, used where erosion, flooding, sea-level rise, or recurrent disasters make continued residence increasingly unsafe. Yet they illustrate with unusual clarity how global ecological pressures can be translated into intensely local human-rights tensions. Relocation is never merely a technical response to physical risk. It affects housing, health, livelihood, social relations, cultural continuity, place attachment, and the ability of communities to participate in decisions about their own future.[35]

Empirical work confirms that even where relocation reduces certain environmental risks, it may simultaneously produce new forms of loss. Research from Fiji, for example, shows that planned relocation can improve access to water,

[32] LESNIKOWSKI et al., "Human Rights in Climate Change Adaptation Policies."
[33] See TEEBKEN, Julia, "Vulnerability Locked in. On the Need to Engage the Outside of the Adaptation Box," *Global Environmental Change* 85 (March 2024): 102807, https://doi.org/10.1016/j.gloenvcha.2024.102807; NGCAMU, Bethuel Sibongiseni, "Climate Change Effects on Vulnerable Populations in the Global South: A Systematic Review," *Natural Hazards* 118, no. 2 (2023): 977–91, https://doi.org/10.1007/s11069-023-06070-2; ERIKSEN, Siri et al., "Adaptation Interventions and Their Effect on Vulnerability in Developing Countries: Help, Hindrance or Irrelevance?," *World Development* 141 (May 2021): 105383, https://doi.org/10.1016/j.worlddev.2020.105383.
[34] MIKULEWICZ, Michael, "Politicizing Vulnerability and Adaptation: On the Need to Democratize Local Responses to Climate Impacts in Developing Countries," *Climate and Development* 10, no. 1 (2018): 18–34, https://doi.org/10.1080/17565529.2017.1304887.
[35] See GROMILOVA, Mariya, "Revisiting Planned Relocation as a Climate Change Adaptation Strategy:The Added Value of a Human Rights-Based Approach," *Utrecht Law Review* 10, no. 1 (2014), https://doi.org/10.18352/ulr.258; MCADAM, Jane and FERRIS, Elizabeth, "Planned Relocations in the Context of Climate Change: Unpacking the Legal and Conceptual Issues," Cambridge International Law Journal, *Cambridge International Law Journal* 4, no. 1 (2015): 137–66, https://doi.org/10.7574/cjicl.04.01.137; MCNAMARA, Karen E. et al., "The Complex Decision-Making of Climate-Induced Relocation: Adaptation and Loss and Damage," *Climate Policy* 18, no. 1 (2018): 111–17, https://doi.org/10.1080/14693062.2016.1248886.

sanitation, and some services, while also disrupting food practices, weakening place attachment, altering social structures, and affecting mental well-being.[36] Other studies of relocation and flood-risk governance similarly emphasize that conflicts in this field turn not only on safety and efficiency, but on autonomy, political influence, racialized inequality, and the capacity of affected communities to shape the terms of environmental change.[37] Planned relocation therefore matters here not as a separate topic, but as a concentrated illustration of the article's broader claim: human rights may be pressured not only by ecological breakdown, but by the legal and administrative forms through which protection is pursued.

What follows from this is a change in legal perspective. If ecological transition can place rights under pressure through action as well as omission, then the relevant inquiry cannot stop at environmental necessity or policy rationality. It must also address the way ecological objectives are operationalized in socially unequal settings, and the extent to which that operationalization normalizes severe local sacrifice as an acceptable cost of collective protection. The question, then, is not whether these pressures matter, but how law should name and evaluate them once they arise within otherwise legitimate ecological governance.

3. From human rights and environmental justice to unequal public burdens

Having established that ecological transition may itself generate pressure on rights, the next question is how law should understand that pressure. At this stage, the task is not yet to formulate the doctrinal test. It is to identify the legal and critical vocabularies through which the problem already becomes intelligible, and to determine why a further step is needed. Two frameworks are indispensable. Human rights law identifies the protected interests, translates ecological harm and ecological governance into duties of justification, and anchors claims to participation and remedy. Environmental justice explains why the burdens of ecological governance are not distributed by accident, but follow socially and territorially patterned lines of exclusion.[38]

[36] MCMICHAEL, Celia and POWELL, Teresia, "Planned Relocation and Health: A Case Study from Fiji," *International Journal of Environmental Research and Public Health* 18, no. 8 (2021), https://doi.org/10.3390/ijerph18084355.
[37] See COMPTON, Caroline, "Just Adaptation and Relocation: New Challenges for the Anthropocene," *King's Law Journal* 30, no. 2 (2019): 176–84, https://doi.org/10.1080/09615768.2019.1645421.
[38] JUSKUS, Ryan, "Sacrifice Zones: A Genealogy and Analysis of an Environmental Justice Concept," *Environmental Humanities* 15, no. 1 (2023): 3–24, https://doi.org/10.1215/22011919-10216129. See also IPSEN, Annabel and LEQUIEU, Amanda McMillan, "From Rationalized Exploitation to Supra

The argument of this section is not that either framework is inadequate in any global sense. It is that they operate at different analytical levels from the narrower doctrinal question raised by this article: when a lawful and formally general ecological measure imposes severe and localized sacrifice on a determinate community, by what legal vocabulary should that defect be named and evaluated?

Human rights law performs the first essential task because it identifies what ecological governance can injure in legal terms. That development is now visible across international and regional materials. In *Portillo Cáceres v Paraguay,*[39] the United Nations' Human Rights Committee treated serious pesticide contamination as engaging not only Article 6 of the ICCPR,[40] but also Article 17 and Article 2(3) of this Convention, thereby linking environmental harm to life, home, privacy/family life, and effective remedy. In *Ioane Teitiota v. New Zealand*,[41] by contrast, the Committee addressed climate-related environmental degradation through the narrower lens of Article 6 alone, in the context of removal, and accepted only that climate-related conditions may, in principle, trigger non-refoulement obligations once the risk to life reaches the necessary threshold.[42] The contrast between these cases is instructive. *Portillo Cáceres v Paraguay* shows the Committee at its strongest where ecological harm is concrete, proximate, and already socially embedded; *Ioane Teitiota v. New Zealand* shows the more cautious register of human rights adjudication where the claim concerns future environmental conditions and mediated causation. At the regional level, *Verein KlimaSeniorinnen Schweiz v. Switzerland*[43] goes further in a different direction. The Grand Chamber of the European Court of Human Rights held that Article 8 of the European Convention on Human Rights encompasses a right to effective protection by State authorities against the serious adverse effects of climate change and also found a violation of Article 6 §1 of this Convention concerning access

Sacrifice Zones: Tracing Sacrifice Zones as a Keyword of Environmental Sociology," *Environmental Sociology* 11, no. 3 (2025): 351–62, https://doi.org/10.1080/23251042.2024.2430390.

[39] *Portillo Cáceres v Paraguay* (HRC, 9 August 2019, Comm No. 2751/2016), CCPR/C/126/D/2751/2016, para 2.3.

[40] *International Covenant on Civil and Political Rights*, adopted December 16, 1966, 999 U.N.T.S. 171, entered into force March 23, 1976.

[41] *Teitiota v New Zealand* (HRC, 24 October 2019, Comm No. 2728/2016), CCPR/C/127/D/2728/2016 in particular see paras 9.4–9.5.

[42] MOLI, Ginevra Le, "The Human Rights Committee, Environmental Protection and the Right to Life," *International & Comparative Law Quarterly* 69, no. 3 (2020): 735–52, https://doi.org/10.1017/S0020589320000123.

[43] European Court of Human Rights, Grand Chamber, Case of *Verein KlimaSeniorinnen Schweiz and Others v Switzerland,* (Application no. 53600/20), Strasbourg, 9 April 2024.

to a court. Together, these materials make one proposition unmistakable that ecological governance now falls within the field of human-rights legality.

Human rights law also performs a second, equally important function. It does not merely identify interests; it structures duties. That is especially visible in the proceduralization of environmental legality. The Aarhus Convention[44] is central here. Its architecture is not built around abstract ecological values alone, but around legally actionable procedural guarantees: access to environmental information, public participation in certain environmental decision-making, and access to justice. In doctrinal terms, that matters because it shifts environmental governance away from technocratic discretion alone and toward reviewable standards of public justification. The significance of Aarhus Convention lies not only in the rights it names, but in the legal form it gives them. Articles 6 and 9, read together, do not simply encourage consultation; they embed participation and access to review within the legality of environmental decision-making itself. This procedural dimension now resonates strongly with climate and environmental human-rights litigation more broadly, where the language of positive obligations, due diligence, and institutional accountability increasingly accompanies substantive rights claims.

Yet the very strengths of human rights law also reveal its characteristic register. It is particularly well suited to identifying protected interests, requiring procedural fairness, condemning exclusion, and policing failures of protection.[45] But the present article is concerned with a somewhat different problem. Many transition measures are not arbitrary, irrational, or directly rights-denying in the classical sense. They are often legally authorized, general in form, and adopted for compelling ecological reasons.[46] What becomes troubling is not the legitimacy of the objective, but the burden-bearing

[44] *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* (Aarhus Convention), adopted June 25, 1998, 2161 U.N.T.S. 447, entered into force October 30, 2001.

[45] SAVARESI, Annalisa and SETZER, Joana, "Rights-Based Litigation in the Climate Emergency: Mapping the Landscape and New Knowledge Frontiers," Journal of Human Rights and the Environment, *Journal of Human Rights and the Environment* 13, no. 1 (2022): 7–34, https://doi.org/10.4337/jhre.2022.01.01. See also SULYOK, Katalin, "Transforming the Rule of Law in Environmental and Climate Litigation: Prohibiting the Arbitrary Treatment of Future Generations," *Transnational Environmental Law* 13, no. 3 (2024): 475–501, https://doi.org/10.1017/S2047102524000116.

[46] BOMMEL, Natascha van and HOFFKEN, Johanna I., "The Urgency of Climate Action and the Aim for Justice in Energy Transitions – Dynamics and Complexity," *Environmental Innovation and Societal Transitions* 48 (September 2023): 100763, https://doi.org/10.1016/j.eist.2023.100763.

structure through which that objective is pursued.[47] Rights law can certainly register the seriousness of such burdens and, in some cases, invalidate them. But its ordinary grammar remains oriented toward deprivation, threshold harm, participation, and remedy.[48] It does not always isolate, with particular doctrinal precision, the defect of concentrated sacrifice under lawful public action.[49] That is not a failure of rights law. It is a function of its principal legal task. Scholarship on climate litigation has captured this point indirectly: rights-based litigation has often proved more effective in relation to state accountability, intergenerational claims, and procedural access than in articulating intragenerational distributive justice in a fully developed doctrinal way.[50]

Environmental justice performs a different function. It explains why transition burdens cluster where they do. Its central contribution is not merely distributive in a narrow sense, but structural.[51] Burdens associated with pollution, conservation, infrastructure siting, relocation, adaptation, or energy transition are not randomly spread. They track class, race, territory, colonial history, infrastructural neglect, and political marginality.[52] In that respect, environmental justice exposes the background asymmetries through which formally general measures produce unequal effects.[53] It also broadens the legal imagination beyond sheer distribution by insisting on recognition and voice. Communities are wronged not only when they bear more of the burden, but when their knowledge, attachments, and claims are institutionally

[47] MCLAUGHLIN, Alex, "The Limit of Climate Justice: Unfair Sacrifice and Aggregate Harm," *Critical Review of International Social and Political Philosophy* 26, no. 6 (2023): 942–63, https://doi.org/10.1080/13698230.2020.1786306; BOOKMAN, Sam and PETEL, Matthias, "Climate Litigation & Climate Justice : The Distributional Implications of Rights-Based Climate Actions in Europe," *Global Justice: Theory Practice Rhetoric* 14, no. 02 (2024): 51–85, https://doi.org/10.21248/gjn.14.02.285.

[48] JO, Hee-Moon, "Rights-Based Climate Change Litigation: A Comparative Study of Legal Foundations, Judicial Strategies, and the Expansion of the Role of Human Rights and Rights of Nature," *KnE Social Sciences*, October 29, 2025, 1–25, https://doi.org/10.18502/kss.v10i26.19977.

[49] SOVACOOL, "Who Are the Victims of Low-Carbon Transitions?"

[50] BEAUREGARD, Charles et al., "Climate Justice and Rights-Based Litigation in a Post-Paris World," *Climate Policy* 21, no. 5 (2021): 652–65, https://doi.org/10.1080/14693062.2020.1867047; SAVARESI and SETZER, "Rights-Based Litigation in the Climate Emergency"; BOOKMAN and PETEL, "Climate Litigation & Climate Justice."

[51] BRONDI, Sonia et al., "Navigating Environmental Justice Framework: A Scoping Literature Review Over Four Decades," *Environmental Justice* 18, no. 4 (October 2024), https://doi.org/10.1089/env.2024.0054

[52] See ARGELICH, Amalia Calderón et al., "Tracing and Building up Environmental Justice Considerations in the Urban Ecosystem Service Literature: A Systematic Review," *Landscape and Urban Planning* 214 (October 2021): 104130, https://doi.org/10.1016/j.landurbplan.2021.104130.

[53] See MARCCUS, Hendricks D., and ZANDT, Shannon Van "Unequal Protection Revisited: Planning for Environmental Justice, Hazard Vulnerability, and Critical Infrastructure in Communities of Color." *Environmental Justice* 14, no. 2 (April 2021): 87–97, https://doi.org/10.1089/env.2020.0054.

discounted.[54] That is why environmental justice has become so important to just-transition thinking, where distributive, procedural, and restorative dimensions are treated as internal to the legitimacy of ecological restructuring rather than external to it.[55]

This explanatory force is indispensable, but its doctrinal status is different. Environmental justice is strongest as a framework of diagnosis and critique. It tells us where law should look and why aggregate ecological gain does not settle questions of legality. It does not always provide a compact juridical test for evaluating measures that are lawful in objective and general in form, yet produce sharply unequal local sacrifice.[56] That limitation becomes especially visible in adaptation governance.[57] The comparative study by Lesnikowski and colleagues is highly revealing in this respect. Across 217 national adaptation policies, many states recognized vulnerable groups and some expressly invoked human rights, but meaningful participation remained thin and accountability mechanisms for harms generated by adaptation actions were almost entirely absent.[58] The legal lesson is precise. Rights may be acknowledged and vulnerability named, yet the institutional architecture may still fail to address how adaptation burdens are allocated, who gets to shape them, and what remedies exist when protective action itself becomes harmful.[59] Environmental justice makes that pattern visible; it does not by itself settle how a court or public-law analysis should formulate the defect.

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[54] See HARRI, Anna and LEVANEN, Jarkko "'It Should Be Much Faster Fashion'— Textile Industry Stakeholders' Perceptions of a Just Circular Transition in Tamil Nadu, India," *Discover Sustainability* 5, no. 1 (2024): 39, https://doi.org/10.1007/s43621-024-00211-8.

[55] CHIARA, Giacomo et al., "What Does 'Just' Mean in Just Energy Transitions? Different Perspectives between EU Institutional Debates and Scientific Literature," *Frontiers in Political Science* 7 (May 2025), https://doi.org/10.3389/fpos.2025.1572855.

[56] TEEBKEN, "Vulnerability Locked in. On the Need to Engage the Outside of the Adaptation Box."

[57] Reviews of adaptation governance point to persistent gaps in justice, participation, and accountability in adaptation planning and implementation, see MALLOY, Jeffrey T. and ASHCRAFT, Catherine M., "A Framework for Implementing Socially Just Climate Adaptation," *Climatic Change* 160, no. 1 (2020): 1–14, https://doi.org/10.1007/s10584-020-02705-6; MALIK, Ishfaq Hussain and FORD, James D., "Addressing the Climate Change Adaptation Gap: Key Themes and Future Directions," *Climate* 12, no. 2 (2024), https://doi.org/10.3390/cli12020024; FIACK, Duran et al., "Sustainable Adaptation: Social Equity and Local Climate Adaptation Planning in U.S. Cities," *Cities* 115 (August 2021): 103235, https://doi.org/10.1016/j.cities.2021.103235.

[58] LESNIKOWSKI et al., "Human Rights in Climate Change Adaptation Policies."

[59] LEE, Seunghan et al., "Towards a Deeper Understanding of Barriers to National Climate Change Adaptation Policy: A Systematic Review," *Climate Risk Management* 35 (January 2022): 100414, https://doi.org/10.1016/j.crm.2022.100414; OMUKUTI, Jessica, "Challenging the Obsession with Local Level Institutions in Country Ownership of Climate Change Adaptation," *Land Use Policy* 94 (May 2020): 104525, https://doi.org/10.1016/j.landusepol.2020.104525.

This is the point at which the present article narrows its claim. The legal problem is not ecological harm in general. It is not every instance of unequal effect. It is the specific case in which the State, acting for a lawful common ecological purpose, imposes severe and localized sacrifice on a determinate group or territory without adequate corrective design.[60] Human rights law tells us what interests are under pressure and what duties of participation, remedy, and justification arise.[61] Environmental justice tells us why the burden is likely to fall where it does.[62] But once the question becomes whether a formally general ecological measure has crossed the line into a legally objectionable pattern of burden allocation, a more compact doctrinal vocabulary is needed.[63] The next section argues that equality provides that vocabulary through the framework of unequal public burdens. The objective is not to displace the normative commitments of just transition, but to develop a more specific legal grammar through which concentrated sacrifice under ecological governance may be identified and reviewed.

4. Equality and unequal public burdens as a human-rights legality test

Once the problem is understood as one of concentrated sacrifice under otherwise lawful ecological governance, equality becomes the most appropriate lens for doctrinal construction. This claim is consistent with, but more institutionally specific than, the broader commitments of just transition scholarship. Whereas just transition provides a normative framework for evaluating the fairness of ecological transformation, equality offers a public-law vocabulary through which concentrated and

[60] See GAYO, Eugenia M. et al., "A Cross-Cutting Approach for Relating Anthropocene, Environmental Injustice and Sacrifice Zones," *Earth's Future* 10, no. 4 (2022): e2021EF002217, https://doi.org/10.1029/2021EF002217; POZO, C. et al., "Reducing Global Environmental Inequality: Determining Regional Quotas for Environmental Burdens through Systems Optimisation," *Journal of Cleaner Production* 270 (October 2020): 121828, https://doi.org/10.1016/j.jclepro.2020.121828; MUTTITT, Greg and KARTHA, Sivan, "Equity, Climate Justice and Fossil Fuel Extraction: Principles for a Managed Phase Out," *Climate Policy* 20, no. 8 (2020): 1024–42, https://doi.org/10.1080/14693062.2020.1763900.

[61] WEWERINKE-SINGH, Margaretha, "A Human Rights Approach to Energy: Realizing the Rights of Billions within Ecological Limits," *Review of European, Comparative & International Environmental Law* 31, no. 1 (2022): 16–26, https://doi.org/10.1111/reel.12412. See also CHAPMAN, Audrey R. and AHMED, A. Karim, "Climate Justice, Humans Rights, and the Case for Reparations," *Health and Human Rights* 23, no. 2 (2021): 81–94.

[62] DEIVANAYAGAM, Thilagawathi Abi et al., "Envisioning Environmental Equity: Climate Change, Health, and Racial Justice," *The Lancet* 402, no. 10395 (2023): 64–78, https://doi.org/10.1016/S0140-6736(23)00919-4. See also FARBER, Daniel A., "INEQUALITY AND REGULATION Designing Rules to Address Race, Poverty, and Environmental Justice," *American Journal of Law and Equality* 3 (September 2023): 2–52, https://doi.org/10.1162/ajle_a_00048.

[63] FARBER, Daniel A., "INEQUALITY AND REGULATION REVISITED," *American Journal of Law and Equality* 4 (September 2024): 347–73, https://doi.org/10.1162/ajle_a_00069.

insufficiently corrected burdens may be subjected to legal review. That claim does not depend on the view that equality somehow supersedes human rights, still less that it displaces environmental law.[64] It depends on a narrower proposition. Where the relevant defect lies not in the ecological objective itself but in the allocation of the costs of pursuing that objective, the law must ask whether public action remains compatible with equal citizenship and the basic conditions of human dignity.

Recent scholarship on climate justice, just transition, and rights-based environmental governance increasingly treats distributive design, participation, and accountability as integral components of legitimate ecological transition rather than as external policy considerations.[65] Just transition scholarship has been particularly important in demonstrating that ecological transformation cannot be assessed solely by reference to environmental effectiveness or decarbonisation outcomes. It also requires attention to how transition-related costs, risks, and opportunities are distributed across different social groups and territories.[66]

The present argument is consistent with that insight but operates at a different level of analysis. Just transition functions primarily as a normative framework for evaluating the fairness of ecological transformation. It identifies the values that should guide transition processes, including distributive justice, procedural inclusion, recognition, and social protection. However, it does not by itself provide a compact public law standard for determining when an otherwise legitimate ecological measure becomes legally suspect because its burdens are excessively concentrated on particular communities. The concept of unequal public burdens is intended to address that narrower question. It does not replace just transition; rather, it translates one of its central distributive concerns into a more specific framework for legal review. In that sense, just transition helps explain why concentrated sacrifice matters, whereas unequal public burdens helps identify when such sacrifice becomes legally

[64] JODOIN, Sébastien et al., "Rights-Based Approaches to Climate Decision-Making," *Current Opinion in Environmental Sustainability* 52 (October 2021): 45–53, https://doi.org/10.1016/j.cosust.2021.06.004.
[65] MCCAULEY, Darren and HEFFRON, Raphael, "Just Transition: Integrating Climate, Energy and Environmental Justice," *Energy Policy* 119 (August 2018): 1–7, https://doi.org/10.1016/j.enpol.2018.04.014; HEFFRON, Raphael and MCCAULEY, Darren, "The 'Just Transition' Threat to Our Energy and Climate 2030 Targets," *Energy Policy* 165 (June 2022): 112949, https://doi.org/10.1016/j.enpol.2022.112949.
[66] ABRAM, Simone et al., "Just Transition: A Whole-Systems Approach to Decarbonisation," Climate Policy 22, no. 8 (2022): 1033–49, https://doi.org/10.1080/14693062.2022.2108365.

problematic.

Equality is not a brake on transition. It is one of the legal conditions under which transition can still count as a genuinely public project. The question addressed here is therefore not whether ecological objectives are legitimate, but whether the burdens of pursuing those objectives remain compatible with the equal status of those required to bear them. This claim is consistent with the broader commitments of just transition scholarship, which likewise insists that ecological transformation must be assessed not only by its environmental objectives but also by the distribution of its social costs and benefits. The distinct contribution of the present analysis lies in translating that concern into a more specific public law framework for identifying when transition-related burdens become legally problematic. The equality at stake here is substantive rather than merely formal.[67] Formal equality is rarely enough for transition disputes because ecological measures are commonly drafted in general terms from the outset.[68] The deeper question is whether rules that appear universal in form operate across such unequal social and territorial backgrounds that they create materially differentiated burdens in practice.[69] Substantive equality jurisprudence and scholarship have long insisted that adjudication must attend to structural disadvantage, adverse effects, and the real-world operation of apparently neutral norms.[70] That insight is particularly apt in ecological transition, where burdens are filtered through pre-existing inequalities of

[67] FREDMAN, Sandra, "Substantive Equality Revisited," *International Journal of Constitutional Law* 14, no. 3 (2016): 712–38, https://doi.org/10.1093/icon/mow043; FREDMAN, Sandra, "Women and Education: The Right to Substantive Equality," in *Human Rights and Equality in Education: Comparative Perspectives on the Right to Education for Minorities and Disadvantaged Groups*, ed. FREDMAN, Sandra et al. (Policy Press, 2018), https://doi.org/10.1332/policypress/9781447337638.003.0007; WILL, Ulrike and MANGER-NESTLER, Cornelia, "Fairness, Equity, and Justice in the Paris Agreement: Terms and Operationalization of Differentiation," *Leiden Journal of International Law* 34, no. 2 (2021): 397–420, https://doi.org/10.1017/S0922156521000078.

[68] See DAWSON, Neil M. et al., "Barriers to Equity in REDD+: Deficiencies in National Interpretation Processes Constrain Adaptation to Context," *Environmental Science & Policy* 88 (October 2018): 1–9, https://doi.org/10.1016/j.envsci.2018.06.009.

[69] BOUZAROVSKI, Stefan, "Just Transitions: A Political Ecology Critique," *Antipode* 54, no. 4 (2022): 1003–20, https://doi.org/10.1111/anti.12823; CIPLET, David and HARRISON, Jill Lindsey, "Transition Tensions: Mapping Conflicts in Movements for a Just and Sustainable Transition," *Environmental Politics* 29, no. 3 (2020): 435–56, https://doi.org/10.1080/09644016.2019.1595883.

[70] BRODERICK, Andrea, "A Reflection on Substantive Equality Jurisprudence: The Standard of Scrutiny at the ECtHR for Differential Treatment of Roma and Persons with Disabilities," *International Journal of Discrimination and the Law* 15, nos. 1–2 (February 2014): 101–122, https://doi.org/10.1177/1358229114558381. See also BASSON, Gideon, "Poverty Discrimination under the Promotion of Equality and Prevention of Unfair Discrimination Act: A Transformative Substantive Equality Approach," *South African Journal on Human Rights* 39, no. 1 (2023): 26–51, https://doi.org/10.1080/02587203.2023.2214373.

income, infrastructure, housing quality, territorial marginality, and political voice.[71]

The concern that lawful public action may impose disproportionate costs on a limited class of persons is not new. It appears in a range of constitutional and administrative law traditions concerned with equality before public burdens, special sacrifice, and the fair distribution of regulatory costs. The present argument does not seek to replace those traditions, but to reconstruct them for the context of contemporary ecological transition governance. The proposed concept of unequal public burdens should therefore be situated within the substantive-equality tradition, but not collapsed into it.[72] Substantive equality is a broad constitutional orientation; unequal public burdens is a more specific public-law construct aimed at one recurring mechanism through which inequality is generated by state action.[73] Its focus is not all forms of disadvantage, nor all forms of unequal treatment. It is narrower and more institutional: it concerns cases in which the state pursues a common ecological objective through measures that require an identifiable part of the community to bear a materially heavier share of the costs.[74] In that sense, the concept functions as a doctrinal intermediate category.[75] It is narrower than substantive equality as a constitutional ideal, but more precise for the burden-allocation disputes that ecological transition increasingly produces. Its contribution lies not in identifying a previously unknown legal problem, but in supplying a more structured doctrinal vocabulary for addressing a familiar problem in a new regulatory context.

This also explains why unequal public burdens is not reducible to proportionality. Proportionality is indispensable in climate and environmental adjudication because public authorities often justify restrictive measures by reference to urgent ecological necessity.[76] But proportionality remains centred on the overall justification of a

[71] SOVACOOL et al., “Decarbonization and Its Discontents.”
[72] FORAN, Michael P., “Equality before the Law : A Substantive Constitutional Principle,” *Public Law*, April 30, 2020, 287–306.
[73] NODES, Kyle, “Equal Dignity and Unequal Protection: A Framework for Analyzing Disparate Impact Claims,” *Duke Law Journal Online* 68 (April 2019): 149–85.
[74] SCHEIDEL, Arnim et al., “Ecological Distribution Conflicts as Forces for Sustainability: An Overview and Conceptual Framework,” *Sustainability Science* 13, no. 3 (2018): 585–98, https://doi.org/10.1007/s11625-017-0519-0.
[75] CHNG, Kenny, “The Relationship Between Constitutional Equality and Substantive Review,” *Asian Journal of Comparative Law* 18, no. 3 (2023): 426–45, https://doi.org/10.1017/asjcl.2023.23.
[76] BOMHOFF, Jacco, “Proportionality,” in *Elgar Encyclopedia of Comparative Law* (Edward Elgar Publishing Limited, 2023); DORKENOO, Kelly et al., “A Critical Review of Disproportionality in Loss and Damage from Climate Change,” *WIREs Climate Change* 13, no. 4 (2022): e770, https://doi.org/10.1002/wcc.770.

measure: whether the aim is legitimate, whether the measure is suitable, whether less restrictive alternatives exist, and whether the relation between means and ends remains acceptable.[77] Equality asks something different. It asks whether the burden-bearing structure generated by the measure is compatible with treating the members of the polity as equals.[78] Thus, proportionality and equality overlap in difficult ways, precisely because both mediate between public ends and private impact; yet that overlap does not erase their different logics. A transition measure may survive proportionality review because its environmental objective is compelling and less restrictive alternatives are unavailable, yet still remain defective if it secures that objective by concentrating severe losses on a limited community without adequate correction.[79] Proportionality asks whether the measure goes too far overall; unequal public burdens asks who is required to absorb the common costs, and on what justificatory basis.[80]

Nor is the concept exhausted by non-discrimination or indirect discrimination. Adverse-effect discrimination doctrine is indispensable where ecological burdens track protected grounds such as race, ethnicity, sex, disability, or indigeneity, and the development of indirect-discrimination law has been central to revealing how facially neutral rules can entrench exclusion.[81] But many transition disputes do not fit comfortably within that framework. A peripheral municipality exposed to infrastructure siting, tenants in poorly insulated housing stock, a fishing community affected by species protection, or low-income households facing fuel poverty may bear disproportionately severe transition burdens without the case mapping neatly onto

[77] LURIE, Guy, "Proportionality and the Right to Equality," *German Law Journal* 21, no. 2 (2020): 174–96, https://doi.org/10.1017/glj.2020.8.
[78] MAKOV, Tamar et al., "Inconsistent Allocations of Harms versus Benefits May Exacerbate Environmental Inequality," *Proceedings of the National Academy of Sciences* 117, no. 16 (2020): 8820–24, https://doi.org/10.1073/pnas.1911116117.
[79] SULTANA, Farhana, "Critical Climate Justice," *The Geographical Journal* 188, no. 1 (2022): 118–24, https://doi.org/10.1111/geoj.12417.
[80] MIKETA, Asami and SCHRATTENHOLZER, Leo, "Equity Implications of Two Burden-Sharing Rules for Stabilizing Greenhouse-Gas Concentrations," *Energy Policy* 34, no. 7 (2006): 877–91, https://doi.org/10.1016/j.enpol.2004.08.050.
[81] GOUNDER, Babu and BROWN, C. Taylor, "The (Un)Just Transition in Ecomodernist Climate Policy: Critical Analysis of Social Inequities in the US Inflation Reduction Act," *Critical Social Policy* 45, no. 3 (September 2024), https://doi.org/10.1177/02610183241281349. See also KHANNA, Vandita, "The Development of Indirect Discrimination Law in India: Slow, Uncertain, and Unsteady," *Indian Law Review* 8, no. 3 (2024): 306–30, https://doi.org/10.1080/24730580.2024.2412898.

orthodox suspect-ground analysis.[82] Unequal public burdens therefore reaches both further and less far than discrimination doctrine: further, because it can capture concentrated sacrifice even where classic protected grounds are not readily available; less far, because it is confined to the unequal allocation of burdens generated by public action in pursuit of a common objective.

The concept should likewise be distinguished from compensation doctrines for lawful sacrifice. Many public-law systems, whether in constitutional, administrative, or expropriation-related settings, recognize that lawful state action may trigger compensation when it imposes a special, abnormal, or exceptional burden on a limited class of persons.[83] The literature on special sacrifice reflects precisely that intuition: certain public losses are too individualized and excessive to be left where they fall. That family of doctrines is highly relevant, but it should not be allowed to do all the conceptual work here. Compensation is remedial; unequal public burdens is diagnostic. Compensation asks what the state owes after a special sacrifice has been recognized.[84] Unequal public burdens asks the prior question: whether the distribution of burdens is already legally defective, such that some form of corrective response in terms of redesign, mitigation, participation, phased implementation, territorial support, exemption, or compensation has become necessary.[85]

In short, the proposed framework is not intended to displace existing human-rights doctrines. Proportionality, non-discrimination, procedural fairness, and positive obligations each perform important but distinct functions within rights adjudication. The present concern is narrower. Ecological measures may satisfy proportionality requirements, pursue legitimate public objectives, apply without formal discrimination, and comply with procedural guarantees, yet still impose unusually concentrated

[82] For instance, see IM, Zhen Jie, "Paying the Piper for the Green Transition? Perceptions of Unfairness from Regional Employment Declines in Carbon-Polluting Industrial Sectors," *Journal of European Public Policy* 31, no. 6 (2024): 1620–46, https://doi.org/10.1080/13501763.2023.2288689.

[83] YOU, Wei et al., "Special Sacrifice and Determination of Compensation Standard for Land Expropriation in the Urbanization Process—A Perspective of Legal Practice," *Sustainability* 14, no. 19 (2022), https://doi.org/10.3390/su141912159; DOORN-HOEKVELD, Willemijn van, "Equal Distribution of Burdens in Flood Risk Management," *Review of European Administrative Law* 10, no. 1 (2017): 81–110, https://doi.org/10.7590/187479817X14945955771984.

[84] MARAIS, Ernst and MAREE, P. J. H., "At the Intersection between Expropriation Law and Administrative Law: Two Critical Views on the Constitutional Court's Arun Judgment," *Potchefstroom Electronic Law Journal* 19 (2016): 1–54, https://doi.org/10.17159/1727-3781/2016/v19i0a578.

[85] HE, Qihao and FAURE, Michael, "Strengthening Resilience and Sustainability for Post-Disaster Recovery: A Comparative Law and Economics Analysis on Smart Mixes Between Mechanisms," *Sustainability* 16, no. 21 (2024), https://doi.org/10.3390/su16219534.

burdens on a limited group of persons for the benefit of the broader community. Unequal public burdens is proposed as a supplementary analytical tool for identifying that specific distributive defect. Its contribution therefore lies not in creating an alternative to established human-rights review, but in refining it where the central legal concern is the concentration of public costs rather than the legitimacy of public objectives themselves.

Portuguese constitutional materials provide a useful, if contested, domestic anchor for this point. Article 13 of its Constitution guarantees equality before the law, while Article 2 frames the Portuguese Republic as a democratic state based on the rule of law.[86] In *Acórdão n.º 83/2022 (the Iberian Wolf* case*)*,[87] the Constitutional Court majority declined to invalidate the statutory compensation limits at issue, but the published dissent of Justice Lino Ribeiro treated the case as one of equality before public burdens and special and abnormal sacrifice. The significance of that disagreement lies less in its outcome than in the constitutional fault line it makes visible: environmental protection may be unquestioned in purpose while the distribution of its costs remains open to equality-based challenge.[88]

The centrality of the Iberian Wolf case to the present analysis is not merely contextual. The decision is particularly valuable because it confronts, in unusually explicit terms, the precise problem that this article seeks to conceptualise: the allocation of concentrated burdens generated by measures pursued in the public ecological interest. Whereas many environmental cases focus primarily on the adequacy of environmental protection or the proportionality of restrictions on individual rights, the Portuguese Constitutional Court was required to address the distributive implications of conservation policy itself. Justice Lino Ribeiro's dissent is especially significant in this regard because it frames the dispute through the language of unequal sacrifice and burden allocation, thereby providing a doctrinal bridge between environmental governance and substantive equality. For that reason, the case functions less as a jurisdiction-specific illustration than as an archetypal example of the broader constitutional dilemma examined throughout this article.

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[86] *Constitution of the Portuguese Republic*, 1976, 7th rev. (2005).
[87] *Acórdão n.º 83/2022 (the Iberian Wolf case),* the Portugal Constitutional Court, 2022, available from: https://r2he.info/summaries/acordao-no-83-2022-the-iberian-wolf-case/
[88] See LUCHERINI, Francesco, "The Constitutionalization of Social Rights in Italy, Germany, and Portugal: Legislative Discretion, Minimal Guarantees, and Distributive Integration," *German Law Journal* 25, no. 2 (2024): 335–50, https://doi.org/10.1017/glj.2023.110.

If unequal public burdens is neither proportionality, nor discrimination, nor compensation, what does it positively require? The answer proposed here is that a transition measure becomes suspect when three elements converge.[89] The first is severity of impact. The burden must be serious enough to threaten the basic conditions of dignified life.[90] This threshold excludes ordinary regulatory inconvenience, diffuse market adjustments, and the normal frictions of social transformation. It is concerned with burdens that materially destabilize access to housing, subsistence, health-protecting energy, mobility, land, livelihood, or the practical capacity to remain part of a community on fair terms.[91] Human-rights and climate-health scholarship increasingly supports precisely this move away from a narrow economic understanding of burden and toward one centred on the social and material preconditions of dignified existence.[92] The jurisprudence under the ICCPR and the ECHR reinforces the same orientation by linking environmental and climate harms to life, home, private and family life, and effective judicial protection.

The second element is concentration of burden. The burden must be socially or territorially clustered on identifiable communities rather than dispersed across the general population. Concentration is what turns a public burden into a potentially unequal public burden.[93] It captures the fact that ecological measures are frequently experienced as place-based or group-specific even when drafted in universal language. Environmental-justice and adaptation scholarship repeatedly shows that burdens associated with energy transition, conservation, exposure reduction, and resilience planning tend to settle on communities already marked by racialized

[89] RANJAN, Ankita et al., "A New Scenario Framework for Equitable and Climate-Compatible Futures," *Climate and Development* 17, no. 4 (2025): 325–37, https://doi.org/10.1080/17565529.2024.2365939.
[90] TESHOME, Martha, "The Human Health Burden of Climate Change: Non-Economic Losses and Ethical Considerations towards Achieving Planetary Health," *The Journal of Climate Change and Health* 19 (September 2024): 100336, https://doi.org/10.1016/j.joclim.2024.100336.
[91] For instance, see JESSEL, Sonal et al., "Energy, Poverty, and Health in Climate Change: A Comprehensive Review of an Emerging Literature," *Frontiers in Public Health* 7 (December 2019), https://doi.org/10.3389/fpubh.2019.00357; LIPPER, Leslie and CAVATASSI, Romina, "The Challenge Climate Change Poses to Achieving Resilient and Inclusive Rural Transformation (RITI)," *Global Food Security* 43 (December 2024): 100811, https://doi.org/10.1016/j.gfs.2024.100811.
[92] LEVY, Sheri et al., "A Human Rights-Based Approach to Climate Injustices at the Local, National, and International Levels: Program and Policy Recommendations," *Social Issues and Policy Review* 18, no. 1 (December 2023), https://doi.org/10.1111/sipr.12103.
[93] KIME, Sage et al., "Evaluating Equity and Justice in Low-Carbon Energy Transitions," *Environmental Research Letters* 18, no. 12 (2023): 123003, https://doi.org/10.1088/1748-9326/ad08f8.

inequality, peripheralization, weak bargaining power, or infrastructural neglect.[94] Concentration is therefore not merely descriptive. It marks the point at which the common ecological good is pursued through a selectively distributed pattern of loss.

The third element is the absence of corrective design, including situations in which formally existing corrective measures are manifestly incapable of preventing, mitigating, or compensating for foreseeable concentrated burdens.[95] Equality does not require perfect parity of impact, nor does it prohibit all uneven sacrifice. What it prohibits is the normalization of severe and concentrated sacrifice without serious institutional efforts to justify, soften, or correct it.[96] This is where procedural justice becomes central rather than incidental. Research on flood-risk management,[97] managed retreat,[98] and adaptation governance consistently shows that burdens become especially objectionable where affected communities have little effective role in shaping the measures imposed upon them, where alternatives are not meaningfully considered, and where support mechanisms are weak or absent. Participation is therefore not an optional procedural supplement. It is part of the legality of burden distribution itself.

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[94] BRINKLEY, Catherine and WAGNER, Jenny, "Who Is Planning for Environmental Justice—and How?," *Journal of the American Planning Association* 90, no. 1 (2024): 63–76, https://doi.org/10.1080/01944363.2022.2118155.

[95] For the purposes of this framework, corrective design should not be understood in purely formal terms. The mere existence of compensation schemes, participatory mechanisms, mitigation measures, or adjustment programmes does not by itself satisfy this requirement. Where such measures are manifestly underfunded, structurally inaccessible, foreseeably ineffective, or otherwise incapable of addressing the concentrated burdens generated by a transition measure, they may be treated as functionally equivalent to an absence of corrective design. The relevant question is therefore not whether corrective mechanisms exist on paper, but whether they are reasonably capable of preventing particular communities from bearing disproportionate costs on behalf of the wider public.

[96] See THALER, Thomas, "Just Retreat—How Different Countries Deal with It: Examples from Austria and England," *Journal of Environmental Studies and Sciences* 11, no. 3 (2021): 412–19, https://doi.org/10.1007/s13412-021-00694-1; SIDERS, A. R., "Social Justice Implications of US Managed Retreat Buyout Programs," *Climatic Change* 152, no. 2 (2019): 239–57, https://doi.org/10.1007/s10584-018-2272-5.

[97] BEGG, Chloe, "Power, Responsibility and Justice: A Review of Local Stakeholder Participation in European Flood Risk Management," *Local Environment* 23, no. 4 (2018): 383–97, https://doi.org/10.1080/13549839.2017.1422119; WATKINS, Sam and COLLINS, Alexandra, "From Community Engagement to Community Inclusion for Socially and Procedurally Just Flood Risk Governance," *Journal of Flood Risk Management* 18, no. 1 (2025): e13042, https://doi.org/10.1111/jfr3.13042.

[98] AJIBADE, Idowu et al., "Are Managed Retreat Programs Successful and Just? A Global Mapping of Success Typologies, Justice Dimensions, and Trade-Offs," *Global Environmental Change* 76 (September 2022): 102576, https://doi.org/10.1016/j.gloenvcha.2022.102576; SIDERS, AR et al., "Transformative Potential of Managed Retreat as Climate Adaptation," *Current Opinion in Environmental Sustainability*, Slow Onset Events related to Climate Change, vol. 50 (June 2021): 272–80, https://doi.org/10.1016/j.cosust.2021.06.007.

This procedural dimension also has a firm basis in positive environmental law.[99] The Aarhus Convention structures environmental legality around access to information, public participation in decision-making, and access to justice. That architecture matters here because a burden that is both imposed and structured without meaningful public voice is much harder to justify as one borne among equals.[100] The same tendency is visible in recent climate jurisprudence, where rights-based adjudication increasingly ties environmental governance to due diligence, institutional justification, and reviewability.[101]

Taken together, these three cumulative indicators, namely severity of impact, concentration of burden, and the absence of manifest inadequacy of corrective design, provide a compact legality test for a specific class of transition disputes. They do not ask whether ecological transition is necessary in the abstract. They ask whether the path chosen to pursue ecological necessity is being built on constitutionally insufficiently examined sacrifice. Their virtue lies in doctrinal economy. They condense a broad field of rights- and justice-based concerns into a reviewable framework for cases where the central problem is neither classic discrimination nor straightforward rights deprivation, but concentrated burden-bearing under lawful common-purpose action.

This is why equality does not weaken transition but disciplines it. Just-transition scholarship has repeatedly argued that ecological restructuring is legitimate only when distributive, procedural, and restorative concerns are treated as internal rather than external to climate action.[102] Unequal public burdens gives that insight a more explicit public-law form. It identifies the point at which a common ecological project ceases to be fairly public because it relies, without adequate justification or correction, on the

[99] GELLERS, Joshua C. and JEFFORDS, Jeffords, "Toward Environmental Democracy? Procedural Environmental Rights and Environmental Justice," *Global Environmental Politics* 18, no. 1 (2018): 99–121, https://doi.org/10.1162/GLEP_a_00445.
[100] LEE, Maria, "The Aarhus Convention 1998 and the Environment Act 2021: Eroding Public Participation," *The Modern Law Review* 86, no. 3 (2023): 756–84, https://doi.org/10.1111/1468-2230.12789.
[101] MACCHI, Chiara, "The Climate Change Dimension of Business and Human Rights: The Gradual Consolidation of a Concept of 'Climate Due Diligence,'" *Business and Human Rights Journal* 6, no. 1 (2021): 93–119, https://doi.org/10.1017/bhj.2020.25.
[102] HEFFRON, Raphael and MCCAULEY, Darren, "The Concept of Energy Justice across the Disciplines," *Energy Policy* 105 (June 2017): 658–67, https://doi.org/10.1016/j.enpol.2017.03.018; MCCAULEY, Darren et al., "Leaders and Laggards in the Pursuit of an EU Just Transition," *Ecological Economics* 205 (March 2023): 107699, https://doi.org/10.1016/j.ecolecon.2022.107699.

politically convenient concentration of sacrifice.[103] At that point, legality demands more than environmental purpose and technocratic rationality. It demands proof that common ecological goods are not being secured through burden allocations incompatible with equal dignity.

It is also highlighted that the proposed framework may be understood as complementary to contemporary scholarship on adaptive environmental law and adaptive governance. That literature has persuasively argued that ecological uncertainty often requires regulatory flexibility, iterative decision-making, and the capacity to adjust legal responses in light of changing environmental conditions. At the same time, concerns have been raised that adaptive governance may, if insufficiently constrained, permit forms of managerial discretion that obscure questions of accountability, legal certainty, and distributive justice.[104] From this perspective, unequal public burdens can be understood as an internal constitutional constraint on adaptive governance. The framework does not oppose regulatory flexibility as such. Rather, it seeks to ensure that adaptive measures remain subject to substantive equality by requiring continuing attention to the severity, concentration, and correction of transition-related burdens.

5. Applications / Local tensions

The value of the proposed framework lies in its capacity to identify a common legal defect across very different forms of ecological governance. The issue is not whether decarbonization, adaptation, or species protection are legitimate public objectives. In all three settings considered here, they are. The issue is whether those objectives are pursued through burden structures that become legally suspect because they are severe, concentrated, and insufficiently corrected. Read in that way, local tensions are not incidental frictions of transition. They are the point at which legality must decide whether a common ecological project is being carried by some more than others.

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[103] ISLAM, Md Saidul, “Rethinking Climate Justice: Insights from Environmental Sociology,” *Climate* 12, no. 12 (2024), https://doi.org/10.3390/cli12120203.

[104] See RUHL, J.B., “General Design Principles for Resilience and Adaptive Capacity in Legal Systems – With Application to Climate Change Adaptation,” *North Carolina Law Review* 89 (2011): 1373–1404, Available from: https://scholarship.law.vanderbilt.edu/faculty-publications/475; CRAIG, Robin Kundis and RUHL, J.B., “Designing Administrative Law for Adaptive Management,” *Vanderbilt Law Review* 67 (2014): 1–87, Available from: https://scholarship.law.vanderbilt.edu/faculty-publications/463; RUHL, J.B. et al. “The Role of Law in Adaptive Governance,” *Ecology and Society* 22 (2017), Available from: https://scholarship.law.vanderbilt.edu/faculty-publications/523.

The following examples are not intended merely to illustrate situations of ecological conflict. Their purpose is to test the analytical capacity of the proposed framework. In each case, the question is whether the combination of severity of impact, concentration of burden, and absence or manifest inadequacy of corrective design reveals a form of unequal public burden that may remain insufficiently visible through conventional analyses focused solely on proportionality, environmental necessity, or procedural compliance.

(a) Carbon pricing, housing, and energy poverty through the lens of unequal public burdens

Carbon pricing is often defended as a rational instrument of climate mitigation, and in aggregate terms that defence is strong.[105] Yet the legal difficulty emerges when a formally general measure interacts with unequal housing conditions and unequal adaptive capacity.[106] The European Commission now explicitly treats energy poverty as a structural problem linked to low income, high household energy expenditure, and the low energy performance of buildings,[107] and recent EU measures require Member States to address energy-poor and vulnerable households, including those living in social housing.[108]

On the present framework, severity arises where higher heating or energy costs threaten the basic conditions of dignified domestic life. The burden is not simply that energy becomes more expensive, but that some households must reduce heating to levels that affect health, wellbeing, or minimally decent living conditions.[109] Concentration is equally clear. A fuel or heating reform may apply to all, yet its practical incidence clusters on low-income households in inefficient buildings, tenants unable to

[105] MENGESHA, Isaak and ROY, Debraj, "Carbon Pricing Drives Critical Transition to Green Growth," *Nature Communications* 16, no. 1 (2025): 1321, https://doi.org/10.1038/s41467-025-56540-3.
[106] For instance, see AYHAN, Sinem H. et al., "The Poverty and Distributional Impacts of Carbon Pricing on Households: Evidence from Ghana, Nigeria and Uganda," *Environment and Development Economics*, September 4, 2025, 1–23, https://doi.org/10.1017/S1355770X25100120.
[107] BOUZAROVSKI, Stefan et al., "Confronting Energy Poverty in Europe: A Research and Policy Agenda," *Energies* 14, no. 4 (2021), https://doi.org/10.3390/en14040858.
[108] STREIMIKIENE, Dalia et al., "Climate Change Mitigation Policies Targeting Households and Addressing Energy Poverty in European Union," *Energies* 13, no. 13 (2020), https://doi.org/10.3390/en13133389.
[109] GOLUBCHIKOV, Oleg and O'SULLIVAN, Kate, "Energy Periphery: Uneven Development and the Precarious Geographies of Low-Carbon Transition," *Energy and Buildings* 211 (March 2020): 109818, https://doi.org/10.1016/j.enbuild.2020.109818.

control retrofits, and residents of peripheral areas with limited alternatives.[110] What determines legality, then, is corrective design.[111] Where carbon pricing is paired with social tariffs, retrofit support, or targeted protection, the distributive defect may be mitigated.[112] Where such measures are absent, a common mitigation policy is effectively financed through a heavier and foreseeable burden on those least able to absorb it. In that setting, the issue ceases to be ordinary climate hardship and becomes a plausible instance of unequal public burdens.

Viewed through the lens of unequal public burdens, the central legal issue is not whether decarbonisation measures pursue a legitimate ecological objective. That question will often be answered affirmatively. The more precise inquiry concerns whether the costs associated with transition are being distributed in a manner consistent with substantive equality. Carbon pricing and housing-related energy policies may survive conventional proportionality review because of their environmental necessity and general applicability. Yet they may still generate equality concerns where their practical effects are concentrated on low-income households and insufficiently corrected through targeted support mechanisms. The framework therefore adds a distinct analytical layer by directing attention to the distributive structure of transition measures rather than solely to the legitimacy of their objectives. A proportionality analysis may conclude that such measures are justified; the unequal public burdens framework asks the additional question of who is required to absorb their costs.

(b) Planned relocation and managed retreat through the lens of unequal public burdens

Adaptation governance provides an even clearer application because it shows that rights pressure may be generated by ecological action itself. In 2024, the Special Rapporteur of the United Nations' Human Rights Council on the human rights of internally displaced persons concluded that planned relocations in the context of

[110] WEIßERMEL, Sören and WEHRHAHN, Rainer, "CLIMATE-JUST HOUSING: A Socio-Spatial Perspective on Climate Policy and Housing," *International Journal of Urban and Regional Research* 48, no. 4 (2024): 628–49, https://doi.org/10.1111/1468-2427.13243.
[111] BOYCE, James K. et al., "Environmental Justice and Carbon Pricing: Can They Be Reconciled?," *Global Challenges* 7, no. 4 (2023): 2200204, https://doi.org/10.1002/gch2.202200204.
[112] ZHONG, Fanglei et al., "Assessing Energy Justice in Climate Change Policies: An Empirical Examination of China's Energy Transition," *Climate Policy* 24, no. 3 (2024): 362–77, https://doi.org/10.1080/14693062.2023.2261894.

climate change and disasters will likely become more frequent, but should remain a lasr resort, used only where settlements cannot be sustained; the report also warns that such relocations can endanger a wide range of human rights and have profound social and cultural impacts. It adds that, where unavoidable, relocations must be planned and implemented through human-rights-based frameworks that prioritize community needs.[113]

Here, severity lies not in movement as such, but in the destabilization of housing continuity, livelihood systems, education, health access, place attachment, and the material conditions of collective life.[114] Concentration is built into the measure: relocation does not burden the public at large, but specific communities whose territories are deemed unsafe, often in ways shaped by prior inequality.[115] The decisive issue is corrective design. If relocation proceeds without meaningful participation, adequate housing continuity, or robust livelihood reconstruction, then adaptation protects the general interest by imposing a concentrated and transformative loss on a determinate community.[116] On this framework, that is not merely difficult adaptation. It is a paradigmatic case of unequal public burdens.

Viewed through the lens of unequal public burdens, the legality of planned relocation cannot be assessed solely by reference to the legitimacy of adaptation objectives. In many circumstances, relocation may be environmentally necessary and even indispensable for the protection of life and safety. The framework directs attention to a different question as to whether the burdens of adaptation are being concentrated on particular communities and whether adequate corrective measures accompany that concentration. Loss of place, social networks, cultural ties, and livelihood opportunities may constitute a particularly severe form of sacrifice. The proposed framework therefore highlights the distributive implications of adaptation policies and helps identify

[113] United Nations Human Rights Council, “Planned Relocations of People in the Context of Disasters and the Adverse Effects of Climate Change,” Report of the Special Rapporteur on the Human Rights of Internally Displaced Persons, Paula Gaviria Betancur, A/HRC/56/47 (July 1, 2024), https://docs.un.org/en/A/HRC/56/47.
[114] MCMICHAEL, Celia and POWELL, Teresia, “Planned Relocation and Health: A Case Study from Fiji,” *International Journal of Environmental Research and Public Health* 18, no. 8 (2021), https://doi.org/10.3390/ijerph18084355.
[115] MCMICHAEL, Celia et al., “Climate Change and the Planned Relocation of People: A Longitudinal Analysis of Vunidogoloa, Fiji,” *Ambio* 54, no. 6 (2025): 1043–56, https://doi.org/10.1007/s13280-024-02120-6.
[116] SIDERS, A. R. and AJIBADE, Idowu, “Introduction: Managed Retreat and Environmental Justice in a Changing Climate,” *Journal of Environmental Studies and Sciences* 11, no. 3 (2021): 287–93, https://doi.org/10.1007/s13412-021-00700-6.

when a necessary adaptation measure risks imposing disproportionate burdens on those least able to avoid them. An adaptation measure may be necessary; the unequal public burdens framework asks whether those required to relocate are being asked to bear more than their fair share of the costs of collective resilience.

(c) Biodiversity conservation through the lens of unequal public burdens

The same structure appears in conservation measures that pursue legitimate ecological ends while imposing disproportionate costs on those living closest to protected species or territories.[117] The Portuguese Iberian wolf litigation is instructive for that reason. In *Acórdão n.º 83/2022*, the Constitutional Court did not declare unconstitutional the challenged compensation regime. But the official judgment also records a dissent by Justice Lino Ribeiro, who located the constitutional issue in equality before public burdens under Articles 2 and 13(1) of the Portuguese Constitution and treated the losses at issue as a matter of special and abnormal sacrifice. The judgment materials further show that Portuguese law itself defines compensable sacrifice through burdens that are "special" because they fall on a person or group rather than the public generally, and "abnormal" because they exceed the ordinary costs of social life.[118]

Applied here, the analysis is straightforward. Species protection is a lawful and weighty public aim. Severity arises where recurring predation materially threatens livelihood. Concentration is obvious because the burden falls on a limited group of livestock producers in wolf-risk areas. The critical issue is corrective design. The dissent argued that the statutory ceiling, especially once state aid was absorbed into it, could fail to compensate equitably for special and abnormal losses. Whether or not that position prevails, the case exposes the doctrinal fault line clearly: a conservation regime may remain ecologically justified while becoming distributively suspect if the common benefit of protection is secured through territorially concentrated and insufficiently corrected sacrifice. Similar tensions may arise in other green-development contexts, including renewable-energy projects that sever local or

[117] See SELVA, Gracie Verde et al., "Can Environmental Compensation Contribute to Socially Equitable Conservation? The Case of an Ecological Fiscal Transfer in the Brazilian Atlantic Forest," *Local Environment* 24, no. 10 (2019): 931–48, https://doi.org/10.1080/13549839.2019.1663800.
[118] DE MESQUITA, Maria José Reis Rangel, "Damages for Violations of Human Rights: The Portuguese Legal System," in *Damages for Violations of Human Rights: A Comparative Study of Domestic Legal Systems*, ed. Ewa Bagińska (Springer International Publishing, 2016), https://doi.org/10.1007/978-3-319-18950-5_14.

Indigenous relations to land and livelihood.

Viewed through the lens of unequal public burdens, the central issue is not whether biodiversity conservation constitutes a legitimate public objective. In most cases, the ecological importance of conservation measures will be difficult to dispute. The relevant question is whether the costs of achieving that objective are distributed in a manner consistent with substantive equality. Where conservation measures impose severe and concentrated burdens on particular landowners, farmers, fishers, or rural communities without adequate corrective mechanisms, the resulting tension is not between conservation and rights as such, but between collective ecological benefits and the unequal allocation of their costs. The framework therefore helps identify when an otherwise legitimate conservation policy risks becoming distributively defective. A conservation measure may be environmentally justified; the unequal public burdens framework asks whether particular communities are being required to absorb an exceptional share of the costs of a benefit enjoyed by society as a whole.

Across these three settings, the policy instrument changes, but the legal question does not. A measure becomes troubling not because it is environmentally ambitious, but because it secures a common ecological good through burdens that are serious, clustered, and insufficiently corrected. That is the practical work done by unequal public burdens: it makes visible, across mitigation, adaptation, and conservation alike, the point at which ecological transition ceases to be merely difficult and becomes legally unjustifiable.

6. Conclusion

The central difficulty of ecological transition is not that it pursues the wrong ends, but that it may pursue the right ends through the wrong distribution of sacrifice. That is where this article has located the legal problem. What makes certain transition measures troubling is not simply that they are costly, disruptive, or politically contested. It is that they may require some communities to absorb losses that are more severe, more concentrated, and less corrected than a constitutional order committed to equal dignity should permit.

The contribution of the article has been to give that difficulty a more exact legal form. Rather than treating unequal transition costs as a diffuse problem of policy fairness, it has argued that they should be understood as a question of public legality.

The concept of unequal public burdens captures the point at which a common ecological project ceases to be fairly shared and begins to depend on localized sacrifice that has not been adequately mitigated, opened to meaningful participation, adjusted, or compensated. Under those conditions, the problem is no longer external to law. It becomes a defect in the way public power has been exercised.

This matters beyond the specific contexts discussed here. As ecological governance expands across energy, land, housing, adaptation, and conservation, conflicts over transition will increasingly turn not only on ambition, expertise, or environmental necessity, but on whether some groups are being treated as more disposable than others in the name of collective survival. The pressure on human rights lies precisely there. It arises when universality is claimed at the level of purpose, while inequality is produced at the level of implementation. Unequal public burdens helps mark the line at which that pressure can no longer be dismissed as an unfortunate side effect and must instead be confronted as a legally unacceptable mode of governance.

Future research may explore how the framework can be operationalised within adaptive governance systems, including through monitoring mechanisms, periodic review requirements, and dynamic corrective measures capable of responding to evolving distributive effects. These questions, however, concern the institutional implementation of the framework rather than its conceptual foundations.

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