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EQUITY



AS THE FOURTH PRINCIPLE TO CLIMATE RESTORATION

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“It is important that the consideration of carbon removal be pushed beyond technical consideration of ‘how much carbon at what cost’ and beyond the boundaries erected by too-narrow readings of climate modeling results towards much deeper examination of the social, environmental, political, and other implications.”¹

—Simon Nicholson

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**ENVIRONMENTAL JUSTICE**

embraces the principle that all people and communities have a right to equal protection and equal enforcement of environmental laws and regulations.

CLIMATE JUSTICE insists on a shift from a discourse on greenhouse gasses and melting ice caps into a civil rights movement with the people and communities most vulnerable to climate impacts at its heart.

Climate change is a universal problem that has already and will continue to be felt earliest and hardest by those individuals with the least means to confront the intersectional crises it exacerbates and whose actions contributed the least to the problem. As stated in the 2022 IPCC Report, *“Vulnerability of ecosystems and people to climate change differs substantially among and within regions, driven by patterns of intersecting socio-economic development, unsustainable ocean and land use, inequity, marginalization, historical and ongoing patterns of inequity such as colonialism, and governance.”*² While solutions to the climate crisis have the potential to remediate these problems, their implementation also has the potential to threaten the livelihoods of climate vulnerable populations and nearby communities if not addressed in a way that considers patterns of inequity.

As awareness of carbon dioxide removal (CDR) and climate restoration grows, environmental³ and climate justice⁴ have become central components of global climate discussions. Moving beyond the *why* of climate restoration, it is essential to consider the *how* and by *whom* when thinking about the global approach to removing carbon dioxide from the atmosphere at the gigaton scale. Questions of who shapes policy, who benefits from deployment, and who faces potential adverse environmental and social consequences are increasingly salient as we approach commercial-scale CDR.⁵ Addressing these questions is essential in developing and scaling drawdown technologies that not only remove the excess CO₂ from the atmosphere but also remediate the historical harms suffered by socially and economically disadvantaged groups, including Black, Indigenous, and people of color (BIPOC), low-income communities, future generations, People in the Global Majority,⁶ women, queer and trans communities, children, people with disabilities, and other parties that are commonly under- or unrepresented. While we recognize these groups and many more as marginalized populations⁷ to acknowledge the many layers of oppression in one single issue, we primarily focus on race, color, national origin, and income as it relates to climate change impacts.

As the IPCC report confirmed, a lack of climate literacy and education has impeded the planning and adoption of meaningful climate initiatives.⁸ This paper aims to educate the public about the role that climate restoration and carbon removal will play in addressing climate change as it relates to justice and equity, while also serving as a reference point to approaching and assessing equity within CDR development, deployment, and solutions through the work of the Solution Series.⁹ Additionally, we acknowledge the third Jemez Principle, “Let People Speak for Themselves,”¹⁰ and recognize that this paper does not represent the totality of voices from marginalized communities. We will work diligently toward the inclusion of a diverse range of stakeholders as we advocate for the just and equitable development and deployment of climate restoration.



APPROACH

We define “**FAIR**” as free from bias, dishonesty, or injustice.

Until 2022, the Foundation for Climate Restoration examined the viability of climate restoration solutions using three criteria: permanence (*i.e., durability*), scalability, and financeability, in addition to baseline considerations of risk and safety. In our 2022 White Paper,¹¹ we announced the addition of the fourth principle of climate restoration, equity, which means the solution can be developed and deployed in a way that fairly¹² distributes the benefits and burdens to all, regardless of income, race, and other characteristics.

Equitable deployment of restorative solutions will need to consider procedural justice (*i.e., fair decision-making processes*), distributive justice (*i.e., fair allocation of benefits*), reparative justice (*i.e., amends for previous harm*), and transformative justice (*i.e., addresses systemic and structural inequities*), especially for frontline communities¹³ and stakeholders. Other forms of justice that will continue to be investigated include intergenerational justice (*i.e., the obligations passed to future generations*) and recognitive justice (*i.e., recognizing the value of cultures, people, histories and places that are affected*). As we work to restore our climate, it is essential to assess the benefits and risks to all communities and fully investigate the impacts of deployment. Failure to adequately engage with equity and justice when implementing and conceptualizing climate restoration solutions may lead to maladaptation, aggravated poverty, reinforcement of existing inequalities, and entrenched gender bias and exclusion of Indigenous and marginalized communities.¹⁴ Context matters more than any specific technology or practice in this respect,¹⁵ so our focus will be on identifying guiding principles for present and future projects, rather than precise prescriptions for equitable implementation.

PROCEDURAL JUSTICE: AN AVENUE FOR COMMUNITY-LED CLIMATE RESTORATION

“In addition to considerations around the built and natural environment, some communities are wary, or outright opposed, to carbon capture and removal for a variety of reasons: lack of case study projects that center justice in their development, involvement of powerful and extractive industries such as oil and gas and “big ag”, moral hazards (e.g., continued use of fossil fuels), misuse of tax credits for geologic sequestration, lack of structures to support procedural justice for communities, and lack of clarity on basic issues like who owns pore-space rights for storage and who determines fair compensation for those rights.”¹⁶

Conventional wisdom suggests that incorporation of procedural justice into projects should lead to better social and environmental outcomes while increasing the overall project success.¹⁷ In other words, deployment that is inclusive of all stakeholders is a moral imperative, but it is also necessary to realize far-reaching and comprehensive deployment of climate restoration solutions. Procedural justice thus prioritizes transparency, the application of neutral principles among parties, respect for participants’ rights, and inclusive participation in decision-making, which often takes the form of participatory processes.¹⁸ Local communities must be at the core of decision-making with their priorities remaining central to project design.¹⁹ Empowering the public to make informed decisions about the role CDR could play in their community can be supported through education, site specific technical assessments, and respecting their final decisions on the implementation of projects.²⁰



In action, procedural justice can look like initial community outreach that identifies ways to improve social acceptance or the organization of a citizens' assembly that represents all groups, inspires trust, and offers accessible research that enables decision-making for the common good.²¹ Additionally, a robust community engagement process can be co-designed with policy entrepreneurs and project creators to meaningfully adjust projects based on community feedback.²² This should include consistent meetings with community members throughout project implementation, with reimbursement for transportation costs and attendance and accessible meeting locations, times, and formats to ensure participation from BIPOC and low-income communities. Mechanisms to support community decision-making and feedback can also include participatory budgeting for money allocation²³ and public-facing software to allow policymakers to receive constructive feedback and suggestions from community members and other stakeholders as projects proceed.²⁴

For projects already underway, effort must be made to transfer power to citizens to shape deployment and remain informed on potential impacts. Project developers should also work to mitigate impacts by maximizing community co-benefits, like workforce development programs and reductions in toxic air pollutant exposure.²⁵ Through these approaches, trust and assurance can be built in communities that their safety, livelihoods, and wellbeing are prioritized in CDR development and deployment. Advocates can communicate to representatives the importance of using these safeguards in both the planning and deployment phase of CDR, and local chapter volunteers can further ensure procedural justice is part of climate restoration by amplifying projects that incorporate robust community-led engagement.

Consent in the context of globally-scaled CDR can be a concern specifically for Indigenous communities. While new Forums such as the Local Communities and Indigenous People's Platform of the UNFCCC work towards the goal of promoting public participation,²⁷ the global and local orders in which CDR would be deployed were not consented to by Indigenous people to begin with, which raises the question of "what it means for groups of people to have an opportunity to consent when the very opportunity itself arises from conditions they did not consent to."²⁸ The impacts of colonization further prevent local and global Indigenous diplomacy at the level which would be required. Without the ability to politically represent themselves, Indigenous communities are unable to properly consent to projects managed in their political spheres.

Past and current research and development of drawdown technologies has been done on stolen land with stolen resources and limited consultation or acknowledgment of this reality. The value of project assets in areas like Canada and the United States is contingent upon access to Indigenous land and resources and the repression of Indigenous sovereignty and jurisdiction.²⁹ Mechanisms such as Free, Prior, and Informed Consent, a specified right for Indigenous People outlined in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP),³⁰ must be utilized to establish clear

REPRESENTATION FROM INDIGENOUS COMMUNITIES²⁷

"As these voices express, Indigenous peoples do not always see climate change as a future of potential environmental impacts that will threaten their current ways of life such that those impacts must be curtailed as much as possible. Rather, climate change impacts are an intensification of entangled processes of colonialism, capitalism and industrialization that continue to inflict violence and harm on Indigenous peoples."²⁶

—Kyle Whyte



and explicit safeguards for monitoring and evaluating initiatives, policies, and projects.³¹ Prioritizing solutions that acknowledge and address these injustices while providing tangible co-benefits agreed upon by Indigenous Peoples can provide an avenue towards meaningful engagement. A lack of such an acknowledgement continues the perpetuation of Indigenous erasure which includes the erasure of colonialism in discourse.

DISTRIBUTIVE JUSTICE: THE RESTORATIVE BURDEN OR OPPORTUNITY

The work of climate restoration can be seen as both a burden and an opportunity, depending on the way in which it is approached.³² That is, those with the most responsibility could be in charge of cleaning up the mess, but this could also limit the ability for those least responsible to receive the potential benefits of solutions. Distributive justice prevents harmful impacts of project deployment from falling on disadvantaged communities while ensuring that the potential benefits and opportunities are distributed fairly across groups, especially the marginalized groups most impacted by climate change.³³ To this end, restorative projects must consider the loss of preexisting benefits and then offer substitutes and additional non-climate and climate benefits before implementation. Impacted communities should be provided accessible information about how these benefits compare in quantity, quality, type, and functionality³⁴ within the context of their locality, management regime, prior land use, and scale.³⁵ To ensure harms do not fall on disadvantaged groups, the deployment process should also include formal feedback mechanisms that are co-created, like Community Benefit Agreements³⁶ and Project Labor Agreements,³⁷ so that community concerns regarding deployment remain central to the process and are addressed on an ongoing basis. Moreover, the benefits and resources from carbon removal must be equitably distributed in deployment processes, and safeguards must be put into place that ensure new harms are not created, existing harms are not exacerbated, and any adverse impacts are not borne by already overburdened communities.³⁸

While work and research on technological CDR suggests that air and water quality, land use and ecological integration, impacts to human health and safety, and energy needs are of the highest concern, research, policy design, and community education on these topics is mostly nascent.³⁹ To date, most technological CDR research has been focused on technical and economic attributes, rather than on equitable outcomes.⁴⁰ Investment in social science research for CDR is needed, and the resulting information should be multilingual and publicly accessible. Climate restoration advocates can call for the investigation, research, and development of solutions that will diminish harm, mitigate risk, and provide co-benefits to communities. Similarly, local chapter volunteers can further distributive justice by advocating for the development of policy mechanisms, systems, and institutions that support monitoring, evaluation, and enforcement of restorative solutions that do not perpetuate or create injustices in deployment.



REPARATIVE JUSTICE: THE PRICE AND HOPEFUL PRINCIPLE OF RESTORATION

“When it comes to warming, you don’t have to calculate backward from climate damages, which are shrouded in uncertainty until disaster hits. Instead, you can work forward from the more hopeful principle of restoration. That is the clarifying moral logic of climate reparations: One inarguable measure of responsibility for anything that’s been done is what it would take to undo it.”⁴¹

—David Wallace-Wells

People in the Global South* bear the brunt of climate change, a problem they have little responsibility for, with warming temperatures and unpredictable weather patterns driving economic hardship, food insecurity, and migration.⁴² Wealthy countries, including the United States, Canada, Japan and much of western Europe, account for just 12 percent of the global population today but are responsible for 50 percent of all the planet-warming greenhouse gasses released from fossil fuels and industry over the past 170 years.⁴³ One recent study suggested that every four Americans could, in their lifetime, produce enough carbon to kill one person living elsewhere on the planet.⁴⁴ Another calculated that the Global North was responsible for 92% of global emissions.⁴⁵ Climate reparations are efforts to assess the harms caused by the past emissions of the major polluters and to improve the lives of the climate-vulnerable through direct programs, policies, and mechanisms for significant resource transfers. These are meant to help the climate-vulnerable contemplate a better livelihood in light of future climate challenges.⁴⁶

Climate restoration specifically offers an opportunity to ensure that this climate debt will be compensated. It is important to note that one-off cash transfers alone cannot adequately address the disproportionate climate impacts on marginalized communities and the Global South at large. As political philosopher Olúfẹmi O. Táíwò explains, “Climate reparations are better understood as a systemic approach to redistributing resources and changing policies and institutions that have perpetuated harm—rather than a discrete exchange of money or of apologies for past wrongdoing.”⁴⁷ Transferred resources should include technologies to support decarbonization in the Global South, helping to maintain the timeline of returning to pre-industrial levels of CO₂ by the year 2050.⁴⁸ With a constructivist view to reparations, a future-oriented approach to building a new social order could be applied that distributes the costs of creating a more equitable world to those who inherited moral responsibilities of past injustices, rooting the approach in distributive justice rather than reconciliatory justice.⁴⁹

* We recognize the terms Global North and Global South are geographically inaccurate but choose to use them to define these countries as we develop a more accurate way of emphasizing global climate inequities. We also define these groups with the terms developing and developed countries, climate-vulnerable, and those least responsible to explore the use of new terms. We highlight the term “People in the Global Majority” in the beginning as a stepping stone towards an improved term but utilize the Global North and South terms throughout the paper to provide a more simplistic way of understanding assessments based on current research for the time being.



A protester holds a 'Climate Reparations Now' placard during a demonstration in London, November 2021 | Vuk Valcic/SOPA Images via ZUMA Press Wire

“There are two ways forward: climate reparations or climate colonialism.”⁵⁶

—Olúfẹmi O. Táíwò

“NEOCOLONIALISM is the practice of using economics, globalization, cultural imperialism, and conditional aid to influence a country.”

Beyond economic power, which has been birthed out of the same situation that brought on this global problem, the Global North is situated in a key position to utilize its financial and technological resources to protect people from further harm while remediating the past that has brought us to this moment of crisis. Advocates within and beyond the F4CR Local Chapter program can call for policies and institutions that will adapt to the necessity of change both with and beyond money allocation. While companies in the Global North like Stripe and Shopify have already demonstrated commitments to pay for carbon removal and provide opportunities for users to direct a portion of their purchases to carbon removal,⁵⁰ further systemic changes must be incorporated in CDR deployment at the global scale needed to restore the climate.

Carbon offsets, used to reduce, avoid, or sequester the equivalent CO₂ that is emitted elsewhere, have been utilized for net-zero commitments and are mostly located in the Global South.⁵¹ The use of offsets for emissions reduction have encountered failures in implementation and demonstrated that the associated net-zero commitments are insufficient to reach climate restoration. In shifting to carbon removal offsets, stakeholders can ensure high-quality offsets that prioritize emissions reduction first and foremost while accounting for a minimized need to offset residual or hard-to-abate emissions from sectors that are difficult to decarbonize.⁵² Equity in this respect requires robust verification, monitoring,⁵³ and opting for non-biological approaches to avoid volatility⁵⁴ while prioritizing long-term durability.⁵⁵

As the discussion of carbon offsets through carbon removal increases, the risk of climate colonialism must be addressed. The alternative to reparations would be climate colonialism, where the wealthiest survive with the most vulnerable devastated as foreign dominance is expanded through initiatives responding to climate change.⁵⁷ For example, this can happen through land-use acquisitions for CDR projects as decisions can have economic, environmental, and social ramifications for the people who live in these areas. Global agreements around CDR will also affect global supply chains and mining, which risks the inequitable sourcing of materials.⁵⁸ Implementing CDR projects in developing countries as justification for continuing to emit in developed countries not only places disproportionate harm on Indigenous People and other frontline communities, but it can also turn into another form of neocolonialism.⁵⁹ The Global North choosing to use land in the Global South to offset their emissions prevents local communities from being able to use the land for food in an increasingly volatile reality of food scarcity and availability. Without safeguards and a procedural participatory approach towards global CDR deployment, we risk this reality of further exploitation and disregard, which initially brought us into this problem. Furthermore, the goal of climate restoration cannot be achieved so long as emissions continue building up in our atmosphere as restoration seeks to remove the “legacy” emissions that are already there. The continuation of fossil fuels will create a larger problem than we currently have today, extending the goal of pre-industrial levels of CO₂ in our atmosphere by the year 2050. We must do the necessary work of decarbonizing our society and removing the legacy emissions in our atmosphere in tandem today.



Around the world, many Indigenous people suffer disproportionately relative to their fellow national citizens. Over 1.4 million Indigenous people in the US live below the poverty line.⁶⁰ As mentioned in *The Red Deal: Indigenous Actions to Save Our Earth*, decolonizing the atmosphere for the oppressed nations and developing countries through the reduction and absorption of developed countries greenhouse gas emissions requires urgent action.⁶¹ Decolonization is the process that brings about the repatriation of Indigenous land and life,⁶² which includes mass land return. This involves transferring the decision-making power over public land to Indigenous communities rather than requiring current residents to vacate their homes, maintaining the idea that Indigenous governance is possible, sustainable, and preferred for public lands.⁶³ The increasing need for global land deals—or large-scale land acquisitions—for CDR will have equity implications which can partially be addressed by returning land to Indigenous People in the name of reparative justice.⁶⁴ The Land Back Movement⁶⁵ has demonstrated momentum,⁶⁶ and land managed by Native communities can often outperform government agencies and conservation organizations in supporting biodiversity, sequestering carbon, and generating other ecological benefits.⁶⁷ Previous approaches by NGOs attempting to protect land, notably through programs such as REDD+, showcased the approach to managing land through the commodification of resources, a direct contradiction to the Indigenous Ways of Knowing⁶⁸ and traditional conservation practices. Insecure tenure rights threaten the livelihoods of vulnerable populations who play a critical role in managing natural resources.⁶⁹ Economic incentives devised for rapid turnaround through carbon offsets risk further deterioration and exploitation while potentially reversing projects following carbon credit transfers. In order to ensure the long-term and equitable drawdown, projects must partner with local communities and Indigenous People to recognize and protect community land and resource rights. Determining who owns and controls land will ultimately affect who benefits from it and what benefits are accessible. Advocates for climate restoration can combine the need for procedural, distributive, and reparative justice to ensure equity in solutions by calling for the protection of local and frontline communities in project target locations through participatory processes and the establishment of clear property rights and tenure systems. Ultimately, for reparations to occur, Global North countries must deal with the damages from their excess emissions and return ownership of stolen land to the Indigenous People.

TRANSFORMATIVE JUSTICE: ADDRESSING THE ROOT CAUSES OF CLIMATE CHANGE AND INJUSTICE

Attempting to deploy carbon removal under the current power structures not only risks further harm to frontline communities and ecosystems but poses its own limitations in reaching the climate-significant scale needed for climate restoration.⁷⁰ Transformative justice can revolutionize sectors relevant to carbon removal by addressing structural power imbalances and historic harms.⁷¹ To do so requires public policies and initiatives that tackle the root causes of inequities and environmental degradation through inclusive political processes and equitable forms of partnership.⁷² Building alternatives to carbon-intensive economic, political, and social structures, practices, and institutions that rely on the exploitation of people and the planet can occur through the work of climate restoration by adjusting food and agriculture systems, energy



The principle of **A JUST TRANSITION** is that a healthy economy and a clean environment can and should co-exist. The process for achieving this vision should be a fair one that should not cost workers or community residents their health, environment, jobs, or economic assets.

systems, water systems, and other structures that generate climate hazards and unjust relationships of power.⁷³ While restoring the climate could be seen as a reactionary response or a symptom-treatment approach, the movement can also contribute to preventative measures if it transforms the conditions that created the injustices of the climate crisis in relation to proposed restorative solutions.⁷⁴

A Just Transition⁷⁵ approach can be utilized in ensuring the safe and equitable shifts towards a sustainable economy to benefit workers on the frontlines, People of Color, Indigenous People, and low-income communities.⁷⁶ Climate restoration can support a just transition if developed and deployed thoughtfully. One approach to supporting this transition is to provide jobs for fossil fuel workers in carbon removal, carbon management, and carbon services.⁷⁷ Many of the skills employed by the oil and gas industry are valuable for capturing, transporting, storing, and utilizing CO₂, which will be crucial in technological CDR projects.⁷⁸ Ensuring frontline workers and frontline communities⁷⁹ are leading CDR policy development can protect against any injustices. Developing the diverse and inclusive workforce needed to scale climate restoration by focusing on improving the salaries and working conditions of these groups while addressing impacts of identity can aid in shifting towards a regenerative and inclusive economy that values workers and communities.⁸⁰ Including acknowledgments and considerations to the rights of workers, community residents, and Indigenous Peoples to clean air, water, land, and food in policy design and development can protect against potential further harms that CDR deployment could cause. By connecting the design of carbon removal to the decline in fossil fuels, climate restoration has the opportunity to mitigate the impacts of transforming systems while tackling the root causes of climate change. This work will not always result in a win-win for affected groups, but comprehensive exploration of all options will at least improve the odds of a just transition.

One approach to transformative justice is to deepen the citizen engagement in governance, which is gaining momentum through the **F4CR Local Chapter program**.⁸¹ Other deliberate forms of governance like citizens' assemblies⁸² can ensure inclusivity in the political process, with decisions that are representative of the common good. Shifting power into communities to decide their futures has been demonstrated through bottom-up and grassroots organizing, though there is still work to be done in providing true representation from a diverse group of voices. Programs like the **Youth Leaders for Climate Restoration**⁸³ have furthered intergenerational justice by transforming and mobilizing the way in which the youth groups engage in climate advocacy, with financial awards to support the continuity of their work. Bringing the voices of youth leaders, particularly in developing countries, to speak to their experiences within the carbon removal community ensures decisions consider a diverse subset of perspectives. Advocates for climate restoration can demand public investment in and ownership of CDR facilities and projects with local chapter volunteers pushing for this approach through policy in order to ensure risks are well-monitored with transparency.⁸⁴



CONCLUSION

“Societies that pursue CDR at too large a scale, adopt the wrong mix of approaches for their circumstances, or govern CDR ineffectively could face serious social and environmental downsides... Civil society organizations, funders, and government agencies can help ensure that CDR plays a positive role in the kind of robust, abatement-focused long-term climate strategy that is essential to fair and effective climate policy.”⁸⁵

—David Morrow, et. al.

Climate restoration must never serve as a substitute for the mitigation and adaptation strategies we need to stop emissions and adjust to a changing climate. Nor should it stand in the place of other important goals, such as those that consider the root causes of ecological degradation along with accountability, reckoning, and reparation.⁸⁶ Integrating climate restoration into the work of decarbonization and adaptation will ensure all forms of climate action are prioritized and mutually beneficial to one another. A narrow approach focused solely on carbon would present its own risks of moral hazards.⁸⁷ While climate restoration as part of a global climate strategy provides avenues towards creating a more habitable planet for all living and sentient beings, the risks and burdens associated with its development and deployment must be addressed.

Considerations of the environmental, social, and political impacts and potential co-benefits of any CDR project or solution will be crucial in adhering to the equity criterion. The addition of equity as the fourth principle for climate restoration allows us to navigate our approach in a way that considers the holistic approach needed to build a livable world. It serves as a stepping stone towards the social and relationally-focused goals that will truly create a future where we can all thrive, with no one left behind. The climate crisis is complex. While we all have a role to play, our efforts are interconnected, with every action having another reaction. The work of climate restoration is not analogous to putting a man on the moon or developing a new microchip—it’s far more complex. Creating a habitable world requires the engagement of all those who will and do reside in it.⁸⁸ The scaled implementation and mobilization needed to truly restore the climate brings us not only humility but also hope in our global capacity to restore our planet.





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