



Climate-U

Transforming Universities
for a Changing Climate

The Climate Emergency and its Relation to Education, Law and the Environment

Transforming Universities for a Changing
Climate

Working Paper Series No. 18

Sônia Fátima Schwendler

Cristina Frutuoso Teixeira

Katya Regina Isaguirre-Torres

Naína Pierri Estades

Julya Naara Mayer Wisniewski

Mariana Ribeiro do Amaral

Sylviane Guilherme

Victoria Hillesheim Garcia e Silva

Vinicius Ricardo Tomal

October 2023



UK Research
and Innovation



Climate-U

Transforming Universities
for a Changing Climate

The Climate Emergency and its Relation to Education, Law and the Environment

Transforming Universities for a Changing Climate Working Paper Series, No. 18

Sônia Fátima Schwendler

Cristina Frutuoso Teixeira

Katya Regina Isaguirre-Torres

Naína Pierri Estades

Julya Naara Mayer Wisniewski

Mariana Ribeiro do Amaral

Sylviane Guilherme

Victoria Hillesheim Garcia e Silva

Vinicius Ricardo Tomal

October 2023

www.climate-uni.com

Tweet @ClimateUniv

© October 2023 Climate-U,
Institute of Education, UCL
20 Bedford Way, London, WC1H 0AL

Free to download with use of suggested citation:
Schwendler, S., Teixeira, C. F., Isaguirre-Torres, K. R.,
Estades, N. P., Wisniewski, J. N. M., do Amaral, M. R.,
Guilherme, S., Garcia e Silva, V. H., Tomal, V. R. (2023)
*The Climate Emergency and its Relation to Education,
Law and the Environment*. Transforming Universities for
a Changing Climate, Working Paper Series No. 18

ISSN: 2754-0308



UK Research
and Innovation

Authors

Sônia Fátima Schwendler is a Professor in the Graduate Programme in Education at the Federal University of Paraná and a Visiting Research Fellow at Queen Mary University of London and the Institute of Education, University College London. Her academic pursuits extensively cover areas of Gender Studies, Sociology, Land-Based Education¹, Social Movements, and Human Rights, with a prominent focus on the necessity for higher education's transformation, considering our changing climate. She is the coordinator for the Transforming Universities for a Changing Climate research project at UFPR.

Cristina Frutuoso Teixeira is a Professor in the Graduate Programme in Environment and Development at the Federal University of Paraná. Her work in the field of sociology focuses on development and environment, and education and environment. Her academic interests focus on climate change in relation to education, law, health, and environment. She also examines conflicts in traditional communities and local population vulnerabilities in Paraná's coastal regions.

Katya Regina Isaguirre-Torres is a Postdoctoral Researcher at the Pontifical Catholic University of Paraná and a Professor of the Graduate Programme in Law at the Federal University of Paraná, specializing in environmental and agrarian law. Her research interests include environmental epistemology, agroecology, climate change, and socio-environmental conflicts due to agricultural and mineral extraction.

Naína Pierri Estades is a Professor of the Graduate Programme in Environment and Development at the Federal University of Paraná. Her academic interests include environmental development and impact assessment, critical environmental education, and coastal and fishing socio-economics. She also collaborates on global initiatives to support small-scale fishing communities and address the impacts of Covid-19 on fisher communities.

¹ *Educação do campo* in Portuguese.

Julya Naara Mayer Wisniewski holds a law degree from the Federal University of Paraná. Her research focuses on climate change's impact on education, law, and health, as well as colonialism's effects and alternatives to democratize international law.

Mariana Ribeiro do Amaral is a PhD candidate in Education at the Federal University of Paraná. Her academic focus is on gender, education and agroecology. Currently, she's a substitute professor in specialized educational services at the Federal Institute of Santa Catarina, with interests in diversity, inclusion, work, and professional education.

Sylviane Guilherme is a PhD candidate in Education at the Federal University of Paraná. She specializes in Art-driven Education and Cultural Production, with particular experience in performing arts and land-based education.

Victoria Hillesheim Garcia e Silva is an undergraduate student in Oceanography at the Federal University of Paraná. She works as the Coordinator of the Entrepreneurial Model at Maris, a Junior Oceanography Company.

Vinicius Ricardo Tomal is pursuing a Master's in Law and is a PhD candidate in Sociology at the Federal University of Paraná. He holds a law degree from the Federal University of Paraná and a postgraduate degree in Public Ministry and Democratic Rule of Law with an emphasis on Indigenous Law. His research focuses on ruralities and environment.

Abstract

This working paper discusses the participatory action research project conducted with traditional communities and social movement representatives in Paraná, Brazil. The study employed culture circles and thematic seminars to understand the experiences of populations vulnerable to climate emergencies, rights violations, and explore instances of resistance. The research primarily focused on understanding the impacts of climate change on diverse groups, including rural populations, coast and riverside communities, *quilombolas*, indigenous people, land reform settlers, and those affected by dams, with an intersectional lens towards women. The outcomes of this study help in understanding the university's role in epistemic debates on climate change. Furthermore, it allows the joint construction of the concept of climate justice and a social and environmental sustainability agenda.



Table of contents

Abstract	3	10. Impacts of the university's actions on climate justice and teachings of the Participatory Action Research	22
1. Introduction	5	Acknowledgements	22
2. Climate Change in Brazil and Paraná	6	References	23
3. The Methodological Process of the Participatory Action Research	6	Appendix A	25
3.1 Dialogues with social movements and traditional peoples	7	Appendix B	26
3.2 Visitations and actions in the communities involved in the PAR	8	Appendix C	27
3.3 Summary table of activities of the Climate-U project - UFPR	9	Appendix D	28
4. Climate emergency, rights violations and experiences of resistance	9	Appendix E	29
5. Justice and climate litigation	13		
6. The 27th United Nations Framework Convention on Climate Change from the perspective of social movements and Indigenous Peoples	14		
7. Experiences of the agroforestry community José Lutzemberger: “agroecology is the way”	15		
8. Scope of the Participatory Action Research	19		
9. The role of the Participatory Action Research in strengthening the outreach of universities as a response to the climate crisis	20		



1. Introduction

This working paper presents the Participatory Action Research: climate emergency and its relationship with education, law, public health and the environment, developed by the Federal University of Paraná (UFPR), through its Graduate Programmes in Education (PPGE), Law (PPGD) and Environment and Development (PPGMADE)¹, as part of the Transforming universities for a changing climate – Climate-U Project.

This participatory action research (PAR) project targeted climate-vulnerable populations in Brazil and studied their experience and struggle for their rights. We sought to: i) diagnose and understand from a feminist and intersectional perspective the impacts of climate change on rural populations, traditional communities, coastal and riverside communities, agrarian reform encampments/settlements, climate refugees affected by dams and/or climate disasters, among others; ii) identify the demands, as well as the resistance strategies of these social subjects, who were mostly women; iii) learn, share, and cultivate knowledge about climate risks, social and environmental vulnerabilities and climate litigation with the communities; iv) contribute to the empowerment of women in these communities to defend their land and collectively build a concept of climate justice and an agenda of socio-environmental sustainability.

During the Climate-U project, UFPR established partnerships with leaders of social movements, associations, and Indigenous Peoples who advocate for the right to life and whose territories have historically been impacted by the pursuit of capital and the effects of climate change. The participatory action research team from UFPR included: four professors (two from the education field, one from law, and one from oceanography) and seven students, four of whom are undergraduates (in oceanography, law, and journalism), one master's student (in law), and two doctoral students (in education). Of these, five are women and two are men. Representatives from the following organizations also participated in the project: Landless Rural Workers' Movement (MST), Movement of People Affected by Dams (MAB), Movement of Peasant Women (MMC), Movement of Artisanal Fisherman and Women (MPP), and representatives of Indigenous, *quilombola*² and *caiçara*³ communities.

MST (*Movimento das Trabalhadoras e Trabalhadores Rurais Sem Terra*) is a social, autonomous, and mass movement created in 1984 that addresses issues related to land distribution, rural poverty, and social justice. MAB (*Movimento das Atingidas e Atingidos por Barragens*) was founded in the 1980s and advocates for the rights of those affected by hydroelectric and other dam

projects through local and regional organization practices; it later became a national organization that also fights for a Popular Energy Project for Brazil. MMC (*Movimento de Mulheres Camponesas*) is composed of peasant women, including farmers, tenants, sharecroppers, riverside dwellers, squatters, landless farmhands, day labourers, rubber tappers, coconut breakers, and artisanal fisherwomen. Their project fights for the cause of peasant and popular feminism, as well as transforming society. The MPP, established in 2010, is a social movement fighting for the rights of artisanal fishermen and fisherwomen in Brazil. It consists of men and women who produce most of the fish consumed by the country's population, a healthy protein source, thus claiming to contribute to the country's food sovereignty. They do this without neglecting the preservation of waters, forests, mangroves, and their ancestral cultures. In addition, this movement seeks to improve the living conditions of fishermen and their families, defend their rights, fight for the regularization of access to land and water, combat predatory fishing, and defend the traditional fishing territories.

In Brazil, the traditional communities and its Indigenous, *quilombola* and *caiçara* representatives that partnered with the Climate-U project were located between 64 km and 250 km from UFPR, more specifically in the coast of the southern state of Paraná and the neighbouring region of its capital Curitiba, as well as the coast of São Paulo, in the Southeast⁴. The communities that participated in the project were the Mbyá-Guarani (Ilha da Cotinga/PR) peoples, the Restinga *quilombola* (Lapa/PR), and the *caiçara* (Ilha do Cardoso/SP) community. We focused on the reports and denouncements of the harmful impacts of climate change in their territories, as well as their people's resistance.

At the beginning of the project, the professors gathered to expand the research and extension work they were already doing with some of these social movements, bringing the subject of climate emergencies to the debate as a research problem. The novelty of this project is that it was gestated in the formation of the research group of the Climate-U Project at UFPR. The participants of the programme already had previous ties and established rapport through research and other programmes with some of these social movements. This project brings innovation in two key areas: i) integrating climate emergencies and analyzing their political implications within social movements, with a specific focus on impacts and resistances, particularly from women's perspectives; ii) expanding the research group's and UFPR's efforts through new partnerships to foster a dialogue on socio-environmental justice, actively listening to the diverse voices of rural, aquatic, and forest communities.

1 These graduate programmes have played a fundamental role in the systematization of knowledge informed in the domains of socio-environmental, epistemic, and gender justice.

2 Territories defined by land ownership, whose population is descended from African peoples who escaped slavery in Brazil.

3 Term coined to name the traditional coastal population of Paraná, São Paulo, and Rio de Janeiro, who are descendants of indigenous peoples, Portuguese settlers, and African slaves.

4 Community representatives in São Paulo participated remotely. The communities visited in person were within the state of Paraná.

2. Climate Change in Brazil and Paraná

In March 2023, the Intergovernmental Panel on Climate Change (IPCC) released the Sixth Assessment Report (AR6), the latest comprehensive evaluation of the global climate situation (UN/Brazil, 2023). This report confirms a 1.1-degree Celsius rise in global average temperature since the pre-Industrial era, leading to more frequent and intense extreme weather events. These changes pose escalating threats to human populations, environment globally, particularly in vulnerable communities and sensitive ecosystems like mangroves, coastlines, and semi-desert areas (UN/Brazil, 2023).

The Paris Agreement's objective to limit average temperature rise to 1.5 degrees Celsius above pre-Industrial-era levels requires swift and continual reductions in greenhouse gas emissions across all sectors, amounting to nearly half by 2030. This endeavor hinges on robust political determination from governments and adequate financial support. The IPCC puts forth the concept of "climate resilient development," which advocates for the integration of adaptation measures to address the loss and damage experienced by communities alongside actions aimed at mitigating or averting emissions. Notably, these actions encompass transitioning to clean energy sources and adopting more sustainable, low-carbon lifestyles (UN/Brazil, 2023).

Brazil is particularly vulnerable to global climate change due to its vast territorial extent, diversity and urbanization, and a large portion of the population living in poverty without access to basic goods and services. This situation is exacerbated by an increase in infectious diseases like dengue, cholera, malaria, and yellow fever.

In terms of climate change action policies, Brazil is significantly behind. In 2004, it created the first national policy aimed at reducing greenhouse gas emissions through the Action Plan for Prevention and Control of Deforestation in the Amazon (*Plano de Ação para Prevenção e Controle de Desmatamento na Amazônia Legal – PPCDAm*). This plan achieved significant results until the end of the Workers' Party (PT) administration. Although a relevant initiative was launched with the publication of the National Plan for Adapting to Climate Change (*Plano Nacional de Adaptação à Mudança do Clima – PNA*) in 2016, it never fully materialized. The administrations of Michel Temer (2016–2018) and Jair Bolsonaro (2019–2022) sidelined environmental policies, particularly those related to climate. The latter actively denied climate change, reneging on international commitments and encouraging deforestation and greater societal and environmental vulnerability (Maes, 2023). The newly elected PT government currently aims to rebuild social and environmental policies and has made it clear that climate issues will be a priority.

In the case of the state of Paraná, according to a study conducted by FIOCRUZ/MMA (*Vulnerabilidade à Mudança do Clima, 2016*), which made estimates for the period 2041 to 2070 based on environmental, economic, and social data, the forecasted climate

changes will impact it differently, by regions. The most impacted regions in Paraná will likely be the North, Northwest, and West. The North, due to its drier climate and destruction of native vegetation, could be most impacted by a decrease in rainfall. The Northeast could see a temperature rise up to 5.7°C and an 18% drop in rainfall. The situation differs in the South and Southeast of the state, with rainfall potentially increasing up to 20%, even if the Southeast could suffer from a higher number of consecutive dry days throughout the year.

The communities visited, and partners in this project, are located in the Eastern part of Paraná, which includes, among others, the Geographic Microregions of Curitiba and Lapa, as well as Paranaguá on the coast. According to the aforementioned study, this area may experience a temperature increase of over 3°C, with a 30% increase in consecutive dry days. When it does rain, the events will be more intense, with an increase in extreme weather events and associated diseases. Coastal cities like Pontal do Paraná and Matinhos could see an increase of up to 43% and 40% in consecutive dry days. Impacts on agriculture and fishing, and an increase in vectors like the *Aedes aegypti* mosquito, are already happening and are likely to increase (Brembatti, 2016).

In terms of specific policies, the state of Paraná, with neoliberal governments aligned with the denialist Bolsonaro movement, experienced several years of "blackout" on environmental and climate change affairs, discontinuing previous efforts. Recently, measures have been resumed, with mechanisms for the evaluation and information on the vulnerability of risk areas and the creation of contingency plans being developed (Paraná/AEN, 2022). It remains unclear how the new policies on climate change and the environment at both national and state level will be implemented in the regions where these communities are located. However, the study highlights both these communities' high vulnerability and their critical resilience capacities for confronting impending scenarios.

3. The Methodological Process of the Participatory Action Research

We used participatory action research (PAR) methodology to build a comprehensive analysis of rights violations, climate impacts, and experiences of resistance. This crucial step enabled us to collaboratively design training initiatives with the involved communities, while also establishing a sustainability agenda focused on climate, social, epistemic, and gender justice.

Our PAR was based on Paulo Freire's conscious dialogical conception in order to mobilize and strengthen, from a feminist perspective, women within their social movements and communities to seek gendered transformations in relation to climate justice (Godden et al. 2020). We sought to involve significant groups and recognize marginalized voices and perspectives (Frediani and Nussey, 2021). By organizing conversation circles (culture circles based on Freire's Pedagogy), and thematic seminars, from June 2022 to August 2023, the project successfully united social movement leaders,



organizations, traditional communities, and UFPR students and professors/researchers. This inclusive approach ensured that the resulting actions were closely aligned with the needs and effective demands of all participating groups.

The project proposal acknowledges, on the one hand, the vulnerability of the people of rural areas, waters and forests in the face of the climate emergency. On the other hand, we acknowledge the importance of the knowledge and practices of these people in constructing different human relationships with non-human nature. Thus, the methodological proposal first sought to conduct a qualified hearing of representatives and leaders to understand the extent of the rights violations these people are subjected to. Also, the visits to the communities were conducted to understand the practices that the communities have been carrying out, viewing them as relevant actions of resistance and confrontation to climate change.

Utilizing in-depth participatory research, specifically through oral testimonies and thematic histories (Thompson, 1988; Portelli, 2006), enabled the discovery of previously marginalized and silenced narratives (related to class, race, ethnicity, and gender). These narratives possess the potential to rewrite history, reinterpret theories, and reformulate legislation and public policies. All dialogues, whether held in culture circles, thematic seminars, or collective interviews, were recorded with the consent of the participants. These recordings were then transcribed and thoroughly analyzed⁵, guided by a co-created theory of change. This theory was formulated in collaboration with the participants and rooted in the theoretical frameworks of socio-environmental justice, epistemological justice, and gender justice, all examined from an intersectional perspective (Godden et al. 2020; Venegas et al. 2021).

3.1 Dialogues with social movements and traditional peoples

Some key moments of this PAR involved meetings and culture circles with social movements and communities engaged in the project. The primary goal was to introduce the project proposal and engage in open dialogue about the unique context of each community concerning climate-related matters. These culture circles, held on September 2, 2022 (remotely) and on February 10 (hybrid), enabled the detailed systematization of the perspectives of social movements active in the countryside, waters, and forests about the impacts and resistances experienced by traditional communities and non-governmental organizations (Appendix A), which provided a solid basis for critical reflection and informed decision-making.

⁵ These dialogues appear throughout the text in the form of quotes from the speakers of the PAR. We chose to identify the people and organizations they represent by name, for the purposes of systematization and dissemination of the PAR data/results. We asked for permission to use the speech and image in the culture circles and recordings for the production of the documentaries. Likewise, as the thematic seminars were open to the public (in remote, hybrid, or face-to-face format), and some of them remain available for access on the project's channel, we kept the voices of the representations of social movements and partner communities visible. Furthermore, the speeches selected for this text on climate change pose no risk to the representatives and their organizations.

⁶ A regional event that, since 2002, takes place annually in the state of Paraná and brings together different collectives of agroecological producers. In 2018, 2019, and 2022, the event took place in Curitiba, Paraná, and was organized by Via Campesina and UFPR.

PAR also yielded the 'Agroecology, climate change, and peasant women's resistances' seminar, which took place on June 24, 2022 at UFPR's Education Sector, part of the Agroecology Journey⁶. Through the speeches of representatives from diverse social movements present at the gathering (MST, MAB, and *quilombola*), a collective narrative emerged. This narrative revealed the ways in which women from rural, aquatic, and forest communities contribute to global climate justice (see Appendix B). This gathering signified the acknowledgment of historically marginalized populations' role and their agency. It fostered a stronger connection between climate change and environmental (in)justice, highlighting how the unequal distribution of environmental consequences stems from disparities in power. Specifically, the burden of risks and environmental damage resulting from economic growth disproportionately affects underprivileged and vulnerable groups (Acsegrad, 2002). The thematic seminar highlighted how climate change has impacted the lives of women in rural areas, rivers, sea, and forests from the perspective of intersectionality, and how they have responded to its destructive effects through resistance. They reveal an ethic of caring for human and non-human nature through feminist practices.



Figure 1. Agroecology, climate change and peasant women's resistance seminar, Curitiba, UFPR (June 24 2022).

Another pivotal moment was the seminar on 'Climate Justice and Litigation' that critically examined the concept of climate justice. The seminar was held on September 16, 2022 at the UFPR Department of Juridical Sciences, in a hybrid format, with the in-person participation of undergraduate and graduate students from UFPR and had guest speakers, who were representatives of social movement and organizations involved in legal matters. (Appendix C). The issue is substantiated by the reports from entities and organizations dedicated to defending the rights of Indigenous and traditional peoples. These reports emphasize the risks and impacts of strategies pursued through market instruments, which can exacerbate socio-environmental conflicts. Inspired by this

context, this thematic seminar promoted a debate on how popular movements have been dealing with the climate issue and how this confrontation takes place in popular legal advice. Recognizing climate justice as a contested concept, it is crucial to explore it through the lens of the realities faced by popular movements in Latin America. These movements, with their ongoing practices of resistance, are shaping a new framework of rights, fostering an alternative relationship between human societies and nature. The increasing impacts of climate change affect human rights, especially of people and communities in vulnerable situations. The climate issue has been incorporated into the international political agenda, and this discussion is also making its way into the realm of the judiciary in Brazil. Climate litigation is defined as a legal mechanism that can engage both judicial and extrajudicial bodies to evaluate, oversee, and enforce legal rights and obligations pertaining to climate change (CONNECTAS, 2019).

Another crucial moment to understand human rights violations and climate injustices was the seminar 'The 27th United Nations Conference on Climate Change' from the perspective of social movements and indigenous peoples, held in a hybrid format on February 10, 2023. (Appendix D). The United Nations Framework Convention on Climate Change (UNFCCC) is an annual assembly that convenes government officials, scientists, environmental organizations, and civil society representatives from various nations. This conference serves as a platform for in-depth deliberations on matters pertaining to global warming and climate change⁷. UNFCCC's main goal is to assess the progress of countries in complying with the agreements established in the United Nations Framework Convention on Climate Change, signed in 1992. During this meeting, attendees engage in discussions pertaining to strategies aimed at both mitigating and adapting to climate change. Additionally, they explore approaches to curbing greenhouse gas emissions and mitigating the adverse effects of climate change on communities and the environment. Considering the scale of this international event, the Climate-U-UFPR culture circle was a space for traditional communities to denounce the lack of effective participation of Indigenous Peoples in the central negotiating tables of the UNFCCC's COP 27, which took place from November 6 to November 18, 2022. They bring the importance of indigeneity in the processes of confronting climate issues.

3.2 Visitations and actions in the communities involved in the PAR

The communities directly involved in the project as visitation and PAR spaces were: the José Lutzenberger agroforestry community (Antonina/PR); the Contestado settlement and the Restinga quilombola (Lapa/PR); the Ilha do Mel fishing community and the Tekoa Takuaty Village Community in Ilha da Cotinga (Paranaguá/PR). These locations are marked on the map of the state of Paraná, pictured in Figure 2.

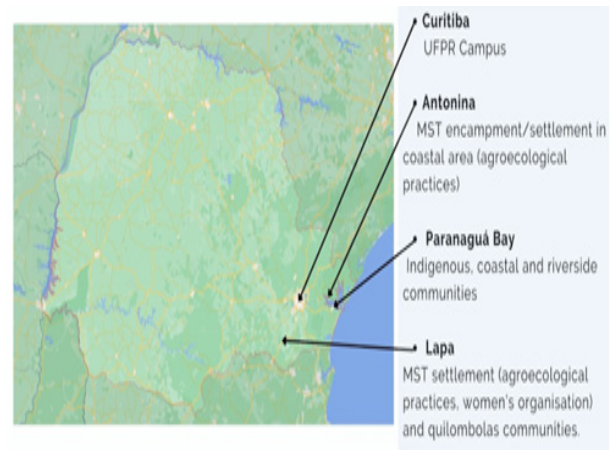


Figure 2. Map of the state of Paraná

The visits to the communities played a pivotal role as a foundational platform for discerning their perspectives on climate-related matters and the approaches employed to address them⁸. These visits were fundamental for the UFPR research team. When speaking with the communities and their leaders, the team became aware of the need for training initiatives. These activities focused on gender issues, empowerment, food sovereignty, and climate change, and especially involved the women of the communities participating in the project. The sense of need for the construction of more continuous formative dialogues on the theme, also having theoretical foundations, emerged in the culture circles with the communities.

To identify the perception of vulnerable communities about climate emergencies and what strategies are being planned for their confrontation, we present data from a visit to one of the communities of the project, the José Lutzenberger Agroforestry Community, located in the municipality of Antonina, Northern coast of the State of Paraná. This community originated from an occupation initiated by the MST in 2004, where they reclaimed a degraded farm for their settlement. Since then, the community has been engaged in agroforestry practice. The José Lutzenberger community aligns with the project's objective of investigating how the practices of communities residing in aquatic, rural, and forest areas contributes to climate crisis resistance. Moreover, it is connected to the necessity of addressing land ownership insecurity as a significant factor contributing to climate vulnerability (IPCC, 2020).

7 The 27th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 27), which took place in Egypt from 8 to 22 November 2022, was scheduled to take place in 2021, but was postponed due to the COVID-19 pandemic.

8 These perceptions are recorded in the video documentaries produced by the project.





Figure 3. Visits to the José Lutzenberger community (March 26, 2023).

Through an extensive survey encompassing meetings, culture circles, and visits, this research offers a comprehensive understanding of the climate emergency context, commodification of nature, rights violations, collective resistance, and disparities between countries in the Global North and South. This approach generates valuable insights that form a comprehensive panorama of violations and resistance in the study area.

3.3 Summary table of activities of the Climate-U Project - UFPR⁹

Activity	Date	Place/platform	Social movement representatives and other guests	UFPR team	External public presence
Culture circle	Sep 2, 2022	Zoom (online)	MST, MAB, MPP, quilombola, UCL Project Coordinator	3 professors, 3 graduate students, 4 undergraduate students	-
Culture circle	Feb 10, 2023	UFPR and Microsoft Teams	MST, MAB, MPP, MMC, quilombola	2 professors, 3 graduate students, 2 undergraduate students	-
Thematic seminar	Jul 24, 2022	UFPR	MST, MAB, quilombola	2 professors, 2 graduate students	Over 60
Thematic seminar	Sep 16, 2022	UFPR and Microsoft Teams	MST, MAB, Land of Rights NGO	4 professors, 8 graduate students, 8 undergraduate students	-
Thematic seminar	Feb 10, 2023	UFPR and Youtube	Indigenous Village Tekoa Takuaty, Land of Rights NGO, UCL Project Coordinator	4 professors, 3 graduate students, 4 undergraduate students	Over 80
Visit to AC José Lutzenberger	Mar 26, 2023	Antonina/PR	7 members of AC José Lutzenberger	3 professors, 2 graduate students, 1 undergraduate student	-

9 In this chart, we include only the activities carried out in the project that had their data analyzed in the present paper.

4. Climate Emergency, Rights Violations and Experiences of Resistance

The climate emergency, defined as a critical situation requiring immediate action to curtail or halt climate change and avert potential irreversible environmental and social ramifications (Oxford, 2019), has been a subject of extensive global discourse among scientists and various stakeholders. These discussions have been fostered by mobilizations and initiatives led by civil society and social movements, with particular emphasis on the involvement of youth movements.

The concept of a climate emergency, in general, has been formulated primarily by entities and individuals hailing from the Global North, where there is a distinct social, cultural, and environmental rights framework, which Latin American countries lack. The region's unequal integration into the capitalist economy fosters the displacement of communities and leads to varying forms of human rights and environmental violations. The financialization of nature and the pursuit of a Green New Deal obscure the social and environmental repercussions borne by Global South countries. These countries grapple with the encroachment of deforestation, wildfires, dam constructions, environmental pollution, climate-induced calamities, loss of fishing grounds, and the erosion of labor rights, among other challenges. Consequently, the ramifications of the climate emergency prompt us to subject solutions centered around market instruments to critical scrutiny, as these approaches often perpetuate the dynamics of inequality.

Listening to the representations of social movements allowed us to understand the impacts of climate change on rural populations, indigenous communities, coastal and riverside communities, settled/reformed agrarian reformers, those affected by dams and/or climatic disasters. The perspective of women was especially influential, considering the intersectionality of different social markers that impact their lives in their respective territories. Through collective dialogue, in culture circles (held on September 2, 2022, and February 10, 2023), between the university and partner social movements that constituted the group of stakeholders, as well as the thematic seminar held in the context of the Agroecology Journeys (June 24, 2022), we sought to understand how these movements perceive climate change and if they are involved in resistance strategies.

Priscila Monnerat, from MST, brought forward some examples of social impacts that climate change has caused in recent years in Brazil:

[...] this matter of climate changes, no one can deny, right [...] We've seen frightening events, right, like that dust cloud in São Paulo last year, those fires in Mato Grosso, right, uncontrollable... Yeah... And other small things in our lands, like someone has said here, in winter, last week, in

[settlement] Contestado, a river went over the road, from so much rain water, yeah. So, gales and other things, yeah. For agriculture this is terrible (June 24, 2022)

The relationship of these communities with nature encompasses not only elements pertaining to survival, such as production and livelihood aspects, but also intertwines these components with emotional and affective considerations, as well as traditional and cultural values. An example of this is found in the account of Lunamar Cristina Morgan, from MMC, on the impact of droughts and pollution on water sources:

Because if you don't have the river to show your child and say something like: look, the fish is this fish. That other fish is another fish. That variety of plant is that plant, right? How do we learn in this dialogue, if you have a poisoned river, no fish, no plants around, what are you gonna say to your children? (February 10, 2023).

Another issue highlighted in her report is the loss of agrobiodiversity experienced by peasant women, resulting from the disruption of traditional planting cycles due to irregular rainfall patterns and periods of unexpected drought. This loss not only affects yields but also underscores the cultural and affective significance associated with their seeds and crops. Morgan continues:

"[...] so the variety, besides a whole agroecological process, an affective process that is historical, that is of the community, that has been passed from mother to daughter, we lose because either there is a lot of drought or there is a lot of rain."

Quilombola Célia da Silva Leonardo Garcia also reported encountering the same issue of droughts and unusual rainfall patterns, illustrating the impact of climate change on women's production activities.

We planted it on the day that we traditionally know is right. That knowledge of being in that month, that moon, that time... That traditional knowledge. We lost—all of us lost—all the seeds because it wouldn't grow. And then we had the thought that one of the companions had planted well in advance, we thought it would come to nothing, it wouldn't grow, and hers did. (February 10, 2023).

In addition to the aforementioned damage, Garcia highlighted another incident wherein the *quilombo* experienced a complete loss of its production due to an unprecedented storm that caused widespread devastation. In this context, while rain posed a challenge for the fruit production of peasant women, it was the period of droughts that exacerbated the predicament. The prolonged dry spells facilitated the dispersal of agribusiness toxins by the wind, resulting in detrimental effects on the fruit trees.

The women who work with fruit production say that they are having a lot of difficulty, because as it is very dry, the wind brings poison that is attacking the fruit trees and then ends up killing the flower. (February 10, 2023).

Climate injustice is intricately intertwined with various other forms of injustice, most notably the issue of access to land and territory, which emerges as a recurring theme in the narratives of the participants involved in this project. Garcia's testimony vividly illustrates this aspect as she shares the plight of her *quilombola* community in Restinga, situated in the municipality of Lapa. The community faces deterritorialization, lacking access to land for agricultural activities, which compels them to incur expenses in renting land for cultivation purposes. Despite each individual having a small subsistence garden in their backyard, the absence of their own territory hinders the community from engaging in large-scale agricultural endeavors, significantly impacting their overall income.

I wanted to talk a little bit about how my community, right, we are a quilombola community, and we are deterritorialized, we do not have land, we do not have planting space, we plant because we rent land. Not because we have our land. We have our backyard there from the house, so everyone has it, a conventional subsistence garden, we keep our knowledge of traditional herbs. [...] In Paraná there are 38 quilombola communities and 86 are still being studied to enter the Palmares certification, right? In the government certification, to then enter the regularization process and, of these, 38 quilombola communities in Paraná, only one community partial ownership of the land [...]10. And we don't have ownership, so we are deterritorialized and this difficulty of not having the land, makes our socio-economic life very difficult to deal with. (September 2, 2022).

As a consequence of climate change, we also highlight Tatiana Mendonça Cardoso's account of the traditional *caíçara* community on the island of Cardoso, situated within an integral protection park, which was created in 1962 in São Paulo, on the Paraná border. The community experienced a significant erosive process, resulting in the loss of approximately one meter of land per year. However, in 2016, a powerful storm surge triggered a critical situation for the community. The area most at risk, with only 24 meters of sand dunes separating two seas, suffered a substantial impact, losing nineteen and a half meters of land overnight. Because of this, the entire community had to be relocated to another place on the island, but the erosive process continues. Moreover, exacerbating the critical situation is the fact that storm surges are no longer confined to winter but have extended into the summer months and intensified. As a result, erosion has accelerated significantly.

The situation of erosion is even worse, because now, with

10 In Brazil, it is the responsibility of the federal agency Palmares Cultural Foundation (Fundação Cultural Palmares – FCP) to certify *quilombola* territories, respecting the self-determination criterion provided for in ILO Convention 169. After certification, which involves statements about the organization, culture, and history of the *quilombola* territory, the *quilombo* can participate in the land regularization process provided for by the National Institute for Colonization and Agrarian Reform (*Instituto Nacional de Colonização e Reforma Agrária* – INCRA).



the droughts that are not only in winter, they are also in summer and are increasingly intense, they take away twenty, fifteen meters of land per year [...] the erosive process is even more intense in the seaside now, because of these drought issues. So the sea level, we feel that it is higher, so the waters are rising beyond what we imagined. (February 10, 2023).

The escalating land loss and the recurrent occurrences of storm surges increasingly undermine the community's ability to maintain a stable and secure existence on the island, calling into question the viability of their continued habitation there.

[...] one of the demands that we had to move now because we made an expedition on the entire island of Cardoso and the question of the erosive process was raised. Then we go picking the wound, erosion is very difficult, our deadlines are counted within the entire island. (February 10, 2023).

Representatives of social movements have consistently raised a shared concern regarding the absence of supportive public policies that acknowledge and address the needs of their communities, thus rendering them relatively invisible to the state. Garcia's *quilombola* community sought assistance from the state after their primary source of income was devastated by the unusual storm, but received no favorable response or support.

What weighed us down was not having public policies, nothing to support us, right? The municipality and the state did not welcome us; and not because we did not look for it, we went after help, we talked about what happened, we presented it and, even so, no help arrived. No public policy took us in, so we had to fight with our own forces again, work with the land, and deal with this situation again. (February 10, 2023).

Morgan from MMC, in turn, when reporting the decrease in fruit production due to toxins and the drought of water sources, intensified by the opening of several artesian wells by agribusiness, vents concerns:

[...] we had to reduce the amount of animals, which is also an important source of income, but there is no water for the animals. Then we begin reducing the animals and no public policy, no investment, nothing to help us, because there never is. (February 10, 2023).

Inara Rodrigues Santos, representing MAB, raised the issue of the energy sector and its connection to climate change, highlighting its excessively exploitative approach towards natural resources. In this context, she elucidates that the regions most severely affected by these impacts are those inhabited by historically

marginalized populations, which she refers to as "territories of sacrifice for capital accumulation." Consequently, these communities require inclusive public policies to accommodate their needs.

And the point of us thinking like this: the need for public policies also, right, how do we build this path to be able to protect these populations as well [...] We need to talk about urban planning. We need to talk about diagnosis and study of the situation of the affected communities. We need to talk about a security plan that allows decent housing conditions, decent health and safety conditions for these populations. We also need to talk and study the issue of reparations, right? And think about assistance from states, municipal and state governments in these contexts as well. (February 10, 2023).

Cardoso's speech reveals a similar issue: the neglect of traditional communities on Cardoso Island by the state. Faced with the erosive process, the community required urgent relocation. However, leaving the Integral Protection Conservation Unit (ICPU) jeopardized their chances of returning¹¹. While the community was granted the right to relocate, no financial resources or assistance were provided by the state government to facilitate the process: "and we say that the state was sure that we would not be able to, but the strength that we had, I don't even know where, we managed to organize many partners with the Association." At present, the pleas for help made by the community remain unheard. The ongoing erosive process necessitates urgent action to prevent territory loss and the displacement of families. However, the state has not responded adequately to address the situation.

[...] but for that we need help. Either to do this study together with us or to think about strategies [...]. We are completely abandoned, even after this whole process has happened, right? And the researches aren't happening, we have no results, and we need to think about actions for yesterday. [...] So we have been putting pressure on the state, but we haven't been able to get help for this, and we've been asking for the support of universities so that we can think of direct joint actions. And that we can think about how to protect these communities, at least until considering a longer-term action, such as a possible relocation, right? But many communities are currently experiencing direct impacts (February 10, 2023).

On the one hand, what becomes evident in Cardoso's testimony, in light of the state's near-abandonment is the importance of the community's own organizational process, which also involves the protagonism of women. On the other hand, her account draws attention to the need for partnerships with other institutions such as universities, considering their articulating and formative role, as she states: "And it was in our hands, in the hands of women, to

¹¹ The rules regarding Integral Protection Conservation Units (Unidades de Conservação de Proteção Integral) indicate that they should not accommodate human populations, and therefore, if there is a population at the time they are created, this population is expelled. However, the environmental authority can make exceptions and allow their stay, under certain agreements and very strict rules. These can stipulate that, should a community leave voluntarily, it may not return, as seems to be the case alluded to.

think about some action. And so we started to call the partners, so the university, it's very important to us." The fisherwoman and community leader shows the importance of the training they had in previous years to write projects for resource capture, which contributed to them, as an association, being able to provide technical assistance to their own community.

Another highlight is the performance of women in the midst of various difficulties faced. Garcia, from the Quilombo Restinga, for example, is part of an association of agroecological producers, composed solely of women who with their own strength take care of the environment and the community, and who practice agroecology. Amandha da Silva Felix, representing MST and the Contestado settlement, sheds light on this matter, emphasizing that agroecology should not be solely perceived in its production dimension, where women play a prominent role, but should also be regarded as a discourse that encompasses various other dimensions embraced and carried forward by them. Highlighted in this process is the care for oneself, for others, in the sense of building relationships of respect, of power and responsibility sharing, as pointed out by the theories of caring (Tronto, 2007) and ecofeminism (Puleo, 2013) that advocate the expansion of this care to non-human subjects, covering both natural and cultivated ecosystems.

And the reports are that the women, of their knowledge, of the accumulation they have, have always persisted and insisted on the production of food for consumption, for their family and that today this production that began in a smaller way, not in the political sense, but the same size, context, the same piece of land, today is what sustains the settlement. [...] It is a collective achievement that comes from this tireless work in these organized families, from the protagonism of women, to talk about healthy eating, but that extends to a set of communities that are in the surroundings, not only the families that are organized in the settlement. (February 10, 2023).

As historical authors of agroecological production, women defend a project of healthy eating, which is at the same time preservation of biodiversity. In this process, they seek to politicize the space of food preparation and distribution, and the visibility of their role in the production process (Schwendler, 2017) and in the survival and resistance of peasant families and communities. Morgan, representing MMC, also offers valuable insights in this regard, asserting that women are the key figures and role models in agroecology within peasant communities. Nonetheless, they are simultaneously the primary individuals impacted by the adversities experienced in production. As their income largely relies on agricultural activities, women achieve a certain degree of financial autonomy from men, who frequently engage in work outside the community. Moreover, there is a profound concern among the women's movement regarding the care for non-human nature and the Earth. They have actively devised alternatives to mitigate various impacts, encompassing aspects such as vegetation cover, pest and disease control, campaigns against pesticides, and the formulation of fertilizer recipes—all closely related to agroecology. Cardoso aptly illustrates the pivotal role of women in the

community, highlighting their resilience during a period of significant decline following the passing of her grandfather, who was the main fisherman and merchant of the entire island. Subsequently, her grandmother suggested that women formed a group to pursue training, income-generating opportunities, feminist advocacy, and open community management.

And we started training ourselves, and with it, we learned management, because we understood that grandpa's management was very important, but it was self-centered. So, in his absence, things were lost. So, we needed to look for a different form of management, that was more open, that everyone had access to the process (February 10, 2023).

Through this shift from handicrafts to reviving dried fish as the community's primary activity, women attain financial independence and actively promote the preservation of caiçara culture and female leadership. Later, this women's group formalized as an association, assuming responsibilities for community care, organization, and providing technical guidance within the community and for the island. Additionally, they now engage in advocacy against injustices and develop strategies to address the impacts faced by their community.

Women also raised concerns about the negligence displayed by agribusiness and profit-driven companies towards environmental issues, highlighting how agroecology serves as a form of resistance in this context. Sara Dalila Wandenbergh dos Santos, from MST, reports:

So, putting a little of what we know, we saw that we could exist as farming families. And this decision for agroecology and agroforestry also constitutes our resistance. This is the main feature of our families (February 10, 2023).

During her speech, Morgan from MMC highlighted the adverse effects of agribusiness actions on the lives of peasant women. These consequences include the use of harmful pesticides that negatively impact their agricultural production and the proliferation of numerous artesian wells, which have disrupted water sources, leading them to dry up. As a result, women are forced to seek water from distant places or purchase water for their needs.

Another woman, also in the southwest of Paraná, reported that the springs dried up on their property as well, and this was due to the drought when agribusinesses near the community began to open artesian wells. Then her fountain dried up, and now she is out of water, so she buys the well. So a woman who has historically been a reference of agroecology in our region, today buys her water, because the source where she had water dried up from so much artesian well that agribusiness did. (February 10, 2023).



In this sense, she states:

And then, aside from the service we already have in life, just existing, just being women, each in their own reality, we still have to be here to think about what to do with the consequences of their actions, the profit that was theirs. (February 10, 2023).

As previously mentioned, Santos from MAB addresses the aspect concerning the energy and mining sector, which possesses an intense exploitative demand for natural resources and goods. This demand often sacrifices territories occupied by already marginalized populations in pursuit of profit, yet fails to provide adequate assistance to address the resulting issues that persist. Besides, instead of blaming the victim and their individual actions, it is necessary to think about the social questions involved and also the bigger players. Santos emphasizes the significance of engaging in a meaningful dialogue concerning the establishment of political, technical, economic, social, and gender-based alternatives to prevent misleading solutions that might exacerbate the oppression faced by communities. Additionally, she underscores the importance of fostering a pluralistic environment to advance in this construction process. forecasting news to predict when to plant. They however had their own methods of mitigating erosions such gabion building using banana stalks, and practices of intercropping for optimal harvest. Besides, some of them were willing to cut down heavy feeder trees such as eucalyptus to help improve crop productivity.

[...] how do we build these alternatives so that they're not false solutions for our people, so that they're not tools to perpetuate oppression in relation to our communities, in relation to our families, women affected and affected by dams. (September 2, 2022).

When analyzing the climate emergency through a framework of rights violations and the experiences of resistance lived and perceived by women in rural, water, and forest areas, we can consider socio-environmental justice through an intersectional light in relation to the injustices and inequalities that operate in their territories and in the broader context. The systematization of the multiple perspectives and actions of these women, which are often not documented on paper, was an important outcome of the dialogical methodology of the project. The narratives of the women representatives reveal a common agenda that includes an alignment of climate, social, epistemic, and gender justice, which implies a continuous confrontation with the capitalist, colonialist, racist, and patriarchal model, connected with other ways of producing, being, doing, and perceiving life.

5. Justice and Climate Litigation

In this section, we summarize the results of the Climate Justice and Litigation Seminar held on September 16, 2022, at the UFPR Department of Juridical Sciences, as detailed in the methodology section and Appendix C. The objective of the seminar was to understand how grassroots movements have been addressing the climate issue and how this confrontation has been taking place in the

courts through popular legal advice.

The discussion that brings together social movements and the judiciary power is justified by the strong regression in Brazil's environmental agenda that occurred between 2018 and 2022. During this period, the country's supreme court addressed relevant issues, such as when it ordered the necessary measures for the functioning of the National Climate Change Fund (*Fundo Nacional de Mudanças do Clima*), which was paralyzed in 2019. The judiciary's role also identifies as a significant strategy of social movements to address human rights violations. Thus, the seminar was designed to analyze how the invited speakers, Priscilla Facina Monnerat (MST), Elisa Estronioli (MAB), and Pedro Martins (Land of Rights – *Terra de Direitos*), perceived the context of setbacks and the role of the judiciary in defending human rights. We also sought to assess, based on their experiences, what an appropriate concept of climate justice would be to consider the needs of rural social movements, traditional communities, and indigenous peoples. In summary, the contributions of the seminar are highlighted below:

1. The practices of peoples and social movements are significant in addressing global warming. A debate on climate justice encourages understanding these practices. However, analyzing them in conjunction with the root causes of social inequality is crucial in determining who is contributing to climate justice and how their rights should be guaranteed.
2. The debate on climate justice should be open and plural, but attention should be drawn to the risk of resistance practices by social movements, such as agroecology, being co-opted and commodified. Global agreements may introduce solutions based on financialization without emphasizing the need to promote structural changes, as highlighted in the statement by invited speaker Elisa Estronioli (MAB):

You can't expect that, within the framework of capitalism, directed by large transnational corporations, financial capital, by the countries of the Global North, the United States and, above all, Europe, solutions that will meet the desires of the people in Brazil and Latin America. (September 16, 2022).

3. Solutions that only address the effects of climate change without incorporating its causes within a predatory production framework are insufficient and can even increase social inequalities and access to environmental equity. They also foster new situations of financial dependence between those who fight most for the conservation of environmental resources and those who benefit from them.
4. Regarding the incorporation of climate issues into the political-legal agenda, two points-of-view were identified. The first one sees the legal space as an opportunity to increase society's overall understanding of the reality experienced by peoples and social movements. The second one recognizes that engagement with the judiciary has the effect of ensuring that everyone has access to the justice system, guaranteeing rights that, even though already present in legal texts, are not materially effective for all social groups.
5. Addressing climate change requires active involvement from peoples and social movements, with an emphasis on the

need to build public policies initiated by the community and designed from the ground up with the direct participation of the affected population. An example mentioned by Elisa Estronioli (MAB) was the construction of Bill no. 572/2022, which is being developed with direct input from MAB and aims to create a national legal framework on human rights and corporations in Brazil¹².

Beyond resistance, to strengthen movements, to strengthen traditional peoples, Indigenous Peoples and everyone who is in the territories struggling, fighting the fight, [...] if we do not have the de facto state with public policies, repressing these [environmental] crimes here in the region and in other biomes as well [...] and with action, we can't. It is a very unequal fight, a very unequal enemy that we are facing. (Elisa Estronioli, MAB, September 16, 2022).

From the discussions of the participants, we conclude that peoples and movements have already been taking actions to address climate change, especially when they denounce human rights violations resulting from socio-environmental conflicts related to mining and agribusiness. They also demonstrate alternative relationships with nature through practices in their territories, as exemplified by the MST's promotion of agroecology.

Climate litigation, that is, the submission of demands to the judiciary to enforce guidelines for combating global warming, is one of the strategies employed by peoples and movements to assert their rights, and it is where their struggles become visible. Ultimately, we understand that the issue of climate justice is not perceived as a single concept, but rather as a set of strategies experienced daily by peoples and social movements. In this sense, the collaboration between academia and social movements needs to be approached carefully. Engaging in dialogue with these movements should be focused on understanding the benefits of their actions for climate justice, identifying the risks they face and how solutions conceived at the global level actually reach these individuals and communities. Finally, we emphasize the importance of the active participation of peoples and social movements in shaping strategies to address climate change.

6. The 27th United Nations Framework Convention on Climate Change from the perspective of social movements and Indigenous Peoples

Brazil is responsible for hosting COP 30 in Belém, situated in the state of Pará within the Amazon biome. The nation thus confronts the crucial task of comprehensively contextualizing the 2025 United Nations Conference on Climate Change. This entails devising informed stances and effective strategies to facilitate meaningful

engagement and participation, necessitating a critical examination of climate change and the development of viable solutions to address these challenges. Recognizing that societal perspectives on climate change and proposed solutions for mitigation may differ significantly, particularly within environmental and socio-environmental domains, is of utmost importance. The political landscape in Brazil is marked by diversity and multiplicity of views, underscoring the necessity for the government to acknowledge and incorporate this heterogeneity of opinions. In doing so, the government can strategically position itself to foster the amalgamation of varied perspectives and consolidate a cohesive environmental and climate agenda currently under development. Within this context, it becomes imperative to acknowledge the diverse undertakings pertaining to sustainable development, the bioeconomy, and socio-biodiversity that currently engender debates. The farmers are excited if there could be a mechanism to provide them with information on when to plant and what to plant, in addition to how to cope amidst the effects of climate change etc. Such a tool would need to provide this information to them in a format and context that meet their need and profile such as language among others.

In the Climate-U thematic seminar held on February 10, 2023, Pedro Martins, a renowned lawyer from the human rights organization Land of Rights (*Terra de Direitos*), emphasized the significance of climate solutions encompassing considerations for socio-biodiversity and active involvement of traditional communities, Indigenous Peoples, and *quilombola* communities. This necessitates meticulous planning and strategic implementation. According to Martins, there were deficiencies in certain climate solutions put forth during COP 27, emphasizing the necessity for heightened transparency and increased participation in climate change adaptation and mitigation initiatives. He further asserted that the structure of the COP tends to favour corporations over civil society. In this regard, he highlighted that the Amazon region is home to various communities and a substantial population, each with its distinct proposal for addressing climate change.

Juliana Kerexu, *Cacique* of the village Tekoa Takuaty in the Bay of Paranaguá, Paraná, serves as a teacher and activist dedicated to Indigenous rights. Her work involves collaborating with women midwives, healers, and praying women, all with the overarching goal of safeguarding regional and traditional cultures, local knowledge, and planetary life preserved by age-old traditions. In her involvement with COP 27, she encountered both valuable experiences and challenges. Accompanied by an advisor from the Guarani commission, Kerexu presented a letter addressing the significance of the Atlantic forest biome, which holds deep ancestral significance for the Guarani people, encapsulating unique ways of life and worldviews.

[...] it was very challenging to take Atlantic forest biome that is directly connected with our territory, right, that we say is for the Guarani people. This connection even from the ancestral, also bringing the way of life and the way we

¹² Agência Câmara Notícias. (2022, April 1). *Projeto cria marco nacional sobre direitos humanos e empresas*. Brasília. Direitos Humanos. Available at: <https://www.camara.leg.br/noticias/861969-projeto-cria-marco-nacional-sobre-direitos-humanos-e-empresas/>



see the world through this territory. (February 10, 2023).

The presence of Indigenous Peoples at COP 27, as in other venues, has often been seen as a mere embellishment. Notwithstanding, with their strength and courage, they have brought the knowledge and experience of their peoples to the world, who need further understanding of the reality faced by traditional communities, particularly women, who bear direct impacts from climate change and commercial activities that threaten their territories.

[...] I felt something very stagnant. It is very beautiful to talk about climate change, the preservation of the environment, the preservation of biomes, but in fact one does not have a perspective beyond that. Because it seems that it is something repetitive, we talk, go there, keep talking more, and the changes do not happen. Who is there to listen in these big countries, which are the ones that most impact our territories, right, of the ones that are most there too, right, helping deforestation, agribusiness? Hence, fostering genuine openness for those who genuinely need to listen and perceive the plight of the peoples facing daily massacres, those most profoundly impacted, becomes paramount. It is imperative not to perceive these communities as mere subjects requiring protection, but rather as the true guardians of the entire biome and its rich biodiversity, a source of national pride. Until we accord this critical importance to their voices, the prospect of a healthy planet remains elusive. (February 10, 2023).

Finally, Kerexu highlights the struggle for the preservation of the Atlantic Forest and the importance of everyone's participation in the cause, not just Indigenous Peoples, since they share the same territory and depend on it to survive. The imperative for climate justice and environmental policies that incorporate Indigenous Peoples in both negotiations and formulation constitutes a key emphasis in her stance. Nonetheless, she underscores the irreversible nature of certain past events, such as the obliteration of a river sacred to an Indigenous group. In this regard, she accentuates the significance of a unified and cohesive struggle to safeguard life on our planet:

These are things that as long as we do not see, as long as you, non-Indigenous people, who are also seeking to know how to help the struggle of Indigenous Peoples, as long as you as citizens who are here, with your duties and also with your rights, as long as you do not understand that this participation of yours also within this struggle, which is everyone's struggle, right, which is for the preservation of life, we will not be able to, because it is only us, right. (February 10, 2023).

Kerexu In this context, both Juliana Kerexu and Tristan McCowan

have emphasized the importance of opening up the university to learn and understand climate issues by actively listening to traditional peoples and their ancestral knowledge. In this process, the university should address the climate crisis by serving as a space to teach and learn about alternative epistemologies that bear the marks of the historical re-existences and struggles of indigenous peoples for the preservation of life on the planet.

7. Experiences of the agroforestry community José Lutzenberger: “agroecology is the way”

Another significant project moment that contributed to the systematic understanding of vulnerable communities' perceptions concerning climate emergencies were the visits to the José Lutzenberger agroforestry community in the municipality of Antonina, situated on the northern coast of Paraná. During the culture circles, it was possible to identify how climate change is perceived and how resistance and alternatives to address its causes and effects are evaluated; an essential stage for the collective construction of formative processes with the community.

The José Lutzenberger agroforestry community is situated in a region characterized by one of the significant remnants of the Atlantic Forest, also known as the dense ombrophilous forest, alongside a marine coastal zone that encompasses the Paranaguá estuarine complex. Due to its socio-ecological importance, approximately 80% of this region is comprised of Environmental Protection Areas, designated for sustainable use or integral protection. In the case of the latter, human occupation is prohibited. In the specific Environmental Protection Area (APA) of Guaraqueçaba, established for sustainable use, the families currently forming the agroforestry community (AC) José Lutzenberger, affiliated with the MST, initiated an occupation of the São Rafael farm in 2004. At the time of occupation, both the soil and the forest within the area had suffered severe impacts and degradation¹³.

Following the occupation, the community embarked on a transformative agroecological transition program aimed at reclaiming and restoring the Atlantic Forest, which had suffered deforestation due to bubalinoculture¹⁴ and the dominance of the Brachiaria Grass plant (*Brachiaria decumbens*), initially introduced to feed buffaloes. The region had become severely degraded, characterized by deforested areas and soil unsuitable for agricultural production. Additionally, the water bodies were contaminated by pesticides, rendering them unsuitable for fishing. Currently, the result of the implementation of agroecological systems guarantees food security to families as stated by the community leadership: “we have quality water, quality food,

13 For more information see: <https://terradedireitos.org.br/noticias/noticias/na-area-em-fez-renascer-a-mata-atlantica-comunidade-jose-lutzenberger-pr-conquista-o-direito-a-terra/23774>; see also <https://acervodigital.ufpr.br/bitstream/handle/1884/68627/R%20-%20T%20-%20ENER%20VANESKI%20FILHO.pdf?sequence=1&isAllowed=y>; <https://www.prppg.ufpr.br/signa/visitante/trabalhoConclusaoWS?idpessoal=41400&idprograma=40001016029P1&ano-base=2020&idtc=35>; see also Isaguirre-Torres, K.R. (2022). *Jornadas da agroecologia: construindo as bases de uma reforma agrária popular e ecológica*. In A. Brandenburg (Ed.), *Agroecologia e reforma agrária popular: um projeto ecológico das Jornadas de Agroecologia*, 348-388. São Paulo: Expressão Popular.

14 Domestic buffalo farming.



quality space [...] we take the water from the river, we eat food that we've just harvested. And this is provided for us daily." Nonetheless, the culture circles brought forth the agroforestry system not merely as a means to ensure food security within the community. Instead, agroforestry emerged as a potent social movement, encompassing a way of life that holds the potential to cause significant transformations in how the socio-ecological system of the region is appropriated, utilized, and conserved. By acting as a form of resistance against socio-environmental injustice and persistently offering an alternative means to address climate change, agroforestry assumes a multifaceted role¹⁵.

Rooted in the Indigenous knowledge of traditional farmers, the agroecological transition programme embraced by AC José Lutzenberger assumes a profound significance for both the municipality of Antonina and the broader region. In addition to the food security of the community, the environmental recovery of the degraded area—soil and biodiversity recovery, vegetation regeneration, naturalization of the course of rivers—the sustainable management of agroforestry provides visits to its territory for community-based tourism¹⁶ and environmental education activities for schools and universities, disseminating their actions and results. For instance, a class activity is being prepared for November 2023 at AC José Lutzenberger on environmental education and non-formal popular educational processes within peasant communities with Pedagogy students from UFPR. This activity is part of the PAR and aims to promote socio-environmental awareness in the training of future teachers from the perspective of social movements.

The AC covers an area of 193.6 ha, housing 20 families, about 40 people in total, including children and the elderly. In the 19 years of occupation and resistance, the AC organized socio-productive activities that generate work, agroecological food production and income. As an example, the AC participates in the National School Feeding Programme – PNAE, where most of the commercialization of fresh production is destined, providing food for school meals. PNAE supplies the municipal School of Matinhos, a neighboring municipality, plus the state schools of three other municipalities on the coast of Paraná.

Regarding production, it is based on the implementation of the large area of successional agroforestry system (SAF) — a type of agroforestry system that has ecological succession as the mainstay and its management reproduces the succession of a native forest — consolidated with the presence of shrub-tree vegetation. The area's classification as a natural vegetation zone arises from its spatial layout, which is meticulously organized into lines (flowerbeds) with open spaces between them, devoid of upper vegetation.

Notably, it took five years of dedicated occupation and rehabilitation efforts to witness the initial outcomes of production in this once degraded environment. As Jonas Souza, another community leader, states: "In the first five years, we [...] couldn't even produce our own food. So, we had to depend on food aid from INCRA."

Upon transitioning from production primarily for subsistence purposes, the community successfully generates extra income, as explained by Souza:

You have a conserved area, you can live in it, and then you make a point of social conditions. [...] And with the surplus from these families' work comes the question of income generation. Then we work on the environmental issue, the social organization of families and, finally, the generation of income to give them comfortable conditions and basic needs. (March 26, 2023).

AC José Lutzenberger serves as a compelling example illustrating the feasibility of embracing diverse environmental protection and recovery strategies (Rossito, 2022), particularly by valuing and integrating local and traditional knowledge and practices concerning natural resource utilization, such as agroforestry¹⁷. Despite their remarkable achievements in implementing agroforestry principles and contributing to environmental restoration, the community has endured nearly two decades of relentless efforts to secure legal possession of their land-territory, as highlighted earlier as a crucial aspect in confronting climate injustice. The collective regularization of land possession was ultimately achieved in 2022, following an enduring process of persistent struggle and steadfast determination. According to Souza, "we can articulate with the state, with some parliamentarians [...] a sum of value to make the acquisition of the area, pay for acquisition of the owner." According to his perspective, the community, which he identifies as a traditional or *caçara*, views the attainment of land ownership in 2022 as a significant triumph that safeguards their way of life against historical expropriation and exploitation endured during various phases of spatial occupation along the northern coast of the state, particularly in the context of the occupied farm: "this space for us has a very large symbology. [...] It's a return to making that production that was a rescue of traditional communities". In truth, it is a process of reappropriation of territory, "it is a retaking of the territory, because until then, we're with the territory that from the original communities way back, then it passed to the *caçara* communities, this mixture of Indigenous Peoples, *caçaras* with black people that was the composition of the people that lived here in this place."

The community's adoption of agroforestry practices can be perceived as a transformative force that reconfigures meanings

¹⁵ In 2017, the community received the Juliana Santilli award for its actions in protecting agrobiodiversity. "The award came through the initiative of the Socio-environmental Institute (ISA), the Bem-Te-Vi Diversidade Association and the Mil Folhas Publishing House of the IEB and is a tribute to the works of the researcher who bears the name of the award, Juliana Santilli, who died suddenly in 2015 and whose contribution was extremely valuable to the field of socio-environmental law and agrarian law" (Isaguirre-Torres, 2022, p. 378).

¹⁶ To achieve this, they are planning to build a restaurant within the community.

¹⁷ The entire production area is certified. Organic and agroforestry certification applies to fresh produce as well as processed products in the agro-industry, such as pulps, which have already been approved by the National Health Surveillance Agency (Anvisa) for commercialization.



and ontologies. It revitalizes and preserves the way of life and traditional knowledge of the community, promoting a sense of “humanization” while challenging the prevailing market logic, notions of private property, and environmental concerns. Souza further elucidates this distinction by highlighting how agroecological production differs from non-agroecological organic production:

Organic production is still focused on the market and not on food. Agroecological production is not just a market issue. Agroecology involves comprehending the entirety of one’s living environment and actively transforming it into the most conducive space for individual well-being (March 26, 2023).

The concept of establishing agroforestry has been ingrained within the community since the early days of their occupation of the farm, coinciding with their affiliation with MST. The principles of agroecology were introduced and familiarized with through various platforms within social movements of the rural sphere, particularly during the Agroecology Journeys. Moreover, during the culture circle, the community members also acknowledged their association with the Mauricio Burmeister do Amaral nucleus within the Ecovida Agroecology Nucleus.

Viewing themselves as integral participants in a transformative socio-environmental process, the community leaders and other members embarked on profound discussions surrounding climate change. This theme of climate change, inherently intertwined within the empirical and discursive realm of their affiliated social movement, was thoroughly examined. The reflections encompassed not only the root causes of climate change, but also its profound impact on their agricultural practices, compelling them to engage in proactive resistance and the establishment of alternative approaches within their community. Empirically, the theme of climate change manifests through tangible impacts observed during the culture circles, predominantly related to productive activities. This reality contributes to the distinctiveness of the sociospatial occupation within the region, distinguished by the presence of protected areas and, notably, by the implementation of carbon sequestration projects initiated by environmental NGOs and private enterprises.

The repercussions of climate variations in the area were particularly evident in how the community was impacted by intense rainfall and a rise in temperatures, aligning to some extent with the assessment conducted by the National Institute of Meteorology (*Instituto Nacional de Meteorologia – INMET*), regarding the outcomes of summer 2022/2023.

Souza has been observing changes that are caused “by man” in the climate for about 15 years. These changes impact the production and marketing of food. He concludes climate change is “[...] this change, what we realize is that it ends up warming up each time, but in a short period of time. This triggers several other weather events, like the issue of excess rain, the uncontrolled seasons.” Referring to the presence of the humid ombrophilous forest,

which has always been a “rain factory,” he notes the changes in rainfall in the region and its impacts:

We have today a frequency of rain with less rain time, but a much more abundant rain. [...] We had the issue of a couple of tornadoes that went through the region, which never happened. [...] The weather from one hour to the next is very unpredictable. We notice that. So much so that we have a lot of [landslide] cases. (March 26, 2023).

Luzinete Souza Oliveira, one of the appointed “seed guardians” of the AC, reports that the impact is on the emotional dimension as well: “[...] after this hail that was devastating, for me, for several families in the camp that had their houses, their production broken.” In the month of August 2022, the aforementioned hailstorm caused significant damage to the region, such as “[...] roças boa de verdura” (good crop farms) and the fruits:

Since then, until the fruit trees, the citrus trees flower, they are not as they were before, you know? It flowered, it bloomed, but much less. Today, take for example the pink lemon. For us there is [...] a lot. And not this year, it’s been a few years that it became smaller, smaller. So, there is this change of climate that is influencing the inside of trees, the fruits. [...] The jaboticaba is supposed to sprout in November, not in August. So, we had jaboticaba in August. The weather is already intemperate (March 26, 2023).

Sara Wandenberg dos Santos highlights that “time is lost” as a consequence of the heavy rains, leading to soil saturation, which results in delayed planting and subsequently postpones the harvest.

The impetus for engaging with the subject of climate change extends beyond the immediate impact on food production. In the culture circle, it was noted that this issue had been present even prior to the community’s occupation. This can be attributed to the presence of a carbon sequestration project within the Guaraqueçaba Environmental Protection Area (APA), designated for sustainable use. Within this APA, various other categories of private Conservation Units (UCs), encompassing restricted or sustainable use, also house such projects. This action is regarded as exacerbating the preexisting socio-environmental conflicts between biodiversity conservation efforts and the socio-ecological reproduction of traditional communities, including farmers, fishermen, Indigenous Peoples, and quilombolas, residing along the coast of Paraná. The projects mentioned above have prompted contemplation on the interplay between conservation initiatives and socio-environmental injustice in the region, as well as the underlying principle that underpins them, which, as pointed out by Souza, is the “market.”

The carbon sequestration and greenhouse gas emissions from deforestation and degradation (REDD) project, encompassing an expansive 18.6 thousand hectares, was initiated in 1999. This undertaking operates in collaboration with several entities, including the non-governmental organizations (NGOs) The

Nature Conservancy (TNC) and Society for Wildlife Research and Environmental Education (SPVS), as well as corporate partners American Electric Power, Chevron, and General Motors. The community occupies areas designated as natural reserves, encompassing the territories of Morro da Mina (3,300 hectares) and Rio Cachoeira (8,600 hectares) within the municipality of Antonina, as well as Serra do Itaqui (6,700 hectares) in the municipality of Guaraqueçaba. These entities maintain proximity as “neighbors” to the AC José Lutzemberger community.

Another AC seed guardian, Vera Lúcia Alegre de Souza, refers to the effects of these projects:

[...] I see these NGOs that raise a lot of money from outside to maintain the forest. But they forget the community that lived there for years and years, just as in the beginning we visited many communities that do not exist today. We walk around where SPVS is today, and we see a lot of abandoned houses that used to be full [...] most of them went to the city. [...] it's a shame to see. Instead of them investing money to keep the community that has always kept this place up, they make people go to the city [...] It is very important for us to preserve nature, but nature with humans is important. [...] Before it had community, and it was all preserved. It is not the community that destroys. What destroys is a farmer who sometimes comes and wrecks the place. A community sometimes stands for years and years without destroying anything (March 26, 2023).

In her account, Vera brings forth the ethics of care and the relationship between human and non-human nature of the Earth as a fundamental dimension of environmental justice. Souza recalls the time when these projects were established in the region, emphasizing that the awareness of climate change only arose when “...it's happening in our house, in our neighborhood, in the city.” For the community, this realization occurred over two decades ago:

We discuss the climate issue here in the community from the beginning, since back when NGOs started buying land here to make carbon credit, to reduce pollution emission of gases from climate effects. So, we started discussing why they were coming onto our territory, onto our life. [...] [and] they are against the communities (March 26, 2023).

The mention of “they are against the communities” pertains to a historical conflict between conservation efforts in the region's protected areas, both public and private, under the management of environmental NGOs, and the local communities residing there since the 1980s. By imposing restrictions on access and traditional productive practices, these protected areas pose challenges to the sustainable development of these communities' ways of life.

Souza further elaborates on the concept of carbon sequestration projects as a response to climate change, noting that this approach fails to address the underlying structural causes of climate change

and socio-environmental injustices:

[...] the forest ceases to fulfill its objective, which is to be a forest in itself, and it becomes the commodity. [...] if you keep the forest standing, you have to receive for it. And that's what companies are doing here on the coast of Paraná today. To keep these forests standing [...] which captures carbon. And then they can take it and put it as a guarantee. In fact, [...] large-scale production processes continue, and polluting gases emission continues. They will continue to keep the same economic actions on their agenda, in production with only economic bias than with environmental bias and social bias (March 26, 2023).

Souza's critique of carbon sequestration projects as a viable strategy to address socio-environmental and climate injustices stems from his recognition of the underlying influence of “market”-driven conservation logic: “[...] this climate justice has to come from another perspective, I think. Developing actual projects that serve the peasant communities [...] In truth, these projects create another type of market that ends up further damaging the lives of these communities living in the countryside.” His analysis corroborates the perspective that the climate issue has also been co-opted and commodified by global markets, perpetuating climate injustice.

From this criticism derives the argument that there are already effective strategies that promote climate justice, such as agroecology, the agroforestry system. For Souza, they are

[...] one way to reestablish another form of activity with less environmental impact and low carbon emissions would be the implementation of an environmental agroforestry system, that is, working with agroecology. [...] When you work with the agroforestry system, when you work the forests again and without removing the peasants from their territories, and with that guaranteeing production, guaranteeing these conserved biomes and also ensuring that less polluting gases are emitted (March 26, 2023).

The certainty of the effectiveness of this strategy is in the phrase painted on the wall of the community meeting space: “agroecology is the way”. In justifying the phrase, Dos Santos considers that it is the way “[...] because of all the rescue she sets out to make of what agriculture is” and, in a defiant tone, “[...] we can take you there and show you that.” The community has already embraced an alternative approach, demonstrating a distinct method of carbon sequestration that aligns with the principles of climate justice:

So today we have a reflection that is the José Lutzemberger community, and it comes in this discussion, in this implementation. [...] we had an area that was pasture and a part of it is already established with the agroforestry system, that is, this massif of vegetation that was introduced has already removed carbon from the atmosphere. It also gave a better quality in people's lives [...] I understand that technology exists today, and it's able to develop projects



that will mitigate this part of the emission of gases (March 26, 2023).

Throughout the process of fortifying resistance against socio-environmental challenges, including climate change, the crucial role of social movements and governmental agencies was underscored. In the first case, Souza observes that social movements are fundamental to engender solutions, including in the context of public policies: “change itself in the countryside only comes from social movements, from rural movements, from organized communities”, as with AC José Lutzemberger. He also highlights the role played by social movements in exerting pressure on public authorities and urging the realization of these alternative solutions:

[...] Those who are really concerned about the Climate, who are concerned about the issue of conservation, production, it's usually the issue of the countryside, settlements, Indigenous Peoples, quilombolas, have these movements. [...] This is being debated in the space of these rural movements more and more [...] it's the path that will signal to have public policies aimed at combating these polluting gases, combating environmental degradation and making a production process that'll ensure that these territories, that these communities they remain [...] with sustainable production (March 26, 2023).

Concerning the role of public power, Souza addresses its shortcomings in adequately recognizing and addressing the needs of a process that involves formulating public policies to foster the development of progressive alternative solutions, “[...] without having to turn the forest into a commodity.” For Dos Santos, it is essential to expand agroecology experiences and the “[...] recognition of the work of peasants, farmers...” and that public resources are intended to replicate what they have and can show that they have succeeded: “...this possibility of us having our productions respected in continuity [...] of us multiplying, tripling agroforestry, this would only be possible with this recognition, with the arrival of resources where they should arrive.” To achieve this goal, it is essential to create an environment that motivates young people to stay and contribute to the development of the community. This requires the implementation of supportive public policies and the allocation of necessary resources. However, the current demand for public resources is seen as insufficient and burdened by bureaucratic processes, as repeatedly expressed by farmers during the culture circles.

8. The Scope of the Participatory Action Research

Engaging in dialogue with the communities facilitated a deep understanding of the challenges they encounter, their ongoing struggles, and their localized acts of resistance. Moreover, it fostered

an exploration of their needs, leading to collective contemplation of potential collaborations between the communities and the university, such as the process of formation of communities, specifically of women, schoolteachers, and university students. A relationship grounded in the exchange of knowledge was formalized, and theoretical academic expertise intertwined with experiential and traditional knowledge. Particularly salient in this endeavor is the emphasis on learning and teaching, constituting fundamental elements of the educational process within the framework of this cultural action for freedom, effectively implemented through the teachings of renowned educator Paulo Freire in the PAR. Thus, attending to the practices and resistance experiences of the communities has proven pivotal in the development of fresh syntheses and the acknowledgment of a novel epistemology concerning climate emergencies, emanating from social movements and imbued with a feminist perspective that tightly interconnects social justice and climate justice.

During the development of the PAR, a notable observation was the disparity between community time and university time. Consequently, several activities, particularly those involving visits to communities, were impeded from being executed as initially planned, owing to the numerous priorities that social movements embraced in their struggle to uphold democracy in Brazil, alongside the demands faced by scholars amidst the post-COVID-19 pandemic era. Within the limited timeframe allocated for the realization of the PAR, the pre-existing collaboration between the researchers, students of the university, and certain social movements proved to be instrumental in ensuring the efficacy of the proposed endeavor. Furthermore, the prospect of sustaining the work, with a specific focus on women, through another grant¹⁸, has proven to be crucial for the ongoing progress of the project. The community articulates its needs and anticipates engagement from the university, underscoring the expectation for continued collaboration. In this context, it is evident that the data collected and the ensuing reflections, which amplify the voices of historically marginalized groups, constitute an integral aspect of an ongoing PAR process.

These culture circles, conducted within the university, local communities, and through remote or hybrid means, have played a pivotal role in foregrounding the experiences and perspectives of traditionally marginalized communities, including Indigenous and *quilombola* populations, artisanal fishermen, *caiçaras*, and social movements of those affected by dams, landless workers, and peasant women. By delving into the impact of climate change and its interplay with issues of social in(justice), knowledge paradigms, and gender representation. Through their acknowledgment of the impact of climate change on their lives, and the absence of effective state interventions and public policies, these individuals inherently engage with environmental justice. They recognize that, owing to long-standing economic, social, and epistemic injustices, they bear the brunt of the consequences of climate crises.

¹⁸ The acquisition of funds from the *Fundação Araucária de Apoio ao Desenvolvimento Científico e Tecnológico do Estado do Paraná* (2023-2025), known as Araucária Foundation, has facilitated the undertaking of the project titled “Participatory Action Research in the empowerment of women in the countryside, waters, and forests of Paraná in the face of the loss of sovereignty and food security, and the risks and impacts of climate change.”

In the culture circles, the participants express that the fight against inequality and environmental justice goes beyond confronting capital accumulation and actions of public power. The PAR documented the perspectives of farmers affiliated with a rural movement, revealing their articulated epistemologies and ontologies that underpin their methods of resistance and development of viable alternatives to confront the climate emergency. A fundamental aspect in this endeavor is their commitment to safeguarding social, territorial, and cultural rights related to the use and management of natural resources. As Souza States, “[...] our plans, our wills, they have a basis.”

An examination of vulnerability concerning the climate emergency, rights violations, and resistance within community settings is facilitated by a comprehensive analysis of the dynamics present in social movements, particularly with a keen focus on gender perspectives. These spaces are shaped through the active engagement of communities and social movements, presenting an avenue for gaining deeper insights into the experiences and obstacles confronted by individuals in such circumstances, as exemplified by quilombola Célia da Silva Leonardo Garcia.

[...] the attention that women have on perception, on local sensitivity, they have a perception about public policies, the need for effective public policies, whether in health, whether in education, whether in culture, they also already have a perception that culture is part of public policy, that it needs to be effective as well (September 2, 2022).

We highlight the role that universities have to play in recognizing and strengthening the agency of women and their social movements, contributing to informed dialogue with policymakers. The acknowledgment of women’s role in combating climate change, as recognized by communities and their social movements, is gradually being established. Over time, women have been demonstrating the breadth and significance of their active involvement and leadership in this process.

[...] historically, like, now we realize that traditional peoples already recognize the strength of women within territories, within their space, we notice in the speeches of men, places, universities or spaces, be it in management, even in government spaces, right? We realize this too, that we’d like to talk and women too, we already realize that they are the ones who preserve the local environment the most, even a little further from the community, it is a concern, a look, a sensitivity, right, that women have to preserve their territorial environment, their space and even that of the other, right? (Garcia, Quilombo Restinga, September 2, 2022).

But this recognition, it’s very important. From the moment we start to hear, not only from ourselves, that we are doers, that some things are rallied, started, developed in their context with a whole by women, from the moment we can recognize this, it’s when we gain this strength so that we can say that we’re able to walk together, men and

women (Sara Wandenberg dos Santos, MST, February 10, 2023).

Notwithstanding these progressions, there remains a series of deficiencies in integrating gender-related concerns into the discussions of social movements addressing climate impacts, even within the context of agroecological debates and other related terms. Generally, it falls upon women to initiate and organize these discussions, as exemplified by the seminar orchestrated by researchers from Climate-U and their affiliated research groups at UFPR during the Agroecology Journeys. In a study titled “*Agencia das mulheres camponesas na construção das Jornadas de Agroecologia do Paraná* [Agency of peasant women in the construction of Agroecology Journeys in Paraná],” Coradin, Guevara, and Schwendler (2022) demonstrate that the theoretical framework employed in these initiatives still relies on a perspective that positions class as the central focus, while regarding gender and race as distinct specificities. The interpretative milestones observed in these Journeys contribute to the “perpetuation of gender, race, and sexuality invisibilities, resulting in the non-recognition of women’s authorship and leadership in the development of agroecology within the context of Agrarian Reform in Paraná” (p. 22).

In this sense, by focusing on listening to and training rural, water, and forest women regarding climate emergencies, the PAR contributed to processes that help address epistemic injustice, particularly if we consider the historical erasure and invisibility of the knowledge they have produced. The intersectional perspective adopted by the project brought to the forefront the need for education that strengthens women in their territories and in addressing socio-environmental (in)justices in their relationship with gender asymmetries and injustices.

9. The role of the Participatory Action Research in Strengthening the Outreach of Universities as a Response to the Climate Crisis

This initiative is an integral component of the Climate-U project, which aims to generate knowledge and enhance the role of universities in addressing the challenges of climate change through both mitigation and adaptation efforts. Given that universities are currently confronted with the task of dealing with the impacts of climate change (mitigation and/or adaptation), the PAR proposal is deemed capable of contributing to the realization of a more comprehensive conception of the university as envisioned by the Climate-U project. The ongoing development of the PAR proposal, collaboratively constructed with social movements and traditional communities, strengthens the role of the university in the discourse surrounding epistemic discussions on climate change. Through a process of co-producing knowledge, this initiative emphasizes the collective efforts of all involved parties, particularly vulnerable groups who have been historically overlooked. These marginalized groups bring forth valuable insights based on their “knowledge of experience made” (Freire, 1970) in understanding the impacts



of climate change and how they actively resist its effects. The collaboration between AC José Lutzemberger and universities has been deemed crucial and beneficial for the community. For Dos Santos,

[...] when we are in a relationship, it's a must for us [...] because sometimes knowledge is lacking and partnership comes with knowledge. We're producing our existence from what we produce in the field, we mutually benefit. But bigger, more structural things, we're still brainstorming. This will also happen through partnerships. (February 10, 2023).

During the culture circles with AC José Lutzemberger, various interactions with higher education institutions for research, extension, and other activities were brought up. Wandenberg emphasized her participation, along with other representatives of social movements, in the COP 27 event at UFPR. Nevertheless, the experiences and insights gained from the discussions on the theme circulate back to the movement and the community, becoming part of ongoing dialogue and reflection. Dos Santos comments: "This is the situation we live in, and we talk to each other."

A primary objective of the PAR was to create a comprehensive map of climate change-related violations and resistance, and collaboratively develop socio-environmental agendas with the communities. This process aimed to equip vulnerable communities with tools to advocate for their interests and formulate proposals for various instances and institutions. However, certain measures necessitate the involvement of specific governments and institutions, which may not be directly and immediately accessible to the community. The university's role in assisting communities is perceived as crucial in responding to their specific demands through a collaborative knowledge-building process. The hope lies in partnerships with universities to aid in the adaptation process to climate change. Tatiana Mendonça Cardoso, a resident of Cardoso Island, emphasizes the impact of climate change on coastal communities and recognizes that research can provide valuable data for supporting potential relocations and exert pressure on the state to take concrete actions in addressing the climate change issue.

[...] among the dialogues that we have here within the communities, we say that if we had a partnership with the university, and we had equipment, and we had training, both from the community so that we could analyze this erosive process and think about actions that can reduce the impact of these erosions on the territory we could have more life in this place. [...] Climate change is happening, the actions are external but those who are impacted are the communities that are in the coastal area, and the university can support us in this sense of building joint data that we can fight, so that we get support for relocations if we have to relocate, or, right, that the government does something in this sense, that we do not have to do everything ourselves, I think that's it. (September 2, 2022).

Through the generation of knowledge and harnessing the full potential of the university in confronting the complexities of climate change, a deeper understanding of its origins and the evaluation of responses to its detrimental impacts in various contexts can be achieved. As a result, the inclusion of the university in this crucial agenda becomes imperative, empowering it to effectively address these challenges. Cacique Kerexu further emphasizes the significance of non-Indigenous involvement in the efforts to safeguard life, even within universities and educational institutions, to raise global awareness about the imperative struggle for preserving the Atlantic Forest.

So, it's very important that it's also brought within the great universities, within the schools, right, also so that it's understood that Indigenous Peoples have a role not only there in this struggle for their existence, but it's for the existence of all of us. (February 10, 2023).

Education plays a crucial role in building solutions to climate crises, but to attain these goals, educational institutions must undergo a profound transformation, urging the development of socially engaged universities that provide free public access and implement affirmative inclusion policies. Although numerous initiatives strive to align their endeavors with the Sustainable Development Goals, certain university models remain unchallenged in terms of the conventional concept of development and the knowledge that underpins it. In light of this, Tristan McCowan, during his lecture at the COP 27 event, underscores the imperative to envision alternative institutional structures for the creation of a genuinely different, sustainable, and just world. Such an endeavor requires addressing the root causes of environmental problems engendered by the prevailing model of civilization. McCowan highlights the Ecoverities Alliance as an exemplar of alternative institutions that draw inspiration from diverse traditions to establish an ecology of knowledge, fostering inclusivity for a wide spectrum of knowledge traditions, including those of Indigenous Peoples in fruitful dialogue with conventional academic knowledge, thereby paving the way for the emergence of a novel institutional paradigm. The realization of such an undertaking necessitates a profound transformation of the university, moving away from the belief in its exclusive possession of valid knowledge.

One effective approach to foster this knowledge exchange involves the university extending beyond its traditional boundaries, actively engaging with communities and social movements in a process of mutual learning and teaching. A noteworthy example of this practice can be observed within the Climate-U project itself, where undergraduate students of the Pedagogy course were actively involved in dialogues with a settled community concerning agroecological production and training in agroecology facilitated by the MST in collaboration with Via Campesina, in the Contestado settlement within the municipality of Lapa. This important moment has been inferred to significantly contribute to the transformation of the university, fostering the production of knowledge that engages in meaningful dialogues with the resistance experiences of peasant communities. This experience will also be carried out in CA José Lutzenberger, as previously mentioned.

Another significant example of how the university can reach out and produce material knowledge is based on the experience of teaching about climate change from another perspective. Through the culture circle in which the school faculty and the teaching staff of the Rural School of the Contestado Settlement (*Escola do Campo do Assentamento Contestado*) participated, we could understand how their school, located in an agroecology settlement, translates empirical knowledge into the school curricula. Listening to the faculty's experience has allowed us to also perceive how the university can contribute to the expanding teacher education in this field.

Another avenue to cultivate this knowledge dialogue and facilitate the university's transformation is through integrating the subject of climate change into the graduate curriculum (master's and doctoral) of UFPR. Initially, it was introduced as a 15-hour pilot module offered in August 2023, but the aim is to expand it to 45 hours in the following years. The objective is to offer a specialized module in the graduate programs in Education (PPGE), Law (PPGD), and Environment and Development (PPGMADE) on climate emergencies and their interconnectedness with education, law, and the environment. This expansion seeks to enhance students' comprehension of climate-related issues, with a focus on education, gender, and intersectionality, by incorporating the socio-environmental epistemology of traditional peoples, social movements, and women in the countryside, waters, and forests¹⁹.

10. Impacts of the university's actions on climate justice and teachings of the Participatory Action Research

The engagement of the university in dialogues with social movements has led to the acknowledgment of existing initiatives in peasant territories and traditional communities, thereby reinforcing the partnership between the university and social movements in co-creating knowledge concerning climate change. The incorporation of perspectives from social movements, traditional peoples, and communities into the discourse on climate justice has spurred critical evaluations of the strategies employed to address climate-related challenges.

Moreover, the integration of environmental and climate-related topics into the university's research, extension, and educational agenda has strengthened its role in engaging with epistemic deliberations on climate change. Furthermore, the incorporation of climate discussions into the university curriculum signifies an amplification of education's influence in fostering cultural transformations concerning climate issues.

The recognition of climate change's impact on women's lives and their corresponding acts of resistance have led to the development of research projects and specialized training courses for women on climate emergencies, food sovereignty, and women's

empowerment within rural, water, and forest contexts.

The act of attentively listening to the practices and experiences of resistance within the communities has proven pivotal in shaping novel syntheses and acknowledging the establishment of a fresh epistemology centered around climate emergencies, which emanate from social movements and are framed by a feminist perspective, entwining social justice and climate justice. By according priority to the voices of rural, water, and forest women regarding climate emergencies and recognizing the pedagogy of care for the body, others, social relationships, territory, and the planet that they cultivate, the PAR has significantly contributed to confronting epistemic, gender, and socio-environmental injustices.

ACKNOWLEDGEMENTS

This study is part of the Transforming Universities for a Changing Climate (Climate-U) research project, funded by the UK Economic and Social Research Council as part of the Global Challenges Research Fund (grant number ES/T005130/1). The authors would like to thank Charlotte Nussey, Alex Frediani, and Tristan McCowan for their comprehensive comments on the draft, and Bruna Andrade for the English translation. We are grateful for the engagement from social movements and traditional communities' representatives involved in the research.

¹⁹ The aim is to open it as an extension course for social movements and affiliated communities.



References

- Acsehrad, H. (2002). Justiça ambiental e construção social do risco. *Desenvolvimento e meio ambiente*. 5, 49-60. Retrieved from: <https://revistas.ufpr.br/made/article/viewFile/22116/14480>.
- Alves, R. (2016, October 13). *Pesquisa inédita mapeia mudanças do clima no Paraná, que ficará até 5,6°C mais quente [Unique research maps climate changes in Paraná, which will become up to 5.6 °C warmer]*. Portal FIOCRUZ. Retrieved from: <https://portal.fiocruz.br/noticia/pesquisa-inedita-mapeia-mudancas-do-clima-no-parana-que-ficara-ate-56degc-mais-quente>.
- Brembatti, K. (2016, June 9). *Como o Paraná poderá ser afetado pelas mudanças climáticas no futuro [How Paraná may be affected by climate change in the future]*. Gazeta do Povo. Retrieved from: <https://www.gazetadopovo.com.br/vida-e-cidadania/como-o-parana-podera-ser-afetado-pelas-mudancas-climaticas-no-futuro-8i8pnoqksbtiqwyq0te93czww/>.
- Conectas Direitos Humanos. (2019). *Guia de litigância climática*. Retrieved from <https://www.conectas.org/publicacao/guia-de-litigancia-climatica/>.
- Coradin, C., Guevara, M., & Schwendler, S. F. (2022). *Agência das mulheres camponesas na construção das Jornadas de Agroecologia do Paraná*. In A. Brandenburg (Ed.), *Agroecologia e reforma agrária popular: um projeto ecológico*. Das Jornadas de Agroecologia, 348–388.
- Maes, J. (2023, March 4). *Brasil está muito atrasado na adaptação às mudanças climáticas, dizem especialistas [Brazil is very late in adapting to climate change, say experts]*. Folha de São Paulo. Retrieved from <https://www1.folha.uol.com.br/ambiente/2023/03/brasil-esta-muito-atrasado-na-adaptacao-as-mudancas-climaticas-dizem-especialistas.shtml>.
- Frediani, A. A. & Nussey C. (2021) *A Protocol for Participatory Action Research into Climate Justice: Principles and Tools*. Transforming Universities for a Changing Climate Working Paper Series, No. 3. Retrieved from https://www.climate-uni.com/_files/ugd/f81108_6267a3677e5d4cb89310044e8ac70d7c.pdf.
- ONU/Brasil. (2023). *Ações urgentes contra a mudança climática são necessárias para garantir um futuro habitável, alerta IPCC [Urgent actions against climate change are necessary to ensure a habitable future, warns IPCC]*. Retrieved from <https://brasil.un.org/pt-br/224004-a%C3%A7%C3%B5es-urgentes-contramudanc%C3%A7as-clim%C3%A1ticas-s%C3%A3o-necess%C3%A1rias-para-garantir-um-futuro-habit%C3%A1vel>.
- Oxford Languages. (2019). *Word of the Year 2019*. Retrieved from: <https://languages.oup.com/word-of-the-year/2019/>.
- Paraná - AEN (Agência Estadual de Notícias). (2022, November 10). *Com novas ferramentas, Paraná amplia ações para frear mudanças climáticas [With new tools, Paraná expands actions to curb climate change]*. Retrieved from <https://www.aen.pr.gov.br/Noticia/Com-novas-ferramentas-Parana-amplia-aco-es-para-frear-mudancas-climaticas>.
- Puleo, A. (2013). *Ecofemismo para otro mundo posible*.
- Rosito, F. D. (2020). *Cooperação agroecológica, natureza e gente*. Doctoral thesis, Graduate program in environment and development, Universidade Federal do Paraná. Retrieved from: <https://www.prppg.ufpr.br/signa/visitante/>



Climate-U

Transforming Universities
for a Changing Climate

About Transforming Universities for a Changing Climate

Climate change is the most significant global challenge of our time, and many of its effects are felt most strongly in the poorest communities of the world. Higher education has a crucial role to play in responding to the climate crisis, not only in conducting research, but also through teaching, community engagement and public awareness. This study contributes to our understanding of how universities in low and middle-income countries can enhance their capacity for responding to climate change, through a focus on the cases of Brazil, Fiji, Kenya and Mozambique. In doing so, it contributes to the broader task of understanding the role of education in achieving the full set of Sustainable Development Goals.

Our partners



Appendix A

Meetings/culture circles with social movements and partner communities

The first meeting took place on September 2, 2022, with the esteemed presence of the International Coordinator, Professor Tristan McCowan, as well as the faculty members and students from the UFPR project. Additionally, the meeting included representatives from prominent social movements, namely Célia da Silva Leonardo Garcia (Movimento de Mulheres Quilombolas do Paraná – MMQPR), Inara Rodrigues Santos (MAB), Tatiana Mendonça Cardoso and Cleonice Silva do Nascimento (Movimento dos Pescadores e Pescadoras do Paraná – MPP - PR), and Daiana de Oliveira (MST). The second meeting took place on February 10, 2023, with the participation of the faculty members and students involved in the project, along with representatives from various social movements. Those in attendance included Célia da Silva Leonardo Garcia (MMQPR), Inara Rodrigues Santos (MAB), Tatiana Mendonça Cardoso (MPP - PR), Lunamar Cristina Morgan (Movimento das Mulheres Camponesas – MMC), and Sara Dalila Wandenberg dos Santos and Amandha da Silva Felix (MST).

Appendix B

Agroecology, climate change and the resistances of peasant women.

This collective moment of the thematic seminar was held on June 24, 2022, within the Agroecology Journey, in the Education Sector of UFPR. The seminar was coordinated by Professors Sônia Fátima Schwendler, from the Education Sector at UFPR, and Katya Isaguirre, from the Law course at UFPR. These coordinators also took on the role of debaters during the culture circle, fostering a fruitful dialogue between the university and various social movements. The participants included representatives from diverse backgrounds, such as Landless Women from MST, represented by Priscila Monnerat, Quilombo Paiol De Telha, represented by Djankaw Kilombola Marques, and the Affected by Dams (MAB), with the presence of Daiane Machado.

In an effort to foster engaging discussions, the dialogue centered around several key questions, which served as the basis for problematizing the topics at hand: 1) are climate projects being discussed in communities? 2) are women actively participating in this climate debate? 3) how do these communities perceive the issue of climate change? 4) do peasant women, through their practices, contribute to nature conservation and the mitigation of global warming? 5) how do these women challenge the agribusiness model through their practices? 6) what role do women play in the fight against climate change? 7) how can feminist and gender struggles lead to solutions addressing climate change? These thought-provoking questions served

as a foundation for engaging and insightful conversations during the seminar, allowing for the exchange of valuable knowledge and perspectives between the university and the social movements.



Appendix C

Climate Justice and Litigation

This meeting took place on September 16, 2022, in partnership between the Climate-U project and the Research and Extension Center on Socio-environmental Law (*Núcleo de Pesquisa e Extensão em Direito Socioambiental – EKOA*), under the coordination of Professor Katya Regina Isaguirre-Torres. The seminar, held in a hybrid format at the UFPR Law School, aimed to critically examine the concept of climate justice developed from proposals of the Global North and to engage eight undergraduate and eight graduate students with individuals who are directly connected to socio-environmental conflicts in the territory, either through their involvement in social movements or in popular legal advisory roles.

The participation of guest speakers Pedro Martins (Legal Advisor for the human rights organization *Terra de Direitos*), Priscila Monnerat (Gender Sector of the MST), and Elisa Estronioli (MAB) evolved from the presentation of motivating questions for the discussion. They were: 1) How do you perceive the concept of climate justice, and how does it align with the practices of MST, MAB and *assessoria jurídica popular* (popular legal advice)? and 2) What connections do you observe between the struggles for the recognition of rights of vulnerable social groups (e.g. agroecology, gender equity, rights of populations affected by dams) and the concept of climate justice? Is the judiciary a strategic arena for taking actions to confront climate change issues?

Appendix D

The 27th United Nations Conference on Climate Change from the perspective of social movements and Indigenous Peoples.

This Climate-U – UFPR event aimed to discuss the 27th United Nations Climate Conference – COP 27, from the perspective of social, community and Indigenous movements, relating climate emergency, rights violations and experiences of resistance. The meeting took place on February 10, 2023, in the Education Sector of UFPR, and was livestreamed through the project's Youtube channel.

The panel of guests included: Tristan McCowan (professor at University College of London and general coordinator of the Climate-U project), Pedro Martins (popular lawyer of the Land of Rights), and Juliana Kerexu Mirim Mariano (Cacique of the Tekoa Takuaty village on Cotinga island, Paranaguá, Brazil).



Appendix E

José Lutzenberger Agroforestry Community

The visit to the José Lutzenberger agroforestry community in the municipality of Antonina, situated on the northern coast of Paraná took place on March 26, 2023. During this visit, two culture circles were conducted with members of the community and two leaders, Sara Dalila Wandenberg dos Santos and Jonas Souza, emerged prominently. Additionally, two “seed guardians,” namely Luzinete Souza Oliveira and Vera Lúcia Alegre de Souza, and a graduate in agroecology from UFPR Litoral, member of the Guarani Kaiowá ethnicity who recently joined the community six months ago named Valdir, also participated in the dialogues.