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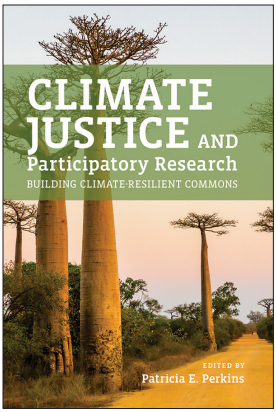

CLIMATE JUSTICE AND PARTICIPATORY RESEARCH: BUILDING CLIMATE-RESILIENT COMMONS

Edited by Patricia E. Perkins

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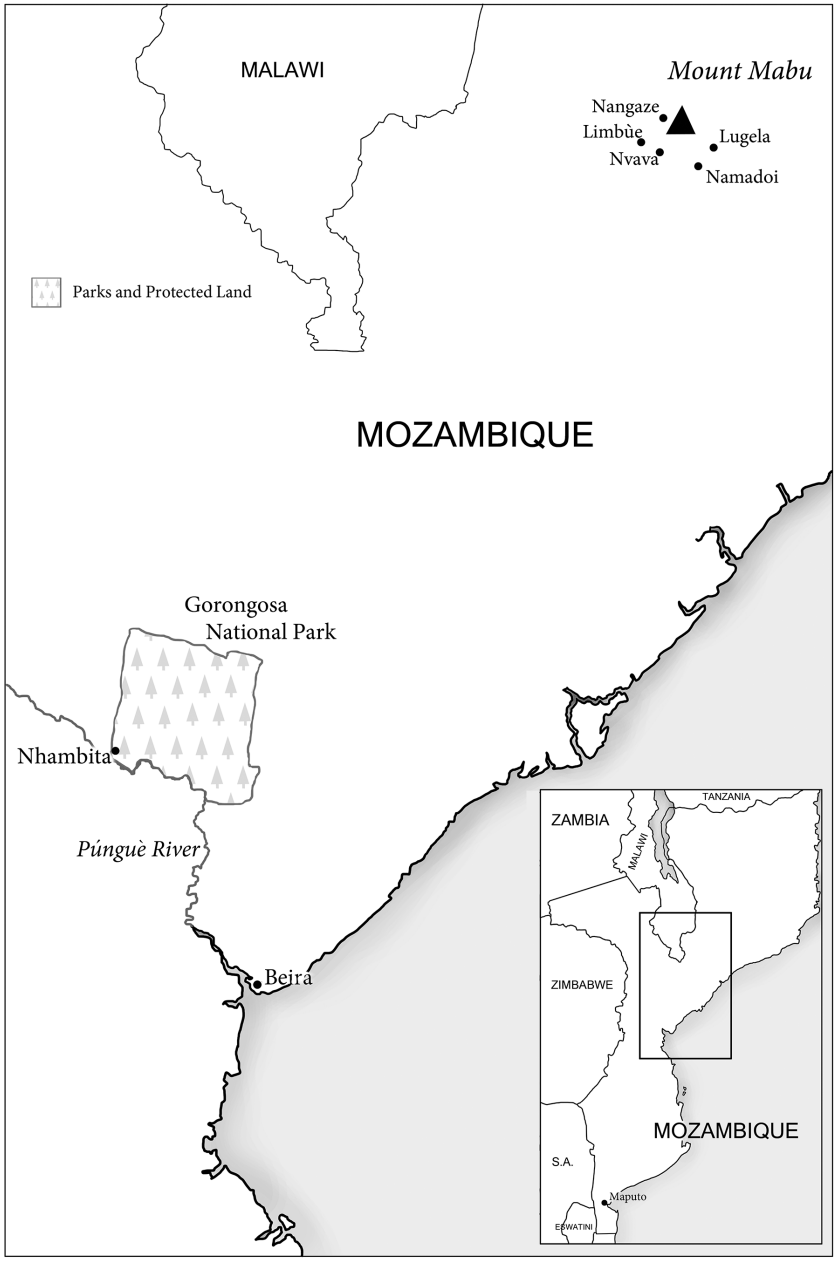
Action Research for Climate Justice: Challenging the Carbon Market and False Climate Solutions in Mozambique

Natacha Bruna and Boaventura Monjane[1]

Introduction: From Mining Extractivism to the Advent of the Carbon Market

The economy of Mozambique is a typical resource-based system. In general, the country's economic policy has focused on transforming the nation into a recipient of Foreign Direct Investment (FDI), adopting an extraction-transport-export scheme that, while resulting in high economic growth rates, fails to improve the welfare of its population (Mosca, Abbas, & Bruna, 2016; Castel-Branco, 2010).

Extractivism is prevalent in numerous other sectors, even beyond those traditionally associated with extractive activities. This is seen in agriculture, where agricultural commodities are harvested and exported with no or only minimal processing. These extractive schemes may generate environmental and social costs, which cause social marginalization and poverty in rural areas. Some studies show that rural livelihoods have been negatively affected in areas where extractive practices are carried out (Feijó, 2016; Mosca & Selemane, 2011). Negative effects on rural livelihoods and increasing poverty



Map 7 Mozambique—Sofala and Zambézia Provinces

have been particularly identified—for instance, in coal mining areas in Tete province, in the natural gas extraction area in Inhambane, and in the cultivation of eucalyptus and rubber trees in various parts of the country.

Moreover, there are visible socio-economic costs as a result of climate change. Mozambique is considered one of the countries that is most vulnerable to climate change, largely because of its weak and fragile socio-economic and human development characteristics (Brito & Holman, 2012; World Bank, 2010). In the past few years, the country has experienced severe droughts, floods, and cyclones (Idai, in Central Mozambique, and Kenneth in the north of the country). Thousands of hectares of crops were destroyed, including cash crops, and the cyclones caused catastrophic health impacts, damaged infrastructure, and shut down numerous businesses (see for example Charrua et al, 2021; Feijó & Aiuba, 2019). In addition to the impact of extreme weather, many regions are silently impacted by climate variability (such as changes in rainfall patterns). This directly and negatively impacts the subsistence agriculture and other income-generating occupations of rural populations.

With the intention of mitigating the effects of the global environmental crisis through the limitation and reduction of greenhouse gas (GHG) emissions, the carbon market emerged from the Kyoto Protocol (UNFCCC 2008). The carbon market consists of buying and selling carbon credits (which are generated by the certification of carbon offsets) and this, in turn, allows buyers to continue to pollute a certain amount, measured in tons of carbon. Carbon is captured through different climate change mitigation actions, including reforestation (replanting in deforested areas) or through the preservation of environmental protection areas. After proper measurement and verification of carbon capture in tons of carbon, the credits are sold at a market price. The price of carbon credits on the international market fluctuated between 5 and 56 US dollars per ton between 2017 and 2022 (IHS Markit, n.d.). The implementation of a carbon capture project aims at capturing the maximum amount of carbon dioxide and selling the carbon credits to industrialized countries, polluting industries, or any other company or individual looking to offset carbon dioxide emissions.

Such mitigation and adaptation projects normally target less industrialized countries with high biodiversity potential, such as Mozambique, where about 25 per cent[2] of the national territory is a potentially protected area. With the global need for adaptation and mitigation, and potential biodiversity, Mozambique is a recipient of climate funds and a strategic destination

for projects working on climate change adaptation and mitigation. However, studies have shown that these projects have a negative impact on rural livelihoods and, as we will see further below, they also stimulate new forms and dynamics of community resistance, given the overexploitation of natural resources (Fairhead et al., 2012; Bruna, 2019).

In researching these issues, we used an action-research methodology in collaboration with the communities affected by these projects—not about them but with them. This chapter seeks to highlight a new element in the rush for natural resources in countries like Mozambique: carbon. This new commodity, which is sold on international markets in the form of carbon credits, is the result of the implementation of "green" projects aimed at conservation and the reduction of GHG emissions.

The chapter looks at two cases. First, it analyzes the implementation of a REDD+ (reducing emissions from deforestation and forest degradation) project in Nhambita, Sofala province, as an example of the mainstream traditional solution to climate change (Map 7). Secondly, we describe an example of a type of climate change mitigation and adaptation initiative that does not follow the top-down and market-driven strategies of mainstream policies. The case we describe, in Mabu, Zambézia province, is an alternative to mainstream solutions—a joint project between community farmers and an environmental organization named JA! (*Justiça Ambiental*—Environmental Justice), where they work collaboratively on sustainable small-scale agriculture and livestock practices using local methods oriented towards the conservation of forests in the community. As these practices differ from those envisaged in mainstream climate change adaptation and mitigation policies, they constitute, we believe, first steps toward reducing the climate injustice that is evident in Mozambique and other extraction-driven countries.

Action Research and the Scholar-Activist Approach

The design of this study adopted an action research and scholar-activist approach. Action research arose from the need to bridge the gap between theory and practice. It is participatory, engaged, and committed research, as opposed to traditional research that is independent, non-reactive and objective. Action research seeks to bring research and action/practice together (Engel, 2000). The scholar-activist approach involves "rigorous academic work that aims to change the world or engaged activist research that is described by

Fig. 16.1 Mabu farmer.

Fig. 16.2 Dona Francisca.

detailed academic research, which is explicitly and unapologetically linked to political projects or movements" (Borras, 2016, p. 1). In practice, engagement with communities must be sensitive, socially friendly, and politically committed to the affected populations (Shivji, 2019, p. 15). Therefore, it consists of conducting rigorous—but not neutral—research (Santos, 2014).

As noted, our study was carried out in collaboration with civil society organizations and local social movements, namely JA! (https://justica-ambiental.org/), UNAC—*União Nacional de Camponeses* (National Peasant Movement Organization—https://www.unac.org.mz/), and the *Alternactiva* collective (Democratic Debate for Social Emancipation Platform—http://alternactiva.co.mz/).

These organizations work directly with rural communities in Nhambita and Mabu. JA! and UNAC (administration) were involved in the development of the project proposal and the research objectives. During the field study in Mabu and Nhambita, we worked in collaboration with local representatives and members of these organizations at the community level. Additionally, and always as a transversal factor, we focused on the inclusion of the research participants in knowledge-building, dissemination, and production of socially relevant and emancipatory content (Figures 16.1 and 16.2).

Community members from Mabu and Nhambita participated in this research not as objects of study in the classic and traditional sense of extractive research, but as active subjects. First, these communities were selected to some extent because of the relationship previously built between the authors, the organizations, and the individuals who participated in the study. Trust shared among authors, the organizations, and the leaders and members of the two communities contributed to this epistemic relationship (Monjane, 2021). This allowed the authors to ask certain questions and get more honest answers from the individuals interviewed. Meetings with all the participants, which may also be called focus groups, were opportunities for community discussions about the purpose of climate change mitigation and adaptation projects implemented in each community (Figures 16.3 and 16.4). These community discussions had not previously taken place in Nhambita and very few had been held in Mabu. Our workshops on climate justice were also an opportunity for mutual learning among the participants, research partners, and researchers. From these workshops emerged new understandings of climate change, greenhouse gas emissions, carbon markets, climate justice, and other topics. The sessions also allowed us to present and check the

Fig. 16.3 Climate justice workshop.

Fig. 16.4 Community group meeting outside.

preliminary results of the study, first in Nhambita and later in Lugela,[3] with members of both communities.

Exchange visits between the communities were a crucial part of this study. Besides the researchers and partner organizations, members of the Nhambita community visited the Mabu community. Both communities are affected by the same phenomena (climate-related changes and crises), but they have radically different response strategies. This made possible a deep understanding of resistance processes, and also the beginning of a cooperative relationship between the communities. It is well known in action-research that facilitating informal intercommunity exchange visits is essential for sharing new experiences among partners (Buti, 2021).

Another important element in this research was the production of audiovisual materials, namely a documentary film summarizing the experiences, struggles, and life alternatives in the two communities. Besides being produced with members of both communities telling their stories as active proponents, it is also a useful popular education tool on climate justice struggles and material for use in climate justice advocacy. This documentary will be returned to the communities in a coming phase of our action research.

Carbon Capture and Emissions Reduction in Nhambita (Gorongosa) and Socio-Economic Implications

The Global Rush to Natural Resources

Due to the dynamics mentioned above, a gradual change is evident in the plans of big multinational companies (e.g., Sasol,[4] which has increased its interest in natural gas in the name of climate change mitigation) and the redirection of global capital to so-called green investments—renewable energy, biofuels, forestry, and others (World Bank, 2010). This means that the rush to natural resources has been shaped to respond to the emerging need to capture carbon and/or reduce emissions. One of the main strategies promoted internationally and acclaimed (and funded in some cases) by organizations such as the United Nations, the Intergovernmental Panel on Climate Change (IPCC), the World Bank, and environmental organizations and foundations, is the REDD+ framework. This strategy is often associated with the carbon market through the implementation of carbon capture projects, through either

reforestation or the (re)establishment of protected areas, so that emission reduction credits can be sold in the carbon market.

Mozambique already has numerous projects for climate change mitigation and adaptation set out in national strategies—the National Strategy for Reducing Emissions from Deforestation and Forest Degradation, Conservation of Forests and Increase of Carbon Reserves through Forests (Mozambique, 2016), and the National Strategy for Adaptation and Mitigation of Climate Change (Mozambique, 2012). From among the many such "green" projects operating in Mozambique, this chapter focuses on the experience of the Nhambita community, which is part of the buffer zone of Gorongosa National Park, one of the largest protected areas in Mozambique. A PES (payments for environmental services) project was implemented in this area under the country's REDD+ strategy. These new dynamics have not only triggered an increase in the land rush in Mozambique (some studies already confirm this; see for example Borras et al., 2011 and Bruna, 2019), but they have also promoted a rush to areas of high biodiversity in order to capture carbon and then sell carbon credits: the carbon rush. The Nhambita case near Gorongosa, which was a REDD+ project implemented by the company Envirotrade, shows how this carbon rush takes shape, the implications of these types of projects for the rural population, and the potential gains for the implementing stakeholders (usually foreigners).

Brief Descriptions of Nhambita and the Envirotrade Project

The community of Nhambita is located in the district of Gorongosa, in the province of Sofala. Gorongosa National Park (PNG) and its buffer zone cover an area of approximately 10,000 km² (Moçambique, 2016). Nhambita is located in the Púnguè region and is near one of the major rivers in the area, the Púnguè River (see Map 7, page 318).

Local families live mostly from dry-land farming (dependent on rainfall or using the low levels of the Púnguè River for cultivation) on small pieces of land (normally from 1.2 to 5 ha per household), which in Mozambique are called *machambas*. These families do not use fertilizers or pesticides and thus rely on shifting cultivation (crop rotation to allow the land to "rest" and restore the quality of the soil, called fallow periods). Besides farming, family members normally work in off-farm activities, such as casual, informal jobs (in the nearest towns or villages), in forestry-based jobs (carpentry, charcoal

selling, sale of alcoholic beverages, traditional medicine), or handicrafts, among others.

It was in this area that the now-defunct British company Envirotrade started a REDD+ project in 2003, named the Sofala Community Carbon Project. According to the company, it was an operation to develop sustainable use of the land to achieve rural development in the region. It was a for-profit project, in which the carbon was captured from agroforestry (of native and non-native plants), forests protected, and deforestation avoided, with the carbon then traded on the open carbon market. The project comprised, in addition to agroforestry, the opening of a local carpentry workshop and a sawmill using local materials in a sustainable way, and a plant nursery for fruit and other species. The nursery supported tree planting and employed mostly women. In addition to the farmer-producers, the company also contracted carpenters, nursery workers, extension agents, and forest rangers who patrolled the forest against deforestation and wildfires.

According to the project's impact assessment, about 1,510 producers were involved in the project (Marzoli & Del Lungo, 2009) with the planting of numerous tree species, under a seven-year payment agreement, although the producers were supposed to protect the trees for longer than seven years. The project basically consisted of capturing carbon by planting trees of different species, and reducing emissions by not deforesting new areas for subsistence agriculture for food and other benefits. Marzoli and Del Lungo (2009) state that, between 2003 and 2008, the project made a total of USD $900,000 on the carbon market, generated mainly through agroforestry activities. The job of the producers was to plant the trees and provide all the necessary care during their growth period. The number of trees planted per producer varied, depending on the land available to each producer. In return, the producers received decreasing annual payments (represented as the equivalent of their labour needed to take care of the plants) according to the number of trees planted per producer—on the condition that no new areas were cleared for *machambas*. However, after fifteen years of operation in Mozambique, the company left the country, and the producers claim that the company stopped paying for the trees or for the investment the farmers had made. According to a former Envirotrade producer and technician,

> I received lemon, cashew and mango plants to be planted. I planted them in the machamba of my house. So, we received tokens to

> be exchanged for salary; in the first year, I got paid—it was about 300 (meticais)[5]; others received a lot of money. I was told the salary was based on the number of plants I received, but I did not have enough plants. I had about a hundred of them in my backyard. It got worse—they paid 290 meticais in the second year. In the third year, I was paid 90 meticais. With that money, I could buy only salt. In a meeting, they told us that the money would come, but it hasn't come [until now] and the project has ended. We were left with only plants. (Interview in July 2021, farmer, former Envirotrade producer)

According to another former producer, "[if] some plants died, the company would reduce our pay" (Interview, farmer, former Envirotrade producer, July 2021).

These statements suggest that the employment relations under the terms of the contract were hostile to farmers to the point that failure to comply with the provisions of the contract resulted in severe penalties enforced by the company, including the termination of the contract (Monjane, 2012). According to a former manager of the company, the payments were supported by the carbon price on the market. Revenues from the sales of carbon credits had three main purposes: (1) paying the producers; (2) covering operating costs of the project; and (3) covering costs related to the measurement and verification of carbon credits. The measurement and verification of carbon credits were done by third parties and not by the company itself. Meanwhile, due to the fall in the global price of carbon and the consequent financial infeasibility of the project, the company had to stop its operations and end the project.

Socioeconomic Implications

a) Disrupted Livelihoods and Social Reproduction Strategies

Although producers argue that planting trees has some benefits for farmers (they provide shade and fruit and protection from strong winds), negative socio-economic implications are evident. In addition to their debts and the drop-off in income after the company left, the planting of trees has affected the way the producers use the land, making them substitute agroforestry for food crops, thus jeopardizing food availability and access, besides the condition that no new areas can be cleared for other activities. Moreover, it was observed that agroforestry absorbed available local labour, which means that

less work was spent on the *machambas*. This also triggered contradictions and conflicts among producers concerning their way of life and agricultural production, as fallowing land was no longer allowed (due to the prohibition on deforesting new areas). These conflicts were not managed with compensatory strategies or policies for the losses in access to land, constraints on traditional agricultural practices, or labour exploitation.

Fifteen years after the beginning of the project, it ended in 2018 and left behind unfinished work and hundreds of perplexed families. According to former producers, the company left the region without saying goodbye to the communities, and it failed to pay for plantation labour or ongoing care for the trees.

> Envirotrade did not leave properly. Envirotrade owes money to many people. First, they owe the producers for three years of planting. Second, they owe three years of salary for the work done by the nursery workers who raised seedlings. Third, they also owe three years of salary to the men who were protecting the areas and making firebreaks. Fourth, they owe three years of salary to the people who lived in the individual [forest] areas designated for the carbon project. Finally, they should indemnify the workers. (Interview in July 2021, former technician at Envirotrade)

According to the former carbon manager and coordinator at Envirotrade, who disagrees with the statements above, the deal ended due to the fall in global carbon prices and the project's resulting financial infeasibility, as carbon revenues funded the project. Also, the company claims to have been the victim of an "anti-REDD+ campaign" that supposedly discredited the work done by Envirotrade for all of those years. As mentioned earlier, the initial plan of the Nhambita carbon project was to pay producers for seven years after planting the trees, which the company says were advance payments, as the producer should take responsibility for caring for and protecting the trees for a much longer period, up to one hundred years (Kill, 2013). One hundred years is presumably the period in which a tree reaches its maximum capacity for carbon sequestration.

Opinions as to how effective the project was for the development of the region are mixed in Nhambita. Some former Envirotrade producers and

technicians regret the discontinuation of the project, especially the loss of the monetary benefits from the annual payments they received.

Although there are no visible prospects of the company's returning to Nhambita, the question still remains within the community as to whether the Envirotrade project will be resumed by the company or any other interested parties.[6] Between uncertainty and hope, some producers continue to protect the planted trees—although without the obligation or pay to care for them—and, at the same time, to clear new areas for agriculture. While Envirotrade had operations in the region, the producers were not allowed—under the terms of the agreements—to clear new areas for other activities, including agriculture, since Envirotrade was interested in documenting greater amounts of vegetation and biomes for the purpose of capturing as much carbon as possible. Households in Nhambita seem to have plenty of fruit trees, mostly mango trees and cashew trees, planted through the project. Some of the producers had signed numerous contracts, adopting different methods (border strips, intercropping, yards), which was possible mainly for producers who had greater land availability. One of the concerns raised by the producers interviewed was that they did not know how to make effective use of the trees, which raises another question about how aware producers were of the objectives and specificities of the project.

According to a producer,

> We were left with only the plants.… In one area some farmers were cutting down trees in revolt, because they were not getting paid. They even started cutting plants in the machamba. I asked why they were cutting everything; they said [because they had] not been allowed to do that for many years [and then we] ended up not getting paid. The machamba is full of plants and they [say] we are going to cut them down. (Interview in July 2021, farmer, former Envirotrade producer)

Apart from the asymmetry in information between the company and the producers, also notable is that the company broke its promises to improve living conditions in the communities as a result of environmental projects. Instead, it is evident that the company created a significant level of economic dependency within the communities, which resulted in a disruption in income and living conditions shortly after the company left. Strategies promoting sovereignty and independence were not created—quite the contrary.

b) Compromised Food Sovereignty

One of the notable critiques from Nhambita carbon project researchers and activists involved the potential risks the project implied for food security in the region, since the hired producers (several hundred) tended to neglect food crop cultivation in favour of tree planting and maintenance. Although some of the trees planted provide fruit, this does not compensate for the other kinds of produce that are no longer grown in the *machambas*.

This was, in fact, the understanding of a teacher from the local elementary school after observing the dynamics of the project's implementation for about ten years. She stated that with the project, the Nhambita community developed a characteristic distinct from the other communities where she taught: farmers worked fewer hours in the *machambas* to dedicate more time to agroforestry.

> [The farmers] lost themselves a little, since they became more involved with the company and food production became their second priority. By abandoning food production they ended up with a loss. (Interview in July 2021, teacher from Nhambita)

It is premature, without a detailed study, to evaluate the changes that occurred in Nhambita regarding the reduction in local productivity and diets. The phenomenon that seems to have emerged with the closure of the project is a process of re-agrarianization, shown by the readoption of agriculture as the main household occupation.

As mentioned earlier, there are divergent opinions in the community about the economic impacts of the project. Those reminiscing about the project's benefits claimed that the project helped the producers purchase certain construction materials and consumer goods, such as cement bricks and metal roofing for home improvements, and some appliances (such as radios and solar panels), although few houses are built with imported materials, as observed by our research team.

Among the more skeptical voices is that of the leader of the Nhambita community, whose view was that Envirotrade simply "*exploited people*" (Interview in July 2021). This community leader refused to become a producer for Envirotrade, because he considered the salary offered too low for the hard work required to keep the trees alive and healthy. Moreover, he claimed

that the terms of the contract benefitted only Envirotrade. The leader and his family decided to continue farming for food. Many other families also opted not to get involved with the project.

The experience of some women was different from that of other producers in the project. In an interview, one woman producer told us that she was contracted to work in the Envirotrade plant nursery from 6 a.m. to 4 p.m., and she also worked in her *machamba* before and after her shift; to this she also added household social reproduction activities. When questioned about the heavy workload burden that she carried and the low salary she received, she stated that it was necessary for her survival and, in particular, for the healthcare and education of her children. After the company abandoned the project, women like her—still owed back pay by the company—lost their source of income from work in the plant nursery, and also the income from the planted trees; they went back to relying on their *machambas* for subsistence.

The Emergence of the Carbon Market and Its Social Costs: The Materialization of Climate Injustice in Mozambique

In Mozambique, mitigation and adaptation strategies envision the implementation of various land-based projects: increasing and consolidating conservation areas, increasing forest plantations such as eucalyptus or pine trees, creating biofuel monocultures (including for export), changing rural land-use methods (e.g., adopting climate-smart agriculture techniques), among others. Thus, some green projects involve large economic interests hiding behind environmental projects.

Generally, households are not adequately informed about these projects beforehand, as in the Nhambita case—and there are others, such as the Gilé National Reserve example and the implementation of conservation REDD+ (Bruna 2021). However, there are numerous players who profit from carbon trading, from measurement and verification companies to carbon offset purchasers (who are generally the biggest global polluters). Therefore, countries with a low ecological footprint,[7] as is the case in Mozambique, are encouraged to conserve and protect their biodiversity for the sake of fighting climate change, while other countries and industries buy these carbon credits and continue to industrialize, pollute, and generate wealth based on the extraction and expropriation of emissions rights and other ecological resources.

Made up of an asymmetrical relationship in which some win and others lose in the name of the environment, those who lose are precisely the ones who historically polluted the least. This green extractivism is at the heart of the materialization of climate injustice in Mozambique.

The Nhambita project and other carbon-capture environmental projects show the fragilities and contradictions of what we consider to be top-down climate solutions and policies (climate action from above). Although the narrative of the Nhambita project proponents presented it as a plan that would promote sustainable use of land, protect local biodiversity, and help develop rural areas, while paying for environmental services provided by the contractors, this project failed in the following ways:

a) Environmental Condescension

In addition to this project having been designed from the top down, its proponents ignored the opinions, expertise, experiences, and real interests of the beneficiaries. Although the farmers were informed of the environmental impacts and benefits of the project, the producers were not aware of the profit objectives of the project. For example, they did not know that carbon is a tradable commodity and that it could be sold on the international market, or who it would be sold to and for how much, what it was for, etc. In other words, there was considerable information asymmetry regarding the real financial interests and drivers of the project: carbon capture and subsequent sale of credits on the international market. Also, producers were not informed that the carbon credits were ultimately used to accommodate polluting activities in other parts of the world.

The fact that the project was designed without considering the aspirations and priorities of the producers worsened the impact of the drop in producers' incomes from the company's departure; producers had invested work and land in the project to gain economic benefits from the trees, instead of concentrating their efforts on activities that would provide long-term benefits for them without financial dependence on the company.

Although they had been named the beneficiaries of the forest inventory, currently the producers find themselves with areas filled with fruit trees and other species of little economic utility. For lack of markets and processing facilities, the fruit ends up rotting. Today's scenario in Nhambita is the result of policies that were inappropriate for local realities or priorities and which

were designed through an asymmetrical top-down process to suit foreign economic interests.

b) The Failure of REDD+ and the Carbon Market

There are no known REDD+ projects that have been successful in their objective of stopping deforestation, but they are very successful in compensating for polluting activities. Several studies have provided evidence that these types of projects, in addition to adverse social effects, are not even effective in achieving their environmental objectives. That is to say, the studies question the effectiveness of such policies in mitigating and combating climate change (Casse et al., 2019). Moreover, we should reflect on and question the basis of policies such as REDD+ that depend on international market stimulus for their implementation. For instance, one of the reasons for the failure of the Envirotrade project in Mozambique, as mentioned earlier, was the fall in the international market price of carbon. Without the sale of carbon credits, the project became financially unviable, revealing its dependence on price variability and international market stimuli.

In the last five years, the price of carbon credits, as is the case for this type of REDD+ project, has ranged from 5 to 36 US dollar per ton (IHS Markit, n.d.). This variability poses risks for the implementation and sustainability of REDD+ projects that depend on the sale of carbon credits. In addition to the economic risk, this factor presents social risks, as a low carbon price can mean even fewer benefits for households affected by the project. It can also mean failure of the project, as happened with Envirotrade in Mozambique. Also, there is a risk in this scheme that arises from the volatility of the exchange rate between the US dollar and meticais (Mozambique's currency). The higher the dollar's value against the metical, the higher the income in the local currency and the more resources available for social projects. However, the opposite scenario poses a risk. Therefore, apart from the dependence on carbon prices, the success of these programs is also subject to exchange rate volatility. In other words, the livelihood of the producers involved depends on international-market and exchange-rate dynamics and will be subject to all the risks that this scheme entails.

Therefore, the way REDD+ was designed not only presents social risks and rural poverty intensification risks, but also promotes a scheme that continues to damage the environment insofar as it allows polluters to continue their polluting activities. In other words, the logic of the market in which

REDD+ functions makes its economic component more dominant than its environmental and social objectives.

What Alternatives? Emancipatory Actions for Climate Change Mitigation and Adaptation in Mabu

This section aims to explore, however tentatively, alternatives to the international top-down, market-based approach to climate action. The objective is not to deeply analyze the dynamics and implications of the alternatives, but to contribute to a debate that highlights fairer approaches which do not sustain existing climate injustices, but instead supply elements to support the construction of climate justice mainstays.

To this end, we investigated the case of Mabu, a community in the district of Lugela, Zambézia province, where the community and environmental organization JA![8] have been working together for over ten years. Over this time they have implemented sustainable small-scale agriculture and livestock activities based on local traditional practices and community forest conservation (forests of approximately 7,880 ha). These practices differ from mainstream climate change mitigation and adaptation policies, and they constitute, in our view, first steps towards minimizing the existing climate injustice in countries like Mozambique.

JA! started working with the population of Mabu (divided among four communities: Limbuè, Nvava, Namadoi, and Nangaze) in 2009 to understand and deal with the dynamics of illegal logging in the region and to promote the conservation of nearby Mount Mabu and its surrounding forest, which is considered a biodiversity hotspot.

> We did the work of raising awareness, which was a job that took us a long time, and we came to the conclusion that we needed to develop some activities with the communities, based on various discussions we had with them. And we tried in our discussions to find potential opportunities and challenges in the area, and understand what they wanted at the same time. So, we tried to create a convergence of all of these factors. (Interview in July 2021, René Machoco, JA!, Mabu)

The activities at the time involved raising awareness of the protection and conservation of the environment and the empowerment of communities in

biodiversity protection and conservation. From 2009 to 2021, JA! assisted the community with (1) environmental awareness, (2) community DUAT[9] registrations, (3) registrations of community environmental licenses for forest and hill protection, (4) creation of farmer and poultry farmer associations for the purpose of developing income-generating occupations such as demonstration fields, aviaries, beehives for honey production, and others. According to JA! and the farmers interviewed during the field research, these activities were the result of a collaborative effort between the community and JA! (from planning to implementation) and are continuously (re)adapted and (re)negotiated to respond to the aspirations and priorities of the community itself.

From the interviews with the members of the associations, it was evident that the associations function as income-generators in the community and also as a mechanism for information sharing both within each community and among the communities. Also, they promote learning about techniques and strategies for making local and forestry products (as mentioned by the vice president of the Nangaze association in an interview). In every community, there are also women's associations, such as *Associação de Mulheres do Límbue*, which, among other activities, focus on poultry farming:

> As a single woman, I would think, how would I manage today? I don't have a husband, but the association helps me. By selling chickens, I help my life, by selling chickens, I help my children in school. Or if I get sick, I sell chickens and I can go to the hospital. That is how they have helped my life. (Interview in July 2021, Filomena, farmer in Limbue Community).

Conclusion

Although the implications of the carbon rush for rural subsistence are different from the implications of mining and agrarian extractivism, there are points of convergence between the two processes. The growing demand for land for the implementation of carbon sequestration projects, whether or not it involves the eviction of producers, ruptures locals' plans for survival (during and after the departure of the company from the land), leaving no compensation and posing high risks for food security. Along with these impacts comes the intensification of social inequality within the community. Our field visits

showed us that it was the families who owned more land who planted more trees and made more money; this allowed them to invest more in agriculture by hiring local labour (more precisely, labour from less-favoured households with less land, including producers whose agreements with Envirotrade were cancelled as punishment for breaching contract clauses, mostly because they had opened up new areas for food crops).

In the case of Nhambita, resource usurpation did not expel farmers, as happens in cases of "traditional" mining and agrarian extractivism. However, the encroachment involved appropriation of control and management of the land so that the hired farmers no longer had decision-making power over the use and benefits from their own land. We call this practice "expropriation without expulsion." On the other hand, this also involved the usurpation of ecological resources, particularly the right to use biodiversity for their own subsistence; that is, the farmers lost their right to emit carbon by allowing carbon credit buyers to obtain it instead. This process of extracting emissions rights, legitimated by climate change mitigation and adaptation policies, is what we call "green extractivism" (Bruna, 2021).

Top-down climate crisis solution projects may seem appealing to rural farmers because of the monetary promises made and the better living conditions offered. However, this model has not been sustainable, as Nhambita's experience shows. In addition to the adverse effects of these policies, Mozambique has been the stage for extreme climate events with devastating impact. This shows how the countries that have contributed the least to the environmental crisis are often those that suffer the most from its impacts, and also those that host "false solutions" to climate change.

In Nhambita, evidence suggests that farmers seem to have joined the project only because they would be paid for it. While the value of trees planted in the community cannot be minimized—for example because they provide shade, fruit, and protection from high winds and cyclones—from a broader perspective, planted trees do not seem to be of much use to the producers. While some choose to clear new spaces, others cut down some of the trees planted (on a small scale), which indicates that the project will likely end up producing the opposite effect to the one desired by the stakeholders, namely Envirotrade, the funders and carbon offset purchasers. What really determined the acceptability of the project by the community was the structural issue of rural unemployment and low wages in Mozambique.

It is this context that emphasizes the need to deepen our notion and concept of climate justice, envisioning policies and solutions to environmental crises that are economically sustainable and socially just, and holding in mind the history of ecological footprints and the varying priorities of countries at different levels of industrialization and economic development. In other words, the conception and design of climate change mitigation and adaptation policies should not stray far from the principles that guide climate justice. The Mabu case study gives clues in this regard. Mainstream climate change mitigation and adaptation policies are usually implemented without the equitable participation of local actors and rural communities, and cause adverse implications for rural livelihoods, as discussed above. Mabu's experience is completely different insofar as there is an absence of information asymmetry among the actors involved, greater participation and engagement of the community in decision-making processes, and ownership of the project by the community participants, who share and support its objectives.

The various actions developed to mitigate and adapt to climate change in Mabu—namely agroecology, conservation of community forests, and promotion of environmentally correct livelihood strategies—are designed in a participatory manner and implemented according to the community's wishes. They are also greener than extractivist, export-oriented agriculture. Agroecology does not cause carbon emissions and is even claimed to cool the planet (LVC, 2007); honey production and small animal farming are also considered environmentally friendly because they are practiced in a sustainable way, unlike the mass animal and meat production of industrial agriculture. Related to this are the consumption habits and patterns practiced in the community, especially regarding agricultural products, which largely involve local produce for local consumption.

JA! and the community collaborate systematically and horizontally to ensure that the aspirations and needs of the community are met and that community members themselves assume leadership in planning and implementation. Aware that such initiatives are not a complete and integrated demonstration of climate justice, we highlight the importance of these actions for building climate justice in countries in the southern hemisphere.

This study is the result of action research with an academic-activist approach—an approach that is still emerging in the context of Mozambique and that, as shown in this study, has great potential to provide information for climate change and climate justice studies, as well as in other areas of

Fig. 16.5 Climate justice workshop participants, July 2021, Nhambita, Gorongosa, Mozambique.

knowledge. This study makes an important contribution by starting a relatively new debate linking the field of extractivism, green extractivism, and climate justice, oriented towards the efforts of anti-extractivism activists in the world, especially in the Global South.

NOTES

1 This study was supported by a Queen Elizabeth Scholarship (QES—York University) in collaboration with *Observatório do Meio Rural* (The Rural Observatory). Translated from the Portuguese by Evandro Rodriquez and P.E. Perkins.

2 https://www.mta.gov.mz/conservacao/potencial-da-biodiversidade/.

3 Lugela is the capital of the District of Lugela, in the Province of Zambézia, about 30 km away from Mabu. The workshops were held in Lugela because of the central location of the town and better infrastructure.

4 Sasol Limited is an integrated energy and chemical company based in South Africa.

5 US$ 5.00 = 65 Meticais at the time, so 300 meticais was about 23 US dollars.

6 Interview 1, former producer.

7 The ecological footprint is a way to measure the pollution levels and GHG emissions in every country.

8 *Justiça Ambiental* (also known by its acronym JA!, which means 'now!' in Portuguese, is a volunteer) is a volunteer non-governmental organization operating in Mozambique. "JA! members see the environment as a holistic concept, and environmental justice as a vehicle to assure equity and equality in society as a whole by means of the environment. In support of sustainable development, we try to view the concept of equality on a large scale, and thus value and assure the rights of future generations to a healthy and safe environment, in the same way that we value this right for ourselves," posted on 14 December 2021. https://justica-ambiental.org/sobre/.

9 DUAT is the Portuguese acronym for rights to use land, which is a kind of land-use grant provided to applicants (individuals and entities).

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