

Caught in the Deluge

The extreme flooding in South Brazil highlighted the vulnerability of small-scale fishers to climate-induced disasters

Rio Grande do Sul in Brazil suffered extreme flooding in the months of May and June of 2024. It has severely disrupted the livelihood of small-scale fishers who depend on the region's aquatic ecosystems (see Table 1). The flooding, driven by unprecedented climate change-induced rainfall, affected thousands of people and caused 147 deaths. It devastated infrastructure, including shops, factories, farms and essential services like transportation and electricity.

Record-breaking rainfall raised river and lagoon levels, particularly impacting Patos Lagoon, Brazil's largest coastal lagoon and a critical area for biodiversity and fisheries. The influx of freshwater from inland watersheds disrupted the saline balance, essential for species like shrimp. The sudden floods, following another major flood in 2023, exposed the need for better disaster preparedness and response.

This article reviews recent news and official data on the disaster in South Brazil. It includes insights from two leaders of artisanal fishing coastal communities in South and Northeast Brazil (see Table 1), who have also faced major floods. We identify key challenges, focusing on social, economic and environmental impacts on small-scale fishers. Additionally, we examine responses from support organizations and propose effective policy options. Our goal is to raise awareness to advocate for small-scale fisherfolk worldwide who are facing climate impacts.

The floods have displaced thousands, creating climate refugees and causing a humanitarian crisis. Many have lost their homes and face prolonged periods in temporary shelters, with uncertain futures.

The psychological and social toll is immense, with families separated and livelihoods lost. Returning residents find homes filled with mud, dead animals and ruined possessions. The loss of basic amenities like electricity and clean water worsens their struggle. In rural areas, destroyed homes and community infrastructure further isolate vulnerable populations, complicating recovery efforts.

The floods have amplified the existing injustice faced by traditional peoples and communities. Civil Defence data shows 450 municipalities affected, with 76,884 people in shelters, 538,545 displaced and 2,124,203

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impacted, overall. The disaster has left 125 missing and over 800 injured, pointing to environmental neglect and socio-political failures. Traditional communities, already facing precarious conditions and institutional racism, were particularly vulnerable.

Financial losses

Economically, the floods have closed major highways and airports, and caused widespread blackouts. The region, reliant on agriculture and fisheries, has halted economic activities, leading to significant financial losses. The artisanal and industrial fisheries sector, vital to the local economy, is severely affected. The suspension of fishing activities has led to millions in losses. Patos

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Table I: Interviews with artisanal fishers leaders in coastal communities increasingly affected by major floods in the Northeast (Marine Extractive Reserve of Canavieiras, Bahia state) and South (Patos Lagoon, Rio Grande do Sul state) Brazil.

<p>Lílian Santana Santos Fisherwoman from Canavieiras Marine Extractive Reserve (Bahia state, Brazil), coordinator of the Women Fisher Network from South Bahia state, and coordinator of the Mother Association of the Canavieiras Extractive Reserve.</p>	<p>Nilmar da Conceição A fisherman from the Patos Lagoon (city of Pelotas, Rio Grande do Sul state, Brazil), regional coordinator of the National Movement of Fishermen and Fisherwomen, and president of the Z3 Fishers Colony.</p>
<p>1. Could you share how your experience with the floods a few years ago was and how it impacted your life and fishing at that time? “The floods in consecutive years greatly impacted our lives. We live in a protected Extractive Reserve. Floods used to occur in normal cycles, as my grandparents and parents told us, bringing an abundance of freshwater fish. However, the floods of 2021 and 2022 were problematic, especially for us artisanal fishers. Chemicals and pesticides used in cocoa, eucalyptus, and coffee plantations contaminated our rivers during heavy rains, killing crabs, crustaceans, and fish. One example is the mussel beds, which almost disappeared due to changes in water salinity.”</p>	<p>1. How did the recent floods impact your daily fishing activities and livelihood? “We are from the Z3 Fishermen’s Colony, located in the south of Lagoa dos Patos, Pelotas, Rio Grande do Sul. There are about 13 communities like ours, totaling around 4,000 fishers and approximately 1,000 families. We experienced a flood in October 2023, and just as we were beginning to recover, another flood hit in May 2024. The impact on our fishing activities was enormous. About 70% of the community was flooded, including houses, fish markets, gear sheds, boats, and nets. This led to massive destruction of essential fishing equipment, such as freezers for preserving the fish. Fishing teams were affected, and many houses were destroyed. Our livelihood is severely threatened, and recovery will be long and difficult.”</p>
<p>2. What long-term strategies or measures were most effective in helping you and your community recover from that previous flood? “Our initial strategies included moving stranded riverine residents, family farmers, and fishers to higher ground. We organized food donation campaigns as fishers couldn’t fish due to fish die-offs and deteriorating aquatic vegetation. We distributed food baskets, hygiene products, mattresses, and blankets. For instance, we helped fishers from Curva do Leão, whose homes were flooded, and who had to build huts on the roadside. We are in dialogue with the municipality to provide subsidies and relocate these people to less vulnerable lands.”</p>	<p>2. What kind of support or assistance do you believe is most urgently needed for you and your community to recover and rebuild? “We received a lot of solidarity from society, both from within and outside the state and even from abroad, in the form of food, water, and medicine. From the government, only the army and civil defense helped us. Some NGOs, such as the National Movement of Fishermen and Fisherwomen, the Fishers Pastoral Council, and the Fisheries Council, also supported us. However, from the federal government, specifically the Ministry of Fisheries and Aquaculture, we only received food baskets. We requested two months of emergency aid in the previous flood but didn’t get a response. Now, in this second flood, we are again asking for emergency aid for the 4,000 fishers in the Lagoa dos Patos region. So far, we only have promises and media attention but no concrete benefits. We hope they fulfill the promises, but we know it’s not easy. The urgency is for the fishing families of Lagoa dos Patos. We urgently need cleaning supplies to resume fishing activities, repairs to homes, and replacement of fishing gear.”</p>
<p>3. Based on your previous experience, what recommendations would you give to fishers facing the recent flood? “My recommendation is to unite forces. Climate change is here, and its impacts will worsen. Fishers, farmers, and the entire community must seek public policies and pressure the government to create support programmes. We must relocate those living on riverbanks who are most impacted by floods and curb laws that ease pesticide use. Protecting our ecosystem and ensuring food security is essential. We should unite to seek government support, create support programmes, and pressure for the relocation of the most affected people, as well as curb the use of pesticides that harm our environment.”</p>	<p>3. What are your biggest concerns for the future of artisanal fishing in your region after this disaster? “The future is uncertain. The lagoon’s recovery will be long, with much debris, and we don’t even know what’s in the lagoon now. In October 2023, when we could have resumed fishing, we faced the first flood, and now another one has come. We urgently need material support to restart our fishing activities. The uncertainty about the continuity of artisanal fishing and the possibility of sustaining our families is a major concern. The lack of effective action from the authorities only increases this insecurity. Here is our appeal to partners, friends, and supporters: we need immediate help to overcome this challenge and ensure a future for artisanal fishing in our region.”</p>

Lagoon, supplying 30 per cent of Brazil's pink shrimp, is particularly impacted, as the operations of supply chains and markets nationwide have been disrupted. Agricultural losses are also significant, with many farmers unable to plant or harvest crops due to flooded fields. Infrastructure damage hampers transportation and logistics, compounding economic losses. The combined effects on agriculture and fisheries ripple through local businesses, reducing income and increasing poverty.

Environmentally, the floods have severely impacted ecosystems. Freshwater mixed with sewage and contaminants causes long-lasting damage to aquatic environments like Patos Lagoon. Pollutants and debris disrupt habitats, leading to potential long-term ecological damage. Estuarine ecosystems, the breeding grounds for numerous fish species, are particularly vulnerable. Contamination from urban run-off and agricultural chemicals threatens water quality and aquatic life, risking a decline in fish populations and affecting biodiversity and livelihoods.

Small-scale fishers around Patos Lagoon have been severely impacted by the floods. Boats, equipment and fishing grounds have been destroyed, halting fishing activities, especially shrimp fishing, due to disrupted salinity levels essential for shrimp larvae. This disruption during the crucial May-June season has led to significant economic losses, affecting both local and national markets.

The challenges thrown up are immense: prolonged economic hardship, loss of income, and uncertainty about the future. Many fishers cannot return home due to the destruction, and are struggling to access relief and support. The psychological toll is severe, as fears arise about the future of their profession. Fishing communities face the loss of essential gear and infrastructure like piers and storage facilities. Replacing these assets is costly, more so due to the immediate income loss. Contaminated fishing grounds also raise safety and marketability concerns, complicating economic recovery.

The Solidarity Network in Defense of Artisanal Fisheries in the Pampa Biome, along with other organizations, has requested a meeting with government representatives to discuss the impacts of the floods and assess possible federal assistance. The network stresses the importance of this hearing for the government to understand the dire situation, which ranges from income loss to community flooding and devastation. They aim to prevent a repeat of 2023, when artisanal fishing communities were left without assistance despite several reports on the impacts. However, as of 10 June 2024, the meeting has not taken place.

Fisher leaders emphasize the disconnect between political proclamations and tangible support, highlighting unfulfilled promises and the vulnerability of communities. They stress the need for genuine empathy, effective public policies and unity among affected communities. Floods are intensifying along Brazil's coast. Before Rio Grande do Sul, another artisanal fishing community in the Canavieiras Extractive Reserve (Resex) in Bahia was affected in 2022.

Local fishers and community organizations are proactively seeking support and implementing strategies to cope with the disaster's effects. These efforts include emergency relief and rebuilding initiatives, though gaps remain. Community leaders call for immediate financial assistance, essential supplies and long-term recovery plans. Organizations like the Landless Workers' Movement (MST) are instrumental in providing immediate relief, distributing food, water and other necessities, and advocating for government support and policy changes to address the root causes of such disasters.

Disaster relief

Various governmental and non-governmental organizations have mobilized to assist in disaster relief. The Ministry of Fisheries and Aquaculture and other entities are delivering emergency food parcels but these interventions are not enough. More substantial and co-ordinated efforts

are needed to address both immediate and long-term needs. Government responses include the Plano Rio Grande, a state initiative focusing on short-term social assistance, medium-term infrastructure rebuilding, and long-term economic development. Despite these efforts, many affected individuals report delays and bureaucratic hurdles in accessing aid, highlighting the need for streamlined and efficient disaster-response mechanisms.

There is no data on water quality yet, but the fishery will likely take more time to recover from the environmental impacts. Research and monitoring are needed in the mid- and long-term periods. Immediate relief measures should provide financial aid, rebuild infrastructure and meet the basic needs of the affected communities. They should include direct financial support for replacing lost equipment and covering living expenses. Emergency funds should rebuild critical infrastructure like piers and storage facilities to enable fishers to resume activities. Notably, the Brazilian government has not set aside any emergency fund for fishery impacts.

Short-term relief should include psychological support for affected individuals, including addressing mental health. Temporary shelters need upgrading for better living conditions, and efforts should focus on reuniting displaced families and restoring community cohesion. Capacity building, community-based resource management, and improved disaster preparedness are crucial. Fishers need to be trained on sustainable practices, developing early warning systems, and enhancing local disaster-response capabilities. Education and training can build community resilience to future disasters.

Mid-term strategies should focus on diversifying income sources for fishing communities, and reducing reliance on a single economic activity. This could involve promoting small-scale aquaculture, community-based tourism and other complementary activities to provide alternative livelihoods during crises.

Policies for climate change adaptation and resilience must be

integrated into fisheries management. This involves creating sustainable fisheries management plans that consider climate risks, promote alternative livelihoods, and invest in research to monitor and respond to environmental changes. Governments should work with local communities to develop policies that enhance the fisheries' resilience to climate impacts.

Long-term nature-based adaptations should include restoring and protecting natural habitats like mangroves and wetlands, which can buffer against flooding. Investments in infrastructure that can withstand extreme weather events, such as elevated buildings and flood-resistant roads, are essential for coastal community sustainability.

The community-led approaches should be integrated into adaptation strategies. Empowering local fishers to participate actively in decision-making processes ensures that their traditional knowledge and practices are respected and incorporated into climate resilience plans.

The extreme flooding in Rio Grande do Sul highlights the vulnerability of small-scale fishers in South Brazil to disasters induced by climate change. The profound social, economic, and environmental impacts require urgent, co-ordinated action from the government, NGOs and the international community. Integrating climate change policies with sustainable fisheries management is essential to enhance resilience and ensure the long-term viability of small-scale fisheries. This approach emphasizes unity, advocacy and policy change to address the challenges faced by artisanal fishers and the broader community. 

For more

Lula announces aid for Rio Grande do Sul flood victims

<https://brazilian.report/power/2024/05/15/lula-announces-aid-for-rio-grande-do-sul-flood-victims/>

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