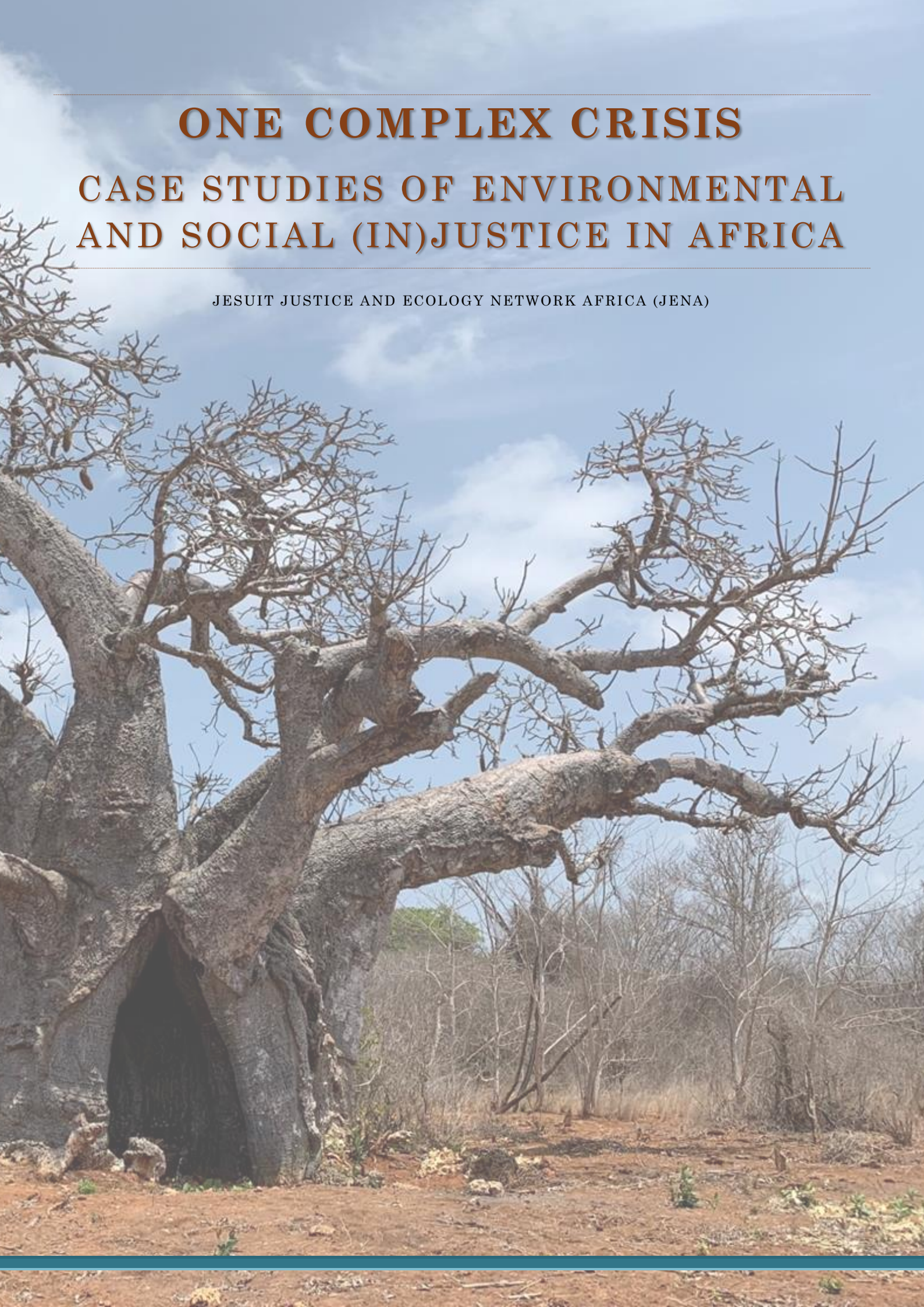
ONE COMPLEX CRISIS

CASE STUDIES OF ENVIRONMENTAL AND SOCIAL (IN)JUSTICE IN AFRICA

JESUIT JUSTICE AND ECOLOGY NETWORK AFRICA (JENA)



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FOREWARD

When Pope Francis wrote in *Laudato si'* that "we are faced not with two separate crises, one environmental and the other social, but rather with one complex crisis which is both social and environmental" (2015, no. 139), he could have easily been describing what life is like for far too many of our brothers and sisters coping with the impacts of climate change, the economic and political legacies of colonialism, and dysfunctional governments in Africa and elsewhere. Of course, this crisis-centered perspective is far from the whole story, but it is an important and privileged part of it.

In this single line from *Laudato si'*, Francis provides us with so much more than just a reflection of our lived experiences coping with environmental and social injustice. He also provides us with a hermeneutic, a way of reading events in the world around us. First, when he clarifies that "we are faced not with two separate crises," Francis already takes it for granted that the world is, in fact, in crisis. This is easy to forget for those of us who live relatively comfortable lives, but hard to ignore for those of us who don't. One aim of this report is to bridge the gap between these two categories of people. All is not well on this planet.

Francis also specifies that the crisis we face is "complex." No simple narratives will do. Instead, we need to take heart and boldly face the many dimensions of today's global crisis: those that are environmental as well as those that are social. These dimensions cannot be separated, they cannot be understood apart from each other, and the ways in which they intertwine are nuanced and context specific.

What follows in this report are a series of case studies, each revealing one example of how the world's social and environmental crisis is playing out in Africa today. I commend them to your reading and your prayer. It is only by listening to and learning from these stories that we can truly appropriate Francis' hermeneutic, standing with the crucified members of the community of creation that we might also accompany them into the joy of the Resurrection.

Fr. Charles B. Chilufya, S.J.
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CONTENTS

INTRODUCTION

In Africa and around the world, people's lives are threatened by climate change, pollution, and biodiversity loss. These changes to the biophysical environment are significant. They are also part of a larger story. Through a series of case studies, this report demonstrates how vulnerability to environmental change is driven by global systems and structures. Too often, the effects of wealthy nations' policies and business practices are kept out of sight and out of mind at home, while the four-fifths of the world's population living in developing countries are left to deal with their effects. This report also illustrates how the environmental change being observed across Africa and the world is made much more damaging by socioeconomic vulnerability in affected countries. Poverty, poor infrastructure, and irresponsible governance in the Global North and South all limit the available options for communities and countries seeking to adapt to a more volatile and precarious world.

The first case study explores the connection between climate change and armed conflict in **Maban, South Sudan**. South Sudan is now emerging from a protracted and brutal civil war that heightened vulnerability to climate change and was partially fueled by South Sudan's changing ecology. On the other end of the continent, farmers in **Chongwe, Zambia**, are in search of ways to mitigate soil degradation caused by the ill-advised application of commercial fertilizers, while soil health becomes more important now than ever due to less predictable rains and longer droughts. Some farmers have found success and improved household food security by using agroecological techniques, but the current policy environment is still based on obsolete science and makes adopting these techniques more difficult. In **coastal Kenya**, small-scale fishers practice a trade that has been at the center of local food security, economy, and culture for millennia. But fishers are threatened by climate change and, ironically, overfishing, and the government has failed to recognize and build on their contributions to food security. At the time of this writing, **southern Malawi** is still reeling from the impacts of Tropical Storm Ana, which made landfall in January of this year. The affected regions have been battered by "historic" storms and floods several times in the last few years as climate change makes these events more frequent and severe. National and local governments have a strong mandate to prepare for and respond to these disasters, but local leaders and international funders work in ways that are counterproductive and leave those most affected in dire need of assistance. In **Uganda**, the government is helping to create disasters rather than remedy them. The East African Crude Oil Pipeline (EACOP) is just one example of a long list of new and planned fossil fuel infrastructure projects around the African continent. These projects are morally insane; they demand a public response. Finally, this report briefly turns to the cross-cutting issue of **gender**. Climate change and other forms of environmental degradation create heavier burdens for women than for men. This fact alone should be alarming. It is also true, however, that increasing gender equity increases societies' social and economic resilience to climate change. Gender equity must play a central role in climate action.

The following case studies are far from comprehensive. Each, however, highlights a different facet of our planetary crisis and its implications for local communities in Africa. By considering each of these stories in all their specificity, we can begin to assemble a picture of the many challenges environmental degradation creates on this continent.

CLIMATE OF CONFLICT

MABAN, SOUTH SUDAN

Climate change and armed conflict affect people's lives in similar ways, jointly driving displacement, food insecurity, and increased vulnerability. These impacts are painfully apparent in Maban, South Sudan, where refugees, internally displaced persons (IDP's), and the local community are affected by extreme heat, drought, and floods, as well as fighting among community constituencies, militias, and the government. Cycles of violence, often driven or exacerbated by the scarcity of natural resources like charcoal, water, and fish, are further enabled by a political elite apparently disinterested in serving its people.

A few steps outside the Jesuit Refugee Service (JRS) compound in Maban, Michael reaches down and picks up a small metallic object from the sand. He turns to me as he holds it up, and playfully asks if I know what it is. I do: he is holding a spent shell casing, probably from a Kalashnikov rifle. At that moment, we happened to be standing on the very spot where, just a few years prior, members of the local parish council had stood, guns at the ready, to protect their "abunas" (priests) from a mass protest that had turned violent.

It was July of 2018 when around 2,000 Mabanese youth forced their way into fifteen NGO compounds in a series of events that eventually led to "looting, arson, and destruction of vehicles, structures, and… lifesaving supplies, including medicines" (South Sudan NGO Forum, 2018). No deaths were recorded, but in the following days, the UN Humanitarian Air Service evacuated around 400 aid workers. The local youth were frustrated by the lack of job opportunities offered by the large, well-funded international aid organizations that had reshaped their home, maintaining an airstrip, roads, and schools, all of which were meant to benefit the area's Sudanese refugees, not the local population.

The 2018 youth uprising in Maban was not an isolated incident, nor was it a senseless act of violence, as some outside observers were quick to claim. It was rather the logical product of a series of unjust systems and structures that have left young people in South Sudan with few opportunities and easy access to weapons.

The crisis in South Sudan is both political and ecological. Climate change and armed conflict are intimately connected. Each reinforces the other, they affect people's lives in similar ways, and both are the result of political leaders' callous disregard for life.

ROOTS OF THE CRISIS

In 2012, refugees fleeing the conflict in Sudan's Kordofan and Blue Nile states began crossing the border into South Sudan, eventually settling in four camps in Maban County (REACH & UNHCR, 2016). Since the refugees' arrival, physical security has been a persistent challenge as tensions among refugees, the local community, and South Sudanese IDP's (internally displaced persons) have led to dozens of deaths (REACH & UNHCR, 2016). As in the 2018 youth uprising, aid organizations sometimes find themselves on the receiving end of refugees' and community members' frustrations. On July 23, 2021, for example, refugees from the Yusif Batil camp detained 11 aid workers after the World Food Program (WFP) had limited food distribution in response to funding cuts (WFP South Sudan, 2021). They then blocked UN peacekeepers from entering the camp until local leaders could resolve the situation (WFP South Sudan, 2021). More recently, on January 10 and 11, 2022, violence erupted between the Mabanese militia and

Photo: Steve Evans / Flickr / CC BY-NC 2.0

armed forces loyal to the Sudan People's Liberation Movement/Army in Opposition (SPLM/A-IO) (UNSC, 2022).

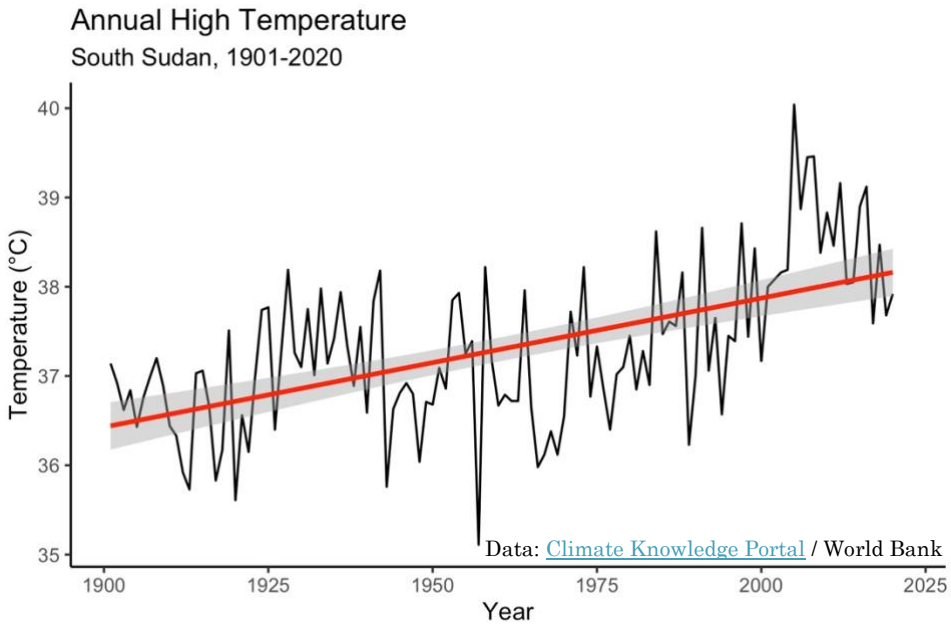
Refugees, the local community, IDPs, and aid workers in Maban point to the limited access to natural resources and livelihoods as a key contributor to violence and conflict. As the influx of refugees has caused Maban's population to skyrocket, natural resources like fish, farmland, charcoal, and water have become increasingly scarce (REACH & UNHCR, 2016). The recent confrontation between local militia and the SPLM/A-IO, for instance, was triggered when the local community accused the fighters of encroaching on their fishing grounds (UNSC, 2022). Similarly, IDPs report that boreholes are some of the most dangerous locations for them to visit, presumably because the local community is concerned about water scarcity (REACH & UNHCR, 2016).

FLOOD, DROUGHT, AND EXTREME HEAT

Climate change puts additional pressure on Maban's scarce natural resources. Maban is one of many flood-prone communities in South Sudan, where flooding is more or less an annual affair. Rains throughout the Blue Nile Basin eventually drain into low-lying areas, often inundating communities with little or no warning, but in well-adapted communities, flooding is not always a tragedy (Rebelo et al., 2012). In Maban, more mild floods become social events, as the rising waters bring plentiful fish to people's doorsteps. Families emerge from their homes to catch all they can with repurposed mosquito nets. Other communities are well-adapted, too. In some places, people cope with floods by building earthen dykes that protect their homes and crops (Trisos et al., 2022, p. 61).

In recent years, however, floods have grown increasingly frequent and severe, destroying homes and crops and displacing communities. Describing the experiences of many in South Sudan, the Sudan Catholic Bishops' Conference wrote that "fear looms in their hearts" at the prospect of renewed and intensified floods (Wani, 2022). Those fears are well founded. In 2019, JRS reported "the most devastating flooding experienced in over four decades" in Maban, which affected over 200,000 people (JRS, 2019). Extreme floods like these are devastating for communities. They destroy food supplies and contaminate water sources. They also drive displacement, which exposes flood victims to further conflict as they are sometimes forced to relocate to areas where they are not welcome.

In South Sudan, drought and extreme heat are also on the rise (Trisos et al., 2022, p. 56). In the years between 1900 and 1975, nationally aggregated high temperatures only exceeded 38°C four times. In the years since, they have exceeded that level 21 times. Of course, this means that the hotter parts of the country,



such as Maban, are experiencing even more extreme conditions. Extreme heat makes physical labor dangerous and leads to decreases in agricultural productivity in a country that is highly food insecure, and where 80% of the population relies on subsistence agriculture (UNEP, 2018, p. 34). Increasing drought has also led to a shorter growing season (UNEP, 2018, p. 59). But heat and drought do not only affect human health and agriculture. Like floods, they also drive conflict (Maystadt et al., 2015). The mechanisms of this connection are not entirely clear, but increased heat due to climate change is generally thought to be a "force multiplier" in places already experiencing insecurity (Scheffran et al., 2014). This is at least partially due to the effect of heat and drought on resource scarcity (Trisos et al., 2022), a key driver of conflict in Maban (REACH & UNHCR, 2016).

POLITICAL SPOILERS

The dangerous combination of resource scarcity, armed conflict, and climate change is made worse by political spoilers in Sudan and South Sudan. There have been allegations, for instance, that the Mabanese militia, which clashed with SPLM/A-IO forces in January over fish, has been funded by the Sudanese government in Khartoum to destabilize the government of Upper Nile State (Nuba Reports, 2017). The political leadership of South Sudan has not behaved much better.

In 2005, when the Sudan People's Liberation Movement/Army (SPLM/A) reached a ceasefire agreement with Sudan, their financial situation changed almost overnight. The SPLM/A, which had previously been a guerilla movement handling relatively small financial flows, quickly transformed into a governing apparatus managing $1.5 billion in oil revenue on an annual basis (de Waal, 2014). In 2011, that number doubled to approximately $3 billion. As revenue skyrocketed, government spending followed suit, but these benefits were monopolized by the political and military elite. A World Bank review of government expenditures found (1) that government spending tracked oil revenues, not the annual budget; (2) that South Sudan had the highest per capita spending of any government in East Africa at around $300, approximately three times Kenya's figure; and (3) that government spending was not being used to provide basic services to the population (Adiebo et al., 2013). Rather than benefit the people of South Sudan, the country's political leadership used government money to line their own pockets, founding a full-blown kleptocracy from their very first days in power (de Waal, 2014).

As a result of South Sudanese leaders' kleptocratic habits, public services are provided by international NGOs rather than the government. While some services are better than none, NGOs are not democratically accountable and their service provision is limited by funding and mission mandates (Riehl, 2001). In Maban, for example, aid organizations are mandated to serve refugees from Sudan, not the local population. As a result, the town's road system only extends as far as the refugee camps, effectively creating a

landlocked island. Locals have to pay high premiums on shipped goods, which arrive by cargo plane. Refugees also have better access to schools than the local community. The NGOs provide schools for refugees, but the government schools stand empty because teachers' salaries are not paid. Electricity is particularly scare. Only 7.2% of South Sudan's population had access to electricity in 2020, the lowest number anywhere in the world (World Bank, 2020).

Poor infrastructure and public services make people much more vulnerable to the life-threatening effects of climate change. The government's spending patterns also contribute to further violence. When civil war erupted in 2013, many observers blamed the cessation of what were effectively loyalty payments to various militias as a key driver of the crisis (de Waal, 2014). Keeping the peace by paying armed groups not to fight only works as long as you have money to pay them (Stearns, 2022).

CONNECTED PRESSURES

Climate change and armed conflict affect people's lives in similar ways, jointly driving displacement, food insecurity, and increased vulnerability. Government actors at all levels must address these challenges together, recognizing the ways in which these related pressures reinforce each other. Ironically, this entire cycle is driven almost exclusively by one commodity. When oil is sold, the proceeds fuel armed conflict. When it is burned abroad, the emissions fuel climate change. And on the ground in places like Maban, people are forced to fight for survival while others benefit from the sale and combustion of this so-called "resource."

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WATER AND DIRT

CHONGWE, ZAMBIA

Climate change and unsustainable farming practices are contributing to decreased agricultural productivity at the same time hunger is increasing. Less predictable and more extreme patterns of rainfall and drought are causing decreases in crop yields and are further exacerbated by soil degradation, a result of agricultural intensification. In Chongwe, Zambia, farmers have adapted to these challenges by implementing agroecological principles, which are more sustainable than conventional alternatives. However, a true adoption of agroecology will also require a more just policy landscape, including secure tenure rights, which can lead to increased food security and encourage the adoption of more sustainable practices.

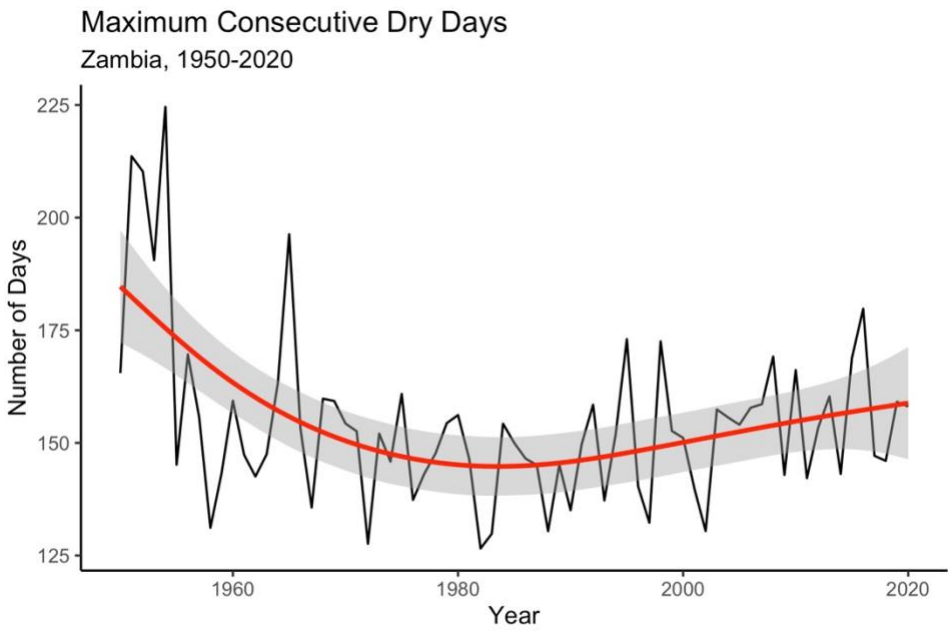
Austin's face comes alive when he greets the small-scale farmers he has known and worked with for years. He lovingly points out the things they have done well, sprinkling in a few useful tips to fix what they have missed. The joy seems to be mutual. I follow Austin as he takes me from farm to farm, and, together with his "students," explains how they are using agroecological principles to adapt to climate change. They show me piles of organic fertilizer, intercropped fields, stockpiles of indigenous seeds, and small forests they have planted on their land. It is hard not to be impressed by how well these techniques have worked. What is even more infectious, though, is the pride these farmers take in their verdant fields and abundant fresh vegetables.

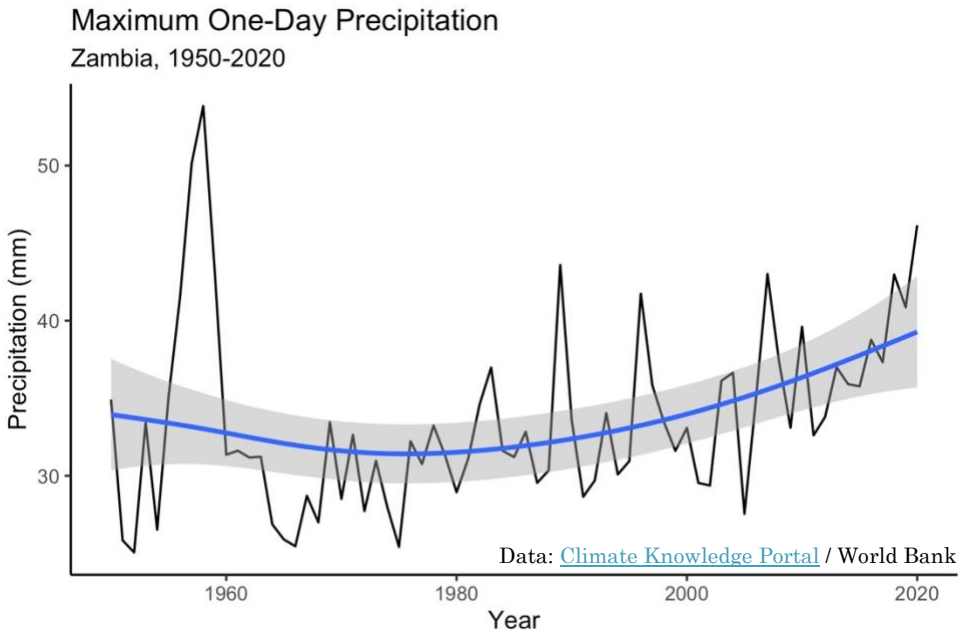
For small-scale farmers, "land is life" (Vellem, 2016), but not all land is equally vivacious. How much water falls on a certain plot of land, when it falls, and what quality soil it falls on do much to determine a small farm's prospects. These crucial factors are not as reliable as they once were, and the changing climate presents challenges for farmers across the continent:

- "The rains came late this year, so we lost all our maize. We don't know what we will eat" (Village chief in Kasungu, Malawi, February 2022).
- "We used to know what to grow here, and we could predict the rains. Now, the rains are unpredictable, and we need to find new ways to survive" (Farmer receiving food assistance, Kilifi, Kenya, March 2022).
- "When drought comes, some of my neighbors lose their crops, but I am okay because I have good soil" (Organic farmer, Chongwe, Zambia, January 2022).

At a global scale, heat energy from climate change makes the water cycle more intense. Warm air holds more water, with an approximately 7% increase in atmospheric holding capacity for every 1 °C of warming (Douville et al., 2021, p. 6). This makes rain and flood events more extreme. It also increases the severity of droughts. But changes in rainfall patterns are also strongly affected by local environmental conditions. Deforestation leads to decreased rainfall and contributes to more severe drought, while urbanization and soil degradation contribute to increased runoff and erosion (Douville et al., 2021, p. 7).

While global patterns in precipitation are following a general pattern of "wet gets wetter and dry gets dryer," these patterns are far from uniform. In Zambia, a history of natural rainfall variability is combining with climate change to make seasonal precipitation patterns increasingly difficult to predict. While mean annual rainfall does not exhibit any significant trends over time, both wet and dry extremes have become more intense. According to





meteorological records, the maximum daily precipitation in the 1980's was usually around 35 mm, but it is now approaching 40 mm; rains are becoming heavier. At the same time, the dry season is growing longer. In the 1980's, the mean maximum consecutive number of dry days in a year was 143. In the 2010's, it was 157.

ADAPTING TO CHANGE

Changes in rainfall patterns affect when farmers can plant their crops. The variability between years now makes planting a gamble. As the village chief from Malawi pointed out, getting this timing wrong can have disastrous effects. A lengthening dry season and an intensifying rainy season also require improved agricultural practices that retain soil moisture, recharge groundwater, and provide at least some protection from floods and erosion. Properly managing soil health could help achieve all of these goals, and yet agricultural lands in Africa are witnessing declining soil health due to unsound management practices (FAO & ITPS, 2015, p. 243). One reason agricultural productivity has declined in Africa is the environmental damage caused, ironically, by agricultural intensification (UNCCD, 2022).

Zambia is one of many African countries that employ Farmer Input Subsidy Programs (FISPs), providing synthetic fertilizer to small-scale farmers in an effort to improve crop yields. These programs are notoriously expensive: the 2020 budget for Zambia's FISP was over $600 million, approximately three times the entire budget of the Ministry of Agriculture (World Bank, 2021, p. 7). They are also a waste of money. Providing fertilizer does not help farmers adapt to the changing seasonality of rainfall. In fact, while synthetic fertilizers can lead to increased yields in the short term, they cause long-term declines in productivity by degrading soil health and biodiversity, limiting soils' ability to retain water and provide nutrients (UNCCD, 2022, p. 25). They are also much less effective in acidic soils, which account for most of Zambia's farmland (Burke et al., 2012).

Zambia's FISP is modeled on the principles of the so-called "green revolution," which saw the development of intensive agricultural practices

Photo: Bryan P. Galligan, S.J.

that boosted crop yields in the Global North. The green revolution, helped by generous government subsidies, did increase productivity in the temperate soils of Europe and North America, but these techniques have not improved food security in Africa (Pingali, 2012). They have, however, emitted tremendous amounts of greenhouse gases and driven horrific losses of biodiversity (UNCCD, 2022).

AGROECOLOGY

One alternative to the green revolution's doctrine of high-input agricultural intensification is the practice of agroecological principles, which "explicitly aim to enrich soils, improve water regulation, and augment biodiversity" (UNCCD, 2022, p. 25). This is what Austin teaches the farmers in Chongwe. The results speak for themselves. In Zambia, small-scale farmers who use sustainable agricultural practices like crop diversification and agroforestry are more food secure than those who do not (Nkomoki et al., 2018). Agroecology, however, is not just a set of methods and technologies for sustainable food production, although it includes those. According to the Committee on World Food Security (CFS), agroecological approaches "look beyond single technological social or institutional innovations and must contribute to sustainable agriculture and food systems that enhance food security and nutrition for current and future generations" (2021, p. 3). To be successful, then, an agroecological approach must be holistic and driven by local, context-specific knowledge (UNCCD, 2022). The particular set of practices used will thus be different depending on the biophysical, social, and economic conditions of a specific place. An agroecological approach must also be implemented as part of a wider policy landscape that prioritizes equity and justice (CFS, 2021).

Land tenure is a key component of this wider policy landscape. Today, over 70% of the world's farmland is controlled by 1% of farms, while 80% of the world's food is produced by small, family farms, covering just 12% of total agricultural land (UNCCD, 2022). Strengthening tenure rights for smallholders could protect and enhance their outsized contribution to food security (FAO, 2012). In Zambia, most smallholders (89%) only hold customary land tenure, which is allocated based on the decisions of local chiefs and headmen (Honig & Mulenga, 2015). Customary tenure is less secure than statutory tenure, and large swathes of the country (around 30% by land area) that were originally held under customary rights have since been expropriated by the state (Honig & Mulenga, 2015). Strengthening tenure rights can also provide a further incentive for farmers to invest more in the long-term health of their land through regenerative agricultural practices (UNCCD, 2022). In Zambia, small-scale farmers with secure land tenure are more likely to adopt sustainable practices than farmers without it (Nkomoki et al., 2018).

Implementing an agroecological approach to farming and food governance presents significant challenges. Doing so will demand that policymakers work with farming communities, paying attention to local contexts as well as the systems and structures that can either create perverse incentives or provide the enabling conditions for a more sustainable and food secure future (UNCCD, 2022). There is no "quick fix" to Africa's food security crisis. However, the farmers in Chongwe prove that progress is possible; the "slow fix" can work.

Photo: Bryan P. Galligan, S.J.

FISHING FOR JUSTICE

COASTAL KENYA

On Kenya's coast, thousands of small-scale fishers provide innumerable benefits to their communities, providing fresh, nutritious food and supporting local economies. But these fisheries are not contributing to food security as much as they could. Communities just a few miles inland do not have access to local catches. Moreover, these fisheries are threatened by climate change, overfishing, and a government that is more interested in macroeconomic growth than in respecting fishers' human rights, or in creating coastal food systems that would achieve environmental sustainability and social justice. Some observers fear an impending fisheries and food security crisis. To prevent this outcome, fisheries should be governed in a democratic manner with human rights and food sovereignty as primary objectives.

A man named Katana walks the beach in Malindi, Kenya. It is a beautiful day—the sun is shining, children play in the shallow water, tourists sunbathe on their towels and snorkel at the marine park—but Katana is not here for pleasure. Instead, he is carrying a five-gallon bucket full of clams he caught early this morning. Before the COVID-19 pandemic, he could count on the local restaurants and hotels to buy his daily haul, but the decrease in tourism has made buyers harder to find. If Katana does not sell his clams today, they will soon spoil and go to waste.

Just a few miles inland, the local Caritas is providing emergency food vouchers to farmers for whom the combination of prolonged drought and economic downturn resulting from the COVID-19 pandemic have proven devastating. With food purchases comprising a significant portion of their household budget, these farmers do not have much flexibility when they choose what to buy. Their diet is dominated by local staples such as *ugali* (a stiff porridge made from maize flour) and *sukuma wiki* (a type of collard greens). Hunger is omnipresent. So, too, is undernutrition (Cartmill et al., 2022). The seafood available in local shops is expensive and imported.

Why are fresh, nutritious clams going to waste when they could do so much good just a few miles away? How is it that Katana cannot find a place to sell his catch when local farmers are buying seafood from China?

FISH AS FOOD

Coastal communities in present-day Kenya have relied on the ocean for food and income for millennia (Glaesel, 1997; Quintana Morales & Horton, 2014). This is no less true today. Although national-level statistics tend to obscure the importance of fish as a food source in Kenya, coastal communities are heavily reliant on protein and nutrients from the sea (Taylor et al., 2019). Small-scale fishers target the plentiful fish and lobster species in and around coral reefs and seagrass beds, and sometimes venture offshore in search of high-value species like tuna (Kimani et al., 2018). In mangrove forests and shallow waters, foot fishers gather shells, crabs, and octopus (Alati et al., 2020; Kimani et al., 2018). In Lamu County alone, it is estimated that fisheries are the primary source of livelihood for 70–75% of local residents (Osuka et al., 2016).

More and more, however, fish and other marine animals are treated as commodities rather than food. On a global level, most countries do not include capture fisheries as part of their national food security strategies, nor do they include food security as a serious policy objective of fisheries management (Bennett et al., 2021). In Kenya, this means that the market for seafood does not penetrate inland. Instead, fishers sell a significant portion of their catch to multinational firms that export seafood to Europe and China (Wamukota &

Photo: Bryan P. Galligan, S.J.

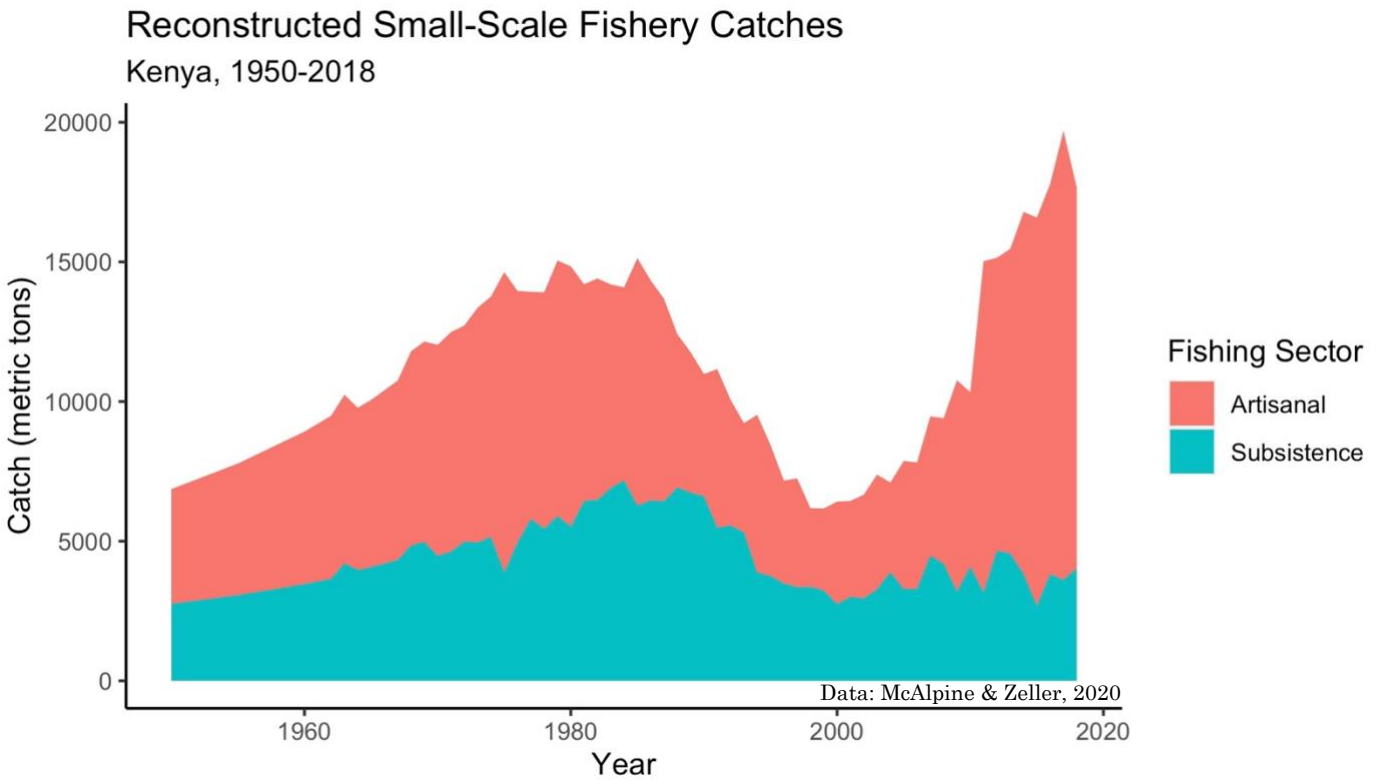
McClanahan, 2017). Some amount of international trade can be beneficial for small-scale fishers as it can increase incomes and stimulate the local economy, but international trade can also affect the local market by increasing the price of fish and limiting the supply (Crona et al., 2016). This is part of the reason the seafood trade in Kenya has connected to Mombasa, Europe, and China, but not the farmers living a few miles away from the beach. Global markets can also bring volatility to local communities. The fisheries most reliant on international trade were also the most strongly affected by the COVID-19 pandemic (Bassett et al., 2021).

AN IMPENDING CRISIS?

Fish do not always leave Kenya aboard cargo planes, however. Sometimes they just swim. As ocean waters become warmer due to climate change, fish populations are on the move. In general, most species are moving towards the north and south poles as they track their preferred water temperatures (Cheung et al., 2013). For high-latitude countries in historically temperate zones, this will bring more tropical species to their waters, potentially increasing fishery yields (Lavender et al., 2021). For tropical countries like Kenya, however, there are no warmer waters from which to replenish the species moving away to higher latitudes. This is leading to a "hypertropicalization" of formerly tropical oceans, in which the diversity and number of fish species are decreasing (Dimarchopoulou et al., 2021). Fishery yields are expected to decrease as well (Lavender et al., 2021).

Another consequence of warming water is the damage it causes to coral reefs. Kenya's coastline is protected by a fringing barrier reef that runs from Somalia to the northern part of South Africa (Obura et al., 2021). In addition to protecting the East African coast from heavy surf and storm events, it also supports significant fishery resources, with many of the species comprising small-scale fishery catches highly reliant on coral reefs (Cinner et al., 2013).

As water temperatures become warmer and more variable due to climate change, corals become stressed, and they eject the small algae that live inside of them and provide them with food (Brown, 1997). As a result, the corals turn a ghostly white color in a phenomenon known as bleaching. If corals stay bleached for too long, they starve and die. Coral cover has already decreased in the Western Indian Ocean due to bleaching (Obura et al., 2021), and the reef ecosystems have been classified as vulnerable to collapse (Obura et al., 2022). Coral bleaching is also made worse by other sources of stress such as overfishing and pollution (Brown, 1997). This is also why poorly planned infrastructure projects, such as the



mega-port project in Lamu, are so destructive. They exacerbate existing vulnerabilities in an already-stressed system, essentially precluding recovery.

The threats to Kenyan fisheries posed by climate change are compounded by other pressures on coastal ecosystems. A study of coral reefs in Kenya, Tanzania, and Mozambique found that around 38% of surveyed sites were overfished and 92% were below a conservation baseline (McClanahan, 2019). There is also evidence that an increasing amount of fishing pressure is being borne by just a few species (Samoilys et al., 2017), which could make the fishery vulnerable to collapse. The current trend of increasing small-scale fishery catches (McAlpine & Zeller, 2020; Zeller et al., 2016) is almost certainly unsustainable. Based on informal reports from fishers, catches in some areas may have already peaked, raising serious concerns about the possibility of an impending food security crisis (Taylor et al., 2019).

BLUE JUSTICE

Increasing pressure on Kenya's marine resources and the inequitable distribution of the catch demand a proactive response from government. President Uhuru Kenyatta said as much in a 2021 op-ed, in which he also made a strong case for the importance of small-scale fisheries and recognized the need to reverse their historic marginalization (Kenyatta, 2021). And yet, Kenyatta's government has proposed and enacted policies that are working in the opposite direction.

When beach management units (BMUs) were first established along Kenya's coast, they were widely celebrated as a progressive model of fisheries management. Those involved had hoped that the new model would democratize small-scale fisheries and provide better ecological and social outcomes than the previous mode of top-down, technocratic governance (Cinner et al., 2012). In some places, it did (Cinner & McClanahan, 2015). However, the establishment of BMUs was spotty at best (Murunga et al., 2021). In some places, the BMU amounted to nothing more than a loose grouping of fishers whose mandate was not respected or funded by fisheries authorities. Although BMUs were designed to empower fishers and represent their interests, members of some BMUs now see them as just another government agency to which they are beholden.

Today, even the progress that was made with the institution of BMUs is set to be reversed. In early 2022, the government released a draft set of fisheries regulations that would use a quota system, coordinated by the central government and implemented by the BMUs, to ensure that commercial fish species are maximally harvested (GoK, 2022). The new regulations represent a paradigm shift from the original envisioning of BMUs. First, they would function in a way that prioritizes macroeconomic growth over food security (Galligan, 2021), thus exacerbating existing problems in Kenya's coastal food systems. Second, they are contrary to legislative and judicial guidance on fishers' human and customary rights, which, until now, have been interpreted as assuring small-scale fishers of guaranteed access to the marine resources they have relied on for millennia (Galligan et al., In review). Under the new regulations, fishers will lose their fishing rights if they do not harvest enough fish. Using single-species quotas in this way to govern an already-depleted multispecies fishery is beyond misguided. Finally, the regulations would make BMUs responsible for implementing the decisions of the central government, which is contrary to the original vision of BMUs as semi-autonomous, democratic bodies that would govern local fisheries according to local needs (Cinner et al., 2012).

Kenya's draft fisheries regulations are just one example of a renewed interest in technocratic fisheries governance, which privileges expert knowledge and, in doing so, neglects the ethical stakes of its decisions and excludes those most affected by them (Francis, 2015, nn. 106-114). If this trajectory continues, the problems facing Kenya's coastal food systems—maldistribution, climate change, and overfishing—are likely to become worse. This need not be the case, however. The success of some BMUs indicates that the current, more democratic model can achieve positive ecological and social outcomes (Cinner & McClanahan, 2015). Another cause for optimism is the success of communities who have set aside locally managed protected areas (McClanahan et al., 2016; McClanahan, 2021) and placed voluntary restrictions on the most destructive fishing gears (McClanahan & Mangi, 2004). These communities are invested in the sustainability of their fisheries and are already working to protect them.

The problem of overfishing is not technical. We have tools at our disposal that can work. What we need is for governments at the national and local levels to recognize the concrete importance of small-scale fisheries' contributions to food security and the ethical importance of their human and customary rights to fish.

Photo: Bryan P. Galligan, S.J.

A MANAGEMENT DISASTER

SOUTHERN MALAWI

Malawi is among the poorest countries in Africa, which makes it much more vulnerable to the impacts of climate change, including storms and floods. These vulnerabilities were on full display when Tropical Storm Ana hit the southern part of the country on January 25, 2022. Homes, crops, and schools were washed away. The government's response was woefully inadequate. As of May 2022, the affected regions have still not recovered. Poor disaster risk management in Malawi is the result of a lack of coordination among international funders, the national government's failure to prioritize potentially lifesaving legal measures, and limited institutional capacity. As a result, international NGOs take the lead in disaster response, but this practice further undermines local governance and increases vulnerability in the long term. Improved disaster management and preparedness is a crucial component of climate change adaptation, especially in vulnerable countries like Malawi.

On January 21, 2022, a tropical depression that formed to the northeast of Madagascar in the Indian Ocean moved into the Mozambique Channel, where it intensified and developed into a moderate tropical storm on Sunday, January 23 (DoDMA, 2022). One day later, Tropical Storm Ana made landfall on the Mozambique coast, eventually crossing into southern Malawi in the early hours of Tuesday, January 25 (DoDMA, 2022).

Tropical Storm Ana brought torrential rains and strong winds to most areas of the country, with the heaviest impacts recorded in the southern districts of Chikwawa, Nsanje, Mulanje, Phalombe, and Zomba (DoDMA, 2022). The heavy and persistent rain led to severe flooding across all districts in the southern region of the country, as well as some districts in the central region. More than 995,000 people were affected, with widespread destruction to schools, homes, roads, and crops (DoDMA, 2022). The districts most heavily affected had also faced devastating floods in 2015 (McCarthy et al., 2018), Cyclone Idai in 2019 (Concern Worldwide, 2020), and were already experiencing flooding when Ana hit (Otto et al., 2022). As of May 2022, more than 36,000 households were still displaced, and the lack of access to clean water had contributed to a cholera outbreak affecting hundreds (UNICEF, 2022). Tragically, UNICEF (2022) also reported that "the number of children admitted for severe acute malnutrition (SAM) treatment in six flood-affected districts more than doubled in April 2022 (1,508) compared to April 2021 (700)."

MANAGING STORMS AND FLOODS IN MALAWI

In Malawi, a storm of Ana's strength is estimated to occur only once every fifty years (Otto et al., 2022), but Ana came only three years after Cyclone Idai, an even stronger storm (Concern Worldwide, 2020). Climate models predict that tropical storms and cyclones affecting countries like Madagascar, Mozambique, and Malawi are becoming stronger as sea surface temperatures rise in the Indian Ocean (Trisos et al., 2022). Some models also predict that these storm events will become more frequent (Otto et al., 2022), which is consistent with the observed increase in frequency over recent decades (Trisos et al., 2022).

While storms like Ana are objectively dangerous, their impacts in Malawi are disproportionately severe due to socioeconomic vulnerabilities. Malawi is subject to chronic food insecurity and the majority of its citizens are highly dependent on small-scale, subsistence agriculture (Ellis & Manda, 2012).


Photo: Martha Phiri

This makes the country very vulnerable to heavy rains and floods, which can destroy farmers' crops (McCarthy et al., 2018). Tropical Storm Ana is the most recent example of this destruction (DoDMA, 2022). The post-storm decrease in production need not be a death sentence, however. After crops were destroyed in 2015, calories per capita were actually higher than the previous year (McCarthy et al., 2018). Instead of production, the strongest predictor of food insecurity among flood-affected households was access to social safety nets (McCarthy et al., 2018). Even modest amounts of cash can prevent hunger and malnutrition in regions affected by storms.

Finance, governance, and infrastructure needs also contribute to Malawi's vulnerability. UNICEF (2022) estimates that meeting current humanitarian needs in Malawi would cost around $8 million, but less than $2 million are currently available. Malawi also receives a non-negligible amount of climate finance, but only a small portion of this money is spent on adaptation, and much of it is lost due to corruption (Kita, 2017). Furthermore, the government's Department of Disaster Management Affairs (DoDMA) does not have the institutional capacity to respond effectively to events like Tropical Storm Ana. Instead, disaster response is largely handled by NGOs, which leads to shortfalls in service delivery and undermines governance capacity (Kita, 2017). The absence of functional local governments, which would normally play an instrumental role in disaster preparedness and response, has only made things worse (Manda, 2014).

Disaster risk management efforts are further hampered by outdated infrastructure. In Ana's aftermath, Malawi lost 30% of its electricity generating capacity when one of its four hydropower stations was catastrophically damaged (Masina, 2022). Temporary repairs alone will cost $23 million and take months to execute (Masina, 2022).

LEGAL AND POLICY REFORM

In Malawi, as in other African countries, disaster risk reduction tends to be treated separately from climate change adaptation, despite the fact that natural disasters are increasingly driven by climate change

(UNDRR, 2022). While there is some coordination between DoDMA, Malawi's lead agency for disaster risk reduction, and the Environmental Affairs Department (EAD), the lead agency for climate change adaptation, disaster risk reduction priorities are largely driven by post-disaster funding (i.e., emergency humanitarian response), while climate change adaptation is largely driven by the funding priorities of international facilities, such as the Green Climate Fund, the Adaptation Fund, and the Global Environment Facility (UNDRR, 2022). As a result, the priorities of international funders often override the efforts of DoDMA and EAD to coordinate more closely.

An even more significant problem is that recent developments in Malawi's disaster risk reduction policy, while promising on paper, have not been accompanied by budgetary allocations (UNDRR, 2022). Recent policy documents have shifted from a basically reactive approach to a more proactive one that would attempt to build resilience in flood-prone communities (Dewa et al., 2021). However, the implementation of these policies is seriously hampered by the lack of funding at the local level (Dewa et al., 2021). A disaster risk management bill, which would provide such funding, has been stalled in the national assembly for years (Disaster Risk Management Bill, 2019). Personnel at DoDMA and EAD blame parliamentarians for their failure to prioritize these sorely needed funds (UNDRR, 2022). In the meantime, DoDMA and EAD are left to implement a policy framework that is based on a draft bill, thus operating without firm legal or financial footing.

FROM TOP TO BOTTOM

Malawi's GDP per capita is just $636.80, making it one of the least wealthy countries on the African continent (rated 44th out of 54) (World Bank, 2020b). For people affected by cyclones, tropical storms, and floods, the lack of financial resources makes it incredibly difficult to relocate or rebuild when their livelihoods are destroyed (Concern Worldwide, 2020). Meanwhile, the national assembly has not committed to funding disaster risk management, and the international donors that have are largely sponsoring piecemeal efforts that risk undermining national and local institutions (UNDRR, 2022). These high-level policy failures have proven devastating for Malawi's poorest, who are left to confront natural disasters like Tropical Storm Ana without the help of improved roads, evacuation plans, social safety nets, and the like (Concern Worldwide, 2020). The passage of the Disaster Risk Management Bill, allocation of sufficient funding, and increased integration of disaster management and climate change adaptation priorities could all help prevent another humanitarian disaster the next time southern Malawi is hit by a tropical storm.

Photo: Martha Phiri

PIPING HOT OIL

UGANDA

In Uganda, a proposed oil pipeline and a repressive government highlight two closely related challenges: the dangerous expansion of export-oriented fossil fuel infrastructure and shrinking civic space. The East African Crude Oil Pipeline (EACOP) is being developed at a time when new fossil fuel infrastructure is inconsistent with limiting global temperatures to 1.5 °C above pre-industrial levels. EACOP and projects like it have also been subject to numerous allegations of human rights violations and environmental damage. In Uganda, the pipeline's construction is facilitated by the government's harsh repression of environmental and human rights defenders. This, too, is part of a global and regional trend. There is a pronounced and urgent need for faith-based advocacy and moral formation that can address the intersection between climate-friendly development and civil and political rights.

It was a Friday afternoon at the end of a tense October when six staff members at a Kampala-based NGO were arrested, brought to a local police station, and held over the weekend without charge (Gyuse, 2021). One of the illegally detained was a breastfeeding mother. Another needed treatment for a chronic medical condition (Gyuse, 2021). The organization they worked for, the Africa Institute for Energy Governance (AFIEGO), was targeted by Ugandan police because it opposed environmentally and socially destructive infrastructure projects sponsored by the government, including the East African Crude Oil Pipeline (EACOP). The arrests were just the latest in a spate of crackdowns.

While the experience of AFIEGO's staffers was relatively tame compared to what some Ugandan activists have faced—allegations of arbitrary arrest, torture, and forced disappearances are common (UNGA, 2021)—the government's decision to target them is indicative of the ways in which unsustainable fossil fuel development in Africa is increasingly enabled by the active repression of civil society.

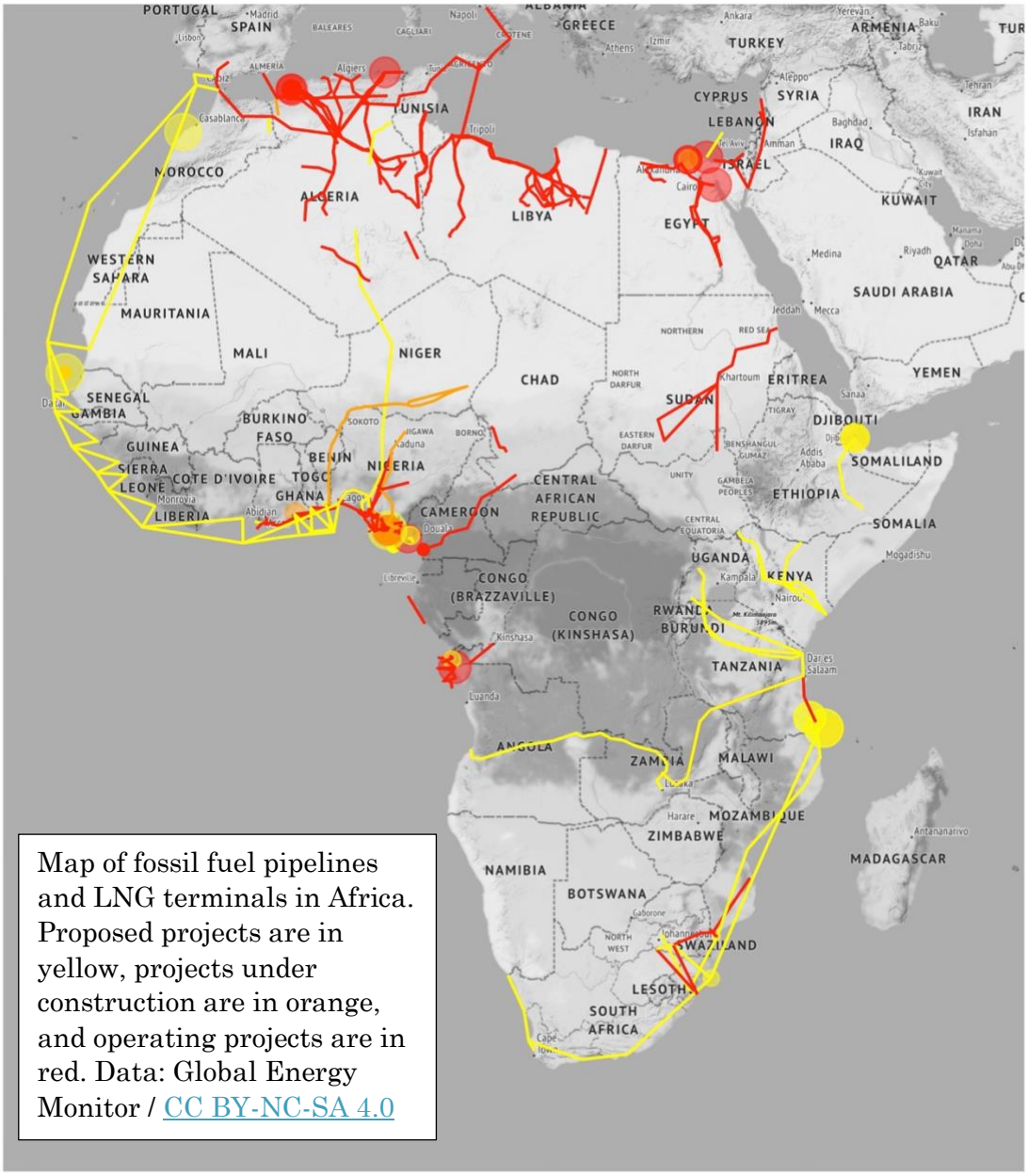
These events are coming at a time when new investments in fossil fuel infrastructure are betting against, and even planning for, a catastrophic level of global warming. According to the International Energy Agency, achieving net zero greenhouse gas emissions by 2050 would mean no new fossil fuel development at all (Bouckaert et al., 2021). But EACOP is just one of many planned fossil fuel projects in Africa. Altogether, the continent is home to 23 existing and planned "carbon bombs," fossil fuel extraction projects that will each lead to at least one gigaton of carbon dioxide emissions in their lifetime (Kühne et al., 2022). These bombs are present in Mozambique, Tanzania, Algeria, Botswana, Libya, Nigeria, South Africa, and Zimbabwe (Kühne et al., 2022). Together with similar projects in other parts of the world, they will generate over twice the limit of carbon emissions that would keep climate warming to 1.5 °C (Kühne et al., 2022). The results of such high levels of warming would be disastrous, especially in Africa.

THE EAST AFRICAN CRUDE OIL PIPELINE (EACOP)

The East African Crude Oil Pipeline (EACOP) is a planned export pipeline that will transport crude oil from Hoima, Uganda, to a marine storage terminal in Tanga, Tanzania (EACOP, 2020). Its extreme length (1,440 kilometers) and cost ($3.5 billion) make it one of East Africa's largest infrastructure projects; it is also set to be the longest heated pipeline in the world (Bogrand et al., 2020). In Uganda, the focus of this report, the main project components include a 296-kilometer buried pipeline, two pumping stations, and 19

intermediate block valves and electric heat substations (EACOP, 2020). While the project has enjoyed enthusiastic support from the Ugandan, Tanzanian, and French governments, it is also highly controversial. Lead developer Total has been accused of a raft of human rights violations, the local environmental impact of the project is likely to

According to EACOP's environmental and social impact assessment (ESIA) for Uganda, as many as 3,000 households will be economically displaced as a result of the project (EACOP, 2020). Independent reviews of the process for acquiring (expropriating) land and compensating the owners have found widespread "confusion, shortcomings in



Map of fossil fuel pipelines and LNG terminals in Africa. Proposed projects are in yellow, projects under construction are in orange, and operating projects are in red. Data: Global Energy Monitor / CC BY-NC-SA 4.0

be severe, and the 10.9 million tons of oil to be transported through the pipeline each year will mean an approximately 34.3 million tons of carbon dioxide emissions annually between 2025 and 2029, far more than Uganda's and Tanzania's current emissions (Bart et al., 2020).

assessment and valuation processes, delayed compensation, and lack of transparency" (Bogrand et al., 2020, p. 6). This has involved and led to significant human rights violations. Poor communication about the so-called "cut-off date," for example, led many local people to stop cultivating their crops after March 15, 2018, expecting that they would imminently

lose their land and not be compensated for any crops planted after the cut-off (Ogwang & Vanclay, 2021). The resulting decrease in food production had immediate effects on hunger in some of the regions affected by the project (Ogwang & Vanclay, 2021).

The likelihood of an oil spill from EACOP also presents a significant threat to water, soil, and biodiversity. Spills have already occurred upstream, and Total has made decisions about construction that will make future spills more likely, all while assuring the public that this is out of the question (Bogrand et al., 2020). The pipeline will have to cross critical sources of water for many local communities, including the Lake Victoria watershed, which supports some 40 million people (Bogrand et al., 2020). Any spill would also contaminate the soil, which would have devastating effects on the local food supply (Bogrand et al., 2020). Moreover, Total plans to expand drilling within the highly biodiverse Murchison Falls national park, an area that is home to giraffes, elephants, lions, giant pangolins, chimpanzees, and other important species (Moisan, 2022).

It is also worth noting that EACOP, like many other mega-infrastructure projects in Africa, is based on a colonial and extractive model of development. Today, large infrastructure projects are growing in popularity, especially in the Global South (Enns & Bersaglio, 2020). To the extent that these projects facilitate regional trade networks, they could be a very effective means of inclusive development (The Economist, 2022). However, the infrastructure projects currently in development around the continent, including EACOP, are largely built on the economic blueprint that came with colonization, which organized material flows out of Africa in a way that would benefit wealthy countries, but not colonized ones (Enns & Bersaglio, 2020). As an export pipeline transporting a commodity whose consumption is incredibly destructive of lives and livelihoods in Africa, EACOP certainly fits this pattern.

SHRINKING CIVIC SPACE

While civil society organizations and NGOs within and outside Uganda have mounted a strong campaign against EACOP, they are also threatened by a government that is actively working against them. Writing about civil society organizations in situations like this, Pope Francis remarked in *Fratelli tutti* that "these groups and organizations often carry out commendable efforts in the service of the common good and their members at times show true heroism, revealing something of the grandeur of which our humanity is still capable" (Francis, 2020, no. 44). While this grandeur is truly admirable, it is unfortunate that so many in Uganda have been forced to such levels of heroism just so they can stand up for what is right.

The repression faced by EACOP's opponents is just the latest example of Uganda's shrinking civic space. President Yoweri Museveni's harsh repression of the opposition ahead of the January 2021 general elections is well known and well documented (HRW, 2021; UNGA, 2021). According to the UN, "hundreds of opposition organizers, campaign staff, members, and supporters had been arrested and detained and some had been subjected to incommunicado detention, including in military detention facilities" (UNGA, 2021, p. 3). Extrajudicial killings were also reported to have taken place (LASPNET et al., 2021). But Uganda's systematic assault on civil society and human rights defenders did not stop when Museveni was reelected. In fact, a letter sent by four UN Special Rapporteurs to the Government of Uganda earlier this year identified a systematic "pattern of intimidation and harassment of civil society organizations and groups in Uganda who have raised human

Photo: Abubaker Lubowa / REUTERS

rights concerns arising from oil and gas projects" (Lawlor et al., 2022, p. 3f). The government has not responded to the letter.

The Ugandan government's harassment of civil society has significantly hampered opposition to EACOP. Not only are individual groups' operations constrained, as in the case of the AFIEGO arrests, but the lack of a free press makes it very difficult to disseminate accurate information about the project. Local media outlets are staunchly pro-EACOP, and have painted opposition to the project as a "massive smear campaign" (Musisi, 2022). Access to accurate information is thus quite limited, with communities and local governments along the pipeline corridor largely kept in the dark about the project's negative impacts (Bogrand et al., 2020). Even so, civil society groups within and outside of Uganda have successfully put a significant amount of pressure on the project's planners (Musisi, 2022).

A PRONOUNCED NEED

While the local Catholic hierarchy in Uganda has not participated in the campaign to stop EACOP, faith-based actors have been instrumental. In October of last year, GreenFaith led an international coalition of over 50 faith-based organizations announcing their opposition to the project (Macharia, 2021). Catholic voices have also been prominent. In March, Pope Francis received a delegation of Ugandan climate activists at the Vatican, where EACOP was one of the topics discussed (Corigliano, 2022). Among the activists was Vanessa Nakate, who has been a key figure in the global, youth-led Fridays for Future climate justice movement (Nakate, 2021). The activists' trip was accompanied and organized by Laudato Si' Movement, a prominent Catholic voice in global civil society that has taken a leadership role in the #StopEACOP campaign (Corigliano, 2022).

Catholic and faith-based opposition to EACOP and projects like it can be very effective. Historically, Catholics—both the institutional Church and individual members of it—have played an important role in African civil society, especially in the fight for social justice and the defense of human rights (Kassimir, 1998). The moral authority and public recognition afforded to Church officials can infuse existing campaigns with greater meaning and urgency while also providing a measure of protection to those who speak out. In the case of EACOP, organized and strong Catholic opposition could strengthen Ugandan

Photo: Ian L. / CC0 Public Domain

civil society while also helping to prevent the devastating effects of the Global North's fossil fuel habit.

Perhaps more importantly, the efforts of actors like Vanessa Nakate, Laudato Si' Movement, and Pope Francis point to a larger need for faith-based advocacy and moral formation in Africa. Neither EACOP nor Uganda's shrinking civic space are isolated phenomena. Large multinational corporations are expanding fossil fuel extraction across the continent with investments in export-oriented infrastructure, effectively planning to use African resources to create a future of mass hunger and displacement for Africans (Carrington & Taylor, 2022). Meanwhile, political leaders are going along with these plans while limiting the possibility for democratic opposition by targeting civil society groups. This trend is particularly pronounced in East Africa (Smidt, 2018). It is also consistent with a larger global trend in which civil and political rights are being severely restricted through coercive law and policy measures as well as an aggressive use of civil and military policing (Buyse, 2018; Lorch et al., 2021).

Confronting EACOP could thus set the stage for future engagement with two deeply important global challenges: the rising tide of authoritarianism and the expansion of fossil fuel use. The most basic principles of human rights and integral ecology are at stake.

LET HER ALONE

GENDER EQUALITY

The impacts of climate change create much heavier burdens for women than for men, especially in the Global South. In Africa, women are often expected to take care of basic household tasks, such as fetching water, collecting firewood, and providing food. When climate change makes these tasks more difficult, it is women who suffer the most. This is true in South Sudan, where patriarchal social and legal structures make these impacts worse. Women are not just victims, however. Mainstreaming gender equality and taking women's contributions seriously can also improve socioeconomic resilience to climate change.

On November 14, 2021, the Fifth World Day of the Poor, Pope Francis chose to center his remarks around the Anointing at Bethany, a gospel story in which an unnamed woman, probably Mary of Bethany (Jn. 12:1–8), anoints Jesus' head with precious oil in a priestly gesture of preparation for death and burial (Mk. 14:3–9). While some of those who witness this scandalous event criticize the woman, Jesus instructs them to "let her alone" (Mk. 14:6), affirms her action (Mk. 14:7–8), and associates her with the mission of evangelization, saying, "wherever the gospel is proclaimed…what she has done will be told in memory of her" (Mk. 14:9).

On Francis' reading, Jesus accepted the woman's gesture in solidarity with "the poor, the lonely, the marginalized, and victims of discrimination," including women, who, according to Francis, are "so often discriminated against and excluded from positions of responsibility" (Francis, 2021, no. 1). He also identifies the woman in the story with all women, who, he says, face marginalization at the hands of patriarchal systems and structures, but nonetheless enjoy a privileged intimacy with Jesus in the most significant aspects of his life (Francis, 2021).

Mary of Bethany experienced discrimination at the hands of those who tried to shame her; she also contributed an important and valuable gift to Jesus' work of salvation. Likewise, women today are consistently more vulnerable to the effects of climate change, but successful adaptation will not be possible without women's contributions and leadership.

GENDER AND CLIMATE

Women, men, boys, and girls, although forming heterogeneous groups, tend to have systematically differing experiences of climate change due to persisting inequality and socially constructed gender roles (Sellers, 2016). Globally, women are consistently more vulnerable to climate change than men. This is particularly true in the Global South, where, in many societies, women are tasked with providing their households with basic, life-sustaining necessities such as water, firewood, and food. These basic household tasks are directly impacted by climate change, which is making them increasingly difficult to complete. Work traditionally allocated to women is often more affected than the work that is allocated to men (Oksala, 2018). Furthermore, women in the Global South tend to have lower literacy rates, limited access to employment opportunities, insufficient access to assets such as land ownership or agricultural technologies, and higher dependence on natural resources for subsistence (Andrijevic et al., 2020). These effects are most pronounced in less democratic states with greater agriculture dependence and low levels of economic development (Eastin, 2018).

Box 6: Population

In 1798, England seemed to be headed for a famine, as food demand from a growing urban population threatened to outstrip agricultural productivity. Fortunately, the use of guano fertilizer helped avert this catastrophe (Trewavas, 2002). Nonetheless, the one-time threat of famine indelibly shaped Western thinking about the relationship between population growth and natural resources, most notably by inspiring the Anglican cleric Thomas Robert Malthus to write his now-famous *Essay on the Principle of Population* (1798). Malthus believed that human populations undergo exponential growth until available resources can no longer provide for human needs, and argued that "the power of population is indefinitely greater than the power in the earth to produce subsistence for man [*sic*]" (Malthus, 1798, p. 4).

Today, we know that human populations do not behave as Malthus expected. In most of the world's wealthier countries, population growth has slowed or become negative without the intervention of coercive policy measures or catastrophic mortality events; the same is expected to happen in the Global South around the beginning of the twenty-second century (UNDESA, 2019). And yet, many environmentalists today are still concerned about the effects population growth in Africa. These concerns are not entirely unfounded. In some places, the current ways in which resources like fish, drinking water, charcoal, and farmland are distributed and used will not be sustainable under the dual pressures of population growth and climate change (Serdeczny et al., 2017). At the same time, population is rarely if ever the only driver of resource scarcity. Global inequality has much more to do with the pressures on natural resources in Africa than population growth does (Barbier, 2019, 2021). As Pope Francis writes in *Laudato si'*, "to blame population growth instead of extreme and selective consumerism on the part of some is one way of refusing to face the issues" (2015, no. 50). In addition to "legitimiz[ing] the present model of distribution" (Francis, 2015, no. 50), this perspective often leads to policies that place the responsibility for managing ecological crises on women and their capacity for reproduction, thus instrumentalizing their bodies, often along racial lines. Historically, NGOs working in Africa have played a role in this instrumentalization by using family planning services as a way to reduce pressure on natural resources (Baker-Médard & Sasser, 2020). While access to healthcare is a laudable goal, initiatives that use it as a means of population control tend to stigmatize women's bodies, exacerbate gender inequality, and undermine individual and political autonomy (Sasser, 2018; Storeng et al., 2019).

CLIMATE AND GENDER IN SOUTH SUDAN

South Sudan is a highly patriarchal society with rigid gender norms and roles (JICA, 2017). It is common for customary laws to override women's rights when it comes to marriage, property, and inheritance disputes. The low status of women in South Sudan and the high prevalence of child marriage play a major role in its high maternal mortality rate (JICA, 2017). Additionally, women have limited access to healthcare services due to a shortage of medical personnel and facilities as well as discrimination in healthcare settings. Violence against women is common in South Sudan. When violence erupts, such as during cattle raiding or political conflict, women and children are the predominate victims of sexual assaults and abduction (JICA, 2017).

Gendered cultural expectations often designate women as the household's primary food provider, which subsequently increases their vulnerability. Consider the story of Amel Ayuen, a 30-year-old woman from Mingkaman, Lakes State, who reports that she was forced to transition from farming to fishing when droughts destroyed her crops (Mednick, 2017). Before the droughts, Amel was a frequent customer at the town market, purchasing fish and grain to feed her five children. Now, she sleeps in her canoe at night so she can arrive at the market early enough to sell her catch

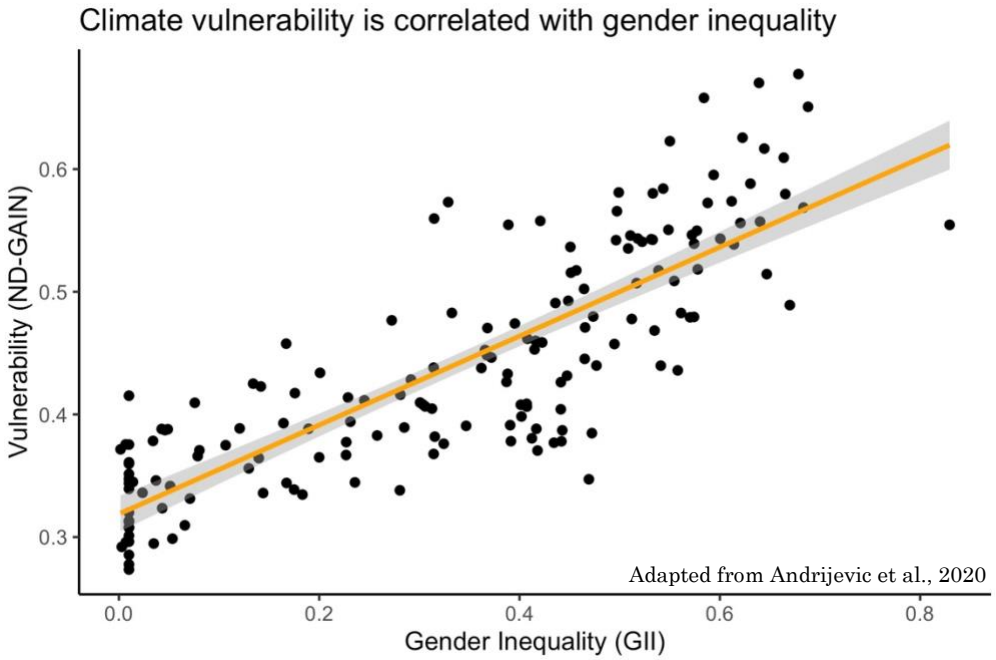
(Mednick, 2017). While Amel successfully transitioned to a new livelihood, she now has to work harder, and the impacts of climate change have affected her in a way that is both different from, and more pronounced than, the way they affected the men in her family.

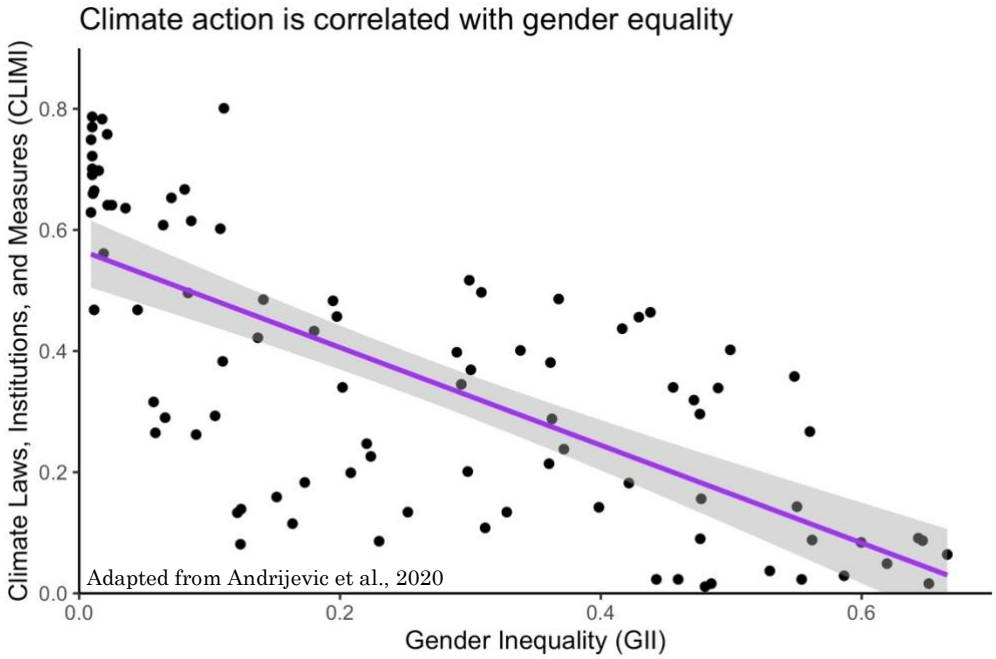
Amel's experiences are indicative of more systemic challenges. Low literacy rates, for instance, can prevent women from receiving climate change information that might otherwise help them to adapt. Only 12.7% of the literate population in South Sudan is made up of women (Mai et al., 2018). Furthermore, around 87% of women in South Sudan have no formal education at all, which severely limits their opportunities for employment should their traditional livelihoods fail.

It is also true that most South Sudanese women collect water for their families (84.9%) (Mai et al., 2018). Water scarcity resulting from more severe droughts forces these women to walk further away from home each day, and can thus lead to an increase in cases of exhaustion, rape, and death (Mai et al., 2018).

GENDERED IMPACTS, GENDERED RESPONSE

As this brief examination of South Sudan suggests, the burdens of climate change are gendered burdens, falling much more heavily on women's shoulders than on men's (Oksala, 2018). This is not simply an unjust reality, however. It also provides an opportunity: empowering women can help build resilience to climate change. This contention is supported by empirical and modeling evidence that suggest gender equality and climate action go hand in hand (Andrijevic et al., 2020). For example, the societies that are most vulnerable to climate change also tend to be less equal; conversely, those with the most substantial climate policies tend to be more friendly to women (Andrijevic et al., 2020). It is thus imperative that women's empowerment be made a central component of climate action, and that women take leadership roles in our efforts to build a just and sustainable future.





CONCLUSION

People around the world are beginning to wake up to the importance and urgency of the triple planetary crisis of climate change, pollution, and biodiversity loss, as well as the social consequences of this crisis. In the United Nations system, for example, the debate around "loss and damage," the idea that high-emitting countries should compensate the victims of climate change, is gaining traction. The inherent value of nature and nature's rights are being recognized by a growing minority. And the collaboration between the scientific community and policymakers has also gained significant momentum, with landmark reports like the UN Environment Program's first-ever synthesis report (UNEP, 2021) and the Intergovernmental Panel on Climate Change's *Sixth Assessment Report* being published, and additional products like the Intergovernmental Panel on Biodiversity and Ecosystem Services' (IPBES) nexus reports and the EAT-Lancet 2.0 report on sustainable and healthy food systems set to arrive soon. As a rule, these large science-to-policy reports are more advanced than their predecessors, communicate very clear policy messages, and have taken an approach consistent with integral ecology by drawing together knowledge from various academic domains. Thanks to these scientific accomplishments, our view of Pope Francis' "one complex crisis" is now clearer than ever before. Unfortunately, however, more information has not yet put the crisis itself on the path to resolution.

The case studies presented here provide snapshots of just how bad our planetary crisis has become, with human life and wellbeing facing unprecedented threats across the African continent. These snapshots are relevant far beyond their immediate contexts, however, and the pressures they illustrate are global challenges.

CLIMATE CHANGE

In March, UN Secretary-General António Guterres warned world leaders that "our addiction to fossil fuels is killing us" (Guterres, 2022). Guterres was right. A livable planet, that is, one where committed warming does not rise above 1.5 °C, can still be secured, but the time window for action is closing quickly. Global greenhouse gas emissions will have to be cut to 50% of their current levels by 2030 to achieve the 1.5 °C goal, but emissions are still rising with only eight years left (Bouckaert et al., 2021). At a time when the world needs to be rapidly phasing out fossil fuels and transitioning to renewables, energy companies and governments are still investing in more fossil fuel production, effectively betting on a climate catastrophe (Kühne et al., 2022). African leaders' participation in these plans is an unqualified betrayal. Meanwhile, the commodity driving this crisis is entangled in geopolitics in such a way as to make war more likely and peace more difficult, just as it has done in South Sudan.

FOOD AND WATER

In Africa, the most immediate effects of climate change, pollution, and biodiversity loss are felt in terms of basic needs like food and water. In South Sudan, Zambia, and Malawi, droughts and floods are putting intense pressure on the food systems people rely on for survival. Aquatic, or "blue," food systems are threatened as well, as seen in coastal Kenya. While the problems facing these food systems vary from place to place, they are driven by many of the same overarching trends. They are also made worse by central governments that remain committed to top-down management of food systems and ecosystems, and that continue to place GDP growth ahead of more holistic metrics of success. The commitment to this broken model of development is deeply irrational and it must change.

POLITICAL MARGINALIZATION

Hope for progress is strongest where there is meaningful political inclusion of those beyond the political and economic elite. The Committee on World Food Security provides a model in this regard: it includes a civil society mechanism that has done much to democratize global food governance. Space for civil society actors, however, and especially African civil society, has been very limited in other venues, including the United Nations Framework Convention on Climate Change (UNFCCC) process

and the governance processes coordinated through UNEP. At COP26 in Glasgow, for example, the fossil fuel industry sent more lobbyists than any one country sent delegates (Langfitt, 2021). Representatives of African civil society, on the other hand, are frequently excluded from high-level meetings when host countries refuse to approve their visas (Lo, 2022). This systemic political marginalization has concrete governance outcomes at all levels, as seen in Uganda, where that country's political elite is censoring the press and arresting activists in order to begin construction on an oil pipeline. The marginalization of women follows a similar dynamic, where one group (in this case, men) is making life and death decisions at the expense of some other group (in this case, women). The only solution is strengthened democracy, political inclusion, and empowerment across the board.

DEVELOPMENT

In each of the case studies presented here, broken development models play some role in undermining communities' and countries' resilience to climate change. In South Sudan, oil production, patriarchy, and kleptocracy conspired to squander an opportunity to build the world's youngest country on a foundation of peace and justice. In Kenya, the central government's obsession with the blue economy has led it to miss and mismanage small-scale fisheries' contributions to sustainable development. In Uganda, a colonial model of export-oriented infrastructure development threatens biodiversity, drinking water, and food security, and will make immense contributions to climate change. In Malawi and Zambia, government policies have degraded small-scale farmers' fields and provided them with little protection from the vicissitudes of changing rainfall, storms, and floods. The development models borrowed from the Global North have failed. It is time to develop and implement new models, both by and for Africans.

The current planetary crisis is not without solutions, but changing course will require strong leaders who prioritize the common good above their own short-term political and economic interests. It will also require attention to the specificity of the crisis' various local manifestations—we might say crises—as this report has highlighted. While common trends and themes are important, they cannot be understood apart from specific places and moments where they intersect in various ways. Once we see these levels of complexity, we can also begin to understand that there is no one policy or technical solution for these problems. Governing from the top down will not help. Instead, governments should empower local communities to seek their own solutions, support them in doing so, and prioritize democracy and human rights in the process, all while collaborating in good faith on those problems that are truly transboundary in scope. Anything less will only worsen the crisis people are already facing in Africa and around the world.

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