MICHAEL MÉNDEZ

Behind the Bougainvillea Curtain

Wildfires and Inequality

More equitable approaches to disaster relief efforts must include undocumented Latino and Indigenous migrants.

Whenever disasters such as wildfires, heatwaves, and droughts strike, observers often assert that these crises do not discriminate on the basis of the race or social class of their victims. Nonetheless, their consequences are a product of human decisionmaking that disproportionately harms low-income communities of color due to existing structural inequalities in society. Every aspect of a disaster—including vulnerabilities, preparedness, response, and rebuilding—is to some extent a social calculus. As these events become more frequent and intense through climate change, the question of whose lives get priority before, during, and after a disaster has become a crucial political issue.

My research on (in)visible communities confronting climate change and environmental injustice asks how climate-induced disasters intensify social inequities. By focusing on the experiences of undocumented Latina/o and Indigenous migrants in California, my collaborators and I have shown that more equitable approaches to disaster preparation and relief efforts are possible. In daily life, these groups are severely affected by racial discrimination, exploitation, economic hardships, difficulty communicating in English and Spanish, and fear of deportation. In this context, when disasters occur, governments fail to protect them or support their recovery.

Systemic racism, cultural norms regarding US citizenship, and assumptions about who is a "worthy disaster victim" blind policymakers and disaster relief organizations to the needs of undocumented Latina/o and Indigenous migrants. Because undocumented migrants fall outside these norms, they are often treated as less than human or even disposable.

These conditions directly shape disaster response and climate adaptation planning. For example, as a 2019 California State Auditor's report highlights, emergency officials routinely overlook the state's most marginalized populations as they prepare for foreseeable wildfires, floods, and other crises.

The research my colleagues and I conducted on the 2017–2018 Thomas Fire in Ventura and Santa Barbara Counties confirms this, showing that emergency response and recovery efforts often ignored the needs of undocumented Latino/a and Indigenous migrants. Resources were directed toward privileged individuals, leaving local migrant rights and environmental justice groups to provide essential services such as language access to emergency information in Spanish and Indigenous dialects, labor protections for farmworkers endangered in the fields, and a private disaster relief fund for undocumented migrants ineligible for federal aid. The wildfire intensified the socioeconomic precarity that undocumented and Indigenous migrants already experience on a regular basis. Now more than ever, it is crucial to understand how these events amplify existing inequalities and how to lessen resulting harms.

Climate change fuels wildfires and inequality

Climate change contributes to making wildfires longer and more severe. On average, wildfires in the western United States burn six times the acreage they did 45 years ago. And in California's Sierra Nevada, the frequency of wildfires since 1970 has increased 256% as the mountain snowpack melts earlier and fire season extends year-round. Eighteen of California's 20 largest wildfires by acreage have occurred since the year 2000. The Thomas Fire is currently ranked as the

eighth largest, but just over a year ago it was in second place. California's Fourth Climate Assessment Report projects that the state's wildfire burn area may increase by 77% by the end of the century. These projections are important to safeguard our environments, but they reveal little of the human dimensions of climate change impacts and how some communities are disproportionately affected.

Human-centered approaches enable deeper understanding of not only the disaster impacts themselves but how perceptions and the experience of impacts translate into actions to improve disaster and climate adaptation planning. I developed the Thomas Fire research project alongside those who lived and worked through the disaster. This community-engaged process enabled us to establish emergent research priorities in dealing with disasters and climate change, develop relationships with local environmental justice organizations, and provide a platform for migrants' rights advocates to speak for themselves. Through this partnership, I came to understand the forms of discrimination and unsafe labor conditions faced by undocumented migrants in the region. In this regard, as one resident of Santa Barbara told me, undocumented migrants struggling to survive in a region of wealth and prosperity are the invisible population living and working behind "the bougainvillea curtain." This idiom references the fast-growing evergreen vine with an explosive magenta color adorning the gates of luxurious estates and farms for added privacy.

The Thomas Fire and its impacts

On December 4, 2017, the Thomas Fire started north of the city of Santa Paula in Ventura County, California. It grew quickly to nearly 31,000 acres (50 square miles) in less than 12 hours. Its explosive growth was driven by a combination of climatic events, including dry foliage, low humidity, and intense Santa Ana winds that gusted up to 60 miles per hour. By the time it was contained 40 days later, the Thomas Fire would be classified as the second-largest wildfire in California's history. It affected hundreds of thousands of residents in the counties of Ventura and Santa Barbara, resulting in massive blackouts, the destruction of over 1,000 buildings, and the death of one firefighter.

Media reports focused on the loss of coastal and hillside mansions and impacts to wealthy homeowners and farmers. The Thomas Fire, however, didn't only destroy expensive property and crops—it also endangered the health and livelihood of thousands of undocumented migrants. California is home to an estimated 2.6 million undocumented migrants—approximately 9% of the state's workers—many of whom are farmworkers or are employed in service jobs such as housekeeping and landscaping. In Ventura and Santa Barbara Counties, there are an estimated 110,500 undocumented individuals.

Although the Thomas Fire relief efforts have largely been praised as effective, migrant workers were especially impacted from the fire when they lost employment, did not have access to evacuation information in their native languages, and were confused about eligibility for disaster relief services. Undocumented migrants' socioeconomic situation is usually precarious; however, the wildfire disaster exacerbated their already difficult situation.

The Thomas Fire revealed how undocumented migrants and those with seasonal work visas require special consideration in disaster planning. For fear of deportation, many hesitate to seek help and restitution during and after a wildfire. Those undocumented migrants who do look for assistance often face language barriers and are excluded from accessing federal disaster assistance programs.

In particular, the needs of Indigenous migrant workers and their families are often overlooked by government officials. Ventura and Santa Barbara Counties have more than 50,000 Indigenous people from Mexico living and working in labor-intensive sectors, such as row crops, cut-flowers, and winemaking. Indigenous Mixtec, Triqui, Maya, and Chatino people are not Hispanic or Latino, though they are often grouped with Hispanic communities. Many are illiterate and some speak neither Spanish nor English but only their native languages. This impedes their ability to obtain health care, housing, and education; to negotiate with employers to improve their work situation; and to exercise their basic civil rights.

In this context, language injustice is especially relevant during disasters. Prior to the fire, local governments had not considered the unique needs of undocumented Latino/a and Indigenous immigrants in their disaster and emergency plans. One in three residents of Ventura and Santa Barbara Counties speaks Spanish or another language at home. However, emergency warnings during the Thomas Fire—which detailed evacuation areas and shelters, road and school closures, the need for N95 respirator masks to protect individuals from unsafe air quality, and the lack of safe drinking water in some neighborhoods—were initially available only in English. Emergency information online later included an option for Google Translate in Spanish, but the Ventura County Office of Emergency Services failed to assign staff for live translation during the first ten days of the disaster event. And the Google Translation service was not an appropriate substitute for live translation: the word "wildfire" in English was translated to "hairbrush" in Spanish. Eventually, social justice groups stepped in, translating the information in multiple languages on the social media platforms that migrant communities are most likely to use.

Another type of information that must be transmitted broadly concerns air quality. Many undocumented migrants, especially farmworkers, have underlying health

conditions, including respiratory issues such as asthma, that make them especially vulnerable to smoke from wildfires. Even though farming areas around the Thomas Fire had some of the most hazardous air quality, this information was not effectively transmitted to the communities who worked in the fields. At the beginning of the fire, air quality conditions were so bad that the California Division of Occupational Health and Safety actually closed their regional offices for several days because it was too hazardous for the field investigators. This office's responsibilities include field investigations to ensure that conditions for farmworkers meets appropriate safety standards, including the provision of N95 masks, goggles, and gloves. They didn't reopen the office until pressured to do so from Latino state and local elected officials.

Prior to the COVID-19 pandemic, few migrant workers and employers knew what an N95 mask was, and they were difficult to obtain. Migrant rights groups used their own funds to purchase these expensive masks and deliver them to workers in the field to protect them from the hazardous air quality conditions. Representatives from groups attempting to distribute masks told me they would often be accused of trespassing and chased off the property. When they were able to deliver masks, male workers were often prioritized, and female workers were less likely to get them.

As the Thomas Fire raged, farmworkers were expected to continue laboring under hazardous conditions and, in some instances, inside mandatory evacuation zones, which were considered hazardous to the general population. One farmworker told us, "During the fire, I worked three days without a mask. It caused me headaches and watery eyes, as well as a cough. We were scared because we were very near where the fire was occurring." Another farmworker said, "We all got sick. Our throats closed in from breathing too much smoke and our kids couldn't go to school. We had to buy masks and medicine for our throats and some goggles because my eyes were irritated when I worked."

Other farmworkers spoke of even worse conditions working long days in the smoke and ash, and said that their saliva had turned black. Fine particulate matter from wildfire smoke can contain a toxic mix of heavy metals and other chemicals from burning structures and other objects. Research shows that it can be more harmful than car exhaust. Because of their undocumented status, few of the workers who get sick or hurt in such hazardous conditions are eligible for health insurance. If they lose their job due to the fire, they cannot access unemployment assistance. Likewise, if they lose housing or personal belongings, they are ineligible for Federal Emergency Management Agency (FEMA) disaster relief funding.

Without a social safety net, the consequences of the disaster exacerbate already stark inequalities. One Indigenous farmworker told us, "The day the fire started, the sky was

FOREST⇌*FIRE*

FOREST⇌*FIRE* is an interdisciplinary exhibition that invites people into the story of the Sierra Nevada forest's 13,000-year relationship with fire and the surprising and essential role humans play in it, affecting forests, the watershed, and our own well-being. The exhibition explores how Indigenous people, using low-intensity fire, created and maintained the West's pre-European, old growth forest for thousands of years. It examines why forests are currently threatened and what can be done immediately to prevent the loss of these forests. The exhibition features the work of 22 California artists and writers who work in a range of media, including animation, beadwork, poetry, sculpture, textiles, and more.

"We hope that viewers take away a common understanding of the forest ecology, its relationship to fire, and the human role within that relationship," said Michael Llewellyn, cocurator of the exhibition. "We hope they will find ways to care for the forest that gives so much to us and is so critical for slowing climate change."

Bringing forests back into equilibrium with fire via small tree and slash reduction combined with traditional low-intensity burns will regenerate healthy, fire-resistant, large-tree forests of pristine beauty and great utility. A healthy forest ecosystem can provide a sustainable source of small-tree timber products and result in jobs. Healthy, large-tree forests purify our water and the air that we breathe, slow the effects of global warming via carbon sequestration, and encourage biodiversity.

The exhibition is on view at the Truckee Community Recreation Center in Truckee, California, from December 2021 through June 2022. Read more at https://www.forestandfire.org/

(Right) JESSA RAE GROWING THUNDER, *Peta: Mitakuye Tewahida (Fire: I Love My Relatives)*, 2021, beadwork on fire protection gear, 30 x 40 inches. Commissioned for FOREST⇌*FIRE*.

Jessa Rae Growing Thunder's (Dakota and Nakoda from the Buffalo Nation) artistic practice as a third-generation quill and beadworker is rooted in cultural knowledge of how to navigate the world around us. In this piece, she adorned fire protection gear with beadwork symbolizing flora and fauna, mountains, and weather to emphasize our connection to the natural environment and the importance of recurrent, low-intensity prescribed burning for healthy forest ecosystems.

covered with smoke, and we were sent home. The next day we didn't work because it was dangerous due to the fire. We lost power because it was cut off by the fire, and we lost food and milk for our kids."

Another Indigenous landscaper recounted his experience in the wake of the Thomas Fire: "I could not get to the homes where I worked because the streets were closed. Two of the homes I worked at were destroyed. One of my good friends was lost during the mudslides [caused by heavy rains following the fires]. He had only been living in Montecito for three weeks before he died. I myself am a cancer survivor, and I'm the only one who provides for the family."

One domestic worker told us that she was instructed to stay behind and safeguard a home in a fire evacuation zone as her employer (the homeowner) fled to a hotel for safety. This domestic worker did not have her own transportation and was stuck for several days until a friend got through the evacuation zone barriers to pick her up. During this time, she was exposed to unsafe air, not to mention the threat of the fire overtaking the home. When she told her employer that she was leaving the house, he asked her to bring a few items from the bedroom to his hotel.

Major policy implications

Our research and these stories illustrate the urgent need to recenter disaster preparation and resilience efforts to include the most marginalized and stigmatized populations. One of the largest gaps in safeguarding communities from disasters is the federal exclusion of undocumented people from receiving FEMA aid. Millions of Californians are undocumented migrants, and disproportionately high numbers of them work in sectors that are severely affected by wildfires and other disasters. Their families are especially vulnerable to disasters due to lack of language access to emergency warnings, minimal economic resources to evacuate and rebuild homes, and lower rates of health care and home insurance coverage.

Being on the frontlines of disaster, explicit exclusion from recovery and relief efforts leaves undocumented immigrants without a safety net in California's nearly year-round wildfire season. In the absence of government response and assistance, advocates in the region created the 805UndocuFund (named after the area code in Ventura and Santa Barbara Counties) to aid undocumented immigrants impacted by the fire. It provided direct financial relief to undocumented immigrants who lost their jobs and families whose homes were destroyed or who incurred health care costs from the disaster. The 805Undocufund raised over $2 million in the first year following the fire.

A major policy implication from our research is that for wildfire planning and response, policymakers need to think beyond just property values. Current disaster policies render many minority and poor communities invisible. Moreover,
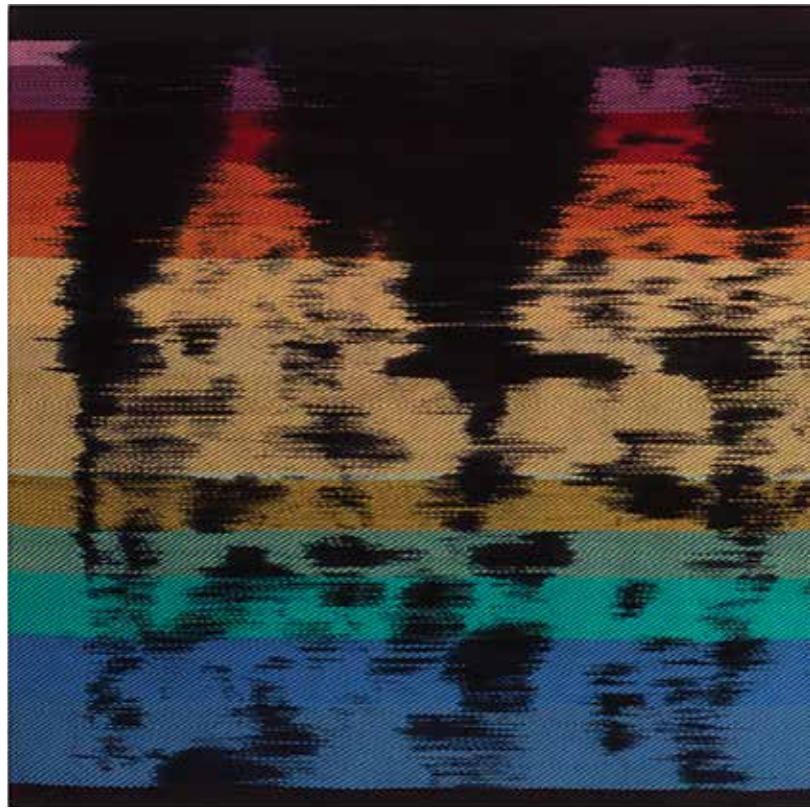
JORIE EMORY, *Sierra LIDAR,* 2021, handwoven textile, painted cotton, 70 x 24 inches. Commissioned for FOREST⇌*FIRE.*

current disaster studies fail to account for the complex web of impacts caused by disasters far beyond destruction of property within the perimeter of the fire itself. Toxic smoke flows down from burning mountainsides and settles in densely populated valleys below, threatening outdoor workers. Lavish hillside mansions are destroyed or evacuated, leaving low-wage migrant gardeners, housekeepers, and caregivers unemployed. Tourism throughout the region shuts down, putting thousands of hotel employees out of work. Multiple regions are affected by the loss of housing and infrastructure and the closure of schools and job sites beyond the census tracts identified in mapping models of fire risk zones. For instance, a low-income migrant family living outside a burn area that loses several weeks of wages without eligibility for federal assistance may be more negatively impacted than a high-income homeowner who lives within the fire-risk zone and whose property is replaced by the homeowner's insurance policy—which also pays for hotel accommodations in the interim.

More inclusive disaster planning would integrate the needs and concerns of marginalized and undocumented
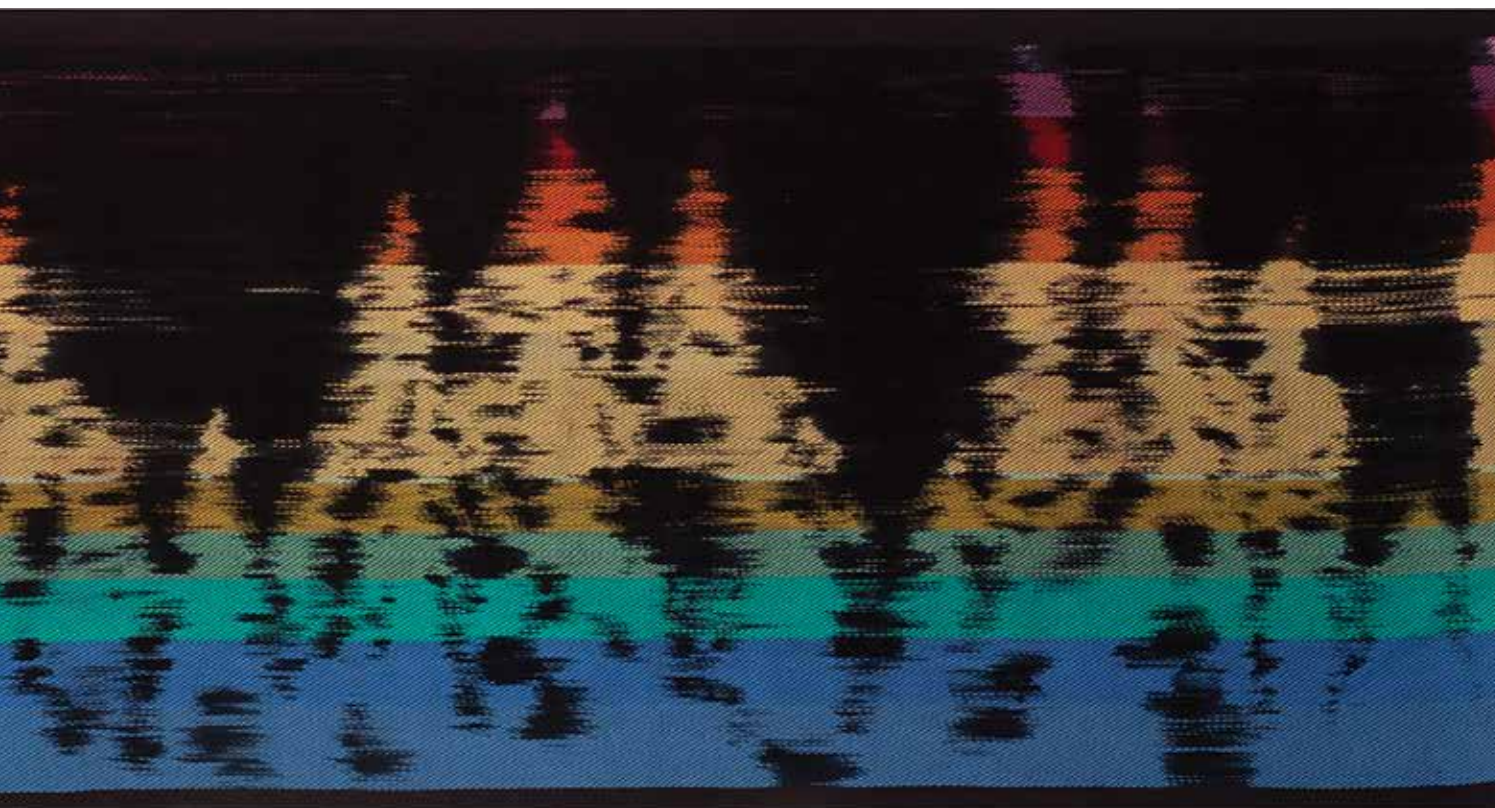
Textile artist Jorie Emory's weaving merges LIDAR mapping technology with analog weaving traditions to highlight the critical role of topographical scanning in forest restoration processes. LIDAR technology is being applied in vegetation management to map landscapes and present data that inform decisions about how best to promote forest health and prevent catastrophic wildfires.

communities long before disaster strikes. Such planning should focus on three key areas.

First, policymakers must legitimize migrant community knowledge and experience and reconsider how they conceptualize who is considered a worthy disaster victim or recipient of disaster aid.

Second, government officials need to involve migrant communities in actual disaster planning, response, and recovery. Ahead of a disaster, governments need to build relationships with trusted nongovernmental organizations and community groups to ensure that they include the sensitive populations in their disaster planning and policies. Such groups are often stopgaps because governments are not adequately safeguarding these communities. And these organizations are themselves under-resourced and often have to dig into their own limited budgets to make up for the lack of government aid. Strong engagement with these communities can build capacity to be part of equitable disaster relief and planning.

And there is also room for federal, state, and local government to improve. In California, statewide guidance for implementing worker health and safety remains vague. This leads counties, agriculture commissioners, public health departments, and local emergency management offices to engage in worker health and safety issues in ad hoc ways. Uneven N95 mask implementation and enforcement, the lack of a requirement for emergency disaster plans from employers who request access permits for workers to labor in mandatory evacuation zones, and subpar air quality monitoring are all areas that need improvement and standardization. The state also needs to enhance its capacity for field investigations. Currently there are only 26 Spanish-speaking field investigators in the entire state of California. And as far as we can determine from public documents, none speak any Indigenous languages.

Finally, the government needs more diverse disaster leadership. Current leadership in all levels of government does not represent the diversity of the United States and, in particular, lacks the experiences of people who are often hardest-hit by climate-induced impacts or disasters. Senior-level appointees and managers are overwhelmingly white and male.

ERIKA OSBORNE, *On the Edge of Sublime*, 2015, oil on linen, 36 x 46 inches. Image courtesy of the artist.

Erika Osborne depicts a wildfire in part of the wildland-urban interface, the transition zone between wildlands and human development. In recent decades millions of people have settled in these zones in California. Communities living in these expanding areas are at the greatest risk of experiencing catastrophic wildfires, partly because they are adjacent to vegetation that can fuel fires and partly because humans often ignite fires.

These suggestions transcend one fire or disaster and apply beyond California. In part, this is because California's wildfires now reach across the globe. Last year, smoke from multiple extreme wildfire events reached not only New York but also Western Europe. California smoke is affecting sensitive populations globally. And as climate change continues, more disasters will occur throughout the nation and the world, setting off a diverse web of effects that will be felt most by those who lack resources and are most stigmatized in society.

In our research, we have found that if society truly wants to tackle disaster risk reduction, it begins with the social integration of stigmatized populations, including undocumented migrants, before a disaster happens. Including them in the social safety net for disaster aid, health care, unemployment assistance, and other social capabilities allows everyone to be full, thriving members of society.

Michael Méndez is assistant professor of environmental planning and policy at the University of California, Irvine, and author of the award-winning book Climate Change from the Streets: How Conflict and Collaboration Strengthen the Environmental Justice Movement *(Yale University Press, 2020). He previously served in California as a senior consultant, lobbyist, and gubernatorial appointee during the passage of the state's internationally acclaimed climate change laws.*

This article is drawn from Méndez's National Academy of Sciences' 2021 Henry and Bryna David Lecture, which honors a leading researcher who has drawn insights from the behavioral and social sciences to inform public policy.