Exploitation, Resistance, and Resilience in Mexico's Yucatán

Stories of Human and Nonhuman Rights under Pressure from Animal Megafarms

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Summary

Mexico's Yucatán peninsula is known for its beaches, Mayan archaeological sites like Tulum and Chichén Itzá, and its forests and cenotes (a network of rivers and lakes, sacred in Mayan cosmology, that wind through hundreds of sinkholes and caves composed of *karst*). Among the nonhuman species found here are endangered spider monkeys, threatened jaguars, and Yucatán parrots. The blind eel and fish, both at risk of extinction, are found only in the peninsula's cenotes (see left). Through the caverns, rainwater and other substances filter directly into the groundwater, which provides the fresh water used by Mayan communities as well as wildlife.

Over the past decade or so, the forested land and especially the cenote waters have attracted the meat industry, which raises animals on an industrial scale. As many as 800 Concentrated Animal Feeding Operations (CAFOs—also known as "factory farms" or "megafarms") pack tens of thousands of pigs and chickens bred for rapid growth into vast sheds.[1] It is estimated that 70 percent of these megafarms have been built within the Ring of Cenotes in northwest Yucatán, which is, or should be, protected by the Ramsar Convention on Wetlands.[2]

The CAFOs for pork production, owned by Kekén, a large Mexican meat processor, which monopolizes the pork business, threaten the Mayan communities' and wild species' access to fresh water. Animal manure and run-off from cleaning operations pollute the cenotes, even as the facilities themselves draw significantly from them. Research by Mexico's Ministry of the Environment in 2023 found that in more than half of the municipalities with mega pig farms, "critical conditions for the water sustainability of the aquifer [cenote]" existed, due to high levels of nitrogen from pig manure and urine.[3]

The CAFOs displace habitats for wildlife, and threaten traditional livelihoods like beekeeping, which Mayans practice in forested areas. The megafarms—and their powerful owners—also threaten the land and human rights of Indigenous Maya communities and deploy the state police and judicial apparatus through muscular, militarized means to intimidate environmental defenders. At the same time, local associations, individuals, and legal advocates in the Yucatán are employing creative means to protect and expand rights—of humans and more-than-humans—including an effort to gain legal personhood status for the Ring of Cenotes.

For several years, Brighter Green has been tracing the connections and distinctions between the movements for the rights of animals and rights of Nature (RoN), exploring how collaborative analysis and action could advance both. The Yucatán CAFOs bristle with multiple rights violations of the human and more-than-human world, and the community environmental defenders, investigative journalists, scientists, and lawyers offer a pathway to protect them both.

Still, our analysis finds that the realities of industrial animal agriculture (reliant on CAFOs or megafarms) haven't received as much attention from the RoN movement as it warrants. This is, therefore, an area ripe for collaboration among the RoN, more-than-human life, and animal rights movements. Other scholars and legal advocates working at the intersection of animal rights and RoN have come to a similar conclusion, and have encouraged more cross-pollination of ideas and action, particularly around animal agriculture.[4]

This Paper

In 2025, Brighter Green produced for the MOTH Conference at New York University[5] a paper entitled *Justice at the Intersections: Animal Rights, Nature's Rights, and the Law*. In the paper, we charted sixty years of the parallel histories and ideas of the movement to establish legal rights for animals and the movement for the legal rights of Nature. In our conclusion, we observed that, although there remained historical, conceptual, and cultural barriers for greater cooperation between advocates of either movement, there were nonetheless areas where campaigners for Nature's rights and animal rights could meaningfully collaborate. These were: stopping the legal and illegal trade in wildlife and thus helping to prevent pandemics and zoonotic diseases; freeing capstone species from confinement; ending industrial fishing and aquaculture; and banning CAFOs.

In this paper, we center the case of the megafarms in the Yucatán to explore two conference themes: MOTH rights in practice and storytelling for the MOTH field. The research and writing draws on academic investigations, journalism, and documentary filmmaking (supported through Brighter Green's Animals and Biodiversity Reporting Fund), stakeholder collaboration, and field work the authors undertook in March 2026 when they visited communities grappling with the consequences of the megafarms and met some of the leading environmental defenders. Most of these people do not feel safe being quoted publicly. So, guided by our colleague, Mérida, Mexico–based journalist Patricio Eleisegui, who has done extensive reporting on the impacts of the megafarms and the new Tren Maya (Maya Train), we only attribute quotes in cases where those individuals have given permission.

Background

In 2024, WWF issued a report on wildlife population numbers between 1970 and 2020, finding that on average, they had declined by 73 percent: 85 percent among freshwater populations, 69 percent in terrestrial populations, and 56 percent among marine populations. The reasons for the decline, wrote WWF, were "habitat loss and degradation and overharvesting, driven primarily by our global food system, followed by invasive species, disease and climate change."[6]

In 2023, a study in *Proceedings of the National Academy of Sciences*,[7] found that of the entire biomass of mammals on Earth, wild mammals totaled only 5 percent of them. Dogs totaled 2 percent, and horses and donkeys 3 percent. Humankind accounted for 36 percent. The remaining 54 percent consisted of livestock, the vast majority of that mass being cattle.[8] In 1970, there were an estimated 1.1 billion cattle; by 2020, that number was 1.5 billion.[9] In 1970, around 550 million pigs were raised worldwide; fifty years later, that number was nearly a billion.[10] In 1970, 5.664 billion birds were raised for food; by 2020, that number had risen to 27.8 billion—a fivefold increase.[11]

In order to support such an increase in production, governments, multinational corporations, and global financing institutions and investors have reshaped the food system. Today, over 80 billion land animals are raised, slaughtered, and consumed globally each year (the vast majority of them chickens).[12] To feed them, 77 percent of Earth's arable land is turned over to grazing or crops like maize (corn) and soybeans.[13] To maximize the supply of land to raise animals or grow the food to feed them, intact forests are razed, leading to considerable

biodiversity loss,[14] degraded vital carbon sinks,[15] devastating forest fires,[16] and the "grabbing" (through pressure, intimidation, or violence) of the land and territory of local communities and Indigenous nations.[17,18]

Over the last 50 years, animals that used to be raised extensively have been moved inside. Today, around the world, for every one animal raised outdoors with a modicum of fresh air, movement, and life in a herd or flock, three inhabit factory farms or CAFOs (Concentrated Animal Feeding Operations, the industry's apt and unsettling term) where they are densely packed, in sheds, crates, or cages, and denied any freedom.[19]

The farmed animals themselves have changed in that time, too. Genetically bred to put on weight as quickly as possible, chickens and pigs are routinely unable to stand and cannot breed. Pigs now weigh as much as 40 pounds more than they did half a century ago when they're taken to slaughter,[20] and they reach that weight in half the time (six months as opposed to a year).[21]

The stress on the animals' bodies is immense: they are routinely in pain through physical deformation or sick from overcrowding.[22] Industry routinely adds antibiotics to animals' feed to try to prevent diseases occurring and spreading in the packed, unsanitary conditions in which factory farmed animals live. Nonetheless, zoonotic outbreaks are far from rare, since in these facilities, bacteria, viruses, and fungi can mutate rapidly and generate new diseases. The H1N1 virus (swine flu) originated in pork-confined areas at industrial farms, and a highly pathogenic form of bird flu (H5N1) was rampant among dairy cows in the U.S. in 2024.[23]

So extensive is the nontherapeutic use of antibiotics (a 2017 study estimated that 73 percent of all antimicrobials sold around the world are used for farmed animals[24]) that the World Health Organization has warned of a steep rise in anti-microbial resistance (AMR). Humans *and* animals, both wild and domesticated, are at risk from drug-resistant pathogens.[25,26,27]

The antibiotics and hormones (used to make animals grow faster) fed to factory-farmed animals don't stay in the animals but are pumped along with their feces and urine into large cesspools (euphemistically called "lagoons" by the industry), which can leak or overtop in storms, and pollute waterways, wells, and rivers.[28] Liquid manure is often sprayed onto fields, and plumes of airborne fecal matter drift onto other properties. Communities living near CAFOs, which usually possess little economic or political power, and are often victims of environmental racism, experience a range of negative impacts from these plumes, such as fly infestation and foul odors that often force homeowners to remain indoors.[29] Families who live downwind or

downstream of these facilities experience respiratory and skin ailments and their property values may be greatly reduced.[30]

A pig megafarm in Yucatán

Brighter Green's Animals and Biodiversity Reporting Fund

Brighter Green became aware of the intensification of animal agriculture in Yucatán via Patricio Eleisegui, an Argentine journalist based in Mexico, who publishes regularly in Jaltun, a journalism collective reporting on forest issues in the Yucatán. Eleisegui approached Brighter Green for seed funding for his investigative reporting on CAFOs' effects on Mayan communities. As a result, Eleisegui wrote a nearly 5,000-word article published first in national Mexican news daily *Pie de Página* and later by several news outlets in Argentina. Brighter Green helped Eleisegui publish a shorter version of the story in English in the *Guardian* online, where it was seen by more than 100,000 people in the first 24 hours it was posted.[31]

Two aspects of Eleisegui's reporting are distinct: first, are the strong bonds of trust he has with rural communities where intimidation, harassment, and the heavy hand of the legal system are recurring, and whose power and voice are severely constrained by the strictures of Mexico's economic and social dynamics. The second is his innovative use of drones to capture images (some included in this paper) of megafarm facilities—the confined animals, waste lagoons, water pollution, and deforestation—that, without this aerial perspective, would be almost wholly

invisible behind walls, barbed wire fencing, and security systems (the calls of the pigs are audible within a certain distance on the ground, and the stench is unavoidable).

As part of their reporting on Yucatán's factory farms and local communities, Eleisegui, along with Mexican filmmaker Maricarmen Sordo, produced *Slaughter-land*, a short documentary film that won first prize at the 2025 Yale Environment 360 Film Festival.[32] Still images and quotations from the film were then repurposed into "Environmental Defenders of the Yucatán,"[33] a photo-exhibit that was first presented in person in Portuguese and English during the People's Tribunal against Ecogenocide,[34] held during the People's Summit in parallel to the COP30 climate summit in Belém, Brazil in November 2025,[35] and then made available online.

Eleisegui's investigative reporting was the latest iteration of Brighter Green's Animals and Biodiversity Reporting Fund, which began in 2023 to educate and support journalists producing stories on the multiple negative consequences of large-scale animal agriculture, for publication in news outlets around the world in English and other languages.

Over three years, Brighter Green has enabled Irish journalist Sophie Kevany to write about meat's role in the climate crisis (published in *Vox*);[36] Repórter Brasil's six-part series of reports and videos on the impact of agribusiness on Brazilian wildlife;[37] Revista Raya's articles and videos on deforestation and cattle ranching's links to the paramilitary in the Colombian Amazon and the extinction of the Nukak Indigenous people;[38] and Bogotá-based El Turbión's investigations into pork megafarms in Colombia.[39,40,41]

Brighter Green continues to collaborate with Repórter Brasil and the Bureau of Investigative Journalism[42] on a compelling, under-reported issue at the intersection of global finance and local impacts of agribusiness. In 2024, Marcel Gomes, Repórter's Executive Secretary, was awarded a prestigious Goldman Environmental Prize for reporting that linked JBS, the largest meatpacking company in the world, to illegal deforestation in Brazil, and his subsequent campaign to pressure meat retailers around the globe to stop selling illegally sourced meat.[43]

Drone footage of megafarms and waste "lagoons" in Sitilpech

MOTH Rights and Wrongs: The Factory Farms of Yucatán

Over the past twenty years, Yucatán has experienced a significant increase in the number and size of pig farms in the state. This expansion has been facilitated by the large amount of GMO soy and water available to raise the pigs; the convenient location of the state's port of Progreso to supply the U.S. and Asian markets[44]; the North American Free Trade Agreement (NAFTA), which encouraged Mexico's agricultural sector to consolidate and intensify operations[45]; and the designation of Yucatán as a state free from classical swine fever (CSF) and Aujeszky's disease, a viral infection that can cause nervous system damage and respiratory issues in pigs.[46,47]

Mexico generates around 1.8 million tons of pork each year,[48] from around 21.3 million pigs (in 2023),[49] with most farms located in Jalisco, Sonora, Puebla, and Yucatán.[50] Pork is one of the three main sources of meat generated and consumed in Mexico (the other two being beef and poultry). Poultry production is more than double that of pork,[51] and Mexico is the sixth-largest poultry producer in the world,[52] with operations centered in Jalisco, Veracruz, Querétaro, and Aguascalientes.[53] Chicken accounts for about half of all the meat eaten in Mexico.[54]

Mexicans' annual consumption of beef, poultry, and pork is expected to rise over the coming years, with poultry in particular seeing large increases: from 38.3 kgs (84.4 lbs) per person in 2023, to 43.8 kgs (96.5 lbs) by 2033.[55]

As elsewhere in the world, the growth of pork and poultry production in Mexico has also been enabled by "technified" or "semi-technified" (i.e. factory farmed) forms of rearing animals, as opposed to "backyard" or cooperative farms.[56]

The main company responsible for the growth in pork production is known colloquially as Kekén, or *pig* in Maya, and is the flagship operation of Group KUO, a Mexican

conglomerate).[57] In 2023, Kekén had annual revenues in 2023 of $US 1.6 billion,[58] exporting meat to the U.S., Japan, Chile, and South Korea.[59] Kekén is a vertically integrated company, which means it controls and owns all aspects of the supply chain: the feed, the pigs' genetics, the crates and sheds used to raise the pigs, and the hormones they're given. In addition to operating scores of large farms and three slaughterhouses, it also owns Maxicarne, a chain of 163 butcher shops throughout Yucatán.[60] As with many vertically integrated companies (like Tyson and Smithfield in the U.S.), Kekén relies on contract farmers throughout Yucatán to supply the animals.[61]

In 2003, Kekén relocated from the Bajío region, an area of Mexico notorious for its severe pollution,[62] to Yucatán to take advantage of the abundant aquifers and pools of fresh water, which are mainly found in the peninsula's 2,100 documented *cenotes* (from the Mayan word *dzonot*, meaning "abyss").[63] Kekén also benefited from a subsidy initiated by the Mexican government in the early 1990s to compete with U.S. pork subsidies and incentivize communities to raise their own farm animals.[64] Ironically, the effect was precisely the reverse.[65]

A community member from Chocholá, Yucatán, describes the process:

> In the nineties, the federal and state governments gave money to communities to promote pork "backyard" husbandry, but since the right-wing government came to power, those subsidies ended, which in turn ended this community practice, benefiting those affluent private landowners able to continue without subsidies. Thus, industrial animal agriculture started its expansion in the form of megafarms and monopolies.

According to the Mexican government, there are approximately 507 large pig farms in the state of Yucatán.[66] However, an investigation by the organization Mercy For Animals (MFA) found that the actual number may be as high as 872.[67] Research by SEMARNAT (the Mexican Ministry of the Environment) shows that nearly 90 percent of the acknowledged pig farms lack environmental permits, [68] and more than 60 percent don't possess a wastewater discharge permit.[69] That means that there is no control over what happens to the thousands of liters of water filled with nitrates from pig excrement and urine that each facility generates.

The scale of the pig farms is staggering. The Local Pig Farmers' Association, which represents entrepreneurs in the sector, states that there are about two million pigs on these megafarms.[70] Given that the National Institute of Statistics and Geography (INEGI) reports there are 2.3 million people living in the entire state of Yucatán, that amounts to almost one pig per urban resident in the state.[71]

Megafarms to produce "meat" chickens for export and domestic consumption are also expanding rapidly in the Yucatán, with more than a hundred that are known and many more that aren't (yet). The government hasn't counted these operations and since they are multiplying in Yucatán, it's hard to get an accurate picture of how widespread they are. Unlike the pig megafarms, the poultry farms and the industry as a whole don't garner much public attention, although some farms house up to 100,000 chickens and produce significant quantities of waste and use plenty of water.

Local communities have reported that waste from some of the poultry operations is illegally dumped in surrounding forest or undeveloped land, with no regard for the consequences. Eleisegui's reporting has documented this occurring in the municipality of Kinchil. He also has written about the contamination of water, air, and soil in several neighborhoods in Hunucmá, also in the Yucatán, where poultry farm run by the Bachoco corporation is located just over 150 feet from homes, as well as schools and kindergartens.[72]

Along with Bachoco, Crío is another large poultry producer active in Yucatán. In January 2026, Pilgrim's Pride, a U.S.-agribusiness and one of the world's largest poultry processors, announced a $US 1.5 billion investment in expanding large-scale poultry production in Mexico.[73] Yucatán is one of three Mexico states where the investment is focused, with a goal of doubling production.[74] According to Eleisegui, "Bachoco and Crío continue to operate largely unnoticed and are very active in supporting governments and public institutions," and the state government in Yucatán has "shown itself to be quite friendly" with Pilgrim's Pride, too.[75]

Destruction of the Environment and Animals

In addition to possessing abundant, clean, fresh water, Yucatán holds other advantages for companies such as Kekén: land is available. Although one-third of the region consists of conserved or protected territories,[76] many of the Indigenous community lack title to land, which is traditionally *ejidal*, or communally owned. Labor in the region is cheap, and the lack of state

regulations, controls, or enforcement of existing laws make it hard to curb the social and environmental impacts of industrial animal agriculture. A community member in Kinchil states that: "These companies chose our territory because it was one of the best-conserved areas—it was clean, healthy, and well-maintained—and this is what Kekén said when it arrived here."

The Mexican government has identified Yucatán as an area of the country where industrial pork production is permitted and indeed encouraged, even if (as this paper shows) it entails the destruction of critical ecosystems, biodiversity, and the traditional ways of life of Mayan communities.

The Mexican government's decision is especially unfortunate, since, according to SEMARNAT, the government's own environmental authority,[77] more than 70 percent of the megafarms in the region[78] are distributed along the Ring of Cenotes,[79] protected under the Ramsar Convention on Wetlands since 2009,[80] and since 2013, named by the state government of Yucatán a Geohydrological State Reserve, which restricts its utilization to activities that support "the preservation and sustainable use of natural resources, as well as with the functional integrity and use capacities of ecosystems."[81]

The cenotes emerge when limestone rock formations, known as *karst*, collapse, revealing the water below the surface, and form networks of interconnected cavernous conduits, through which rainwater and other substances filter directly into the groundwater. Dr. Yameli Aguilar Duarte, head of the Mexican Association for Karst Studies and one of the leading experts on the impacts of megafarms in the region, explains that given the highly permeable nature of karst, if surface water is contaminated, the aquifer will be, too, and there is no chance for the soil and rock system to dissolve, retain, or transform that contamination. In short, the antibiotics and hormones administered to the pigs, and the excrement produced by them, end up in the water. As Dr. Aguilar observes: "If we take into consideration that a pig produces four times the organic waste that a human produces, the organic load in the wastewater from megafarms is so great that the soils cannot retain these components and the contamination of water bodies is imminent."[82]

That same water used by the industry travels into caves, caverns, and wells—and to people's homes, businesses, and farms. Mayan communities in Yucatán claim that shortly after large-scale pig farms began operating on Mayan land, air and water quality began to deteriorate. In the municipality of Kinchil, the Chik'in-já Mayan Council requested water samples from cenotes, springs, and wells for analysis, and the results showed that all were contaminated with

E. coli and other bacteria.[83] Communities living near the pork facilities report persistent foul odors, and locals suffering from fly and mosquito infestations, and skin and stomach maladies.[84,85] According to the Mayan Council, these findings match the data from Mexico's Ministry of Public Health (SINAVE), which show an increase in cases of intestinal infections in Yucatán between 2012 and 2019.[86]

The megafarms have had major effects on the nonhuman residents of Yucatán. The forests on the peninsula are home and refuge to thousands of species, some of them currently facing extinction, such as the spider monkey (*Ateles geoffrogyi*)[87] and the jaguar (*Panthera onca*),[88] as well as threatened species like the Yucatán parrot (*Amazona xantholora*).[89] The cenotes also contain endemic species at risk, such as blind fish (*Ogilbia pearsei* and *Ophisternon infernale*).[90]

In addition to the wild animals, the nonhumans in the Yucatán include millions of pigs (and chickens) in the megafarms themselves. They are not the native breeds the Indigenous communities have farmed for centuries. Instead, they are fast-growing breeds widely used internationally for their fast growth and feed "efficiency" in industrial animal agriculture; each day, they are raised and slaughtered in their thousands. In the town of Umán, workers estimate that six thousand pigs are killed each day, while in Sahé they estimate double that number. These are the animals that make it to the slaughterhouse: those that don't meet size requirements or have other defects are burned and thrown into the cenotes.

In Kinchil, around 60,000 piglets are born each week; the newborns remain with their mothers for only a week and a half, then are sent to be fattened before being taken to the abattoir. The slaughter process involves caging the animals and lowering them into a pit where they are suffocated with carbon dioxide. They are then sent through a channel where they are dismembered, and the unusable remains are often simply dumped in the forest. The pigs do not always die from suffocation.

The megafarms have deeply impacted all communities around them. According to the "Evaluation of Deforestation in the Yucatán Peninsula from 2019 to 2023," conducted by the Mexican Civil Council for Sustainable Forestry (CCMSS), 285,580 hectares of forest were lost during this period, one of the main drivers being extractive industries such as agribusiness, extensive livestock farming, and pork and poultry megafarms.[91] In Kinchil, for example, one megafarm felled almost 78 percent of the trees in the area, and impacted the livelihoods and local

economies of Mayan communities.[92] Data from Global Forest Watch in 2025 indicate that in 2024 alone, the Yucatán Peninsula lost 144,200 hectares of forest, accounting for almost half of all deforestation recorded in Mexico that year.[93]

This reality is especially unfortunate given that, in 2014, Mexico became one of fifty national governments to sign the New York Declaration on Forests, which calls for an end to the clearing of "natural forest" by 2030, the restoration of 350 million hectares (865 million acres) of degraded land, and enhancing forest governance and finance, while reducing greenhouse gas emissions from deforestation and degradation of forests.

The state of Yucatán also signed the Declaration, as part of a group of government signatures from the subnational level.[94] But evidence for the state and federal governments prioritizing forest protection in Yucatán is scant, as researchers, communities, legal experts, journalists, and our own field work underscore. For many who know and love the Yucatán, the transformation of the peninsula's forests—whether for tourism, urban development, the Tren Maya, large-scale monocultures of crops, and the megafarms—is unavoidable, and painful, whether experienced on the ground or flying over the peninsula. As one Mexico City-based researcher, who spent childhood vacations in the Yucatán and remembers it as a mostly undisturbed swatch of green, exclaimed at a recent gathering near the peninsula city of Izamal: "I fear the forest here is dying, and I'm scared by how much grief that makes me feel."

Mexico is also one of 160 national government signatories to the COP28 Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action, developed by the UAE, which hosted the UN climate summit (COP28) in Dubai in 2023. One of the five central objectives in the Declaration governments agreed to pursue calls for maximizing

> the climate and environmental benefits—while containing and reducing harmful impacts—associated with agriculture and food systems by conserving, protecting and restoring land and natural ecosystems, enhancing soil health, and biodiversity, and shifting from higher greenhouse gas-emitting practices to more sustainable production and consumption approaches.[95]

(It is worth noting that COP28 was unusual in that about two-thirds of the food served was vegetarian or vegan, which was an acknowledgment of the higher greenhouse emissions

associated with producing and consuming meat and dairy products compared to vegetables, grains, fruits, and legumes.[96])

Other international conventions and global and regional agreements to which Mexico is a party provide context and grounding for rights advocacy and judicial filings, including principle 10 of the 1992 Rio Convention on Biodiversity (citizen participation in environmental decision-making) and the Escazú Agreement (protections for environmental defenders), the UN and American Declarations on the Rights of Indigenous Peoples (which recognizes collective rights and strengthens legal protections for Indigenous rights).

Public Health and the *Milpa*

The CAFO model also has major impacts on public health. Incidents regarding zoonotic outbreaks in Yucatán are hard to track; only testimonies from former workers allow for the news to be told. A community member in Kinchil reports that: "Recently, there was an incident where thousands of pigs were burned due to a zoonotic outbreak."

The workers themselves are in danger within the CAFO system. Former employees of factory farms and slaughterhouses not only report animal cruelty throughout the supply chain, but denounce violations of their labor rights.[97] They mention extremely difficult working conditions where injuries are common; long hours; and being forced to work even when sick. The hiring process still relies on the "patronage" model dating back to the early twentieth century. Wages at megafarms are usually below minimum, and on some farms, workers are not allowed to have phones, preventing them from documenting anything that could happen. A community member in Sanahcat explains: "The main promise from the company to the communities is the offer of 'jobs,' but those jobs are highly precarious and there are many reports of abuse to workers." Furthermore, to avoid surveillance and monitoring of their operations, megafarms use state-of-the-art technology to prevent drones from approaching their facilities.[98]

The negative environmental effects of the megafarms are not confined to forests and trees. Residents of Santa María Chí describe how the vegetation around the megafarm in their

community is wilting, and contaminated water is damaging their *milpas*—centuries-old Mayan agricultural production systems (see previous page).[99] Inhabitants of Sitilpech describe a similar situation, where a megafarm operates less than a kilometer away from some homes in the community. One resident told journalist Patricio Eleisegui:

> The smell was what woke us up. The green flies, the mosquitoes. The headaches. The pestilence, which at night no longer lets us sleep. Then something appeared in the fruit, as if it were smoke. The bushes looked sad and would soon dry up. When we realized it, the Kekén farm had already been running for a year . . . People stopped cooking outside or leaving the doors open, while the trucks full of pigs began to pass by, day and night.[100]

Another farmer said: "Before the hog farm, the plants looked green, and now there is nothing left. The bushes are drying up from the roots and then they break."[101] In short, says a community member from Sitilpech:

> The farm has destroyed the forest, brought disease, and caused other terrible things; there are no more crops, it has polluted the water, and caused division among us. There used to be 42,000 pigs, and now we don't know exactly how many there are. The stench in the air is terrible during the dry season, and although we have requested a visit from the Federal Attorney's Office for Environmental Protection (PROFEPA) and they promised to provide results, they never delivered anything.

Beekeeping is one of the main economic pillars of the communities in this region.[102] (The image below is of a hive in Kinchil.) That, too, has been affected by the megafarms. One Mayan inhabitant of Kinchil stated that:

> When the company [Kekén] came to set up operations, we watched in sorrow as they began cutting down the trees we had cared for so diligently for our beekeeping. They left vast swaths of land ravaged. It was very sad. They cut

down century-old trees—the very ones that benefit us most during droughts. They started by clearing the highest areas.[103]

Criminalization and Harassment

Many members of Mayan communities in Yucatán have been victims of the state's repressive forces, particularly regarding the pork megafarms. According to a 2024 report from the Mexican Center for Environmental Law (CEMDA) on the situation of people and communities defending environmental human rights in Mexico, criminalization of human rights defenders has been accompanied by other forms of aggression, such as defamation, stigmatization, excessive use of force, theft, threats, and physical assaults—including in the implementation of pork megafarms. In this section, we document cases from villages in the Yucatán—Sitilpech, Santa María Chí, and Kinchil—at the center of the struggle between citizens and megafarms.

Sitilpech

After the Sitilpech community (seen, left, marching against Kekén) established a camp to protest a nearby megafarm, on February 18, 2023,[104] approximately 150 state police and riot police entered the camp to dismantle it, violently attacking those, primarily women and children, who were protesting peacefully.[105] As one community member testified:

> There was premeditation by the authorities against a community that was protesting peacefully; many hid in the woods, planning to corner and attack us when we had to flee. Twenty-five white armored trucks and riot police arrived at the camp. They beat up an older woman and even burned down a comrade's shack.

The state of Yucatán then initiated legal proceedings against eight members of the community, specifically those who had spoken out about the farm to local media: they were accused of blocking a state highway and faced a possible five-year prison sentence.[106] One of the eight defendants commented: "How can we defend ourselves if it's the state itself that's suing us? If we speak out, they crush us; we have no one to turn to."

For a month, the farm monitored the citizens—including underage family members—closely by drone. Ultimately, the eight were sentenced to a year and a half of restrictions and internal control, which prevented them from leaving the state and required them to check in monthly with the authorities. The eight were forbidden to participate in protests against the megafarm, or even approach it. Through their collective efforts to procure funds for a private lawyer, the criminalized individuals from Sitilpech were able to secure their release after months of intense harassment.

Santa María Chí

A pork farm began operations in Santa María Chí in 1986 with just five sheds. (The photo is from a protest camp in the town.) In 2009, partly due to NAFTA, the operation partnered with Kekén, which allowed for expansion and the beginning of exports. By 2026, the farm had grown to 42 sheds.

Initially, all the farm's wastewater was directed into a nearby lagoon, a biodiverse area that children from the community would play in. However, the lagoon would overflow during the winter months. (Although no written documentation exists regarding this issue, it has been shared through oral accounts in the community.)

Wilberth Nahuat Puc, the commissioner for Santa María Chí and the public face of the people's struggle against the megafarm, recounts:

> People in Santa María were always complaining about the terrible stench coming from the farm but they were afraid to do something about it; besides, the company would send out "presents" to the community: little things, such as cheap toys for the children, food, etc. But then, the farm started burning excrement and severely

impacting people's livelihoods. That's when people realized the dimensions of the problem and in May 2023, the community came together to protest and try to stop the farm, since it wasn't taking responsibility for the burnings.

The community searched for legal recourse but it wasn't easy because there's just too much corruption—from the attorneys, to the public ministries, including lawyers, etc. Plus, the company has huge political power and has entered agreements with everyone in Mexico. Hence, people know that their actions could have little to no effect and, instead, protesting could have major implications. Anyhow, the community organized and held its protest blocking the entrance to the farm and impeding animal feed to enter the facilities.

Three days after the protest, Wilberth received a notification from the San Gerardo and Chumoxil Factory Farm Group (owned by the Loret de Mola family, direct partners of Kekén) of two lawsuits against him. Wilberth was falsely accused of property dispossession and illegal deprivation of liberty (kidnapping) for leading a neighborhood watch group positioned several meters from the entrance of the pork megafarm. The judge issued a three-month restraining order that prohibited him from being within 300 meters of the farm for several months, despite his home and his family's residence being located only about 45 meters from the farm. The powerful corporate lawyers representing the company called for prison time for Wilberth, who could only rely on the state counseling service for legal representation. The first trial was originally scheduled for December 2024 but has been postponed multiple times. Wilberth writes of that experience:

I just couldn't go anywhere; they practically locked me in my own home. If I left, it would be a violation, and they could take me to jail, and to be honest, I don't even know if I'd ever get home again. These are very powerful people in the peninsula—they even own an oil company called PetroMayab—and it makes you realize you're not fighting just anyone. They were actually filming the whole town; drones were monitoring people's yards; they put police officers in front of my house, in the park across the street. It was very scary.

Wilberth sought legal assistance, and, on behalf of the community (so as not to expose anyone else) he decided to file lawsuits against the "San Gerardo" pork megafarm, SEMARNAT, PROFEPA, the Mexican National Water Commission, and other federal, state, and local authorities.

The community claimed violations of their rights to health, water, and a healthy environment, highlighting that the megafarm had been operating for decades without community consultation and without an environmental impact assessment. Wilberth explains:

> It's been a long and difficult process for me, but we documented everything: the photos and all the evidence of what they burned were crucial to the case. We also sought support from groups, reporters, associations, etc., and the media made a lot of noise about it. In fact, the criminalization process was key, since I had to protect myself somehow. Because if I stayed silent, they'd just dump me somewhere like they've done with others before . . . I did it without fear, despite my mom telling me not to do it.

Since 2021, the PROFEPA has ordered several partial closures of the megafarm, which has included four suspensions and a fine of close to 17.8 million pesos (more than a million dollars). These orders prohibited the company from bringing in any "new" pigs until it made necessary improvements to its wastewater-discharge system and enhanced its odor-management practices, which have been significantly affecting the township. These regulations allowed the company to keep its existing pigs, enabling the megafarm to continue operating and even increase its internal pig population.

In April 2025, PROFEPA ordered another partial closure of the megafarm, which the company did not comply with, so a second fine of over 18.6 million pesos was imposed. The latest sanction, issued in September 2025, mandated the total and definitive closure of the Santa María factory farm, and required the company to submit a schedule for that closure. The company has until the end of April 2026 to close its operations in Santa María Chí, which includes relocating the pigs, likely to another conserved area in the Yucatán Peninsula.

Wilberth affirms:

We are happy that the farm is finally closing, which is actually good publicity for PROFEPA. But this is just one in over 500 megafarms in the region, and this excludes poultry megafarms that haven't been counted yet. We are now waiting until they take all the animals out, since the program doesn't include dismantling. After April 30, there's a new date where they'll need to explain how they will manage the wastewater left and restore the site. But if everything is cleared up by 2030, what are they going to do next? Probably other industries will arrive (possibly real estate), so now we're defending the territory and trying to recover our community land. We're on the lookout on what they plan to do next.

Wilberth himself is still under litigation. He says:

The judicial system has treated me unfairly. I've been re-elected as commissioner, but the legal case against me has been stagnant. Recently, they finally began to advance it, coinciding with the election period. Just a few days before the registration deadline, they attempted to hold a liability trial [to impede Wilberth's re-election], but they were unsuccessful, and I was re-elected. Last year, they tried to put me on trial three times.

The last attempt was in October 2025, but the judge couldn't find any evidence against me and closed the case. However, the very next day, the company submitted another complaint, and I was informed that in March [2026], the case would be handed over to the first chamber of the court, which is known to be corrupt. We are still waiting for a resolution. In the meantime, I often feel anxious when I travel because they can use my legal situation against me at any time.

Protest mural in Kinchil

Kinchil

At the center of the legal concerns of many of the Mayan community affected by the megafarms is their right to land.

The municipality of Kinchil provided an example of state collusion with agribusiness over land, as well as the punishing of dissent. In 2013, Kekén dispossessed the family of Carlos Llamá of 30 hectares of land to build a pork megafarm. Kekén seized the land with the help of the state Attorney General's office, using the Organized Reaction Group Against Assaults (ROCA), an elite unit of the Yucatán police that had been trained by U.S. SWAT teams, Israeli commandos from Sayeret Matkal, and the special units GIPN and RAID of the French police. As Llamá states:

> Kinchil is one of the few municipalities that has preserved its communal lands, which is why we are being targeted so harshly, even to the point of criminalizing our defense of the territory. We had to integrate the environmental aspect into the struggle at a later stage, after Kekén attacked me, trying to destroy my livestock and bees, but the company ended up affecting others. At that point, we organized,

> documented the situation, and reported it to the authorities. This led to the formation of the Western Maya Council in collaboration with other municipalities.

In 2013, Llamá and the Kinchil community filed a lawsuit against Kekén and other institutions (including PROFEPA and SEMARNAT), establishing that of the three thousand hectares of land in Kekén's possession, only a fifth were legally acquired, reclaiming their rights to *ejidal* land (community land). In filing the lawsuit, Llamá said on behalf of the community:

> We demand the nullification of land tenure documents issued to non-community individuals. Previously, the government offered us the chance to choose a plot of land and abandon our communal land rights. This would have been legalized through a notary's deed, but we refused. Despite this, Indigenous land was taken from us. Land tenure is subject to cultural rights, ancestral rights; Indigenous peoples do not need documentation, because we have worked and lived on that land since before it was declared national land. It is important to know about international agreements on land rights.

Llamá and his family are facing significant challenges as they oppose the Kinchil pork megafarm. Given the widely known corruption and biases of state institutions, they not only have to find and pay for their own legal support, but must cover the costs of tests and other expenses related to the ongoing legal proceedings, which go beyond just financial burdens. "Half our lives have been spent on paperwork, photocopies, and other expenses related to the process, which is already draining enough," says Carlos.

Kinchil was the first Mayan community to file a complaint regarding environmental damage; unfortunately, the case did not proceed, and Kekén is now working to clean up its image. Carlos continues: "The government's 'Sembrando Vida' (Sowing Life) program promotes a rhetoric of care; however, the community is currently facing lawsuits in three jurisdictions—Mérida, Maxcanú, and Hunucmá—merely for traveling through their own territories. This situation is concerning because it is viewed as a form of coercion."

Defamation tactics have divided the community, weakening the Council and progressively isolating Carlos. He states:

> We struggle to defend the economic, social, cultural, and environmental rights of Indigenous peoples. All of these rights are being violated in numerous ways, from consultations to land titling. A crucial hearing is set to begin [in April 2026]. It will be Kekén and the state versus the community. Therefore, we need international support, such as an *amicus curiae* from institutions, organizations, or individuals who participate as friends of the court to argue that certain laws should be applied. Because if Kekén wins this upcoming hearing, they will be shielded from accountability for good.

In one of several *amicus curiae* briefs filed at Brighter Green's request in solidarity with the land rights case in Kinchil being adjudicated in April 2026, Dr. Harlet Esquivel Marín, postdoctoral researcher at the Regional Center for Multidisciplinary Investigations at the Autonomous University of Mexico, called out the recurring impunity before the law and regulations that has characterized the operations of the megafarms. This impunity, she writes,

> is not accidental; it is institutionalized. If these damages have been occurring for more than a decade and have not been resolved, it's not because no one has reported them. It's because there's an architecture in place, an institutional [architecture] that allows them to continue.

Homún

In the course of their struggles against the factory farms in Yucatán, the Mayan communities have used existing laws in creative ways that illustrate both the promise and the limitations of legal approaches.

In 2017, a company named PAPO **(**Producción Alimentaria Porcícola) received permits from the government of Yucatán to build a 49,000-hog operation near Homún, a Mayan town of around 6,400 people near Mérida in the central part of the state. The town's community voted

753–40 against the farm, and formed Kana'an Ts'onot ("guardians of the cenotes" in Maya) to resist it.[107]

In March 2018, Guardians filed a lawsuit against PAPO, on behalf of six Mayan children petitioning for their right to a healthy environment and clean water.[108] This legal action ultimately resulted in the closure of the farm in December 2018. However, the legal battle continues because the political and social impacts of the industry persist. **[See Box: The Ring of Cenotes]**

Arguments concerning children and the environment have proven among the most compelling, both legally and politically, in this struggle. International media highlighted the Homún case of a "group of children fighting against a pork megafarm." By contrast, other avenues, such as the rights of pigs confined in industrial conditions, have been less thoroughly explored.

Another aspect that has proven significant is the mobilization of ethnic groups, particularly in Yucatán, where 65 percent of the 2.5 million people in the state identify as Indigenous Mayan.[109] Kana'an Ts'onot identifies as a Mayan committee and as part of the Mayan community advocates for its rights to self-determination and land. In 2024, the Second District Judge in Yucatán State ruled in favor of Homún's Guardians of the Cenotes and prevented the PAPO pig farm from continuing to operate.[110]

The Ring of Cenotes

A Case for Personhood

On January 24, 2022, representatives of Kana'an Ts'onot ("Guardians of the Cenotes" in Maya) presented a letter to federal, state, and municipal authorities, requesting the recognition of the Ring as a legal entity with rights (personhood),[111] and the Homún community as its guardian.[112] In addition, the Guardians submitted findings to the authorities of organochlorine pesticides in the region's water (many of which are banned in other countries) and demanded the farm be stopped.[113] In addition, the community argued, they had not been consulted on the pig farm, in violation of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the Convention No.169 on Indigenous and Tribal Peoples.[114]

This, as Lourdes Medina Carillo, lawyer at U'tsil K'uxtal confirms, has been routine in terms of the siting of factory farms:

> None of the communities have ever been consulted about their will to have [or not] megafarms established in their territories despite a body of international and national laws in place demanding Free Prior and Informed Consent (FPIC), even though many farms are just meters away from the people's homes.

Kana'an Ts'onot and the human rights organization Equipo Indignación filed several constitutional protection appeals (*amparos*) against the megafarm. One concern of Kana'an Ts'onot was that the megafarm would negatively affect ecotourism in the cenotes, which has become a significant source of revenue in the region. Currently, there are 30 cenotes open to tourists, most of which are located on *ejidal* lands or on private property.

The injunction cited multiple and increasing threats to the cenotes over recent years. Uncontrolled urban development and a lack of proper drainage in cities were causing pollution. Waste products and chemical runoff from the growth of local breweries and massive monocrops of soybeans (predominantly grown for animal feed) were adding to the problem. The now-completed construction of the Maya Train (Tren Maya)—a government-funded 1500-kilometer loop through Yucatán, Chiapas, Campeche, Tabasco, and Quintana Roo states—required the embedding of thousands of steel pillars directly into the delicate underground network of *cenotes*.[115] It is now estimated that perhaps 70 percent of cenotes are contaminated.[116] But the main concern for the Guardians of the Cenotes were the pig farms.

In 2024, a federal court in Mérida revoked the environmental impact authorization for the farm. The court argued that the Ring of Cenotes Geohydrological Reserve is a natural element that must be protected, and this decision aligns with the principle of environmental law known as *in dubio pro natura* (if in doubt, favor Nature), as well as the concepts of prevention and the precautionary principle. Lourdes Medina Carrillo, an environmental lawyer involved in the case, described this ruling as "valuable," emphasizing its significance from the perspective of the rights of Nature.

In addition to asserting the rights of the cenotes as a means to exercise the Mayan people's right to self-determination, the Guardians' request also aimed to reform state law.

Mexico does not recognize the rights of Nature in its Constitution, although four states do so in their local constitutions (Colima, Mexico City, Guerrero, and Oaxaca).

Mexico City (which is the capital city and a state) in 2024 adopted an amendment to the state constitution that recognizes nature and biodiversity (endemic and native species) as subjects of rights "at the same level as human rights."[117] In 2021, Oaxaca also recognized RoN in its state constitution, spanning rights to preservation, ecological function, restoration of ecological balance, and right to be legally represented.[118] No such recognition has happened in Yucatán.

At the national level, a proposal to reform the Mexican constitution to include RoN, introduced in 2019, has not advanced to a vote in the national Senate. However, the Mexican judiciary, including the Supreme Court, has undergone a major reform recently in which all judges are elected directly by voters. This could, according to Lourdes Medina Carrillo, lead them to be bolder in ruling on rights of nature, as in the personhood case for the Ring of Cenotes case.

As Carillo notes, the previous Supreme Court made some progress, but ultimately resisted recognizing ecosystems possessing rights, part of a broader institutional reluctance to do this. The new Court, she notes, might find a positive RoN ruling to be too radical early in their tenure and might instead seek to issue rulings that advance Indigenous rights that could also benefit the nonhuman world. Like other jurists in the Americas, the Mexican judiciary and legal community are aware of other countries' legal recognition of RoN or specific ecosystems like rivers (as in Ecuador, Colombia, and Perú) and are learning from these courts' rulings.[119]

Another important recent ruling, by the Inter-American Court of Human Rights, could also influence advancements in RoN in Mexico and throughout the region. In May 2025, the Court, in an opinion on the climate emergency, affirmed that recognizing Nature as a subject of rights is not "alien" to the Inter-American system of protecting human rights. "Rather," the opinion reads, "[this] represents a contemporary expression of the principle of interdependence between human rights and the environment."[120]

So, as of now, no river, lake, mountain, or cenote in Mexico has been recognized as having rights, although several initiatives have been proposed in that direction. Either way, the political mobilization initiated by organizations such as Kana'an Ts'onot and Indignación was instrumental in prompting the intervention of SEMARNAT (the Mexican Ministry of

Environment and Natural Resources). They stated that "no permits or authorizations will be granted for this activity in Homún."

A Test Case: Collaboration with the Global Alliance for the Rights of Nature

In March 2023, the Global Alliance for the Rights of Nature (GARN)[121] held its eighth local Tribunal on the Rights of Nature at Valladolid, Yucatán, in connection with the impacts of the Maya Train (Tren Maya) case. Among the remedies the Tribunal jurors sought for the damage they observed and learned about from communities and researchers was recognition of the rights of the cenotes "as they constitute the most important water source for the survival of the peoples, communities, and animal and plant species in the region."[122]

The International Rights of Nature Tribunal, established by GARN, is akin to a "people's jury" of citizens with legal expertise who speak on behalf of nature. The perspectives and principles of Indigenous communities are centered. Tribunal jurors issue joint judgments that urge redress of government and corporate policies that impinge on RoN. Tribunals have been held at UN climate change conferences, at municipal climate weeks, and at other environmental gatherings, on university campuses, and also, as in the Yucatán Tren Maya Tribunal, *in situ*.[123]

Given the consequences of the megafarms in the Yucatán, and Brighter Green's effort to "tell this story" at the intersection of RoN, and MOTH and animal rights, we submitted the case to the tribunal. GARN and Brighter Green agreed to incorporate the megafarms into a follow-up tribunal process on the Tren Maya that GARN undertook in 2025.

Working with journalist Patricio Eleisegui and his contacts on the ground, Brighter Green developed a dossier to inform the tribunal members' deliberations. The resulting resolution on the impacts of the Tren Maya and the mega pig farms on the rights of nature and Indigenous people and local communities in the Yucatán found broad violations of rights enumerated in the Universal Declaration on the Rights of Mother Earth.[124] These included: the right of ecosystems to exist; the right to water; the right to clean air; the right to holistic health; the right to be free from contamination, pollution, and toxic or radioactive waste; the right to life and existence of species, and to species' well-being; the right of nonhuman animals in megafarms to maintain their identity and integrity as different, self-regulated, interconnected beings; and the violation of

the right to welfare, to life, and not to be subjected to degrading treatments, or to be genetically altered.

The text affirmed the tribunal's 2023 judgment on the Maya Train and requested President Claudia Sheinbaum and Alicia Bárcena Ibarra, secretary of environment and natural resources (SEMARNAT), to take measures to redress the violations, as follows:

- Adoption of the analysis prepared by SEMARNAT in March 2023, concerning the pollution generated by megafarms in Yucatán, and compliance with the related recommendations;
- Adoption of a moratorium on all approvals of new industrial pig farms in Yucatán, accompanied by the reduction in the number of installed factories, due to the unsustainability of the current pig density per hectare present in most municipalities of Yucatán;
- Dismantling of megafarms in the area known as the Ring of Cenotes, which is the primary freshwater reserve of the Yucatán Peninsula, along with a prohibition on the establishment of new farms;
- Implementation of protective measures for the Ring of Cenotes.
- Addressing surface water eutrophication and halt deforestation caused by the expansion of megafarms;
- Taking immediate action to control and monitor sewage and waste (excrement) discharges into groundwater;
- Restoring soils contaminated with heavy minerals due to the extensive use of antibiotics in megafarms;
- Upholding the right to prior, free, informed, and culturally appropriate consultation in accordance with ILO Convention 169, and compliance with the Escazú Agreement;
- Respecting the rights of the Maya peoples, ensuring their integrity, and stopping all forms of persecution or harassment—especially judicial actions—against communities and their leaders;
- Promoting an amendment to the Yucatán State Constitution that recognizes the Rights of Nature.[125]

Some months after the GARN tribunal resolution was published, Dr. Marcos Orellana, the UN Special Rapporteur on toxics and human rights, visited the Yucatán. Brighter Green shared the dossier we prepared for GARN with his office. In a press conference he held in March 2026 on his findings, megafarms were among the main factors in a "toxic crisis" facing Mexico that is polluting the water and air.[126] He also expressed concern at the lack of consultation or transparency regarding the "operation of these animal factories, the deforestation they generate, and the criminalization of community leadership to discourage their activism."[127]

Conclusion

Later in 2026, unless courts intervene, Tren Maya freight service[128] will begin, further facilitating the export of pigs, chickens, trees, rubber, and other "commodities" from the Yucatán. This service will reinforce the "extractivist" economic model being imposed by powerful state and non-state actors, already at an immense cost. The megafarms in the Yucatán illuminate how intricately industrial animal agriculture is linked to multiple violations of rights, destruction of Indigenous ways of life and relationships with the nonhuman world, pollution of waterways, deforestation, public health threats, and structural forces linked to transnational capital and trade.[129]

The imbalances of power in this struggle are more than evident, and despite the difficult obstacles communities have been confronting, collective strategies for resistance offer hope to both the human and non-human world. RoN and MOTH rights that embed rights of animals crack open future possibilities to end the impunity of the megafarms for human and nonhuman communities alike. Areas for further inquiry and action along this pathway include:

- The Mayans have historically served as guardians of the land and maintained a deep connection to the cenotes, which are integral to their livelihoods, culture, and worldviews. Securing recognition of personhood for the cenotes would support Indigenous peoples in their struggle for *ejidal* land, which is increasingly targeted for appropriation by foreign interests. Additionally, linking this movement to the rights of animals could strengthen the case for Ring of Cenotes' protections. All living organisms associated with the cenotes could benefit, including the pigs in megafarms. This could be particularly relevant if a ruling banning industrial animal operations in the Ring is achieved, which could potentially extend to other vulnerable areas.

- When evidence of megafarms' destruction of reciprocal ecological, social, and economic relationships is so compelling, why is success to hold them accountable and address systemic flaws so rare? Could experiences/struggles like those in the Yucatán be transferable to other geographies? Could global or regional networks of information- and strategy-sharing, and solidarity, accelerate the rights of and reciprocity with the nonhuman world? Developing a collective strategy, like regional and global networks of affected individuals, and communities, researchers, activists, journalists, and others could play a crucial role in strengthening territorial struggles, raising awareness, and ultimately holding governments and corporate actors accountable to the precepts of international and national laws in place. This strategy could also expand understanding among policymakers, opinion formers, campaigners, consumers, and local communities about how the industrial model of animal agriculture affects all forms of life—from microorganisms in the soil and water; to animals, wild and domesticated; and human health and flourishing—and inform local and global campaigns for rights and redress.

- Why is a focus (or joint focus) on animal rights the least evident tool in most community struggles? How could researchers and academics with an interest in both environmental and animal protections and rights collaborate and experiment with new approaches, like the "green criminology" lens Esquivel Marín is applying to megafarms in the Yucatán? Can local, national, and even international stakeholders ultimately strive for a multispecies justice that honors *all* life, by extending, for instance, the recognition of the personhood of the cenotes in Yucatán to other ecosystems in the region and to animal species also exploited by the industry (i.e. chickens, octopi, tilapia)?

- By what additional means could solidarity be extended to MOTH rights defenders on the frontlines and lawyers who defend them and file cases to protect and advance MOTH rights? How could more legal advocates be supported and encouraged, including at community levels?

- And finally, to storytelling (and envisioning). How can the nonhuman world be seen and respected in its immense variety, including the pigs and chickens in the megafarms, who

are denatured, treated as virtual machines, expendable when they fail as "production units," and almost wholly hidden from view in vast sheds behind walls and security systems? How could creative, rigorous storytelling and new narratives be employed in these struggles for MOTH rights, and for enhancing reciprocity with the nonhuman world?

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