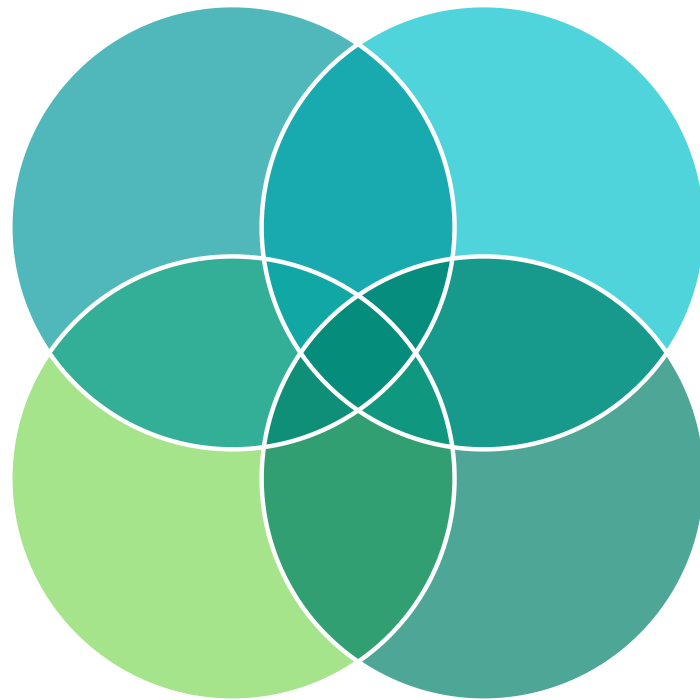


The Influence of Environmental Toxicity, Inequity and Capitalism on Reproductive Health



2022

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Kelley Dennings

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Acknowledgments

Editing: Stephanie Feldstein, Kim Dinan, Lydia Millet
Graphic Design: Linda Rico

This report would not have been possible without the review and constructive feedback provided by Adoma Addo, John Fleming, Jennifer Molidor, Victoria Bogdan Tejeda and John Buse at the Center for Biological Diversity and Jace Anderson with Nurses for Sexual and Reproductive Health.

Notes About the Scope of This Report

This report aims to provide a brief, introductory overview of the relationship between the environment, racial inequity, reproductive justice, and their connection to capitalism. It does not intend, nor is it able, to cover the full range of issues relevant to these complex subjects.

In the context of this report, “capitalism” refers to market capitalist systems predicated on models of infinite growth. While the discussion of capitalism in the report will frequently reference racist, sexist and classist outcomes that perpetuate reproductive injustices, it’s not the intention of this report to collapse racism, sexism or classism into capitalism.

Gender is the behavioral, cultural or psychological traits typically associated with one sex. Gender is viewed along a continuum and includes both binary and non-binary gender identities, including LGBTQIA+. We acknowledge that all people are affected by these issues, and gender-diverse people often face additional challenges due to the lack of inclusive healthcare and other systems of oppression. Within this document we use gender-neutral terms when possible; however, since the literature to date has largely reported results in a binary way — female or male — we have retained some gendered language to accurately represent the best available research.

Executive Summary

Our health and environment are deeply interconnected. The exploitation of people, animals and nature drives the environmental crises we face today and damages the health of the most marginalized people. Reproductive health, specifically, is affected by poor environmental quality, making it difficult for parents to have healthy pregnancies and raise their children in safe and healthy communities. Improving environmental conditions results in positive public health outcomes and is imperative for reproductive justice.

Many invisible environmental threats — such as toxic chemicals in the air and water and extreme temperatures — impede reproductive justice and cause harm to pregnant people, fetuses, infants and children. This report seeks to help people understand these links more clearly. It also explores the role capitalist systems play in harming reproductive and environmental health. By exposing the connections between fossil fuel extraction, plastic products, industrial agriculture, climate change, and negative reproductive health outcomes, we hope to increase awareness of these invisible threats, illuminate the role of capitalist growth models in causing these harms, and propose solutions for mitigating the ongoing reproductive injustice caused by environmental crises. Case studies within the report highlight Cancer Alley, the connection between plastic phthalates and endometriosis, agricultural toxics pollution in Indigenous communities, and redlining's effect on extreme heat exposure.

While all individuals are affected by the environmental effects of capitalism, low-wealth communities and people of color are experiencing drastically poorer reproductive health outcomes and higher rates of harm. This disparity is exacerbated by systemic inequalities that often prevent less privileged communities from accessing safer resources like organic foods, air conditioning, and comprehensive healthcare. Solutions to these problems must include social, economic, and environmental policy that regulates the wide range of factors blocking reproductive justice in the United States.

Some Examples of Solutions Include:

- Prioritizing health and healthcare for all over profit
- Corporate transparency and accountability for harm
- Testing, regulating and banning harmful chemicals
- Increasing access to safer and healthier products and foods
- Rapid transitions to community-based clean energy and reusable systems

This report hopes to demonstrate that in order to achieve reproductive justice we must overhaul extractive and exploitative systems to help people and the planet thrive.

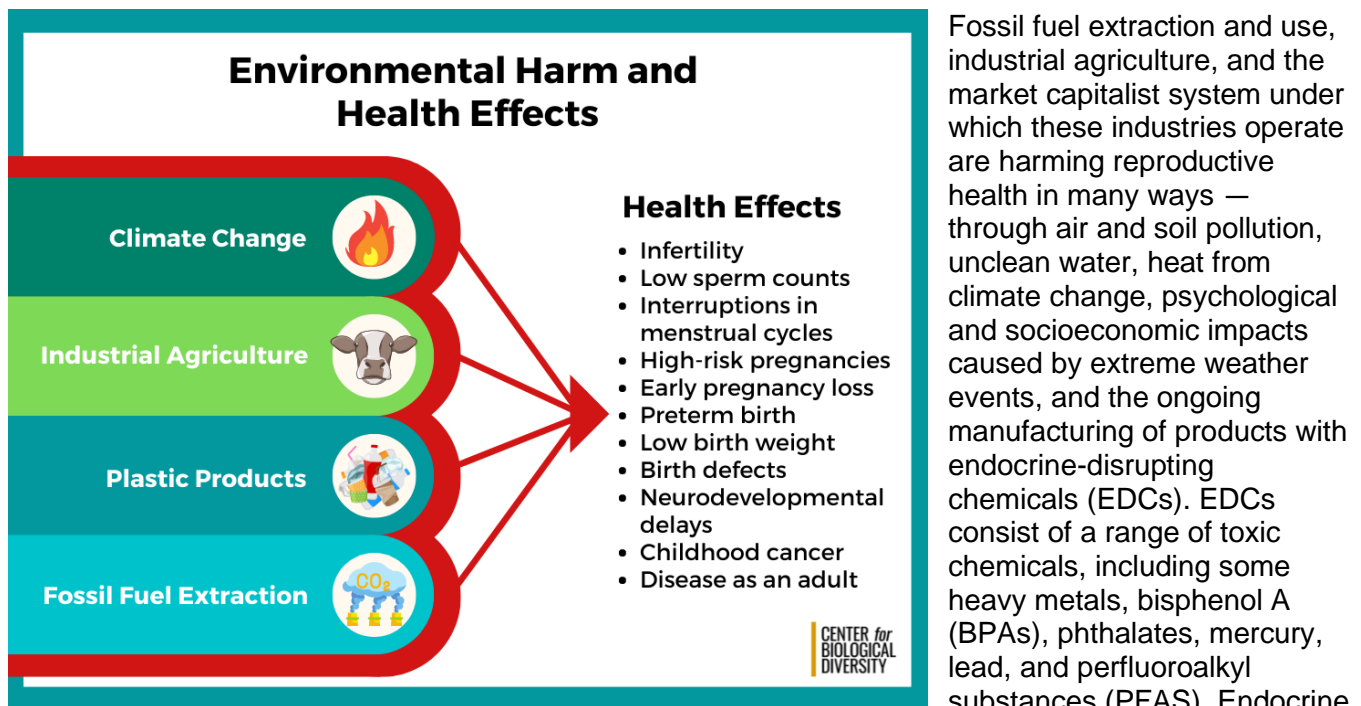
Introduction

Reproductive Justice and Environmental Health

Reproductive justice, as defined by the organization SisterSong¹ is “the human right to maintain personal bodily autonomy, have children, not have children, and parent the children we have in safe and sustainable communities.” For people with uteruses to have reproductive justice, they must have access to contraception and abortion and the right to pursue and maintain reproductive health² via access to universal healthcare, safe environments, safe pregnancies, and the reduction of stillbirth and infant mortality.³

Unfortunately, threats to environmental health are putting reproductive health at risk. In this document, environmental health refers to environmental factors and toxicants that create poor health outcomes for humans and adversely affect wild plants and animals, further diminishing the overall health of communities and ecosystems. This includes toxic chemicals found in everyday products, used in pesticides, and released as pollution into the environment from energy extraction and industrial processes. It also includes threats to physical safety, nutrition and emotional wellbeing caused by climate change. Currently the destruction of ecosystems and reckless production of toxic chemicals are inhibiting reproductive justice.

Figure 1. Environmental Harm and Health Effects



disruptors — along with other pollutants emitted from fossil fuel extraction and industrial agriculture — interfere with the function and health of reproductive organs.⁴ In particular, phthalates are used in toys, flooring, detergents, food packaging, pharmaceuticals, blood bags and tubing, and personal-care products like nail polish, aftershave lotions and items with perfumes. PFAS is also in a wide range of products that are stick-proof, waterproof and stain resistant, such as food packaging, Teflon pans,

firefighting foam, textiles, medical equipment, and personal-care products like dental floss, mascara and foundation.

EDCs are particularly harmful to pregnant people and their children, as these toxic chemicals travel through the placenta and expose the babies in utero. Pregnancy is one of the most critical times for human development, so in utero exposure to EDCs can affect babies' health into adulthood. Environmental harm, including pollution and extreme weather events caused by climate change, can cause challenging birth and pregnancy outcomes, including infertility, low sperm counts, interruptions in menstrual cycles, high-risk pregnancies, early pregnancy loss, birth defects, preterm birth, and low birth weight.

The consequences of exposure to environmental toxics during conception and pregnancy can continue after babies are born, leading to birth defects, neurodevelopmental delays, childhood cancer and chronic illness. These health disparities can perpetuate wealth disparities, as chronic health issues often cause barriers to professional success⁵ and therefore create barriers to economic independence. Given the added burden of environmentally triggered health risks, providing social services like healthcare, education, nutrition, and affordable childcare creates equitable access to resources that allows everyone to productively engage in society.

Studies show that universal access to contraception and reproductive healthcare —including abortion — along with greater education lowers birth rates and the impact that population pressures have on the environment.⁶ Environmental pollutants make planning for a pregnancy more challenging and make it harder to avoid unwanted pregnancies. Toxic chemicals can disrupt menstrual cycles and consequently make the fertility awareness-based method (FAM) of birth control unreliable. Irregular cycles also delay awareness of pregnancy, which could make it even harder for people living in states with strict regulations to seek abortions.

Environmental pollutants and climate change make it challenging for people to have safe and healthy pregnancies. Reducing environmental harm can improve reproductive justice by limiting obstacles to fertility and creating safer environments for parents to raise their children.

Because environmental health and reproductive health are so deeply intertwined — and caring for both have mutual benefits to people and the planet — reproductive health and justice are a critical part of the environmental movement.

The Role of Capitalism in Reproductive Justice and Environmental Health

Research shows that human-driven toxic emissions and climate change directly impede the pursuit of reproductive justice. While federal, state and corporate policy and regulations could provide the necessary solutions, they are largely failing to do so. Instead the U.S. economy aligns with capitalist notions that prioritize wealth accumulation and concentration, endless growth, and private markets. The burden of mitigating and solving bodily and environmental harm has fallen on individuals, while the corporations and governments responsible for them have not been held accountable either for the costs of these harms or for their remedy.

Factories, industrial agriculture, and fossil fuel extraction sites drive profit growth with little regard for the consequences of exposing laborers and nearby communities to toxic pollutants. Corporate damage to ecosystems and biodiversity carries few penalties for those causing the often-irreversible destruction. Infrastructures such as monopoly utilities, increasingly consolidated animal feeding operations, and large factories keep these practices entrenched in the name of endless growth, with no regard for the impacts on humans, wildlife, or life-supporting ecosystems. Indeed the high costs of these endeavors are often paid by those most harmed rather than by the industries causing the harm. Government policies distort the market prices of “cheap” energy, meat, and other products via subsidies while maximizing profits for powerful stakeholders incentivized to maintain the status quo.

If growth continues to be held up as the primary measure of economic health, humans will continue to be exploited, and the environment pushed past its carrying capacity, to generate private profit.

These harms disproportionately fall on communities of color and low wealth individuals who cannot afford to move to safer environments, access comprehensive healthcare, or otherwise mitigate exposure to toxic chemicals and climate-related harms.

Exposure to environmental health risks depends on the neighborhoods we live in, the places we work, and the food and personal products we can access.

Those living in low-wealth areas are less likely to have access to safe products and toxic-free foods and are more likely to experience the negative consequences of pollution and climate change.

Despite extensive research on the risks associated with exposure to toxics in the home — from products like cleaning supplies and plastics to contaminated flood waters — limited regulations exist to protect people from them.

Instead the burden continues to fall upon individuals to self-educate about the risks of the products they buy and the food they eat and strategically try to circumvent the many avenues of exposure to toxics and the dangers of climate change.

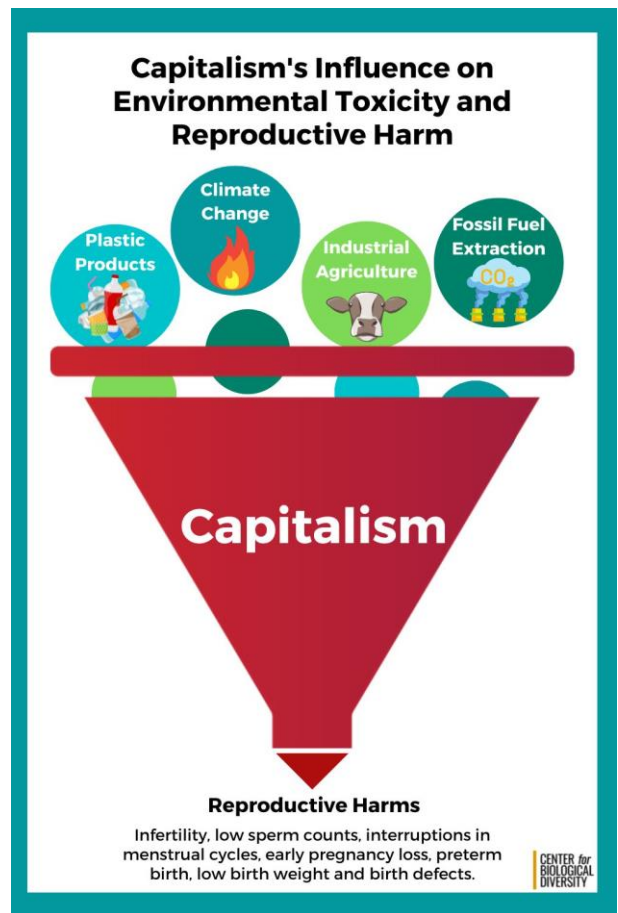


Figure 2. Capitalism's Influence on Environmental Toxicity and Reproductive Harm



Fossil Fuel Extraction

The Issue

Fossil fuels are non-renewable energy sources derived from the deeply buried remains of ancient animals and plants. Due to this biological origin, they have a high carbon content and can only be extracted using invasive and highly polluting techniques such as mountaintop-removal coal mining, fracking and drilling. Because of government policies, subsidies, and existing infrastructures that externalize costs and keep fossil fuels artificially “cheap,” these methods continue to be favored by industry despite the increasing availability of renewable energy sources like solar or wind, which are better for reproductive health and the planet.

The lifecycle of fossil fuel energy consists of dangerous emissions and leaks. Fossil fuel extraction sites and refineries emit harmful particles and chemicals into the air, water, and soil, exposing nearby communities and wildlife to toxic pollutants. Transportation of gas and oil via pipelines and “bomb trains” increase the risks of toxic exposure as well as dangerous spills and explosions.⁷ Fossil fuel production is also a major source of methane gas, the second most abundant human-generated greenhouse gas after carbon dioxide. Toxic particulate matter in the air caused by the burning of fossil fuels in power plants, vehicles, and other sources have been linked to 8.7 million annual deaths worldwide.⁸

Fracking, mining (surface, mountaintop and coal), and fossil fuel combustion also send heavy metals like cadmium, arsenic, lead, and mercury into nearby drinking water and soil as runoff.⁹ In fact, burning and extracting fossil fuels is the main cause of mercury contamination.¹⁰ Heavy metals like mercury are significant contributors to drinking water contamination.¹¹ Water and air pollutants from fossil fuels further contribute to soil toxicity, which can impede crop production and contaminate the crops that do grow, leading to food insecurity. As a result, air, land, water and food become contaminated, exposing individuals who live and work in communities where fossil fuels are extracted to these toxic chemicals.

This report aims to provide a brief, introductory overview of the relationship between fossil fuel extraction and reproductive justice. It does not intend to cover the complex, comprehensive harms caused by the fossil fuel industry.

The Reproductive Health Harms of Fossil Fuel Extraction

Emissions from the production and burning of fossil fuels have detrimental effects on reproductive health and reproductive justice. The pollution emitted from the extraction of fossil fuels has been shown to build up in biologically female bodies, leading to worsened health outcomes like breast and ovarian cancers.¹² These toxics can also cause poor pregnancy outcomes including stillbirth, early pregnancy loss, low birth weight, birth defects and neurological delays in children. This is because burning and extracting fossil fuels releases endocrine-disrupting chemicals (EDCs) into soil, water and air,¹³ which are then absorbed by humans through food, contaminated water and breathing in air pollution. Similarly, mercury, which enters water sources and soil from coal-fired power plants and coal combustion, can lead to low birth weight, stillborn birth, increased risk of early pregnancy loss, and infant mortality.¹⁴

Living or working near fossil fuel operations has been directly linked to poor reproductive health outcomes. Several research studies in regions with a high density of fossil fuel operations have



provided empirical data for this relationship. For example, one study found that babies born to women residing in coal mining areas in West Virginia had a low birth-weight rate 16% higher than those in other counties,¹⁵ while another found that pregnant women near fracking sites had a 40% increased risk of going into labor prematurely and a 30% increased risk of a high-risk pregnancy.¹⁶ Another recent study found that people living near mountaintop-removal sites were 42% more likely to have children with birth defects or experience stillborn births.¹⁷

While fracking for natural gas has been touted by the industry as a relatively safe fossil fuel extraction option, it uses fluids comprised of more than 1,000 chemicals, many of which are endocrine disruptors. These chemicals increase the risk of perinatal morbidity, premature birth, low birth weight, and overall high-risk pregnancies.¹⁸ Those closest to high density fracking locations are more likely to go into premature labor, with 6% going into labor extremely prematurely, which is medically defined as before 28 weeks of pregnancy.¹⁹ Fracking has also correlated with poor health outcomes for babies, as severe birth defects affecting the brain and spine were significantly more prominent in children living within two miles of a drilling or fracking location. Women living near ongoing fracking in rural Colorado were found to be 30% more likely to have babies with congenital heart defects.²⁰ Since fracking operations use many of the same chemicals as conventional oil and gas operations, some of the risks posed by fracking are posed by conventional methods as well.²¹

How Fossil Fuel Extraction Is Linked to Capitalism and Inequity

Fossil fuel extraction relies on the exploitation of people and the land they live on. Not only does the extractive process affect fertility and fetal health but it inhibits parents' abilities to raise their children in safe, stable environments. These consequences are worse for marginalized communities, whose neighborhoods are regularly displaced, and whose health is harmed, as a result of corporate, capitalist industrial endeavors given free rein to pollute without significant penalty or redress.

Mining and drilling degrade the environment and release toxics into the air, water and soil, fueling environmental-related reproductive harm. Simultaneously, fossil fuel production exploits people by contaminating their neighborhoods and endangering their homes and bodies. This harm leads to increased risk of reproductive problems for everyone exposed. However, with less money or access to social resources, such as comprehensive healthcare, marginalized communities inevitably suffer greater environmentally triggered harm than those with economic privilege.

Impacts on Communities of Color

People living near sites of extraction through mountaintop removal, coal mining and fracking are often low-wealth, people of color, and Indigenous communities.²² Black children are 79% more likely to live in highly polluted neighborhoods than white children, and 68% of Black people in the United States live near coal-fired power plants,²³ which has a direct effect on their ability to raise children in a healthy environment. For example, asthma is the most widespread chronic childhood disease, but Black and Latino children are more affected than white children because they're more likely to live near industrial pollution.²⁴

Living near extraction sites also affects the educational experience of Black, Indigenous and children of color. A 2016 report found that pollution from oil and gas industries was linked with approximately 750,000 summertime asthma attacks for kids and 500,000 missed school days.²⁵ Additionally, the majority of U.S. farmland owned by Black, Indigenous, and other farmers of color is located in areas most contaminated by the fossil fuel industry, such as Appalachia and the Southeast.²⁶



The harmful impacts of pollutants on these communities only increase with higher levels of poverty or lower rates of healthcare access, as well as disparities in the quality of healthcare. A multitude of societal barriers and systemic inequalities within and outside of healthcare, along with greater exposure to environmental toxicants, has put Black women in far greater danger.²⁷

Black pregnant women experience preterm labor 50% more often than white women, while low birth weight and stillborn births are twice as common for Black women as for white women.²⁸

Impacts on Indigenous Communities

Indigenous communities have also been notably exploited by the fossil fuel industry. While reproductive justice demands a safe and sustainable environment for children, Indigenous families have had their land destroyed by toxic chemicals. The Ponca tribe's land in Nebraska has become so toxic and the soil so contaminated from fossil fuel pollutants that food cannot grow within a 16-mile radius of their land.²⁹

Indigenous women are particularly harmed by these toxics because their cultural practices require more interaction with water and soil than other members of their community. These women must inevitably choose between physical safety or maintaining their spiritual and traditional identities, since industrial pollution has made it impossible for them to do both.³⁰

The Gendered Impacts of Fossil Fuel Extraction

Despite the ongoing research showing the harm of fossil fuel extraction, companies continue to take efforts to conceal these risks from the public. In the 1960s companies like Shell and Imperial Oil, an ExxonMobil subsidiary, were concerned that fossil fuel-related pollution caused health problems. By the 1980s Imperial Oil had proposed plans to investigate birth defects in the offspring of industry workers. These companies not only continued harmful production but aggressively lobbied against clean-air regulations and sowed doubt about the scientific evidence linking fossil fuels to health issues.³¹ Little has changed, and profit continues to be prioritized over wellbeing, with major banks like JP Morgan Chase and Citi leading fossil fuel financing.³²

Contaminants from fossil fuel extraction sites place additional obstacles on women's advancement beyond harming their health. Patriarchal norms continue to disproportionately enlist women and girls in unpaid domestic labor, including food preparation, obtaining clean water, child rearing, and caring for sick family members.³³ When air, water and soil become polluted, it often falls on mothers to navigate these dangers and provide safe care for children and elders who fall ill. This can often include forgoing paid employment to stay home and care for their families,³⁴ further diminishing their economic equality and impeding opportunities for economic independence.

Indigenous women, girls, and two-spirit people, in particular, have experienced greater levels of abuse by the men working in coal, oil and gas,³⁶ with increased rates of sexual abuse, trafficking, and domestic violence against Indigenous women and children linked to fossil fuel extraction sites.³⁷



Capitalist models rely on the unpaid labor of women in these spaces, requiring them to compensate for the damage caused by business ventures without supportive policies to help them advance economically, or even remain financially secure. Increased fossil fuel extraction places further harmful demands on women.³⁵ While industry leaders claim to provide jobs for locals at extraction sites, women are rarely seen as viable candidates for these jobs and instead often only experience the negative consequences of fossil fuel operations.

Such consequences include increased sexual abuse of women living near fossil fuel extraction sites, where there are often temporary “man camps” for workers to live in.

Case Study: Cancer Alley

Photo credit: Alejandro Dávila Fragoso / Earthjustice



Communities in the Louisiana region known as Cancer Alley have experienced firsthand how fossil fuel extraction explicitly harms the less privileged. Cancer Alley is the nickname for an 85-mile-long stretch of land along the Mississippi River where 150 fossil fuel refineries operate. The nickname comes from the extremely high rates of cancer experienced by those living in the area, but poor health outcomes within the region are significantly higher among low-wealth people and people of color. The parishes predominantly inhabited by Black residents suffer the most.³⁸

The disparity of outcomes highlights present-day environmental oppression driven by capitalism; the origins of Cancer Alley tell a similar story. The land was originally settled by freed enslaved people, but in the 1960s, fossil fuel industries began to take over and develop extraction sites and processing plants nearby. This was supported by the government, which rezoned parts of the area to allow industrial production, often failing to inform residents of the change. As a result, descendants of the freed enslaved people who originally settled on this land now experience higher-than-average rates of hysterectomies, miscarriages, and a breadth of other reproductive challenges because of extreme exposure to environmental toxics.³⁹

People living closest to toxic pollutants are most likely to ingest them, but communities farther away can absorb residual contaminants through polluted water and food grown in toxic soil. Fenceline communities, the neighborhoods that exist near extraction and production sites, have higher rates of exposure to toxic pollutants. Like Cancer Alley, fenceline communities most commonly have higher populations of low-wealth, people of color, or immigrant families.⁴⁰



Examples of Solutions

Stop the Expansion of Oil, Gas and Coal Development

Despite the many negative consequences of fossil fuel extraction, extraction sites continue to grow. To stop further expansion, we must stop leasing public land to fossil fuel industries. The Center for Biological Diversity's "Keep It in the Ground" campaign calls for a ban on new leasing of public lands for oil and gas extraction.⁴¹ Similarly, the Build Back Fossil Free campaign calls on the president to cease approval of new fossil fuel projects, protect marginalized communities that are disproportionately harmed by fossil fuels, and declare a climate emergency.⁴² However, these outcomes have not yet occurred, and more government action is required to shut down ongoing extraction sites and prevent future sites from being built.

Increase Transparency for People Living In High-Risk Areas

Reproductive harms to those living near extraction and production sites are well researched and documented, but education about the risks of these toxicants for those living nearby is often limited. Policies that mandate transparency to nearby communities and regular updates about toxic emissions would empower residents to understand how their bodies are affected and whether there are steps they can take to mitigate risk.

The American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women and the American Society for Reproductive Medicine Practice Committee are similarly calling for healthcare workers in high-risk neighborhoods to translate research for their clients, sharing the risks with their patients and addressing avenues for protection.⁴³ The U.S. Energy Information Administration has created interactive maps with the locations of coal-mining plants, fossil fuel sites and power plants, which can help identify high-risk neighborhoods, but clear, multilingual information needs to be disseminated directly to those affected by fossil fuel activity.

Shift to a Community-Based Clean Energy Economy

In addition to inhibiting fossil fuel extraction and production, the clean energy economy has been shown to decrease economic disparities through job opportunities. A 2019 investigation found that investing in clean energy increased economic mobility for low-wage individuals at far greater lengths than fossil fuel industries and non-energy related fields. In fact clean energy has added approximately 320 new occupations across energy production, energy efficiency, and environmental management disciplines.⁴⁴

The research found that those currently employed in clean energy jobs tend to earn more, with a higher minimum wage compared to other industries employing workers of similar economic background. Higher wages are particularly noteworthy in the clean energy economy because these occupations tend to have lower educational requirements than other jobs in the workforce offering similar pay, making economic advancement more accessible to groups who might face obstacles in their job search elsewhere. These workers often learn specific technical skills and obtain marketable scientific knowledge through job-specific training and on-site learning.⁴⁵

A community-based energy economy — also known as energy democracy — provides a stark contrast to the exploitation inherent in energy systems under capitalism. As defined by the Local Clean Energy Alliance, "Energy democracy is a way to frame the struggle of working people, low-income communities and communities of color, along with their allies, to take control of energy resources and decision-making from the corporate energy establishment and use those resources to empower their communities." Democratizing energy represents a significant opportunity to make a just transition from a fossil-fuel-based economy to a new clean energy economy grounded in principles of economic and



social justice. For example, distributed solar generation allows communities to gain local control over their energy system rather than leaving that control in the hands of monopoly utilities that are often investor-owned. Progressive distributed solar energy policy choices can enable renters and individuals who cannot afford to purchase solar energy systems to invest in renewable energy.⁴⁶



Plastic Products

The Issue

Plastic material goods are riddled with dangerous chemicals, including endocrine-disrupting chemicals (EDCs), that lead to harmful exposure during their lifecycle. Unfortunately, not all products are tested for the presence of EDCs. The factory production of plastics emits toxic pollutants into neighboring water, air and soil, while individuals everywhere are exposed to chemicals when using these products in their homes and workplaces. And disposal of these products does not make them disappear. Plastics can take hundreds of years to decompose, during which time they break down into microplastics in landfills or oceans. Burning plastics through harmful technologies such as gasification and incineration also releases toxic chemicals into the environment, which then can lead to exposure of humans and wildlife.⁴⁷

To produce plastic goods, fossil fuels must be extracted from the land and transported to factories. At the factories, they are mixed with additional toxic additives to create different shapes, sizes, and colors of plastic particles, before being sent to other factories to become products and packaging. The processes that create plastics from fossil fuels release toxic particles into the air that build up in humans and ecosystems. Once produced, these toxic-laden products enter the homes and workplaces of people around the globe.⁴⁸

When people use products made of plastic materials, they can be exposed to toxic chemicals via ingestion, inhalation, and skin absorption.⁴⁹ Many of these products contain a range of harmful EDCs, including bisphenols (BPAs), phthalates and per- and polyfluoroalkyl substances (PFAS).⁵⁰ BPAs and phthalates are often referred to as “everywhere chemicals” because of their ubiquitous nature. They are used to harden or soften plastic, respectively, and can be found in everything from children’s toys, canned food liners, plastic containers, baby’s teething products, personal care products, and even flooring or pipes.⁵¹

PFAS is an umbrella term for a vast range of chemicals known as “forever chemicals” because they do not degrade over time.⁵² This means that all PFAS already in existence will never disappear. PFAS are especially dangerous because they are persistent and bioaccumulate in people.⁵³ Unfortunately, they are widely used in domestic products, such as food packaging, nonstick cookware, cleaning products, cosmetics, shampoos, stain-resistant items, and water-repellent clothing. Their widespread use has caused PFAS to pollute water, fish, soil and dust.⁵⁴ With an estimated 6 million Americans drinking PFAS-contaminated water and nearly 99% of Americans having PFAS in their blood,⁵⁵ the chemical is already extremely widespread. Researchers have also discovered a wide range of links between PFAS and health concerns in wildlife, from immune-based diseases in turtles and dolphins to hormonal changes in the brains of polar bears.⁵⁶

As plastic degrades over time, miniscule pieces of plastic called microplastics become fragmented from the original item. These microplastics then contaminate oceans, land, and air, becoming easily ingested by people, animals and ecosystems. These microplastics are long lasting and remain in the soil for over 100 years.⁵⁷ Technologies that break down plastic waste through heat are similarly dangerous, releasing toxic chemicals, such as dioxins, mercury and acid gases, which then get absorbed by the surrounding air, water and soil. These toxicants can travel long distances and accumulate in plants, wildlife and humans.⁵⁸ In fact, about two-thirds of all plastic ever produced remains as tiny particles in oceans, soil, air, and human and animal bodies.⁵⁹



Toxic plastic pollutants are extremely durable, mobile, and ubiquitous and it's almost impossible to completely eliminate exposure.⁶⁰ EDCs easily move from plastic production, consumption and disposal sites through communities and into homes. Factories emit air, water and soil pollution, which enters homes through inhalation, drinking water and food. Simultaneously, individuals unknowingly purchase products made with phthalates, PFAS and BPAs, and are exposed through daily activities like cleaning a home, ordering takeout, or putting on makeup.

From 1950 to 2015, it was estimated that global plastic production increased from 2 million metric tons to 380 million metric tons.⁶¹ In the years since, the toxicity of the products has not diminished, and fossil fuel extraction has only increased the health risks associated with plastic production. This report aims to provide a brief, introductory overview of the relationship between the lifecycle of plastic material goods and reproductive justice. It does not intend to cover the complex, comprehensive harms caused by this industry.

Reproductive Health Harms of Plastic

Reproductive harm is possible throughout the lifecycle of plastic products. The process of transforming fossil fuels into plastic releases toxicants into the air that have been linked with developmental problems and low birth weight for the offspring of industry workers or community members in neighborhoods adjacent to plastic manufacturing factories and reproductive cancers in adults.⁶² The products that come from these processes are equally harmful.

BPAs are linked to breast and reproductive cancers, endometriosis, reproductive challenges and early puberty. In young children BPA exposures before and after birth are linked to changes in brain development and behavior.⁶³ Similarly, prenatal exposure to phthalates can lead to asthma, allergies, cognitive and behavioral problems, and can also affect reproductive development of boys and reduce fertility for men.⁶⁴ This is because phthalates lower sperm count, create less mobile sperm, and lead to overall birth defects in the male reproductive system.⁶⁵ Male genital deficiencies have also been linked with phthalate exposure.⁶⁶ Soft plastics, which are largely made of phthalates, are strongly linked with endometriosis, a leading cause of infertility for those with a female reproductive system.⁶⁷ Like other EDCs these toxicants travel through the placenta of a pregnant person and expose the baby in utero to harmful chemicals.

PFAS are particularly damaging, with exposure to even low levels affecting fertility and birth weight.⁶⁸ While the industry claims otherwise, PFAS accumulates in people, with detections in breast milk doubling nearly every four years for women in the United States.⁶⁹ Its longevity in breast milk contaminates nutritional sources for babies and exposes them to health risks during a critical time in their development. The existence of PFAS and other plastic toxicants in breast milk and the placenta violates the reproductive justice requirement for a safe and healthy environment.

How Plastic is Linked to Capitalism and Inequity

In many ways plastic products are the embodiment of capitalism: mass-produced cheaply and viewed as disposable. Their harms — and the harms caused by their manufacturing processes — are well documented,⁷⁰ but industry persists with large-scale production regardless of its effects. While alternative, toxics-free items and processes exist that would limit harm to workers and consumers, they are currently more expensive to produce and thus unappealing to corporations⁷¹ that operate in a growth-driven capitalist model. Workers especially are at risk, facing health harms and possible death



due to exposure to toxic chemicals.⁷² And since the United States does not require death and injury reporting for the contract workers who do the most dangerous jobs in these factories, the risks of working in plastic production are underrepresented in safety data.⁷³ For example, 15 workers who died in one BP plastic production factory explosion in Texas were contract workers, so their deaths were not recorded in the company's safety records.⁷⁴

Workers in the factories producing plastics are repeatedly exploited by being exposed to the toxic chemicals used in plastics and often are left without adequate protections or information about the harms from those chemicals. Workers who process these EDCs, or make the products containing them, are more likely to be exposed by inhalation, skin absorption, or swallowing. Inhalation is the most common method of exposure,⁷⁵ increasing a person's likelihood of developing health issues.

Women working in factories where plastics are created are exposed to toxics that can cause breast cancer and increased risk of reproductive challenges.⁷⁶ Plastic manufacturers often aim to minimize costs by offering employees high-deductible healthcare plans, increasing health-insurance premiums, and including a spousal surcharge, making it inaccessible for many factory workers and/or their families to seek care for their work-related health problems.⁷⁷

This is further complicated by low salaries, with the average non-supervisory worker in the U.S. plastics production system making between \$29,000 and \$40,000 annually.⁷⁸

In addition to the harm done to workers, fenceline communities are exposed to toxicants from the production of material goods. The communities located nearest to industrial factories are generally communities of color and low wealth. Fully 46% of U.S. housing projects are within a mile of industrial factories that emit toxics.⁷⁹ More than 60% of all people living in housing projects in the United States are Black or Hispanic families, and all are low wealth.⁸⁰ These marginalized groups are specifically chosen as ideal neighbors for industrial practices because it's presumed those living there don't have the ability or resources to challenge the industry.⁸¹ The impacts of plastic production on these communities are only exacerbated by food insecurity, unequal access to healthcare, and poor education.⁸²

Working at or living near industrial factories can be particularly dangerous due to the occasional occurrence of so-called factory accidents. Fires, explosions, and chemical releases can increase the risk of exposure to toxics and force a 'shelter-in-place,' in which nearby communities must take shelter inside a room in their home with no or few windows to avoid exposure to pollutants.⁸³ Unfortunately such events are not uncommon, with one plastic refinery in Louisiana reporting more than six incidents per month.⁸⁴ These incidents can also be triggered by extreme weather events⁸⁵ which are becoming more common with the ongoing climate crisis. Fenceline communities are often further exploited as the dangers of nearby factories are withheld from them, inhibiting them from evaluating risks and participating in decisions about harm mitigation.⁸⁶

While fenceline exposure increases risk for marginalized communities, all individuals are exposed to toxicity through plastic production processes and consumer practices. In addition to the acceleration of climate change caused by fossil fuel extraction to produce plastic, plastic products also find their way into homes around the world — and predictably, less privileged groups are those most harmed. Women are particularly at risk, with cosmetics and beauty products marketing specifically targeting them. A 2004 study found that women are exposed to more than 100 chemicals each day (although not all



plastic specific) through beauty and hygiene products and packaging.⁸⁷ Black, Indigenous and women of color are targeted even more, as many beauty and personal-care products with notably high levels of EDCs,⁸⁸ such as hair relaxants and skin lighteners, are specifically marketed to them. While alternatives to toxic material goods exist, such as natural beauty products, they also tend to be more expensive. Thus low-income individuals are least likely to be able to afford these alternatives, exposing them to greater harm than their economically privileged peers.

The exploitation of factory workers, fenceline communities and consumers helps sustain the plastic industry. By disregarding the safety of workers and communities, factories can continue production of toxic products to maximize profit. Additionally, with more toxic products sold at cheaper costs, low-income individuals have little choice but to continue purchasing them, maintaining their exposure to harm and the demand for toxic material goods as part of market capitalism.

Case Study: Endometriosis



As the prevalence of endometriosis grows, researchers are considering potential causes. While several studies over the past two decades have shown links between phthalates and PFAS and endometriosis, results were most recently replicated in a 2018 study that showed phthalates to be a likely cause of endometriosis.

Affecting up to 10% of reproductive-aged female-bodied people,⁸⁹ endometriosis is a common cause of infertility⁹⁰ and can lead to severe and chronic

pain,⁹¹ irregular bleeding, disruption of one's career,⁹² and interruption of social functioning.⁹³

Beauty products, cosmetics and personal care products are prominent sources of EDCs that are directly marketed to young women. Specifically, phthalates have been shown to contribute to growing rates of endometriosis in young women. Phthalates are used in the soft plastics that often hold cosmetics and personal-care products,⁹⁴ thus also contaminating the product that is then directly applied to the body.

Endometriosis has been shown to directly impede women's professional lives, making it less likely for them to work in their preferred profession, more likely to make health-related decisions about work, and more likely to experience loss of productivity or require more sick leave as a result of symptoms.⁹⁵ So the effect of toxicants in plastic and other products goes beyond physical health, directly impeding the economic freedom and mobility of the women most affected.



Examples of Solutions

Ban and Regulate Chemicals

Banning toxic chemicals like BPAs, PFAS and phthalates has been challenging on the federal level, but efforts continue. In 2008 Congress banned eight phthalates commonly found in toys and children's products through the Consumer Product Safety Improvement Act. In 2012 the FDA banned one bisphenol (BPA) in children's items, including baby bottles, sippy cups, and infant formula cans.⁹⁶ However, BPAs, phthalates and PFAS chemicals deemed harmful tend to be replaced with alternatives that have similar properties but less research proving their danger. For example, the U.S. Food and Drug Administration, or FDA, recently reviewed PFOS and PFOA, which are chemicals similar to PFAS. While the FDA decided PFOA and PFOS could not be used in food packaging, companies have substituted other PFAS chemicals for the same uses.⁹⁷ Instead of recycling the same damaging compounds, manufacturers must utilize alternatives with different chemicals that are not derived from, or composed of, harmful toxics.

The Toxics Substances Control Act, or TSCA, requires that every new chemical is assessed for safety and only approved once the manufacturer can show they are unlikely to present risk. But the system is far from perfect, and the EPA continues to approve new PFAS that have not yet been proven unharmed. Of the 400 recently approved PFAS, less than half were tested for toxicity to humans and the environment.⁹⁸ The law also requires that the EPA review all existing chemicals, so many chemicals currently used in plastics processing are undergoing risk assessments that may restrict their use in the future. Overall banning and stricter regulation of these chemicals is an important next step.

Increase Transparency and Engagement of Risk

EPA has attempted to increase communication between factories and fence-line residents with Local Emergency Planning Committees, or LEPCs. These committees develop an emergency response plan, review the plan at least once annually, and provide information to residents about chemicals in the community. There is one LEPC for each of the more than 3,000 designated local emergency planning districts.⁹⁹ However, lack of funding, data, and support staff has limited the ability of LEPCs to adequately inform communities about potential hazards and instead created an additional bureaucratic obstacle for communication.¹⁰⁰ Until current factories are shuttered and future operations prohibited near residential towns, proper education about risks to communities are imperative.

The same is true for consumers, who may not be aware of the many toxic plastic-packaged products on the market. For example, there is currently no federal law requiring manufacturers of cleaning products to include ingredients.¹⁰¹ However, state bills that require transparency, such as California's Cleaning Product Right to Know Act, increases transparency for the whole country and motivates advocacy for federal change. Similarly, at the time of this publication, upgrades to the Personal Care Products Safety Act of 2019 are needed to increase regulations of cosmetics, requiring disclosure of toxic fragrance ingredients and increasing safety standards for cosmetics.¹⁰² Transparency, on both federal and state levels, will increase public awareness and could inevitably limit the power of industry corporations and product manufacturers.

Increase Access to Safer Products

There are a lot of ways to avoid toxic plastic products, like using glass, aluminum, steel or porcelain containers instead. When it comes to plastic containers that hold food, particularly hot food, it's important to avoid plastic products with recycling codes 3 or 7,¹⁰³ which are often made of BPAs and phthalates that can contaminate the food. People should also look to buy fragrance-free personal-care



products and eat more fresh food instead of packaged food to prevent the transmission of toxic chemicals into bodies.¹⁰⁴ Unfortunately, these options are not equally available across socioeconomic and geographic sectors. Accessibility could improve with social policy reform that more evenly distributes wealth or corporate incentivization to lower the cost and distribution of safer items. Both social and corporate policies are needed to reduce disparities in access to safer products.

Build Reusable Systems

The prevention of waste throughout a product's lifecycle must be a policy focus. Creating less plastic waste in the first place decreases the negative impacts of fossil fuel extraction, production and distribution. One way to accomplish this is through reuse. Third-party sanitized reuse systems should be incentivized for coffee cups, to-go containers, and other food packaging. A shift to cultural and business models that close materials loops should also be encouraged. Reusables can save businesses money and help restaurants, venues, and food-service operations cut costs. The Break Free From Plastic movement is a global initiative that advocates for reductions in single-use plastic, as well as prioritizes solutions for managing pollution from plastics.¹⁰⁵ Zero-waste systems built around reuse can limit plastic production and create local jobs and supply chains to support resilient, equitable communities.



Industrial Agriculture

The Issue

Industrial agriculture has become a primary source of endocrine-disrupting chemicals. Toxic runoff, containing pesticide residue and livestock waste and components, can contaminate food sources and pollute the air, water and soil. This runoff seeps into streams, lakes and groundwater, contaminating drinking water and creating toxic algal blooms that are deadly for people, pets and wildlife.^{106, 107} Toxic runoff is consumed by fish and farmed animals that pass these toxicants on to the humans who eat them. Pesticides and animal manure are sprayed onto crops, polluting the air of neighboring communities, and are carried home on the skin and clothing of agricultural workers, outdoor laborers, and people living nearby.¹⁰⁸ Improper storage and disposal processes of animal waste are common in the industry and expose nearby communities to toxicants and other pollutants.

Animal Agriculture

Animal feces and urine are stored in large lagoons and then pumped onto nearby fields for fertilizer. This manure is often sprayed in excess, leading to high levels of runoff and contamination of the water and soil nearby.¹⁰⁹ The lagoons also frequently leak, rupture, or are overfilled. The mismanagement of these lagoons further enhances the toxic exposure from factory farms to nearby communities, which are disproportionately neighborhoods of Black, Indigenous and people of color.

The improper disposal of animal bodies is also a source of toxic pollution that affects neighboring communities. Farmed animals are incinerated, gassed, shot, or buried in unlined ground burial sites, often without public transparency or proper regulation, causing significant environmental damage. These practices pollute the air and water with nitrates, ammonia, pharmaceuticals fed to animals, and other disease-causing composites, which are then consumed or inhaled by people and wildlife.¹¹⁰

The vast majority of animal agriculture (more than 90% globally and 99% in the United States) is produced in large-scale industrial facilities known as concentrated animal feeding operations (CAFOs) or factory farms,^{111, 112} where the animals are given antibiotics to prevent illness or infection from overcrowded, unhygienic conditions.

While giving antibiotics to treat sick animals is productive, the majority of antibiotics used in agriculture are fed to animals, along with steroid anabolic growth promoters, to boost their growth and alter their nutrient composition. Antibiotics are given to healthy animals at low doses to promote increased production, while steroid growth promoters interact with an animal's hormones specifically to increase the growth of the animal.¹¹³ About 65% of medically important antibiotics in the United States are sold to farms and used indiscriminately in feed and water.¹¹⁴ As a result of the widespread use of these pharmaceuticals in animals, bacteria is growing resistant to commonly used antibiotics. When these bacteria then show up in humans via common illnesses such as pneumonia or tuberculosis, antibiotics are less effective in treating them. And antibiotics used to treat simple ailments like mild lacerations can be less effective. The World Health Organization has called antibiotic resistance one of today's biggest threats to global health and food security.¹¹⁵

Pesticides

The system of industrial animal agriculture and associated monocrops used as feed inherently requires toxic pesticides, which contaminate nearby communities. Pesticides are deliberately created to kill fungi such as plants and animals that impede agricultural production,¹¹⁶ and therefore harm any wild animal,



insect or plant that could interfere with the growth of the agricultural operations' product or profits. For example, pesticides are applied to fields to destroy native plants and local species, sprayed inside facilities to kill rodents, and applied to the animals themselves to control parasites. These processes do not exist in a vacuum and have devastating effects on non-targeted wildlife, from pollinators to predators, as well as humans — particularly those who work in agriculture or live near agriculture operations and are regularly exposed to these chemicals.

There are more than 16,000 registered pesticides and new chemicals are being created all the time in the United States. Not all have been comprehensively tested for their full toxicity before going to market.¹¹⁷ Atrazine, for example, is a widely used herbicide and EDC and has been found in 94% of U.S. drinking-water samples.¹¹⁸ Its widespread presence in waterways and surface water poses severe reproductive health threats to wildlife, such as disrupting the sexual growth of amphibians.¹¹⁹ Atrazine has also been shown to have more severe health effects when it interacts with other pesticides in the environment,¹²⁰ leading to a complicated and ever-evolving mix of toxic chemicals.

Even pesticides that have been tested and banned continue to accumulate over time. The insecticide DDT, for example, continues to be found in animals and humans over 30 years after it was banned.¹²¹ While this report specifically focuses on land agriculture, it's important to note that toxicants, including mercury and other persistent organic pollutants, also build up in aquatic animals, contaminating wild fish and the people who eat them. Approximately 60% of the rivers and streams in America's agricultural regions have levels of pesticides deemed harmful for aquatic life. In urban areas, the contamination rate is closer to 90%.¹²²

This report aims to provide a brief, introductory overview of the relationship between industrial agricultural operations and reproductive justice. It does not intend to cover the complex, comprehensive harms caused by the agriculture industry.

The Reproductive Health Harms of Industrial Agriculture

Animal Agriculture

Industrial animal agriculture's overuse of antibiotics is a threat to global and reproductive human health. In fact, antibiotic resistance impedes the treatment of about 2.8 million people in the United States every year and kills approximately 35,000 people.¹²³ Antibiotic resistance is especially concerning for pregnant people and increases risk of medical complications for parent and child. For example, urinary tract infections (UTI), which are regularly resolved with a simple round of antibiotics, become increasingly dangerous with antibiotic resistance. Without effective antibiotic intervention, a urinary tract infection can lead to preeclampsia, premature birth, and birth defects. Though historically simple to treat, the most common antibiotics for combatting UTIs during pregnancy have become less effective in recent years,¹²⁴ increasing the danger of this formerly easy-to-treat ailment.

Infections that are particularly dangerous for reproductive health and frequently treated with antibiotics, such as gonorrhea, are becoming especially hard to treat as antibiotic resistance has grown.¹²⁵

Beyond just sexual health, antibiotic resistance also harms vulnerable children and infants who rely on basic medicines. Currently, children and infants are experiencing growing antibiotic resistance,¹²⁶



making it harder to utilize previously effective medicines to treat their illnesses. This shift further challenges parents' ability to keep their children safe, as dictated by the principles of reproductive justice.

Pesticides

Pesticides are often composed of endocrine disrupting chemicals that directly affect reproductive health, exposing those closest to industrial agricultural operations to severe harm. The degree of risk is often dependent upon both duration of exposure and toxicity of the chemical, with pre- and postnatal periods for pregnant people shown to be particularly sensitive to pesticide exposure.¹²⁷

Atrazine has been linked to reduced male fertility, increased risk of miscarriage, birth defects and low birth weight in babies, and breast cancer in mothers.¹²⁸

Arsenic, which previously was a pesticide and remains in soil and water, increases the likelihood of miscarriage, stillbirth and preterm birth. It also interrupts reproductive function in females by disrupting puberty, menstrual cycles, and ovulation. Puberty is also affected by pesticides, which cause abnormal mammary gland development in young girls, potentially leading to breast cancer and difficulty nursing later in life.¹²⁹

Pesticide exposure causes multigenerational damage to individual and communal health. Like other endocrine disruptors, these agricultural chemicals cross the placenta and affect fetal development. Complex mixtures of agricultural pollutants have been found in umbilical cord blood, and in utero exposure has been linked with childhood cancers, ADHD, delayed cognitive skills and poorer hand-eye coordination compared to those living farther from pesticide spraying.¹³⁰

The ability to breastfeed or chestfeed has been particularly harmed by agricultural chemicals, with pesticides like atrazine reducing the length of time a pregnant person can lactate after giving birth.

As a result, a person exposed to high levels of pesticides may have to stop nursing their child earlier than they'd like, impeding their ability to provide the care they wish for their babies and contributing to infant food insecurity as breast milk can be an affordable and nutritious food source for low-income families. Nursing helps to prevent malnutrition and contributes to food security for the whole family in times of crisis.

Agricultural pollutants also contaminate breast milk. Indigenous communities most exposed to these toxicants have found their breast milk contaminated by pesticides, forcing them to either pass these contaminants onto their babies while nursing or to stop altogether.¹³¹ Breast milk is economically beneficial and can have profound health benefits on the development of the baby. Breast milk evolves with the baby, meets new nutritional requirements as the child grows, and leads to decreased illness and a healthier immune system.¹³² While there are many valid reasons parents may not nurse their children, preventable environmental disruptions should not stop those who want to and are able to.



How Industrial Agriculture Is Linked to Capitalism and Inequity

The harm of agricultural toxicants is multifaceted. Lack of testing, limited regulation of chemicals, and scarce protection for those exposed to agricultural chemicals all compound the dangerous effect of industrial agriculture on reproductive justice. Testing, regulations and safety require a commitment of time and money and have largely been pushed aside by policymakers and industry corporations to prioritize financial gain. As a result, human and animal health is sacrificed in the pursuit of new and more profitable agricultural chemicals.

It's important to note that more than half of U.S. industrial crop production is not grown for human consumption but rather for animal feed to increase the profit of animal agriculture industries.¹³³ In this system, industrially grown crops are used to speed farmed animals to slaughter weight and maximize the enormous profits of meat corporations. These examples highlight the implications of market capitalism throughout the industrial agriculture sector.

Lack of Testing

Testing for the safety of many pesticides has been inadequate and fails to account for the full range of harms these chemicals cause¹³⁴ — and the active ingredients of a product are often the only ones tested. Adjuvants, which are chemicals added to the active ingredients of agricultural toxicants to increase their effectiveness, are rarely tested in experiments that decide exposure regulations. Yet these adjuvants can amplify the toxicity of their active principal ingredient up to 1,000 times.¹³⁵ Claims that adjuvants don't need to be tested serve the profit-maximizing endeavors of industry¹³⁶ but drastically harm those exposed to the toxicants.

Very little research has been done on the reproductive effects of adjuvants, further enhancing the harm of industrial agriculture on reproductive justice.

Testing could hold the industry to higher standards and increase protections for consumers. However, testing would also chip away at massive profit margins and make it more difficult for industries to ignore the harms these poisons cause to people and ecosystems.

Lack of Regulation

Limited regulations further compound the harm caused by inadequate testing and offer minimal protection against toxicity. Industrial agricultural companies use toxic chemicals and pesticides to increase their profit margins, creating more output for less cost. Compared to the four other largest agricultural producers across the globe, the United States is notably behind in regulating toxicants. Hundreds of millions of pounds of pesticides banned in the EU, China and Brazil — three of the largest global producers and users of pesticides — are still utilized in the United States every year.¹³⁷

Despite unilateral bans on harmful pesticides being the most productive way to diminish toxic exposure and reduce health harm, the United States largely relies on voluntary cancellation of pesticide use by industry actors instead of regulating their use directly.¹³⁸ By leaving it up to the industry, corporations have the freedom to prioritize their own profit over safety.



Lack of Protection for People

Antibiotic Resistance

Historically, industrial agricultural has been deeply enmeshed with capitalist modes of production. Antibiotics have become a low-cost way to prepare animals for food, despite contributing to a public health crisis.¹³⁹ The use of antibiotics has been credited as the pivotal technology for industrializing animal agriculture, as it creates greater amounts of food and requires far fewer laborers.¹⁴⁰ To achieve this efficiency, antibiotics are used as preventative measures to compensate for crowded, unsanitary conditions that spread disease among animals.

This prioritization of growth and product output over hygiene and animal welfare has led to an unnecessarily widespread use of antibiotics and steroids in farmed animals.¹⁴¹ The process disproportionately affects low-wealth groups because antibiotic resistance leads to increased medical costs, longer hospital stays, and higher chances of death.¹⁴² For those in the United States without access to comprehensive healthcare, it's less attainable to afford more extensive treatments once standard antibiotics stop working.

Pesticide Exposure

Additionally, the pesticide manufacturing industries in the United States have profited off the sales of toxic pesticides for decades. In 2018 pesticide exporters in the U.S. made over \$4 billion in pesticide production and export.¹⁴³ Some of these exported chemicals were already banned in the United States but continued to be created for less industrialized countries that had yet to implement environmental protections against them. Such exports make a lot of money for American industries but harm other countries and the planet because they contaminate oceans and air, exposing children and adults around the globe to toxicants.

The World Bank estimates that more than 355,000 people die every year from pesticide poisoning.¹⁴⁴

Those most marginalized are also those most at risk from the harmful effects of agricultural pesticide use. The widespread act of covering crops with pesticides is worsened by the use of airplanes spraying land and affecting the community at large.¹⁴⁵ This is especially worse for Black, Latino and low-wealth communities, whose populations are more likely to live near or work in industrial agriculture operations.¹⁴⁶

Increased toxicity in air, soil and water makes caretaking duties, such as sanitizing water and caring for those with health issues, more challenging. The burden usually falls on women to complete these duties,¹⁴⁷ and exposure to EDCs from pesticides is particularly risky for pregnant people or nursing parents because of the sensitivities in their babies' developing systems.

Harms to Indigenous Communities and Immigrants

Indigenous communities have noted their own high risk for EDC exposure because of their close relationship with nature and proximity to pesticide-using industrial agriculture operations, but when they raise concerns they are often ignored.¹⁴⁸ Community midwives and mothers noted poor birth outcomes for many years before regulating agencies acknowledged the harm. Even when governmental groups have eventually realized the extent of harm and passed regulations to mitigate it, the chemicals had often already become pervasive.¹⁴⁹



Indigenous communities often live in areas exploited by government and corporations for profit, particularly very rural areas in the continental United States and in Alaska. Due to the makeup of some pesticides, the chemicals tend to travel northward and bioaccumulate in high quantities in the Arctic, severely damaging Arctic animals, marine mammals and Indigenous people who live there.¹⁵⁰

Industrial agriculture workers are most often immigrants and people of color who are exploited through low wages, poor working conditions, and limited legal protection. Despite doing grueling manual labor and experiencing heightened toxicant exposure, a 2018 survey found, only 32% of farmworkers reported making more than \$30,000 per year.¹⁵¹

This exploitation of farmworkers is worsened by the fact that most do not have access to healthcare or workers' compensation and are unlikely to be able to obtain care or protective gear for the health risks they're exposed to.¹⁵²

As a result of agricultural production, these workers unintentionally bring toxicants home to their partners and children, as their skin and clothes become contaminated with chemicals.¹⁵³ This exposes families to reproductive harm and creates an unsafe environment for children.

Harms to Low-Wealth Communities

While pesticides pollute the air, water and soil of nearby residences, they also contaminate food. Those without high risk of neighborhood exposure may still unknowingly consume toxic pesticides if they don't have the socioeconomic privilege to access organic food. Switching from conventional to organic food lowers levels of pesticides and chemicals in diets,⁸ but this is not always possible in low-wealth communities because of the higher cost and limited availability of fresh, healthy and organic foods.¹⁵⁴ A lack of produce and healthier food in those communities affects the health of families¹⁵⁵ and worsens pregnancy outcomes; pregnant people and parents are unable to provide their families with the safety identified as a tenet of reproductive justice.¹⁵⁶

Harms to Nursing People

The effects of industrial agriculture on lactation have further exacerbated food insecurity for low-income families that may already be struggling to afford food.¹⁵⁷ The environmental harms to breast milk worsen already existing racial disparities. Policies and programs that promote education, postnatal healthcare, and workplace and community support for nursing increase their rates, but Black, Indigenous and other communities of color often lack access to these resources, resulting in fewer Black and brown families breastfeeding or chestfeeding than white families.

Hospitals serving predominantly Black families are less likely to provide lactation support and more likely to offer formula.¹⁵⁸ For families whose breast milk may be more difficult to produce because of toxicants from nearby industrial agriculture operations, limited lactation support is an additional barrier to nursing.



Case Study: Agricultural Toxicants and Indigenous Communities



Indigenous communities have been particularly affected by agricultural toxicants as increasing amounts of their land are colonized by agricultural industries, contaminated with pollutants, and burdened with unsafe animal agricultural practices. The toxic runoff often flows right into their soil, water and food, exposing Indigenous people to toxicants at alarming rates.¹⁵⁹

Indigenous women, in particular, are exposed to toxicants at higher rates due to their involvement in farming, food

preparation for their families, and the gathering of traditional foods and plants that have been contaminated by pesticides.¹⁶⁰

One study followed 600 Indigenous mothers and their children in Central California for 12 years to determine the effects of pesticide exposure on maternal health and future generations. The study found that two-year-old children, whose mothers had the highest levels of exposure in their blood, showed the least mental development and had higher rates of developmental disorders. They also showed higher rates of childhood cancers like leukemia.

Indigenous women in California also expressed a loss of cultural traditions at the hands of agrochemicals, as pesticides made plants for traditional medicines less plentiful and harder to find. These Indigenous women noted that agricultural runoff harmed the opportunity to pass on their histories, stories and ceremonies to future generations, causing an unnecessary loss of tribal customs and leaving them unable to raise their children in a way authentic to their culture.¹⁶¹

Examples of Solutions

Shift Testing Dynamics and Increase Regulation of Agriculture Products

The U.S. Environmental Protection Agency has registered more than 16,000 pesticides, and over 1 billion pounds are sold annually in the United States.¹⁶² But the EPA largely relies on toxicity studies conducted by the pesticide industry itself. This leads to a conflict of interest in which those most likely to profit from pesticide approval oversee the studies that determine its safety. While research should continue to be funded by pesticide manufacturers, it would be more productive for the EPA to rely on neutral researchers to determine the degree to which a pesticide causes harm.¹⁶³

The Center for Biological Diversity's Pesticides Reduction campaign has filed a series of lawsuits against the EPA to investigate pesticides to protect public health.¹⁶⁴ Regulation of pesticides has proven successful in other countries. Countries that banned atrazine found there are other viable ways to



produce corn and grow food without using the toxicant and still keep losses at less than 1%. Germany and Italy, which both banned atrazine in 1991, have seen their corn harvests increase.¹⁶⁵ To ensure safety, testing must be done on adjuvants as well as active principals, as studies show they drastically change the toxicity of a chemical.¹⁶⁶

Increased regulation is also necessary for antibiotics used in animal agriculture. The WHO has called on industrial agricultural operations to increase regulation of antibiotic use and require veterinary supervision of medicinal practices. It has also noted the importance of ceasing use of antibiotics on healthy animals for preventative measures or growth. Since preventative medications are often used to prevent disease from spreading among animals in unsanitary agricultural settings, policy requiring improved safety and hygiene for animals would diminish the need for widespread antibiotic usage.¹⁶⁷ The WHO has called on policymakers and the healthcare industry to limit the causes of antibiotic overuse and address the far-reaching consequences of antibiotic resistance, including increasing access to vaccines, sex education and safe sex practices.¹⁶⁸

Increase Access to Safe, Healthy Foods

Access to safe, chemical-free food is important to mitigate consumption of and exposure to widespread toxic pesticides. Organic foods or antibiotic-free labels all denote food with less toxic chemicals or less harmful antibiotics.¹⁶⁹ Unsurprisingly, 72% of Americans say price is a deciding factor in whether they purchase organic items.¹⁷⁰ However, federal subsidies and other agricultural policies favor industrial production, keeping the cost of unhealthy, pesticide-laden foods artificially low and making organic foods more expensive and less accessible for low-income communities. Policies are needed to shift subsidies from animal agriculture and commodity crops to organic agriculture, increase incentives and support for farmers to transition to organic production, and increase access to healthy, pesticide-free food by placing more grocery stores and community gardens in low-wealth areas.

In addition to policies making organic foods more affordable and widely available, better wages and income distribution is imperative to help low-income communities afford safe and healthy food. Specifically, higher wages for agricultural workers would allow those responsible for growing the food — and those most affected by toxic agricultural chemicals — to access safe alternatives.

Enforce Safety Guidelines in Agricultural Operations

While safer products and techniques exist to promote agricultural growth, pesticide use has increased in the past decade, raising the risk to farmworkers and nearby communities.¹⁷¹ Several farmworker advocacy agencies, including Farmworker Justice,¹⁷² Farm Labor Organizing Committee,¹⁷³ and United Farm Workers,¹⁷⁴ have called for farmworker inclusion in fair labor laws, supporting farmers in reducing reliance on pesticides, increased access to safe working conditions, and diminished corruption by farm owners. Similarly, passing legislation like the HEAL for Immigrant Families Act would make it easier for immigrant families to access public healthcare or purchase health insurance through the Affordable Care Act,¹⁷⁵ providing far greater access to health and safety for the many agricultural workers who are immigrants. It's also imperative to protect workers from harmful chemicals and remove dangerous pesticides from farming systems through policy such as The Protect America's Children from Toxic Pesticides Act.¹⁷⁶

The Expert Group Meeting of the UN Permanent Forum on Indigenous Issues has called for several policy changes that would mitigate agricultural toxicity in Indigenous communities. These include the elimination of agrochemicals that contain EDCs, cleanup of regions contaminated by pesticide and agrochemicals, respect and understanding of Indigenous people's environmental practices, accessible healthcare for women and children most hurt by toxicants, and banning the United States from exporting harmful pesticides to other countries.¹⁷⁷



Prohibiting new CAFOs from being built and current CAFOs from expanding would drastically diminish toxic emissions from pesticides and animal waste. Until stricter regulations on CAFOs are passed through policy such as the Safe Line Speeds in COVID-19 Act, the risk of contamination among animals and inadequate safety for workers will remain.¹⁷⁸



Climate Change

The Issue

Human activities have increased the amount of greenhouse gases in the atmosphere, warming the Earth's climate and resulting in changing weather patterns. These activities — including the overconsumption of raw and material goods, deforestation, carbon-intensive agriculture, and the burning of fossil fuels — are changing how the planet and its ecosystems function.¹⁷⁹ Climate change is creating more intense and frequent temperature extremes, wildfires, floods and other serious weather events that displace and kill people, increase disease risks, and increase pollutants in the air, water, food and soil.¹⁸⁰ One-third of all animal and plant species on the planet could face extinction by 2070 due to climate change.¹⁸¹

With the current rate of climate change, heat waves are predicted to get worse and last longer, posing threats to human health and the environment.¹⁸² Climate change also worsens air quality, causing ground-level ozone to form.¹⁸³ While ozone in the atmosphere keeps the planet healthy, ground-level ozone can be toxic to humans when inhaled. In addition to air pollution, climate change has increased droughts, flooding, and extreme heat, making certain neighborhoods and regions unlivable. These extreme weather events also threaten food security, reducing the nutritiousness, safety, and production of crops and exposing food that people later consume to harmful toxicants.¹⁸⁴ These public health harms will continue to increase as climate instability worsens.

This report aims to provide a brief, introductory overview of the relationship between climate change and reproductive justice. It does not intend to cover the complex, comprehensive harms caused by climate change to reproductive justice.

The Reproductive Health Harms of Climate Change

Climate change presents new health risks to pregnant people and babies in utero and exacerbates health risks that are already present, creating harmful outcomes.¹⁸⁵ The American College of Obstetricians and Gynecologists has recognized climate change as an urgent women's health issue.¹⁸⁶

Extreme heat is among the most harmful climate change outcomes for people, causing more fatalities than all other extreme weather events combined.¹⁸⁷ Extreme heat exposure is particularly harmful for pregnant people and newborn babies and is linked to preterm labor, stillborn births, low birth weight, infant mortality and developmental delays.¹⁸⁸ The impact of heat is notable — several studies found heat exposure increases the risk of preterm birth from 8.6% to 21%. This increase was even higher for pregnant people of color.¹⁸⁹

Preterm labor and low birth weight are dangerous for infants and lead to health problems in adulthood, including diabetes, heart disease, asthma and high blood pressure.¹⁹⁰ Newborns are more vulnerable to heat exposure because they have less ability to regulate their body temperature, making high temperatures more dangerous.¹⁹¹ Heat and humidity have also expanded the geographical range of vector-borne diseases such as Zika and Lyme, which are particularly dangerous for pregnant people and their babies.^{192, 193}

Climate change has also increased the duration and intensity of wildfire season, raising the amount of air pollutants.¹⁹⁴ Wildfire smoke affects both pregnant people and fetuses, increasing chances of



preterm birth, low birth weight,¹⁹⁵ and psychosocial stress that may affect fetal development.¹⁹⁶ Pregnant people are particularly at risk from compromised air quality because of the physiological changes they experience during pregnancy, including higher respiratory rates and plasma volumes.¹⁹⁷ Wildfire smoke exposure has also been shown to potentially decrease lung function and worsen cases of asthma in children.¹⁹⁸ This impedes parents' ability to raise children in safe environments — a core tenet of reproductive justice.

Respiratory issues are further exacerbated by the increase of ground-level ozone due to increasing temperatures. Ozone is an air pollutant that can cause respiratory illnesses during pregnancy that lead to low birth weight or preterm labor.¹⁹⁹ Extreme weather events, such as hurricanes and floods, have also been linked with poor birth outcomes²⁰⁰ as well as poor nutrition and diarrhea. This is because floods, hurricanes, and wildfire can increase levels of toxics and pollutants in water and food, which can make their way into human bodies through eating and drinking.²⁰¹

The ongoing increase in carbon dioxide concentrations, in addition to driving climate change, is reducing the nutrient density of food.²⁰² Further, climate change is increasing the likelihood of toxic contaminants and pathogens in food.²⁰³ Rising ocean surface temperatures harm food sources as well, because warmer water temperatures can increase an animal's metabolic rate and their mercury absorption.²⁰⁴ This can cause increased mercury in the food chain. When mercury is consumed by pregnant people, it leads to a higher risk of fetal developmental delays.²⁰⁵ The trickle-down effects of climate change on food security are complex and particularly dangerous for pregnant people because they have specific nutritional needs.²⁰⁶

The harms of climate change-fueled severe weather events are long lasting and extend beyond the immediate incident. For example, pregnant women and birth outcomes continued to be affected by Hurricane Katrina five to seven years after the storm.²⁰⁷ These long-term effects often include people's ability to access obstetric care and nursing support, as seen in the aftermath of Hurricane Maria in Puerto Rico.²⁰⁸

Weather-related events have also been linked with worsened mental health outcomes pre- and postnatally, with severe maternal stress increasing the risk of pregnancy complications, such as preterm labor.²⁰⁹ Severe weather events also lead to increased rates of sexual violence,²¹⁰ the implications of which are particularly hard to manage if one loses access to mental and reproductive healthcare.

How Climate Change Is Linked to Capitalism and Inequity

Climate change is clearly and powerfully driven by capitalist systems and behaviors. Fossil fuel development and use, carbon-intensive agriculture, and other industrial processes responsible for the majority of greenhouse gas emissions are driven by profit growth rather than public interest or need. Industry-driven government policies — along with excessive overconsumption of resources and material goods — maintains the systems of oil and gas extraction, factory production, and wastefulness that fuel climate change.

Not only does capitalism perpetuate climate change, but the profit-driven market has also created disparities in who has the necessary resources to care for the health problems it triggers: Some people are harmed by climate change far more than others.²¹¹ The amount of harm is based on a range of factors, including geographical location, economic resources, race, and gender; and those most affected are typically the lowest contributors to greenhouse gas emissions.



Heat Exposure

Low-income communities and Black, Indigenous and people of color are more likely to experience extreme heat and less likely to have resources like air conditioning to keep them cool.²¹² Black and Indigenous people in the United States are 50% less likely to have air conditioning and spend a greater percentage of their income on it when they do have it.²¹³ Black, Hispanic and Indigenous households report significantly more energy insecurity than white households. Black homes experience 43% higher energy burdens than white homes, Hispanic households experience 20% higher burdens, and Indigenous households report about 45% greater energy burdens than white homes.²¹⁴ These inequalities make it harder to combat heat exposure.

Low-wealth communities also experience greater exposure to wildfire smoke because they have less access to technology that would reduce exposure,²¹⁵ such as air purifiers.²¹⁶ Comprehensive healthcare that could mitigate the impacts of climate change on reproductive health are also less accessible to many vulnerable communities.²¹⁷ High heat exposure can cause adverse birth outcomes.

Pregnant Black, Indigenous²¹⁸ and Asian people are more likely to have a preterm birth related to climate change triggers like heat exposure than white mothers,²¹⁹ and Black pregnant people also have greater rates of heat-related hospitalization than other pregnant people.

This is likely due to multiple systems of structural racism, including disparities in heat exposure²²⁰ and unequal access to healthcare²²¹ and resources. These outcomes are worse for pregnant people who work outdoors, with pregnant agricultural workers experiencing exceptionally high exposure to climate risks while having less power to take breaks or request accommodation.²²²

Economic and Health Effects

The U.S. capitalist economic framework has left women, and especially women of color, poorer than men. Climate change highlights this disparity because women tend to have fewer resources to rely on during times of climate change-related crisis, such as droughts, floods, heat waves and storms.²²³ Women are more likely to be caregivers, which affords them less flexibility to freely respond to and protect themselves from weather crises. The caregiver role also places more economic²²⁴ and social responsibility on women to care for children or ill family members during times of crisis. During Hurricane Katrina, for example, women were less likely than men to be able to evacuate during the storm or to recover financially and mentally afterwards.²²⁵ In the aftermath of Katrina, there was an increase in domestic violence, mental health problems, and housing crises, which left young, single, Black mothers the most vulnerable.

Black women are already 3 to 4 times more likely to die from pregnancy complications than white women because of racial discrimination and stress-related comorbidities,²²⁶ so risk factors caused by climate change only further threaten the mortality of pregnant Black people. Black people have been found to have higher rates of post-traumatic stress following a natural disaster than white people.²²⁷ Hurricane Maria in Puerto Rico left women struggling to find reproductive healthcare, including emergency obstetric services.²²⁸

Extreme weather events can also limit access to abortions and birth control, making reproductive justice and autonomy over whether to become pregnant difficult. Hurricane Katrina caused disruption in family planning services for young women in New Orleans even five to six months after the storm. At that time 40% of young women reported they weren't using birth control and 4% experienced an



unintended pregnancy because they couldn't access care.²²⁹ A study on the effects of Hurricane Ike in Texas discovered that Black women reported greater difficulty than their white or Hispanic counterparts in accessing contraception following the natural disaster.²³⁰

Access to reproductive healthcare has been shown to increase women's social and economic opportunities²³¹ and limit population growth, both of which contribute to increased economic freedom for women, resiliency in times of crisis, long-term greenhouse gas emissions-reductions, and overall better outcomes for people and the planet.

Case Study: Extreme Heat and Redlining



Black women are harmed by climate change at much higher rates than the general population, but their unique experience is often overlooked. Extreme heat elevates rates of preterm labor and low birth weight²³² for everyone, but these harmful outcomes are worse for Black mothers because of institutional disparities. A 2017 study found that for every 10-degree temperature increase in California, preterm deliveries increased by 8.6%. However, for Black women, the increase was nearly 15%.²³³

These negative outcomes are compounded by unequal access to resources and greater exposure to the harms of climate change. The harms caused by increased heat, wildfires, and extreme weather events are most likely to affect people of color and low-wealth communities.²³⁴ This disparity exists for several reasons, including access to cooling devices and even the temperature of the communities themselves, with temperatures in Black, Hispanic and Indigenous neighborhoods notably higher than in white neighborhoods because of redlining and urban heat island effects. Redlining was a federal government initiative in the 1930s in which predominantly Black neighborhoods were outlined in red marker as less desirable for mortgage lenders to provide white families loans to move to.²³⁵ Those neighborhoods became less cared for by civil service projects, including the development of parks and the planting of trees that cool streets during hot and sunny days.²³⁶

While redlining originally targeted Black communities, it now also affects Latino and Indigenous neighborhoods.²³⁷ Today poorer, urban neighborhoods where marginalized groups are more likely to live have fewer trees, less shade, and more buildings, which increases temperatures. Land surface temperatures in communities exposed to the historic racial discrimination of redlining are on average 4.7 degrees Fahrenheit warmer than non-redlined communities, with some as high as 12.6 degrees Fahrenheit warmer.²³⁸ Pregnant people living in these "microclimates" experience far greater impacts from climate change, but the effect of heat on pregnancy and human health is rarely incorporated into



city-planning initiatives. Excessive heat has been shown to influence a range of social inequities, including access to food and learning outcomes in classrooms.²³⁹

The trickle-down effect of excessive heat fuels generational oppression, giving children growing up in these communities less opportunity to thrive. This directly affects the rate at which they continue to be touched by climate change. College-educated mothers, for example, experience fewer adverse pregnancy outcomes from heat because they tend to have higher incomes and thus often air conditioning.²⁴⁰

Black families in the United States are less likely to have sufficient air conditioning or safe housing²⁴¹ and more likely to live in counties with less green space and higher temperatures.²⁴² As a consequence of redlining, from 1971 to 2000, counties with more than 25% Black residents experienced an average of 18 days per year with temperatures above 100 degrees. Counties with fewer than 25% Black residents, on the other hand, only experienced approximately seven days per year with temperatures above 100 degrees. This disparity is expected to worsen if global goals addressing climate change are not met.²⁴³

America's economic, healthcare and environmental systems overlap to fuel the inequities in pregnancy and birth outcomes experienced by Black people, and a comprehensive overhaul of these systems is imperative for reproductive justice.

Examples of Solutions

Ban Fossil Fuel Extraction and Reduce Emissions Across Sectors

Reducing greenhouse gas emissions and banning fossil fuel extraction are critical to stopping climate change.²⁴⁴ The Center for Biological Diversity is calling for an immediate just transition from fossil fuel energy to clean, wildlife-friendly renewable sources and the banning of all new fossil fuel extraction.²⁴⁵ Even if fossil fuel extraction were stopped immediately, there's already so much carbon in the atmosphere that temperatures would continue to increase gradually, but temperature rise would be limited and harms lessened.²⁴⁶ The Center also calls for other climate change mitigation strategies including halting the damaging life cycle of plastic, which relies on fossil fuel extraction for production and emits dangerous toxicants through both manufacturing and waste management processes,²⁴⁷ and reducing meat and dairy production, which is a leading cause of land-use change and a major source of methane emissions, a short-lived climate pollutant that heats the atmosphere 87 times more than carbon dioxide over a 20-year period.²⁴⁸

Support Economic Equity Policies

Climate change is further exacerbated by extreme social and economic disparities around the globe, and progressive social changes are necessary to stop the climate crisis from worsening and to help communities adapt. Tax rebate programs, social welfare policies that support wealth distribution, or energy assistance programs would allow low-wealth people to access clean, renewable energy and cooling devices in their homes. Universal access to comprehensive, culturally sensitive healthcare is critical, as health insurance remains inaccessible to all.

Parents are not guaranteed paid parental leave in the United States, making it difficult for pregnant people or parents of newborns to prioritize their health and the health of their infants. The United States remains one of the only post-industrial countries in the world not to offer paid maternity leave.²⁴⁹



Increase Safety Measures for Climate Change Health Exposure

Currently there is no federal mandate protecting those who work outdoors from excessive heat or requiring provisions of rest, shade, water and protective clothing.²⁵⁰ Though such policies exist in some states, Congress should pass a federal law protecting all workers from heat exposure. It should also pass legislation that would give explicit safety accommodations to pregnant people during extreme heat such as the Pregnant Workers Fairness Act.²⁵¹ It's important that these policies cover all workers regardless of citizenship status, as most outdoor laborers and farmworkers in the United States were born in other countries.²⁵²

In addition to workers' rights, increased safety measures in communities are needed to mitigate the impacts of climate change on reproductive health. This begins with educating the public about the risks of climate change on pregnancy, which will promote understanding in those who have not yet seen the effects of climate change firsthand and will inform pregnant people about the specific climate-related risks they may face. Next, safety measures in communities can be promoted through the addition of greenspace in low-wealth areas and by increasing accessibility to affordable cooling devices and air purifiers. This will help decrease temperatures in counties with higher rates of heat exposure.²⁵³

Add Health and Gender Equity to Climate Plans

Comprehensive healthcare would improve access to reproductive health services for most people, but it's particularly important for people experiencing climate-related reproductive health issues. As poor health outcomes from climate change worsen, increased budgeting for climate-related health care issues will be needed to mitigate the damaging effects on people's reproductive health.²⁵⁴

It's necessary to invest in fixing the systemic issues affecting Black women's maternal health, including housing, nutrition, vaccinations, perinatal workforce support, reproductive healthcare for incarcerated pregnant women, and climate change-related risks.²⁵⁵ It must become easier for immigrant families to access public healthcare or purchase health insurance through the Affordable Care Act;²⁵⁶ individuals can support policies that improve equity and help mitigate the impact of climate change-related health issues on marginalized groups by supporting the Black Maternal Health Momnibus Act or the HEAL for Immigrant Families Act.

Prioritizing pregnancy-specific concerns in emergency response planning for weather-related disasters is also needed. This includes emergency access to contraception, obstetric care, and nursing support, as well as ensuring that information about nearby cooling centers for pregnant people is widely circulated.²⁵⁷ This would allow for safer pregnancies during the climate crises but also ensure that people are not experiencing unplanned pregnancies simply because they are unable to access contraception or abortions due to extreme weather events.

State and local governments should include gender empowerment strategies in their climate plans, which would increase overall community health and equity in climate mitigation and adaptation measures. They can begin by collecting relevant data to allow for more accurate and concrete goals and lobby for a more inclusive and comprehensive plan. Next, educate and train staff on how gender disparities are exacerbated by climate change. Finally, incorporate gender action plans into climate plans which highlight the need for more women leaders, access to equal pay and improved social services. Such efforts would yield climate as well as social benefits.

Conclusion

The relationship between reproductive justice and environmentalism is mutually reinforcing, since prioritizing reproductive health also helps the planet, which in turn supports a healthy environment for children. Humanity's growing population and overconsumption are degrading the environment, fueling climate change, and driving the sixth mass extinction crisis, with the United States responsible for exceptionally high levels of resource use that only increase as its population grows.²⁵⁸

Systematic exploitation of people, animals and nature drives the environmental crises we face and damages the reproductive health of the most marginalized people and communities. Factory and agricultural workers are frequently exposed to greater harm, while receiving limited health benefits and unfair wages. Fenceline neighborhoods are regularly exposed to increased toxicity with limited regulation, advocacy, or community education to mitigate harm. Financial gain and GDP growth have been prioritized over reproductive health, safe communities, access to family planning and healthcare resources, and bodily autonomy.

While all individuals are affected, low-wealth communities and people of color are experiencing drastically poorer pregnancy outcomes and higher rates of environmental harm. This disparity of outcomes is exacerbated by oppressive policies that limit access to resources such as organic foods, cooling devices, and comprehensive healthcare for less privileged communities. Solutions to these problems must include social, economic, and environmental policy that regulates the wide range of factors impeding reproductive justice in the United States.

The overlapping structural issues associated with current systems of oppression demand a postcapitalist transition founded on gender, racial, environmental and economic justice. That transition would embody values such as solidarity and cooperation, equity in all dimensions (including race, ethnicity, gender and class), social and economic democracy, sustainability and pluralism. The achievement of reproductive justice depends on the prioritization of changes that will overhaul exploitative systems to help people and the planet thrive.

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