

# SOLUTIONS



Environmental  
Defense  
Fund

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## INDIA'S NEW GREEN REVOLUTION

EDF helps farmers cut costs, protect yields and  
fight climate change — all at the same time.

ALSO INSIDE: Florida ports go electric | Quiet corporate climate progress | Western water wins



## Feeding the future

Longfin yellowtail is a sushi bar staple and here, at this Hawaii fish farm, it's a showcase for clean, sustainable aquaculture. The farm uses a combination of technological innovation and traditional knowledge to raise these fish, also known as Hawaiian kanpachi, in a way that reduces pollution and minimizes impacts on other marine life.

EDF and its partners in the Coalition for Sustainable Aquaculture are backing a bipartisan bill now before Congress that would invest in more open-ocean aquaculture research and in demonstration farms using beneficial practices like these. The results can guide industry standards, help create new jobs and bring more affordable, sustainably raised seafood not just to sushi bars but to everyone's table.



**Watch** *Feeding the Future*  
*From the Sea*, a new EDF mini-documentary about sustainable aquaculture in Hawaii.

# Practical solutions, global impact



MOHAMMAD SHAHHOSSEINI

Last year, I visited India and had the chance to meet local farmers. India's farmers live on the front lines of climate change as hotter temperatures and increasingly unpredictable rainfall impact their yields.

As a result, many farmers have been overfertilizing their fields, hoping this will protect them from a failed harvest.

Not only is this expensive, but overusing nitrogen-based fertilizer releases more of the potent greenhouse gas nitrous oxide. While India's 100 million farmers each make only a small contribution to climate change, their impact

adds up: Agriculture accounts for nearly a fifth of the country's planet-warming greenhouse gas emissions.

So EDF experts supported partners in India who worked with farmers, scientists and policymakers to transform how one of the world's largest agricultural systems uses fertilizer. What began as a pilot project is now reaching tens of thousands of farmers, and soon many more, helping to reduce costs, protect crop yields and cut climate pollution all at the same time. (*See p. 8.*) This is just one promising example of EDF's global work to fight climate change.

In Europe, our experts are working to shape how landmark methane regulations, passed by the European Parliament, will be implemented. These rules will help reduce the powerful and fast-acting climate pollutant methane — the main component of natural gas — not only in Europe, but across the global liquified natural gas supply chain.

EDF experts have also been helping nations navigate difficult negotiations on a first-of-its-kind global shipping agreement to clean up pollution under the International Maritime Organization.

All of these examples highlight the practical, market-based solutions that EDF is known for, and that can strengthen energy security, improve air quality and drive climate progress.

I want you to know about this work, because even as we continue to vigorously defend climate protections from Trump administration rollbacks, progress is happening both outside the U.S. and in our states.

For example, in Virginia, a state facing explosive data center growth, we worked with Governor Abigail Spanberger to bring the state back into the Regional Greenhouse Gas Initiative, which caps greenhouse gas emissions for the utilities serving many of those data centers. (*See p. 4.*)

No matter the obstacle, EDF is committed to delivering results that work for both people and the planet. Thank you for your continued support.

  
Fred Krupp, EDF President

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# Virginia rejoins climate compact

Virginia is back in the Regional Greenhouse Gas Initiative, a cap-and-invest program that cuts climate and air pollution from power plants in 11 Northeastern and mid-Atlantic states. RGGI also saves consumers money on energy, improves public health and creates new jobs. RGGI previously generated hundreds of millions of dollars to help Virginia prepare for coastal and inland flooding.

Three years ago, former Governor Glenn Youngkin illegally pulled his state out of RGGI. But EDF and partners successfully advocated for legislation, signed by Governor Abigail Spanberger in February, that doesn't just allow Virginia to participate in RGGI, it requires it.

"Virginia is once again leading the way on climate solutions, combatting higher electricity bills and supporting communities as they adapt to increased flood risk," says Emily Steinhilber, who leads EDF's work on coastlines and watersheds in the commonwealth.

RGGI sets a declining cap on power plant pollution — the country's second-largest source of climate pollution. Plants must then buy allowances for every ton they emit. Participating states invest those funds in energy efficiency, clean energy, energy bill reduction and community flood preparedness. "For every dollar the states invest, there's a 4-to-1 return in energy bill savings," says Peter Daigle, EDF's Virginia state affairs manager. Over time, RGGI investments are expected to save consumers more than \$20 billion.

"RGGI creates a pathway to lowering energy use and increasing energy affordability for those who need it most," Steinhilber says. "It shows us a cleaner grid, safer communities and more affordable energy bills go hand-in-hand."



ISTOCKPHOTO

## Superpollutant takedown

More than 8 million early deaths a year and nearly half the world's warming to date have been brought about by short-lived but potent planet-warming compounds like ozone, methane, soot and refrigerants.

Now, for the first time, the Beyond Alliance, led by EDF and partners, is bringing together big businesses, including JPMorganChase, Salesforce and Workday, to cut superpollutants like these. The alliance aims to scale promising, pollution-cutting technologies and pioneer new options for businesses working to improve their climate impacts.

Beyond Alliance has committed \$100 million to fund innovative projects like the startup Recoolit, which trains and pays technicians in Indonesia to capture refrigerant gases from old air-conditioning units. The coolants are then dispatched to facilities such as cement kilns where they're destroyed instead of being released into the atmosphere.

The company hopes to use Beyond Alliance funding to expand worldwide.

"This is an exciting example of how we can speed money to places where it will make the biggest difference," says Elizabeth Sturcken, who leads EDF's corporate partnerships.

"We bring major companies together in something like a buyers' club to fund early-stage climate projects, and that helps the most promising solutions scale up and tackle more pollution, faster."



GETTY

**\$100 Million**

Amount committed to fund innovative projects that reduce climate superpollutants.

Source: Beyond Alliance



## The end of disposable cups?

Europeans throw away billions of disposable cups every year. In response, EDF and partners are piloting a reusable cup program in Berlin called Recup. Consumers borrow cups from cafés and return them via vending machines. Initial findings show that convenience, paired with good policy, is effective at reducing waste and Recup could serve as a model across Europe.

# More coal, more pollution

**C**OAL-FIRED ELECTRICITY IS THE country's most expensive and polluting form of power. Yet it's on the rise in the U.S. for the first time in decades, up 13% last year alone. This isn't some fluke. The Trump administration is making concerted efforts to prop up the coal industry.

EDF is fighting back in court, alongside a broad coalition of environmental non-profits, state attorneys general, public health advocates and community groups, challenging the administration's orders forcing coal plants to stay open. We're also taking the EPA to court over its pollution waivers for industrial facilities, attempts to reverse climate protections and cancellation of clean air standards.

"These cases can take months or years to play out," says EDF Lead Counsel Ted Kelly. "But the law is on our side."

## Not just more coal, dirtier coal

Trump administration emergency orders are forcing costly, unreliable coal plants to stay open long after operators planned to retire them. Keeping just one of those plants, the J.H. Campbell plant in Michigan, open costs over \$600,000 a day — a price being passed on to American families and businesses. The administration has also announced hundreds of millions of dollars of new coal-industry subsidies and signed wasteful contracts for the

Department of Defense to procure coal-fired electricity.

All of this contributed to a 9% increase in mercury emissions from power plants in 2025, according to the EPA's own data.

"Coal was already the dirtiest form of electricity," says Kelly. "But now, just as its use is spiking because of subsidies and other factors, pollution limits are being stripped away."

Here's one example: In March 2025, the Trump administration offered two-year pollution-rules waivers to any industrial facility or power plant that sent an email requesting one. Seventy-one coal-fired power plants got them. According to documents EDF made public through Freedom of Information Act requests, the administration's waivers went above and beyond what these industrial polluters requested.

Then, in February of this year, the EPA finalized its rollback of the Mercury and Air Toxics Standards, which protect against mercury, arsenic, nickel and other pollutants from power plants. These pollutants can cause cancer, heart and lung diseases and brain damage in babies. The EPA had updated the standards in 2024 to reduce toxic heavy metals emitted, require continuous monitoring at smokestacks and close a loophole that allowed plants burning especially dirty lignite coal to emit over three times more mercury than other plants.



U.S. Energy Secretary Chris Wright promotes coal

GETTY

Now, even plants that didn't request a pollution exemption are no longer required to comply with the MATS standard. EDF and a coalition of health and environmental groups are challenging the MATS repeal in court.

"There's a theme here," says Surbhi Sarang, senior attorney at EDF, about the latest executive branch moves. "The Trump administration is going above and beyond what even the coal industry is asking for. American families will be the ones paying the price with their wallets and their health. It's unacceptable and unlawful, and we will continue to fight back at every turn."

Joanna Foster



**\$600,000**

The daily cost to consumers of keeping Michigan's J.H. Campbell plant open.

Source: Consumers Energy

GETTY

# Native practices restore a dry valley

**F**ORTY YEARS AGO, ALONG A STRETCH of highway in California's San Joaquin Valley, there stood a small Christmas tree farm. In this drought-prone region, the farm depended on water pumped from deep underground — water that today is being extracted faster than nature can replenish it.

This former tree farm is starting to tell a new story. Across more than 10 acres, bees and butterflies hover over vegetable beds and pollinator hedgerows — native shrubs and flowers planted in place of fences to serve as wind breaks and attract desirable insects. Wine-dark elderberries ripen in the sun, salt grass reaches skyward and goats graze, keeping invasive weeds at bay. The return of spongy, rich soil contained by the long roots of native marsh plants will help the land soak up more rain, replenishing underground water deposits and bolstering the ecosystem against future droughts.

This transformation is led by the local Wukchumni Tribe, with the support of

**“ This land has been very special to us for a long time. I am very tied to this land. ”**

— Darlene Franco, Wukchumni Tribal Chairperson and CEO (below)



Wukchumni Farms Manager Lahoci Franco shows off a native seed bank.

California's Multipurpose Land Repurposing Program. “This land has been very special to us for a long time. I am very tied to this land,” says Wukchumni Tribal Chairperson and CEO Darlene Franco. She recalls that it was on this land that her mother learned to gather food and plant medicines, and it was on this land that her children learned to walk.

In the San Joaquin Valley, by 2040, climate change and drought threaten to leave nearly 20% of farmland without enough groundwater for agricultural use. Statewide, up to a million acres face the same risk. Experts say that thoughtfully repurposing land, as the Wukchumni are doing, is critical to avoiding another dust bowl.

California's MLRP funds projects that find new uses for agricultural land to improve the well-being of both local people and the landscape, all while conserving groundwater. Saving and sowing native seeds, composting waste and planting flowers to attract bees and other pollinators is helping the tribe restore the land to health, creating space for fruit trees, vegetable gardens and chickens that support the 200-member tribe's goal of growing and raising their own food. They

harvest native plants like elderberry and salt grass to make traditional medicines. Basket weavers carry on their cultural practice using mallows, and sages are also grown on the property. A former seasonal wetland is being restored and oak trees are being replanted, helping the land to absorb more water while providing a home for native species.

“This is a living model of land-use change that supports biodiversity, honors traditional ecological knowledge and helps the region adapt to changing climate conditions,” says Anna Schiller, whose team at EDF helped create the MLRP initiative. That program was initially funded through California's state budget and, as part of a coalition of more than 160 groups, EDF went on to help secure an additional \$200 million in support through California's \$10 billion 2024 climate bond. “As California continues to navigate water scarcity and extreme weather caused by climate change,” Schiller says, “programs like the MLRP and communities like the Wukchumni Tribe provide us with a hopeful path forward.”

Franco is imagining a positive future also. “In 10 to 20 years,” she says, “I hope that this land — our land — is abundant with plants, with animals. The way it used to be.”

Nika Beauchamp

# Florida's ports go electric

**F**LORIDA MAY BE MOST FAMOUS FOR its idyllic beaches. But peppered along its 1,350 miles of coastline is another major economic driver — ports. The state has more seaports than any other and these 16 ports are responsible for over 13% of Florida's GDP, contributing \$117 billion to the state's economy.

To keep competitive, Florida is modernizing its ports. That work began during the Biden administration when around \$5 billion was set aside to help the nation's ports electrify.

Now that that money is being frozen or redirected by the Trump administration, EDF is helping keep the momentum going by working directly with ports to make the business case for electrification in the Sunshine State.

"You don't have to care about climate change or local air pollution for port electrification to still be the right move," says Dawn Shirreffs, EDF's state director in Florida, whose team helped several ports in Florida successfully apply for federal port-electrification dollars. "While there's no longer federal funding, electrifying Florida's ports will save money, increase port capacity and make ports more competitive in the future."

The climate impact of maritime emissions, while not necessarily a driver for Florida ports, is significant. If the maritime industry were a country, it would be the sixth-largest emitter of greenhouse gases. In Florida, the transportation sector, which includes shipping, is responsible for 50% of climate pollution.

## A smart investment

While some electric port equipment carries higher up-front costs, a recent EDF analysis highlights that it has lower fuel and maintenance expenses, making it a better deal in the long term. Electric gantry cranes, for example, cost about 30% more than diesel models but deliver average annual savings of more than \$60,000 per crane over a 20-year lifespan.

Electrified equipment enables ports to stack cargo higher and to use their very limited acreage more efficiently. And switching

from diesel helps insulate against skyrocketing fuel costs.

The state is also competing for business in a global industry that is increasingly conscious of its climate footprint. All five of the largest container shipping lines operating in Florida have publicly committed to eliminate or offset their climate pollution entirely.

"Shipping lines are increasingly evaluating ports on sustainability credentials," says Ali DySard, EDF's Florida program manager. "Ports that offer electrified yards, efficient cargo handling and shore power" — enabling ships to rely on electricity instead of burning dirty fuel while docked — "are better positioned to retain existing customers and attract new ones."

## \$60,000

**Average yearly savings from a single electric crane**

Source: AECOM

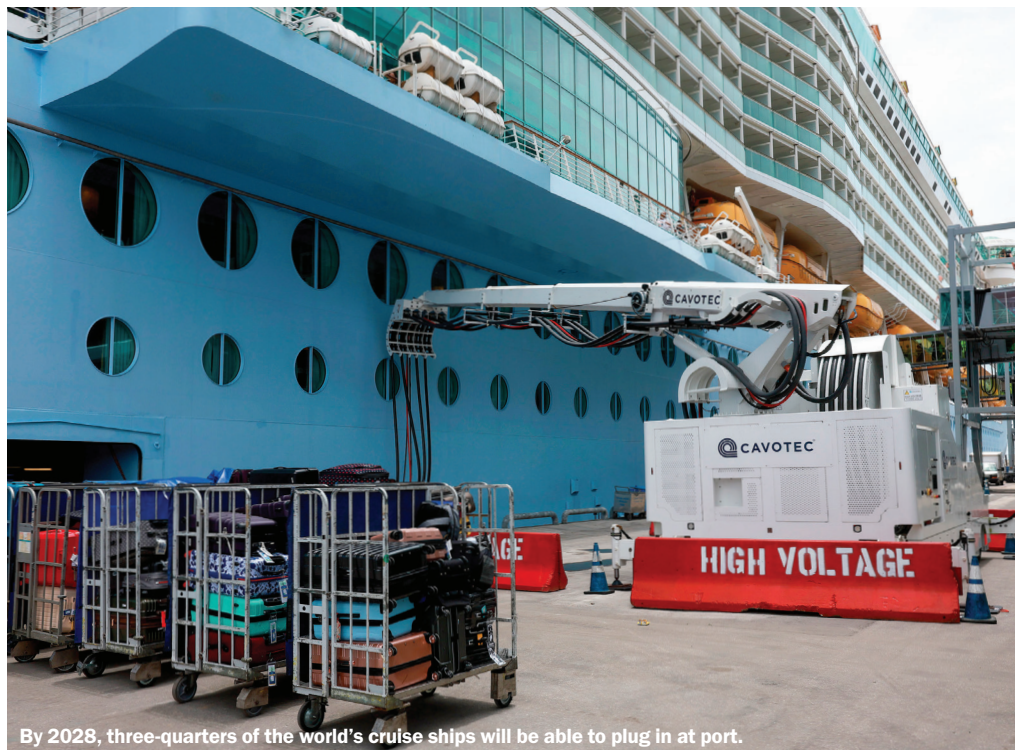
Of course, Florida's ports don't just handle cargo. The state is home to the world's three busiest cruise ship terminals, which increasingly expect shore power.

Around 120 cruise ships that frequent Florida ports can already connect to shoreside electricity. By 2028, nearly three-quarters of the world's cruise ships are expected to be shore power-ready, the result, in part, of European Union regulations.

Seven Florida ports already have shore power either in use, installed, under construction, or in development. Port Miami was the first cruise port on the East Coast to install shore power across several berths. Each berth cuts emissions equivalent to those produced by 7,500 cars annually.

"Florida's ports are doing this because their customers — the cruise lines filling their berths and the cargo operators filling their yards — are demanding it," says Shirreffs. "The competitive and environmental stakes are directly linked and ports that invest in electric infrastructure win more business."

Joanna Foster



By 2028, three-quarters of the world's cruise ships will be able to plug in at port.

JOE RAEDLE/GETTY IMAGES

# SOWING TRUST, GROWING RESULTS

**Enlisting India's 100 million farmers in the fight against climate change.**

**By Ragini Daliya and  
Vidya Gowri Venkatesh**

**T**HE SUN BEATS DOWN ON MANOJ KUMAR KUSHWAHA'S SMALL PLOT IN East Champaran, in the Indian state of Bihar. For years, his ritual was straightforward: At sowing time, he would scatter bag after bag of urea, a nitrogen-containing fertilizer, across his rice and wheat fields.

He'd apply a hefty 5.5 pounds of fertilizer per kattha, a local land measure — a dose passed down through generations and reinforced by fear. It was an act of faith — faith that more fertilizer meant more grain, and fear that without it, the increasingly fickle rains and baking heat would steal his harvest. The cost was crippling, but it was the insurance premium he thought he had to pay.

Six hundred miles away, in a conference room in New Delhi, EDF scientists and strategists were focused on a different set of numbers. They saw India's staggering \$21 billion annual fertilizer subsidy. They observed that agriculture accounted for 20% of the nation's greenhouse gases, with nitrogen overuse being a primary contributor. They saw the silent yet powerful leak of nitrous oxide, a greenhouse gas nearly 300 times more potent than carbon dioxide, rising from fields like Kushwaha's.

But Hisham Mundol, EDF's lead India adviser, saw a connection others missed. "Farmers are on the front lines of climate change," he explains. "They use fertilizer as an insurance policy." The problem wasn't carelessness; it was a rational response to a climate of deep uncertainty.

The solution, therefore, couldn't be a ban or a blame. It had to be a better form of insurance — one that saved money, secured yields and protected the planet.

This is the story of how that philosophy took root, beginning with a pilot in 2023, spreading to 60,000 farmers across three states, and sparking a quiet revolution in measurement and trust.



PRANISHA TERPETHI



### The unseen algorithm in the soil

In the world of agronomy, there is a concept called “N Balance.” It is the precise calculation between the nitrogen a crop needs and the nitrogen a farmer applies. In India, this balance has been tipped disastrously toward excess.

“Three out of four farmers in Bihar are overapplying nitrogen,” says Ajeet Singh, EDF’s manager for Climate-Smart Agriculture, who has over two decades of grassroots experience. The consequences are a cascade of loss: financial loss for the farmer, ecological loss for the soil and water, and a profound cost for the climate.

EDF helped develop a user-friendly N Balance tool that farmers and others can use to estimate nitrogen loss, at a field level or across a supply chain. In 2023, Singh and others launched a pilot program to use the tool in India. It began with a simple survey. Across 20,000 farmers in the states of Maharashtra, Bihar and Tamil Nadu, they asked 13 straightforward questions: plot size, typical yield, type and amount of fertilizer used.

“We calculate the nitrogen balance and based on that, we do provide advisories to individual farmers on what amount of fertilizer they need to reduce gradually,” explains EDF’s Samir Mirza, an agricultural engineer. For a farmer like Kushwaha, that meant a careful, step-by-step reduction from his habitual 5.5 pounds per kattha.

“We do not throw any new technology at the farmer,” Singh emphasizes.

“Farmers are willing to adopt climate-smart technology, but they need to trust the source of information.”

Trust, in rural India, is not built by apps alone. It is built by the

person who looks you in the eye, who shares your village, and whose own livelihood is tied to your success.

### The bridge builders

This is where the model makes its ingenious turn. Instead of relying solely on a strained government extension system, EDF helped cultivate a new local force: the Climate Smart Entrepreneur.

Meet Somnath from Ahilyanagar, Maharashtra. In 2024, he joined a program to train entrepreneurs run by EDF’s local partners. He then started offering digital banking services, saving his village’s 600–700 families a 6-mile trip for cash. He also became a crop trader, promising immediate payment in an industry of delayed settlements. He became a trusted face.

Then, he was given a new tool: knowledge. “I didn’t know how to do climate-smart agriculture,” Somnath admits. “In the training, we were told about N Balance, how to calculate it, how to convey it to farmers, and help them.”

The training transformed him from a service provider into a knowledge partner. Armed with a printed advisory pamphlet generated by EDF’s system for each farmer, he would walk into the fields. “My relationship with the farmers has improved a lot,” he says. “I go to their fields ... I share this knowledge. So, the farmer is automatically connected to me.” This connection became the capillary system through which complex climate science flowed.

Mirza, who helps oversee this network, explains the sustainable logic.

“We train around 2,900 entrepreneurs in Maharashtra and, across India, we cover around 9,500 agricultural entrepreneurs.” The goal is to reach 6,000 in Maharashtra alone in the coming years. “If the farmers did better, the entrepreneurs would do better. Their business is linked to the farmer’s success.”

Somnath’s credibility grew, farmers sold their produce to him, and they listened when he advised them to change lifelong habits. It was a virtuous cycle engineered around trust.

### A ledger of change

The final, most crucial node in this network is the farmer. This is where the data and the diplomacy are put to the test. Kushwaha, in Bihar, is the test. He joined the program at its start in 2023 and, after two cropping cycles, his results are telling.

“We used to spend a lot of money,” Kushwaha says, reflecting on his fertilizer bills. When his local service provider — his “teacher,” as he calls him — advised him to cut back, he was cautious. “The teacher told me to reduce the amount of fertilizers little by little. Gradually.”

He followed the tailored advisory, a simple pamphlet that broke down the ▶

**From left:**  
In Bihar, India, a farmer applies fertilizer to his field.

**A nugget of dry, degraded soil, the result of fertilizer overuse.**

**EDF training in progress.**



recommendations for his specific plot. “I tried according to the instructions, and the result was the same.” The yield held firm. The only thing that fell was his cost.

From 5.5 pounds, he has been guided to reduce the application significantly to 2.2 pounds and even less if needed. “We got some relief from the cost of fertilizers,” Kushwaha says. In the precarious economics of smallholder farming, this relief is transformative. It is capital for diversification, a buffer against the next shock, a chance to breathe.

His experience shatters the myth that farmers are resistant to change. They are resistant to risk. When given credible, personalized evidence that reduces their risk and their costs, they become the most effective agents of change. “Farmers are now discussing their N Balance scores with each other,” Mirza notes with enthusiasm, describing a new culture of peer learning emerging in villages.

### Optimizing with data

The work that began in 2023 with Kushwaha, Somnath, and now 60,000 farmers, is generating something perhaps as valuable as the immediate savings: a massive, granular dataset. “This data

## “Farmers are willing to adopt climate-smart technology, but they need to trust the source of information.”

— Hisham Mundol, EDF’s lead India adviser

will help us to design customized advisories to the farmers at a larger scale,” Mizra explains.

This is the scaling vision for the program’s next phase. The three-year trial, which concluded after the 2025 cycle, aims to refine the N Balance algorithm so precisely that it can be plugged into any existing agricultural digital platform in the country.

“It could optimize fertilizer for the farmers and provide tailored advisories in terms of fertilizer,” Mizra says, imagining a future where this precise tool is as common as a weather app.

The implications ripple upward. This data can help district administrations budget fertilizer subsidies more accurately, saving public funds. It provides incontrovertible evidence for policymakers on what works. It turns the abstract concept of “emissions reduction” into millions of individual, profitable decisions — like Kushwaha’s careful reduction to a more optimal measure.

Mundol sees this as the cornerstone of the future. “I will say digital soil health,” he states, when asked about the most urgent local action. “Unless we can get an accurate assessment of the health of soil at a plot-by-plot level and can give with confidence recommendations to a farmer ... we’re never going to address the agriculture issue.”

### Sowing a new future

The narrative of climate action in agriculture is often one of sacrifice — of doing less,

of bearing loss. The EDF model flips that script. It is a story of doing smarter.

At EDF, that purpose is guided by three principles: science, equity, and economics. None, Mundol insists, can stand alone.

“Science tells us what needs to change,” he says. “Equity tells us who must not be left behind. And economics tells us whether something will last.”

Take away any one of the three, he believes, and climate action collapses. “If it hurts incomes, farmers won’t adopt it. If it ignores science, it won’t work. And if it isn’t equitable, it won’t scale.”

This is why EDF’s interventions rarely look dramatic. They don’t ask farmers to abandon fertilizers overnight, fishers to stop fishing, or entrepreneurs to chase idealism without income. Instead, they focus on better decisions, supported by evidence and rooted in lived realities.

At the heart of this approach lies data — but not the kind that stays locked in reports.

“Data only matters if people trust it,” Mundol says. “And people trust data when it reflects what they see on their fields, in their animals, in their catch.”

For Indian agriculture, he believes the next frontier is clear. “We need granular, plot-level soil and climate data that farmers can actually use. Without that, advice will always feel generic.”

Back in Bihar, Kushwaha may not talk in terms of emissions or nitrogen cycles. But he knows what has changed. His fertilizer costs are lower. His yields are stable. And for the first time in years, he has a financial buffer against uncertainty. It also benefits the planet. ■

*This story first appeared in Betterindia.com*

**From left: Farmer Manoj Kumar Kushwaha is able to get the same yield using 60% less fertilizer.**

**Paddy farmers in Bihar, India, are becoming agents of change.**



# Companies quietly pursue climate action

**I**N 2025, A NUMBER OF MAJOR U.S. companies announced departures from corporate and industry climate initiatives. On earnings calls, popular brands fell silent about sustainability. Advocates feared that big U.S. businesses were balking at the idea of continuing to cut their climate pollution.

Yet experts say that this is not evidence of widespread backtracking. In many American companies, the work continues — sometimes quietly, sometimes differently.

“While companies may be talking less about sustainability in public, the majority are continuing to do the work,” says Lea Borkenhagen, who heads the EDF team that advises big businesses on how to improve their impact on the climate. “In fact, a growing number of businesses are baking climate action into core operations — and they’re doing so because it simply makes good business sense.”

## A competitive edge

So why the silence, which some call “greenhushing” — companies keeping quiet about sustainability to avoid backlash or legal trouble even as they keep cutting pollution?

The practice skyrocketed after the 2024 U.S. presidential election, according to recent reports.

In fact, a *Harvard Business Review* analysis late last year found that out of 75 major brands, only 13% retreated from sustainability efforts, while 85% held steady or even accelerated — often out of public view. Recent surveys by business consultancies Deloitte and Accenture reported the vast majority of CEOs were maintaining or growing their company’s



EDF's Lea Borkenhagen

JEFF WEINER



Dairy companies are reducing planet-warming methane from cows.

sustainability work. Experts say big businesses know that climate change is a growing risk — and tackling it gives them an edge over the competition.

**“While companies may be talking less about sustainability in public, the majority are continuing to do the work.”**

— Lea Borkenhagen, EDF

Brands have seen worsening storms, flooding and droughts send supply chains into disarray. For example, severe droughts in 2023 and 2024 lowered water levels in the Panama Canal so significantly that most ships couldn’t traverse the waterway, disrupting global trade for weeks. Research shows the canal will see worse and more frequent droughts, if climate change continues unabated.

Reducing climate pollution is the best way for the private sector to slow the warming that is causing more extreme weather worldwide. Redesigning products and processes with sustainability in mind has also helped leading companies save money, attract new customers and make supply chains more efficient and resilient.

Businesses must also continue their climate efforts in places like California and the European Union, which require companies to disclose

emissions in order to do business within their borders.

## The big question for big business

In this age of greenhushing, rising temperatures and worsening weather, how can companies chart a path to success and stability?

Borkenhagen says savvy C-suites are baking sustainability into the way they do business. Through the EDF-affiliated Beyond Alliance, for instance, corporate giants including Workday, Salesforce and JPMorganChase are investing \$100 million to cut climate superpollutants like toxic ozone and refrigerants. (*See p. 4.*)

At the same time, EDF and partners are advising a cohort of leaders from nine major food brands, ingredient-makers and retailers to find new ways to grow key ingredients more sustainably. EDF also recently advised investors representing \$25 trillion in assets — many of whom credited EDF’s expertise with helping them engage oil and gas companies on cutting emissions despite political headwinds.

“The defining question for business today is not whether climate change matters,” says Borkenhagen, “but how prepared companies are to meet the challenge of operating in today’s climate. Smart and agile business executives know that companies that lead on climate are often better positioned not just for short-term stability but also for long-term growth.”

Nika Beauchamp



# A water win in Arizona

By Shanti Menon

A foreign conglomerate uses Arizona desert water to grow alfalfa that is shipped to Saudi Arabia.

MARK HENLE/THE REPUBLIC

**L**A PAZ COUNTY, ARIZONA, IS ONE OF the drier places in a pretty dry state. With just a scant few inches of rain a year, a shrinking supply of water from the Colorado River, and a climate that keeps getting hotter and drier, it seems an unlikely spot to set up a water-intensive alfalfa farm.

Yet this is where Fondomonte Arizona, a Saudi-owned company, purchased nearly 10,000 acres of land in 2014 to cultivate alfalfa, which it then shipped back to feed cattle in Saudi Arabia. What did Arizona provide that the desert kingdom did not? Free access to underground water reserves for anyone, limited only by how many wells you could afford to drill and how deep you could afford to dig them.

For Fondomonte, this wasn't much of a limit at all. In 2023 alone, the company extracted more than 31,000 acre-feet of groundwater. (An acre-foot is the amount of water it takes to cover an acre of land one foot deep.)

The Fellowship Bible Church up the road hit its limit soon after Fondomonte expanded its operations. By 2017, the church's well had run dry. No water in the taps. No collection-plate miracle that could produce the \$20,000 needed to dig a deeper well. Congregants now haul in water donated by Fondomonte to keep the church going — an arrangement

antithetical to the independence that rural Arizona communities value deeply.

This January, however, La Paz residents, working with EDF and others, did achieve something close to a miracle: the first groundwater protections for the Ranegras Basin, a resource shared by thousands of residents in La Paz and neighboring Yuma County. After more than 40 long years of state inaction, Ranegras is the fourth region in Arizona to receive new protections for local groundwater supplies since November 2022. And while Arizona's water issues are far from resolved, change is in the air.

## The battle for groundwater

"If you're just getting into water issues here, you're going to have to catch up," explains Holly Irwin, a district supervisor for La Paz County. "Everybody's looking for water."

Here's the situation: Many residents of Arizona's rural counties get most, if not all, of their water from wells that tap into groundwater — ancient, underground reserves of water created over millennia by water seeping into rock. This groundwater is the lifeblood of Arizona, providing more than 40% of all the water used in the state — more than is supplied by the beleaguered Colorado River, water which is unhappily

shared between seven increasingly dry Western states.

That groundwater is being extracted far faster than it can ever be replenished. In 1980, Arizona passed a groundbreaking state law to manage groundwater extraction around its major population centers. But 80% of Arizona remained without limits on pumping groundwater, despite it being the primary water source for many rural residents and businesses.

"There's about 1.3 million people in Arizona living in areas that are fully or highly dependent on groundwater — with zero protection," says EDF's Arizona water advocate Chris Kuzdas, who supports communities in La Paz County and across rural Arizona in their efforts to shape water policies that affect them.

When big, industrial operations like Fondomonte started moving into rural counties, drilling deeper and deeper, the cracks started to show — literally. Land started collapsing around overpumped areas, creating rifts and buckles that fractured buildings and well casings.

As their wells ran dry, La Paz County residents reached out to Irwin with their concerns. One couple told her they had to choose between investing in new, deeper wells, or moving. "They ended up moving," says Irwin. "That's something that's just heartbreaking for me."

## A decade of advocacy

Deeply worried about the future of her county, Irwin took her concerns about groundwater to the state legislature. She met with lawmakers, testified at hearings and wrote op-eds, to no avail. She collected 500 signatures on a petition asking lawmakers for local groundwater protections and hand-delivered it in 2018 to then-Governor Doug Ducey.

“I got crickets,” says Irwin. “Nothing happened.”

In 2023, she tried again, delivering the same petition to Arizona’s new governor, Katie Hobbs. By this time, Irwin was a leader in the growing, bipartisan Rural Water Working Group, a group of local elected officials and community advocates that was shaking up the state’s indifference to protecting water for rural communities.

This time, her petition got results. “I never expected I would see anything like this,” says Irwin.

That year, Hobbs canceled one of Fondomonte’s leases on state land in La Paz County and said the state would not renew three others. By early 2024, the company had stopped irrigating all four leased properties, according to the governor’s office. Then, Arizona Attorney General Kris Mayes filed a lawsuit against Fondomonte, seeking a court order to stop the excessive pumping on the land it owns and establish a fund to address



La Paz County District Supervisor Holly Irwin

CANTLIN O'HARA FOR THE WASHINGTON POST VIA GETTY IMAGES

**“There’s about 1.3 million people in Arizona living in areas that are fully or highly dependent on groundwater — with zero protection.”**

— Chris Kuzdas, EDF’s Arizona water advocate

the damages caused. (At press time, that lawsuit was still pending.)

In January 2026, the Arizona Department of Water Resources established water protections for the Ranegras Basin that block

agricultural expansion and require major water users to monitor and conserve groundwater. The details of the plan will be worked out through an extensive community engagement process, throughout which EDF will provide technical support to communities.

Kuzdas says, “The acceleration we are seeing after 40 years of nothing speaks to the direction communities want to go: choice and self-determination over their future. That means protecting groundwater supplies now and for future generations.”

## What’s next for Arizona groundwater

For Irwin, the battle is far from finished. Ranegras is just one of five basins that hold groundwater supplies for residents and businesses in La Paz County.

“Getting the one basin protected validates all the blood, sweat and tears for a decade,” says Irwin. “But with groundwater, the work will never be done.”

Just days after the Ranegras announcement, Arizona’s legislature introduced a bill that would allow a New York City hedge fund, Water Asset Management, which purchased 13,000 acres in La Paz in 2024, to pump water out of another local basin and sell it to the fast-growing Phoenix suburbs.

“It’s not morally right to take from our community just because urban areas overbuilt,” Irwin says. “Groundwater is our livelihood; we need it to survive. We have a right to grow just like anyone else.”

Irwin continues to be a leading voice on water protection for her community. “I work for the people who blessed me with this office,” she says. “I’m going to fight to protect what I can, for as long as I can.” ■



As foreign companies divert groundwater for agriculture, residents’ wells run dry.

LOS ANGELES TIMES VIA GETTY IMAGES

# Chemicals in our food

An EDF expert answers your questions.

Could a dangerous chemical be lurking in your coffee? Last year, EDF found that the U.S. Food and Drug Administration has been allowing 25 chemicals linked to cancer into America's food system. Many are used in packaging or processing. Eight are known human carcinogens and 17 are probable human carcinogens.

We sat down with Maria Doa, EDF's senior chemicals expert, to find out about the risks, how EDF is pushing for change and what you can do to protect yourself.

## Why did EDF do this research?

We believe the FDA is putting people at risk. By law, the agency is required to ban food additives that cause cancer in humans or animals. While many of the chemicals we looked at are not added to food as ingredients, two-thirds of them can migrate into food from processing and packaging, including plastics, paperboard, metals and coatings. Here's one concerning example: Methylene chloride, commonly used as a paint stripper, is so dangerous that the EPA has banned its use in most instances. But the FDA still allows it to be used to decaffeinate coffee and tea.

## How can something be restricted by the EPA but not the FDA?

This is a point I've raised with FDA leaders many times. But the FDA, not the EPA, regulates chemicals in food, and their failure to act shifts the burden of toxic chemicals onto consumers, with estimated health costs reaching up to \$2.2 trillion every year. The agency's inaction is even harder to accept when you consider that many people are exposed to these same carcinogenic chemicals from multiple sources every day — in their food, air and water — and that cumulative exposure isn't a risk they even consider. That is a huge regulatory gap. Plus, in many cases, safer substitutes are readily available.

## Is there anything consumers can do to protect themselves?

First, I want people to know that consumers shouldn't need to figure out how to protect themselves. By law, that is the FDA's job. But there are some practical steps to take: Eat fresh, unpackaged fruits and vegetables and limit highly processed, packaged foods. Avoid microwaving food in plastic and look for coffee or tea decaffeinated without chemicals — like the Swiss Water Process.

## What is EDF doing about this? And how can supporters help?

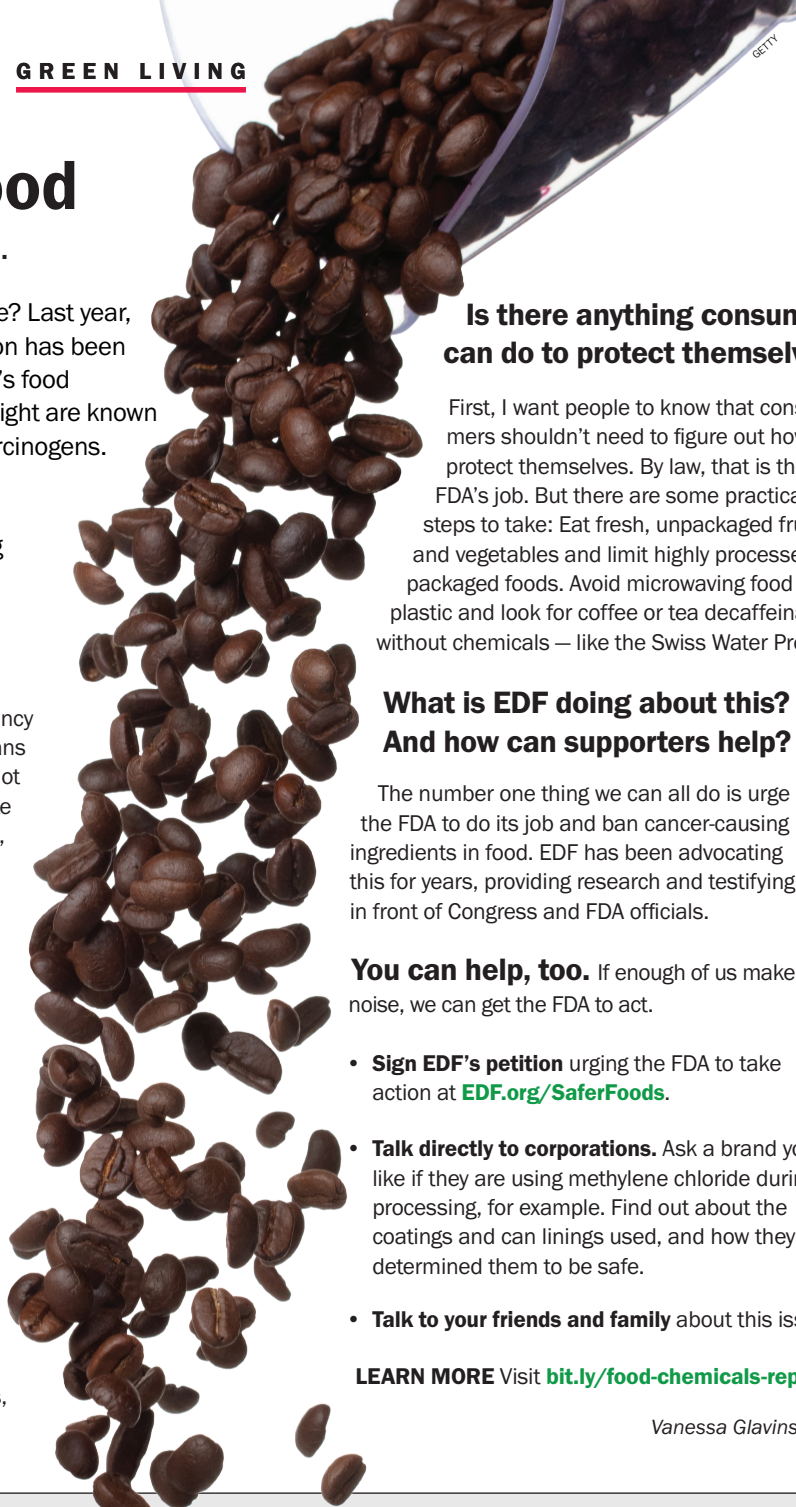
The number one thing we can all do is urge the FDA to do its job and ban cancer-causing ingredients in food. EDF has been advocating this for years, providing research and testifying in front of Congress and FDA officials.

**You can help, too.** If enough of us make noise, we can get the FDA to act.

- **Sign EDF's petition** urging the FDA to take action at [EDF.org/SaferFoods](https://www.edf.org/saferfoods).
- **Talk directly to corporations.** Ask a brand you like if they are using methylene chloride during processing, for example. Find out about the coatings and can linings used, and how they determined them to be safe.
- **Talk to your friends and family** about this issue.

**LEARN MORE** Visit [bit.ly/food-chemicals-report](https://bit.ly/food-chemicals-report)

Vanessa Glavinskas



## Cancer-causing chemicals permitted by the FDA

These known carcinogens are among 25 cancer-linked chemicals the FDA allows in our food system.



### Formaldehyde

Allowed for use in contact surfaces and melamine kitchenware, as well as defoaming agents.



### Methylene chloride

Allowed for use in decaffeinating coffee, in hops and spice extracts, adhesives and industrial products.



### Trichloroethylene (TCE)

Allowed for use in hops and spice extracts and in decaffeinating coffee.



### Asbestos

Allowed for use in adhesives, rubber articles and polyester resins in food-related manufacturing.



## ★ YOU GOT THIS DONE!

# From trash patch to thriving habitat

Marie Massa waters the Lincoln Heights California Native Plants Corridor.

**M**ARIE MASSA WAS WALKING HER son to kindergarten three years ago when she saw something that she couldn't stop thinking about — a neglected strip of land covered in weeds and trash. To her neighbors, it was an eyesore. But EDF member Massa saw something else: "I remember thinking this could be a really great place to showcase native plants," she says.

One morning, Massa — a horticulturist turned stay-at-home parent — scattered wildflower seeds as a test. When they sprouted, she knew her idea could work. "I had so many wildflowers coming up," she says, "I just needed to get rid of the weeds and garbage, and I knew this place could thrive."

That was the start of what is now the Lincoln Heights California Native Plants Corridor, a 380-foot stretch of native plants bursting with color. It took three years of work, with the help of volunteers and local nonprofits, but Massa successfully transformed the former dumping ground into a place her neighbors cherish.

It wasn't easy. She had to work with local officials and secure plant donations. She organized community workdays, and sheet-mulched nearly 400 feet of land by herself. "Backbreaking work," she says.

Then there was the issue of water.

With permission to use a nearby high school's spigot, she connected hundreds

of feet of hoses together to reach the corridor. "It takes me three days to water the entire stretch," she says. "Even though everything is native, you need to water them for about three years to get them established before you can be hands off," she explains.

Her neighbors tell her they now see more butterflies, hummingbirds and bees. When a vandal ripped out some of her plantings, residents kept watch until the perpetrator was caught.

For Massa, restoring the strip of land feels both personal and urgent.

"You see all these horrible things happening in the world — the loss of rainforests, of plants and animals and insects," she said. "I felt compelled to do something, because even though I can't solve everything, I knew I could make a difference here."

Her mission now extends beyond the corridor. She speaks to local students about the importance of native plants and is advocating for Los Angeles to become a Bee City USA affiliate — a municipality that supports native, pollinator-friendly plantings in public spaces.

Above all, she says she wants people to understand that environmental work isn't only for experts or institutions. "You just have to be willing to invest the time," she says. "Anyone can make a difference."

Vanessa Glavinskas

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### WE'RE ALL EARS

Got an environmental success story you want to share? Let us know at [editor@edf.org](mailto:editor@edf.org).

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