

SUBJECT Vandana Shiva

OCCUPATION

Radical Scientist

INTERVIEWER
Patrick Pittman

PHOTOGRAPHER Gauri Gill

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There are forces of nature, and then there is Vandana Shiva. Hers is a name close to the lips of anybody engaged in questions of sustainable agriculture, of social justice, of globalisation, of any of the great sociocultural fights of the past couple of decades. Wherever there is a pulpit, where there is land and tradition to protect, she'll be there. She is loved or she is loathed, depending on who you talk to, but she is clearly a woman with a mission—to fight the rise of Big Agriculture, and the end of biodiversity.

Born in 1952 in India's Dehradun Valley, in the Uttarakhand state at the foothills of the Himalayas, Vandana didn't start out intending to be an activist, or an environmental warrior, or an eco-feminist, or a thorn in the side of global finance and trade. She started out in quantum physics, something her school didn't even teach, but which she taught herself well enough to eventually study for a PhD in Canada. Somewhere in there, she met the tree huggers of the Chipko movement in the forests of Uttarakhand, the forests her father worked when she was a child, and it became clear that a life other than the one she intended lay in front of her. The scientist would have to take up the placards.

These days she spends her life travelling the world, floating from confab to confab, angering, agitating, and inspiring. She's published countless books, led countless movements, pissed off countless executives. Sometimes, when she's lucky, she returns to New Delhi, where her Navdanya organisation leads the fight for biodiversity and access to patent-free seeds for farmers.

I've spoken to a lot of activists over the years, whose rage against the machine has turned into bitter and hardworn cynicism. Nobody has fought or raged harder than Vandana Shiva, and yet she does not speak with weariness. She speaks of a fight that must continue, against a specific set of ideas. Whether or not the fight is winnable, that's not the point—all one can do, when one is asked, is to join the fray.



VANDANA SHIVA: Well, I see a deep connection between climate change and agriculture. At least forty per cent of greenhouse gas emissions come from agriculture, and agriculture is most vulnerable to the impact of climate instability. We are witnessing it in India right now, and in the United States. The solution to climate problems of instability and predictability, as well as the food crisis, is ecological agriculture.

Feed the soil with organic matter, it'll allow you to go through a drought. It'll also reduce emissions. It'll give you more food.

And that's it. Amongst all of your work, across all of these issues, in the end it comes back to a consistent solution of seed-to-soil food production.

Yes. You know, at the basis of all of this is a certain kind of thinking. Mechanistic thinking. The idea that the world is a machine, and you could break it down

and fix it back, and everything will go on. Linked to that is a particular idea of the economy—that it must be industrial, that it depends on fossil fuels. Now, there are hundreds of ways to produce; humanity existed long before fossil fuels came into our economy, and growth is a mismeasure. All it measures is how fast you can destroy your natural endowments, how fast you can destroy your society to commodify and commercialise. That growth train eventually stops; we've seen it stop in Europe, we've seen it stop in the US. Brazil, India, and China were kept up as the poster children for growth. The BRICs. We were turned into bricks! We were called "emerging countries." Now, we're grinding to a halt! In Brazil, there's only two per cent growth. In India, five per cent. So this whole 'making growth the objective,' which is nothing but the destruction of society and nature, has to end. To reclaim sanity, you begin with what is available to you.

You can't change the minds of those who become billionaires. You can't change the minds of governments who think this is the way to go. You begin with your backyard. You begin with the pot on your balcony.

You were trained as a physicist, but you're a long way from that these days. Was there a moment of awakening, or were you always fighting?

Well you know, I became a physicist *A*, because I wanted to understand the world, and, *B*, Einstein was my inspiration. I went to a school where they didn't teach physics,

but I found ways to learn physics, and eventually went into the foundations of quantum theory. I didn't stop doing that work because it bored me, I didn't stop doing that work because I'd had enough. If I moved out of my preoccupation with the foundations of quantum theory, which I thoroughly enjoyed, it was really for two reasons.

I'd become involved with the Chipko movement while I was a student. So I hadn't given up physics at that time. But, as a result of doing ecology on the side, working with movements, every vacation for me was a vacation where I participated in and volunteered with movements like Chipko. At the end of it I was writing a lot and studying for fun, and hobby, and service. Those started to create this

identity of me as a so-called environmental expert, and the government started to commission studies, and those studies turned into saving entire ecosystems. We stopped mining in my valley, Dehradun. We stopped monocultural obsession with the eucalyptus—a beautiful tree in Australia, a really disastrous introduction in countries like India. I paused for a minute and said, *You know, short-term studies can save entire ecosystems*.

It's a bit selfish of me to think my brain is meant just to entertain myself. I can do a little more with it.

At that time, I thought I'd take a ten year break. But in the meantime we had the World Trade Organisation, we had the Bhopal disaster, the Punjab disaster. I started to look at agriculture. I studied it like I would study physics, and found all the lies behind the Green Revolution and industrial agriculture. And then with the WTO and the balancing of life, I got the message: ten years, no—more like a lifetime's work! So I guess I'll be doing this for a lifetime.

Looks like it! What was your first encounter with the women of the Chipko movement?

I call them my "university of ecology." I was going off to Canada and I wanted to visit some of my favourite spots. My father had been a forester, and had walked and trekked this area. I had a few days before I was going to catch the flight and I thought, *I'll just*

go walk this mountain, sit in the stream, and take these memories with me. I just wanted to take something precious with me. And the mountain forest was gone and the river was a trickle and I couldn't swim in it. I'm coming back, I'm sitting and talking to the local villagers and saying, 'My God, this has been a disaster.' And then they informed me and said, 'Yeah, but it's going to stop.' In a village hundreds of miles away, women had started acting. They'd started the Chipko movement. My connection to Chipko came from my personal experience of deep ecological loss. Of course later, when I started to make connections, I realised every one of the activists who were really supporting the movement were all friends of my parents.

Were your parents activists?

My mother, for sure, yes. Very much an activist. My father was really an ecologist; you know, he was in a government job, but his heart was very much in these issues. My mother had given up official work and become a farmer, and was much more free. Wherever my father got posted, she would seek out the best poets, the best activists, the best social workers, it was wonderful. So those were the kind of people who surrounded us as we were growing up.

Were you raised in some way to believe that the game around you was rigged, and that you had to fight it? Well we didn't know the larger game. We just knew the game of truth. We knew the game of simplicity. We didn't know the larger game because we weren't in it. Our parents weren't in it, my father was a forester, we lived in the forest. I remember, as a teenager saying, 'Oh, you know, we come to the forest, all my friends go to

discos.' He said, 'You want to go to the disco? Come! Get into the car!' He drove us to Delhi. We go into this dingy basement. After five minutes I say, 'Oh my God, this is so boring. The forest is so much more exciting!' [Laughs].

So anyway, the rigged world, I really got into it bit by bit. My own intellectual

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The tree huggers were born in blood. Funny how non-violence can start that way.

It's 1730, and the maharajah of Jodhpur has sent tree fellers to Khejarli to gather wood for a new palace. When they arrive, they find Amrita Devi and her three children, arms wrapped around a tree, willing to lay down their lives for it; they are not ready to let brief, materialist concerns bring an end to the forest's ancient story.

"It is a small price to pay if, at the cost of my head, the tree is saved," she says. The tree is not saved, and neither, by way of the tree feller's axe, is her head. But news spreads, and villagers from the surrounding area gather in her memory, wrapping themselves around all the trees to come. Before the fellers lay down their axes, 363 Bishnoi people lay down their lives in the name of Devi and the trees. It is not until the children are put in the way that the blood ceases to let. The fellers stop, broken, and retreat. Returning to Jodhpur, they tell the maharajah of the fallen, and ask how they might continue. The maharajah, nonplussed, suggests that easing up on the logging, for the time being, might be a sensible idea.

The sacrifice of Devi and her followers reverberates through folk legend for two and a half centuries, until we arrive in Uttarakhand, at the foot of the Himalayas, in the early 1970s. It is difficult to pinpoint the exact moment of the birth of Chipko, but it arose as a result of a ruthless contracted tree felling system implemented by the provincial government. Trees were auctioned off for felling, regardless of environmental and cultural concerns. In one early confrontation, a sporting goods company was granted 300 ash trees for tennis rackets, but were beat back by the drums and slogans of the villagers. In the Reni Forest in 1974, the government had a plan for keeping protest to a minimum when they announced the auction of 2500 trees, tricking the

men of the villages into a fictional meeting away from home, leaving only the women to protect the forest.

Inspired by the story of Amrita Devi, and by Ghandi's example of nonviolent resistance, a group of female peasants from the surrounding villages, led by Gaura Devi, put themselves in the way of the chainsaws, throwing their arms around the trees. Their refusal to move, their passionate slogans, the rippling spread of the movement to other forests in other areas, became Chipko, and Chipko became a force in civil society, putting environmental concerns firmly on the political agenda. In the early 1980s, Sunderlal Bahugunal—a disciple of Ghandi, who gave the movement its famous slogan, "Ecology is permanent economy"—marched 5000 kilometres on foot through the Himalayas, spreading the message of Chipko. He met with Indian prime minister, Indira Ghandi to deliver the movement's message; Ghandi subsequently ordered a fifteen-year ban on felling in Uttar Pradesh and surrounding regions.

"Chipko" in Hindi, means, literally, "to stick", or more loosely "to embrace" or "to hug". Though it started with hugs, over the years the women became more organised, forming co-operatives to guard forests, and to organise production and respectful use, maintenance, replanting and rotation of the land through traditional means. Many of their leaders later became active in campaigns against India's brutal damming programs. Their nonviolence and collective action served as a model for others around the world, from the forests of Tasmania to America's grand trees of the Pacific Northwest. Somewhere along the way, "tree hugger" became some kind of pejorative—a short stab of a phrase denoting thoughtless, pointless environmental protest. But those short stabs weren't strong. Not so strong as Amrita Devi. Not so strong as those women of the Reni Forest, who put their lives on the line for an abstract idea, and reshaped modern India in the process. Those are the ones the trees will remember when we're gone.

life was very innocent as a physicist. I often say I found the world behind the eucalyptus tree! I didn't know there was something called the World Bank until I started to see all the areas around Bangalore turning into eucalyptus monoculture. I asked, 'Why is everyone planting eucalyptus?' I can't live with unanswered questions, you know. That's the scientist in me. If I find a question mark, I've got to answer it! So there was this big question mark: 'Why is every farmer planting eucalyptus?' I started to do the study, and found a World Bank loan behind it. That's when I found out about the World Bank. Then I studied the World Bank. Then I thought we'd dealt with the World Bank, we were going to be at peace. Then they created the World Trade Organisation.

Now you're often referred to, even on your own book blurbs, as a "radical" scientist. It always strikes me as interesting when people preaching very traditional and old ways of engaging with the earth refer to themselves as "radical." But what does it mean to you to be radical in science?

Well, look at the roots. I mean, the word "radical" comes from the word "root." So for me a radical scientist is one who's rooted in actual knowledge, truth, and independence. And for that reason is also rooted in knowledge that has lasted, and all knowledge that has lasted is knowledge that makes us recognise interconnections.

You talk about India's growth—have you really felt it start to slow down in the last few years?

I have felt it in the ugliness of what it has wrought. India was a beautiful country. In terms of landscape, people,

faces, the light in people's eyes. The light has gone. Faces are desperate and ugly. Buildings are desperate and ugly. India has been ruined in these fifteen years of chasing growth. We have paid a very big price, and it doesn't get measured in growth. That's the kind of thing I go around measuring—the quarter million farm suicides. We didn't have to kill our farmers; agriculture was a very viable activity. My mother brought us up on agriculture. We had created a food system based on enough income for the farmers, and affordable, sustainable food distribution.

All of that has been dismantled to create growth. That is something we didn't have to do, because we *can* feed two Indias. We have enough knowledge in our biodiversity, enough land, enough water. And yet we are starving our people, and killing our farmers, and killing our soil. Every day we witness it. It's a tragedy. The double tragedy is what India's become, and yet, it's called "Shining India."

India shines, and yet the lights have gone out?

Absolutely. When I went off forty years ago to do my PhD, in Canada, people would talk about poverty. I didn't know economics, I was, you know, just doing quantum theory! I didn't know too much about

the world. But in the simple stuff that one sees; I used to say, 'I don't know what poverty is, but our people have a light in their eyes, and there isn't a light in the eyes of people here.'

And there's something that brings a light in your eyes. And of course it's the joy of living, it's the art of living.

I was in Australia recently to do a keynote for a group on women's economics. And I tried to remind the women that economics and economy originally meant the art of living, the art of running a home, the planet, looking after it. All it has become is money making. Aristotle had a word for it, *chrematistics*. That's all we are now. Money makers, and most people can't make money, so they die.

People really started to take notice of your work on a global level with your work on seed politics, and Monsanto, round about the same time as the World Trade Organisation was kicking into gear Yeah, but you know, I got exposed to this in 1987. Because of my book on the Green Revolution, I was invited to an early meeting on biotechnology long before there was commercialisation. The industry laid out its plan, and the plan was threefold. You've got to genetically modify in order to take patents, because we can't just go and say, 'The seed is my invention,' you've got to do something to

it to make it look different. So genetic engineering was the gateway to what they really wanted. Patenting so they could collect royalties. And they wanted this on a global scale. So they wanted the WTO to impose these rules of patenting worldwide. 1987 is when I started saving seeds and started Navdanya. Of course, there was no law on paper by then, but the agenda of the corporations was there. 1991 is when we got the leaked draft of what became the WTO, the *Dunkel Draft Text*, it was called. And we called it the *DDT*. I started travelling the country explaining this to farmers, and built up a movement. There has been a redefinition of who is the creator, the owner, of this planet and its beautiful diversity of life. I don't think there's been any tectonic shift as deep as that, and most people didn't even notice it.

If the lights have gone out in India's eyes, how do you keep fighting in the wake of things consistently getting worse? What gives you the strength to keep protesting against, say, the drowning of the Narmada Valley, and to keep shouting against all of that? Why don't you give up?

How can you give up life? How can you give up truth? How can you give up justice? I don't think it's given to us as a possibility. And as I've often said, we have a Hindi phrase, "Nishkam Karma" which basically means a deep engagement, with detachment from the results.

As a human being, you are duty-bound to get engaged. When you find injustice, when you find unfairness, when you find untruth. But you have to get engaged knowing that you have no control over the outcome.

It's that combination of passion and detachment that allows one to carry on. Of course, otherwise you would have burnout.

So at the turn of the century we all feared globalisation and the WTO and the rising monoculture. A decade on, in the wake of economic collapse and the ongoing impact of Occupy and other movements, do you see real, tangible opportunities to build something new, now, from the grassroots?

You know, when the whole globalisation project was put in place and that video was shown around as bringing prosperity worldwide. Bill Clinton would say all boats would rise with the tide, remember! The results are there for us to see. Society after

society is collapsing. I mean, boats are drowning. And there are two things available to us—one is to anticipate what will come, and the other is, even if you don't, then after the boats drown, you still have to have your lifeboats. You still have to have your little Noah's Ark. I do believe that Occupy, very clearly naming the one percent versus the ninety-nine percent, has given a clarity for people to understand and start building alternatives. I think it's happening in a very big way.

I was invited by the president of the Province of Rome a month or two ago,



and they took me to these urban gardens. The government is encouraging people to occupy vacant lots. It's a progressive government, and they want to prevent builders from using the crisis that Italy is in for grabbing public lands. It's beautiful how a local government and local people... I mean, again, the light that is back in the eyes of these youths who would otherwise have been gangsters!

A couple of months ago you were at the UN in New York for a discussion on Bhutan's Happiness Index. I find that very interesting let's look at another way to measure the success of a country that's not economic growth. They're doing some interesting stuff there.

They definitely are. Very courageous stuff. About three years ago the prime minister invited me for a conference. I delayed my trip to Copenhagen for two days just to do this meeting in Bhutan. I'd done my book, Soil Not Oil; we'd just finished the study on the Himalayas, "Climate Change at the Third Pole". So I talked of all this and then the

prime minister asked me to come back and help the transition to a 100 per cent organic Bhutan. As he wrote in his letter, "The only way we'll grow happiness in a society which is largely agriculture is by growing organic." From our experience, he could see what the Green Revolution has brought. A quarter million farm suicides. Cancer; there's a cancer train that runs out of Punjab every night. Water gone, poison everywhere. And he definitely doesn't want to see Bhutan that way. Bhutan always talks of happiness and well-being. And well-being very clearly is another way of measuring the economy.

You won the Sydney Peace Prize a few years ago. I wonder if you could talk for a moment about the link between your work and what that actually means for the building of peace in the world.

I started working in organics in 1984. Like I said, Bhopal had happened, Punjab had happened. These were both huge incidents of violence; in Bhopal, thousands had been killed in one night. And in Punjab, thirty thousand had been killed

in extremist violence. That's when I started to study the Green Revolution. So the very roots of my engagement with organic farming begin with a search for a solution that is non-violent.

For me, organic has always been about peace-making with the earth. Peace-making for people.

Why should people be dying of cancer? Why should farmers be committing suicide? Why should we, if we are angry, take guns and shoot each other? Peace has quite clearly been the motivating factor for me to do all this, both peace with the earth and peace among people.

You've come back a few times, in what you've been talking about, to the tragedy of the farmer suicides in India over the last fifteen years. When did this phenomenon become noticeable to you?

It started in 1997. I rushed down to study the first one in Andhra Pradesh, a young man who grew food crops. He was told he'd be rich with this hybrid cotton. He borrowed heavily to get the seeds. Borrowed heavily to drill a tube well. Borrowed heavily for the chemicals. He couldn't pay back. He committed suicide. He used

to grow food and he was never in debt before that. That was the first study we did. And we've monitored it since then.

Most of the suicides are in the cotton belt. Most of the cotton is now genetically modified cotton, Monsanto's cotton. Now, while the trend is so very clear that the suicides are because of debt, the debt is because of the cost of seed and

chemicals, and this cost is extremely high in the cotton areas—every year there's a fake study that is floated by Monsanto. I've done this work long enough to know who speaks for them, which scientist does their studies, which so-called "farmers' union" puts out a study. There's one new one saying, 'Oh, the indicator that this has done well is the higher levels of consumer expenditure.'

My God, you take the food away from people, you stop them from growing everything and take away their serenity, obviously they'll have higher expenditure! That's an indicator of poverty, not of prosperity!

Two years ago they brought out a study on how women are doing better. What was the indicator? That "more women are working in other people's cotton fields." Their study said they've been going to the homes to see what is happening, and they say, "Therefore we can assume the men are looking after the children and taking charge, and this is the liberation of women." And I had to write a response and say, "No, the men have committed suicide. That is why women who work in their own fields to grow food for their children are now working in other people's cotton fields, as slave labour, to be able to get something back for the children." It's all so manipulated. And those who don't know get impressed and say, 'Oh, there's a debate.' There's no debate. There's lies versus truth. There's never a debate between lies versus truth!

In Australia, when you speak to farmers who are close to the poverty line, trapped in cycles of debt with no particular way out, they all say, 'It's easy to tell me that I should turn to organics, but I'm only just surviving and I don't know how to do it.' Those debt cycles actually keep the existing systems in place.

Absolutely! When genetically modified seeds came on the market, they were first planted in the United States. And like I said, I've been watching it since 1987, before it was commercialised. So when I made one of my trips in the early 1990s when the soya and corn started, I met with farmers. And I asked, 'Why are you planting this stuff?' And the farmers said, 'The

companies have a noose around our neck. We do what they tell us to do. GM is what they're giving us—we plant GM.' And this debt cycle is, in effect, a slavery cycle, where farmers lose both the freedom to think and make independent judgements, and the freedom to act.

When we talk about food security—which is obviously a big focus of Navdanya—in easy media terms, it's always just about famine-level malnourishment. But that's not really what you're talking about, is it? It's about families, in India, Australia, wherever else, living near the poverty line, and how to eat well in those circumstances.

Yes. This is something I saw recently in Punjab. We were told Punjab produces so much, but the fields were impoverished compared to the fields from my regions up in the mountains

where we grow a hundred crops. Punjab was growing rice, and monocultures of wheat. So the first thing that happens is that our mind is shifted to what I call "the monoculture of the mind." And you don't look at the diversity that was lost. The second thing that happens is that you make things in terms of the yield of that commodity, as if that's all that is produced. But if you look at diversity, there's more than the yield of one commodity. There's the output of many products. There's the hay your cow gets, there are the vegetables your family gets, there's the fruit, the multiple crops so that you don't have a collapse in terms of disease

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or in terms of climate change or pest attack, et cetera. Last year I decided to turn this into a nutritional calculation, and we did a study called "Health Per Acre." We took the output of farms and converted it into actual nutritional content. And of course the monoculture chemical farms produced next to no nutrition. Whereas the biodiverse farms produced so much nutrition that we could be feeding two Indias by going ecological.

The minute you shift to a monoculture of agribusiness, what happens? You stop thinking of the family. You stop thinking of the soil. You start thinking of the market.

Got to sell, got to sell, got to sell. And you start thinking of having to buy the inputs in order to grow what you want to sell. So you start thinking, Got to buy, got to buy, got to buy! But farmers don't normally sit and do a cash account, a balance, and say, 'I've spent so much; I've earned so much.' And definitely the whole agriculture system has zero consideration for nutrition, health, taste, and quality. And absolutely no consideration about food as nourishment, food as culture, food as that which binds us to the earth and binds us as family in society to each other.

So to your mind, there are no issues with small scale diverse farm production scaling to feed not just India's population, but also the vast cities and megatropolises of the world. You believe you can feed a world to that level without industrial agriculture?

Well India's feeding itself with small farms. Eighty per cent of the world's food is not coming from the monoculture agribusiness farms controlled by the dominant cultures of the world. Eighty per cent of food comes from small farms. So when we consider scal-

ing up of the small farms, for me, scaling it up is not destroying the small farm to make the large farm. Not destroying the bio-diversity to make the monoculture. But taking those large farms and turning them into bio-diverse farms. That is the scaling up we need.

You've got a lot of work still to do. You've been working hard for a lot of years. But what is it that will let you know that this fight is working?

That it's worth it?

Well for me it's worth it every day just because I'm following my conscience and doing what my conscience says is the thing to do. I go to sleep very peacefully, I get up very peacefully. But I am putting

a lot of energy this year in taking the issue of seed, which is what propelled me to do the work of Navdanya from '87 onwards, to a very global level of public understanding. You know. There are people who are doing seed saving. There are people who are fighting patents. There are individuals and small groups. But the juggernaut of destruction is so huge, and now country after country is passing laws to criminalise farmers' seeds. To collect royalties from anything a farmer grows, whether it was bought from Monsanto or not. And in effect, it is to strangle every alternative.

I've seen this happen to Germany and France this year. We have fought this kind of law from 2004 and resisted it in India. So we've started the Seeds of Freedom campaign, a global movement. And what I really want to do over the next three years—I don't know what the outcome will be, but I feel the imperative to do it—is that the issue of patenting gets understood by a lot more people. So that a lot more people start to realise that this is so wrong, and start to take

action. Not just the farmer who was saving seeds who is today being criminalised, but every organic grower, every organic eater. The little restaurant that wants to get good delicious vegetables and knows that tomorrow this will be impossible and all you will get is Monsanto seeds. So to really create a very broad wave of both awareness and outrage. And to call for no patents on seed. And to create actions that allows it to happen.

Why do I take even hope in this? Because we've done it in India. When I started seed saving, I did it to fight patents. And I took inspiration from Gandhi. Facets of Gandhi. Gandhi didn't have just one facet. He didn't just resist. He created and resisted. He said, 'If you don't create an alternative, your resistance will never be strong.' So I took inspiration from the spinning wheel.

That's why I started saving seeds, I asked, Gandhi fought the British Empire with a spinning wheel, so what's the spinning wheel of today?

And the seed is what came to my mind. And on the other side, I said, *They're not going to stop making laws just because some of us think it's an outrage that you haven't invented the seed and you call it your invention. Something's going wrong very deeply. And then you collect royalties, and we've seen this for fifteen years, you collect royalties that kill farmers.* It was always an ethical outrage but now it's becoming a social human rights abuse.

Gandhi said to the British, when the salt laws were being enforced, that, 'We have a duty to continue to make our salt, we won't obey your law.' So that day onwards, from 1987, we said, 'We're going to save seeds, but we're going to save seeds with the declaration that we do not obey, we do not respect patents on seeds because it's a brute law. It's an unjust law. And it's our duty to not obey.' All our members, our 650,000 people who are associated with Navdanya—in campaign movements, seed saving, organic farming—all take this simple pledge: we received our seeds from nature and our ancestors, we've got to pass them on to future generations. We will not respect any law that makes this illegal.