

# The Great Simplification

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Nate Hagens (00:00:02):

You're listening to The Great Simplification with Nate Hagens, that's me. On this show, we try to explore and simplify what's happening with energy, the economy, the environment, and our society. Together with scientists, experts, and leaders, this show is about understanding the bird's-eye view of how everything fits together, where we go from here, and what we can do about it as a society and as individuals.

(00:00:33):

Vandana Shiva is a well-known activist, author of many books, and is a global champion on regenerative agriculture, biodiversity, and nutritious food. She has a PhD in physics and, 40 years ago, founded the Research Foundation for Science, Technology and Ecology, an independent research institute that works on the most significant ecological problems of our time.

(00:01:02):

I have known of Vandana Shiva for over 20 years. We have many mutual friends, but the moment I hit record on this podcast was the very first time I've ever spoken with her, and what turned out to be a delightful first interview on the central topics of our unsustainable world and where we go from here. I'm very pleased to welcome Vandana Shiva.

(00:01:41):

Hello, Vandana.

Vandana Shiva (00:01:43):

Hello.

Nate Hagens (00:01:45):

Thank you so much for your time. We are 11-and-a-half hours difference, and I'm just having coffee and you've not yet had your dinner, but I really am honored to have you on the program.

Vandana Shiva (00:02:01):

My pleasure, too.

Nate Hagens (00:02:03):

There's so many things I want to ask you. What an amazing time to be alive. You've been working on the core issues of our time for your entire life. I don't even know where to start, but you were one of the original tree huggers. Could you tell us about the Chipko movement and your experience? Let's start there.

Vandana Shiva (00:02:27):

Yeah, no, I was a volunteer for that wonderful movement. I was doing my PhD in Canada. And before leaving, I just visited a favorite forest, and forest was gone. And that's when I was feeling despair, feel part of me had been chopped off. And then a chaiwala on a roadside informed me about Chipko.

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(00:02:47):

So, just like you're asking me, I didn't know what Chipko was, but I said, "I'm going to come back every vacation and volunteer for this amazing, courageous movement of women declaring that they would hug the trees and the axe would have to first fall on them before it fell on a tree." And the movement started '72, continued till '81, till everything they were saying was recognized by government in the decade of disasters, landslides, floods. And the women had been saying, "These forests are what manage soil and water. They are not timber mines," because the deforestation was leading to huge landslides and disasters, of the kind we see now aggravated. But at that point, it was all about... logging was the biggest industry at that time. And Chipko was an ecological movement. It was a grassroots movement. It was led primarily by women, and they became my professors in ecology here. I did my quantum theory at the University of Western Ontario, but I learned my biodiversity and ecology from women who'd never been to school, but they knew everything about how forest function, rivers function, soil functions, and they taught me.

Nate Hagens (00:04:09):

Have we missed a generation of ecological teaching of young people, because it seems like you have to get to college to have deep ecological coursework. What's been your experience of that globally?

Vandana Shiva (00:04:24):

Well, I think the '70s were really when the early ecological movement... You had Rachel Carson, we had Chipko. The Stockholm Summit, only our prime minister bothered to go, and she cited from the Atharva Veda, "Let us not hurt the Earth. Let us just take enough for our sustenance." And I think the '70s then were worked on getting the message and it was much more movement-building at that time. And I think later, then, the big organizations got created. And I always feel, to me, Chipko was important because it was so self-sustaining. Fistfuls of rice used to support the movement.

(00:05:11):

And I think what happened was, through the '90s, at the time when globalization was rushing ahead and we had created the International Forum on Globalization, recognizing that the disasters will start now, that their emissions will grow. When Walmart outsources all its procurement from China, it's not that the emissions come down, they just increase, but they are outsourced, and so they are not counted in the Walmart budget or in the US budget. I think the big-organization environment movement was not very present on seeing how the dominant economy, the economy, what I call the 1%, did a book called Oneness Vs. 1%. And I think, yes, a generation missed out on the kind of everyday knowledge that is absolutely vital for life on Earth and for hope for the future.

Nate Hagens (00:06:16):

Yeah, I agree. I didn't take ecology really until my PhD studies, when I took a lot of it.

(00:06:25):

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So, you've written so many books and have been working on so many projects. You wrote a book called *The Violence of the Green Revolution*. What has the so-called Green Revolution done to communities and to real sustainable agriculture?

Vandana Shiva (00:06:43):

Well, the first is, it totally destroyed our ontology, our understanding of the living world. The soil was declared empty, an empty container for holding the nitrogen fertilizers. A wonderful essay has just been written on *Death in The Garden*, picking up from my book on the Green Revolution, but going deep into Haber-Bosch, Hitler's Germany, The gases that killed people, but also, the same process that made ammunitions made synthetic fertilizers. Basically, the Green Revolution was driven for selling these leftover war chemicals. Rachel Carson has written about it. Albert Howard wrote about it. And industrial agriculture was named green when it was introduced to countries like India. It wasn't that there was a green movement there. The green movement came much later, in the '70s, but there was a Red Revolution in China, and that struck fear in the United States. So they just gave the word green to pushing fertilizers and changing the plants to adapt to fertilizers because the native seeds were totally rejecting the synthetic fertilizers.

(00:08:04):

So Borlaug had to make the dwarf varieties and adapt it to chemicals, but the chemicals required more water. That's why there's so much water use in industrial agriculture. Lakes are drying up, aquifers are drying up, all to feed the chemicals, not to feed the planet, not to feed the plants, to just dissolve the chemicals.

(00:08:27):

And then we have in this short period... I did the book in '84 when the Punjab farmers rose and revolt and they said, "We are living under slavery because we don't choose what we'll grow. We don't choose the methods of growing. And we don't choose the price at which we sell it," which is a freedom we've always had. And today, Punjab soils are desertified, the groundwaters are disappearing. There's water mining of a very high level. The pesticide use has created a cancer epidemic. And there's a train that leaves Punjab called the cancer train. It's name is the cancer train. And the fact that we keep having these protests of farmers is because, even though the image is that the farmers did well, well, we wouldn't have had protests in the '80s, in the '90s, and 2 years ago, 14 months of protest, if farmers were doing so well.

(00:09:24):

Indian agriculture before that was what Albert Howard wrote about. He was sent by the British to improve. We are always being improved, I smile at that. The south is always being improved. Plants are always being improved. Trees are always being improved. And he found the soils fertile when he arrived in 1905, and he found there were lots of insects but no pest damage. And he said, "I'm going to make the pest and the peasant my professor." And he studied, literally, under the peasants and watching how insects controlled pests and wrote the book, *The Agricultural Testament*. That was the agriculture that was destroyed.

(00:10:10):

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Howard then became the inspiration for the organic movement worldwide. Rodale Institute was created because of his book. Soil Association in England was created because of his book. But the interesting thing is the attack on organic continues. "Organic starves the world." I've just had a compliment because the United Nations visited women being... greeted me for my birthday, which was a few days ago. The trolls are hyper. And they're telling me I'm responsible for exactly 50% of hunger deaths of the world. So, the ecological alternative to the Green Revolution is what flourishes, that's the work I do in Navdanya, that's what I've done since '84.

(00:10:58):

And yet, the propaganda machine keeps letting people feel that it doesn't work. So the myth of the empty plant, the empty soil, "The plant is just a machine for using the fertilizers, it has no other purpose. Plants don't have a being. Plants don't have intelligence. Plants are not self-organized entities. Plants are just delivery for the fertilizers."

(00:11:22):

I remember when we were defending our... I worked very hard to ensure that the myth that the seed is an invention of Monsanto did not enter our legal framework because I used to work with Parliament, work with our government. Our Parliament wrote a clause that plants, animals, and seeds, and their parts are not human inventions, therefore they cannot be patented. And of course, Monsanto tried to challenge this. And I remember their lawyers saying in the courts, "The seed is an empty container. It's only the chemicals that we put into it that make it work." So this idea of the empty Earth, the empty soil, terra nullius, this is what colonialism constructed.

(00:12:09):

It's still carrying on. We are now empty heads. We can't think. We need behavior modification.

Nate Hagens (00:12:15):

Let's expand on that, on your comment about the UN and pesticides. What is your take on happenings in Sri Lanka? I understand you were an advisor last year on the ban of imports to synthetic pesticides and fertilizers, which was revoked seven months later amid the economic turmoil and popular uprising. What have you learned about moving away from fossil fuel-based agriculture, and what's your take on the Sri Lanka situation?

Vandana Shiva (00:12:47):

Well, I was never an advisor to that president.

Nate Hagens (00:12:50):

Oh, really? Okay.

Vandana Shiva (00:12:50):

And I wouldn't be so naive as to say overnight, "Stop fertilizers." If I was advising him, I would say, "Spend five years building up the ecological capacity." So he announced, already Sri Lanka was in deep

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debt, independent, totally independent of the ban on fertilizers. And the debt was because, like every other country that's driven into debt and pushed into the debt trap, they were building highways, resorts, ports, all of which needed huge money and they weren't able to pay. A lot of focus is put on China, but BlackRock was also creditor to Sri Lanka. And because they could not afford anymore to pay the debt, and the debt crisis was aggravated by the COVID crisis.

(00:13:48):

COVID meant the exports collapsed, supply chains were collapsing. They were depending a lot on exports of spices and tea, that collapsed. They depended a lot on tourism, tourism collapsed during COVID. And all the transfer of foreign exchange from workers who were overseas, that, too, collapsed. So, the foreign exchange-earning collapsed and the debt was huge. 300 million was what Sri Lanka was spending on synthetic fertilizer.

(00:14:19):

And it is not the case that there isn't an organic movement; very, very strong organic movement. For 30 years, I've been visiting the farmers of Sri Lanka. And when the president announced overnight that they would stop importing synthetic fertilizers, it was nothing to do with me, it was a lot to do with the debt. What happened was his agriculture scientists got in touch with me. They said, "We've been told to stop using agriculture and the import has been banned, and we really don't know how to do organic. Will you train us?" So I did a Zoom training. Like I'm talking to you, I talked to the hundreds of scientists of Sri Lanka. And they were also particularly keen to learn about ecological agriculture, something I've done now since 1984.

(00:15:10):

Because CropLife, which is the coalition of the group I call the poison cartel, people who make poisons... And names keep changing. It was Monsanto now its Bayer. It was Syngenta, now it's Syngenta ChemChina. It was Dow and was with DuPont, and now it's Corteva. So, no one could keep up with these change in names, and these concentrations and convergences for 60% of the seeds of the world are controlled by them. And they call themselves CropLife. They have nothing to do with crops. They're basically pesticide and herbicide makers. And they hijacked the UN Food Summit last year and took it to New York. And CropLife, the UN, Mr. Gates worked together to destroy the international system. The CropLife was attacking in a vigorous way. And of course, they've, really, mania, "Everyone will starve. Everyone will starve. Everyone will starve." And the scientists were very keen to find a way.

(00:16:14):

We've done more ecological agriculture. Our productivity is huge. The nutrition per acre is much more. Soils are much more fertile. So, that's what I did. The president I've never met, I've never known. And I think preparing the science and the transition comes first. A ban doesn't make any sense in an ad hoc way.

(00:16:42):

Take another case, another island, Cuba. The sanctions stopped any import of synthetic fertilizers, stopped all oil. Overnight, on their own, the Cuban scientists shifted to an agriculture that doesn't need fossil fuels. The tractors disappeared, the horses came on the farms, gardens were created all over

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Havana. I've been there for two, three times to inaugurate the big sustainable agriculture movement, their organic movement. And because the country did it themselves, with the top -- it's the only country where the organic movement has been led by scientists. Everywhere else, it has been led by farmers. But the scientists and the farmers joined hands and amazing transition took place.

(00:17:36):

So, it is not the case... Well, we were growing food without chemicals till 1966 in this country. If we starved before that, it wasn't because of ecological agriculture that Albert Howard has described, it was because of the British Empire taking half of the food in cash as a tax payment from the Indian peasants. Having declared the whole land of India their private property, \$45 trillion was transferred. 60 million... some people say 40, some say 60, but between 40-60 million people died of famine. Farmers who were growing the food couldn't eat it. The last big famine we had was 1942. We haven't had a famine since then. And the Green Revolution story always has a narrative. "India was brought out of famine." No, there's a big gap between 1942 and 1966, and there was no famine in that time.

(00:18:36):

But for me, the saddest part about the way industrial agriculture writes its narratives, whether it's about Sri Lanka, or the Green Revolution, or the GM question, is that they can totally fabricate facts. In this troll attack on me right now, they're accusing me of having gone to Kansas. No. In 2021, no, I wasn't traveling, no one was traveling. They've cooked up a visit of mine, and then they cooked up a letter to the president of a university I never visited. Fascinating, yeah? I just look at it and I said, "What kind of world are we living in? Anything can be cooked up."

Nate Hagens (00:19:15):

Yeah. I'm well aware of those sorts of things. And our social media and algorithms don't help either because they turn things that are angry and divisive into viral things, things that we would never say in a town meeting or a meeting on people, but online, the more extreme stuff gets spread.

(00:19:41):

So, every time you talk, I come up with more questions I want to ask you, but at the heart of what you're saying just now, the soil and the population of countries like India are also casualties of the economic superorganism, which is my work looking at how we have created this growth-based metabolic structure globally. And it's outcompeting more sustainable, slower, more ecology-based movements.

(00:20:17):

And so, what is your real belief on the link between fossil-fuel agriculture and population? You mentioned Haber-Bosch and nitrogen fertilizers. On a global level, what do you think is the human global population situation? How many people can the Earth support at a reasonable lifestyle in the future?

Vandana Shiva (00:20:40):

Well, I think different ecosystems support different numbers. The very arid ecosystems have pastoralism, which distributes the population. So per acre, the population is very, very thin. The rice-growing regions

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of Asia have a much higher population. And there's tremendous work done on how, for example, the farming systems in Bali were evolved in order to turn larger numbers into an advantage by creating what scientists have called involution, that the people did more work in the rice paddies, created the terraces, and more people could be supported. So there was an intensification of the carrying capacity of the ecosystem, huge management of water distribution, which still carries on to this day.

(00:21:42):

In my book *Earth Democracy*, which I wrote after we stopped the World Trade Organization in Seattle, and we were always being told, "Oh, the anti-globalizers know what they're against, they don't know what they're for." And I would always say, "We are not anti-globalizers. We are pro-Earth, we are pro-humanity." And we are basically seeing how your model of corporate control, based on growth, is destroying the world.

(00:22:09):

Now, most people don't know that growth is a very recent indicator. It's during the war that extracting surplus from society... Societies run their wealth in circular economies, they constantly give back. So there's nothing like extra extraction. But besides, you got to buy more jet planes, you go to buy more ships, have larger armies, navies, air force, you go to finance it. So what was done was the gross domestic product, gross national product indicator was created. And then the UN System Accounts, or UN System of Accounting was created, which basically says, "If you produce what you consume, you don't produce." So, sustainable production, which sustains consumption, was turned into zero. And that's why the growth indicator only counted extractivism. But every bit of extractivism is a disruption of a social system or of an ecological system.

(00:23:13):

And it is not just a disruption of the capacity of social, ecological systems to support nature and society, was this extraction has huge amounts of pollution and externalities. The fossil fuel-age has created externality of climate change, but it has also created all the distortions in our thinking. You talk about simplification, I talk about simplicity. And the reason we don't see the huge footprint is because it's always invisible. It's either far away in another country, another culture, or it is in invisible energy slaves.

(00:24:03):

Amory Lovins had done this amazing work on energy slaves, and I think he had talked about 250 times more energy slaves in America than Nigeria in terms of workforce. Therefore, the population of the Earth is not 4 billion, but 200 billion. So if you add that to today, and of course, even our computers are working on energy slaves, everything is working on it. And the more invisible it becomes, the heavier the energy slaves. So if I work it out with the current population of 7.7 billion, people living under forced industrialization, an energy-intensive digitalization, the population of energy slaves is more than 3.35 trillion. In displacing real people and substituting them with 250 energy slaves is additional burden. And they're talking of making every car electric. Well, you need 600 times more lithium than there in the world. So, you always project this growth into a fictitious realm. And its main justification is to destroy what exists. You'll never get where you want to get, but your main objective is to destroy what exists in a sustainable way.

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Nate Hagens (00:25:29):

Well, by "your," you mean the western culture. It's certainly not my objective. My objective is to save as many species and things of value through the bottlenecks coming up. But I know what you mean.

(00:25:41):

And I think what's happening now in Egypt in COP27, it's going to fail, like they always fail, because they're trying to manage three objectives: climate, growth, and equity. And you can't solve for three things in one conference. Do you have any thoughts on that?

Vandana Shiva (00:26:06):

Well, you can't have equity of a race towards non-sustainability. It's just the wrong place to go. I remember a cartoon that was made when I talked about... everyone's sitting on the branch and saying, "I'm going to chop it up faster." And that model of equity is basically a race toward the same destination of death and extinction. And that cannot possibly be a true meaning of equity. Equity has to be rooted both in the ecological fabric and the web of life and the Earth family, and it has to be rooted in not the consumerism that has become the model of being human but living within the limits that the Earth provides for us and living a good life within those limits.

(00:26:59):

Because I've lived in a pre-industrial India. I have lived in a pre-fossil fuel India. We were called backward because we didn't have plastic. And the World Bank gave money, "Bring plastics." Now we got plastic pollution. Then they said, "They don't have pesticides, they're backward." They brought us pesticides. Now we got cancer deaths.

(00:27:19):

I can tell you, when you measure true quality of life, how happy are people, how much is the twinkle in their eye, how much do they smile at each other, those are the true human indicators. How much are they able to cooperate? We see climate disasters. In a village community, they'll get displaced, their hut will be washed off. Cyclone is gone, they come right back and help each other build each other's huts.

Nate Hagens (00:27:52):

So, do you see twinkle in people's eyes and smiling in your city and community in India now, relative to the past, or-

Vandana Shiva (00:28:00):

No, it's gone down. When I went to do my PhD in Canada, and, you know, everyone, "Oh, you poor things, you're from poor countries," and they'd give me these long lectures. And my basic argument was, "Even on the street, people have community. And even on the street, people have a twinkle in their eye." If there's one thing greed has taken away from human beings, it's the twinkle in the eye.

Nate Hagens (00:28:25):



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You also wrote a book called *Soil, Not Oil*. I don't think we're going to be able to cover all your books on this call. But in the book, you championed the potential of self-organizing community propelled by human energy. In other words, work.

(00:28:44):

In contrast to the energy slaves from fossil fuels that you've just mentioned, and the creativity by this community in contrast to top-down solutions by policy and growth, can you summarize this? And what is the potential?

(00:29:03):

My work, which is just superficial compared to yours on this topic, is Haber-Bosch and nitrogen fertilizers have increased the amount of food globally. We could replace a good part of that, but it would take a lot more time and human labor taking them away from other jobs. So, can you explain this and expand on it?

Vandana Shiva (00:29:28):

Yeah. I don't really agree that Haber-Bosch increased the availability of food. They increased the production of commodities. It's very different issue. The minute you get synthetic fertilizers, you have to turn a biodiverse system, with 12 crops and 9 crops and 7 crops, into a monoculture to match the chemical inputs. Not only is the plant changed into a dwarf plant but diversity is replaced for monocultures to fit into the chemical package.

(00:30:04):

My work, all these years, has now shown me, one, when you measure biodiversity in terms of nutrition and the biodiversity itself, you actually produce much more nutrition per acre. So we worked out an indicator, we said, "Yield per acre measures commodities monoculture's leaving for the ships, whereas nutrition per acre measures how much nourishment there is in the plants." So far, we've done it with the soil. The soil is richer, the nutrition in the plants is richer. And now new research is showing that the Haber-Bosch commodity is nutritionally-empty commodity. It has absolutely no phytochemicals, it has no zinc, and that's why the zinc deficiencies, magnesium deficiencies, all kinds of deficiencies are growing. So, if you treat food as that which nourishes us, then we haven't grown more food. We have definitely grown more trade and more movement of commodities, but commodities are not food.

(00:31:18):

So, Haber-Bosch did not. I mean, that to me, as a scientist, the wrong measure. Growth is a wrong measure of how well the economy is doing and how well people are doing. Yield is a wrong measure how well farming is doing or how healthy the food is.

Nate Hagens (00:31:38):

So, using GDP to measure our wellbeing, the analog in agriculture is using calories to represent biodiversity, and nutrition is also the wrong label.

Vandana Shiva (00:31:53):

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It's the wrong measure. It's the wrong measure.

Nate Hagens (00:31:54):

That makes sense to me. In the United States, approximately 3% of the population works in energy and agriculture. And in India, it's something like 70% or more than that. So, is it possible to generate nutritional food without fossil fuels, but getting rid of some of the extraneous jobs and having more people working on the land intensively? I believe you think that's true.

Vandana Shiva (00:32:26):

Well, our book on Health per Acre, we worked out, if we extrapolated every acre of land today to grow biodiversity, we would feed two times India's population.

Nate Hagens (00:32:40):

In the land of India itself... just in the land of India?

Vandana Shiva (00:32:44):

In the land of India, but if we do that all over the world, it would be the same. Commodities are not feeding people, that's why a billion people are hungry and the remaining are having all kinds of deficiencies and all kinds of chronic diseases.

(00:33:00):

In the lead-up to GAT, there wasn't even a WTO then, I organized the biggest-ever rally of farmers internationally and called them to India. And I called environment ministers like José Lutzenberger from Brazil, who was defending the Amazon, and to all the exhibit, the environment minister of Ethiopia. And these, here were the 500,000 farmers at this gathering. We were sitting on the stage and I remember Lutzenberger said, "I know why they're scared of small farmers because a small farmer is the only producer who needs the Earth and their body. We can do without external inputs. That farming is possible."

(00:33:54):

So, it is really the last free labor-free production. And then, when globalization kept pushing, our government signed the WTO, agriculture was brought in, seeds were brought in, and our government started to say, "We must be like the United States. They have only 3% on land and they are advanced. So we must remove our farmers from the land and reduce it to 3%." So I joke in TV debates. Those days, there were TV debates. I said, "They want to put them into the Arabia Sea. How do you get rid of 70% of the population?"

(00:34:32):

And then, because I worked with the then prime minister, who had been a former prime minister, the GAT ambassador who had negotiated the treaty, and we created a whole WTO campaign and we did a calculation. We said, "Okay, if they were to displace all these millions from the land and put them into

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the cities, what's the rate of growth of employment in the cities? And if that rate of growth had to absorb all of these people, how many years will it take for them to be absorbed?" 350 years. 350 years.

(00:35:11):

Now, this is the reason that strange economies are getting created. I did a lot of public tribunals in Mexico, and Mexico has said they'll phase out, by 2024, glyphosate and not allow GMOs. I have done many public tribunals and I remember one particular one I'll never forget. An economist said, "Ever since NAFTA, when land was taken away, the peasant economy was destroyed, work was destroyed, one-third of Mexico's economy became an economy of crime, drug trade, stealing, people trade... in women, sex trafficking because when all productive work is robbed from you and denied from you."

(00:35:58):

This afternoon, I was working with the UN in Afghanistan. And they, of course, because it's so fashionable these days, "Everything is climate, everything's climate." I said, "Those poor Afghans since 1840 have been invaded and invaded and invaded. And if today they're in the kind of shape where they're having to grow opium to survive, it is not purely climate change; it is the wars that were imposed on them."

(00:36:28):

So, I think we conflate too many. And the reason I wrote Soil, Not Oil was because, at that point, agriculture was totally not in the discussion on climate change. My simple analysis were showing, well, if you're processing more food, you're using more energies. If you're transporting it with food miles, you're using more energy and you're having more emissions. And of course, I'd done the work on the synthetic fertilizers as fossil fertilizers. So, basically, industrial agriculture is a fossil-fuel food system, and people were not even looking at it.

(00:37:01):

But I'd also worked on the alternatives. How, in a disaster, do you deal with climate disasters? Biodiversity. Biodiversity of our seeds that can tolerate salt, that can tolerate floods, just the field of biodiversity. Three crops will be destroyed, but six others will keep standing. So diversity is the answer, and the biodiversity destruction is the beginning of the climate havoc. The fossil-fuel substitution of living energies is the second.

(00:37:31):

And I think the entry of fossil fuels into the food system, of course, now we know if you add every bit, the processing, the transport, the destruction of the Amazon for GMO soil and animal feed, the fertilizers, the waste, 50% of the US food is wasted either on the farm or then thrown away, 50% of the emissions come from a bad food system that's also making us sick. And we have a solution, that if we stop the fossil fuels and went to ecological agriculture, we could, in 10 years, pull down the excess CO<sub>2</sub> and grow more food, have more fertile soils. That's the issue of regeneration. The miracle of the green leaf. It took the climate temperatures down from 290 degrees, with a 98% CO<sub>2</sub> on this planet, when we couldn't have lived, and brought it to the temperatures which allowed human beings to evolve. And it was all done by photosynthesis, absorbing the carbon dioxide. And I feel we've ignored too much of the

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living energies of the universe, including the energy that we have as creative bodies. So, just using our energy was turned into drudgery.

(00:38:52):

I've asked so many people say, "Oh, the poor peasants and drudgery," I said, "I don't know a single peasant who on their own say, 'Oh, this is drudgery work.' They're the happiest people. They sing and dance and they have community. And you want to take away their land and you want to take away their wellbeing. And who are you to decide what's drudgery? The person who's suffering drudgery will decide what's drudgery." But there's always someone else trying to save you. And it's the civilizing mission, goes on and on and on, improving us, civilizing us, liberating us. Leave the liberation to us.

Nate Hagens (00:39:31):

Thank you for that. Again, I have so many questions for you. On the India situation, you have been a champion for impoverished regions and trying to do regenerative agriculture and replace industrial, corporate agriculture with community scale examples, seed variety. What are some key projects, Vandana, that you are aware of or are associated with now that you're excited about and hopeful on this topic of replacing industrial agriculture?

Vandana Shiva (00:40:15):

Once, I did the work of the Green Revolution. And just rice and wheat displaced our diversity, and then the Monsantos wanted to own and patent seed through GMOs. That's when I said, "I'm going to save seeds." I had no idea how you save seeds. And we've now created 150 community seed banks. We've defended the seed as a commons, but we have recovered biodiversity. The mind that there's just rice and wheat, rice and wheat, like GM corn, GMO soya. No, there's so much diversity in the world.

(00:40:48):

So, the first really exciting part has been that we saved every seed bit we could find, and in our seed banks were seeds that could tolerate salt. So when the super cyclone hit in 1999 in Orissa, we distributed those salt-tolerant seeds. Then the tsunami hit in 2014, I think, and the Orissa farmers gave truckloads of salt-tolerant seeds to the Tamil Nadu farmers. And the government had said, "They'll never be able to farm for five years because there's too much salt on the land," and we said, "We have salt-tolerant seeds," and we shared it.

(00:41:28):

Second, the millets, which are the most nutritious foods, the most climate-resilient foods used next to no water, don't need irrigation, are full of nourishment. They were called primitive grains and driven out by the Green Revolution. We said, "We are going to make these forgotten foods the future foods." 2023 is now announced as the year of millets. We prevented there being banished from the human diet.

(00:41:58):

Third, I was focusing on food grains, but the suicides in India started in the cotton area because cotton was overtaken very fast by Monsanto. 95% of the cotton is Monsanto Bt cotton. They came illegally. I sued them, I fought them in the courts. The cases are still going on. 2002, they were allowed to sell

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commercially. In no time, the farmers' debt through the roof. It's not working for pest control. Farmers are using more pesticides, you're using more fertilizer, they're using more irrigation. And the farmers' debt is what is leading to suicides. We've lost 400,000 farmers to suicide since globalization, and 85% of this is in the cotton belt. The government releases statistics so you can put exactly where the suicides are, and it overlaps with the Bt cotton belt.

(00:42:54):

I did a journey, I did a pilgrimage. When I don't understand, I do a pilgrimage. I say, "I will go and figure out why are farmers using this seed." And I found out their seeds had been finished off through seed replacement. The government seeds weren't being bred. And all the Indian companies had been locked into licensing arrangement through a false claim that Monsanto had a patent. They didn't have a patent in India, they had it in United States. So, literally, Monsanto took over the entire seed economy of India. That's when I started to look for organic cotton seeds. And now we've distributed organic cotton seeds, we train farmers in the suicide belt in organic farming. We've linked back to Gandhi's Ashrams.

(00:43:37):

Gandhi fought the British Empire by pulling out the spinning wheel. And I learned from there to do... for me, the seed is the spinning wheel. And he said, "If we make our own cloth, we will never be slaves." For him, economic freedom was the base of the political freedom.

(00:43:52):

The Gandhi Ashrams are still there, hand-spun, hand-woven cloth. So we give the organic cotton to them, and they make beautiful fabrics, printed with natural dyes from vegetables and plants, hand-printed. So, when you talk about the bodily labor, hand-spinning and hand-weaving and beautiful printing is all the creativity of a hand. I think what fossil fuel banished was the ability to think, our ability to feel, and our ability to use our hands. It fossilized our minds, our hearts, and our hands. And what we need to regenerate is, of course, the Earth through our minds, and our hearts, and our hands.

Nate Hagens (00:44:35):

You're older than me and have been working on these things your entire life. I am already tired and overwhelmed at times with the challenge ahead of us. It's now 8:30 PM your time, you've had a full day, and you're still full of energy and poetry and wisdom on this podcast. You haven't even had dinner yet. How do you manage with this much energy? Given the scale of the task, how do you not lose hope and vitality? I'm just curious.

Vandana Shiva (00:45:11):

Well, energy in the universe is not the coal and the oil underground. The world is energy. The universe is energy. Nature is energy. And the fact that a seed can become a tree, that amazing autopoietic energy, and Schrödinger... who did Schrödinger equation and the Schrödinger's cat. He's done a brilliant book called What Is Life? And he's asked in that book and says, "Well, unlike machines and physical processes, living systems have the power to reverse entropy. Fossil fuels and mechanical systems create entropy and waste. Living systems take the energy and turn it into more creative energy. Every leaf

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comes out." Now, if it can happen to the seed and can happen to the soil organisms and all of this amazing self-organized capacity of the soil web of life, I think we just have to, A, be conscious of that tremendous energy and participate in it, and at the same time, not participate in that which degrades, depletes, destroys.

Nate Hagens (00:46:41):

To mention another of your many books, you wrote a book called *Staying Alive: Women, Ecology, and Development in India*. And in your public speaking now, you often connect the colonization of Earth with the historic treatment of women. How do you see the current opportunity for both women and ecology in this, I call, great simplification in the coming cultural transition?

Vandana Shiva (00:47:10):

I think part of the great simplification is shedding the baggage that the Earth is dead and inert, she's terra nullius. And women are a second sex, they're passive, they're objects, they're property because neither a... Women are creative, they're productive. In fact, most of the production, when you measure it in terms of time spent in the world, is women's work. It's just that it's not counted as work because, just like GDP only counts that which you can exchange in the market, work, too is counted in terms of what you can sell as labor power in the market. Your work in terms of regenerating the soil, your work in taking care of children and the family or old people, it's not counted as work, it's care work.

(00:48:00):

The care economy is the biggest economy because the Earth works in the care economy, women work in the care economy. So, the opportunity in this moment of crisis is stopping the blindness towards the tremendous creativity of the Earth. We have to stop trying to be masters and conquerors and engineers, like Bacon tried to think we should be, supermen. The nature had to be subjugated and conquered. I mean, that's what his book, and he wrote about *The Masculine Birth of Time*. He literally defined the time of conquest as the masculine time. And before, the papal bull supporting Columbus was a papal bull unleashing the witch-hunts and inquisitions. Most of the people who were killed were witches. And who were they? They were the knowledgeable women of society. You couldn't know with nature, you had to know to conquer nature.

(00:49:04):

And what's the opportunity today? If we keep having the engineering mentality, like Mr. Gates has, "Geoengineering is a solution. Further engineering of food in labs is a solution," the engineering and mastering mentality is still there, but we will not have a future on that path. That's the path that's leading to collapse. That's the world that's collapsing.

(00:49:29):

So, just celebrating the creativity of nature and the invisible creativity that has been made to look like it's not there, women. And Gandhi had a beautiful prayer, very beautiful prayer. Every day, he used to say, "Make me more womanly," which meant "Make me more caring." Now, he was a man, and he could see that as the world had colonized and industrialized, care had been left in the background. Men were the ones who... be in wars, men were the ones who were in factories, men were the ones in plantations.

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And in a way, men and women have to participate in a new revolution of care. And that new revolution of care is what life is all about.

Nate Hagens (00:50:22):

I've never heard that quote from Gandhi, but I agree. We need to make men more womanly because the current system is headed for a cliff.

(00:50:37):

Herman Daly, I don't know if you knew him, he was a friend-

Vandana Shiva (00:50:42):

I knew him.

Nate Hagens (00:50:43):

He passed away unexpectedly last week. I talked to him last week, a couple days before he died. And he's just so bright and such a wonderful human being. But he was an initial thinker in the ecological economics movement. So, what economic theory for the future do you support and propose? What economic system could potentially reflect the ecological values, support food security, the caring, the localization that you've been discussing? Is such a thing possible?

Vandana Shiva (00:51:18):

It's necessary. It's not just possible. It's necessary. And those economies have been the economies of indigenous people. Those have been the economies pre-colonialism, pre-industrialism. I've just done a book in Italian, it's called Greed to Care. And I went into the roots of the word economy, in Aristotle's time. He talked about oekonomika, and he called it the art of living. And he made a clear distinction between oekonomika as the art of living and chrematistics, the art of money-making. So, GDP measures chrematistics, the billionaires are winning the race on chrematistics, but the art of living is the true economy. And to practice the art of living, of course, you could learn from life. And therefore, the art of living is about protecting and regenerating nature's economy.

(00:52:24):

Again creating because since colonialism, killing every local economy with its diversity of occupations has been the work. We will have to learn again all the diversity of occupations. They're teaching six-year-old kids coding, as if coding will save the world. No, we need the ability to know how to put a seed into the soil and grow food. We need to go into the kitchen and actually cook food. We need to be able to stitch a torn garment. I think we could put it this way, either we will keep getting trashed by the 1% who have already said there is no place for the 99%... Troperberg said... what's his name? The Facebook Meta guy, what's his name?

Nate Hagens (00:53:17):

Mark Zuckerberg?

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Vandana Shiva (00:53:19):

Zuckerberg. Zuckerberg. He said in his Harvard address, "99% people won't have a place in the future economy." And for me, 100% percent people will have a place in the future economy, and the 1% won't be able to trash the world, like they're doing.

(00:53:38):

I take a lot of learning from nature. I see the leaves fall. The green leaf doesn't always stay green; conifers, maybe, yeah. But in the desert, there's forest? No. And I think the more we grow the economy of art of living, art of loving, art of caring, the more marginalization of the narrative that "Without destroying the Earth, we cannot live."

Nate Hagens (00:54:12):

Let me ask you a paradoxical question. My work is about energy depletion globally and the implications that will have for societies, and the complexity that's been built up inevitably will turn into a simplification. In the Global North, that means we're going to have to use less or significantly less energy inputs to power our current lifestyles. With respect to these lower-energy-per-capita futures, what can the Global North learn from the Global South in this regard? What are models in India, for example, that are working now on a lower-energy-per-capita basis? Do you have any thoughts on this?

Vandana Shiva (00:55:11):

Lower external energy, lower fossil energy-

Nate Hagens (00:55:14):

Yes. Exactly.

Vandana Shiva (00:55:16):

... but high energy of all other kinds. The work we do in agriculture, no fossil-fuel use at all. The soils are fertile. I would love to organize a trip, bring a group to see how you can simplify and have a good life, be with communities that are able to sustain themselves. But, of course, the one thing that we will have to stop is the alienation of resources, because without co-creating with nature, without co-creating with nature's energies, we will never be able to simplify in terms of the fossil infrastructure. And the challenge before us is, everything, all the money is being poured into expanding the infrastructure for fossil fuels. More highways. They just said a whole new train station in Kenya, 2 billion, 3 billion was given by the UK. All of this infrastructure is an infrastructure of destruction, not only because every highway destroys a forest or a farm but every highway is making the fossil-fuel empire last a little longer. But what true economy is, creating and co-creating the infrastructure of life.

(00:56:52):

And it's just that we have been made blind to these processes. We have not just been made blind to the processes, we've always been, if they are seen, then "They're backward. They're primitive. They must be improved." So, I would love for a northern group to come and see, come in the villages, how much diversity of food they can grow, how with their bodies working... We call it the yoga of the Earth. When



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people say, "Oh, it's so hard. It's so hard. It's so hard," I say, "You do yoga, don't you?" "Yeah, yeah, yeah. That's wonderful." I say, "This is yoga of the Earth." We actually offer a course called Yoga of the Earth.

Nate Hagens (00:57:37):

Has this not happened? Has there not been a documentary made about these practices, the yoga of the Earth in India and-

Vandana Shiva (00:57:47):

Well, wouldn't it be nice? Think of it. You should do it.

Nate Hagens (00:57:52):

I might be able to help you do that. And I think it's really important because we are going to have to be more reconnected with regenerative agriculture, not because it's the right thing to do, but we're going to have to do it-

Vandana Shiva (00:58:08):

It's also the right thing to do.

Nate Hagens (00:58:08):

Yeah.

(00:58:11):

So, I know that you have delayed your dinner because of this interview, and I have some questions that I ask all my guests. Let me ask you this, just out of curiosity, personal curiosity, what will you be having for dinner tonight?

Vandana Shiva (00:58:34):

From what I saw, is a capsicum and potato curry, and a chapati.

Nate Hagens (00:58:44):

What's that?

Vandana Shiva (00:58:45):

Simple. Simplification.

Nate Hagens (00:58:47):

What's a chapati?

Vandana Shiva (00:58:51):

A chapati is our bread.

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Nate Hagens (00:58:53):

Okay, that sounds-

Vandana Shiva (00:58:56):

Well, right now I must tell you this. 1857, the Indian peasants rose against the East India Company, which was just extracting and people were losing their land. It's called the Sepoy Mutiny, but it was a societal revolution. And that's when the East India Company ended and then the British crown took over. But they would kill people if they heard them talking, the people would be hung on the trees. And the people found a brilliant way to communicate. They would take a chapati, a bread, and pass it on, and if you receive the bread, you were part of the revolution. So, that was a bread revolution. I always say, "Our bread is our freedom."

Nate Hagens (00:59:44):

Thank you.

(00:59:46):

So, Vandana, given your lifetime of activism and reflection and scholarship on these issues, do you have any personal advice to the global listeners of this show at this time of global polycrisis?

Vandana Shiva (01:00:02):

First, don't despair. Understand that there are actions that are bringing the Earth to the brink, but you can be part of other actions.

(01:00:15):

Don't underestimate your contributions. I worked with seed, and seed is so small. Gandhi worked with a spinning wheel, and the spinning wheel is so small. The smallness is what allows it to multiply on its own. The seed multiplies on its own, but as it passes through society, society is able to exchange seeds, grow the food. So appreciate your smallness because it gives you new flexibility.

(01:00:53):

And the third is, keep good company. Just hang out with people you love, and give them energy and take energy from them.

Nate Hagens (01:01:06):

I love that. I've long advised people to do the same. Don't hang around with people that are counter to what you believe in.

(01:01:15):

A follow-up to that. What specific recommendations do you have for young humans, both in India and listening to this show, who become aware of the energy, climate, ecology situation, of the human situation?

Vandana Shiva (01:01:34):

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Well, I would like every young Indian to understand the ecological roots of the civilization that lasted 10,000 years. It's respect for soil, it's respect for biodiversity. Why did it make every river and every tree sacred? Because sacredness was protection and reverence.

(01:01:59):

The second thing I would really like young Indians to do is, whatever, wherever you are in privilege, I've always felt that whatever you have, it creates an obligation. And the more you have, the obligation is higher. You can either consume it away and fritter it away and blow it up with the next dress and the next car, or you can say, "What can I do to give strength where creative alternatives are being created?" And the more people join in this solidarity, the more we'll be able to grow well-being by using less.

Nate Hagens (01:02:43):

What do you care most about in the world, Vandana?

Vandana Shiva (01:02:52):

Life. Life and love. Because I care for life, and the forest life is threatened, I go to the forest; when the soil life is threatened, I turn to the soil. But life, because life was what was banished in the fossil thinking, there's no life.

Nate Hagens (01:03:08):

Where do you live in India? Like, roughly which region?

Vandana Shiva (01:03:13):

Well, my home, where I am right now, is... you know the Himalaya?

Nate Hagens (01:03:19):

Yeah.

Vandana Shiva (01:03:20):

And the place where the two big rivers enter the plains, the Ganges and the Yamuna, the valley between those two rivers, at the foothills of the Himalaya. I look out and I see Mussoorie, the other side, the Shivalik.

Nate Hagens (01:03:33):

So you have lots of natural beauty where you live.

Vandana Shiva (01:03:37):

A lot more till globalization, a lot more beauty. In fact, all the Britishers used to say, "There's no place like this in Europe." It's very beautiful. The little parts... Our farm, we've allowed the land to regenerate. We have a lot of biodiversity. We have seven-times more pollinators than in the forest next door, just

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because we grew biodiversity, and our water level has come up 70 feet from the time we started farming. So, it's not the case that farming will always deplete water; farming can regenerate water.

Nate Hagens (01:04:11):

How does that work?

Vandana Shiva (01:04:12):

It's just a beautiful part. Do come, do come. Visit.

Nate Hagens (01:04:16):

I've never been to India.

(01:04:17):

How does farming-

Vandana Shiva (01:04:18):

Really? You must, you must.

Nate Hagens (01:04:21):

Well, maybe we'll make that documentary about the Yoga of the Earth.

Vandana Shiva (01:04:27):

Yeah.

Nate Hagens (01:04:28):

How does regenerative agriculture replenish the water table? I don't understand that.

Vandana Shiva (01:04:35):

Okay. Chemical agriculture just sucks out. It only takes and it doesn't give back, both because it destroys the soil capacity to hold water, and especially, where the big machinery is used, it packs it up. So when the water comes, it just runs away, nothing infiltrates into the ground.

(01:04:56):

When you do regenerative agriculture, the first thing you're doing is giving back organic matter to the soil. To me, it's "Thank you, Earth." When people... there's a tax on organic, and all I say, "This is just 'Thank you, Mother Earth. You've given us so much. Here's a little portion for your regeneration.'" When the organic matter's there, 1% organic matter can hold 1,600 liters of water per hectare. So the soil itself hold water. But now the soil is porous. The earthworms are creating channels. And through those channels, when the water comes, it's going in and recharging the groundwater. So there's most water in the soil, and there's more water in the ground, and there's less water running away.

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Nate Hagens (01:05:43):

As a podcast host, I just have to tell you that I would like this conversation to go on for, like, three hours because I have so much to ask you. I just want to be really respectful of your time and your family and your evening. So, a couple more questions, but I'm hoping that we can talk again.

(01:06:01):

Of all the issues in the world, and some you've discussed, what is the thing that worries you most in the coming 10 years?

Vandana Shiva (01:06:12):

Geoengineering and weather modification. Climate change, already uncertain, but the intentional disruption of the system. Mr. Gates is funding huge amounts of geoengineering, and the US Air Force, they've got a whole report called *Owning the Weather*, that we will now use weather modification as a weapon of war.

(01:06:34):

And I have watched the last few years. Every time it's ready for harvest, untimely rains come. That's something that's so beyond your control. And even though there is a treaty, there's a UN treaty in North, which is supposed to prevent any environmental modification, it's kind of sleeping. And I think we do need much more public consciousness about the fact that "Yes, we've had fossil pollution, which has given us climate havoc, but now we are having intentional pollution and putting aerosols into the sky to actually change the weather, change the climate." And the excuse is, "Oh, we'll cool the planet." You don't disrupt ecosystems and lives. And there's nothing like "cool the planet" in one part of the world and destroy the sun's ability to support life on this planet, because all pollution is about blocking the sun. And to have more activity to block the sun is actually preventing photosynthesis. And there'll be no food production. There may be one or two groups that work on geoengineering, but it is very... it's not in the consciousness of people.

Nate Hagens (01:07:54):

It's not thanking the Earth, it's changing the Earth. And the more I interview people like you, it seems that there're really two lenses to view the future. There's a technology lens and there's an ecology lens. And they give vastly different prescriptions for the direction we need to head.

(01:08:18):

So, in contrast, Vandana, in the next 10 years, what gives you the most hope?

Vandana Shiva (01:08:26):

The place where I get the most hope is from the Earth. I've never seen the Earth as dead. The Earth is very living, and you can also see climate havoc as one way the Earth is trying to shake you up. And the Earth's potential to regenerate is huge. We've just got to stop the harm and work in humility with the Earth. That's what gives me hope. In any case, it's what we have to do.

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Nate Hagens (01:08:58):

If you were benevolent dictator or had the ability to be in such a position, and there was no personal recourse to your decision, what is one thing that you would do now to improve human and planetary futures?

Vandana Shiva (01:09:16):

I would basically stop all activities, all thinking that is denying the Earth is living, and all activities, technologies, scientific paradigms that push that denial further causing more harm.

Nate Hagens (01:09:37):

Is there anything else you'd like to share with those listening?

Vandana Shiva (01:09:44):

To cultivate hope.

Nate Hagens (01:09:48):

Thank you. I am so honored to have shared this time with you and I hope we can continue this conversation.

Vandana Shiva (01:09:57):

My pleasure. You come to India.

Nate Hagens (01:10:00):

Let's have that conversation. I hope you enjoy your capsicum and potatoes-

Vandana Shiva (01:10:05):

Capsicum, potato, and the chapati.

Nate Hagens (01:10:08):

Excellent.

Vandana Shiva (01:10:09):

Thank you.

Nate Hagens (01:10:12):

Thank you.

(01:10:12):

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