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## A GOOD WORLD FOR EVERYBODY

### PODIUM

**Dr. Vandana Shiva**

**Edith Vanghelof / Grüne Bildungswerkstatt**

**Edith:** I would like to welcome everybody to this evening's event and say a few words to introduce what is going to be going on. First of all, my name is Edith Vanghelof. I'm from the *Grüne Bildungswerkstatt*, and together with other organizations we made this evening possible and invited Vandana Shiva to talk to us. Eva Lachkovics, who is somewhere, is going to say a few words about the other organizations, especially WIDE of which she is a member, and then we will continue.

**Eva:** I'm really overwhelmed by the big audience, but of course I'm not really surprised. When Vandana Shiva comes, people come and always many. I'm especially happy to welcome Vandana. I've known Vandana for more than 30 years now.

**Dr. Vandana Shiva:** 1987.

**Eva:** Since 1987, right. And I know how to appreciate her work, her international work and her work for people, for all people and against big transnational concerns and for justice and food certainty. So in the name of the WIDE Austrian network and also *Grüne Frauen Wien* I welcome you all very much. I'm very happy to see you all and I wish you an interesting evening. Thank you.

*Applause*

**Edith:** Thank you, Eva. I would like to briefly apologize, we couldn't find a larger space for this event on such short notice. So, I hope you'll bear with us. It's a bit tight. I'm also very happy and very pleased that so many of you have come. The other organizations that I would like to thank just to make sure we don't forget anybody is *Frauensolidarität*, *Brot für die Welt* and the *Katholische Frauenbewegung* who has given us this space. They're not here today, but they gave us this room to use. And of course the women's organization of the Green party. Then another important thank you is that Vandana Shiva was invited by the organizers of the event *Elevate* in Graz which is about music, discussion, and activism where she will be speaking about civil society activism.

So, as you've already noticed the discussion and the presentation is going to be in English. But when we have the questions you can ask your questions, if you feel more comfortable, in German and I will translate the questions. But the answers will be in English. So I hope that's okay.

Yes. Preparing for this, I made a few notes to introduce Dr. Vandana Shiva. And I just want to read a few, because there is so much that she has done. And she has been so active that it's really amazing and very inspiring to read about everything that she has initiated and has been involved in. First of all, she's an environmental activist, an expert on biodiversity. She organizes international campaigns against genetically modified crops and foods. Seed freedom is a big issue, against patents on life forms. But I'm sure she's going to tell us more

about all of this herself then, and also a little bit more about her background. Just a few organizations that she founded: very important the Research Foundation for Science, Technology and Ecology in Dehra Dun in 1982, in 1991 the organization *Navdanya* which is a national movement to protect diversity and integrity of living resources, especially native seed in India. And she also initiated *Bija Vidyapeeth*, an international college for sustainable living. She is also on the Steering Committee of the Indian People's Campaign Against the WTO, and she is on the National Board of Organic Standards in India. She advises governments on sustainable agriculture and is currently also advising specifically the government of Bhutan with the aim of making Bhutan 100% organic. And I'm sure you can tell us more of your advisory activities. I want to mention three titles of three books, because there are a lot of books. *Soil, not oil* which is about the relationship between industrial agriculture and climate change. *Making peace with the earth* is the newer one about wrong assumptions of corporate globalization of limitless growth and the war against natural resources, water, soil, forests, minerals and seeds. And *Ecofeminism* together with Maria Mies on movements and philosophies that link feminism and ecology.

So, you can see that she's really an active person. I will start out with a couple of questions. One is to tell us a bit about yourself and how you started out on this remarkable life as an activist: the beginning, the "Green Revolution", your critique of it. And then I also have one quote from your book "Soil, not oil": "Nature shrinks as capital grows. The growth of the market cannot solve the very crisis it creates." And maybe you would like to say a few words about this.

**Dr. Vandana Shiva:** Sure, yes. Let me begin with my life's journey. Eva mentioned that we met in 1987. And you won't realize this but in fact, the conference she had organized which was called *The Laws of Life* on the implications of the emerging biotechnologies. We are talking '87. There was no commercial GMO in the world. And this meeting was organized first in a quiet place in Bogève in France, and then it moved to Geneva. And Eva had done all the thinking and research and background. This is where the corporations had come as well as some UN people and some independent scientists and activists.

And there were three things that the corporations said at this meeting that made me dedicate my life to seed freedom. Start *Navdanya* and everything else I've done since then. The first thing the corporations said was: "We are not big enough. We have to become bigger. And by the turn of the century, we'll be only five." And you might have noticed there was an attempt by Monsanto to buy up Syngenta, which failed recently which meant they would become four, and then two and then one. The second thing they said was: "We are not making enough money, selling chemicals." Now, these chemical companies were the same companies that have made chemicals for warfare, and I'll mention a little more about that with my critique of the Green Revolution. They were saying they weren't making enough money. So, they wanted to make more money. And they were very honest, because it was a very cosy meeting. It was not adversarial. They were honestly sharing their strategies and visions for the future.

So, now that there are the tools of recombinant DNA, which can move genes across species, which was the subject of our discussion, we can now make genetically engineered organisms. There wasn't a commercial entity, but they were already working on the Bt, *Bacillus thuringiensis*. And they said: "Through this, we can take patents." And it was the component in Geneva where it came out that they were already working on the Free Trade Agreement, at that time called the General Agreement on Tariffs and Trade which became the WTO. And I was working very closely after that with our ambassador to GATT who was objecting to these intellectual property agreements. And that's how together Dr. Shukla and I and others created

this people's campaign against WTO. Its chair was a former Prime Minister of India. So, it is not the case that governments across the board want to hand over our lives to corporations.

So, how did I end up being at that meeting? (*Laughs*) You know, my own background is – my training was physics. I then chose to do a thesis on the foundations of quantum theory, because I really wanted to, you know, go beyond the mechanistic thought, because I really find the mechanical thought as a big part of the problem. It first defines nature as dead, and therefore, creates limitless exploitation of nature. But in the process it has to define women's knowledge as not knowledge. And in my earlier book "Staying Alive" I tracked how the witch hunts were really about annihilating women who knew, who were the healers, who were the ones who took care of society. They were the one who were targeted as witches. (*Pause*) So, taking away women's knowledge, creativity, productivity and denying nature's creativity was very, very much the way that mechanical thought was going, and I wanted to go beyond it. But before I left for my PhD, for which I went to Canada, I wanted to visit my favourite spots. So, I had grown up in the Himalaya, I had walked with my dad, who was a forest officer. And I said: "Before I go, let me just carry my fondest memories with me." So, I went to this place which used to be a beautiful oak forest. The oak forest was gone. (*Pause*) I went to swim in my favourite stream. The stream was dead. And I was so concerned, and I'm talking in this little tea shop. In India, we have a lot of dhabas, you know these little roadside tea shops, and they make real tea. (*Laughter*) And I was talking about the destruction, and this old man said: "Yes, but now Chipko has started."

Chipko means to hug, to embrace. And this was a spontaneous movement, started by women in a very remote village called Raini who said to the loggers, "You can't cut these forests", because they understood how logging was leading to landslides, how logging was leading to the drying up of springs, how logging was leading to flooding. And women could connect all of this. So I took a commitment that every vacation I will come back and volunteer with these women, which is what I did until we stopped the logging in 1981. Every holiday I would be there in the villages, walking village to village, documenting for the women.

They knew what they were fighting for, but none of them knew how to read and write. And one thing I realised in that period was there are two kinds of illegitimate knowledge powers in society. Illegitimate in the sense that they treat others as not knowing. The first is if you know English, you're supposed to know more. (*Pause*) Which is not true because every language embodies knowledge! And it's because of this arrogance we have destroyed so many knowledges. The eskimos have hundreds of names for a snowflake. In the desert of Rajasthan there are hundreds of names for the snowdrop ... sorry, for the raindrop. (*Pause*) That is knowledge! To know which raindrop with which size in which season with which velocity will do what to your soil and to your crop. You've already got an ecological narrative in that. I had gone to English schools, so I could write English. I said to the women: "This is something I can help with. (*Laughs*) I can write down what you're saying in an English report."

And then there's one more that came with the Cartesian method which said: "Only that which can be measured is the true reality, *res extensa*." So out of it came all the quantitative analysis. The ability to make graphs. I said: "I know how to make graphs, I know how to speak and write English. This will be my service to Chipko." So I started to write reports for them. And of course, I'd write what they'd say, but then I'd go to libraries and research the rest. And we eventually managed to get a logging ban, because we could do calculations that showed that what the government was earning through royalties from timber mining was nothing compared to what the government was spending on flood relief, on drought, on landslides.

And all of this really peaked two years ago with the climate issue coming up. Two years ago in our region because of this rabid building of dams. We stopped the logging, but they continued to build dams. They continued to make mass tourism out of our pilgrim centres. When the extreme rain came on 16<sup>th</sup> and 17<sup>th</sup> of June 2013, more than 20,000 people in my region were washed away. But that climate disaster didn't make to any international news. But it's in our region the worst disaster we've seen.

Because I've been taught so much by the women of Chipko about biodiversity (*Pause*) When violence erupted in Punjab in 1984 and that same December we had the tragedy of Bhopal where a pesticide plant leaked. The pesticide plant was then owned by Union Carbide which is now owned by Dow. 3,000 people were killed immediately and thousands since then and hundreds of thousands maybe for life. And my sister, Dr. Mira Shiva who also Eva knows, was immediately sent for medical relief. And one of the things that she was shocked about was when the doctors and the government were asking Carbide, "Tell us what gas leaked so we can find the antidote". Carbide headquarters said, "We can't tell you, it's a trade secret." They let people die, for the trade secret.

So I decided to look at why was agriculture so violent and wrote a book called "The violence of the Green Revolution" which is how I ended up being invited to the biotechnology meeting. Because I had one book on agriculture. And what I had learned through the Green Revolution was, first, it is not true that chemical industrial monocultures produce more food. Actually, they're impoverished systems. In terms of biology, they're very impoverished. In terms of nutrition, they're very impoverished. They reduce our food availability by half, because they displace the crops that women use. I've done assessments: In an ordinary farm, women will have 250 species. All of them give you nutrition. When that goes, you lose your sources of vitamin A, you lose your sources of iron and you get anaemia. You get vitamin A deficiencies.

Because I had training in science, I could apply it to my assessments of the Green Revolution. I could start counting how much more water is used. Ten times more water to produce the same amount of food. When I went to Punjab to understand why there was violence, it turned out it was farmers' protests labelled in the media afterwards as a religious issue. Exactly what they are doing now. The GMO cotton is failing in Punjab right now. Farmers were on the railway tracks blocking the traffic. 80% failure of the crop. About ten days ago, suddenly they find burned pages of the sacred text of the Sikhs, and then it's suddenly about religion. All the coverages: religion, religion, religion. It was a farmers' protest. 1984 was a farmers' protest.

And why were farmers mad? Because they were losing their soil, they were losing their water, they were getting into debt. They were supposed to have gotten more money out of all of this, and all they were getting was debt. Now, they even have a cancer train from Punjab because all of those pesticides. So, it's not true that chemicals feed the world; it's not true today that GMOs feed the world. As we said in our campaign that we launched on 8<sup>th</sup> of March this year on Women's Day, women and biodiversity feed the world, not corporations and GMOs. And you know, my critique of the Green Revolution in a way extended to industrial agriculture using GMO seeds. The system is the same industrial system. It's still a monoculture, it's still energy intensive, it is still based on fossil fuels. It's just that the seed itself is now a seed that's genetically engineered and intellectual property. And that adds a whole new dimension to it. And I don't know maybe you later have a question on the farmers' crisis? Do you?

**Edith:** Yes, I have.

**Dr. Vandana Shiva:** So, I'll hold it.

**Edith:** Especially about the small farms vs. genetic engineering.

**Dr. Vandana Shiva:** Sure. So we hold it for that.

**Edith:** And then the women ... You can continue.

**Dr. Vandana Shiva:** Okay. Okay, I mean, you know this quotation that you cited “Nature shrinks as capital grows”. I’ve watched it again and again and again. I told you about Chipko. How did capital grow by chopping the forests and selling the timber? Capital grew, but nature shrunk. Nature’s ability to stabilise the ecosystem shrunk, women’s economy shrunk. Women who were bringing food for their fuel had less, because the forest was depleted. And in a major study for our Ministry of Environment, on mining (*Pause*) And in those days, mining was the biggest source of revenues for our region, and everyone said without mining there’s no economy. (*Pause*) We did the assessment. We were losing a natural aquifer that was offered by limestone as the miners took down this aquifer. So they were only seeing the mineral. They were not seeing the water-holding capacity. That’s what the women were seeing, because they were losing their springs.

And I worked out in my 30 years and more of this work: the limit is a 10 mile walk for women for water. They will tolerate, tolerate, tolerate, and then when it’s 10 miles of walking they say: “No more of logging. No more agriculture, no more Coca-Cola in Plachimada.” They shut the plant down. Women of India shut down Coca-Cola in Plachimada in Kerala, because Coca-Cola ... I mean, a bottle of Coca-Cola water is sold for 12 a rupees. How did that 12 rupees of profits come to Coca-Cola? They say: “Manufactured by ...” They don’t manufacture water, they just mine it. They go into a village, set a deep tube and suck out the water. And because of the processes that they use, they leave a lot of pollution behind. 1.5 million litres per day per plant of Coca Cola . (*Pause*) They take it for free. They’re literally stealing, which is what the women of Plachimada said. The water level went down, women were walking 10 miles. Water disappeared, agriculture disappeared. Women’s time was spent on collecting water. And then finally, they said: “No more.”

And they started to fight, sitting opposite the gate of Coca-Cola. And they called me and said: “Come and celebrate earth today with us.” I think it must have been 2002, and I said: “This is very strange. One village I don’t know fighting Coca-Cola. Why? I don’t know.” I don’t like that drink. It looks toxic to me. But why would women be fighting? So I went to figure out. Hundred women, 500 policemen. I said to them: “I’ll be there until you shut this plant down.” And I did everything I could, you know.

What I’ve learned over the years is there’s no one issue. All issues are important. There’s no one way of dealing with an issue. All ways are important. Art is important, science is important, getting your local politicians involved. So, Coca-Cola was spending on all the newspapers and all the media. No one would cover this, because they gave advertising money. (*Pause*) I called up a person who was from a party which had the local government. And he owned a big newspaper, and I rang him up and said: “Aren’t you ashamed of yourself giving absolutely no coverage to this movement? And I will come back in so many weeks, and I want you to be there, personally. And I want you to cover this.” Once one newspaper broke the censorship, all newspapers had to cover it. He lost 60 million ... no, six ... yes, he lost 60 million rupees in advertising by covering this issue. He came out and did it. And we shut down the Coca-Cola plant.

So, no matter where you look, all growth which is a measurement of the growth of capital is the conversion of nature into cash and the conversion of women's work and the work for sustenance into commodities. And the measure of growth which is GDP comes from the war, just like the chemicals that are used in agriculture come from the war.

The measure of growth as the ultimate measure of capitalist patriarchy comes from the war. During the war, they had to mobilise resources to buy more tanks, more fighter jets and bigger armies. So they defined and said: "If you produce what you consume, you are not producing." That's how national accounts were created. So, women working in their home or peasants working in their field were not producing. It's only if you grew something that could be sold and then you bought what you needed that commodification then mobilised the resources out of which you could buy more weapons. This became the basis of GDP. This is where Bhutan turned around and said: "We are not going to measure gross national product and gross domestic product. We are going to focus on the health and wellbeing of our people. We will create a new indicator called gross national happiness."

And then the Prime Minister wrote to me and said: "I can't see us growing happiness in any other way but growing organic. So, can you help us?" So we helped them. Our team goes there, they come to us and it's a process that's very sustainable doing it. And Bhutan is quite an example to study in terms of breaking out. And if there's one country in Europe that has similar situations, it's you. You're mountainous. Mountains are a wonderful block to keep the rubbish out. (*Pause, laughter*) It's more tedious to climb a mountain than to go on a highway. Mountains are our protectors. And I know one of the strongest movements for seed savings, for organic farming, for local food is in Austria. And it's because you already have that. So, I think that the women's groups that are here today should all join up to say: "We are going to create new indicators for economy that ensures the wellbeing of nature, the last woman and the last child." (*Applause*)

**Edith:** Thank you. Thank you for the very inspiring talk and also for the ideas. I'm sure it's going to be taken up. When we have new indicators, then we will announce it. What I also looked up which I would like to ask you is also about the relationship between the climate change, the destruction and the specific effects on women and industrial agriculture. And then I also wanted to ask you about this new global alliance for "climate smart agriculture". This is something new that was announced in the media by the American government. Your opinion on that:

**Dr. Vandana Shiva:** Okay. So in ... you know, about ten years ago, climate extremes started to become more frequent. And you know, through *Navdanya*, the movement I started, the seed saving, we had saved every seed we could find. We weren't saying: "Oh, this is useful." We weren't saying: "This is high yielding." We were just saying: "If our ancestors used the seed, it can't be useless." So, among the seeds we had saved were salt tolerant seeds that farmers had evolved in the coastal areas. And when in 1999 a terrible cyclone hit twice the velocity of normal cyclones, it went much further inland and caused more damage, we were able to distribute these seeds. Because with the cyclone, salt from the sea comes on the land, so you need salt tolerance. Otherwise you can't grow crop. And then after ... this was in 1999. In 2004, we had the tsunami. And I went to help; and the government of the areas said: "We can't do agriculture for five years." They called it a crop holiday. I said: "You call it a crop holiday. The farmers will starve. And we'll bring you salt tolerant seeds." "Oh it can't be, they don't exist." I said: "They jolly well do. They used to be here, you wiped them out. We'll bring from Orissa. Orissa farmers gifted two truckloads of salt tolerant seeds. Immediately, agriculture bounced back.

So, the idea that corporations are bringing us climate smart solutions is very, very misleading. Now because of our work on seeds and biodiversity as well as our organic work where we were actually doing assessments: How much more matter is in the organic soil when you do organic farming? How much more water is in the soil when you return organic matter to the soil? So we've been doing these very, very scientific studies, too. And I just said: "Agriculture is so hugely impacted by climate change, but the discussion isn't even there. And let me do an assessment of how much does the contribution of industrial globalised agriculture make to damaging the climate." When I say industrialised I mean inputs that come from fossil fuels, fertilisers that come from natural gas. The same factories that originally made explosives. Even pesticides begin with fossil fuels. *(Pause)* All of the chemicals in agriculture have their origins in fossil fuels. *(Pause)* How much does this take? What happens when the soil loses its organic matter? How much is that contributing? So, that's when I started writing "Soil, not oil", my book. But I also was sharing the commission on the future of food for the region of Tuscany, and we did a manifesto for Copenhagen. And we put the sums together. It's not that it wasn't there; it was just hidden in the IPCC reports, which is the intergovernmental panel on climate change. So, you had deforestation figures, but mostly deforestation today is happening to expand soil in the Amazonas, palm oil in Indonesia. In fact, Obama is going to Indonesia to basically tell Indonesia to stop chopping down the rainforest for palm oil, but the problem is all international companies that create this false demand for palm oil. So, deforestation is destroying every year 30 million hectares for agriculture commodities. The concentrated animal farm operations which are these factory farms, and the only reason they exist is there are such huge subsidies in it. *(Pause)* That's why people put all their animals in factory farms. And then there are the European standards. When you had the annexation of the East European countries, you know, people there had cows like us. You know, two cows per family, one goat per family. And they said: "No, no, no. This is not safe. Milking with your hands is not safe. You ought to have 500 cows and torture them with animal feed, soya bean." So, the factory farms are responsible 11% to 15%. Transportation, shipping food thousands of miles: 5% to 6%. And when you ship food thousands of miles and you also increase processing and packaging. About 70% of the waste and garbage is food packaging. *(Pause)* That accounts for 8% to 10% of the greenhouse gases. When you ship fresh vegetables miles and miles, you have to have a lot of refrigeration. That's 4%. And half of the industrial food is thrown away. Either at the farm level or at the best-before date in the big supermarkets. That's another 4%. You add it all up, it's between 40% to 50% of all greenhouse gases, the three primary ones being carbon dioxide directly from fossil fuels, nitrogen oxide which is coming from the use of synthetic nitrogen fertilisers and is 300 times more damaging to the environment, and methane which comes both from factory farms as well as from food waste. We are talking about the biggest contribution to climate change coming from an industrial model of agriculture. We also know what's the solution. We know if we have more biodiversity you protect the soil more, you protect water more, you have more resilience. We know that if we increase organic matter in soil by 2 tons per hectare which is very easy. Our own farm has, you know, in 15 years got 2.2 tons per hectare. With 2 tons per hectare on all farmland in the world ... if the world went organic, we could pull out that excess carbon dioxide that's sitting in the atmosphere, 400 pounds per million and damaging the climate. So not only do we get rid of emissions, we get rid of the stocks, the past emissions. Ten gigatons. In 5 to 10 years, we could get rid of all the excess build-up of pollution in the atmosphere. We also know that when soil has more organic matter, it holds water better. If you have a drought, you won't have a crop failure. You have a flood, the soil will absorb it better and your crops won't die. *(Pause)* 4.5% increase in organic matter; 80,000 litres of water holding capacity in soil. These are the true answers.

And in fact, in Paris when the COP 21 will happen, this is the focus of my work. I'm planting gardens when I go to Paris. So, say ... a garden might look small, but millions of people planting gardens is a big change. After the meeting Eva had organised, I was shaken. These corporations wanting to control life on earth! I said: "How do you deal with them? What do we do?" And on the way back I'm thinking of our freedom movement, I'm thinking of Gandhi who took on the British Empire. And how did he take on the British Empire? He pulled out a spinning wheel. He said: "If they control us through the textile industry, we've got to make our own cloth." And when he was laughed at and said: "How do you think a small spinning wheel will get you freedom?" He said: "It's the only thing that has the power to take down the Empire." Because this little spinning wheel can be in the hands of the poorest woman in the poorest hut." (Pause) So, the last person can be engaged in freedom. And so my mind was working.

So, what's the spinning wheel of today? Now that Eva has thrown my mind in this terrible twirl, what is the spinning wheel of today? And by the time I got off my flight at home, I said: the seed. The seed is today's spinning wheel. The rest of my life I'm going to save seeds. So, at one level, one day I will write – if I ever do a biography, Eva – that at one level, it's your work for that meeting on laws of life that made me realise how important the seed is. It's small, but in the hands of every farmer. It's powerful. (Pause) A garden, everywhere, on your terrace, in your backyard, in the school, in the church. And maybe this is a second idea you can take back, since we are sitting in a Catholic space. And now they have a Pope that has written *Laudato Si*, the new encyclical. Now is the time to put the care for the Earth as the central issue. And care for the Earth begins with a garden.

What is "climate smart agriculture"? Basically, the language of "climate smart" began with Monsanto, began in a Bangkok meeting. And you know, they've lied for hundred years. They can't get out of the habit of lying. So they started to say: "Use of Roundup will keep organic matter in the soil." And they have this false thesis that somehow carbon in the soil is escaping all the time, and now there's carbon dating. Carbon in the soil has been around for thousands of years. It doesn't escape just like that. So, if you spray Roundup instead of tillage, we are going to have the solution. So they started to offer use of Roundup – glyphosate – which is now proven to be a carcinogen, as a climate smart solution. It was pushed back. So then they did of course what the smart are doing: they got other companies together. Now the fertiliser industry which is such a big cause of climate change is leading "climate smart agriculture". The fertiliser industry which should not exist, because soil has all the capacity, if you give it organic matter, to make fertility through the billions and billions of organisms that are constantly turning organic matter into nutrition, creating more nature... earthworms eat a leave and create more nitrogen in their mould, create more phosphate, create more calcium. These are amplifiers. They are the true fertiliser factories that actually build soil fertility. The three aspects of climate smart agriculture, and it's not a surprise that the USA and others are pushing it.

The first is, as I said, more use of chemicals, more use of fertiliser, more use of Roundup. Second: owning more of the climate resilient - seeds that farmers have evolved - through patents. We have a report of *Navdanya* called the *Biopiracy of climate resilient seeds*. 1,500 patents in the hands of the Monsantos and the Syngentas. Do they make climate resilient seeds? No, because it's a complex trait. (Pause) They steal the varieties. Just yesterday, Mr. Gates who's a very big piece of this ... Bill Gates works very closely with Monsanto. Bill Gates has said: "All the money, all the money for climate fund should go for improved seeds." And for them, improved seeds means in their hands. When it moves in corporate hands, it becomes improved magically. It's basically a pirated seed. And I've challenged the Gates

Foundation in debates: Where did they ... “Oh, we’ve got drought tolerant and oh, we’ve got soil tolerant ...” I said: “Can you tell me where the original seed came from? Why don’t you declare your original sources of plants? Which seedbank? Which gene bank? Which country?” Columbus did this, pretended he discovered America. Stop keep pretending you’re inventing the seed. All you do is steal it.

But the third aspect of climate smart in my review is the part we really need to keep a lookout for. Last year, Monsanto bought up the world’s biggest climate data company. And then they bought up the world’s biggest soil data company. And what they’re really seeking to do is – and they’ve said it, you know, because I know this idea of ONE AGRICULTURE was launched in India from ICRISA. I’ve read all the documents. The idea is this: there will be one agriculture all over the world. (*Pause*) They will control every aspect of it. Earlier they controlled chemicals, then they control chemicals with the seeds through genetic engineering. Now they want to control the seed, the soil, the chemicals, the water – and data and information. And in their minds, they figured it all out, you know. There’ll be satellites in the sky, the data will be sold to farmers. The farmer wants to know: “What’s the state of my soil?” He’ll buy the data of his or her soil rather than know what the soil is. If the farmer wants to know will it be a drought, Monsanto will tell them it’s a drought. “You’ll buy our salt tolerant seeds.” And this total control net system that they want to evolve as climate smart it’s actually climate dumb. It’s dumb because diversity is the only way you can deal with climate change. Decentralisation is the only way you can deal with climate change. So, more monocultures, more monopoly, more concentration, more centralisation is a disaster, because there’s no way - the huge variations in climate - they can keep up with it. The only thing that can keep up with it is nature’s intelligence in evolution and adaptation, community intelligence, women’s intelligence at work. And we’ve done a lot of study on women’s knowledge on adaptation to climate change, and it’s amazing. They will tell you exactly which seed will do good in an area with low rainfall. They will tell you which species survive an early winter or when the rainfall is too heavy. And that knowledge really is the alternative to the absence of knowledge, because data is not knowledge. I have called it information obesity. (*Laughter*)

**Edith:** You practically covered all of my questions. (*Laughs*) A lot of them. I had some notes also on TTIP which is now very topical here. And what civil society or what actions can we take? You’ve given us a good example ... a few positive examples of success which is always encouraging. And there’s going to be this conference coming up now in Paris. You also spoke about that. But maybe you could tell us a bit more about civil society activities.

**Dr. Vandana Shiva:** Yeah.

**Edith:** Activism.

**Dr. Vandana Shiva:** So, as I mentioned, my work on seeds really gets connected back to the corporations using the GATT and the Free Trade Agreement to put in laws on ownership of seed Article 27(3)(b) of the TRIPS Agreement, in particular. And we worked to make sure our national systems had protections, had exclusions.

TTIP and TPP. TPP is the Trans-Pacific Partnership, TTIP is the Transatlantic Trade and Investment Partnership. They’re not partnerships. They shouldn’t be called partnerships. Partnerships would mean Europeans sit with American citizens and you say: “Yeah, this is our priority. Let’s do trade in this way. (*Pause*) These are important issues, and let’s make sure we don’t destroy our democracy, our constitutions.” These partnerships are really corporate impositions. Otherwise why would they have to be so secret? They’ve been agreed to. TPP

has been agreed to and yet they say: “We can’t let the people know.” *(Pause)* If they’ve to hide, there’s something to hide. We have seen leaks of the intellectual property part of TTP, we also have seen what are some of the food and agriculture related parts of TTIP. And the three aspects which they haven’t managed to get through in the last 20 years through WTO. *(Pause)* They wanted to, but we woke up early enough to block it.

The first is total ownership on seeds, on medicines, on information, on knowledge. No exceptions, no exclusions. The second is because Europe has gone a different way on GMO safety, biosafety, food safety, then the United States which is much more under the control of corporations. You know, it was the Greens who organised the first European meeting on deliberate release of GMOs out of which came the biosafety laws. We’re talking 1998. We’re talking about a lot of work that went into it.

In 2003, Monsanto used President Bush to sue Europe in WTO to get rid of the bans, to get rid of the moratoriums. And I immediately launched a campaign with movements across the world. It was called the citizens campaign on GMOs in WTO. And the basic thing was we collected about 30 million signatures and sent it to WTO. Actually gave it. José Bové, me, Susan George gave it in Hong Kong and said: “We are watching you. *(Pause)* We are watching you. You don’t make these decisions in secret, and you make it look like it’s US against Europe. No, it’s Monsanto vs. the citizens of the world. *(Pause)* Because if you rule against the bans and against the decision of citizens to be free of GMOs, you are ruling not just against European citizens, but you are ruling against other citizens who don’t want GMOs.”

The WTO did not dare make a strong ruling of any kind. As you know, there was an attempt to dilute European laws recently, and yet the majority of European countries have exercised their option to have a ban, including Austria. The TTIP on harmonisation of safety would basically mean get rid of the European options. U.S. as no law. U.S. has no biosafety law. *(Pause)* They work on the assumption of substantial equivalence, pretend that GMO is like non-GMO, so you don’t have to regulate. And if there’s nothing different, then what do you have to look for? So don’t look, don’t see, don’t find and say: “It’s proven safe.” But ignorance is not proof of safety. Ignorance is ignorance of harm. And this is very big as you know. Séralini, Smith, and scientist after scientist have been hounded.

The third very important issue which I think will be the most important aspect for civil society activism and for democracy everywhere is these investor state dispute settlement systems where corporations “as investors” claim their right to sue governments if governments listen to their people and say: “We’ll keep agriculture GMO free.” Monsanto will then have the right to say: “Sorry, Austria, Germany, France. We’d had made so much money selling GMOs and collecting royalties, and you’ve stolen it from us. *(Pause)* So now you compensate us.” It’s a very strange logic. It’s like me saying: “I own all your kidneys.” There’s huge money in kidney transplants. And when you say, “No, I have integrity to my body”, I say, “No, you’re interfering in my trade rights. *(Pause)* I’ll sue you. You made me lose a million each. Now compensate me.” *(Pause)*

That’s the level of insanity, and behind is the idea of corporate personhood, that a corporation is a person with rights. And the movement we have to create, and this is the big movement we have to create, is corporations are pieces of paper where we create legal entities to work in the commercial sphere, but within larger boundaries, ecological limits, social limits, limits of democracies, limits set by our constitutions. And if a corporation treads beyond those boundaries, we have the right to withdraw the permission for their existence. *(Pause)*

This idea of corporate personhood is being established very fast in the United States, and from there it's permeating through these free trade agreements. It's a very simple issue. It's getting rid of an anthropological illusion. Sorry, Monsanto, you can't exist, because I can't pinch you, I can't hug you, you don't get born, you don't die like other people do. You have none of the qualities of a person. People say: "You hate Monsanto." I say: "I can't hate Monsanto, it doesn't exist." (*Laughter*) I love everyone, but I can't even love Monsanto, because it doesn't exist - as a person. It exists as a legal permission. And we've got to become very foundational in these issues and very creative.

And one of the things that has really worked for us in India to deal with this is reclaiming Gandhi's *Satyagraha*. *Satyagraha* is the force of truth. Gandhi used it against Apartheid in South Africa when they tried to put compulsory badges on race. He used it against the illegal cultivation, he used it against the salt law that the British were imposing on us. Can you imagine in hot countries like India if salt is a monopoly? (*Pause*) How much money they'd have made. Gandhi walked to the beach, picked it up and said: "Sorry, nature gives it for free. We'll continue to make our salt. And we won't obey your laws."

And we will have to find creative ways to bring down this myth that the corporations are a person. Now, the India-EU agreement is actually stalled right now. And it's told over the fact that Europe is imposing, through the pressure of the multinational pharmaceutical industry, all kinds of unreasonable criteria on the generic drugs industry of India. We have a big worry, because a big part of the European-India free trade treaty is free trade in dairy. Now, the big dairy industry of Europe has destroyed the dairy farmers here. (*Pause*) They can destroy the Indian farmers. India is the biggest dairy economy of the world. (*Pause*) I don't think you realise that. (*Pause*) And who produces? One woman with two cows. That's the base. And the world's biggest corporative is our dairy corporative where women take care of the cow, make the milk, collect it, put into chilling plants and into a national grid, distributed all over. So, the marketing system is totally national, but the production unit is very small, tiny, decentralised. And that combination has made India very, very strong in the dairy sector. It's a women's sector.

And some time in the future, the groups might want to screen a lovely film called *Manthan*. *Manthan* means to churn. You know, when you separate, when you take yoghurt and churn to make buttermilk and butter, that action is called *manthan*. And there's a brilliant film made on this corporative, but as a feature film and a beautiful actress who is no more, Smita Patil. And it's very, very inspiring. So, the dairy issue is very big, but the generic medicine is very big between Europe and India. And as I said, you know, they're overstepping their boundary so fast that at this point even the India government, which is running along with this free trade agreement, has had to say: "You can't do this. We won't negotiate until you stop this undemocratic imposition of crazy norms." It has nothing to do with safety, but they pretend it's about safety. It's like a bit about ... You know, a small tomato and a big tomato. A small tomato is declared unsafe. How do they measure safety? By looking at the tomato. All the pesticide residues. They look at it through a silly tray which has holes of a certain size. And if the tomato goes through, it's declared unsafe. That is what phytosanitary measures. Food safety rests on measurement of uniformity rather than the bringing of diversity which is where resilience comes, but also where freedom comes from diversity.

**Edith:** There are quite a few suggestions on how to continue and continue initiatives that already exist. At this point, maybe we could go into the discussion. And I would like to ask the audience if there are any questions, statements that someone would like to make. As I had

mentioned at the beginning, if you feel uncomfortable with English, you can ask your question in German. But the answer will be then in English.

**Question, male voice:** Thanks so much for talk. That was amazing. My question has got to do with soil and bacteria. We all know how important the relationship of the bacteria in the soil and the bacteria in the gut is. There's still so much soil ... in Austria. There's about 20 hectares each day to ... . It seems like there's such a big misconception ... regarding ecosystem resiliency. So, my question really is: How do you teach people to create ...?

**Dr. Vandana Shiva:** Well, you know, this year is the year of soil. Yeah? 2015 is the year of soil. And it has actually created a lot more consciousness than there was before 2015 started. There are three contributions we have made. One, I suggest all of you look at the website [seedfreedom.info](http://seedfreedom.info) where we have the manifesto *Terra viva*. *Terra viva* connects the crisis of soil, the crisis in countries like Syria and Nigeria of desertification, climate change and the connection to conflicts as well as what are the parts out of these multiple crises? What are the frameworks of a new economy or democracy we must create to avert absolute disaster? And basically, it was very, you know, an important group of people. And it turns out that the current system which as I said in "Soil, not oil", you know: "Every time capital grows, nature shrinks" ... It's basically an extractive economy. Not just extractive for oil, extractive for minerals, but extractive of soil fertility, extractive of people's wealth, extractive of the common good. And extraction concentrate on the top which is why you get the one-percent-phenomena happening. And what we need are circular economies, where more circulated between society and the soil, more circulates within society which is why people get taken care of in certain societies. And in other societies, you have deep polarisation. Another contribution has been the film called *The living soil*, which is available on Youtube if you ... I don't know how you get to it, but I'm sure there's a way you can find it.

And then actually I called people from the food-agriculture-soil movement from around the world, and I undertook a soil pilgrimage from 2<sup>nd</sup> October, Gandhi's birth anniversary, to 5<sup>th</sup> of October. And the pilgrimage was to where Gandhi had nourished the freedom movement from, and then where Howard was the British scientist who was sent to India to introduce chemicals in 1905. He came and sold soils for fertile and learned from the peasants how to maintain good soil. He's called the father of modern organic farming. He wrote a book called *The Agricultural Testament* in which as he says, "This is written under my professors, the Indian peasant and the pests." So that soil pilgrimage, there's a pledge, and I think you can find that too. How do we shift the paradigm about soil? First, I think just by having more people care for the soil and celebrate the soil, and creating other economies, the evolving alternatives.

You know, in India, we have a new government which passed three ordinances to grab all the land of the farmers. It really believes in replacing villages with "smart cities". The word "smart" has become like a disease. (*Laughter*) So I went into the roots and said: "Okay, what does smart really mean?" And smart means the thieves, you know. (*Pause*) In German, I think it meant, smarting meant through the pain, you know. My elbow smarted when I knocked it. So, either it's painful or dishonest. And it's terrible to design society around pain and dishonesty. Then you can design it around wholesomeness and wellbeing. So, what we've done is to block that law, and it's been blocked down. We said: "You're treating soil as dead, you're treating the peasant as disposable. But this is what farmers give you." And our calculations are 1.2 trillion dollars annually in environmental benefits. If we add health benefits, it'll be another trillion. You add all the countries, we are talking about 15, 20 trillion dollars of contributions farmers make through the living soil. Now we're organising cities and

farmers. Just tell the citizens: “You will only get good food when you are linked to a farmer.” And the farmer has fertile soil they can work with. So, those are the shifts we will need to make. We’ve to do the science, but we’ve all to do the activism. There’s nothing like creative activism and waking society up. And society is sleeping just now.

**Edith:** Okay. Yes, we agree. Thank you. Any other questions, comments?

**Question, female voice:** Yes, I have two questions. The first is what are your hopes or confidence is it going to be enough, or is it going in the wrong direction? Just not enough? And the second one is I’ve read somewhere about rice fields that use less water so that less methane is produced. Is it something in that direction going on?

**Dr. Vandana Shiva:** Okay. So, on the first issue ... You see, when the Copenhagen summit started, everything looked good. And then President Obama flew in after his Nobel Prize and sat with China, India and all the polluters and said: “Let’s subvert this agreement. Let’s do voluntary commitments, not legally binding.” So, what will be the tricks played at COP 21, you can’t predict. All you can predict is this nonsense of climate smart. It will be floating around quite a bit. But as I’ve been saying over the last few months: Even if the governments fail in Paris, we can’t fail the planet, because it’s about the human species surviving into the future or making this planet totally uninhabitable for our species. So, we can’t fail. And as I gave you all those figures on living soil rich in carbon, organic farming, reducing food miles, the answers are there. We’ve got used to thinking, “Here’s a big problem and it needs a big entity to make a big solution.” That’s where we’ve to flip to the Gandhi spinning wheel. Here’s a very big problem. That’s why we have to engage millions and millions of people to shape an alternative that addresses this problem, solves it – and makes the system that has a vested interest in continuing, the system that causes the problem, that makes it irrelevant. Our dealing with giant corporations, especially in the food sector today, can only be through making them irrelevant by our actions, our choices, our commitments.

In terms of rice, we saved rice. We’ve saved 4,000 varieties of rice. If you were to come to *Navdanya* ... We offer a course every September, October on the A to Z of Agroecology, it’s an international course. We also have internships throughout the year at the Earth University, the [Bija Vidyapeeth](http://Bija Vidyapeeth). Any of you, very, very welcome to come. You just have to go to the [navdanya.org](http://navdanya.org) website and look for Earth University. If you come to our farm and we’re growing ... I think there are 750 varieties of rice right now. About 80% don’t need irrigation. This idea that rice needs irrigation is born of the chemical agriculture in the Green Revolution. So, a lot of rices is what we call rain-fed. They depend on the rain. And so rain-fed rices need absolutely no water. There’s no flooding there. But more importantly, even when there is more water in heavy rainfall areas, you don’t have to have methane emissions. If you have rice and ducks and the ducks are paddling, no methane builds up. It’s when you have poisons, then the ducks die and then you have methane. So, all of the problems of rice paddies are a result of chemical agriculture, not of rice. Just as much as the problems of climate change are not a problem of the sun, because President Bush had a proposal to put reflectors in the sky to send the sunlight back. (*Laughter*) Sun is a blessing, it’s not a problem. And all of these other geoengineering issues of “put polluters in the sky, make artificial volcanos, pollute the atmosphere, we’ll have global cooling ...” No, we can have global cooling with good food. Grow good food to have global cooling.

*Applause*

**Question, female voice:** I recently learned about African farmers rediscovering the precolonial crops, because they figured out that they are much more resilient to climate change than those brought by the colonial power. So, how do you see the colonial legacy in this whole problem?

**Dr. Vandana Shiva:** Well, I think that the colonial ... I wouldn't honour it with the word *legacy*. I'm sure there are other phrases that you can create for destructive processes, because legacies are desirable, they should last. This should never have happened. And I mentioned the Pope, the current Pope and his *Laudato Si*. But there was a Pope who passed a papal bull in 1493 after Columbus arrived in America. And then this bull was passed. It was called "Inter caetera", it was an encyclical about conquering and overthrowing all barbarians. And who was a barbarian? Anyone who was not white and anyone who was not Christian was by definition a barbarian.

So, all the world outside Europe was defined into barbarianism. And then you could take their land. That was the bull: "Go, take the lands on our behalf, because I work on behalf of God, and I give power to the king who then gives power to Columbus and other conquerors. Go, grab the land of anyone you can grab." So, land-grab was very, very much part of colonialism. And the genocide, I mean, if you look at the figures of the aboriginal people killed, the Native Americans wiped out, we are talking about a very, I think the largest genocide the world has seen with the land-grab of colonialism. And with it went all the crops, because what did the colonisers look for? That which could be globally traded: cotton as a commodity. "Grow it in America, grab the land from the Native Americans, plant cotton, take the Africans, capture them as slaves, make them work on it." And you know, when they say: "The textile industry was always efficient", I always add this little equation. I say: "Tell me how efficient." It was in the factories of England. It was all of this colonialism that really made that edifice work which is why Gandhi's work to bringing it down was so important. So, we have a 500-year mistake. A brutal mistake of colonialism. Then we have a 250 year brutal mistake. 200 years of fossil fuel, 250 years of mechanistic thought. Another brutal mistake which has devastated the planet, destroyed societies. We have a 20-year mistake of globalisation. We should end all three, because each builds on the other.

Without colonialism, you wouldn't have had a Bacon. Without a Bacon and Descartes you wouldn't have a Monsanto claiming invention of seed as a machine. (*Pause*) And as I've written in my book *Biopiracy*, I've called it *the second coming of Columbus*, the patenting. Because again, you know, when I find a troublesome word, I like to go to its root. Where does it start? Where did the word "patent" start? So, you know, when you had all these Hungarian-Austrian empire, lots of letters used to be exchanged. But they were closed and sealed letters, because they were all about conspiracy. So they put a stamp and no one else could open it. But what Columbus got was a letter patent. "Patent" simply meant "open letter" which you could scroll out and announce. "The Pope has empowered my king and queen to empower me to grab your land." That was the letter patent. So, I call Monsanto today taking a TTIP agreement, writing it, pushing it on the world. All future TTIPs ... it's like the second coming of Columbus. "I've written a patent law. Now all your seeds are mine. I've written a patent law. I can steal what I want to from your society and patent it, and make you pay royalties to me." (*Pause*) So, colonialism is a very big part of the story, very, very big part of the story.

And I really feel for those of you who are students and studying, someone compare the *Laudato Si* and its principles and philosophy to *Inter caetera*. What kind of world are the two creating? I'm so grateful to Pope Francis that he has taken a turn himself morally to not continue that tradition.

*Applause*

**Question, male voice:** You mentioned the growing role of linkages, the urban and farmer linkages. And I just want to hear your position on what you think of the rapid development of urbanisation and rural depopulation and how that is problematic maybe regarding those linkages in huge metropolises and huge cities.

**Dr. Vandana Shiva:** You know, I have a very simple thesis: What humans do, they can undo. Now, if they've created a crazy economic system, which measures productivity of agriculture in a very false way; takes highly productive systems that are ecologically sustainable, produce more nutrition ... We have a report called *health per acre* where we measure the nutrition per acre, and it's much, much more on ecological farms. And then we've done the wealth per acre which is the true cost accounting. Now, at the true level small farms are necessary, small farms feed us. 70% of the food we eat today comes from small farms. But there's this other manipulated machine which says: "Small farms are inefficient, organic is inefficient. Therefore, wipe them out." We can undo that. That's my work.

I have a new book actually after all these. It was written for the Milan Expo. It should be out in English soon. It's called *Who really feeds the world*, because the Milan Expo was on feeding the world. And of course all the corporations were trumpeting around: "We feed the world, we feed the world." So, the publisher said: "Can you reply to this?" So I wrote. I wrote a reply who really feeds the world. I said: "Pesticides don't feed the world, the pollinators do. Fertilisers don't feed the world, the soil and microorganisms do. The corporations don't feed the world, women do and small farmers do." So, given that there is a need for that paradigm shift at every level of every discipline, that's one part. The second is just because some cities have become big doesn't mean a big city must go 10,000 miles away for its food.

I talk about food-sheds. You know, we all have thought about watersheds. You don't go 8,000 miles for your local water supply for your municipality. (*Pause*) What you do is protect your watershed, keep it safe, don't allow pollutants. And that's how the planning for water is done: through watersheds. We need food-sheds. A small town will have a smaller food-shed, a big town will have a bigger food-shed. But it'll still be local with respect to that urban area. So, a big town might have a 100 or 200 kilometre food-shed and a small one will have a 5-mile food-shed. It's just that your circle becomes bigger, but it's still a circle. And not this linear exploitation ... long distances. Things which are trashing the earth, 75% destruction of all resources. It's trashing the farmers. This system that is designed so that farmers can't make it. And it's also exploiting the consumer, both through disease as well as food costs.

You know, I've done lots of studies to show that with globalisation ... you know, normally food prices go like this: (hands are parallel to each other) This is the price farmers get, this is the price consumers pay. 6%, 10% difference. And with globalisation it starts to go like that: (she illustrates the spread with two hands). Consumers pay more and more. (*Pause*) Farmers get less and less. It's now 1%. 1% of what the consumer pays reaches the farmer. That 99% is what Walmart grows with. That 99% is what Starbucks and Nestlé grow with. That 99% is what allows Pepsi to make money out of potato chips where only 1% is reaching the farmer. I've done these studies with the potato growers. So, what we do is close this gap through the circular and circulate more.

So, you know, I have never understood this, why do people say a big urban area means you must have a 10,000 miles supply chain. No! Big urban areas means you go from 10 miles to 100

or 250 also. It's alright, you know. But there will still be a local. And why do we need to build this? We've got to address climate change: this is the only way will. We've got to protect the soil: this is only way we will. We've got to have more work from the land. You used the word "depopulation of rural areas". We will HAVE to repopulate rural areas. Otherwise you'll have more and more unemployment; you'll have more and more refugees. Because if every place is consumed, it will flush out people from the rural areas. Kill the villages: it's an unliveable future. And it doesn't take too much, it doesn't take ... I mean, I was in a very, very wealthy part of the US. Half the audience like this was young farmers. So I said: "How come, how come you can farm in this very rich area?" They said: "The rich area was smart enough to decide that their villages and farmlands would stay farmlands." So they passed a local council meeting and said: "No rural farmland will be converted to urban sprawl." And that created a land trust to which young people can turn for employment and meaning, you know. It's not just employment. I mean I get for training at Bija [Vidyapeeth](#), I get people from the software industry who are dying within. They get a fat check from the banks and financial institutions, hedge funds. They're going crazy. "I want sanity, I want to farm."

**Edith:** Thank you. The next question.

**Question, male voice:** I have a question on the cultural knowledge. I see a kind of a problem in the Western tradition of breaking traditional knowledge in the means of what we believe in or what legitimisation of knowledge nowadays is for us is scientific approval. And scientific approval always is cutting with traditions in terms of other cultures and times when there was an old book, it only got the legitimisation then because it was at least 2,000 years old. So, do you believe nowadays we can solve kind of cognitive and everyday problems by getting a balance of science and tradition, and which kind of science do you see for a modern society again?

**Dr. Vandana Shiva:** Okay. So, I wouldn't contrast science and tradition. What I would say is there is pluralism of knowledge. And science only means to know. So science is knowledge. It's only in the mechanical, mechanistic reductionist era of the Bacons and the Descartes and the Newtons, you start to define the science of fragmentation and division as a science with a capital "S". Only that will count as science. Everyone else's knowledge will count as not science. So, women's knowledge goes, ancient knowledge goes.

I gave the 100<sup>th</sup> anniversary lecture for our first Ayurveda college. Ayurveda is the Indian ..., it means the science of life. It literally means the science of life, and it's the ancient Indian tradition of healing. And everyone today, you know, all the Europeans, all the Americans are descending in Kerala for Ayurvedic treatment, because it just works better. More than a hundred years ago, the British tried to criminalise it, so you've got to shut this down. But there wasn't a school. There wasn't ... individual Vaid would heal. Vaid would teach the next generation in their homes, make their own medicines. And the British said: "No, no, no, no, no." So, this particular Vaid was smart, Dr. Warriar, he said, "We will create institutions like them, but we will maintain our content. So, we'll have medical schools, but we'll teach Ayurveda. We'll have pharmacies, but we'll make Ayurvedic medicine." So this Ayurveda acharya then became the place for defence against the British dismembering.

The same is needed today for agriculture. But it isn't just that the Baconian system made Western knowledge privileged and turned all of the rest of knowledge into "non-knowledge". Today, we have a bigger tragedy, and that tragedy is this: that today corporations have taken over research and science. And they're not doing science, because for them inquiring and figuring out how the nature works is not the issue. For them, manipulation is the issue and if

nature is working in a different way from what you thought, hiding that is an issue. So someone recently issued the soil-gut connection. You know, we have bacteria in our gut. Roundup kills bacteria, but they say it won't affect the human being because our cells don't have the shikimate pathway. But 600 trillion cells, most of them are bacteria in the human body. And Roundup kills the shikimate pathway in the bacteria leading to all the consequences including the gut-brain connection. So you just manipulate, you hide. And in fact, in the name of that privileged science you are creating anti-science. (*Pause*)

You are creating anti-science. What we are witnessing with Monsanto is an enterprise of anti-science. Whether it's preventing the Americans from knowing what they're eating, the labelling law fight just now. The *Dark Act*, denying Americans the right to know, or its hounding scientists, I mentioned Séralini. Or it's preventing research of certain kinds all over the place. They have huge, huge influence.

So, what is the contemporary role of knowledge and science? I will use the two interchangeably, because I'll use the word "science" with a small s, and science is to know. Everyone knows. Everyone knows different. (*Pause*) Just like there are artists. Every artist's work isn't the same. (*Pause*) Science too is a cultural activity. And as a cultural activity, different systems evolve different criteria of testing reliability, authenticity etc.

So, the challenge in our time is this: there is, thank goodness, enough independent science for new knowledge to emerge. For example, I mean, I did my quantum theory, but epigenetics ... the whole fundamentalism on which genetic engineering is based is genetic determinism. The genes determine everything. Very false. Genes are one aspect of a self-organised organism. And everything has a role, and science is teaching us that. Of course, again, they try and shut down those departments, but it comes out all the time. Genecology. All the work we have, you know ... In the science of industrial agriculture, the soil was defined as an empty container to hold the nitrogen, phosphorus, potassium. We now know through science, because we can now use microscopes to see the brilliance of diversity in the soil. What we need is a new convergence. Not a new standardisation, but a new convergence, a new confluence between those ancient systems tested over time and the new ecological systems that are emerging. And both then become the alternative to the anti-science that is being used to justify destruction of human health and the planet. And the seed is a very important area for this.

So, for example not only did we save seeds, we do participatory research, we do participatory breeding. And now we've written a little manifesto called *The law of the Seed* which is absolutely by the top experts. You know, the person who used to head FAO's Plant Genetic Resources commission, said Salvatore Ceccarelli, the world's top participatory breeder. We put our minds together and said: What is the true law of the seed? What does the seed tell us and what does breeding from women tell us? That you breed for diversity, you breed for resilience, you breed for nourishment. What are the standards of the industrial breeding? Uniformity, uniformity, uniformity. This was what was being used two years ago to bulldozer a seed law on Europe, which was defeated because of the very broad alliance including the *Seed Freedom Movement*. And your own *Arche Noah*, the seed savers of Austria.

I think it's in health, it's in agriculture, it's in food. I would even say if people have the guts, it's all also in mental health, because what's going on in mental health? It's crazy. They are literally making ... You know, it's normal for people who are under pressure to feel the pressure. And you define it in all kinds of ways and turn it into a psychiatric problem. Monsanto has defined the search for organic as a new psychiatric problem. (*Laughter*) I can't remember the name, but they have a name for those who look for healthy food. It's a psychiatric problem.

**Edith:** Now we really have to get armed to fight this. There are two more questions and then we'll start closing up.

**Comment, female voice:** I want to thank you so much for inspiring me and us. I just wanted to say to you all here that we have a petition for soil protection in Vienna. And if you are interested to see this petition, go on *Stadtfrucht* and there you can see the link to sign this petition if you want that quite huge areas of Vienna stay alive as agricultural areas.

**Edith:** What's the name of the website again?

**Female voice:** *Stadtfrucht*.

**Edith:** *Stadtfrucht*. Okay, thank you. Very interesting to know about this. I hadn't heard yet. Yes?

**Question, female voice:** I'd like to hear a little bit more about this circular society that you said would be the opposite of the extractive economy. Do you have in mind like the Adivasi in India or what exactly is this opposite of the extractive economy?

**Dr. Vandana Shiva:** So, when we're talking of extractive systems, linear extractive systems and circular systems, we're of course talking of the economy, but we're also talking about politics. Because what are free trade treaties but taking power out of communities, nations and putting them in the hands of invisible corporations who make all the decisions. That's a linear extraction of power from people. So about the circular economy, a very good example of what I was describing ... a circular relationship with the soil. You plant the seed. You plant seeds carefully to maximize photosynthesis and biomass. You get more organic matter, you return a large part to the soil, you eat a bit. And as you do that, you build up more and more and more soil fertility and more organic carbon. That is a circular economy of agriculture. And because of the linear extractive system, it only measures the throughput. What are the commodities you extracted from the farm? So, we have more and more commodities, but we have less and less food. 90% of the corn and soya, which is the largest acreage that is spreading because it's connected to intellectual property ... 90% of the corn and soya goes for biofuel and animal feed. That's not a circular economy. It's a linear extractive economy.

You talked about the Adivasi, yes. Wherever there are commons, wherever there's mutual gift ... and all societies that were circular are gift economies. So, the gift and the commons rather than commodities and grabbing (*Pause*) But it isn't just Adivasi societies which are the indigenous societies. This is the kind of economies we have to build now, as more and more young people are thrown into a non-option for their future. I work with Greeks, I work with Italian youth, I work with Spanish youth. I worked with the government of Rome and they said to me: "We love your work on seed, but our big problem is youth unemployment." I said: "Let your youth that are unemployed have gardens. Give them land. All you need to do is give land. They will do the rest." (*Pause*) Yeah, that's a circular economy. So, a circular economy isn't of the past, it's the basis of the future. Circular economy in terms of giving with gratitude back to the earth, and circular, in terms of relating together as a community.

**Edith:** Thank you.

*Applause*

**Edith:** I would like to thank everybody for coming, and I would like to thank Vandana Shiva especially. She came straight from the airport to us. And we had a really powerful talk. I'm very happy that you were here. And now we know that the future is - we're going to solve everything with farming. You can apply it to almost everything now. Yes, I'm taking that with me. I apologise again for the crowded situation, but next time we'll know we need at least three times as large a room. Thank you on behalf of all the other organisations for coming and good evening.

**Dr. Vandana Shiva:** Thank you.

*Note: This is a transcript of the video. As the audio quality was not always perfect, the unintelligible spots are marked as omissions (...), which may be completed at a later time.*