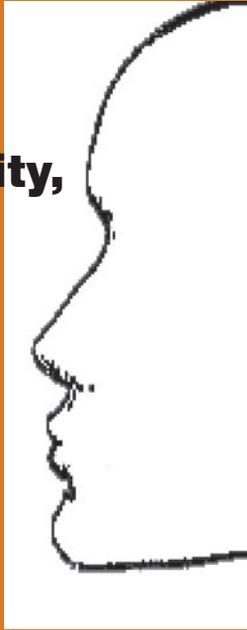




Landscapes, Agro-Biodiversity, Markets, Subsidies

Mauro Agnoletti talks with

Vandana Shiva



Vandana Shiva is a world-renowned environmental thinker, activist, physicist, philosopher of science, writer and science policy advocate. She was trained as a physicist and received her Ph.D. in philosophy from the University of Western Ontario, Canada, in 1978 with a doctoral dissertation entitled *Hidden Variables and Locality in Quantum Theory*.

In 1982, Dr. Shiva founded the Research Foundation for Science, Technology and Ecology, an institute dedicated to high quality and independent research to address the most significant ecological and social issues of our times. In 1991 she created Navdanya, a national movement to protect the diversity and integrity of living resources, especially native seed, to promote organic farming and fair trade. In 2001 Dr. Shiva founded Bija Vidyapeeth/Earth University, an international college for sustainable living, in collaboration with Schumacher College, U.K. She also founded a Gender Unit at the International Centre for Mountain Development (ICIMOD) in Kathmandu, and was a founding Board Member of the Women's Environment and Development Organization (WEDO).

Vandana Shiva has contributed in fundamental ways to changes in the practice and paradigms of agriculture and food. Her books *The Violence of Green Revolution* and *Monocultures of the Mind* have become basic challenges to the dominant paradigm of non-sustainable, reductionist industrial agriculture. Intellectual Property Rights

(IPRs), biodiversity, biotechnology, bioethics, and genetic engineering are other fields to which Vandana Shiva has contributed intellectually and through campaigns.

Besides her activism, she also serves on government expert groups on biodiversity and IPR legislation. She has assisted grassroots organizations of the Green movement in Africa, Asia, Latin America, Ireland, Switzerland, and Austria with campaigns against genetic engineering. She is one of the leaders and board members of the International Forum on Globalization and a figure of the global solidarity movement known as the “alter-globalization movement”. Dr. Shiva also chairs the Commission on the Future of Food set up by the Region of Tuscany in Italy. In 1993, Shiva received the Right Livelihood Award in 1993 (also known as the “Alternative Nobel Prize”) for “placing women and ecology at the heart of modern development discourse”.

The titles of her books reflect her values and practice. They include: *Earth Democracy: Justice, Sustainability and Peace* (2005); *Patents, Myths and Reality* (2004); *Water Wars* (2002); *Tomorrow's Biodiversity* (2001); *Biopiracy: The Plunder of Nature and Knowledge* (1999); *Monocultures of the Mind: Biodiversity, Biotechnology and Agriculture* (1993); and *The Violence of the Green Revolution* (1992). Shiva has also authored over 300 papers in leading scientific and technical journals.

Mauro Agnoletti is associate professor at the faculty of Agriculture of the University of Florence. Most of his training, teaching and research activity have focused on forest and environmental history, as well as rural landscapes. He chairs the research group on Forest History of the International Union of the Forest Research Organization and is member of the board of the International Consortium of Environmental History Organizations. He was also Vice President of the European Environmental History Society. He is a consultant for the European Landscape Convention, the ICOMOS, and the Ministerial Conference on the Protection of Forests in Europe. He is presently collaborating with the United Nations and UNESCO for the Convention on Biological Diversity, and with FAO for the assessment of Global Agricultural Heritage Systems (GIAHS). He also coordinates a commission of the Italian Ministry of Agriculture

for the conservation and valorization of rural landscape. He has authored more than 120 publications.

Mauro Agnoletti and Vandana Shiva meet in Florence in May 2011, to discuss a number of central issues in the international public debate regarding the environmental implications of the development model prevailing in industrialized countries, including the notion of conservation and agro-biodiversity, park-creation policies, the existence of a social question embedded in the environmental question, and the effects of subsidies to agriculture.

MA: Maybe you could start by telling us what you have been doing here in Florence, and what's new?

VS: This particular trip to Florence is to launch Navdanya International. Navdanya is the movement I started in India twenty-five years ago. It means "Nine Seeds" but it also can mean "the New Gift". In its meaning of "Nine Seeds" it stands for diversity, in its meaning of "New Gift" it signifies recovering the commons from the privatization of the earth, of resources, of the water, of the seeds, etc. And on the 21st we had the launch of Navdanya International, which is based here in Florence, and we will build on and continue the work of the International Commission on the Future of Food, which is also based in Florence. Our focus will be on biodiversity, ecological farming, which ends up being about cultivating the land, creating landscape, maintaining landscape; because in Navdanya's work it is very clear that you cannot have development without conservation. And in fact, the more you conserve, the better your production systems are. We believe our structures of the past are more complex and more sophisticated, more multiple, more diverse ways of protecting anything, whether it be the value of work or the value of resources, or the productivity of human activity.

MA: Thank you. In your career so far you have made statements about a very high number of things we link to sustainability, so I will try now to concentrate all this big issue in a few questions. Based on my

own experience as a scientist, or what I have seen are the biggest problems scientists address in their scientific publications, and the experience I have as chair of a commission developing agrarian policies, basically what we do in Italy is giving money to farmers for doing things. So one of the things we see is that modern agricultural systems receive a lot of external energy inputs, so that they appear to be very productive and very efficient, whereas if you calculate the amount of energy inputted into it you realize that over the last hundred years the expenditure of energy has been so high that they are actually very inefficient as regards their energy input/output ratio. When we speak of reducing these energy inputs to become more sustainable, in the case of Italy, for instance, we have to deal with what has happened in the last hundred years, which basically is not only the industrial development of agriculture, but also the fact that we have abandoned 30 million hectares of farmland. The result is that now only half of the land is cultivated and forest is encroaching on previously farmed land. If we are thinking of revising our model, if we say that perhaps we need less intensive cultivation, more extensive cultivation, and also if we want to maintain the landscape, what the local people have created, as well as address the food problem, probably we should not let the forest grow so much. But then you get all the ecological movements saying that this is wonderful, we have so many forests, so we are very sustainable. But on the other hand the same people are complaining that we are importing 60% of our food from abroad, so what about our ecological footprint? To give you a practical example of this kind of contradiction, if we give somebody a contribution for, let's say, bringing back pigs, or cattle, or sheep into the woods, we will be facing problems with environmentalists accusing us of damaging the forest; the same thing if we try to restore farmland. These are the two horns of the dilemma, and sometimes it is hard to make a decision because in the end it seems there is nothing we can do. So I would like to have your comment on this.

VS: I think the first issue about intensive agriculture is that we have to qualify “intensive”. So far with industrial agriculture we have had intensification of energy, fossil fuels, ten units of energy put in to get one unit of energy out, and we have had intensification of

chemicals. We have been made to believe that this has been intensive use of land, but it is actually extensive use of land. If you stop growing certain things by displacing biodiversity, by destroying the integration between livestock, trees and crops, you are merely exporting that pressure somewhere else. So for example, in a good integrated system the fodder for animals would be local and it would be part of the farming system, whereas the Amazon forest is being cut down to provide feed for animals kept in intensive conditions. If you look at the feed footprint, seven times the feed print of Europe is being used outside Europe just to maintain the animals of Europe. So it is extensive and not intensive, if you measure (a) the output per human acre and (b) the input into the system. So I, in fact, and Navdanya, promote ecologically intensive systems. Ecologically intensive systems means that you intensify the processes of nature to renew fertility, to conserve water, to help biodiversity. And these resource-intensive systems and biodiversity-intensive systems enhance ecosystem capacity to produce more. They conserve more water, they enrich the ecology of the pollinators, and they increase soil fertility by allowing soil microorganisms to provide the nitrogen, the phosphorus, the potassium, the calcium, and everything else the earth needs.

So I think we need to start qualifying “intensive”, and we need to move on from fossil fuel/chemical intensive, to biodiversity/ecological intensive. When we do that we must find the perfectly happy medium and instead of having a conflict between forest and farm, animals and crops, and animals and humans, start creating corporative arrangements. The fodder for animals comes from the straw that humans don’t eat, and pastures and trees support some of the most sustainable systems, including systems in my region in the Himalayan Mountains. There is a close relationship between the animals and the forest, on the one hand, and the farmland, on the other. So we can actually have both, instead of the extremes of concentrating every effort on industrial agriculture versus abandoning agriculture altogether and allow forests to intrude on farmland, and hope we can still create food security for every country. I think that is the big illusion we have to overcome. Italy is told “you don’t have to grow food, import it”, India is told “you don’t have to grow food, import it”.

MA: Korea, Japan, North America...

VS: Brazil is told “you don’t have to grow food, import it”. But the point is, then everyone turns into an importer.

MA: And where will this food be produced?

VS: Exactly. We know very clearly it’s an illusion, but in the world everyone tells us that the reason we should be growing food is to produce vegetables and fruit for export. But if 1.2 billion people in India don’t produce their own food, no one else is going to look after them. We may become *producers* for supermarkets for the North, but we will not be *eaters*. The globalization-engendered crisis that has distorted our agricultural policies has already left half of India hungry in fifty years. Now we need to extrapolate and say ok, this process in continuing, this mirage that everyone can stop being a producer and everyone can be a consumer of food without asking the question about who will be the producer.

This is related to the question of what is effective productivity. I believe real productivity has to be diversity of output, multifunctionality, and internalizing input costs, whereas the industrial system is productive by illusion because it externalises input costs, it doesn’t count them, ever – it wouldn’t exist if it counted them. Besides, the industrial system does not count the full output, only that of monocultures. But after 25 years of work in Navdanya we know for a fact that a biodiverse organic system produces far more nutrition per acre than any industrial monoculture can. So we are talking about addressing hunger, we are talking about addressing the environmental crisis, and we are talking about ensuring that we have a real community that is biodiverse. Then ecological is the only way to go.

MA: Thank you. That of biodiversity is indeed another question that you address quite often. The way we see the things is that Europe, under the Habitat Directive of 1992, has produced a large network of protected areas called Nature 2000. These protected areas have been created in more or less every European country. And basically

these habitats that protected areas are protecting are defined according to scientific guidelines for wildlife preservation. The biodiversity being assessed is thus the biodiversity of nature, pristine nature. So what is happening in reality is that you single out a place, you place a boundary around it, and you say “ok, inside here we are managing this piece of land to the purpose of preserving these species”. Now, in intensely populated areas like India, Italy and many other countries in the world, it just so happens that many of these areas, although not all of them, are established in places where indigenous people live. They are doing what they have always been doing for centuries, and from one day to the next they suddenly find out that what they’re doing is wrong. I’ve been working on this for the Ministerial Conference on the Protection of Forests in Europe. There is a neglect here for the biodiversity generated by traditional farming practices. In a country like ours, farmers introduce animal and plant species, create diversity by implementing different patterns of land use, by growing small crops in tiny areas. By this they create what we call a “landscape mosaic”, which is actually a very rich habitat. But according to the prevalent theory of biodiversity it is a fragmented habitat and hence worthless. So once again, we have on the one hand a number of scientists who know what we are talking about and understand that you cannot apply this theory as it is, but on the other the present laws are based on the official theory. So my question is: do you think that, also based on your own experience, this view of what is important for the land should be revised? What are the values we need to look at? Because it does seem that we are trapped in a conflict between a certain idea of nature held by some people – usually living in cities, not in the countryside – and a whole different idea of what nature is held by farmers and shepherds. Much of the reasoning I see at the international level, these rules, these paradigms that we are creating, generate conflicts when they are actually applied in the real world. So what are your thoughts on this?

VS: I think that we need to recognize that there is biodiversity in the forest, there is biodiversity in farms, there is biodiversity in the seas, there is biodiversity of fish, birds, microorganisms, of trees and

crops and – this observation may surprise you – we need to recognize that the fact that biodiversity, or what is called agro-biodiversity, is the result of cultivation does not mean that it is not wild. It is wild because the entire ecosystem of the soil is an amazing wilderness, unless you have destroyed it by spreading weed killers and fertilizers and killing the microorganisms. And now we have big corporations encroaching on the wilderness and undermining the wildness of plants through things like “terminator technology”, which creates seeds that don’t renew. In my view an open pollinated seed, a renewable seed, a farm-raised variety, has large contents of wildness because it is able to reproduce. I think that an artificial idea of nature out there without humans is the biggest block, both to conservation and to human wellbeing. In India, a separation of humans from nature has never been the case. Our best protected areas are traditionally the forests where the tribes lived with their local culture, who held the forest and its species as sacred. So if you go to India today, the richest forest areas are actually areas where people have deliberately protected biodiversity. These are not “hands-off areas”, they are areas of human intervention where love and compassion has protected the ecosystem. The US exported this idea of parks versus people: if an area that tribes have protected up to now needs to be protected, you have to throw the tribes out. And that is such a social conflict, for the minute you throw the tribes out, the protectors become the enemies of the park, and today in every park of India, because they threw the old protectors out, ecosystem stability has gone destroyed. For example, India has a very special variety of lion called the Gir lion, and this forest, called the Gir forest, and we have a very important pastoral tribe who live in this forest, called the Maldhari, who keep cattle, and know very well that off and on the lion will pick up one or two cattle, but they won’t shoot the lion: they regard this as an offering to the lion. The Maldhari were treated as a threat to the lion and removed. When cattle used to graze the grass in this area they would prevent forest fires. Besides, as long as the Maldhari were there they kept away poachers. And now they have destroyed the forest with forest fires, they have removed the real conservationists, and the animals are vulnerable to poachers belonging to the globally

organized criminal gang. But even more important is the totally artificial divide between agriculture and forests. A survey by senior forest officers shows that there are more trees on farmland than in the forests themselves.

MA: In Italy a similar investigation was made. It revealed that on some farm areas there are as many as 180 trees per hectare. Areas outside forests have always yielded twice as much fuel wood as forests.

VS: Exactly. So the idea that you can only have forests locked up in parks and your agricultural areas should be barren monocultures of annual crops, with not a tree, not a bird, not a earthworm on it, is a disaster for agriculture, as we have seen, because of the impacts of industrial farming, which is using up 70% of our water, producing 40% of greenhouse gas emissions, and destroying 75% of our biodiversity. Everything, every indicator shows that we are losing out. And the forest too is getting impoverished, because the satisfaction of needs once met by the farm is now fully falling on the forests, and this puts them under pressure. I will give you an example. We did a study: Our farms in my region, in the Himalaya, produce a lot of biodiversity of crops and a lot of biomass; some of that biomass goes for straw, to feed the animals, for compost, and some to produce firewood. This was considered primitive and they introduced export vegetables, tomatoes, soybeans and potatoes, which of course, as you know, are crops that yield very low biomass and no fodder for animals. So the pressure to find fodder has increased the pressure on the forest. So in fact these are not protection systems, they are pressure-building systems.

MA: Also because, as you said, it is clear that we now have a polarization of farms and forests, while before there was a synergy; indeed, there could be no farming without forests.

VS: And we have to go for that. We need a paradigm shift. Protection must be also seen as productive and production should also be seen as preservation.

MA: Here in Tuscany we have a park called the Landscape Park of

Moscheta, in the mountains, where land abandonment has almost destroyed both settlements and biodiversity. We have ascertained that in the Tuscan Region over the last hundred years abandoned forest areas that were formerly farmed have increased by 80%, and only 5% of pasture land remains. So what we are proposing is to recreate a balance between the biodiversity of herbs and the biodiversity of trees. We need to remove some forest to recreate the biodiversity of the landscape mosaic. Actually we may not get anywhere with our proposal, because as you can imagine nature protectors are saying we should not touch the forests. That is why I was asking this question, because in the end the message a politician gets is something like “Oh no, we are cutting down forests in the mountains!” The people wouldn’t understand. When you bring this discussion to a political level it is difficult to change both mentalities, that of people who want to turn farming into an even more industrialised business, and that of environmentalists who are still looking at mountains and forest areas in general as places for wilderness and not for men. This is why we have been changing our planning for the Ministry of Agriculture. We have shifted from the 1960s paradigm – production, production, production – to the 1970s, 80s, and especially 90s paradigm – biodiversity, nature, put back nature onto farmland – and the Ministry of Agriculture said it doesn’t work. That is why we have introduced the concept of landscape, because today we think that landscape is the integration of society, economy and the environment. If we put the three of these together perhaps we can start to evolve a different paradigm for farmland.

Coming to my last question, you know that Europe is strongly criticizing us because we are putting a lot of money in agriculture, because we heavily subsidise farmers. I don’t know if you are familiar with these data, but 30% of Italian agriculture is subsidised, in Tuscany 45%. So, from the point of view of Third World countries, we are giving our agriculture an unfair advantage, but from our point of view we see that the degree of abandonment of the land is something like 120,000 hectares every year over the last 80 years, so we are trying to do all we can to keep the people there, by giving them money, basically. So, what do you suggest?

VS: I think that there are two very different kinds of subsidies. One is granted to promote globally traded commodities and it is used to lower prices and dump on Third World countries; and that dumping leads to the destruction of the livelihoods of farmers. This has happened, for example, in the case of soya dumping. Soya was 150 dollars a ton but subsidized for 190 dollars a ton, and its introduction undercut the oilseed production of India—mustard, sesame, coconut, and others, the richest oilseed culture in the world. It destroyed 67% of our edible oil production. That kind of subsidy is hugely destructive to the Third World. There is another kind of, I won't call it subsidy, I'll call it support. When a society decides that we want a balance between urban areas and rural areas, we want our rural areas populated, and because of the unfairness of the global marketplace, where prices of commodities keep falling and it is not possible to make a living in agriculture, we will put some of our collective wealth into keeping farmers on the land. Now when we have done that very clearly, nobody can dump on us. Similarly in Tuscany, if the subsidies allow small farmers, young farmers, to engage in agriculture for local production, to create local markets, to build back the food-producing economy and rural fabric, that does not hurt us. So I would distinguish between these two kinds of financing. I would like to see the new plan for after 2013 increase the support to European rural areas, biodiversity protection, and rural livelihoods. We treat a plumber as someone who does work and we give him money, we treat a gardener as someone who does work, and we make sure the gardener can make a living. It is time to recognize that a rural person is not just a producer of commodities, that is the last thing he should be doing, they are landscape maintainers, which is a very important social function, they are providers of water insofar as they maintain the watersheds, they are builders of soil insofar as they renew soil fertility. And when you renew the soil fertility with organic systems you are also taking out carbon from the earth, so organic farming can give an important contribution to carbon sequestering, as much as 40%. So there are levels and levels and levels of advantages that society gets by supporting farmers. In a context of a distorted world agricultural economy, agriculture should

be thought of as a primary activity. It should not need any external input, whether the input be fossil fuels or financial. Instead, because of the distortion of a globalised economy under the control of five agricultural giants and five seeds giants, the cost of production keeps going up, the price of commodities keeps going down, and the price of food keeps going up; these are multiple contradictory trends, and these trends are the result of manipulations of production and of the market place. We need to move on to an honest market, we need truth in agriculture, we need prices that reflect the real cost of cultivation, we need prices that reflect the real ecological footprint.

MA: Do you think that today there is an increase in politicians' awareness of these issues?

VS: In my understanding you have a biodiversity of politicians too! And some of them are indeed becoming more aware. In my own country I advised the government of Kerala, I advised the government of my own state, and just before coming to Italy I was advising the government of Madhya Pradesh, which will very soon pass an organic quality directive. I advised the government of Bhutan, the country that introduced the concept of "Gross National Happiness" as opposed to "Gross National Product", and its Prime Minister asked me to help make Bhutan 100% organic. So, there are minds that are open. There are also minds that are closed. But they are not closed automatically, they are closed because a lot of money is moved to influence politicians and decision makers. This is reflected in the report on the GMO issue we will be bringing out with Navdanya International. Biotech industry has a huge influence on governments, and they make politicians say certain things we know are wrong, including president Obama, who is too intelligent not to know that reversing the judgments of lower cost to ban GMOs through direct presidential intervention is the result of Monsanto's sway on the White House. So I would say that the problem is not so much politicians, but corrupt and corrupting corporations who would prevent humanity from moving on to an enlightened future based on protection of nature, balance with nature, harmony with

nature, and a better livelihood for most people and all people, just for the sake of their short-term profits, at the cost of destroying biodiversity and destroying farmers—suicides have been increasing exponentially among Indian farmers since Monsanto was allowed to take control of our crop seeds. So we are talking of very lasting damage to the world, a billion people hungry, two billion people suffering from obesity. We are talking about food on its way to becoming the principal source of health problems in the world. And if we want to change that we have to make corporations accountable, and the only way to make them accountable is to ensure that people's rights and people's power are exercised democratically. People otherwise will make this change themselves. You ask about politicians' awareness, I would say, if we consider people instead, more and more are becoming aware, and they are becoming aware for three reasons: for one thing, the young are becoming aware because they know there is no opening for them in the present system, the economy is collapsing, there is no future, there are no jobs. Even here, graduates and post-graduates have been volunteering for us, and most of them are working in factories and in farming. Quite clearly they can find no other employment opportunities. The second reason is that people are realizing that the ecological crisis is really serious. The oil industry may try to deny the threat of global warming, but the effects of global warming are everywhere. And the third very important reason is that more and more people are feeling alienated, more and more people are realising that they are not happy. People want to change, but the change cannot occur within the system, because the crises are multiple and we need a synergetic change, one that will solve all these multiple crises at the same time. And that in my view is the challenge that lies ahead for humanity.