

Reith Lectures 2000: Respect for the Earth

Lecture 5: Poverty & Globalisation - Vandana Shiva - Delhi

Recently, I was visiting Bhatinda in Punjab because of an epidemic of farmers suicides. Punjab used to be the most prosperous agricultural region in India. Today every farmer is in debt and despair. Vast stretches of land have become water-logged desert. And as an old farmer pointed out, even the trees have stopped bearing fruit because heavy use of pesticides have killed the pollinators - the bees and butterflies.

And Punjab is not alone in experiencing this ecological and social disaster. Last year I was in Warangal, Andhra Pradesh where farmers have also been committing suicide. Farmers who traditionally grew pulses and millets and paddy have been lured by seed companies to buy hybrid cotton seeds referred to by the seed merchants as "white gold", which were supposed to make them millionaires. Instead they became paupers.

Their native seeds have been displaced with new hybrids which cannot be saved and need to be purchased every year at high cost. Hybrids are also very vulnerable to pest attacks. Spending on pesticides in Warangal has shot up 2000 per cent from \$2.5 million in the 1980s to \$50 million in 1997. Now farmers are consuming the same pesticides as a way of killing themselves so that they can escape permanently from unpayable debt.

The corporations are now trying to introduce genetically engineered seed which will further increase costs and ecological risks. That is why farmers like Malla Reddy of the Andhra Pradesh Farmers' Union had uprooted Monsanto's genetically engineered Bollgard cotton in Warangal.

On March 27th, 25 year old Betavati Ratan took his life because he could not pay pack debts for drilling a deep tube well on his two-acre farm. The wells are now dry, as are the wells in Gujarat and Rajasthan where more than 50 million people face a water famine.

The drought is not a "natural disaster". It is "man-made". It is the result of mining of scarce ground water in arid regions to grow thirsty cash crops for exports instead of water prudent food crops for local needs.

It is experiences such as these which tell me that we are so wrong to be smug about the new global economy. I will argue in this lecture that it is time to stop and think about the impact of globalisation on the lives of ordinary people. This is vital to achieve sustainability.

Seattle and the World Trade Organisation protests last year have forced everyone to think again. Throughout this lecture series people have referred to different aspects of sustainable development taking globalisation for granted. For me it is now time radically to re-evaluate what we are doing. For what we are doing in the name of globalisation to the poor is brutal and unforgivable. This is specially evident in India as we witness the unfolding disasters of globalisation, especially in food and agriculture.

Who feeds the world? My answer is very different to that given by most people.

It is women and small farmers working with biodiversity who are the primary food providers in the Third World, and contrary to the dominant assumption, their biodiversity based small farms are more productive than industrial monocultures.

The rich diversity and sustainable systems of food production are being destroyed in the name of increasing food production. However, with the destruction of diversity, rich sources of nutrition disappear. When measured in terms of nutrition per acre, and from the perspective biodiversity, the so called "high yields" of industrial agriculture or industrial fisheries do not imply more production of food and nutrition.

Yields usually refers to production per unit area of a single crop. Output refers to the total production of diverse crops and products. Planting only one crop in the entire field as a monoculture will of course increase its individual yield. Planting multiple crops in a mixture will have low yields of individual crops, but will have high total output of food. Yields have been defined in such a way as to make the food production on small farms by small farmers disappear. This hides the production by millions of women farmers in the Third World - farmers like those in my native Himalaya who fought against logging in the Chipko movement, who in their terraced fields even today grow Jhangora (barnyard millet), Marsha (Amaranth), Tur (Pigeon Pea), Urad (Black gram), Gahat (horse gram), Soya Bean (Glycine Max), Bhat (Glycine Soya) - endless diversity in their fields. From the biodiversity perspective, biodiversity based productivity is higher than monoculture productivity. I call this blindness to the high productivity of diversity a "Monoculture of the Mind", which creates monocultures in our fields and in our world.

The Mayan peasants in the Chiapas are characterised as unproductive because they produce only 2 tons of corn per acre. However, the overall food output is 20 tons per acre when the diversity of their beans and squashes, their vegetables their fruit trees are taken into account.

In Java, small farmers cultivate 607 species in their home gardens. In sub-Saharan Africa, women cultivate 120 different plants. A single home garden in Thailand has 230 species, and African home gardens have more than 60 species of trees.

Rural families in the Congo eat leaves from more than 50 species of their farm trees.

A study in eastern Nigeria found that home gardens occupying only 2 per cent of a household's farmland accounted for half of the farm's total output. In Indonesia 20 per cent of household income and 40 per cent of domestic food supplies come from the home gardens managed by women.

Research done by FAO has shown that small biodiverse farms can produce thousands of times more food than large, industrial monocultures.

And diversity in addition to giving more food is the best strategy for preventing drought and desertification.

What the world needs to feed a growing population sustainably is biodiversity intensification, not the chemical intensification or the intensification of genetic engineering. While women and small peasants feed the world through biodiversity we are repeatedly told that without genetic engineering and globalisation of agriculture the world will starve. In spite of all empirical evidence showing that genetic engineering does not produce more food and in fact often leads to a yield decline, it is constantly promoted as the only alternative available for feeding the hungry.

That is why I ask, who feeds the world?

This deliberate blindness to diversity, the blindness to nature's production, production by women, production by Third World farmers allows destruction and appropriation to be projected as creation.

Take the case of the much flouted "golden rice" or genetically engineered Vitamin A rice as a cure for blindness. It is assumed that without genetic engineering we cannot remove Vitamin A deficiency. However, nature gives us abundant and diverse sources of vitamin A. If rice was not polished, rice itself would provide Vitamin A. If herbicides were not sprayed on our wheat fields, we would have bathua, amaranth, mustard leaves as delicious and nutritious greens that provide Vitamin A.

Women in Bengal use more than 150 plants as greens - Hinche sak (*Enhydra fluctuans*), Palang sak (*Spinacea oleracea*), Tak palang (*Rumex vesicarius*), Lal Sak (*Amaranthus gangeticus*) - to name but a few.

But the myth of creation presents biotechnologists as the creators of Vitamin A, negating nature's diverse gifts and women's knowledge of how to use this diversity to feed their children and families. The most efficient means of rendering the destruction of nature, local economies and small autonomous producers is by rendering their production invisible.

Women who produce for their families and communities are treated as 'non-productive' and 'economically' inactive. The devaluation of women's work, and of work done in sustainable economies, is the natural outcome of a system constructed by capitalist patriarchy. This is how globalisation destroys local economies and destruction itself is counted as growth.

And women themselves are devalued. Because many women in the rural and indigenous communities work co-operatively with nature's processes, their work is often contradictory to the dominant market driven 'development' and trade policies. And because work that satisfies needs and ensures sustenance is devalued in general, there is less nurturing of life and life support systems.

The devaluation and invisibility of sustainable, regenerative production is most glaring in the area of food. While patriarchal division of labour has assigned women the role of feeding their families and communities, patriarchal economics and patriarchal views of science and technology magically make women's work in providing food disappear. "Feeding the World" becomes disassociated from the women who actually do it and is projected as dependent on global agribusiness and biotechnology corporations.

However, industrialisation and genetic engineering of food and globalisation of trade in agriculture are recipes for creating hunger, not for feeding the poor.

Everywhere, food production is becoming a negative economy, with farmers spending more to buy costly inputs for industrial production than the price they receive for their produce. The consequence is rising debts and epidemics of suicides in both poor and rich countries.

Economic globalisation is leading to a concentration of the seed industry, increased use of pesticides, and, finally, increased debt. Capital-intensive, corporate controlled agriculture is being spread into regions where peasants are poor but, until now, have been self-sufficient in food. In the regions where industrial agriculture has been introduced through globalisation, higher costs are making it virtually impossible for small farmers to survive.

The globalisation of non-sustainable industrial agriculture is literally evaporating the incomes of Third World farmers through a combination of devaluation of currencies, increase in costs of production and a collapse in commodity prices.

Farmers everywhere are being paid a fraction of what they received for the same commodity a decade ago. The Canadian National Farmers Union put it like this in a report to the senate this year:

"While the farmers growing cereal grains - wheat, oats, corn - earn negative returns and are pushed close to bankruptcy, the companies that make breakfast cereals reap huge profits. In 1998, cereal companies Kellogg's, Quaker Oats, and General Mills enjoyed return on equity rates of 56%, 165% and 222% respectively. While a bushel of corn sold for less than \$4, a bushel of corn flakes sold for \$133 ... Maybe farmers are making too little because others are taking too much."

And a World Bank report has admitted that "behind the polarisation of domestic consumer prices and world prices is the presence of large trading companies in international commodity markets."

While farmers earn less, consumers pay more. In India, food prices have doubled between 1999 and 2000. The consumption of food grains in rural areas has dropped by 12%. Increased economic growth through global commerce is based on pseudo surpluses. More food is being traded while the poor are consuming less. When growth increases poverty, when real production becomes a negative economy, and speculators are defined as "wealth creators", something has gone wrong with the concepts and categories of wealth and wealth creation. Pushing the real production by nature and people into a negative economy implies that production of real goods and services is declining, creating deeper poverty for the millions who are not part of the dot.com route to instant wealth creation.

Women - as I have said - are the primary food producers and food processors in the world. However, their work in production and processing is now becoming invisible.

Recently, the McKinsey corporation said: "American food giants recognise that Indian agro-business has lots of room to grow, especially in food processing. India

processes a minuscule 1 per cent of the food it grows compared with 70 per cent for the U.S...".

It is not that we Indians eat our food raw. Global consultants fail to see the 99 per cent food processing done by women at household level, or by the small cottage industry because it is not controlled by global agribusiness. 99% of India's agroprocessing has been intentionally kept at the small level. Now, under the pressure of globalisation, things are changing. Pseudo hygiene laws are being used to shut down local economies and small scale processing.

In August 1998, small scale local processing of edible oil was banned in India through a "packaging order" which made sale of open oil illegal and required all oil to be packaged in plastic or aluminium. This shut down tiny "ghanis" or cold pressed mills. It destroyed the market for our diverse oilseeds - mustard, linseed, sesame, groundnut, coconut.

And the take-over of the edible oil industry has affected 10 million livelihoods. The take over of flour or "atta" by packaged branded flour will cost 100 million livelihoods. And these millions are being pushed into new poverty.

The forced use of packaging will increase the environmental burden of millions of tonnes of waste.

The globalisation of the food system is destroying the diversity of local food cultures and local food economies. A global monoculture is being forced on people by defining everything that is fresh, local and handmade as a health hazard. Human hands are being defined as the worst contaminants, and work for human hands is being outlawed, to be replaced by machines and chemicals bought from global corporations. These are not recipes for feeding the world, but stealing livelihoods from the poor to create markets for the powerful.

People are being perceived as parasites, to be exterminated for the "health" of the global economy.

In the process new health and ecological hazards are being forced on Third World people through dumping of genetically engineered foods and other hazardous products.

Recently, because of a W.T.O. ruling, India has been forced to remove restrictions on all imports. Among the unrestricted imports are carcasses and animal waste parts that create a threat to our culture and introduce public health hazards such as the Mad Cow Disease.

The US Centre for Disease Prevention in Atlanta has calculated that nearly 81 million cases of food borne illnesses occur in the US every year. Deaths from food poisoning have gone up more up more than four times due to deregulation. Most of these infections are caused by factory farmed meat. The US slaughters 93 million pigs, thirty seven million cattle, two million calves, six million horses, goats and sheep and eight billion chickens and turkeys each year.

Now the giant meat industry of US wants to dump contaminated meat produced through violent and cruel methods on Indian consumers.

The waste of the rich is being dumped on the poor. The wealth of the poor is being violently appropriated through new and clever means like patents on biodiversity and indigenous knowledge.

Patents and intellectual property rights are supposed to be granted for novel inventions. But patents are being claimed for rice varieties such as the basmati for which my Valley - where I was born - is famous, or pesticides derived from the Neem which our mothers and grandmothers have been using.

Rice Tec, a U.S. based company has been granted Patent no. 5,663,484 for basmati rice lines and grains.

Basmati, neem, pepper, bitter gourd, turmeric.....every aspect of the innovation embodied in our indigenous food and medicinal systems is now being pirated and patented. The knowledge of the poor is being converted into the property of global corporations, creating a situation where the poor will have to pay for the seeds and medicines they have evolved and have used to meet their own needs for nutrition and health care.

Such false claims to creation are now the global norm, with the Trade Related Intellectual Property Rights Agreement of World Trade Organisation forcing countries to introduce regimes that allow patenting of life forms and indigenous knowledge.

Instead of recognising that commercial interests build on nature and on the contribution of other cultures, global law has enshrined the patriarchal myth of creation to create new property rights to life forms just as colonialism used the myth of discovery as the basis of the take over of the land of others as colonies.

Humans do not create life when they manipulate it. Rice Tec's claim that it has made "an instant invention of a novel rice line", or Roslin Institute's claim that Ian Wilmut "created" Dolly denies the creativity of nature, the self-organisational capacity of life forms, and the prior innovations of Third World communities.

Patents and intellectual property rights are supposed to prevent piracy. Instead they are becoming the instruments of pirating the common traditional knowledge from the poor of the Third World and making it the exclusive "property" of western scientists and corporations.

When patents are granted for seeds and plants, as in the case of basmati, theft is defined as creation, and saving and sharing seed is defined as theft of intellectual property. Corporations which have broad patents on crops such as cotton, soya bean, mustard are suing farmers for seed saving and hiring detective agencies to find out if farmers have saved seed or shared it with neighbours.

The recent announcement that Monsanto is giving away the rice genome for free is misleading, because Monsanto has never made a commitment that it will never patent rice varieties or any other crop varieties.

Sharing and exchange, the basis of our humanity and of our ecological survival has been redefined as a crime. This makes us all poor.

Nature has given us abundance, women's indigenous knowledge of biodiversity, agriculture and nutrition has built on that abundance to create more from less, to create growth through sharing.

The poor are pushed into deeper poverty by making them pay for what was theirs. Even the rich are poorer because their profits are based on the theft and on the use of coercion and violence. This is not wealth creation but plunder.

Sustainability requires the protection of all species and all people and the recognition that diverse species and diverse people play an essential role in maintaining ecological processes. Pollinators are critical to fertilisation and generation of plants. Biodiversity in fields provides vegetables, fodder, medicine and protection to the soil from water and wind erosion.

As humans travel further down the road to non-sustainability, they become intolerant of other species and blind to their vital role in our survival.

In 1992, when Indian farmers destroyed Cargill's seed plant in Bellary, Karnataka, to protest against seed failure, the Cargill Chief Executive stated, "We bring Indian farmers smart technologies which prevent bees from usurping the pollen". When I was participating in the United Nations Biosafety Negotiations, Monsanto circulated literature to defend its herbicide resistant Roundup ready crops on grounds that they prevent "weeds from stealing the sunshine". But what Monsanto calls weeds are the green fields that provide Vitamin A rice and prevent blindness in children and anaemia in women.

A worldview that defines pollination as "theft by bees" and claims biodiversity "steals" sunshine is a worldview which itself aims at stealing nature's harvest by replacing open, pollinated varieties with hybrids and sterile seeds, and destroying biodiverse flora with herbicides such as Roundup. The threat posed to the Monarch butterfly by genetically engineered bt crops is just one example of the ecological poverty created by the new biotechnologies. As butterflies and bees disappear, production is undermined. As biodiversity disappears, with it go sources of nutrition and food.

When giant corporations view small peasants and bees as thieves, and through trade rules and new technologies seek the right to exterminate them, humanity has reached a dangerous threshold. The imperative to stamp out the smallest insect, the smallest plant, the smallest peasant comes from a deep fear - the fear of everything that is alive and free. And this deep insecurity and fear is unleashing the violence against all people and all species.

The global free trade economy has become a threat to sustainability and the very survival of the poor and other species is at stake not just as a side effect or as an exception but in a systemic way through a restructuring of our worldview at the most fundamental level. Sustainability, sharing and survival is being economically outlawed in the name of market competitiveness and market efficiency.

I want to argue here tonight that we need to urgently bring the planet and people back into the picture.

The world can be fed only by feeding all beings that make the world.

In giving food to other beings and species we maintain conditions for our own food security. In feeding earthworms we feed ourselves. In feeding cows, we feed the soil, and in providing food for the soil, we provide food for humans. This worldview of abundance is based on sharing and on a deep awareness of humans as members of the earth family. This awareness that in impoverishing other beings, we impoverish ourselves and in nourishing other beings, we nourish ourselves is the real basis of sustainability.

The sustainability challenge for the new millennium is whether global economic man can move out of the worldview based on fear and scarcity, monocultures and monopolies, appropriation and dispossession and shift to a view based on abundance and sharing, diversity and decentralisation, and respect and dignity for all beings.

Sustainability demands that we move out of the economic trap that is leaving no space for other species and other people. Economic Globalisation has become a war against nature and the poor. But the rules of globalisation are not god - given. They can be changed. They must be changed. We must bring this war to an end.

Since Seattle, a frequently used phrase has been the need for a rule based system. Globalisation is the rule of commerce and it has elevated Wall Street to be the only source of value. As a result things that should have high worth - nature, culture, the future are being devalued and destroyed. The rules of globalisation are undermining the rules of justice and sustainability, of compassion and sharing. We have to move from market totalitarianism to an earth democracy.

We can survive as a species only if we live by the rules of the biosphere. The biosphere has enough for everyone's needs if the global economy respects the limits set by sustainability and justice.

As Gandhi had reminded us: "The earth has enough for everyone's needs, but not for some people's greed".