

And, worse yet, there is global warming. GRAIN, the Barcelona, Spain-based organization which I just referred to in an endnote, wrote a paper in October 2009, which explores in depth the connection between this hydrocarbon farming and global warming. They point out, “The model of industrial agriculture that supplies the global food system essentially functions by converting oil into food, producing tremendous amounts of greenhouse gases (GHGs) in the process. The use of huge amounts of chemical fertilisers, the expansion of the industrial meat industry, and the ploughing under of the world’s savannahs and forests to grow agricultural commodities are together responsible for at least 30 per cent of the global GHG emissions that cause climate change.

“But that is only a part of the current food system’s contribution to the climate crisis. Turning food into global industrial commodities results in a tremendous waste of fossil-fuel energy in transporting it around the world, processing it, storing it and freezing it, and getting it to people’s homes. All these processes are contributing to the climate bill. When added together, it is not at all an exaggeration to say that the current global food system could be responsible for nearly half of the world’s GHG emissions.”<sup>61</sup>

Emissions whose origins are not only traceable, but patented.

### **The Green Revolution: India/Patents**

In New Delhi, India, I conducted my third in a series of interviews with the physicist, ecologist, and activist Dr. Vandana Shiva. (The first in St. Louis at the *First Grassroots Gathering on Biodevastation: Genetic Engineering*; the second in Johannesburg, South

Africa, at the *People’s Earth Summit* parallel event to the *U. N. World Summit on Sustainable Development*.)

On the day prior to the interview, I had joined in and taken photos of a demonstration march through the streets of Delhi on the subject of the World Trade Organization (WTO). This was August 2003 and in October the WTO was to meet in Cancún, Mexico. It was a large march of thousands of people from all walks-of-life and types of organizations and Vandana Shiva was at the front walking with three former prime ministers of India.<sup>62</sup> The main banner at the end of the march, behind the speaker’s podium, said simply, “Indian People’s Campaign Against WTO.”

In my interview with Vandana Shiva, in her office, she spoke about the role of patents in the development of the Green Revolution, and also some aspects of the role of the WTO: “In the early days, the word patent was used for two things. In the case of getting hold of territory, what were issued by kings and queens were letters-patent, which were open letters. Anyone could know that Columbus had been given a right by Queen Isabella and King Ferdinand to conquer and take over any territory on their behalf.

“But the second meaning, defined around the same time by the Venetian laws on patent, which were the first patent laws, was that a master craftsman could be brought (to a country), because technology at that time was craft technology, and if a country could not make glass they would give to the master craftsman apprentices and say, ‘Train our people in this art.’ ‘Train our people to make glass.’ ‘Train our people to make steel.’ ‘Train our people to make textiles’ and we will give you an exclusive right (to make these products) for seven years while you are training people.



*Harvesting sugar cane near Renganathapuram in Tamil Nadu, India.*



*Vandana Shiva at the People's Earth Summit, in Johannesburg, South Africa.*

“The period of the patent was seven years because it took seven years to learn a craft. After that seven years was over, the master craftsman went back to wherever he belonged and you had all the apprentices available in the country to spread that technology as a free public good. This was the pattern throughout the early use of patent law.

“Then you get slow shifts with the rise of industrialism. As big industry became a major economic interest, they started to use technology as an instrument of monopoly. Patents became the way to say, ‘Only we will use this technology.’

“The way they expanded this power was, on the one hand, extending the life of patents. It went from seven years to fourteen. Now, under WTO, for the first time, it is twenty years – extendible in a period where technologies are becoming so obsolete that if

you have that kind of monopoly for twenty years you are totally controlling the technology.

“And the second thing is constantly increasing the domain over which patents will apply. For example, in India’s patent law agriculture could not be touched. Agriculture was free of monopolies. And in medicine you could not have a product monopoly. You could not monopolize a medicine but you could monopolize a method of making a medicine. But, medicine has been brought into monopolies. Seed has been brought into monopolies. Cells have been brought into monopolies. Genes have been brought into monopolies. Animals have been brought into monopolies.

“Basically, the ’80s saw a twist in this and a lot of it had to do with the rise of the big industry and their convergence into one set of giants, which are the health giants, the pharmaceutical giants, the gene

giants controlling all life. ... It's the privatization of knowledge. I have called it the enclosure, the ultimate enclosure. We had enclosures of land. Now, we are seeing enclosures of biodiversity, life itself. In my book *Biopiracy*,<sup>63</sup> I've talked about how this is the last colony. It is the spaces within our minds – for knowledge. The spaces within life forms for reproduction. A seed cannot reproduce without permission of the patent holder and the company. Knowledge cannot be transmitted without permission and license collection. It's rent collection from life. It's rent collection from being human, and thinking, and knowing.”<sup>64</sup>

Similarly, Devinder Sharma, an award-winning journalist, writer, and researcher on food and trade policy, who I also interviewed in New Delhi, gave an example of the privatization of research, “When I was a student of agriculture, plant breeding, the Mecca of plant breeding was an institute in England called the Plant Breeding Institute in Cambridge. The Plant Breeding Institute was an institute which was a public sector institute. It was an institute which was getting £6 million from the U.K. government as support, but returning £10 million a year to the government. It was not a loss-making unit. But Margaret Thatcher sold off that institute to Unilever. Unilever sold it off to Monsanto.”<sup>65</sup>

So, just as common land was made private in England, and common resources such as oil, coal, even water have been made private, so now medicine, seeds, cells, and genes have been made private. When Milton Friedman, Margaret Thatcher, Ronald Reagan, and Augusto Pinochet spoke of privatization, they were really quite serious. In agriculture, patents of hybrids and genetically-modified organisms

(GMOs) have further centralized, verticalized control over food production and food producers.

But, slipping here into the GMO stage of the Green Revolution, doesn't mean that the first stage didn't also come to India. In fact, one of Vandana Shiva's first books was called *The Violence of the Green Revolution*,<sup>66</sup> and it dealt extensively with the coming of monoculture hybrid seeds and massive irrigation projects to the Punjab area of India. She writes in detail of the contamination and degradation of the living soil system.<sup>67</sup> She describes the dependence and indebtedness caused by the Green Revolution as farmers borrowed more and more to pay for the chemical inputs without which the new seeds will not produce.<sup>68</sup> She laments the thousands of farmer suicides a year by pesticide poisoning.<sup>69</sup>

In the New Delhi interview with Vandana Shiva, she looked back again on this period to make connections between the great expenditures and accompanying social problems of the irrigation projects, the violence which grew out of uneven development in agriculture, and the 30,000 people who died as a result of the 1984 Bhopal Union Carbide plant gas leak – a factory producing pesticides for Green Revolution agriculture. “Why are we so dependent on pesticides – weapons of mass destruction?” she asked.<sup>70</sup> Not to mention the ruination of seed diversity by substituting in the few chosen seed types brought from Mexico.

### **GMOs and choice**

But, as a planet, we didn't slip into GMOs. This was a conscious choice by some – a conscious choice opposed by many. And the facts of choice reveal at least two perspectives, reflecting much on what is or