# 15

# People-Based Globalization

*Tewolde Berhan Gebre Egziabher*

## INTRODUCTION

Professor Boaventura de Sousa Santos has challenged me with an unusual and most enjoyable project. This consists, first, of reading eight thought-provoking chapters from this volume, which concern what we are doing to biodiversity and the consequent crisis; second, of being inspired by those chapters; and, lastly, of presenting my comments on them. Yet the best aspect of the challenge involves my inspiration to write a chapter that overarches the contents of the eight chapters. I will now briefly relate the contents of these chapters, and follow that with what they have provoked me to write.

## A BRIEF REVIEW OF THE CHAPTERS

All of the eight chapters deal largely with biodiversity, how our lives are linked to it, how indigenous and local communities use it in a sustainable manner (as noted by Article 8[j] of the Convention on Biological Diversity [CBD]), and how the modalities of use have been, and are being, changed by the globalization currently occurring under the impetus of corporate privatization enshrined in the agreements of the World Trade Organization (WTO), especially in its Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs). This globalization is a continuation of the plundering of human life and labor by the colonialism and neocolonialism of the last 500 years and its enslavement, not just of human freedom, but of the natural resources and the fruits of labor of other humans as well.

The eight chapters are case studies from five countries from the South. From these chapters we gather that in Mozambique the attempts of Portuguese colonialism to make basic changes in the use of biodiversity were not very effective. In South Africa, the colonial impact was also minimal. Yet later,

during apartheid, the changes were more brutally imposed and were more effective. As in Mozambique, the former colonial power of Brazil is also Portugal. Unlike Mozambique, Brazil has been independent for almost two centuries. Also unlike Mozambique, people of European origin dominate the establishment in Brazil, followed by people of African origin, with the indigenous Americans being a minority. In Colombia, which along with Brazil remained the longest under European rule and in which the most influential and normative portion of the population is now of European origin, more systematic attempts at accommodating indigenous cultures have been consciously attempted than has been the case in Brazil. In India, a country that was under colonial rule for centuries but which now is not dominated by Europeans, there has been the most marked shift on thinking about systems of knowledge and technology. This happened through the spread of the European scientific tradition to a non-European culture. Nevertheless, this new infusion of thought and knowledge has not effectively destroyed the knowledge, technologies, and practices of Indian indigenous and local communities. Due to these observations, I will, following a very brief exposition of all of the chapters, summarize first the chapters about Mozambique, followed by those about South Africa, Brazil, Colombia and India. I will end with Vandana Shiva's treatment of globalization and biodiversity, and finally focus on an overall view of globalization and biodiversity, indigenous and local communities, and, in general, development in the South.

## A QUICK GLIMPSE AT THE CHAPTERS

Mozambique is a low-lying country of diverse environmental conditions and ethnic and cultural groups. The heterogeneous environment is prone to flooding, cyclones, and drought. João Paulo Borges Coelho shows us clearly how the diversity of cultures has equipped the inhabitants with equally diverse environment-specific systems of predicting calamities and dealing with them. Paula G. Meneses portrays a similarly effective and culturally diverse system of health care, with traditional doctors not only treating physically sick people but also people dissatisfied psychologically or otherwise, even those complaining of ill luck.

Both authors tell us that during the long colonial period, dislocation and community breakdown as a result of the demands of the colonial governments for labor in commercial agriculture as well as the active assaults on the traditional medical systems as obscurantist, weakened these knowledge systems. Following independence, the Marxist Frelimo government intensified the problems by insisting on collective farms and modern medicine, thus disregarding the community knowledge and technology systems, which fell into disuse. The subsequent ideological liberalization and the consequent



reduction in persecution have helped improve conditions for traditional medicine, although it is still seen as inferior, and perhaps undesirable. The intensification of floods, droughts, and cyclones still continues to disrupt settlements, to displace people, and to thus render the traditional systems of coping with calamities ineffective.

Thokozani Xaba describes in a well-written and well-referenced chapter how traditional medicine has been very seriously disrupted and depleted in South Africa. Similar to the situation in Mozambique, the negative impact of the colonial period was serious, but not total. This intensified during the apartheid period, and it has seriously impaired traditional medicine in South Africa.

In both Mozambique and South Africa, the traditional knowledge and technology systems are described as versatile, incorporating new facts and adapting to new conditions as they come. The local communities in both Mozambique and South Africa are portrayed as able to quickly identify emerging opportunities to try to obtain recognition of their right to their knowledge and technologies as well as to their biodiversity. Laymert Garcia dos Santos informs us that the conditions are similar in Brazil. He describes how corporate capitalism disrupts and appropriates community knowledge, technologies, and biodiversity. He describes the attempts that have been and are being made in Brazil to legally recognize the rights of communities to their knowledge, technologies, and biodiversity and to protect them from corporate plunder. The interplay among corporate, community, and national pressures for and against such recognition are described.

The rights of indigenous communities to the ownership and management of their natural resources is recognized in the constitution of Colombia. This has caused the maintenance and control of community knowledge, technologies, biodiversity, and territory by indigenous and local communities, as well as the struggles for the specific legal recognition of those rights and protection from corporate plunder, to develop a distinct dynamic. The chapter by Margarita Flórez Alonso and that by Arturo Escobar and Mauricio Pardo give us complementary information about the nature of the knowledge, technologies, and biodiversity of the indigenous and Afro-American communities of the Pacific coastal lowlands and piedmonts of Colombia and the history of their struggle for recognition. Thanks to the Colombian Constitution, these communities have achieved the recognition that they have fought for. Yet the violence so prevalent in the area, caused by rebel movements, has targeted many of the community leaders.

All these authors implicitly or explicitly show us how the social and knowledge system values of conquering Europe suppressed, and then marginalized, traditional knowledge systems, science, and technology, and how, in the desire to progress towards becoming like Europe, even post-independence national governments continued and still continue this mar-

ginalization, usually more effectively than their predecessor colonial governments had.

Shiv Visvanathan shows that even science is not value-neutral, and that it has European religious and cultural values ingrained in it. He convincingly points out that thermodynamics, especially its Second Law, is merely an expression of European economic values and that, as a consequence, the application of the concept of entropy favors the individual over the community, the rich over the poor, the urban over the rural, and the industrial over the subsistence producer. He also gives the same view as the other authors in their respective countries of study of an embattled system of knowledge and technology in India. Perhaps owing to the large size of the Indian scientific community, however, there has been much more conscious debate on the issue in India than has been the case in most other countries. Vandana Shiva's chapter focuses on the current scene in international law and on other norms (most notably, intellectual property rights) that help to maintain in the present the ravaging that dominated the past, and which seem set to insure its continuance.

I now take it as my duty to make use of all of these authors' insights and to add, hopefully, some useful dimension to their excellent analyses. The very nature of attempting to find commonalities among all the chapters necessarily brings my focus to the international, in many ways parallel to and overlapping with the ground covered by Vandana Shiva.

## INDIGENOUS AND LOCAL COMMUNITIES

Farmers produce most of the food we eat. Some food is merely hunted or gathered, not raised or cultivated. Hunters and gatherers collect and use it. But, in absolute terms, farmers probably gather more uncultivated food than those we formally call gatherers. Even laborers, executives, and intellectuals from towns gather some uncultivated food, e.g., mushrooms and berries. Conversely, there probably are few, if any at all, hunters or gatherers that never have access to food produced by farmers. Differences between farmers and non-farmers are therefore quantitative, not absolute, and their interests overlap.

Some hunters, gatherers, and farmers live in countries controlled by powerful newcomers with different value systems. Therefore, we collectively call them indigenous peoples. Many farmers are, thus, also indigenous peoples. Other hunters, gatherers, and farmers are of the same culture as those who are in power over them and who oppress them. We collectively call these hunters, gatherers and farmers local communities (Egziabher, 1996). That is why Article 8(j) of the Convention on Biological Diversity recognizes indigenous and local communities as the owners of biological diversity and the knowledge and technologies for its sustainable use.



## FEUDALISM: OLD AND NEW

My interest here is in the oppressed indigenous community and in the local community. Therefore, in the following discussion, I will use images from the community world rooted in the past to describe the modern world. I hope that this will help us better understand indigenous and local communities, their service to humanity, and their plight. Since the majority of indigenous and local communities are farming communities, my emphasis in this text will be on agriculture and agricultural biodiversity, knowledge and technologies.

In the past, virtually all farmers were subjected to powerful armed oppressors who extracted a large share of their produce. These oppressors came mostly from among the farmers themselves but often also from foreign conquerors. We call the oppressors aristocrats, and we call the farmers serfs. Now that the aristocrats have been largely eliminated, the serfs have no landlords and we call the farmers peasants. The aristocrats greatly modified the farming community by breaking it up into portions to constitute their respective manor houses and serfs tied to them. Even if restricted to the lands of the manor house, however, these serfs maintained their community values, which they had developed prior to feudalism. The feudal lords extracted produce but interfered little in the production systems.

With industrialization, some of the aristocrats have become, or have been replaced by, farmers who are not oppressed, and who, unlike the freed serfs or peasants, have large landholdings. Most agricultural production in the North and a growing amount in the South is now by this new breed of farmers who have replaced and are replacing peasants. They are important members of the *status quo*. They employ laborers who are often of peasant origin and continue to be as oppressed as peasants. "Modern farmers" and peasants are, therefore, incompatible and not capable of being direct allies despite the fact that both are farmers. However, farm laborers and peasants suffer similar fates and would be natural allies if they could establish a liaison.

But of course modern farmers and peasants have some commonalities too. They both want to produce biomass as food or as raw material. However, the peasants want it primarily for themselves, while the modern farmers want it for the market. To cultivate and produce biomass, the modern farmer and the peasant want seed. The peasant primarily generates and maintains his/her seed through a system of cooperation and exchange with other farmers. The modern farmer primarily buys it. From whom? From seed companies.

With the entrenchment of the industrial culture, seed companies have thus emerged. They supply seed to the modern farmer, and always seek to "modernize" the peasant when they think of his/her role as a biomass producer who could buy their seed. These companies have recently been consolidating into smaller and smaller numbers of larger and larger North-based corpora-

tions. But the seed they sell has largely been generated by the serf and peasant,[1] and if he/she were "modernized," in the long run there would remain little variety to use in breeding, and thus also little commercial seed to sell. However, the long run is not always easy to appreciate and, bent on immediate private gain, the seed corporations eliminate farmers' varieties merely to cut off their own noses only to spite their own faces and starve us all in the process.

To get seed that is good, both the modern farmer and the peasant want to generate new varieties, to select the best from the existing, and to combine the best traits from different varieties. We have now come to call this process research.[2] The peasant does his/her own research. The modern farmer has it done for him/her. By whom? By the life-science corporations.

The old feudal system was run by aristocrats who became landlords and exacted produce and obedience from the peasants/serfs. The aristocrats and the peasants/serfs constituted the antithetical but complementary major groups in feudal society. The production system they created required some inputs that the two could not generate on their own: implements from artisans, treatment from those who had medical lore, records from scribes, spiritual reassurance from clerics, etc. The old feudal system, therefore, allowed the existence of these specialized actors in guilds of varying degrees of autonomy.

## DEMOCRATIZATION AND CORPORATIONS

It was the ideals of democratization, the desire to be free, that caused the demise of the old feudal order. The pursuit of this ideal liberated the peasants and the aristocrats alike. All of them could become farmers or warriors, smiths or scribes (or authors), or even dream up new professions. Freed from strict regimentation by individual aristocrats, the ingenious and the devious found the opportunity to accumulate money and other resources from the honest and the industrious. Though the state was strengthened to deal with the increasing need for regulation, it did not try to stop the unequal accumulation of wealth. In fact, since the state machinery was usually run by the wealthiest, it protected wealth. In the North now and progressively also in the South, individual property is hallowed. One can insist on human rights, but only as subordinate to private property rights.

With the state protecting personal property and with persons accumulating wealth, a new power base and a new aristocracy was established. Steel armor was replaced by the gold bar; feudalism has re-emerged as corporate capitalism. This corporate capitalism with its global agenda fits the role of the agent of imperialism expounded by Marx in his many writings more than colonialism did at its height. We are now back full spiral one level removed upwards (downwards?) from feudalism: the knight yeoman is replaced by the chief executive officer (CEO) and the manor house is replaced by the corporation.



The old feudal system was simple and the new one is complex. In the old system, peasants constituted the workforce, the serfs, who were organized under a manor house to cultivate food crops. The rest of the aristocratic structure was built hierarchically upwards all the way up to the king or emperor. In the new feudal system, the crafts, which in the old system had been organized in autonomous guilds, have been incorporated into the mainstream and many more types of economic activity have been created. The capitalist system is thus made up of many major groups partially antithetical and partially mutualistic among themselves. Each economic activity has its manor house or corporation commanded by the CEO, a new golden knight. His power is commensurate with his wealth. He does not have to understand the work done by his white-collar and blue-collar serfs (workforce); specialists attracted (press-ganged) by his wealth can do it for him (note that it is usually not for her). The hierarchical arrangement above the company headquarters bears no relationship to geography. It thus creates a reticulate system, one that could be likened to a net with the knots randomly assigned to represent manor (business) houses. Even the once powerful states of the North have now been entangled by this net and left with little room for maneuver. Meanwhile, the self-employed majority, the peasant (subsistence) farmers of the South, have been marginalized by this reticulate global power surreptitiously operated by a relatively few shadowy CEOs.

The old aristocrats, when knights in armor, saved damsels, and, when rogues without official attire, raped them. The new aristocrats have no time for either. Most of us save money for later use, as the squirrel saves nuts in autumn for use in winter. The wealthy are constantly accumulating: they have no leisure and presumably little pleasure. Who is more depraved, the old or the new aristocrats? In the old feudal system, successively higher and thus fewer aristocrats fought for the topmost position, that of the king or emperor. In spite of continually trying, they never established a worldwide emperor. Even the huge British Empire was only a blip in history, and ruled only one-fifth of the earth. The new aristocracy has succeeded where the old failed: it has crowned the World Trade Organization as the supreme ruler; never mind that its CEO is not called an emperor. Nevertheless, the new aristocrats continue to fight more viciously than those of old, the casualties are at least as numerous, and the instabilities are definitely greater and growing.

## AND THE PEASANT?

The peasants' new counterparts, the corporation's employees, are now all entangled in the global net. If they wriggle, the golden corporate sword severs them with its sharp blade of unemployment. The modern farmer, when small enough, gets squeezed for money by the seed company owner, who charges the

maximum possible price through royalties and conditionalities (Clunies-Ross, 1996: 20–24). The supermarket owner pays her/him the minimum possible for her/his produce sold and charges her/him the maximum price possible for necessities bought. The seed company and the supermarket become increasingly owned by the same corporation. The breeder gets squeezed by the seed company, which pays the lowest salary possible, and by the supermarkets, which charge the highest price possible for necessities bought. The relic peasant in the North who wants to stay out of the new corporate feudal system is entangled with legislation that makes it impossible for him/her to continue planting seed of his/her choosing (Clunies-Ross, 1996: 32). In the South, the peasant is "helped" through credit systems into desperation and the abandonment of his/her land (Shiva, 1994: 176–183). Can the peasant, especially in the South, slip through the holes in the global corporate net and survive, or is he/she doomed? Will the humans running the North-based corporate minority, who have now effectively marginalized the Southern self-sustaining majority, succeed in the logical next step: the elimination of self-sustenance and the global rule by compulsory dependence?

The Southern peasant would be the first to doom himself/herself if that would change his/her lifestyle. In spite of the myth to the contrary, peasant farmers do not want to remain poor. They want greater comfort and an easier life. They are not impermeable to new knowledge and thinking if it becomes accessible enough to them and in a form that makes it understandable to them—just like everyone else. They are not static but can change values and organization when they see these as useful. Peasant farmers are not conservatives who have opted out for the sake of opting out. They are the global majority who have been marginalized by the aggressive globalizing minority. For this reason peasant farmers want to remain in control of the process that is to lift them out of poverty—just like any of us. Above all, just as with their colonial masters, they have been let down so often by the modern state, which is supposed to be their own, that they are skeptical about offers of improvement in lifestyle—just like any of us would be. They want greater comfort, but they want to know the price they will pay for it and if they will at all be able to afford it—just as any of us would want to.

In short, as also pointed out in the chapters by Coelho and by Meneses for Mozambique and by Alonso and by Escobar and Pardo for Colombia, peasants are not conservative out of obstinacy; they merely want to keep the best of the little they have—just like any of us. And are we, their counterparts of the industrial culture cohabiting their countries, also similarly obstinate? Our morale is down the drain, and we are so suppressed by the aura of the might of the North that we are unable to be obstinate. Most of us have turned into automatons that chime "yes" to whatever is suggested from the North.



## AND THE EMPLOYEE?

When the old feudal system was destroyed by people's desire to be free, and when the accumulation of wealth was rather limited, most people could continue the peasant and artisan traditions of being self-employed. With greater accumulation of wealth, the means for their self-employment came to be owned more and more by the wealthiest and they became wage laborers. This process began with the buying up of and eviction from the land, and has now culminated in transnational buy-ups and mergers. With the space for self-employment virtually all bought up by the wealthy, the employee is weak and easy to dismiss. Unemployment is the sharp golden sword that the new corporate golden lord or CEO of the corporate manor uses to keep his modern serfs, the corporation's white- and blue-collar employees, obedient.[3]

How did the worker and the professional, who took over from the peasant, have their prospects for gainful employment so reduced? This is not the main thrust of my quest here and I will only briefly point out three correlated processes:

—The accumulation of knowledge and technologies supported by shifts in value made it possible for the honest and industrious individual to be self-employed.

—The worship of private property and the disregard, beyond mere lip service of social justice[4] made it inevitable that a relatively reduced number of individuals would accumulate a growing proportion of the wealth generated by the population and hence control people's lives.

—The very small cartel of wealthy men found it useful to have a docile workforce and instituted "structural" unemployment, with the consequent feeling of dispensability of the employee.

The process that initially made the self-employed of the North lose his/her livelihood through the accumulation of wealth by others is the same that is now destroying the livelihood of the peasant, the pastoralist, the gatherer, and the hunter of the South. The disadvantaged, both in the North and in the South, suffer the same fate meted out by the same doom.

## THE PEASANT'S PRODUCTION SYSTEM AND ITS PRIVATIZATION

The early farmers chose the plants and animals that gave food and other needed products and helped these chosen plants and animals grow at the expense of other plants and animals. The set of technologies they used in achieving this gave us agriculture. In agriculture, therefore, one plant species (a crop) occupies

the specialized environments in which many other species of plants naturally grew. The situation is similar with domestic animals, which have replaced many other species of wild animals in our pastures and rangelands.

By excluding most species, therefore, agriculture harms the local ecosystem,[5] and therefore the natural environment. This weakness of agriculture forced the early cultivators to learn the roles of the excluded species and to find ways of substituting for those roles. They learnt to use seed heterogeneity to maximize variation in a response appropriate for the variation in the environment. They thus gave plasticity to their crops. They rotated different crops to vary demands on nutrients. They fallowed the land to bring it under the influence of the natural or semi-natural large range of plant species. They planted a range of trees in and around fields (now called agroforestry) to benefit from forest conditions where decaying leaves yield nutrients. They manured and composted to maximize nutrient release at the required place and time.

Plasticity has been the most important adaptive trait of crop species ever since agriculture was adopted, replacing much of the role of the many species unwanted in terms of biomass that the crop displaced from agroecosystems. Modern agriculture has got rid of plasticity. How did it do so?

With the demise of the aristocracy of the old feudal order, the deserved liberation of both the aristocrat and the peasant came about. The social fences of exclusion erected around the artisan guilds also broke down. Human choice of lifestyles increased. Freedom is surely good! With increased freedom, the types of crafts increased and, irrespective of class origin, the predisposed became artisans by choice. This expansion in the scope of the making of crafts was mirrored by a corresponding increase in the trade in the tools and goods made by the artisans. Then came industrialization: the means of privatizing the crafts made by artisans and the transformation of the self-employed to wage laborers. Services also grew in kind and magnitude. Finally, one of the oldest of services, trade, led the way to the accumulation of sufficient wealth to buy up factories, and to further privatize from the industrialists the already privatized crafts of the wage laborers. This is the basis of the present industrial culture of the North. Of course, I would never quarrel with industrialization, only with the privatization that has attended it in the North.

Parallel developments occurred in agriculture. Among the easiest to privatize from the peasant and from which to create new professions was the making of farm implements, the epitome of which is now the tractor. Then followed other farm inputs. The role of agriculture has always been seen as so obviously overriding that privatization was not the stated motive in the developments that occurred. With regard to seed, Clunies-Ross (1996) has traced the development of seed privatization in the United Kingdom, the birthplace of industrialization. A genuine desire to protect the farmer from being swindled by merchants who sold bad seed led to the development of seed standards and tests. This gave rise to both seed sellers and regulators of what used to be produced and exchanged by farmers themselves. Then developed the express desire to help the farmer choose the best seed, which led to a massive exclusion of seed heterogeneity and hence also to a loss of plasticity. It also led to plant breeders as professionals distinct from farmers. Finally, in the name of encouraging the research to keep improving seed, the farmers were made to pay royalties and to obey conditionalities of use of seed, management of crop in the field, and the use and marketing of the harvest. This was enforced by law, and farmers can now plant only "authorized" seed bought from seed corporations if they want to sell their produce to anyone.



This privatization of seed was made possible by creating a myth of creativity of the plant breeder different from that of the peasant farmer (see note 2). The elimination of plasticity from seed was paraded as creative and as one of the measures of the plant breeder's achievements is "uniformity." The requirement for uniformity does not explicitly oppose plasticity, but it limits its extent so much that now, for a breeder's variety to be grown extensively, massive efforts are needed to make the environment correspondingly homogeneous. This is done through the provision of irrigation water and chemicals. The logic is simple: since the seed has been made homogeneous, the environment must also be made homogeneous so that it becomes suitable for the crop's growth.

The other two measures of the plant breeder's presumed creativity are the distinctness and the stability of the variety. Distinctness has no value other than enabling the breeder to identify the variety as his/her own. In the context of producing food, it is trivial. Its existence is a reflection of the homogeneity, and hence the limited plasticity and adaptability, of the breeder's variety. Stability is equally an outcome of homogeneity: no matter what selection pressure changes in environment apply, a stable (homogeneous) seed either succeeds in the narrowly defined suitable environment, or fails everywhere else. It cannot adapt and change with changes in the environment. Is stability really needed to ensure food production? Like distinctness, it is merely a consequence of genetic poverty, a desire to cut up genetic diversity into portions amenable to privatization.

Which, then, is more creative? Which is more useful? Which is more environmentally friendly? The breeder's or the farmer's variety? The answer would be clear if we did not live in a topsy-turvy world where privatization reigns supreme and communal cooperation is tantamount to sedition. In my view, therefore, the values of the status quo are obviously flawed. The steps needed to counter these values are not obvious, but they must be found if we are to continue feeding ourselves. It should be remembered, however, that, as clearly explained in Shiva's chapter, a patent originally was (and it is now

clear that it still is) a written permission given by the powerful to plunder at will. The excuse of "creativity" is thus a historical afterthought to cater to postcolonial sensitivities without changing the fact. Will we, then, be able to continue feeding ourselves? I wonder.

## WHAT IS AT STAKE?

We have a world minority status quo in which efforts at freeing the individual from the oppressive old feudal order has culminated in some individuals (even if merely based on the inheritance of wealth their progenitors unfairly privatized) determining all international values and relationships. As aptly and clearly explained in Visvanathan's chapter, even scientific laws are not free from private commercial values. He shows this clearly in thermodynamics, which considers the energy that brings us rainfall as degenerate, and the energy that can fire a bullet as of high quality. He points out that this view makes sense only in the commercialization of energy, not in its inherent nature. I am grateful to Visvanathan because he has helped me restore my confidence in myself. In college, I did very well in physics and mathematics, but entropy always eluded me. Now I know that it exists only in the commercial mind! In the context of biodiversity and the knowledge and technologies based on it, the global imposition of such values and norms has resulted in the following injustices.

## INTELLECTUAL PROPERTY RIGHTS PROTECTION (IPRS)

Northern corporations take biodiversity and technologies from the South and own them. Their ownership is sealed with breeder's rights and patents. These IPR systems are forced on the whole world through TRIPs (Trade Related Aspects of Intellectual Property Rights). Ancient farmers eliminated most species and created a poorer environment in order to produce more food for humans. That was bad for nature, but it looked good for humans. Soon the ancient farmers realized that what was bad for nature was also bad for humans and corrected this defect in agriculture. Yet modern breeders are eliminating most genetic variation in order to enable them to stake claims on seed. This destroys the ancient correction of the defects in agriculture, and it is thus bad both for nature and for humans, especially for those in Southern countries, most of whom are peasants. But it is obviously good for the bosses of breeders, the now fewer and fewer life-science corporations. It enables them to have breeders combine and recombine the farmers' varieties from the South in order to choose uniform, distinct, and stable breeder's varieties, to patent these (Egziabher, 2001: 28), to charge royalties on them, to impose conditionalities on their use, to destroy the rest in the name of conserving



them in gene banks (Fowler and Mooney, 1990: 161–172)—the diversity they do not as yet want to claim, the very foundation of their breeding—and, eventually perhaps, to destroy most of us.

Southern peasants are seen by these transnational corporations as an unexplored market for their degenerate seed. In the name of free trade they globally push the degenerate seed. The "free market" rules of the World Trade Organization make this possible for them. I cannot see what is "free" in a market where countries and peoples are forced to import things that they would rather not. In the name of development, but for ensuring dependency, these transnational corporations force the acceptance of this "free market" through loan and aid conditionalities enforced by Northern governments directly and/or through the World Bank and the IMF.[6]

As shown in Shiva's chapter, the grotesque instrumentality of robbery through these IPRs is shown by the fact that the farmers' varieties, whose integrity as seeds has been safeguarded by peasants the world over, are considered not worthy of a comparable protection because they are not degraded into being uniform, distinct, and stable. At the same time, even less uniform, distinct, and stable categories of seed are now being patented by these same transnational corporations merely for having one trait (e.g., resistance to the herbicide glyphosate) genetically engineered into them. A patented transgene from a transgenic variety unintentionally but certainly does get into other cultivars through pollination, and all the cultivars are sunk into the patented variety.[7] What a world of inconsistency! That is why, as vividly described for Brazil in the chapter by Santos, national debates in the South on the issue are tortuous and apparently interminable. Even the more specific case of traditional medicine embroils society in debate, as well documented by Xaba for South Africa and Meneses for Mozambique.

The breeder will always need the peasant's heterogeneous seed. Otherwise corporate breeding would stop. The new corporate feudal system should, therefore, learn from the old and allow peasant communities to survive even if only as guilds. It should thus forgo its intellectual property rights system at least with regard to indigenous and local communities. Or else, as suggested by Shiva in her chapter, it should allow a counterbalancing Community Rights (Farmers' Rights) system that protects the indigenous and local community's biodiversity, knowledge, and technologies. Otherwise, the new corporate lord will be like the old feudal lord without his smiths and knights, and thus without sword and armor. Intellectual property rights protection could then become the way to the destruction of the supposedly protected corporate lord and his retinue, the stakeholders.

And what of the peasants, pastoralists, and gatherers who have generated and maintained the biodiversity, knowledge, and technologies? The Northern status quo considers them invalid owners because they are organized into

cooperating communities and it is appropriate that only individuals should own anything. They claim that, therefore, something owned by communities is there for the taking by any individual. Some of them at least maintain that communal ownership should not be allowed since, as can be noted from the now defunct Soviet Union, it is non-viable (Clunies-Ross, 1996: 36–37). Of course this is rubbish. Communities have existed for millennia. It is only the emergence of the new feudal system, corporate capitalism, which is based solely on individually amassed wealth, that is destroying communal ownership. Even thus, as clearly described by Meneses and by Coelho for Mozambique, by Xaba for South Africa, by Escobar and Pardo and by Alonso for Colombia, communal ownership is viable. It is the individually based new corporate feudal system itself whose viability has not yet been fully tested.

Privatization through IPRs is working by default: communities now know what is hitting them, while their governments, if they know, do not want to help because the government officials themselves are in positions that maximize their opportunity to join the privatization foray. The intellectual property protection game has all its fickle rules set by the other (Northern and corporate) side, and the rules change as we learn the game—e.g., a variety has to be homogeneous in order to be given a Breeders' Right protection; yet all the different varieties into which a patented gene has entered through pollination enjoy the same patent protection (see note 7). What should we do? We should make our own rules, first for the rural communities of the South. Then perhaps the actually and potentially unemployed and unemployable of the North, trying to rediscover self-employment, may join us. The Organization of African Unity has tried to respond to this challenge. In 1998 its Summit in Ouagadougou endorsed an African Model Law on the Rights of Local Communities, Farmers, and Breeders and on the Regulation of Access to Biological Resources (Ekpere, 2001: 78). African countries are domesticating this model law by passing national laws. Article 9 of the model law stipulates that the rights to be protected are those recognized by the community itself as its customary rights and that such rights are not to be determined *de nova* by the state.

The International Treaty on Plant Genetic Resources for Food and Agriculture, adopted in Rome in November 2001, is the first international law to recognize the rights of countries to provide community rights to farmers through national law (Farmers' Rights).

## MISGUIDED RESEARCH STRATEGY

As explained well in the chapters by Shiva and Santos, all plant breeding now aims at homogeneity by producing uniformity, distinctness, and stability. Within this constraint, it tries to maximize plasticity or adaptability to a wide



range of environments. If it had not bowed to the dictates of privatization and abandoned the age-old strategy of using heterogeneity to maximize plasticity, it would have had more impact.[8] Considering that most agricultural research is now in the hands of corporations, a reversal of this research paradigm is unlikely in the short run.

Nevertheless, agricultural research should focus on maximizing the use of biodiversity and on enhancing the natural ecological processes to maximize soil fertility. When inputs are needed for this enhancement, they will almost always be locally available in the ecosystem. How a system to achieve this can be created should be debated nationally, involving multidisciplinary professionals, the public, and, especially, indigenous and/or local communities. Agricultural research possibly could then have the competence to support subsistence (peasant) agriculture. Currently, there is a national policy and concerted political effort to make this happen in Ethiopia. Since Ethiopian agriculture has been in serious crisis, this experiment is needed, and will be ecologically instructive towards sustainable agriculture.

## QUICK FIXES

The logic of the quick fix that is used to try to solve specific manifestations of the problem caused by the privatization of the seed goes as follows: if corporations need to make seed homogeneous in order to exclude peasant communities as well as other corporations, it must be done. But the seed corporations must also make the heterogeneous environment homogeneous by adding water and chemicals. Otherwise their homogeneous seed will not suit the environment. Besides, the situation creates new business opportunities for the corporation. Unfortunately, the environment is changing quickly because of this onslaught of homogenization, and even the chosen homogeneous seed is regularly failing (Fowler and Mooney, 1990; Pretty, 1995: 7). It is time that the corporations went back to heterogeneous seed in order to suit the reality of the heterogeneous environment. The appeal of genetic engineering may well thus lie in enabling the corporations to restore heterogeneity by introducing through pollination one transgene into a whole crop genome and yet still be able to claim the complete control that patenting a transgene gives.

Agrochemicals and seed are now mostly controlled by the same seed-controlling corporations. Chemicals should be used in agriculture when indispensable, but only so long as they can help natural processes and not oppose them and undermine the prospects for the continuation of life. But a reduction in the use of chemicals would proportionately reduce the power of control and the income of the seed/chemical corporations. Therefore, genetically engineering the need for chemicals into the seed, e.g., herbicide tolerance, will continue to intensify in the future.

## GENETIC ENGINEERING AS THE NEXT QUICK FIX

Genetic engineering is thus with good reason now being seen as the quick fix to overcome the failure of the discredited chemical quick fix of the Green Revolution. Genetic engineering should be used if proven useful, but not to hastily cover up failures. Suppose it also fails? And in this respect I think it will fail. The problem with the present use of agrochemicals is that the environment becomes poisoned. In a poisoned environment, all life deteriorates. Even what we get through genetic engineering is life. Thus even transgenics would do better in a good environment. In a ravaged environment, it is possible that temporarily we may be better off with genetic engineering than without. But I have no doubt that we would be better off still in an environment whose integrity we have safeguarded. And, as pointed out by all the authors that have contributed chapters to this book, indigenous and local communities safeguard environmental integrity even when their governments implementing the globalization agenda make it difficult for them. In any case, genetic engineering is only just over a decade old. We do not as yet know how well it works. We do not know its long-term impacts. Should we plunge into the unknown in the dark? I would have thought that it would be safer to retrace our steps into ecological agriculture and wait for daylight!

## BIOSAFETY

In the meantime, we should make sure that the unseen does not get out of control and cut off our route for going back into ecological agriculture. That is why we have the Cartagena Protocol on Biosafety. That is why, in spite of the pressure from the United States of America to accept their doctrine of the substantial equivalence of genetically engineered organisms with non-engineered counterparts, we should subject genetic engineering to the precautionary principle as stipulated in articles 10.6 and 11.8 of the Cartagena Protocol on Biosafety.

There should also be national biosafety legislation in each country to safeguard human health and the natural biota. Peasants would then have their newest fear about their own health and biodiversity reduced. Realizing this, and spurred by the fact that genetically engineered organisms, like all other organisms, recognize no national borders, the Organization of African Unity has developed a Model Law on Safety in Biotechnology (Organization of African Unity, 2002: 42) to help its member states develop national biosafety laws of a regionally compatible rigor. This is a good example that I think all regions should emulate.



## WHAT SHOULD BE DONE: HOMEMADE RULES FOR FAMILY GAMES AND INTERNATIONAL LAW AND ACTION FOR LOCAL LEEWAY

The Northern status quo that so dominates us is made up of individuals with standard human sensibilities and sensitivities. I am sure that, in the absence of a slaughterhouse, most of them would have a lunch of bread and cabbage rather than butcher the ox earmarked for their steak. I am convinced that the "international" norms that they impose upon us arise as much by default as by design, because we offer none of our making. These norms continue from the past of Northern institutions, from their slavery and colonial periods. I, therefore, believe that Southern countries should legislate at home what they want internationally. At least at home the family will then play the game by rules of its own making, and some of those home rules may find their way into the international arena. As shown by Shiva in her chapter in this book with regard to the fight against the *neem* patents, it is persistent efforts from the South that are needed. Of course, corporate interests will oppose these home rules by stating that WTO agreements override national law. Of course, some individuals from the North will also personally oppose us. These individuals should be treated as enemies worse than their colonizing ancestors. Some will support us. We should cultivate our alliances with them. Most will be so preoccupied with the routine of living that they will not be bothered. These are potential allies who will see our need also to live, just as they live. We should work hard to inform them, and to stimulate them to react. What does this mean in the context of biodiversity and indigenous and local communities?

Africa has started a strategy, which looks appropriate to me, to achieve this. Nationally, African countries have started to pass laws that recognize community rights and farmers' rights. They are also making their breeders' rights laws subordinate to community and farmers' rights. Thanks to persistence, their position is now being strengthened by the International Treaty on Plant Genetic Resources for Food and Agriculture. Article 9 of this treaty empowers countries to recognize farmers' rights under national law. Such national legislation will give indigenous and local communities leeway to keep generating and managing their community knowledge, technologies, and biodiversity. The African members of the WTO have also now, followed by the least developed country members of the WTO, which are mostly African, tabled at the TRIPs Council their objection to patenting as it is now provided for in TRIPs, and asked that Article 27.3(b) of TRIPs be revised to forbid the patenting of plants or animals as well as to forbid the patenting of life processes. Their position has a strong scientific basis, since it is only what is invented and not what is discovered that is patentable, and since the cells, organelles, chromosomes, genes, and nucleic acid molecules

used to claim patents are all natural, and since there has not been one life form that has been constructed out of the non-living (Egziabher, 2001).

This fight to free biodiversity from corporate control should not stop at attacking patenting. In addition to patents, very restrictive contracts are now a norm between seed corporations and farmers in North America. It is likely that seed corporations will try to use the protection to undisclosed information given by TRIPs in order to bypass patenting and yet control farmers through contracts that ensure their obedience to arbitrary orders and the protection of information. Of course the grain will be there for anyone to access and test to determine its identity. But if information is kept confidential, testing will be difficult, especially in a transgenic variety. In any case, I think that anyone can analyze and find out what Coca-Cola is constituted of; however, since its composition is legally a secret, reconstituting it would break the laws governing confidential information. It is for this reason that the composition of one of the commonest substance on earth, Coca-Cola, "remains a secret." Therefore, I feel certain that seed corporations will keep finding newer and newer methods of biodiversity control, and thus finding equally newer and newer ways of combating their control will be needed. And, as shown by Santos for Brazil, their ways are not restricted to the norms they create; they also destabilize national debate in southern countries.

Perhaps the most critical strategy in this struggle will be information exchange. Corporate globalization itself has made this information exchange possible. Opposition to corporate biodiversity control exists not only in the South. Opposition to it is growing among the northern public, especially among researchers who are now finding it more and more cumbersome to negotiate the use of patented varieties, constructs, and genes. It is said that the now well-known Golden Rice of Professor Potrykus and his team now carries over fifty patents. Even though awareness is as yet low, what this means is that developing genetic engineering, or even continuing with traditional breeding, will become virtually impossible in the South. Activists in the South should, therefore, try to raise awareness on these issues in the South, and liaise with those in the North who oppose biodiversity control by corporations. This can all be done through the internet, and it may take no more than enthusiasm and a few websites.

## BIBLIOGRAPHY


Alexander, Titus (1996). *Unravelling Global Apartheid*. Cambridge: Polity.

Clements, Frederic E. (1905). *Research Methods in Ecology*. Lincoln, NE: University Publishing.

Clunies-Ross, Tracey (1996). *Farmers, Plant Breeders and Seed Regulations*. Sturminster Newtown, UK: Ecologist.

Duvick, Donald N. (1995). "Plant breeding and biotechnology for meeting future food needs," in *Population and Food in the Early Twenty-First Century: Meeting Future Food Demand of an Increasing Population*, in N. Islam (ed.). Washington, DC: International Food Policy Research Institute.





Egziabher, Tewolde Berhan Gebre (1996). "The Convention on Biological Diversity, Intellectual Property Rights and the Interests of the South," in *The Movement for Collective Intellectual Rights*, Solomon Tilahyn and Sue Edwards (eds.). Institute for Sustainable Development: Addis Ababa and London: Gaia Foundation, 15–42.

——— (2001). *The Inappropriateness of the Patent System for Life Forms and Process*. Penang, Malaysia: Third World Network.

Ekpere, Johnson A. (2001). *The African Model Law for the Protection of the Rights of Local Communities, Farmers, Breeders and for the Regulation of Access to Biological Resources*. Addis Ababa: Organization of African Unity.

Fowler, Cary, and P. Mooney (1990). *Shattering*. Tucson, AZ: U. of Arizona P.

Goldsmith, James (1994). *The Trap*. London: Macmillan.

Hancock, Graham (1989). *Lords of Poverty*. London: Mandarin.

Korten, David C. (1995). *When Corporations Rule the World*. London: Earthscan.

Linthurst, R. A, P. Bourdeau, and R. G. Tardiff (eds.) (1995). *Methods to Assess the Effects of Chemicals on Ecosystems*. Baffins Lane, Chichester, UK: John Wiley & Sons.

McIntosh, R. P. (1976). "Ecology since 1900," in *Issues and Ideas in America*, B. J. Taylor and T. J. White (eds.). Norman, OK: U. of Oklahoma P.

Organization of African Unity (2002). *African Model Law on Safety in Biotechnology*. Addis Ababa: Organization of African Unity.

Pretty, Jules (1995). *Regenerating Agriculture*. London: Earthscan.

Shiva, Vandana (1994). *The Violence of the Green Revolution*. Penang, Malaysia: Third World Network.

UNDP (2001). *Human Development Report 2001*. New York: Oxford UP.


## Notes

1 Fowler and Mooney, in their book entitled *Shattering*, have given details of the diversity in farmers' varieties and shown that all the crops grown by modern farmers and peasants now depend on this diversity.

2 The specially trained plant breeders who produce the homogeneous varieties for industrial agriculture have been denying the fact that farming communities are breeders, maintaining that farming communities merely select what nature provides. This is indeed true, not only of farming communities, but also of plant scientists. That is why, to conjure up a distinction, the industrial agriculture breeders call the varieties produced by farming communities "land races," connoting that it is the land and not the farming community that produces the variety. Albeit grudgingly, even industrial agriculture plant breeders are now recognizing farming communities as breeders. For example, Duvick (1995: 221–222) recognizes both as breeders and distinguishes their contributions as "professional plant breeding" and as "plant breeding by farmers".

3 Goldsmith (1994: 15–46) gives the magnitude of unemployment in industrialized Europe at the time. I have no recent statistics, but I have the impression that unemployment has increased.

4 The squeeze by seed companies on the potato growers of Scotland, which has been described by Clunies-Ross (1996: 20–28), and the refusal of the British Government to do something about it, can be cited as an example.

5 Any introductory textbook on ecology will give sufficient information to understand an ecosystem. A brief but sufficient analytic description is found in the proceedings of a workshop (Linthurst, Bourdeau and Tardiff [1995: 13–34]). Though views on the degree to which an ecosystem can be seen as a loose assemblage of organisms with complementary requirements (e.g., McIntosh, 1976: 353–372), or as a superorganism with the component species as its clearly determinable parts (e.g., Clements, 1905), the ecosystem as a unit maintained at more or less the same condition, even if changing over the long term, through homeostasis maintained by the interactions among all the components, is accepted as ecological fact.

6 It is understandable that official Northern publications, even those of the UN, IMF, and World Bank, which should know this best, do not contain much information about conditionalities imposed on the South except in broad terms, for instance, on the debt of developing countries (e.g., UNDP, 2001: 191–194). Many individuals have, however, written on these issues. An easily readable account on how developed countries, especially through international lending institutions, exact conditionalities, including structural adjustments, has been written by Hancock (1989: 37–75). The private sector also exacts obedience to its conditionalities, including those within its own home base, and pressures governments effectively to do what it wants. This has been described by many authors, e.g., Korten (1995). Another author, Alexander (1996: 54–84), describes how industrialized countries usually force developing countries through economic means to do what they are asked. On pp. 120–145, he describes the role of the IMF and the World Bank in this. In particular, on pp. 126–128, he describes how "structural adjustment" is used to open up a developing country's markets. In this way, it is only developed countries that use the right to keep out goods that is granted them by the Multilateral Agreement on Trade in Goods of the WTO. Structural adjustment denies developing countries this right, which international law entitles them to have. Obviously, economic might is the ultimate right. Many other authors have also written in a similar vein on the issue.

7 Percy Schmeiser (2001), personal communications. Schmeiser maintains that he planted non-genetically modified rape (canola). Pollination from other fields introduced Monsanto's Roundup-Ready Canola genes into his rape. Monsanto took him to court for infringement. In return, he sued Monsanto for contaminating his field. The judge found Schmeiser guilty, saying that however the genetically engineered gene got into his crop, the fact that it is there is sufficient guilt on his part! Mad, but that is what comes out of a combination of patenting a gene or species, and adhering to Article 34 or TRIPs, which assumes that the accused is an infringer unless he can prove otherwise. How can anybody prove or disprove that a bee or a butterfly flew from Monsanto's field to Schmeiser's? Would it not make sense to accept what happens in nature as true rather then what TRIPs says? Which is more likely to be wrong: the law of nature, or the law of industrial man?

8 Dr. Tesfaye Tessema and his colleagues, in an unpublished report, have shown that, at the Debre Zeit Agricultural Research Centre, they combined selected farmers' varieties of durum wheat and obtained yields without chemical inputs comparable to those obtained from homogeneous "improved" varieties grown with chemical inputs.