Biodiversity, Cultural Diversity, And Food Equity

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Abstract Biodiversity and genetic resources have become the focal point of major national and international biological and political debates regarding control, ownership, access, and erosion of critical resources. While these issues are key to environmental sustainability and food security, biodiversity and genetic resources must be seen in the broader context of their inextricable relationship to cultural diversity and to humans' view of nature. Nature is assumed to be constituted socially through a wide variety of human processes described collectively as culture. Three significant cultural factors, technology, science, and capitalism, are largely responsible for the secularization and homogenization of food and agriculture and the remaking of nature. These processes and forces may simultaneously and unwittingly create the problems of declines in biodiversity, cultural diversity, and food equity. Indeed, it may well be that the only way to conserve cultural biodiversity in the field is to conserve cultural diversity among peoples. This reunification of biodiversity and cultural diversity and food and agriculture will require new paradigms and institutional mechanisms that allow us to show our care for each other through our reverence for nature.

In the 1990s biodiversity and genetic resources have emerged as major national and international biological and political issues. Within the U. S. the National Research Council established the Committee on Managing Global Genetic Resources: Agricultural Imperatives, which examined a number of the issues and policy implications and produced four significant reports: *Agricultural Crop Issues and Policies* (1993); *Livestock* (1993); *Forest Trees* (1991); and the *U. S. National Plant Germplasm System* (1991). At the same time the U. S. Department of Interior and the Congress have set aside over $180 million for a new National Biological Survey to survey the health, abundance, and distribution of plants and animals and their ecosystems, as well as to conduct research necessary to understand ecological processes and the impacts of human activities (Nicols, 1993). Moreover, in the 1990 Farm Bill (Public Law 101-624) Congress established the new National Genetic Resources Program within the U. S. Department of Agriculture's Agricultural Research Service to acquire, preserve, and distribute genetic resources to users worldwide. In the global arena, the International Center for Plant Genetic Resources, a new autonomous organization within the network of international agricultural research centers, was created in 1992 under the premise that there was a need for a flexible and independent response to new challenges. In addition, the United Nations Food and Agriculture Organization's Commission on Plant Genetic Resources celebrated its 10th anniversary in 1993 with arguably its most ambitious and cooperative session (Strauss, 1993).

Several factors have contributed to the increasing interest in genetic resources. On one hand is concern for biodiversity, genetic vulnerability, and the loss of genetic resources. For example, the International Union for the Conservation of Nature and Natural Resources estimates that between 20,000 and 25,000 plant species are currently threatened with extinction. On the other hand are issues of control over and ownership of
genetic resources between the First and the Third World that have generated acrimonious debate, restrictive policies, and regulations regarding exchange of resources among countries and numerous international commissions and conferences to resolve differences. Indeed, the controversy grew so heated in the 1980s that it was characterized as the “Seed Wars” (Kloppenburg and Kleinman, 1988).

Recently biodiversity emerged as a primary focus of the United Nations Conference on the Environment and Development, the Rio Earth Summit (June, 1992). Of the five documents produced by the conference, the Convention on Biological Diversity was the most controversial. The objectives of the convention were (1) the conservation of biological diversity, (2) the sustainable use of its components, and (3) the fair and equitable share of the benefits. However, issues of the cost and financial responsibility of implementation, and the treatment of biotechnology and intellectual property rights were cited as reasons for the adamant refusal to sign the document by the then U. S. President George Bush, alone among the leaders of the more than 180 countries represented in Rio (Johnson, 1993). Nonetheless, by the first anniversary of the Earth Summit 21 nations (out of a total of 30 required) had ratified the convention. Moreover, U. S. President Bill Clinton in his first major environmental speech, announced the intention to sign the document proclaiming “we cannot walk away from challenges like those presented by the biodiversity treaty. We must step up to them.” (Gallager, 1993)

Biodiversity, however, can also be linked in important ways to broader and more general concerns ranging from environmental change and conceptions of nature to issues of food security and equity. As David Wood in a recent article in the New Scientist (Wood, 1992:8) pointed out, “action on biodiversity must shift from the present over emphasis on tropical forests to a more realistic target of protecting, managing, and increasing resources of the agrobiodiversity needed for future global food security.” However, even this expanded view is only part of the story. To encompass issues relating to crop plant genetic resources and agrobiodiversity as simply a subset of global biodiversity concerns within an environmental framework is to ignore the equally important social cultural concerns (Buttel, 1992) and the related issues of cultural diversity (Busch et al., 1989; Sachs, 1992). Consequently, this paper focuses on agrobiodiversity and specifically plant genetic resources in the context of our relationship to nature and the continuing transformation of agriculture, food, and culture.

Nature
Any discussion of biodiversity and genetic resource or germplasm conservation must begin with a discussion of nature itself. The first premise is that nature is not natural. The idea that something, such as wilderness, the cosmos, physical or biological reality that scientists discover, analyze, map, and manipulate, exists purely independent of humans, is simply mistaken. This reasoning is not unlike the idea that sculptors have occasionally espoused that the statue is already in the piece of stone, only to be revealed by the carving. Humans have populated this planet for a millennia and have cultivated the earth, even in the process of not cultivating it. Well before the dawn of agriculture and civilization, hunters and gatherers selected their food, both plant and animal. Nature was in part the sum of the human choices regarding the useful and useless, edible and inedible, and the desired and despised. nature was what human beings made it. Many philosophers concur by noting that what we call objective reality is constituted by both the actual physical configurations of the elements in things, and human conceptual frameworks (e.g., theories, definitions). While we can’t create the molecules, organisms, or systems among organisms that exist, we, nevertheless, constitute nature through our practical and cognitive activities. In the final analysis, nature is socially constituted (Busch et al., 1989).

While among societies considerable agreement exists as to what nature and natural processes are, due in part to commerce and communication, these definitions can also differ. Changes in how societies view nature and agriculture have a profound and continuing effect upon concerns for the conservation and preservation of genetic resources. Some societies have demystified nature, subjecting it to the regularization of industrial production and, through science, withdrawing humans from it. In turn, science has reintroduced the distinction between the real and objective and the merely subjective.

When human beings first began to cultivate the soil or tend animals they assumed a great responsibility: the maintenance of biological diversity. Until recently, however, maintenance required little active care; the simple activities of farmers and herders sufficed. In the last century, however, plant and animal breeders and other biological scientists have utilized experimental methods and genetic theory to radically change plants and to a lesser extent animals. Indeed, they have virtually monopolized the process of socializing nature. In short, when we speak of domesticated plants and animals, we speak of a nature that we have created. This nature is a material manifestation of descriptions, evaluations, and manipulations, all reflecting how a society constitutes nature.

Only in the last several decades has this restructuring of nature begun to pose serious problems. Since cultivated plants and farm animals are as much cultural artifacts as are machines, their cultivation is dependent upon and intertwined with a host of other cultural artifacts, including institutions. As soon as we cease to