

• *Mariano R. Sto. Domingo*

Cultural Crisis, Erosion of Biological Diversity and the People's Response*

Binigyang pansin sa papel na ito ang mahigpit na kaugnayan ng krisis kultural-- partikular ang komodipikasyon ng lupa, pagkawala ng tradisyunal na sistema ng kaalaman at ang walang habas na paggamit ng teknolohiya-- sa pagkaubos ng biodiversity o saribuhay. Ipinahayag din na ang pagkasira ng saribuhay ang nagdudulot ng ibayo pang kaligaligan sa lipunan tulad ng nangyayari sa mga Katutubo. Ipinakita rin na bagamat nangyayari ang magkakambal na krisis, may mga sumusulpot namang tugon mula sa mga tao upang protektahan ang kapaligiran at lipunan.

You ask if we own the land. And mock us. "Where is your title? "When we query the meaning of your words you answer with taunting arrogance. "Where are the documents to prove that you own the land?" Title. Documents. Proof. Such arrogance to speak of owning the land when you shall be owned by it. How can you own that which will outlive you? Only the race own the land because only the race lives forever.

*Macli-ing Dulag
Kalinga Chieftain, Philippines*

*This article covers two chapters of the unpublished masteral thesis of the author entitled "Biological Diversity and the Indigenous People: An Inquiry into the Question of Sustainable Development as a Global Ethic," International University of Japan, June 1994.

Beginning of the Cultural Crisis: Integration into the Market System

The global expansion of capitalism and commodity flows during the Great Depression in Europe in 1873 triggered massive mobilization of capital to new production sites and the unparalleled appropriation of natural resources found in the Americas and Asia.¹ With increasing need for food crops such as maize, potatoes, squash, tomatoes, peanuts, common beans, sunflower, and other products from plants and trees such as rubber and palm-oil, massive cultivation of these crops brought about the displacement of local biodiversity in the colonies by monocultures of raw materials for European industry.²

Historical accounts of this trade flow focus on the indigenous people whom Wolf referred to as "people without history." Colonization severely limited political and economic autonomy as these people have to yield up substantive authority and gradually relinquish the capacity to reproduce their social networks and hierarchies. 'People's lives (were) reshaped to correspond to the dictates of the capitalist mode.'³

According to Polanyi, the spread of capitalism into previously non-market societies and the conversion of the means of production and their products into commodities to be allocated by the self-regulating market system required the transformation of life into labor, patrimony into capital, and nature into land.⁴

Thus, the penetration by the market system of previously non-market territories established a dichotomy of economy and society, with the latter subordinated to the former, this Polanyi calls the 'disembedding of the economy from society.'⁵ This means that people's economic activities ceased to operate as a function of their social relations, their culture and identity. The institutions which sustain their sense of communities were likewise replaced by artificially organized systems of production and consumption, of the processes of buying and selling.

However, the major impact

*'is primarily a cultural not an economic phenomenon... (n)ot economic exploitation, as is often assumed, but the disintegration of the cultural environment of the victim is then the cause of the degradation. The economic process, may, naturally, supply the vehicle of the destruction, and almost invariably economic inferiority will make the weaker yield, but the immediate cause of his undoing is not for that reason economic; it lies in the lethal injury to the institution in which his social existence is embodied. The result is loss of self-respect and standards...'*⁶

Daly and Cobb recognize one problem related to market as 'the corrosiveness of self-interest on the moral context of the community.' They argue that shared values which maintain the community (honesty, kindness, initiative) are reduced by market to the level of personal taste which is explicit in the positivistic, individualist philosophy of value on which modern economic theory is based. For the market, values are derived only from satisfaction of individual wants.⁷

Hirsch identifies this 'depletion of moral capital' as a negative externality or adverse unintended effect of economic activities. With the integration of an otherwise non-market community with the market system, there is increased pressure for use of time as people become engaged in material consumption and competition for additional income to maintain their position in the society. Because of this, there is a decline in sociability and erosion of social ethic.

There develops excessive production of individual activity channeled through the market so that the commercialized sector of people's lives is unduly large. Commodity bias gives rise to commodity fetishism as people begin to neglect the social context in which individual acquisition of goods and services takes place.⁸ The movement of people also results to less social contact, less reciprocation on a bilateral basis, and the decay of

traditional ties. The patterns of behavior which Polanyi and Sahlins observed in primitive societies are minimized.

An illustration of the enormous impact of the encroachment of the market system into the territories of indigenous people is provided in the Diagram 1 below. The cultivation of palm-oil in their land causes marginalization, hunger and exploitation.

Polanyi's words, the 'shattering of culture,' can be attributed to the commodification of the land becoming an object for exploitation and individual private gain which is the cradle of the people's identity and culture. The disintegration of the social fabric also results in the loss of traditional knowledge that have been passed from generation to generation and which includes vast information on biological resources and their uses. The loss is due to its replacement by the modern knowledge system that came together with capitalist expansion.⁹

Modern View of the Land

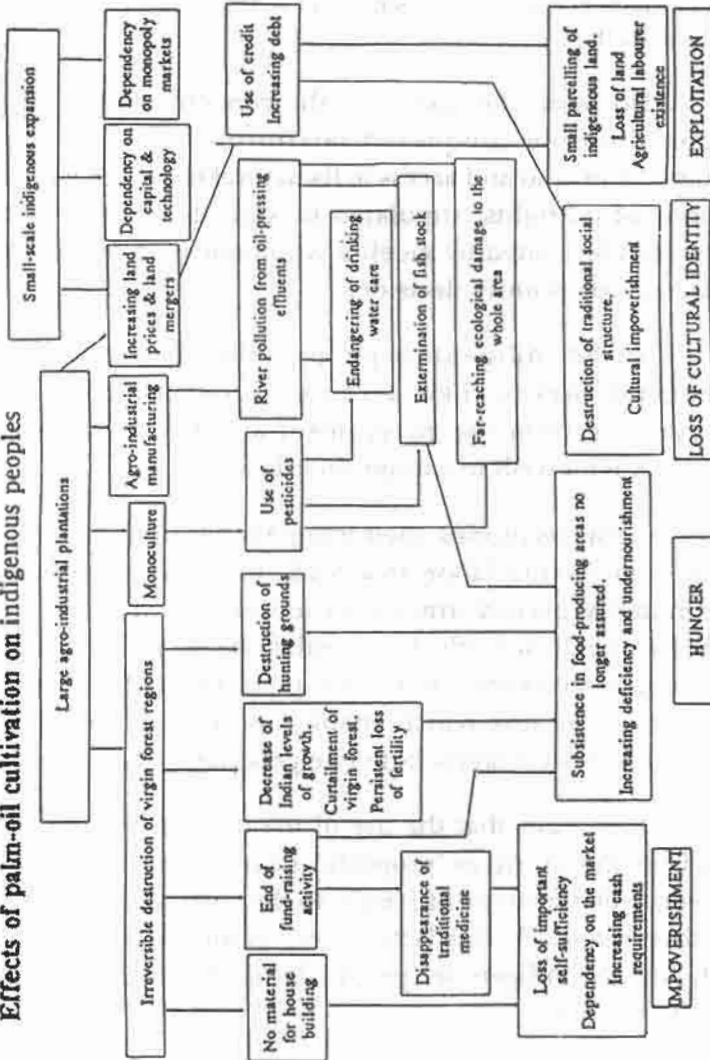
As mentioned earlier, the expansion of capitalism brought about in the transformation of land into exchangeable commodity, abstracted from the totality of the natural world, at the same time delinking it from the culture and institutions that its relationship with the people has given rise to, and which regulate its status and function.¹⁰ Being reduced into mere space, it was deprived of its meaning as a productive part of nature, one commodity among others, whose possession is motivated by profit and exploitation of water, forest, minerals and animals.

Polanyi described the process as a result of the demands of the capitalist society.

The first stage was the commercialization of the soil, mobilizing the feudal revenue of the land. The second was the forcing up of the production of food and organic raw

Diagram 1

Effects of palm-oil cultivation on indigenous peoples



Source: The Group of Ecological Economists. Ecological Economics. London: Zed Books Ltd., 1982, p.96.

materials to serve the needs of a rapidly growing industrial population on a national scale. The third was the extension of such a system of surplus to overseas and colonial territories. With the last step, land and its produce were finally fitted into the scheme of a self-regulating world market."

Also, with the last step, the concept of property was imposed on the conquered territories. This means that ownership of land and access to its natural resources were based on individual rights, stipulated in legal documents that may have been legislated by an elite who happened to control and influence community decisions.

For the indigenous people, the absence of formal document makes their territories unprotected against intervention from the government and encroachment from outsiders who wish to exploit their land

In some territories, their integration into the labor market or movement into labor area leads to in the breaking up of communally owned areas into individual plots.¹² Lack of sufficient land then affects potential use of an area. Alloting community lands into individual plots also reduces resources and breaks the link which enables indigenous peoples to be caretakers of their lands from one generation to another.

Neal argues that the use of the idea of property in land may be ethnocentric, as 'property' is a misnomer which actually refers to 'relationships of people to the surface of the earth and to other people.'¹³ This latter interpretation is more consistent with how the indigenous people define their relationship with their territories.

The idea of property also led to the misrepresentation of all natural resources by the land as the former are reduced to the latter. The 'full reality of land', at least for the indigenous people, is ignored by the market and economic theory. This

full reality-- the land's embeddedness in social relations giving identity to communities and providing them material support for survival-- is not accounted for in the highly abstract modern concept of the land which represents all natural resources and individuals, and all the living things supported by the land, except for labor expended in raising them.

As a result of this ignorance, and as a result of the crises that follow afterwards, 'nature (was) reduced to its elements, neighborhoods and landscapes defiled, rivers polluted ... and the power to produce food and raw materials destroyed.'¹⁴

Dominant Knowledge System and Biotechnology

Among the adverse cultural impact of the spread of capitalism is the extinction of age-old knowledge systems of indigenous communities which have been passed on from generation to generation.

When the Westerners colonized the resource-rich territories, they brought along with them a system of thought influenced by the Baconian ideal and Cartesian dualism. Being so, among the major characteristics of this Western and scientific knowledge system are separation and dissociation. *'It sets human beings apart from and over nature, thus opening a way for a relationship wherein humans are masters and possessors of nature, relationship that is primarily exploitative and manipulative.'*¹⁵

Sterling provides a summary of this mechanistic and Cartesian worldview and contrasted it with what he calls the ecological/holistic one (See Table 1). He charged that the schism embodied in scientific inquiry is the cause of the present environmental crisis.

Not only has the knowledge system in question and its methodologies led to certain technologies, it also led to the flourishing of capitalism and materialism. This relationship

Table 1: Mechanistic versus Ecological World Views

Mechanistic/Cartesian	Ecological/Holistic
<i>Descriptors</i> Mechanistic, reductionist, objectivist, technocentric	Organic, holistic, participative, ecocentric
<i>Primary Characteristics</i> Fact and value unrelated Ethics and ordinary life separated Subject and object separate People and nature separate -- relation is one of domination Knowledge divisible, value-free, empirical, controlling Linear concepts of time and causation Nature understood as being made up of discrete parts; the whole is no more than the sum of its parts The power of a unit equated with well-being (money, influence, resources) Emphasis on the quantitative Emphasis on material reality Analysis key to understanding Instrumental values Few or no technical or ecological limits	Fact and value closely related Ethics and ordinary life integrated Subject and object interactive People and nature inseparable -- relation is one of systemic synergy Knowledge indivisible, value-laden, both empirical and intuitive, empathic Cyclical concepts of time and causation Nature understood as being made up of interrelated wholes which are greater than the sum of their parts The quality of interrelationships between systems equated with well-being Concern with the qualitative Concern with physical and metaphysical reality Synthesis given greater emphasis Instrumental and intrinsic values integrated through systemic values Ecological limits determine technical limits
<i>Secondary characteristics</i> Centralization of power Specialization Emphasis on the competitive Increasing homogeneity and disintegration Undifferentiated economic growth	Decentralization of power Multidimensional approach Emphasis on the cooperative Increasing diversity and integration Steady-state economy or qualitative growth

Source: Sterling, Stephen R., 'Towards an Ecological World View,' in Engel & Engel, Ethics of Environment and Development, Tucson: The University of Arizona Press, 1990, p.82.

between science and the market and its effect on the environment was described by Shiva:

The one dimensional perspective of dominant knowledge is rooted in the intimate links of modern science with the market. As multidimensional integration between agriculture and forestry at the local level are broken, new integrations between non-local market and local resources are established. Since economic power is concentrated in these remote centers of exploitation, knowledge develops according to the linear logic of maximizing flow at the local level. The integrated forest and farm gives way to the separate spheres of forestry and agriculture. The diverse forest and agriculture systems are reduced to 'preferred species' by selective annihilation of species diversity which is not 'useful' from the market perspective. Finally the preferred species themselves have to be engineered and introduced on the basis of 'preferred' traits. The natural, native diversity is replaced by introduced diversity of trees and crops.¹⁶

A technology which is a product of the dominant knowledge system and is responsible for the abovementioned 'engineering of species' is biotechnology. While it is considered, especially during the 1970's, as almost a panacea for the global hunger problem, it is now approached with caution as it has been found out to reduce nature's diversity itself.

Biotechnology involves 'techniques which use living organisms to make or modify a product, including techniques for improving the characteristics of economically important plants and animals and for developing microorganisms which act on the environment.'¹⁷

It is surrounded by anxieties because of social, economic, ecological and political risks. It extends property rights on life forms making living organisms means of production which are nearly entirely controlled by people from outside of the

territories where the resources are found. There is thus a danger that plants and their seeds, and animals whose genetic attributes are manipulated can be patented and treated as commodities.

Shiva links unregulated use of biotechnology to the destruction of indigenous peoples' cultural and ethical fabric based on agriculture, in which the fundamental life processes are treated as sacred, not commodities to be bought and sold on the market. Since new biotechnologies tamper with the very fabric of life, she asserts that fundamental restructuring of our minds, our ethics, our environmental, social and economic values and relationships is necessary.¹⁸

The Biological Diversity Crisis

A consequence of the crisis in culture, including the impoverishment of knowledge, and the unregulated use of technology is the erosion of biological diversity. Biodiversity crisis exacerbates, in turn, social instability that may have led to the former in the first place, and may eventually result in the loss of human culture that have evolved as unique adaptation.

Biological diversity or biodiversity is an umbrella concept encompassing the diversity of genes, species and ecosystems in the world.¹⁹ Species Diversity refers to varieties of plants and animals within a region. Estimates range from about 5 to over 30 million different species in existence clustered in particular ecological regions around the world.²⁰ According to Secretary Adams of the Smithsonian Institute,²¹ only about 1.4 million have been named and described by scientists including about 250,000 plants and 44,000 vertebrates. The rest are invertebrates, insects, fungi and other organisms and microorganisms of various kinds.

Biodiversity is extremely important because it provides livelihood as well as numerous ecosystem services such as purification of water, regeneration of soil, regulating

temperature, and recycling nutrient and wastes. However, a lot of species are being depleted fast and some are becoming extinct. According to the 1986 UN Report on World Resources,

Species extinction has occurred since life's emergence on Earth almost 4 billion years ago. Of the estimated half billion species that have even existed, modern survivors today probably number 5 to 10 million species. But almost all past extinctions have occurred naturally ... only in the past four centuries has advancing technology made possible massive human-caused losses of habitat and species.

With the continuing destruction of ecosystems, it is estimated that by 2040, 20 to 75 species per day would be lost daily.²² Among the leading causes of biodiversity erosion are ignorance about species, influence of global trading, and the techno-economic push to replace diversity with monocultures through biotechnology.

It is relevant to note that most of the remaining biodiversity are found in areas occupied by indigenous people.²³ The latter have a vast knowledge of the plants and animals in their immediate ecosystem. The knowledge system of plants, or ethnobotanical knowledge, for example, is threatened because of the destruction of indigenous institutions as a result of the encroachment of capitalist market and its accompanying new systems of thought.

Swaney & Olson catalogue the impact of international trade on indigenous people and their biological resources by tracing the flow of resources from country of origin down to the end-users and specifying the environmental damage wrought by activities of multinational corporations which range from cattle-ranching, extraction of energy and minerals, felling of trees for wood products, to expansion of corporate plantations. The authors agree that biological resources in the indigenous territories are depleted as a result of market

encroachment which subordinate the indigenous people's rights to the rights of those involved in such activities.²⁴

Shiva argues that the introduction of modern scientific knowledge system creates 'monocultures of the mind' which are intolerant of diversity. This uniform thinking encouraged by modern science compartmentalizes knowledge of environment and resources into separate disciplines creating, in Shiva's terms, '*cracks of fragmentation*.' This same system of thought gave birth to monoculture in plant cultivation which destroys varieties of 'non-preferred species'.²⁵

A recent example of the latter phenomenon is Green Revolution which turned out to be an ecological disaster since it created strains of 'miracle rice' which proved to be ecologically vulnerable as the 'improved varieties' are ecologically unrelated to other plants and are not resistant to diseases.

What is alarming is that biodiversity erosion does not happen piece-meal, erosion starts as chain reaction. The disappearance of a species is related to the extinction of innumerable other species with which it is interrelated through food webs and food chains, about which humanity is totally ignorant. The crisis of biodiversity is not just a crisis of the disappearance of species which have the potential of spinning dollars for corporate enterprises by serving as industrial raw material. It is more basically a crisis that threatens the life-support systems and livelihoods of millions of people in developing countries, including the indigenous population.

At the same time that biodiversity provides ecological stability, diversity also ensures diverse livelihoods and provides for multiple needs through reciprocal arrangements. Gray argues that homogeneous and one-dimensional production breaks-up community structure, displacing people from diverse occupations, and make production dependent on external

inputs and external markets. Thus, the people lose control of their own economy and society.

The wild predictions associated with biodiversity loss, along with the continuing threat of cultural extinction faced by indigenous people, have generated protective movements which are now rapidly globalizing. Among these is the movement for sustainable development which will be discussed in the next section.

2

If life is threatened what must one do? Fight! ...otherwise he will be dishonoured. That will be worse than death. If we fight, we die honourably ...And because we are willing to fight now, our children may win and keep this Kalinga land ...And the land shall even become more sacred, nourished by our sweat and blood. Then we who sacrificed that they may live...shall abide with them and nurture the generations, guarding the ...pappayaw (rice fields), the ili(community), blessing their lives till endless time.²⁶

*Macli-ing Dulag
Kalinga Chieftain, Philippines*

The colonization of their territories, and the impact of the expansion of commodity flows and the knowledge system of the West left the indigenous people's culture unprotected and their resources subject to appropriation and experimentation by the colonists. This section considers the protective responses against these twin crises of culture and environment, exploring the articulation of the culture-environment nexus in 'sustainable development,' as well as the gradual integration of cultural factors in the concepts and instruments related to the conservation of biological diversity, and providing a critique of sustainable development from the perspective of the organized indigenous population.

Indigenous People's and Environmental Movements as Counter Movements

The rise of social movements in the past few decades have been phenomenal. These trends have been differentially interpreted by various scholars as '*a result of the widening democratic space,*' '*manifestation of class struggle,*' or '*pursuance of common interests.*'²⁷

The indigenous people's movement count among these globalizing movements. Since the 19th century, the indigenous peoples' movement has existed but it flourished globally only in the last 25 years. It started in 1960's in North America, Scandinavia and Australia, in 1970's in Central and South America and in 1980's in the Pacific and Asia. Davis and Partridge partly attribute this 'cultural renaissance' to the younger and more educated members who are reaffirming (and sometimes rediscovering) their indigenous cultural roots and identities, using them to form new ethnic organizations and federations.²⁸

The platforms of these organizations are based on their desire to participate in local decision making, assert their own languages and cultures, and maintain some control over indigenous land and natural resources. The agenda of indigenous people's movement for their cultural rights and self-determination have also been expanded to include entitlements to the biological resources in their ancestral domains.

A movement which gained worldwide adherence in about the same period is the environmental movement. The United Nations' Conference on Human Environment held in Stockholm, Sweden on June 5, 1972 was held in response to the observed deterioration of global environment. The conference marked the emergence of a new paradigm on environment, in general, and biodiversity, in particular. The old paradigm seeing the earth as a 'storage of resources which man can use freely

for development' was replaced by a new one, which sees the earth as a 'unified system of interdependent organisms which may supply man's need as long as he observes the system's rules.'²⁹

Late in the 1980's, interest groups started forming coalitions, partly as a result of their capacity for networking, but more importantly because of the realization that their goals are mutually reinforcing. This is illustrated in the coalition between advocates of ecological integrity and advocates of social and economic justice which stated the following:

*We affirm both the integrity, stability and beauty of the ecosystem and the imperative of social justice. We recognize that poverty, environmental degradation and population growth are inextricably related and that none of these fundamental problems can be successfully addressed in isolation ... We will succeed or fail together.*³⁰

Wallerstein calls these movements anti-systemic, seeking to transform the system but at the same time a product of the system. He traces their appearance in the late 1960's as people begin evincing doubts as to the utility and reasonableness of 'science' and 'assimilation' as social objectives.³¹

Polanyi believes that these movements are evidence of man's continuing search for justice as a response to societal changes brought about by the rise of modern day capitalism.³²

The disembedding of the economy from social relations, and the established dichotomy of man and nature as a result left man unprotected and vulnerable. He therefore seeks ways to counteract these dehumanizing effects by engaging in social mobilization to protect his values and inherited institutions. The rise of the environmental and indigenous peoples' movements are but some examples of what Polanyi calls counter movements, part of what he terms as 'double movement.'

The double movement can be personified as the action of two organizing principles in society, each of them setting itself specific institutional aims, having the support of definite social forces and using its own distinctive methods. The one is the principle of economic liberalism, aiming at the establishment of a self-regulating market, relying on the support of the trading classes, and using largely laissez-faire and free trade as its method; the other is the principle of social protection aiming at the conservation of man and nature as well as productive organizations, relying on the varying support of those most immediately affected by the deleterious action of the market... and using protective legislation, restrictive association, and other instruments of intervention as its methods.³³

In their interpretation of Polanyi's theory, Frank and Fuentes emphasized that the social movements, however varied, 'share a force of morality, a sense of (in)justice in individual motivation, and the force of social mobilization in developing social power ... Social movements ... mobilize their members in a shared moral sense of injustice ... Morality and justice have probably been the essential motivating and driving force of social movements.'³⁴

Sustainable Development and the Indigenous Critique

To a certain extent, the rise of the movement for sustainable development as a holistic approach to tackle multiple problems related to environment, economic development, and social justice can be considered a contemporary example of Polanyi's counter movement³⁵ and Wallerstein's anti-systemic movement.

The Brundtland Report brought the concept sustainable development to the fore, but it was used as early as 1980 in the World Conservation Strategy of the International Union for the Conservation of Nature. It referred to sustainable development as 'the emerging paradigm ... seek(ing) to develop strategies

and tools to respond to five broad requirements: 1) integration of conservation and development; 2) satisfaction of basic human needs; 3) achievement of equity and social justice; 4) provision for social self-determination and cultural diversity; and, 5) maintenance of ecological integrity.³⁶

Judging the present definition as ambiguous and incomplete, many scholars, economists, ecologists, government and non-government institutions sought to conceptualize anew and provide ideas on how it could be achieved, and why there is a need for it.

Environment and its conservation as well as need for equity and income redistribution appear to be two of the permanent features of most discussions. A third component, of which there is lack of consensus regarding its compatibility with sustainability, and is not a focus of this paper, is growth. It should be noted, however, that this latter component dominates much of the thinking of neo-classical economists and becomes their organizing concept in discussing sustainable development.³⁷

The 1992-1993 World Resources Report analyzed the concept in terms of four dimensions: physical, economic (not necessarily growth), human, and technological. Under the physical (or environmental) dimension, sustainable development is "using renewable resource in a manner that does not eliminate or degrade them or otherwise diminish their 'renewable' usefulness for future generations while maintaining effectively constant or nondeclining stock of natural resources such as soil, groundwater, and biomass."³⁸

Avoiding the term economic growth³⁹, the document referred to the economic dimension as 'the optimal resource management by concentrating on 'maximizing the net benefits of economic development, subject to maintaining the services and quality of natural resources. This means that the use of resources today should not reduce real incomes in the future.

The other two dimensions are human and technological dimensions, the former being 'improve(ment) of health care, education and social well-being, and participatory development'⁴⁰ while the latter refers to rapid transformation of technological base of industrial civilization.⁴¹ The Report then provided suggestions on how sustainable development can be achieved and they are enumerated in Table 2 on the next page.

Judging from all the definitions, The World Resources Report concluded that 'an important component of virtually all definitions of sustainable development has to do with equity. Indeed the original definition explicitly suggests that the future generation must be taken into account, a principle called intergenerational equity - *'equity for generations yet to come, whose interests are not represented by standard economic analyses or by market forces that discount the future.'*⁴² This theme of responsibility to our future progeny has caught the attention of many environmentalists and is currently being used as a moral philosophy for advocating and supporting policies for conservation.

However, 'intergenerational equity' has loaded so many conceptualizations of sustainable development that some authors criticize it as giving very little attention to the second type of equity, that for present generation who do not have equal access to natural resources and other economic goods. This intragenerational equity refers to the relationship between the developed countries of the North and the impoverished countries in the Southern hemisphere, between social classes, races, genders and indigenous groups.⁴³

Among the indigenous population, the major criticisms are cultural and political in character, factors that in recent years have been emphasized in the development debate, and which for the indigenous people, are more important than economic questions.⁴⁴

Table 2: Sustainable Development as Operationalized in the World Resources (Report 1992-93)

<p>Economic</p> <ul style="list-style-type: none"> ... steady reductions in wasteful levels of consumption of energy and other natural resources through improvements in efficiency and through changes in lifestyle (for rich countries) ... <i>changing consumption patterns that needlessly threatens the biodiversity of other countries.</i> ...commitment of resources toward continued improvement of living standards. ...reducing the growing disparity of incomes and access to health care in industrialized countries such as the US; making unproductive landholdings available to the landless poor in regions such as South America; extending credit and legitimacy to the informal economic sectors of many countries; and improving education and health care opportunities for women everywhere.
<p>Human</p> <ul style="list-style-type: none"> ... significant progress toward stable population. ... vigorous rural development to help slow migration to cities and adoption of policy measures and technologies to minimize the environmental consequences of urbanization. ... making full use of human resources by improving education and health services and by combating hunger; redirecting or reallocating resources to ensure that basic human needs, such as literacy, primary health care, and clean water are met first. ... <i>improving social well-being, protecting cultural diversity and investing in human capital.</i> ... requires participation of those affected in planning and execution of programs.
<p>Environmental</p> <ul style="list-style-type: none"> ... protecting the natural resources needed for food production and cooking fuels - while expanding production to meet the needs of growing populations. ... more efficient use of arable lands and water supplies. ... <i>richness of Earth's biodiversity would be conserved for future generations by greatly slowing - and if possible, halting - extinctions and habitat ecosystem destruction.</i> ... not risking significant alterations of the global environment that might - by increasing sea level or changing rainfall and vegetation patterns or increasing UV radiation - alter the opportunities for future generation
<p>Technological</p> <ul style="list-style-type: none"> ... shifting to technologies that are cleaner and more efficient and that minimize consumption of energy and other natural resources. ... encouraging environment-friendly trends and finding additional incentives for responsible corporate behavior on a global basis. ... <i>rapid introduction of improved technologies, as well as improved government regulations and enforcement.</i> ... limiting the global rate of increase of greenhouse gases and eventually, stabilizing the atmospheric concentration of these gases. ... preventing degradation of the Earth's protective layer.

Source: World Resources 1992-93: A Report by WRI in collaboration with UNEP and UN Development Program. Oxford: Oxford University Press, 1992.

Regarding cultural dimension of development, sustainable development in itself may not be appropriate culturally. Gray asserts that *'prohibitionism, social production patterns and cosmological questions could all affect a community being persuaded to sell rainforest produce, for example. The introduction of new production process may conflict with their existing world view causing splits within the communities.'*⁴⁵

The political dimension, on the other hand, concerns the perceived top-down approach to development, 'where sustainability is but a cloak for encouraging integration of indigenous peoples into the market economy, aided and abetted by the general public and unwitting companies.'⁴⁶

Gray identified important points which are at variance with the idea of encouraging indigenous people to enter market before they have formulated their own strategies. One of these points is the market's tendency to swamp cultures and societies, destroying them particularly when consumer demands override production.

Another point is the indigenous people's expressed desire to avoid dependency, which lies at the root of the destruction of cultures and society. Thus, they articulate their desire for the acquisition of land rights, control over resources, and self-determined relationship with the market as bases for indigenous production.⁴⁷

All of these imply that for the indigenous people, sustainability means cultural continuity. They seek to protect their culture from the adverse impact of the market. While sustainable development in itself is a protective response, the fear that it is tainted by the market shows its presence.

The efforts of the indigenous communities however, may have paid already as their causes have gradually been integrated in the environmental movement through biodiversity conservation

Biodiversity: Evolution of the Concept

Through the years since the 19th century, the concept of biodiversity has been evolving as a result of a series of protective responses geared towards the conservation of biological resources. From being just species diversity, the concept incorporated genetic diversity, expanding into ecosystem diversity, and now, quite tentatively, human cultural diversity.⁴⁸ Table 3 is not an exhaustive listing of events but is made to illustrate the evolution of the concept as a result of protective movements along with representative events which serve to promote conservation of biological diversity. The Stockholm Conference is used as a reference point since it is a turning point in the history of international environmental movement.⁴⁹

The first major global effort to protect wildlife species is the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) negotiated in 1973 and became effective in 1975.⁵⁰ This is a product of a long history of protecting the species dating back in 1861 when the Yosemite National Park in California was established, the first ever known public effort to conserve nature⁵¹, and in 1902 when the International Treaty for the Protection of Birds and Animals Useful to Agriculture was signed in Central Europe.⁵² Since then, various national parks, zoological and botanical gardens and aquaria and gene banks have been constructed.

These efforts, however, are being criticized for being short of vision to preserve biological diversity. Most of them are either forms of custodial management of charismatic species like elephants, lions, monkey-eating-eagles, spectacular vistas, historic sites, watersheds and timber sources, or efforts to protect species which have economic values at the moment. This means that for a very long period of time, the dominant theme in the biodiversity movement is species diversity.

Genetic diversity, on the other hand, is a relatively recent theme which found its way into the discussion as a result of the

Table 3: Chronology of Biodiversity-Related Events and the Changes in the Biodiversity Theme

Period	Themes
Pre-Stockholm	
Establishment of Yosemite Park, California, 1872	Species Diversity
International Treaty for the Protection of Birds and Animals Useful to Agriculture, 1902	Species Diversity
International Union for the Protection of New Plant Varieties, 1961	Genetic Diversity
Stockholm, 1972	
United Nations Conference on the Human Environment	Species & Genetic Diversity
	Ecosystem Diversity as an Emerging Theme
Washington, 1973	
Convention on International Trade in Endangered Species of Wild Fauna & Flora (CITES)	Species Diversity
United Nations, 1980	
Launching of the World Conservation Strategy	Ecosystem Diversity
Rio de Janeiro, 1992	
Earth Summit	Genetic, Species and Ecosystem Diversity
	Human Cultural Diversity as an Emerging Theme

Source: Caldwell, L.K. International Environmental Policy: Emergence and Dimensions. Durham: Duke University Press, 1984.
 World Resources Institute, et. al. World Resources 1992-93.
 Oxford: Oxford University Press, 1992.

establishment of organizations for the protection of varieties of plants useful for agriculture like the International Union for the Protection of New Plant Varieties in 1961.⁵³

It is only during the past 20 years, however, that world-wide programs were launched expressly to conserve biological diversity.⁵⁴ Since the holding of the United Nations Conference on the Human Environment in Stockholm, Sweden in 1972, the issue of biological diversity has slowly surfaced from the quagmire of environmental issues discussed by international policy-making bodies.

The conference, which is considered the first Earth Summit because of its magnitude, endorsed an international treaty, the Endangered Species Treaty which recognized that conservation of species goes beyond political boundaries and needs the cooperation of the different countries in the world. Biodiversity, since then, has consistently included ecosystems as an important dimension which cannot be separated from species and genetic diversity.

In 1980, the UN Environmental Report entitled the World Conservation Strategy: Living Resource Conservation for Sustainable Development was published linking conservation with successful economic development and emphasizing priorities for national action including formulation of national conservation strategies like wildlife conservation. The document carried over the theme of ecosystem diversity but this time included the role of local people as well as the women and minority groups in the conservation effort.⁵⁵

Before the Earth Summit in Rio de Janeiro, Brazil, in June of 1992, the document Global Biodiversity Strategy was published. It proposes that the goal of biodiversity conservation is to support sustainable development by protecting and using biological resources in ways that do not diminish the world's variety of genes or destroy important habitats.⁵⁶

Furthermore, it added, albeit tentatively, a fourth aspect to what it referred to as the umbrella concept of biodiversity: human cultural diversity, reflecting Robertson's idea of the cultural turn manifested in the thematization of humankind as a species-community in the conceptualization and formulation of policy instruments.

Like genetic or species diversity, some attributes of human cultures (say, a nomadism or shifting cultivation) represent 'solutions' to the problems of survival in particular environments. And, like other aspects of biodiversity, cultural diversity helps people adapt to changing conditions. Cultural diversity is manifested by diversity in language, religious beliefs, land management practices, art, music, social structure, crop selection, diet, and any number of other attributes of human society.⁵⁷

This is considered a 'volta face' from the biodiversity programs in the past as it recognizes the importance of cultural diversity and the role it plays in preserving biodiversity. This means that the document acknowledges that valuation of the world's biodiversity should not be only based on economic criteria but also on social and cultural factors.

Furthermore, the document gave recognition to the fact that there are also people existing in areas where the biological resources could be found. The contention is that there is high correlation between biological diversity and cultural diversity. In other words, where there exists indigenous minorities (in the highlands, forest, etc.) a wide variety of species could also be found.⁵⁸

Chapter VI of the document entitled *Creating Conditions and Incentives for Local Biodiversity Conservation* articulates both the need to recognize the ancestral land and the knowledge kept by the indigenous people.

Another important document reflecting this change in perspectives is the 1992 Convention on Biodiversity was

formulated and signed by most state leaders during the Earth Summit in Rio de Janeiro in June, 1992.

In its preamble, the Convention states :

Recognizing the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components.

However, what is missing in the convention is the recognition of sovereign right of local communities which have conserved and maintained biodiversity, and whose cultural survival is linked intimately to the survival of biodiversity

Conclusion

While the link between biodiversity and the indigenous people has long been articulated, it is only recently that the role of the indigenous population in the conservation of biological diversity is recognized almost globally. This has become possible through the integration of the cultural concern in the discourse on 'sustainable development.

Using the cultural component of the people-environment nexus as the starting point of the discussion, it is argued in this paper that the loss of biological diversity is a consequence of the cultural crisis, manifested in the weakening of socio-cultural institutions and identity, dissociation of nature from the land, and replacement and eventual loss of indigenous knowledge system and strategies, among others. In Polanyi's words, these are instances of disembedding of economy from society. For Shiva, these are cracks of fragmentation resulting from colonization of the mind by Western science leading to monocultures in both societal and biological levels

It is also emphasized that biodiversity loss, in turn, exacerbates social instability which led to the crisis in the first place.

These twin crises of culture and environment have triggered separate social actions in the past in the form of indigenous people's and the environmental protection movements, including biodiversity conservation. These are what Polanyi calls the protective response or counter movement as a result of the encroachment of the market system. Wallerstein labels these actions as anti-systemic movements as the protagonists themselves are products of the system. It is shown that the concept of biodiversity has evolved into a more holistic concept gradually integrating, albeit tentatively, human cultural diversity as a component. Policy instruments crafted to conserve biodiversity take into account human cultural diversity, specifically and views and knowledge system of indigenous people.

However, as the indigenous people's movement have articulated, there are anxieties surrounding sustainable development and its instruments, as they may irreversibly facilitate the complete engulfment of their communities by the market system, destroying cultural continuity, which is what sustainability means for them in the first place. This is the reason why for the author, borrowing Polanyi's terms, there is protective response within the counter movement itself, seeking to protect their culture, their social cohesion and identity as well as its embeddedness in nature, which market forces threaten to destroy.

Indigenous institutions therefore have to be strengthened to protect them from further encroachment of the market perceived to be legitimized by the policy instruments themselves.

Also the idea of re-inhabiting the earth, through smaller communities can be promoted, thus re-embedding culture into nature and vice-versa.

Endnotes

¹Shiva Vandana, *Monocultures of the Mind: Perspectives on Biodiversity and Biotechnology*. Malaysia: Third World Network, 1993, pg. 27.

²Gray, Andrew. *Between the Spice of Life and the Melting Pot: Biodiversity Conservation and its Impact on Indigenous People's*. (International Work Group on Indigenous Affairs Document 70) Copenhagen: IWGIA, August 1991. p.13.

³Wolf, Eric, *Europe and the People without History*. Berkeley: University of California Press, c1992, p.390.

⁴Polanyi, Karl, *The Great Transformation*. Boston: Beacon Press, 1994, p.68.

⁵Ibid., p.46.

⁶Ibid., p. 157.

⁷Daly, Herman and J.B. Cobb, *For the common Good: Redirecting the Economy Toward Community, the Environment and a Sustainable Future*. Boston: Beacon Press, 1989, p.50.

⁸Ibid., p. 95. orthodox economic analysis - concerned with commodities people have, not with how they get them.

⁹What is sad is that it is voluntary in many instances. Eugene Linden "Lost Tribes, Lost Knowledge" *Time*. September 23, 1991 pp. 38-46.

¹⁰The other meaningful aspects of people's lives and livelihood which were transformed into commodities were labor and capital. Polanyi.

¹¹Ibid., p.179

¹²Gray, p. 15.

¹³Walter C. Neal, "Property in Land as Cultural Imperialism: or, Ethnocentric Ideas Won't Work in India and Africa," *Journal of Economic Issues*, Vol. XIX, No. 4, December, 1985, pp.951.

¹⁴Polanyi, p. 73. quoted in K.M. Stokes, *Social Ethics and Reflections on Socio-Economic Transition*. Draft of Feb. 7, 1994, Graduate School of International Relations, International University of Japan, p.2.

¹⁵Sterling, Stephen, "Towards an Ecological World View," in Engel & Engel. *Ethics of Environment and Development*. Tucson:

University of Arizona Press, p.78.

¹⁶Shiva, p. 27.

¹⁷major groups of technologies: 1. genetic engineering - allows any gene to be moved from any organism into another; 2. recombinant DNA technology - has the potential to transfer the genes into a global resource that can be used to shape novel life forms; new advances in techniques for the isolation and rejoining of segments of DNA. Shiva, p. 95.

¹⁸Ibid., p.89.

¹⁹World Resources Institute, et. al. *World Resources 1992-93*, (Oxford: Oxford University Press), p. 128.

²⁰Gray, p.ii.

²¹Smithsonian, March 1992, p.10.

²²World Resources Institute, et.al., p.128.

²³Gray, p.10.

²⁴Swaney & Olson, "The Economic Biodiversity," *Journal of Economic Issues*, Vol. 26, no. 1, March 1992, p.6.

²⁵Shiva, p.68.

²⁶From an article by Victoria Tauili-Corpuz, "In Defense of Ancestral Land," *Asia Link*, Vol. 15, No.3, (May-June, 1993), p.6.

²⁷Jan N. Pietrese. "Emancipations, Modern and Postmodern" *Development and Change*, Vol.23 No.3 (July 1992), p.21.

²⁸Shelton Davis & David Partridge, "Promoting the development of indigenous people in Latin America," *Finance & Development*, (March 1994), p.39.

²⁹Caldwell, L.K., *International Environmental Policy: Emergence and Dimensions*. Durham: Duke University Press, 1984, p.19.

³⁰From the document "Making a Common Cause Internationally," in Engel & Engel, p.10.

³¹Wallerstein. *Geopolitics and Geoculture: essays on the changing world system*. (Cambridge: Cambridge University Press, 1991), pp.180-182.

³²"Man...resigned himself to the truth that he had a soul to lose and that was worse than death, and founded his freedom upon it. He resigns himself in our time to the reality of society which

means the end of that freedom. But again, life springs from ultimate resignation. Uncomplaining acceptance of the reality of society gives man indomitable courage and strength to remove all removable injustice and unfreedom." Polanyi, p.258.

³³Ibid., p.132.

³⁴Andre G. Frank & Marta Fuentes, "Social Movement, The State & Transformation," in Marguerite Mendell and Daniel Salee (eds.), *The Legacy of Karl Polanyi: Market, State and Society at the End of the Twentieth Century*, (London: Macmillan Academic and Professional 1991), p.172.

³⁵Stokes, p.9.

³⁶David Brooks. Beyond Catch Phrases: What Does Sustainable Development Really mean? *Arid Lands Newsletter*, vol. 33 (Spring/Summer 1993). p.4.

³⁷For example, economist Terence Veeman identified the components of sustainable development as growth, distribution and environment. Growth refers to the "creation of long-run productive capacity so an economy can supply increasingly diverse goods and services to its population"; distribution "involves the incidence of the benefits of economic growth, in particular, the impact on absolute poverty and relative income inequality and environment concern(s)...the natural resource, environmental and ecological underpinnings necessary to sustain the growth process over time." Terence Veeman. "Sustainable Development," *Canadian Journal of Agricultural Economics*, vol. 37 (1989), pp.876-877.

³⁸World Resources, 1992-93, p.100.

³⁹The disagreement stems from the contention by some economists that the Earth is a finite system. In 1980, the Club of Rome published "Limits to Growth" which warned of global crisis if economic growth is not halted.

⁴⁰World Resources Institute, et.al. p.101.

⁴¹Ibid.

⁴²Ibid., p.102.

⁴³Lori Ann Thrupp, "Justice as a Key Element of Sustainable Development: Poverty, Power and Political Ecology in an Inequitable World," (Washington, DC: World Resources Institute, draft mimeo.. 1993).

⁴⁴Gray, p.40.

⁴⁵Ibid.

⁴⁶Ibid., p.16.

⁴⁷Ibid.

⁴⁸World Resources Institute, et.al. *Global Biodiversity Strategy (GBD)*, (Washington DC: World Resources Institute, 1992) p.3.

⁴⁹Caldwell, p.102.

⁵⁰Ibid., pp.189-190.

⁵¹Ibid., pp.189-190.

⁵²World Resources Institute et. al., *World Resources 1992-93*, p.136.

⁵³Ibid., p.221.

⁵⁴World Resources Institute, et.al., *World Resources 1988-89*, (New York: Basic Books, Inc., 1988), p.78

⁵⁵Ibid., pp.103-104.

⁵⁶World Resources Institute et.al., *World Resources 1992-93*, pp. 133-134.

⁵⁷World Resources Institute, et. al. *GBD*, p.5.

⁵⁸Gray, p.8.