ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 7| Issue: 9| September 2021|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2021: 8.047 || ISI Value: 1.188

THE DEVELOPED AND THE DEVELOPING WORLD IN THE BIODIVERSITY REGIME

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Article DOI: https://doi.org/10.36713/epra8592
DOI No: 10.36713/epra8592

Human societies have a major impact on their environment and with the tendency to exploit inexhaustible resources man has led to the degradation of these resources. Environmental issues became the focus of international concern due to a rising awareness of the risks and implications of international environmental problems. Due to concerns regarding species extinction, depletion of genetic varieties, destruction of natural habitats, deforestation and disruptions in atmosphere there was an increased interest in preserving biodiversity. Conservation and protection of biodiversity became important as biodiversity provides the human societies with a number of important services, which include enhancing the productivity of natural and agricultural ecosystems, providing insurance against attacks on agricultural crops by pathogens, and providing us with valuable knowledge of novel genetic and molecular forms. Biodiversity offers genetic resources for food and agriculture. Living organisms provide irreplaceable environmental services upon which humanity is critically dependent, such as keeping soil fertile, absorbing pollution, breaking down waste, and pollinating crops. One study estimates that the value of 17 such natural services is between US $16-54 trillion per year, with an average of US $33 trillion per year. Man's ability to domesticate and breed more productive animals and crops- like, hens that lay more eggs and corn that resists drought, depends upon the genetic diversity within these species. Biological diversity provides the goods and services that make life on earth possible and satisfy the needs of human societies. Another important contribution of biodiversity is insurance against attack by pathogens. An example of this is the role of biodiversity in preserving the Asian rice crop from a new virus, the grassy stunt virus, carried by the brown plant hopper. This virus was destroying a large number of crops and so, rice breeders developed a form of rice resistant to this with the help of the International Rice Research Institute (IRRI) in the Philippines. The IRRI found a strain of wild rice not used commercially but resistant to the grassy stunt virus. The gene conveying resistance was transferred to commercial rice varieties, yielding commercial rice resistant to the threatening virus. This would not have been possible without genes from a strain of rice apparently of no commercial value.

Biodiversity is also a great source of knowledge. We can learn from natural organisms how to make chemicals that have important and valuable properties. An example is that of the polymerase chain reaction (PCR). This reaction is used in the amplification of DNA specimens for analysis in forensic tests and in many processes central to the biotechnology industry. Culturing requires an enzyme that is resistant to high temperatures. Enzymes with the right degree of temperature resistance were found in hot springs in Yellowstone National Park, and the heat resistance of these was then used to create an enzyme that could be used to culture DNA specimens. This enzyme is now central to the rapidly growing biotechnology industry. Asprin comes from the bark of willow trees. The bark of Yew trees has been used to derive a drug that is effective against ovarian cancer. A derivative of the Rosy Periwinkle flower is being used to cure childhood leukemia. Hence, plants and animals can be used to produce substances that are highly active pharmacologically. Plants that live in insect infested areas produce substances that are poisonous to insects, and these are used for making insecticides. Some

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snakes produce venom that paralyses parts of the nervous system and others produce venom that reduces blood pressure. Other insects produce anti-coagulants. All of these have been adapted for medical use.

As biodiversity has so many important functions and uses attached to it, its preservation and conservation became very important to all the nations of the world.

The issue of biodiversity came on the forefront, due to two reasons:

Firstly, it was realised that there was an immediate need to conserve habitats in developing nations. By 1987, a lot of evidence started coming up which showed that the destruction of biodiversity was the result of the habitat destroying activities of the developing nations. The developed world was more concerned about how others managed their biological resources. Meanwhile the developing countries were of the view that as the developed countries have already used up their natural resources in the process of industrialisation the developing countries should also be given an equal chance to move on the path of development. They also pointed out, that the developed coutries have actually destroyed a higher portion of their own natural wealth in the process of industrialisation than the developing countries so far.[1]

Secondly, it was realized that countries would require additional funds to conserve their natural resources. Conservation of biological diversity is important to all and so it was decided that everyone should bear this conservation burden. As the developed countries are financially stronger than the developing countries the onus of providing funds for conservation and preservation of biodiversity falls on the developed world.

The question then arose that where would the funds come from to conserve biodiversity? There was a need to bring about an international agreement on biodiversity due to the increase in the destruction of natural habitats, genetic resources and biological organisms. International efforts at conserving biodiversity are not new and there have been in the past many global treaties on conserving environment. Prior to 1992, there were a number of conventions that dealt with biodiversity in specific regions and a number of conventions that dealt with specific aspects of biodiversity. However, there was no global convention to cover biodiversity as a whole.

Evolution of the Biodiversity Regime

The interest in the protection of biodiversity dates back in time. Infact, protected areas in India go back to 252 B.C. when the emperor of India estabilished protected areas for mammals, birds, fish and forests. The modern conservation movement has its roots in the forests of India. It was based on the realization of three core principles: humans through their activities damaged the environment, they have a duty to conserve the environment for future generations, hence scientific and empirical methods should be applied to conserve the environment. During the British rule in India, Sir James Ranald Martin brought to light reports that depicted the extensive damage done to the forests through the large scale deforestation activities of the British. Sir Martin also lobbied intensively for the creation of forest departments that would help in forest conservation activities. In 1842, the Madras Board of Revenue started forest conservation programmes. This was the first case of state management of forests in the world. Later on in 1855, Lord Dalhousie introduced the world's first large scale permanent forest conservation model, which later spread to other British colonies as well as the United States. In the United States environmental movement took off after the Second World War. John Muir advocated for nature to be set aside for its own sake and because of his efforts the world's first national park was created at Yellowstone in 1872. In the nineteenth century many other international agreements for the protection of natural resources were signed like the River Commissions for the Rhine and the Danube which are now involved in environmental policy, emerged as arrangements for the facilitation of economic use of rivers as waterways. In 1945, the UN Food and Agricultural Organization was set up which included in its mandate the conservation of natural resources. The 1946 International Whaling Convention, estabilished a club of whaling nations for the management of harvestation of whales.

The developed countries grew richer by using the resources of the developing and underdeveloped countries. Perelman has argued that, "a rich natural resource base makes a poor country especially a relatively powerless one, an inviting target- both politically and military- for dominant nations. In the case of oil, the powerful nations will not risk letting such a valuable resource fall under the control of an independent government, especially one that might pursue policies that do not coincide with the economic interests of the great transnational corporations."[2] So

[1] Porter & Brown, Global Environmental Politics, (U.S.A.: Westview Press, 2000), p. 128.

[2] Perelman, M, "Myths of the Market", Organisation & Environment, Vol. 16, No. 2 (June 2003), p. 200.

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according to the dependency theorists, the governments in the resource rich developing countries are allowed to indulge in economically damaging activities as long as they remain loyal to the powerful countries of the North and allow them to loot their natural resource wealth.

The 1972 Stockholm Conference was the first global United Nations conference on environment. Although it was not much of a success, it actually managed to bring to the focus of the world the problem of use and appropriation of resources. International environmental issues became institutionalized along with the recognition that states have a responsibility to cooperate in efforts for the management of the global commons and trans- boundary pollution. While the North was interested in combating the problems of population growth, conservation, industrial pollution, the South was voicing its concerns about development and how did not want the North to deprive them of the benefits of economic growth. There were clashes over who was responsible for the protection of the environment and who would pay for the said protection. Developing countries insisted that efforts to protect the environment should be linked with policies that promoted their social and economic development as the developing world was less responsible for resource depletion and global pollution. This was the first time when the relationship between environment and development was first time talked about in the context of North- South relations. Between 1970s and 1980s, a number of international environmental agreements were passed like, the 1971, Ramsar Convention to preserve the wetland habitats of waterfowl, the 1972 London Dumping Convention that estabilished a framework for restricting the dumping of toxins in the sea, the 1973 Convention on International Trade in Endangered Species of Wild Flora and Fauna which banned trade in critically endangered species and limited trade in roughly 5000 animal species and 25,000 plant species threatened with extinction to exports which were non-detrimental to the species. At the same time in India, women living in the Himalayan region in North India began the Chipko Movement to protect trees from commercial logging which was causing soil erosion and deforestation.

In the 1980s the Brundtland Commission gave a report titled 'Our Common Future' which acted as a spark for environmental debates. It called for a transfer of technology and financial assistance to support sustainable development in the South. During this same time a lot of research was being undertaken on genetic resources. The developed nations through their advanced technology were bringing about a lot of new innovations- better quality of seeds by using the genetic resources of the developing countries. In the beginning, access to these genetic resources was free, but later on, the developing countries recognised that this scenario was not beneficial for them as the developed countries were not sharing their knowledge and were protecting it through intellectual property rights. As a result the developing countries started talks to restrict or charge for the access of their resources. They started pushing for greater access to biotechnology that resulted from their biological wealth. In 1989, the World Conservation Union gave a proposal through which the conservation of biodiversity and access to genetic resources came together for the first time. The World Conservation Union put forward its belief that the developed nations can be obliged to pay for the conservation of the developing world genetic resources if they realised that they would loose free access to these resources. It also proposed the creation of an international fund for the conservation of genetic resources. The publication of the Brundtland report paved way for the negotiation and signing of many new treaties like, the 1985 Vienna Convention for the Protection of the Ozone Layer, the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer and the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal that prevented traders from shipping hazardous waste from industrial countries to developing countries.

During the early 1990's thanks to the environmental NGOs, politicians like Fidel Castro and Virgilio Barco, an idea began to take shape that the North had an ecological debt to the South. In the words of Joan Martinez- Alier, "The notion of an ecological debt is not particularly radical. Think of the environmental liabilities incurred by firms (under the United States Superfund legislation), or of the engineering field called 'restoration ecology', or the proposals by the Swedish government in the early 1990s to calculate the country's environmental debt. Ecologically unequal exchange is one of the reasons for the claim of the Ecological Debt. The second reason for this claim is the disproportionate use of Environmental Space by the rich countries."[3]

By the end of the 1980s the international world was concerned that the emissions of green house gases like methane, carbon dioxide and CFCs were affecting

[3] Martinez-Alier, Joan, "Marxism, Social Metabolism and Ecologically Unequal Exchange" Paper presented at Lund University Conference on World Systems Theory and the Environment (2003), p. 25.

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the Earth's energy balance and leading to rapid global warming and climate change. In 1988, an international panel of scientists was set up to examine the risk of climate change, which gave a report that paved way for an international convention addressing this problem of climate change. In 1992, Club of Rome published their report titled 'The Limits to Growth', which drew attention to the growing pressure on natural resources as a result of mindless human activities. All these factors led to the United Nations Conference on Environment and Development in Rio in 1992, of which biodiversity became the focal point. The Rio Summit is the largest United Nations conference till date, with most countries and 117 head of states participating. The Rio Summit put environment and development on the agenda of global leaders. The Rio summit opened three conventions for signature: The United Nations Framework Convention for Climate Change, Convention to Combat Desertification and Convention on Biological Diversity.

The Convention on Biological Diversity which was opened for signature at the Rio Summit finally came into force on 29th December 1993. The Conference of Parties (COP) is the governing body of the CBD, which meets up periodically to take decisions regarding the implementation of the CBD. The COP has seven programmes of work- agricultural biodiversity, dry and sub- humid lands biodiversity, island biodiversity, coastal and marine biodiversity, mountain biodiversity, forest biodiversity and inland waters biodiversity. It sets out key issues for consideration, identifies potential outputs and the means of achieving these outputs as well as the time period in which it will achieve them.

The Convention on Biological Diversity aims to achieve the biodiversity objectives of:

- Conservation of biological diversity,
- Sustainable use of its components and
- Fair and equitable sharing of benefits arising out of the utilization of genetic resources.

CBD can best be understood as a confluence of different movements whose main concern is the centralized management of global land use planning. Whether the movement involved parks and protected areas, farmer rights movement or bio-prospecting the same theme occurs.[4] Land is used for a variety of different purposes like agriculture, recreation, research, development etc. There is a need to divide these functions between lands used primarily for production and those set aside for other functions. In areas where land is used for multiple functions, there can be conflicting societal demands for biodiversity conservation, nature protection, tourism and recreation which could overlap. Where diverse resource users are involved, differences will emerge between human demands and the capacity of the rural landscape to satisfy them.[5] As different users are linked with one another, an activity by one user will have consequences for the other user as well. This would lead to conflict amongst the users on the use of land. The topics for discussion under the terms of the Biodiversity Convention concern the mechanisms for intervening within national development choices regarding land use, to effect a diversity of functions at the global level and to provide the incentives to do so.

The convention on biological diversity can not only be looked as an effort of the countries of the world to protect their biodiversity but it has become a political issue fraught with political undertones. The two major players in this debate on the protection of biological diversity are the developed countries of the North and the developing and underdeveloped countries of the South. The bulk of the countries possessing these biological resources lie in the south, while the north possesses the technological know-how and the financial resources. It was the CBD that finally gave States the right of sovereign control over their natural resources. Article 15, of CBD makes it clear that States have sovereign rights over their genetic resources and only they can govern the right to determine access to their resources. Access where granted shall be on mutually agreed terms and subject to prior informed consent of the contracting party. There is no such concept as free scientific access to resources.

On the issue of patents and technology transfer the convention document is somewhat ambiguous as it tries to appease both the developed and developing nations. Article 16, of the convention recognises that both access to and transfer of technology among nations is very important. It also specifies that the developing countries which provide genetic resources would in return be given access to technology relevant to conserving and sustainable use of their genetic resources. This technology includes technology protected by patents and other intellectual property

[4] Timothy Swanson, "Why is there a Biodiversity Convention? The International Interest in Centralised Land Use Planning", International Affairs, Vol. 75, No. 2, 1999, p. 308.

[5] Brouwer, F., and M. Van der Heide, Introduction in Multifunctional Rural Land Management, Economics and Policies, (London: Earthscan, 2009), pp. 1-13.

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rights. But this access is subject to the terms of international law.

Article 19, of the convention document, allows the developing countries providing the genetic resources to participate in biotechnological research activities. It also promotes fair and equitable sharing of the results and benefits arising from biotechnology based upon the genetic resources of the developing countries.

The Convention on Biological Diversity legitimized access to genetic resources. It was concerned about sharing the benefits of genetic information that were the result of the developing countries genetic resources. Most of the biotechnologies, patents are found in the developed world while the genetic resources are situated in the developing world. Huge transnational corporations earn huge profits from the technology obtained from the developing countries resources but these profits do not flow back to the developing world. It is because of the CBD that the developing countries also started to get some benefits of commercial exploitation of their genetic resources.

The global issue concerned with the biodiversity convention is the division of products between reserve uses and high productivity uses. The biggest question that the world faces is what is to be preserved and what is to be consumed and how much to be consumed? If each state pursues its own narrowly defined self interest in the determination of its land uses, then each will pursue maximum productivity and this will eliminate the base of reserve lands that currently supply all other uses.[6] The land should be divided on the basis of its use, that is, land primarily used for production purposes and land used for other purposes like research and knowledge, recreation and leisure. Since the developed world have already used up a substantial percentage of their land for development purposes, the onus of setting up land aside for other diverse purposes now rests on the developing world. But why would the developing countries do so? CBD provides such incentives to the developing countries that would make induce them to set aside land for these other purposes. CBD is concerned with helping the member countries make such development choices that would have an impact upon their natural resources. Our natural resources are our biggest asset and can be used as a great bargaining chip in international politics for realizing our objectives. The developing countries provide the developed countries their genetic resources for research, but what do they actually gain from this? One such gain can be achieved through bioprospecting agreements between the owners of resources and their users. Bioprospecting agreements can provide the developing countries with financial resources for the conservation of biodiversity. For example, InBio in Costa Rica gives 10% of its research funds and 50% of its royalties to the Ministry of Natural Resources. It also makes contributions to other conservation programmes and public universities. Another example is that of an Australian pharmaceutical company AMRAD which gave US $ 380,000 in conservation projects in Australia, dedicated to the protection of rare and endangered flora and fauna and other conservation projects.

No one can acertain what the situation would have been without the CBD regime, but nevertheless the scenario could have been much worse.

[6] Swanson, Timothy, "Why is there a Biodiversity Convention? The International Interest in Centralised Land Use Planning", International Affairs, Vol. 75, No. 2 (1999), p. 331.

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