Indian J. Pl. Genet. Resources 9(1): 1-10, 1996

IMPLICATIONS OF THE CONVENTION ON BIOLOGICAL DIVERSITY : INDIAN APPROACH*

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The International Convention on Biological Diversity, which was adopted during the Earth Summit (UNCED) held in Brazil in 1992, came into force in December, 1993. Having ratified the Convention in February 1994, India is now obligated to undertake actions to implement its various provisions. This paper describes the genesis, objectives and salient features of the Convention. It also highlights various approaches to be taken into consideration by India for achieving the objectives and implementing its various provisions.

Key words : Convention, biological diversity, implication, Indian approach.

The Convention on Biological Diversity (CBD) was adopted by 171 countries during the historic United Nations Convention for Environment and Development (UNCED), known as the Earth Summit, at Rio de Janeiro, Brazil, in June, 1992 (UNEP, 1992), and came into force from 29th December, 1993. India ratified the Convention on 18th February, 1994. As per the provision, the Convention then became operative in the country from 19th May, 1994, that is 90 days after ratification.

GENESIS

The concern raised by conservationists during the past several decades over the rapid loss of biological diversity was given a sharp focus by the World Conservation Union (IUCN). Subsequently, this was politically and legally recognised at the international level during the Stockholm Conference on the Human Environment in 1972. These concerns were brought into the public domain by the acclaimed report *Our Common Future* (WCED, 1987). The Governing Council of the United Nations Environment Programme (UNEP), through its decision 14/26 of June, 1987 established an *ad hoc* working Group of Experts on Biological Diversity. Based on inputs provided by the Working

*The views expressed in this paper not necessarily that of the Government of India

Group during 1988-90, the Governing Council made this group the Inter-governmental negotiating Committee for the Convention on Biological Diversity. The actual negotiations took place during 1991-92. India contributed significantly to the draft of the Convention.

As the negotiations progressed through five normal sessions, the elements of the proposed Convention went through a sea change, becoming more complex. Sanchez (1994), who was the Chairperson of the Negotiating Committee, listed the following issues, which became the core of the negotiations:

- the cost of taking measures to conserve biological diversity *versus* the cost of not taking any measures;
- access to genetic resources and different possibilities of regulating it;
- whether the focus should be on wild species or should include both wild and domesticated species;
- access to and transfer of technology, including biotechnology, which must be considered for conservation and rational use of the components of biological diversity;
- the eventual source and method of funding the costs of the measures that would be agreed upon; and
- the consequence and impact of biodiversity conservation on trade and development.

SALIENT FEATURES OF THE CONVENTION

Preamble and objectives

The preamble of the CBD recognises and reaffirms (UNEP, 1992):

- the intrinsic value of biological diversity;
- the sovereign rights of States over their biological resources;
- the fundamental requirements of *in-situ* conservation of ecosystems and natural habitats;
- the supporting role of *ex-situ* conservation;
- the vital role of local communities and women in the conservation and sustainable use of biological diversity;
- the desirability of sharing equitably the benefits arising from the use of traditional knowledge, skills, innovations and practices;
- the importance of and need to promote regional and global cooperation for conservation; and
- the requirement of substantial investments to conserve biological diversity.

The objectives of the Convention are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources and by appropriate transfer of technologies, taking into account all rights over those resources and to technologies, and by appropriate funding (UNEP, 1992).

Provisions

Through its 42 Articles, the Convention (UNEP, 1992) recognises national sovereignty over biological resources (Art. 3); calls for taking general measures for conservation and sustainable use (Art.6); identification and monitoring (Art. 7); *in-situ* and *ex-situ* conservation (Art. 8, Art.9); sustainable use of components of biological diversity (Art.10); incentive measures (Art.11); research and training (Art.12); public education and awareness (Art.13); and impact assessment and minimising adverse impacts (Art. 14). The Convention's provisions facilitate access to genetic resources on 'mutually agreed terms' and with the 'prior informed consent' of the country providing the resources, with the recipient country being committed to share the accruing benefits (Art. 15). It also provides for the transfer of technologies, including biotechnologies, on 'fair and most favorable' terms, from the developed to the developing nations, which are the main providers of genetic resources (Art.16). Moreover, the Convention calls on the private sector to facilitate access to and transfer of such technologies developed by them (Art.14.4). The Contracting Parties are to cooperate in this regard to ensure that patents and other intellectual property rights are supportive of, and do not run counter to, the objectives of the Convention (Art.16.5). It commits the parties to consider the need for, and modalities of, a protocol in the field of safe transfer, handling and use of any living modified organism resulting from biotechnology (Art. 19.3). The Parties are also to take measures to facilitate access on a fair and equitable basis, and on mutually agreed terms, to the results and benefits arising from biotechnologies (Art. 19.2). The developed Country Parties are committed to contribute to a fund to enable developing Country Parties to meet the 'agreed full incremental costs' for implementing the provisions of the Convention (Art.20.2). This financial mechanism is to 'operate within a democratic and transparent system of governace' and 'function under the authority' of the Conference of Parties (Art. 21).

INDIAN APPROACH TOWARDS IMPLEMENTATION

Principle

From the national point of view, the Convention (Art. 3) establishes the most important principle of States having sovereign rights to exploit their own resources, while ensuring that their activities do not cause cross-boundary damage to the environment of other States.

General measures

Art.6 establishes a set of norms for developing national strategies, plans and programmes for the conservation and sustainable use of biological diversity and their integration into sectorial or cross-sectorial policies, plans and programmes. The Ministry of Environment and Forests (MOEF), which is the National Focal Point/Nodal Agency for this purpose, had (prior to UNCED) already finalised the *National Conservation Strategy and Policy Statement on Environment and Development* (GOI, 1992). This document incorporates a broad strategy for promoting conservation of biological diversity in the country, which is supported by earlier policy instruments including the National Forest Policy (GOI, 1988) and the National Wildlife Action Plan. MOEF has also undertaken a Country Status Report, which is in the final stages of preparation.

Identification and monitoring

Conservation and sustainable use of biological diversity requires actions at several levels. In order to (a) identify critical components i.e. ecosystems, species and genomes (Art. 7a); (b) monitor such components to determine priorities (Art. 7b); (c) identify activities and monitor their adverse impacts (Art. 7c); (d) improve data acquisition and management (Art. 7d), India has established a system of protected areas including special conservation areas like wetlands, mangroves and biosphere reserves. The multifarious tasks are shared by a network of official organisations, including the Botanical, Zoological and Forest Surveys of India (BSI, ZSI and FSI), the Indian Council of Agricultural Research (ICAR) and the Council of Scientific and Industrial Research (CSIR) systems, the Wildlife Institute of India (WII), the Indian Council of Forestry Research and Education (ICFRE), and the Central and State Pollution Control Boards. Also involved are the universities and various non- government organisations (NGOs) such as the World Wide Fund for Nature (WWF), the M.S. Swaminathan Research Foundation (MSSRF), the Bombay Natural History Society (BNHS), Centre for Science and Environment (CSE) etc. The gaps identified would help to strengthen the activities.

In-situ conservation

Article 8 of the Convention relates to *in-situ* conservation; it calls for establishing a national system of protected areas (PAs); development of guidelines for selection, establishment and management of PAs; regulating access to biological resources within or outside the PAs; and promoting protection in natural surroundings and conservation areas adjacent to PAs. India already has 80 National Parks and 441 Sanctuaries covering 1,48,700 sq km area which is about 4.5 per cent of the total geographical area (GOI, 1996). Further expansion of the PAs is envisaged on the basis of a systematic study

carried out by Rodgers and Panwar (1988). This would reduce the gaps in various biogeographic units and biomes. In addition, special conservation areas including 16 wetlands, 15 mangroves, 4 coral reefs and 8 biosphere reserves have been particularly designated by MOEF for scientific management and conservation. The National Afforestation and Ecodevelopment Board (NAEB) has been given specific mandate for conserving areas adjacent to PAs and overall ecodevelopment activities for restoring degraded ecosystems. Recovery of endangered and threatened species (Art. 8f) is covered through *ex-situ* preservation areas (GOI, 1994).

Of particular concern is to control the use of living organisms modified through biotechnologies and to guard against the associated risks (Art. 8g). In India, in 1989 MOEF in consultation with the Department of Biotechnology (DBT) had already framed rules to govern the manufacture, use, import, export and storage of hazardous microorganisms/cells. These rules regulate aspects of safety in research and production and provide for granting approval to proposals for use of hazardous microorganisms and recombinants in research and industrial production, including their release into the environment. MOEF has proposed to expand the scope of these rules through further guidelines and introducing risk-assessment procedures for the release of living modified organisms in contained and open environments and also for granting environmental impact clearance.

The obligation to control threatening alien or exotic species (Art. 8h) necessitates extensive review (in consultation with the concerned government agencies) of the scope of existing quarantine measures for screening biomaterials entering the country, with reference to fungal, bacterial and viral diseases and pests. Similarly, the aspects relating to the need of maintaining compatibility of physical components especially land and water, with the conservation of biological diversity shall have to be deliberated upon.

Article 8 (j) stresses the need to respect, preserve and maintain the knowledge, innovations, skills and practices of indigeneous/local communities, and to promote their wider application. The National Forest Policy and the National Conservation Strategy endorse this. MOEF, the Indian Council of Medical Research (ICMR) and the Anthropological Survey of India (ASI) are engaged in collecting information towards this end. In the light of the Convention, the existing arrangements need further review, for which MOEF has already initiated appropriate action.

MOEF has already done a comprehensive review of existing legislations and is in the process of formulating specific legal proposals for the proposed Biological Diversity (Conservation) Act. The details of legal requirements are dealt separately (Chauhan, 1996). Both financial and other kinds of support for *in-situ* conservation (Art.8m) is being provided under existing national

policy, legislation and institutional mechanism. However, it is desirable that the existing mechanisms be further strengthened through internal and external support.

Ex-situ conservation

To complement the *in-situ* measures (Art. 8), the Convention (Art. 9) also covers measures to be adopted for *ex-situ* conservation. These include establishing facilities for research, recovery and rehabilitation of threatened species; regulating and managing the collection of biological resources from natural habitats for *ex-situ* conservation purposes; and adequate financial and other support. India has already made concerted efforts in this direction. For example, under the aegis of ICAR, the three National Bureaus of Plant, Animal and Fish Genetic resources (NBPGR, NBAGR and NBFGR), have been established for *ex-situ* conservation and for undertaking research on domesticated biological diversity. Wild biological diversity has been conserved through 275 *ex-situ* areas and 66 botanic gardens. The research component is pursued through universities, and the institutions of ICAR, CSIR, BSI, ZSI, WII, ICFRE, the Salim Ali Centre of Ornithology (SACON) and the G.B. Pant Institute of Himalayan Environment and Development etc. The research on biotechnological aspects is supported by DBT through the national facility for Microbial Type Culture, Blue-green Algae, Marine Cyno-bacteria, Plant Tissue Culture Repository, Animal Tissue and Cell Cultures, Animal House, Seed Banks, Medicinal Plants, Genetic Engineering Units, Biochemical Engineering, Immunology and Biosafety etc. However, the financial and technical/scientific inputs need to be augmented, for which the cooperation of other Contracting Parties to the Convention is essential (GOI, 1994).

Sustainable use of components of biological diversity

Article 10 emphasises that sustainable usage must be integrated into national decision-making processes, through measures to control adverse impacts, protecting customary and traditional use, providing support to local populations in remedial action in degraded areas and encouraging cooperation between government and private sectors.

Through the various policy instruments relating to wildlife and forests, India has tried to integrate sustainable usage into decision making. However, the lack of organic linkages between various agencies both at the national and state levels has resulted in a rather unsatisfactory situation. Conservation of marine biological diversity and characterisation of micro-organisms have not been adequately addressed. On-farm conservation of agri-biological diversity is also rather poor. As a result, a significant number of traditional varieties

of important crops have been lost forever. The guidelines for imapct assessments of projects for industry and mining, thermal power, river valley development, rail/road highways, ports and harbours, airports, townships etc. lack focus on biological diversity aspects. An exercise is being undertaken to review these guidelines. For the purpose of sustainable use of ecosystems, criteria for determining ecological fragility have been developed and are being implemented.

Incentive measures

The Convention states that States should adopt economically and socially sound incentives (Art.11) for conservation and sustainable use of biological diversity. In this direction, the Government of India has launched several programmes. In view of the provisions of the Convention, further incentives need to be evolved for on and off farm conservation of agri-biological diversity. Similarly, incentives will have to be given to local communities for conserving and sustainably using rich freshwater and marine biological diversity.

Research and training

Education, training and research concerning certain aspects of biological diversity (Art. 12) are currently being promoted through (a) the universities; (b) government agencies such as MOEF, Ministry of Science and Technology (MST), DBT, CSIR, ICAR, ICFRE, WII, SACON, G, B. Pant Institute of Himalayan Environment and Development, and other associated institutes/organisations and (c) NGOS such as WWF (India), BNHS, Centre of Environmental Education (CEE) etc.

Public education and awareness

The National Environmental Awarenessess Campaign has had 'Biological Diversity' as its theme in current years. Communication media including television, radio, the national and regional Press have also been used to generate awareness about the Convention. NGOs are being actively involved throughout the country to spread information and understanding of the importance of conservation and sustainable use of biological diversity, and the measures required for this (Art. 13a). The University Grants Commission (UGC) and the National Council of Educational Research and Training (NCERT) have also initiated action to develop syllabi for undergraduate and postgraduate courses. The cooperation of other Contracting Parties has also been sought, including nations in the South Asian region. Collaboration with international agencies such as FAO, UNDP, UNEP, IUCN and the World Resources Institute is also being explored.

Impact assessment and minimising adverse impacts

Article 14 of the Convention deals with (a) introducing procedures requiring Environmental Impact Assessment (EIA); (b) arrangements to account for the environmental consequences of programmes and policies; (c) and to account for the adverse impact beyond national jurisdictions; (d) notification of adverse effects upon other States as well as initiation of action to prevent damage; and (e) promoting national arrangements for emergency responses to activities threatening biological diversity and establishing joint contingency plans with other Contracting Parties.

India's existing arrangements, under the Environment (Protection) Act, provide for impact assessment of development projects in the public sector alone, such as projects for river valleys and irrigation, industry and mining, thermal power, ports and harbours, railways, highways, airports, townships etc. It is proposed to extend the scope of EIA to private sector development projects as well, and to provide statutory backing for this.

Access to genetic resources

Access to genetic resources is covered by Art. 15 which provides for (a) recognition of the rights of sovereign states; (b) creating conditions to facilitate access to genetic resources by other countries; (c) and d) access on mutually agreed terms with prior informed consent; and (e) developing and carrying out research with full participation of the Contracting Parties.

Access to genetic resources is facilitated through bilateral arrangements under FAO which regulates the import/export of seeds, and the country's export-import policy under the Foreign (Trade) Act. However, arrangements to govern access to genetic resources in the future are yet to be worked out in accordance with the provisions of Articles 15, 16 and 19 of the Convention.

Access to and transfer of technology

The Convention recognises the importance of access to and transfer of technology and advocates that countries take facilitating, legislative, administrative and policy measures, under fair and most favorable terms to both government and private sectors. Granting access to and transfer of technology must take into account the issues relating to patents and intellectual property rights.

Since this is closely linked to access to genetic resources and will be crucial for successfully implementing the provisions of the Convention, India will have to carefully assess and review the existing protocols/treaties such as provisions of GATT and TRIPS along with our own Patent Law and other related legal regimes. The cooperation of other Contracting Parties may be

sought, as and when it is necessary. India will have to evolve a legal regime in a manner that it protects the knowledge, innovations, skills and practices of the local communities relating to the use of genetic resources, while taking into account the implications arising from the intellectual property regime.

Exchange of information and technical and scientific cooperation

Regarding the exchange of information (Art.17) and technical and scientific cooperation (Art.18). India has been engaged in collecting relevant information and development of technologies through independent or joint programmes/ventures undertaken by both government and private agencies. In the light of these two Articles, ongoing programmes could emphasise and integrate aspects related to biological diversity.

Handling of biotechnology and distribution of its benefits

As mentioned earlier, India already has rules for the manufacture, use, import, export and storage of genetically engineered organisms/cells which were adopted in 1889 under the Environment (Protection) Act. Besides, DBT has been actively promoting research activities related to biotechnologies through bilateral joint ventures in the frontier areas. India is also participating in developing the modalities for biosafety protocol and other related matters (Art. 19).

Financial resources

For effective implementation of the provisions of the Convention, India is already providing financial support for national activities in accordance with its capacity. However, the gaps identified in ongoing conservation measures and activities towards sustainable utilisation of biological diversity, indicate that India would require substantial support from the financial mechanism set up under the Convention. For this purpose, a National Action Plan is being drawn up to identify the areas for formulation of specific project proposals for bilateral and multilateral funding.

CONCLUSIONS

It is evident that India has already taken significant steps towards implementing the International Convention on Biological Diversity, and the four principles on which it is based: conservation of biological diversity; regulated access to genetic resources; access to and transfer of technology; and international equity in sustainable utilisation of the components of biological diversity. However, there are some challenging issues for which the country will have to take new policy initiatives. These issues are :

— developing effective data bases for monitoring the causes of loss of biological diversity;

— strengthening *ex-situ* and *in-situ* conservation measures;

— developing legal procedures for providing access to genetic resources without affecting the rights of local communities, their knowledge, innovations, skills and practices;

— developing regulatory mechanism dealing with technology/transfer, biosafety, rights of local communities, regional cooperation and augmentation of financial resources; and

— enhancing capacity in the institutional mechanism, human resources and technology.

These issues need to be comprehensively addressed by policy makers, administrators, scientists, and government agencies and NGOs through a consultative process, considering both short and long term requirements. The recommendations evolved through such a process would enable the Government of India to evolve a comprehensive 'National Programme on Conservation of Biological Diversity' (MSSRF, 1993).

REFERENCES

Chauhan K.P.S. 1996. Legal requirements for fulfilling obligations under the Convention on Biological Diversity in India. *Indian J. Pl. Genet. Resources* 9(1): 1-10.

GOI. 1988. National Forest Policy. Ministry of Environment and Forests, Government of India, New Delhi.

GOI. 1992. National Conservation Strategy and Policy Statement on Environment and Development. Ministry of Environment and Forests. Government of India, New Delhi.

GOI. 1994. Country Paper - India. International Consultation on Biological Diversity. MOEF, UNEP and IISC, Bangalore.

GOI. 1996. Annual Report. Ministry of Environment and Forests, New Delhi.

MSSRF. 1993. Policy Actions for Biological Diversity. Proceedings No. 5. M.S. Swaminathan Research Foundation, Madras.

Rodgers W.A. and H.S. Panwar. 1988. Planning a protected area network in India. Wildlife Institute of India, Dehradun.

Sanchez V. 1994. "The Convention on Biological Diversity: Negotiations and Contents". *In*: Sanchez, V. and Juma, C. (eds.) Biodiplomacy. African Centre for Technology Studies, Nairobi.

UNEP. 1992. Convention on Biological Diversity. United Nations Environment Programme, Nairobi.

WCED. 1987. Our Common Future. World Commission on Environment and Development. Oxford University Press, Oxford.