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LEGAL REQUIREMENTS FOR FULFILLING OBLIGATIONS UNDER THE CONVENTION ON BIOLOGICAL DIVERSITY IN INDIA*

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The implementation of the Convention on Biological Diversity, which came into force in 1993, requires a multi-pronged strategy. The paper outlines the legal requirements, and suggests the elements that could form part of specific legal proposals for the proposed Biodiversity (Conservation) Act, an umbrella Act.

Key words : Convention, biological diversity, legal requirements

India is one of the 12 identified centres of origin of cultivated plants and of mega-biological diversity and has two of the 18 identified 'hotspots' - the Eastern Himalaya and the Western Ghats. Nearly 45,000 plant species and 81,000 animal species have been reported so far based on surveys undertaken by the Botanical and Zoological Surveys of India (BSI and ZSI). There is a significant percentage of endemic, rare and threatened species. The marine habitat comprising about 75,000 kms of coastline, and extending 200 nautical miles off-shore, is expected to harbour very rich resources of marine species of both economical and ecological value. According to world biogeographic classification (Udvardy, 1975), India represents two major realms, three biomes and 12 biogeographic regions. Recently, the Wildlife Institute of India (WII) has proposed a modified classification dividing the country into 10 bioecographic regions; Trans-Himalayan, Himalayan, Indian Desert, Semi-Arid, Western Ghats, Deccan Peninsula, Gangetic Plains, North-East, Islands and Coasts (GOI, 1994).

India is represented by the rich germplasm of plants of agri-horticultural, medicinal and other industrial values. The entire range of genetic diversity of buffalo in the world is also represented by eight breeds found in India. Breeds of cattle number 26, sheep 40, goat 20, camel 8, horse 6 and donkey 2. There

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are 18 types of poultry. Yak, Mithun, Geese and Ducks have also been domesticated (GOI, 1994). This wide range of diversity in domesticated plants and animals has evolved largely due to diverse cultural practices adopted by the people of the country.

MAJOR FACETS OF THE CONVENTION

The adoption of the international Convention on Biological Diversity (CBD) was an important and historic milestone at the United Nations Conference on Environment and Development (UNCED), in Brazil in 1992. After the necessary ratification, the CBD has come into force from 29th December, 1993. Its objectives are the conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the utilisation of genetic resources (Sanchez and Juma, 1994).

The CBD recognises the intrinsic value of biological diversity; the sovereign rights of States over their biological resources; the fundamental requirement of *in-situ* conservation of ecosystems and habitats; the supporting role of *ex-situ* measures; the vital role of local communities and women in conservation and sustainable use of biological diversity; the desirability of equitably sharing 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.

Enunciated in 42 articles, the CBD establishes a framework for conservation, access to genetic resources, transfer of technology, scientific and technical cooperation, information exchange, the generation of scientific and financial resources through new and additional funding from an identified financial mechanism. This is likely to make the Convention an extremely important instrument for the conservation of biological diversity not only for its own sake but also because of its potential benefits for human beings. From the point of view of India and other developing countries, the CBD appears advantageous for setting up a financial mechanism for supporting conservation measures and other activities such as access to genetic resources, technology transfer and capacity-building, which would bring many benefits in the field of agriculture, forestry, fisheries, pharmaceuticals and industrial applications. (UNEP, 1992).

Since the CBD is now an internationally binding treaty, to which India is a signatory, the provisions of the Convention will have to be appropriately implemented in letter and spirit. Therefore, various management and scientific approaches need to be developed. These approaches will have to be adequately supported by a comprehensive legal regime with the primary objective of providing a framework for the conservation of biological diversity, sustainable

use of its components and equitable sharing of benefits arising from such utilisation.

NEED FOR BROAD-BASED LEGISLATION FOR IMPLEMENTING THE CONVENTION

The country's biological diversity is threatened due to many reasons: fragmentation of habitats, deforestation, over-exploitation of the genetic resources, rapid changes in the hydrological regime and land use patterns, soil degradation, air and water pollution, the adverse impact of development projects and increase in the population. As a result, a significant number of animal species (including 81 species of mammals, 47 birds, 15 reptiles, three amphibians) and 1500 plant species are considered vulnerable and endangered. About 20 species are categorised as 'possibly extinct', as these have not been sighted during the last 6-10 decades (GOI, 1994). Poaching and illegal trade in wildlife products have also adversely affected biological diversity.

The CBD has very wide scope with reference to the various legal issues concerning biological diversity. India also has numerous laws which deal with preservation of the specific components of biological diversity. At the request of the Ministry of Environment and Forests (MOEF), which is the nodal agency for implementing the Convention, Kothari and Singh (1992) analysed the central Acts and highlighted significant gaps. The priority elements requiring legal support are as follows :

- Survey, identification, characterisation and monitoring;
- *Ex-situ* and *in-situ* conservation measures;
- Sustainable use;
- Access to genetic resources including Intellectual Property Rights (IPRs);
- Access to and transfer of technology including IPRs;
- Biotechnology and biosafety;
- Safeguarding community rights including their knowledge, skills, innovations and practices.

SPECIFIC LEGAL REQUIREMENTS

Based on a detailed analysis of the various Articles of the Convention, nearly 50 action points have been identified (Chauhan, 1993). Action points which require legal support are discussed below.

Survey, identification, characterisation and monitoring

The convention (Art. 7) recommends identification and monitoring of ecosystems, habitats and species (as per the CBD Annexure I) and also

mechanisms for monitoring the activities directly associated for both loss and enhancement of biological diversity (UNEP, 1992). At present, India has no legal provisions stipulating the authenticated identification of wild and domestic species of plants, animals and micro-organisms. Therefore, it is important to have specific legal provisions for a uniform accepted nomenclature, and to empower the BSI and ZSI for wild species and the three Bureaus of Plant, Animal and Fish Genetic Resources for domesticated species to issue legally validated certificates for correct identification. This could be further supported by maintaining a National Register for an authenticated record of Indian biological resources. In addition, provisions are required to evolve guidelines for continuous evaluation of the status of biological diversity at ecosystem, species and genetic levels. These may vary from ecosystem-to-ecosystem and species-to-species. Specific procedures for Environmental Impact Assessment (EIA) of changes affecting nature, the dynamics and functioning of habitats are important elements. One of the biggest challenges for legal experts is to develop guidelines for environmentally sound and sustainable use of land and marine resources.

Conservation measures

India has established a wide network of protected areas (PAs) covering more than 4.5 per cent of the total geographical area; in addition there are 7 biosphere reserves, 16 wetlands, 15 mangroves and 4 coral reef areas. However, the existing Central Acts only govern certain components - wildlife, forests, water and air pollution. Therefore, more specific legal provisions are needed to focus particularly on threatened, rare and endemic species and agro-biodiversity rich areas; and to safeguard against the possible risk of introducing exotic and alien species which may adversely affect natural ecosystems. Besides, the mechanism for establishing and enforcing liability for activities causing loss of habitats, or of the components of biological diversity needs to be evolved and made mandatory.

Sustainable use

There are about 24 Central Acts on the use and extraction of certain natural resources (Kothari and Singh, 1992). These legal instruments do provide some regulatory mechanisms for wild biological diversity but domesticated diversity is not adequately addressed. The specific legal provisions for sustainable use of biological resources must cover protection of customary use, remedial action for enhancement, a mechanism to involve panchayats and other representative local bodies for conservation, mechanisms for liability and compensation, and adequate legal penalties for the activities responsible for the loss of biological diversity.

Table 1. Central Legal Instruments Relevant to Biological Diversity*

1. **Agricultural and Processed Food Products Export Development Authority Act, 1985/1986**

   -Promotion and regulation of export of agricultural products specified in schedules - includes medicinal plants

2. **Agricultural Produce (Grading and Marking) Act, 1937**

   - Fixing grade designations to indicate quality of any specified agricultural produce (3a, b)

   -Prohibition or restriction on trade in wrongly marked/graded produce (3g)

   -Extension of such provisions to any other article (incl. non- agricultural articles) [6]

3. **Cardamom Act, 1965**

   -Provisions as in Rubber Act (see below); includes seeds.

   -Provision for prohibiting/restricting export/import of cardamom (21). Applicable to *Elettaria cardamomum* Maton, but extendable to any other plant notified by Cardamom Board [3].

4. **Coconut Development Board Act, 1979**

   -As in Rubber Act, Tea Act, Cardamom Act, etc.

5. **Customs Act, 1962**

   -Regulation of import-export specificially for :

   a) The protection of human, animal or plant life or health (11 (t)]

   b) The conservation of exhaustible natural resources [11(m)]

   -Regulation of transportation and storage of notified items [11 (j, k, l, m)].

6. **Destructive Insects and Pests Act, 1914**

   -Prohibition or regulation of import of any "articles" which may cause infection to any plant [3(1)]

   -Prohibition or regulation or movement, between states within India, of articles likely to cause infection to any plant [4A]

   Note: 'articles' includes insects and plants

7. **Environment (Protection) Act, 1986**

   -General measures to protect environment [3(i)]

   -Restriction of industrial and other processes/activities in specified areas [3(2)(v)]

   (Read with Rule 5 of Environment (Protection) Rules, 1986)

   -Prevention and control of hazardous substances, including their manufacture, use, release and movement [3(2), 7,8]

8. **Fisheries Act, 1897**

   -Prohibition on use of explosives for fishing [4(1)]

   -Prohibition on use of poisons for fishing [5]

   -Regulation on fishing in private waters, with consent of owners/right holders [6(2) & (3)]

   -Prohibition of all fishing in specified waters for maximum 2 years [6(4)]

9. **Forest Act, 1927**
   -Setting up and managing reserved forests [Chapter II]
   -Setting up and managing village forests [Chapter III]
   -Setting up and managing protected forests [Chapter IV]
   -Protection on non-government forests and lands [Chapter V]
   -Control of movement of forest produce [Chapter VII]
   -Control of grazing/trespass by cattle in forest land [Chapter X]
10. **Forest (Conservation) Act, 1980**
   -Prohibiting or regulating non-forest use of forest lands [2]
11. **Import and Export (Control) Act, 1947**
   -Prohibition or restriction on imports and exports of specified items [3].
   -Regulations on transportation of specified items [4e]
12. **Marine Products Export Development Authority, 1972**
   -Establishment of an Authority for developing and controlling marine products [4, 9(1)]
   -Developing and regulating off-shore and deep-sea fishing; taking measures for conservation; fixing standards for export; regulating exports [9(2a, c, f)]
   -Prohibition/restriction on export and import of marine products [20(1)]
13. **Maritime Zones of India (Regulation of Fishing by foreign vessels) Act, 1980**
   -Regulation of fishing in India's EEZ by people using foreign vessels [3]
   -Permits only to be granted within definition of public interest, and for scientific research, experiments, etc. [5(3), 8]
14. **National Dairy Development Board Act, 1987**
   -Establishment of a Board which promotes dairy development and other agriculture based industries [4, 16(1a)]
   -Financing and facilitating animal husbandry, agriculture, high yielding cattle (including import of semen), import-export of milch animals and bulls and general enhancement of cattle wealth [16(1)]
15. **National Oilseeds and Vegetable Oils Development Board, 1983**
   -As in Rubber Act, etc. special focus on providing farmers, especially seeds, and certified seeds of high quality, and for improved methods of cultivation.
16. **New Seed Development Policy, 1988**
17. **Prevention of Cruelty to Animals Act, 1960**
   -Restrictions on cruel treatment of animals, including use, transportation, and trade [Chapter III, and Rules under Secton 38].
   -Restrictions on use of animals for purposes of experimentation and performances [Chapter IV & V].
18. **Rubber (Production and Marketing) Act. 1947**
   -Establishment of Indian Rubber Board, with function of developing/encouraging improved rubber cultivation and marketing, advising or import/export [B(1) & (2)]
   -Restrictions on right of rubber planters - licence required to plant or replant where to plant, etc. [17]
   Note: Applicable to 4 species of rubber initially, more if Board so notifies [Definitions]

19. **Seeds Act, 1966**

-Regulation on quality of seeds of notified food crops, cotton and fodder, to be sold for agricultural purposes [5,6]

-Restriction on export/import of notified seeds [12]

-Exemption to persons selling/delivering, on own premises, seeds grown by them [24]

20. **Spices Board Act, 1986**

-As in Rubber Act, etc., for cardamom; for other spices, restricted to export-import development and regulation.

21. **Tea Act, 1935**

-As in Rubber Act, etc. includes restrictions on export of tea seeds [17]. Applicable to one species, *Camellia sinensis*, presumably to all the its varieties.

22. **Territorial Waters, Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act, 1976**

-Establishment of sovereign rights over waters and seabed within the continental shelf and exclusive economic zone (200 nautical miles from nearest appropriate point on Indian territory) [3(1), 5(1), 6(2), 7(4)]

-Sovereign right to explore, exploit, conserve and manage resources of continental shelf and EEZ [6(3), 7(4)]

-Notification of any area within this zone for purposes of protection of resources and conservation of marine environment [6(5), 7(6)]

23. **Tobacco Board Act, 1975**

-As in Rubber Act, Tea Act, Cardamom Act, etc.

24. **Wildlife (Protection) Act, 1972 and Wildlife (Protection) Amendment Act, 1991**

-Restriction or prohibition on hunting of animals [Chapter III]- Protection of specified plants [Chapter IIIA]

-Setting up and managing sanctuaries and national parks [Chapter IV]

-Setting up of zoo authority, control of zoos, and captive breeding [Chapter IVA]

-Control of trade and commerce in wild animals, animal articles and trophies [Chapter V & Chapter VA]

*Based on Kothari and Singh (1992)

Access to genetic resources including IPRs

The provisions relating to access to genetic resources need to be specially focused on developing model agreements regulating access through 'Prior Informed Consent'; equitable sharing of benefits on 'Mutually Agreed Terms'; measures for local communities to protect their rights relating to knowledge, skills, innovations, practices etc.; the transfer of genetic resources as per the provisions of the CBD. Also important are legal measures to cover the repatriation of germplasm (given away prior to the Convention) from international collections, and a mechanism for regional cooperation in relation to the genetic resources commonly found in this region. The present Patent

Act needs to be refined so that the Intellectual Property Regime relating to living forms becomes compatible with the patent laws prevalent in the world. This is necessary in the light of TRIPS provisions under GATT (1993) which has been ratified by India.

Access to and transfer of technology

Regarding access to and transfer of technology, including biotechnology, there is need to develop a *sui-generis* system to circumscribe IPR related issues. The provisions must take into account the modalities/regulations for providing access to and transfer of technologies in return for genetic resources; modalities for providing options for international cooperation on patents and other IPRs; and provisions or conditionalities for joint ventures/programmes to develop technologies which have IPR implications. This will protect the interest of scientists/technologists involved in managing and conserving India's biological diversity and environmental quality. For the purpose of speedy access and transfer of technologies, a 'Clearing House Mechanism' needs to be established. Precautionary measures are also required to ensure that these technologies are not used for purposes other than conservation and sustainable use of biological diversity.

Biotechnology and biosafety

The release of living modified or genetically engineered organisms/life forms into the environment may pose several problems including deleterious ecological consequences. At present under the Environment (Protection) Act, Rules on Biosafety (notified in 1989) and the revised guidelines (1990) govern the risk assessment and biosafety of hazardous micro-organisms/genetically modified organisms or cells. These provisions are inadequate in many respects such as :

- — modalities/protocols for access to and transfer of biotechnology, sharing results and benefits on 'Mutually Agreed Terms';
- — procedures for 'Advanced Informed Agreements' for safe transfer of living modified organisms;
- — procedures for both risk assessment and management, including disaster management. These may also include compensation and liability in case there is any harm to human health and lives, ecosystems or bio-geographic regions.

Framework

The elements described in the foregoing paragraphs could form the basis for developing operational clauses in an 'Umbrella' Act on the Conservation

of Biological Diversity. It has been suggested that it would be difficult for a single agency to implement such a broad based legal instrument. Therefore, existing governmental machinery needs to be augmented, rather than establishing a new national authority. For administrative purposes, MOEF could continue to be the nodal point, supported by a 'Standing Committee' to oversee the implementation of the proposed Act. In addition, the proposed Committee could also look after the scientific, technical, cultural, anthropological and other aspects of conservation and sustainable use of biological diversity; continuously review and refine the shortcomings encountered in implementation of the Act and advise the Government from time to time in this regard. Besides, there is a need to establish a 'Community Gene Fund' for providing adequate financial support for effective implementation of the proposed Act (Kothari, 1994).

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