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Lecture-1

(For B.Sc. (H) Life Sciences and Mathematics)

Chapter 6: Global Environmental issues and Policies

Topics to cover

CONVENTION ON BIOLOGICAL DIVERSITY

The Convention on Biological Diversity is an international legally binding treaty with three main goals:

1. *Conservation of biodiversity*
2. *Sustainable use of biodiversity*
3. *Fair and equitable sharing of the benefits arising from the use of genetic resources.*

Its overall objective is to encourage actions, which will lead to a sustainable future. It covers biodiversity at all levels: *ecosystem, species and genetic resources*. The CBD's governing body is the *Conference of the Parties (COP)*.

FACTS AND FIGURES:

The Convention of Biological Diversity (CBD) was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993. Till date, there are 193 parties.

Components of biodiversity are all various forms of life on earth including ecosystems, animals, plants, animals, fungi, microorganisms, and genetic diversity.

With its three objectives, the CBD is often seen as the key international instrument for sustainable development.

Ecosystems, species, and genetic resources should be used for the benefit of humans, but in a way that does not lead to the decline of biodiversity.

Substantial investments are required to conserve biodiversity, but it will bring significant environmental, economic and social benefits in return.

The Ecosystem Approach, an integrated strategy for the management of resources, is the framework for action under the convention.

The precautionary principle states that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.

THE CARTAGENA PROTOCOL

The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international agreement on biosafety as a supplement to the Convention on Biological Diversity effective since 2003. The Biosafety Protocol seeks to protect biological diversity from the potential risks posed by genetically modified organisms resulting from modern biotechnology.

The required number of 50 instruments of ratification / accession/ approval/ acceptance by countries was reached in May 2003. In accordance with the provisions of its Article 37, the Protocol entered into force on 11 September 2003. As of December 2019, the Protocol had 172 Parties.

OBJECTIVE:

The objective of the Protocol is to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of 'living modified organisms resulting from modern biotechnology' that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on trans boundary movements.

SCOPE:

Trans boundary movement, transit, handling and use of LMOs can affect sustainable use of biological diversity.

APPLICATION:

The Protocol applies to the trans boundary movement, transit, handling and use of all living modified organisms that may have adverse effects on the

conservation and sustainable use of biological diversity, taking also into account risks to human health.

The governing body of the Protocol is called the Conference of the Parties to the Convention serving as the meeting of the Parties to the Protocol (also the COP-MOP). The main function of this body is to review the implementation of the Protocol and make decisions necessary to promote its effective operation.

ADVANCED INFORMED AGREEMENT:

Differentiated procedures for LMO's for intentional introduction into the environment and LMO's for direct use as food, feed or for processing (LMO-FFPs).

AIA= prior informed consent (PIC)

For first movement of LMOs for intentional introduction into environment.

Exporters must provide detailed information in advance of first shipment.

Importers may then authorize / refuse shipment, depending on RA.

AIA Procedure:

Notification.

Acknowledgement by importer (90days).

Decision procedure and review of decisions.

Notification

Party of export must notify Party of import prior to 1st international transboundary movement of an LMO for introduction into the environment of the Party of import.

Exporters must provide, as a minimum, information in annex 1.

Each Party of export must legally require its exporters to ensure that information in the notification is accurate.

Acknowledgement

Party of import must acknowledge receipt within 90 days and state:

Whether the notification contains the minimum information required (in Article 8) and

Whether the importation should proceed according to national law or to the decision procedure in Article 10.

Decision procedure

Importers asks exporter to do risk assessment.

Importer submits risk assessment.

Importer communicates decision to exporter in 270 days.

Importer may review or change its decision in light of new information.

Exporters may also request a review.

RISK ASSESSMENT AND RISK MANAGEMENT:

Risk assessment:

Identification of potential environmental adverse effects or hazards, and determining, when a hazard is identified, the probability of it occurring

In accordance with principles, methodologies and details in annex III.

Identify/ evaluate potential adverse effects – scientifically, case by case.

Minimum information, Annex I: Ensured by importer, cost by exporter.

Lack of knowledge, not lack of risk.

Risk management:

Methods applied to minimize potential hazards or adverse effects identified by the assessment

Measures to manage and control risks.

Prevent unintentional LMO movement.

Ensure that LMOs are observed for an appropriate period before use.

HANDLING, TRANSPORT, PACKAGING AND IDENTIFICATION:

Shipments of different categories of LMOs will be accompanied by documentation with varying details:

LMO-FFPs: will identify them as 'may contain' LMOs, not intended for introduction into the environment and contact details of consignee.

Contained use: clearly identifies them as LMOs specifies conditions for safe handling, storage/ use and contact details of consignee.

For introduction into environment: clearly identifies them as LMOs, specifies the identity and relevant traits and/ or characteristics, along with any requirements for their safe handling, storage, transport and use, contact information and declaration that the movement conforms to the requirements of the Protocol.

Lecture-2

Topics to cover

RAMSAR CONVENTION ON WETLANDS

The **Ramsar Convention**, signed in 1971 in Ramsar, Iran, is the only global treaty that focuses specifically on wetlands. Today 170 nations are signatories to the Ramsar Convention. A contracting party agrees to nominate at least one wetland in its territory to the List of Wetlands of International Importance based on enumerated criteria. By August 6, 2018, over 2323 wetland areas were inscribed on the Ramsar List, comprising over 248 million ha (Ramsar Convention Secretariat, 2018). In addition, contracting parties agree to manage all their wetlands based on the concept of “wise use.” Wise use means the maintenance of the ecological character of the wetland and allowance of sustainable use for the benefit of people and the environment. The Convention also mandates contracting parties to adopt National Wetland Policies, produce wetland inventories, conduct wetland monitoring and research, raise public awareness of wetlands, and develop integrated management plans for wetlands sites. The Ramsar Secretariat has prepared numerous manuals to assist wetland decision-makers. Ramsar Handbook 18 contains Guidelines for Wetland Management (Ramsar Convention Secretariat, 2010b). Ramsar Handbook 12 concerning Coastal Management also stresses many of the same principles that should guide management of coastal wetlands (Ramsar Convention Secretariat, 2010a). In 2002, the eighth Conference of the contracting parties to the Ramsar Convention (COP-8) adopted Resolution VIII.14—“New Guidelines for Management Planning for Ramsar Sites and Other Wetlands.” At the COP-8, contracting parties also adopted specific Ramsar guidelines for mangrove

management—Resolution VIII.32—“Conservation, Integrated Management, and Sustainable Use of Mangrove Ecosystems and their Resources.”

The Convention's mission is 'the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world". Wetlands are among the most diverse and productive ecosystems. They provide essential services and supply all our fresh water. However, they continue to be degraded and converted to other uses. The Convention uses a broad definition of wetlands. It includes all lakes and rivers, underground aquifers, swamps and marshes, wet grasslands, peat-lands, oases, estuaries, deltas and tidal flats, mangroves and other coastal areas, coral reefs, and all human-made sites such as fish ponds, rice paddies, reservoirs and salt pans. Under the 'three pillars" of the Convention, the Contracting Parties commit to:

1. work towards the wise use of all their wetlands;
2. designate suitable wetlands for the list of Wetlands of International Importance (the "Ramsar List") and ensure their effective management;
3. cooperate internationally on trans boundary wetlands, shared wetland systems and shared species.

The Contracting Parties approved the Fourth Ramsar Strategic Plan for 2016-2024 at COP 12. The Ramsar Convention works closely with six other organisations known as International Organization Partners (OPS).

These are:

4. Birdlife International
5. International Union for Conservation of Nature (IUCN)
6. International Water Management Institute (IWMI)
7. Wetlands International

8. WWF International

9. Wildfowl & Wetlands Trust (WWT)

These organizations support the work of the Convention by providing expert technical advice, helping implement field studies, and providing financial support. The IOPs also participate regularly as observers in all meetings of the Conference of the Parties and as full members of the Scientific and Technical Review Panel.

Montreux Record:

Montreux Record under the Convention is *a register of wetland sites on the List of Wetlands of International Importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference.*

It is *maintained as part of the Ramsar List.*

The Montreux Record was established by Recommendation of *the Conference of the Contracting Parties (1990).*

Sites may be added to and removed from the Record *only with the approval of the Contracting Parties in which they lie.*

Currently, two wetlands of India are in Montreux record: *Keoladeo National Park (Rajasthan) and Loktak Lake (Manipur).*

Chilka lake (Odisha) was placed in the record but was later removed from it.

CHEMICAL WEAPONS CONVENTION (CWC)

The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (the Chemical Weapons Convention or CWC), is comprised of a Preamble, 24 Articles, and 3 Annexes — the Annex on Chemicals, the Verification Annex, and the Confidentiality Annex. The Convention aims to eliminate an entire category of weapons of mass destruction by prohibiting the development, production, acquisition, stockpiling, retention, transfer or use of chemical weapons by States Parties. States Parties, in turn, must take the steps necessary to enforce that prohibition in respect of persons (natural or legal) within their jurisdiction. All States Parties have agreed to chemically disarm by destroying any stockpiles of chemical weapons they may hold and any facilities which produced them, as well as any chemical weapons they abandoned on the territory of other States Parties in the past. States Parties have also agreed to create a verification regime for certain toxic chemicals and their precursors (listed in Schedules 1, 2 and 3 in the Annex on Chemicals) in order to ensure that such chemicals are only used for purposes not prohibited under the Convention.

A unique feature of the Convention is its incorporation of the 'challenge inspection' whereby any State Party in doubt about another State Party's compliance can request a surprise inspection. Under the Convention's 'challenge inspection' procedure, States Parties have committed themselves to the principle of 'any time, anywhere' inspections with no right of refusal. The Chemical Weapons Convention (CWC) is an arms control treaty that outlaws the production, stockpiling, and use of chemical weapons and their precursors. The full name of the treaty is the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction and it co

is administered by the Organisation for the Prohibition of Chemical Weapons (OPCW), an intergovernmental organization based in The Hague, The Netherlands. The treaty entered into force on 29 April 1997. The Chemical Weapons Convention prohibits the large-scale use, development, production, stockpiling and transfer of chemical weapons. Very limited production for research, medical, pharmaceutical or protective purposes is still permitted. The main obligation of member states under the convention is to effect this prohibition, as well as the destruction of all current chemical weapons. All destruction activities must take place under OPCW verification.