

EVOLUTION OF INTERNATIONAL GOVERNANCE OF BIODIVERSITY

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Abstract: *The rapid degradation of biological diversity was a significant catalyst behind the mobilization of governments and international organizations to institutionalize the governance of nature. As a result, international governance structures started evolving in early 20th century culminating with the establishment of the comprehensive UN Convention on Biological Diversity (CBD) in 1993. The CBD has elaborate mechanisms and frameworks for nature governance on a global level. In addition, the parallel Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services has gained growing momentum. It is pertinent to understand the complexities and future of these international regimes meant to govern the protection and sustainable use of biodiversity globally.*

Key words: Governance, Biodiversity, Politics, Conservation, International, Science-Policy

1. Introduction

In the early 20th century the world community realized that the world-wide loss of biodiversity was increasing at an alarming rate. Scientists, policy makers, governments and international organizations called for the conservation and preservation of biological diversity in particular that found in developing countries which are in a more precarious position. Discourse on the sovereign rights of the State over biodiversity located within its boundaries and the ways of protecting it were becoming common place on the international arena. Various international environmental law institutions emerged by the 1970s after which UN bodies started taking shape with mandates of protection for more precise areas such as biodiversity. Finally, the Convention on Biological Diversity (CBD) came into force in 1993, which is the most comprehensive international agreement on biodiversity governance¹. The CBD has various

¹ Other international agreements on biodiversity include: the Convention on Trade in Endangered Species (CITES), the Ramsar Convention on Wetlands, the Convention on Migratory Species, the World Heritage Convention, and the FAO Treaty on Plant Genetic Resources for Food and Agriculture. Also of relevance for biodiversity are the Convention to Combat Desertification, the Framework Convention on Climate Change and the Intergovernmental

organs, mechanisms and programmes that collectively deliver governance functions along with providing assistance to member governments. Recently, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has emerged as an alternative or complementary structure of international governance of biodiversity. However, there is an array of questions surrounding IPBES such as, whether science and politics would support each other in this new global structure and whether the CBD would continue to function in the same manner as originally conceived. This article explores the trajectory of the evolution of international governance of biodiversity and discusses the challenges to governance in the new paradigm of science-policy interface.

2. Why International Governance of Biodiversity?

It is well known that the 20th century witnessed an alarming increase in the destruction of biodiversity. Evaluations vary concerning the quantity of endangered and extinct species. Some estimates go as high as 200 species disappearing every day (WWF, 2016; Vidal, 2011). According to the scientific community, the proportion of species loss is higher than ever before in the history of mankind. It is estimated that around 12.5% of known plant species alone are endangered (Shah, 2014), due to the direct destruction of plants and their habitat. There is also a growing concern about the introduction by humans of invasive species into specific habitats followed by the modification of the trophic chain.

According to Visseren-Hamakers (2009), the habitat and land-use changes represent the most important cause of biodiversity loss for terrestrial ecosystems, while over-exploitation of resources is the main threat to marine biodiversity. Therefore, such adverse impacts are expected to increase significantly in the future, reflecting the urgent need for an effective governance framework to curb the expected loss. The urgency for effective protection becomes more evident when, in addition to the ecosystem services, we consider the social, economic and political aspects of biodiversity. Nilsson (2011) highlighted that the evolution of international governance of biodiversity has undergone many shifts and changes. Given that today's governance architecture features a range of regimes and overlapping ways of addressing environmental challenges, it is logical to assume that biodiversity governance is an integral part of understanding global sustainability governance in general by focusing on issues such as equity, justice, participation and institutional peculiarities (Nilsson, 2011).

Based on core characteristics² of governance, Pisupati (2012) defined 'biodiversity governance' as *"the manner in which stakeholders participate effectively in policy setting and decision making that is based on rule of law, is transparent, and is based on equity and accountability in order to ensure that the strategic vision of conserving biodiversity and ecosystems, using them sustainably, and sharing of the benefits are enforced at the national, regional and global levels for current and future uses."*

3. Evolution of Biodiversity Governance

Though the conservation of biodiversity is believed to be the phenomenon of ancient era, the degradation had been taken into cognizance in the 19th century and, resultantly, the governance systems started evolving since then. Following is the trajectory of the evolution of international governance of biodiversity:

Forum on Forests. In addition, a number of agreements on indigenous people' rights and human rights address natural and biological resources.

² Core Characteristics of Governance: participation in decision-making, rule of law, transparency, equity, accountability, and strategic vision.

3.1 Early Conservation Initiatives

Efforts to curtail biodiversity loss in the 20th century began early on and intensified as time went on. The North Pacific Fur Seal Convention of 1911 between the US and other countries providing for the preservation and protection of fur seals was designed to ensure the sustainable use of a shared natural resource that was being threatened by overexploitation (Young and Osherenko, 1993). During the same period, there was discussion about the protection of nature as well as the role of international agreements for the preservation of the areas and/or species that did not fall under the jurisdiction of a particular country (Conwentz, 1914). Examples include the musk ox of Greenland and the reindeer of Spitsbergen. Later, there were also the efforts to regulate trade in endangered species, such as the Convention for the Protection of African Flora and Fauna in 1933. Interestingly, the development of national parks had started even earlier. The aim of creating national parks was mainly to protect spectacular landscapes. However, in the European context, the emerging science of ecology started to enter the discourse during the inter-war period. Subsequently, national parks were also seen as spaces where scientific research could take place in relatively undisturbed ecosystems (Wråkberg, 2006; Kupper, 2009). Factually, protected areas (e.g. national parks, sanctuaries, biosphere reserves, game reserves, protected landscapes, etc.) also provide basis for conservation as well as the governance paradigms. Generally, the biodiversity frameworks in these early international efforts did not acknowledge the link between nature protection and human development (Adams, 1992). Protected areas have also been described as driven by colonial interests and are controversial to this day in developing countries (Linnér, 2003).

It should be noted that peoples in the developing world have ancient traditions with regard to the conservation of their natural spaces and biodiversity therein. For instance, the earliest known examples in India of areas being set aside to provide species protection are from around 300 BC, during the time of Emperor Ashoka. The administration of Emperor Ashoka is known to have had a clear policy of exploiting and protecting natural resources. In subsequent years, many different rulers followed similar policies. Additionally, over 600 different tribes and non-tribal local people who live in and depend on natural resources such as wild flora and fauna for their subsistence, livelihoods, culture and religion, have also been practicing conservation in different ways. Astonishingly, between 100,000 and 150,000 sacred groves exist in India (Malhotra *et al.*, 2007), which have been conserved and protected by local communities by applying their spiritual and religious traditions to the benefit of Nature. According to Bhattacharya (2014), ancient Indian texts like *Arthashastra*, *Sathapatha Bhramanas*, *Vedas*, *Brhat-Samhita*, *Ramayana*, *Mahabharata*, and *Rajtarangini* reflect the concepts of ecology and conservation in a sustainable manner. The sacred groves (*Tapovana*) of India were rich in biodiversity and ecological wealth, which was also mentioned in many ancient Indian documents like *Abhigyan Shakuntalam* written by *Kalidasa*. Trees like Banyan (*Ficus benghalensis*) and fig (*Ficus religiosa*) were often referred to in history (widely protected in Asia and Africa) as keystone species. Today as well there are many policies developed in many parts of the world, for forest and biodiversity conservation, that can be linked directly or indirectly to traditional knowledge developed in ancient India and further built upon today (Bhattacharya and Arjjumend, 2007).

3.2 Post World War-II Era

Post World War II emerged a new world order that brought forth new way of viewing the relationship between humans and nature (Linnér, 2003). For instance, the United Nations Scientific Conference on the Conservation and Utilization of Natural Resources (UNSCUR) in 1949 had focused on food production, population growth and the use of science towards effective resource management to increase living standards (Aull *et al.*, 1950; McGormick,

1991). In fact, at this time resource utilization became a significant global concern placing science in a central position for providing guidance. As far as biodiversity is concerned, institutions dealing with its governance were established as early as 1948 (the International Union for the Protection of Nature – IUPN), which was later renamed as International Union for Conservation of Nature and Natural Resources (IUCN) and is currently known as the World Conservation Union (IUCN). During 1943 agencies such as UNESCO and FAO also supported discussions on governance issues (McGormick, 1991; Christoffersen, 1997). Parallel to the UNSCUR in 1949, the IUPN and UNESCO organized the International Technical Conference on Protection of Nature (ITCPN). At a time when the UNSCUR framed the issue of nature conservation mainly in terms of utilization of natural resources, the parallel conference (ITCPN) focused more on human ecology and education, where ecology represented a new more holistic conception of nature protection than the previous emphasis on species.

The League of Nations (forerunner of the United Nations), held international discussions on food and agriculture and at the League of Nations conference of 1943, focus was put on raising living standards and making agriculture more efficient, which later led to the creation of Food and Agriculture Organization of the United Nations (FAO). Its goal was to recommend national and international action towards the “conservation of natural resources”. The FAO also aimed to provide a platform where scientific expertise could contribute to policy decisions (Mayne, 1947).

Between 1945 and 1950, the focus began shifting from terrestrial biodiversity conservation to the sustainable use of marine environments. After World War II, several nation states started to extend their jurisdictional claims on waters beyond the three-mile limit from their coast by using customary international law (Nilsson, 2011). The UN International Law Commission (UNILC) began working in this new domain in 1949 and prepared four draft conventions, which were adopted at the first UN Conference on the Law of the Sea in 1958. The one that most directly relates to biodiversity governance was the Convention on Fishing and Conservation of the Living Resources of the High Seas. It is an example of early international law regulating the use of the global commons. Later the discussions resulted in the legal recognition of exclusive economic zones that replaced open access governance systems by those controlled by national rights and responsibilities (Hoel, Sydnes and Ebbin, 2005).

3.3 Ecosystem Science in the Centre of Governance

As mentioned above, ecology played a respectively key role in conservation politics with regards to national parks; but its role took on more and more importance in the 1960s. As this science was itself in the process of evolution from an earlier focus on species and populations to taking a more ecosystemic approach, the International Biological Programme (IBP) emerged as a special programme focusing on ecosystem science between 1968 and 1974. It was influenced by the conservation politics of the 1960s that put the science of ecology and national parks on centre stage. Subsequently, the Man and Biosphere (MAB) Programme was established in 1971 under UNESCO that brought the resource-science-people link to the forefront. Kwa (1987) describes in the history of International Biological Programme (IBP) how the science of ecosystem/ecology evolved to include systems-science-inspired studies of large biomes. In a 10-year review of the MAB programme, Di Castri *et al.* (1981) highlight a growing skepticism towards global solutions and global models.

3.4 Environment and Development Approach

When the biological sciences were urging immediate attention for emerging environmental challenges, environment politics were becoming increasingly international. The UN Conference on the Human Environment in 1972, held in Stockholm, is seen as the beginning of the international environmental law movement. The Conference focused on the environment, but in the context of the recent decolonization movement in various parts of the world, international power politics and the growing tensions between the global North and global South, the economic, social and political inequalities were very much present (Campbell, 1973; Selin and Linnér, 2005). Thus the spotlight began to shift from the developed countries to developing countries resulting in the expression of the concerns of developing countries to an extent not previously seen in environmental politics (Rambach, 1972). Furthermore the Stockholm Summit highlighted the link between development and the environment, which was seen as a milestone in seeking political support for environmental governance.

Building on the Stockholm Summit, the World Conservation Strategy (WCS) in the 1980s featured several concepts that led to new ways of thinking about biodiversity (Nilsson, 2011). According to Robinson (1993), this was highly successful as its format was used by over 50 countries to implement their national conservation strategies. The WCS identified various issues that were linked to conservation and biodiversity governance, ranging from the need for legal regimes and frameworks to management strategies for biodiversity. In 1976, the IUCN created a programme called Conservation for Development that was intended to link IUCN's scientific expertise in conservation with the work of development agencies (Louafi, 2007). At the same time, the WCS introduced the concept of sustainable development and became an important inspiration for the World Commission on Environment and Development (WCED), also known as the Brundtland Commission (Christoffersen, 1997; Selin and Linnér, 2005). The report of Brundtland Commission, entitled 'Our Common Future', has been an important document which details structures of biodiversity governance proposed by the Commission. In the 1970s, the IUCN established its Environmental Law Centre. Among its top priorities was to review environmental law texts and to draft new international treaties. Several biodiversity-relevant conventions can be attributed to these efforts, including CITES (Convention on International Trade in Endangered Species), RAMSAR (Convention of Wetlands of International Importance) and the CBD (Convention on Biological Diversity) (Christoffersen, 1997).

3.5 Towards Convention on Biological Diversity

In the mid 1980s, several potential arenas with their own priorities and structures emerged as contenders to take the lead in international governance of biodiversity. None however proved to be satisfactory for the decision makers at the time. The FAO was perceived by many OECD countries as too politicized; UNESCO was not acceptable to developing countries because of its limited focus on biodiversity reserves; and the IUCN was not seen as credible to governments since it was not an intergovernmental body. Finally, the UNEP provided an arena that was acceptable to most and hence took the lead in this area (McGraw, 2002). The road to the Convention on Biological Diversity (CBD) however was not easy. It started with the "bio-battles" of the FAO high in the minds of developing countries (McGraw, 2002). Essentially, seed production was now big business with implications for biodiversity and biotechnology safety emerged as a major new political context. Furthermore, the International Undertaking on Plant Genetic Resources (IU) (later renamed as UPOV – International Union for the Protection of New Varieties of Plants) recognized the legitimate rights of plant breeders and, given its rules for implementation, left the genetic resources of developing countries without protection. According to Svensson (1993), the developing countries were firmly resolved to address this state of affairs.

The negotiations for the CBD resulted in an interesting shift in the way States viewed biological resources. In a so-called compromise between the Global North and the Global South, biodiversity and genetic resources were no longer to be thought of as a global common. Instead, the States were given exclusive sovereignty over genetic resources and biodiversity. This was a significant turning point in the biodiversity governance discourse in which developing countries felt marginalized in the climate negotiations and hence were determined to secure their interests in the CBD. This was possible since here they had a good bargaining position due to the fact that most of the genetic resources contemplated were found within their national territories. Many developing countries had apprehensions that the CBD would, like other UN bodies, also force them to take action based on assessments dominated by scientists from the Global North, making it difficult for developing countries to oppose (Svensson, 1993). In this manner, the industrialized countries had to agree to clauses about benefit-sharing, technology transfer and funding. The developing countries, on the other hand, had to accept responsibility for conserving and using their resources sustainably as well as not refusing access to the genetic resources if certain criteria were met (Koester, 1997; McGraw, 2002). Within the CBD a Subsidiary Body on Scientific and Technological Advice (SBSTA) was created, which introduced a new paradigm in biodiversity governance focusing on the responsibility of each economic sector rather than on reserves. A glimpse of the history of CBD evolution has been illustrated in Table.1 below.

Table.1: Trajectory of Evolution of Convention on Biological Diversity

<i>Dates and Venue</i>	<i>Meeting</i>
16 - 18 November 1988 Geneva, Switzerland	First session of Ad Hoc Working Group of Experts on Biological Diversity
19 - 23 February 1990	Second Session of the Ad Hoc Working Group of Experts on Biological Diversity
9 - 13 July 1990	Third Session of the Ad Hoc Working Group of Experts on Biological Diversity
14 - 17 November 1990 Nairobi, Kenya	Sub-Working Group on Biotechnology
19 - 23 November 1990 Nairobi, Kenya	First Session of the Ad Hoc Working Group of Legal and Technical Experts on Biological Diversity
25 February - 6 March 1991 Nairobi, Kenya	Ad Hoc Working Group of Legal and Technical Experts on Biological Diversity
24 June - 3 July 1991 Madrid, Spain	Ad Hoc Working Group of Legal and Technical Experts on Biological Diversity
24 June - 3 July 1991 Madrid, Spain	Third Negotiating Session / First Meeting of the Intergovernmental Negotiating Committee for a Convention on Biological Diversity
23 September - 3 October 1991 Nairobi, Kenya	Fourth Negotiating Session / Second Meeting of the Intergovernmental Negotiating Committee for a Convention on Biological Diversity
25 November - 4 December 1991 Geneva, Switzerland	Fifth Negotiating Session / Third Meeting of the Intergovernmental Negotiating Committee for a Convention on Biological Diversity
6 - 15 February 1992 Nairobi, Kenya	Sixth Negotiating Session / Fourth Meeting of the Intergovernmental Negotiating Committee for a Convention on Biological Diversity
11 - 19 May 1992 Nairobi, Kenya	Seventh Negotiating Session / Fifth Meeting of the Intergovernmental Negotiating Committee for a Convention on Biological Diversity
20 - 21 May 1992 Nairobi, Kenya	Conference for the Adoption of the Convention on Biological Diversity

Source & Courtesy: Secretariat of CBD (<https://www.cbd.int/history>)

3.5.1 Architecture of Convention on Biological Diversity

Under the auspices of the UNEP, the Ad Hoc Working Group on Intergovernmental Negotiating Committee for a Convention on Biological Diversity culminated its work on 22 May 1992 with the Nairobi Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity. The Convention was opened for signature on 5 June 1992 at the United Nations Conference on Environment and Development (the Rio "Earth Summit"). It remained open for signature until 4 June 1993, by which time it had received 168 signatures. The Convention entered into force on 29 December 1993, 90 days after the 30th ratification. As of today³ there are 168 signatories and 196 Parties of the Convention. The first session of the Conference of the Parties (COP1) was held on 28 November – 9 December 1994 in the Bahamas. So far twelve Conferences of the Parties have been concluded.

The CBD's objectives are: "to conserve biological diversity, to use biological diversity in a sustainable fashion, and to share the benefits of biological diversity fairly and equitably." The Convention is the first global agreement that addresses all aspects of biological diversity: genetic resources, species and ecosystems. It recognizes, for the first time, that the conservation of biological diversity is "a common concern for all humanity" and an integral part of the development process. To achieve its objectives, the Convention follows in the footsteps of the Rio Declaration on the Environment and Development and encourages scientific and technological cooperation between countries, access to genetic resources and the transfer of clean environmental technologies (CBD, 1993). The CBD links traditional conservation efforts to the economic goal of using biological resources sustainably. The CBD emphasizes many of the good governance principles set out above, providing valuable guidance for effective governance of biodiversity. The ecosystem approach seeks to balance different interests in society including local and global values, conservation and development (Swiderska *et al.*, 2009). Its first two principles are particularly notable in terms of the preceding discussion on biodiversity governance: (1) that the objectives of natural resource management are a matter of societal choice; and (2) that management should be decentralized to the lowest appropriate level (Swiderska *et al.*, 2009). It is pertinent to visually represent the organs and initiatives of the CBD to date. Various organs of the CBD are depicted in Figure.1 below.

Leadership of the CBD rests with the Conference of Parties (COP), an ultimate authority, which reviews progress under the Convention, identifies new priorities, and sets work plans for members. The COP has established 7 thematic programmes of work: (a) Agricultural Biodiversity, (b) Dry and Sub-Humid Lands Biodiversity, (c) Islands Biodiversity, (d) Marine and Coastal Biodiversity, (e) Forest Biodiversity, (f) Mountain Biodiversity, and (g) Inland Waters Biodiversity. The CBD Secretariat, based in Montreal (Canada), operates under the United Nations Environment Programme (UNEP). Its main functions are to organize meetings, draft documents, assist member governments in the implementation of the programme of work, coordinate with other international organizations, and collect and disseminate information.

³ <https://www.cbd.int/information/parties.shtml> accessed on 2 March 2016.

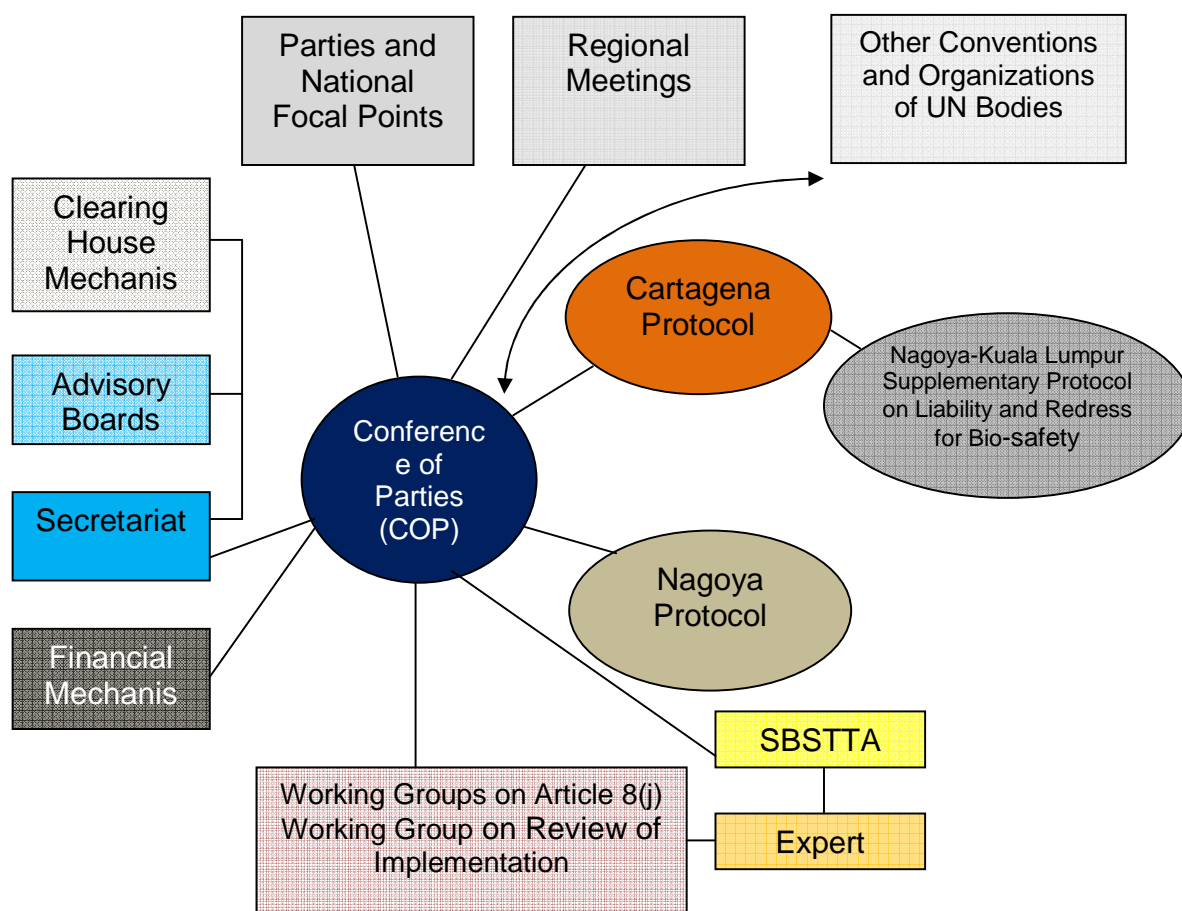


Figure. 1: Illustrated Diagram of CBD Organs

3.5.2 Protocols of the Convention

Cartagena Protocol: The Cartagena Protocol on Bio-safety of the Convention, also known as the Bio-safety Protocol, was adopted in January 2000 and entered into force on 11 September 2003. The Bio-safety Protocol seeks to protect biological diversity from the potential risks posed by living modified organisms (LMOs) resulting from modern biotechnology. It requires that products developed through new technologies must be based on the 'precautionary principle' while calling for a balance between public health and economic benefits. It will, for example, let countries ban imports of a genetically modified organism (GMO) if they feel there not enough scientific evidence that the product is safe and requires exporters to label shipments containing genetically modified commodities such as corn or cotton.

Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress for Bio-safety: The issue of elaborating rules on liability and redress for damage resulting from living modified organisms was under consideration internationally both before and after the adoption of the Bio-safety Protocol. So, the Article 27 of Protocol required the COP serving as the meeting of the Parties (COP-MOP) to the Bio-safety Protocol to adopt a process with respect to the appropriate elaboration of international rules and procedures in the field of liability and redress for damages resulting from trans-boundary movements of living modified organisms (LMOs).

Nagoya Protocol: The Nagoya Protocol on Access & Benefit Sharing (ABS) was adopted on 29 October 2010 in Nagoya, Japan and that entered into force on 12 October 2014 after 53rd instrument of ratification. Its objective is the fair and equitable sharing of benefits arising from the utilization of genetic resources, thereby contributing to the conservation and sustainable use of biodiversity. After the Nagoya Protocol came into existence, three meetings of Intergovernmental Committee for the Nagoya Protocol on Access & Benefit Sharing (INCP-1, ICNP-2 and ICNP-3) have taken place so far, as well as two general body meetings during COP 11 and COP 12.

3.5.3 Other Bodies of the Convention

An elaborate functional structure of the CBD is shown in Figure.2. Some of the main bodies are described below.

Subsidiary Body for Scientific, Technical and Technological Advice (SBSTTA): By virtue of CBD Article 25 an open-ended intergovernmental scientific advisory body known as SBSTTA was established to provide with timely scientific advice relating to the implementation of the Convention.

Working Group on Article 8(j): This Working Group was created to expand on the CBD recognition of the dependency of indigenous and local communities (ILCs) on biodiversity and their role in conserving and developing bio-resources. It was for this reason that Article 8(j) was added to the Convention. The Working Group oversees all considerations relating to the traditional knowledge of ILCs in the various programmes of work under the Convention.

Working Group on Protected Areas: Conference of the Parties established an Ad-Hoc Open-ended Working Group on Protected Areas in February 2004 to support and review the implementation of the programme of work on biodiversity conservation in protected areas.

There are various other instruments and mechanisms through which the CBD accomplished its role of governing biodiversity conservation worldwide. Examples include: Strategic Plan for Biodiversity 2011-2020, Aichi Biodiversity Targets Task Force, National Biodiversity Strategies and Action Plans (NBSAP), National Reports, Clearing-House Mechanism, South-South Cooperation, and Consortium of Scientific Partners. CBD also works in close coordination of biodiversity-related other Conventions.

4. IPBES: An Emerging New Institution of Biodiversity Governance

From the beginning days of biodiversity governance, the scientific community made it clear that they wanted to be active participants in the multilateral discussions. Although there is still tension between political entities and the scientific community there have also been efforts to move science more to the forefront of biodiversity decision making (UNEP, 2010). In 1995, the biodiversity science community came out with the report titled "Global Biodiversity Assessment" (Heywood, 1995) but the debate about SBSTTA's role as scientific advisor and its scientific integrity continued leading to a situation where the SBSTTA has generally carried out its work without any collectively organized participation by the scientific community (Nilsson, 2011).

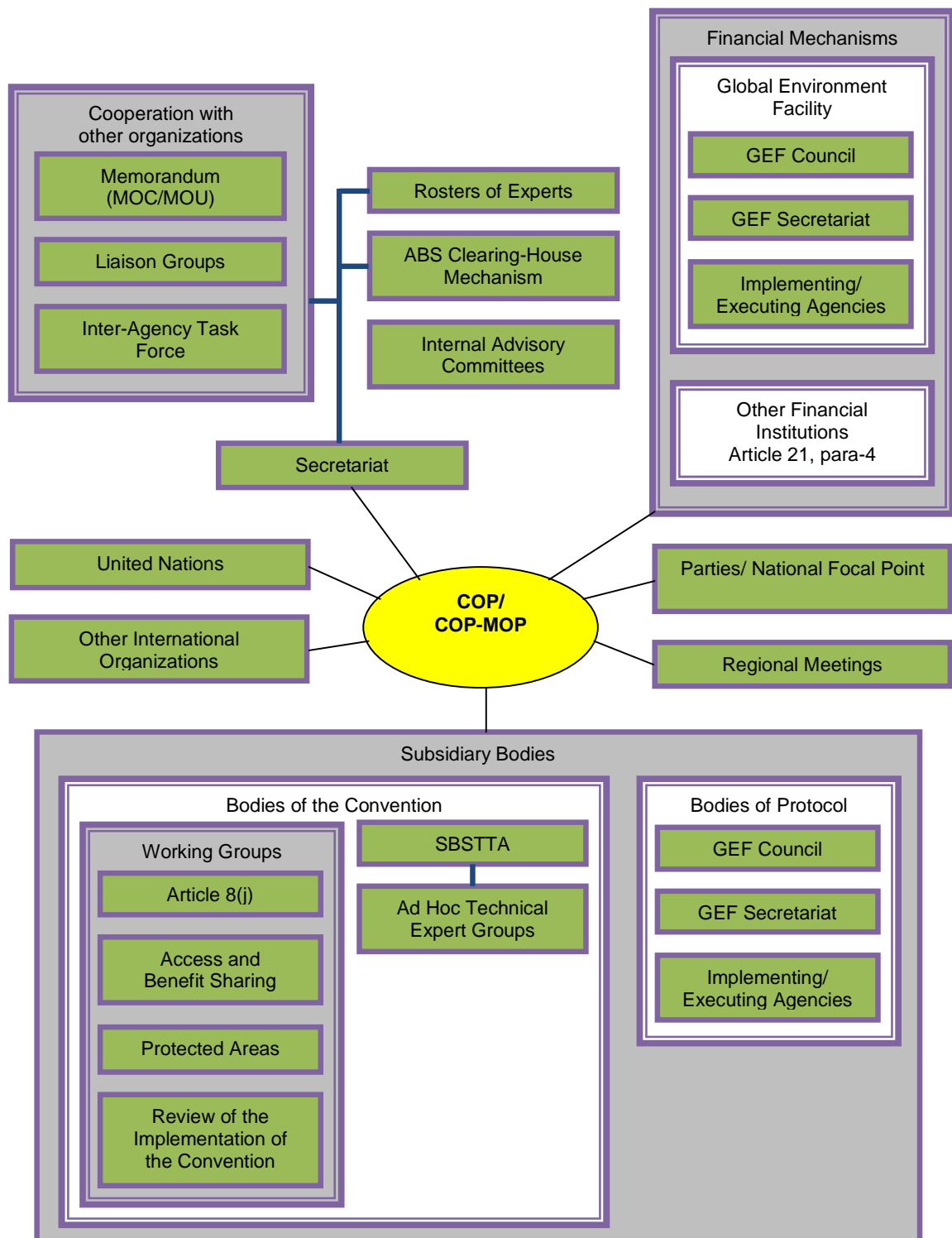


Figure.2: Elaborate Functional Structure of CBD (Adapted from CBD)

During the international conference on biodiversity (“Biodiversity, Science and Governance”) held in 2005 in Paris (France), the concept of an international expert panel on biodiversity (described as the “biodiversity’s equivalent to the IPCC⁴”) was developed considerably. For two years consultations were held globally on the International Mechanism of Scientific Expertise on Biodiversity (IMoSEB). In Bonn (Germany) in 2008, the Conference of the Parties (COP9) to the CBD at its ninth meeting voted a resolution in favour of establishing an expert group, known as the Ad-Hoc Intergovernmental and Multi-Stakeholder Meeting on an Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). IDDRI⁵ assisted in the preparation of the first meeting of this expert group, which was held in Putrajaya (Malaysia) in November 2008. This consultative process revealed the need to conduct an analysis of the current science-policy interface in terms of biodiversity protection. Two more Ad-Hoc Intergovernmental and Multi-Stakeholder Meetings on IPBES were convened, respectively, in Nairobi (Kenya) in October 2009 (IPBES-II) and in Busan (South Korea) in June 2010 (IPBES-III). In particular, IPBES-III delegates eventually adopted the Busan outcome “whereby they agreed that an IPBES should be established, should collaborate with existing initiatives on biodiversity and ecosystem services, and should be scientifically independent” (Monfreda *et al.*, 2010).

On the 21st of December 2010, the UN General Assembly adopted a resolution on establishing IPBES⁶. In this resolution, the UN General Assembly invite the Governing Council of the United Nations Environment Programme (UNEP), without prejudice to the final institutional arrangements of the platform, in collaboration with the Secretariat of the CBD, and other relevant international, regional and sub-regional organizations⁷, “...to convene a plenary meeting providing for the full and effective participation of all Member States, in particular representatives from developing countries, to consider modalities and arrangements to fully operationalize the platform at the earliest opportunity”. The plenary, which should be the IPBES’ decision-making body, is open to participation from all Member States of the United Nations and to regional economic integration organizations. It was also settled that the intergovernmental organizations and other relevant stakeholders should participate in the plenary as observers.

So far 4 plenary of IPBES have taken place. The first meeting of the Platform's Plenary (IPBES-1) was held in Bonn, Germany from 21 to 26 January 2013, hosted by the Government of Germany. The Second meeting of the Platform's Plenary (IPBES-2) was held in Antalya, Turkey, from 9 to 14 December 2013, hosted by the Government of Turkey. The third session of the Platform's Plenary (IPBES-3) was concluded between 12 and 17 January 2015, in Bonn, Germany. The fourth plenary has been conducted between 22 and 28 February 2016 in Kuala Lumpur (Malaysia). As of today⁸, the IPBES has 80 government members.

5. Implications of New Biodiversity Governance

According to the UNEP (2013), in order to make IPBES successful, the decision makers need scientifically credible and independent information that takes into account the complex

⁴ Intergovernmental Panel on Climate Change (IPCC)

⁵ Institut du Développement Durable et des Relations Internationales (IDDRI)

⁶ UNEP press release, Biodiversity year ends on high hope as UN General Assembly backs resolution for an 'IPCC-for Nature', available at:

<http://unep.org/Documents.Multilingual/Default.asp?DocumentID=653&ArticleID=6872&l=en>

⁷ Such organizations include: UNESCO, UNDP, FAO

⁸ <http://www.ipbes.net/about/members>, accessed on 2 March 2016.

relationships between biodiversity, ecosystem services, and people. Accordingly, they also need effective methods to interpret the scientific information in order to make informed decisions. Simultaneously, the scientific community too needs to understand the needs of decision makers better. In essence, the dialogue between the scientific community, governments, and other stakeholders on biodiversity and ecosystem services needs to be strengthened. However, according to Turnhout *et al.* (2012), the IPBES must draw on a much broader range of knowledge and stakeholders. Currently, IPBES provisional work programme and technical background documents suggest that the platform is aimed to serve as a clearing house that guarantees the global availability of all biodiversity knowledge that has been standardized and scientifically validated. It is believed that this is attractive to elite actors such as natural scientists and national governments, but it excludes many important stakeholders, e.g. indigenous people, businesses, farmers, community partnerships and fisher folks. Moreover, the IPBES has not proposed a single scientific definition of biodiversity. The platform has also not recognized various ways of living with and knowing the nature that human cultures have developed. Thus, it is promoting a predominantly science-based understanding of biodiversity, with ecosystem services taking centre stage. This focus reduces biodiversity to an object of exploitation and runs the risk of bringing it even further into a system of market exchange.

Biodiversity politics have a long and tumultuous history and go beyond the oversimplified preservation versus conservation for sustainable use paradigm. More recently, concerns about intellectual property rights over genetic resources inform to a large extent the ecosystem management and ecosystem services discussions (Nilsson, 2011). Furthermore, a wider range of actors, including NGO's and other international organizations are challenging the scientific model as the only source of credible explanation of how biodiversity works and its importance. Hence, where biodiversity is concerned the scientific community hold a less privileged position than it has had in the climate regime even though the biodiversity science community is much less coherent than the climate modeling community that brought climate change into the policy arena (Worster 1994). Since there are already numbers of competing discourses, it appears unlikely that an organizational change in biodiversity governance would suddenly change the playing field to give science a stronger voice in biodiversity politics. According to Nilsson (2011), this does not imply that the creation of a new body for science policy dialogue is without value. However, the value may rest more in creating an arena for learning in both directions at the science-policy interface than science directly informing policy (Nilsson, 2011). The history of biodiversity governance shows that previous efforts at science-policy dialogues have in fact been important for including broader societal concerns in the discussion of conservation. Not long ago the fourth plenary of IPBES has concluded with the remarks "there will be plenty of opportunities to continue reinforcing IPBES' role as a science-policy interface, but that difficult work is ahead, particularly in making the global assessment relevant at the country level and ensuring that knowledge gaps, including the vast gap on diverse values, are filled" (ENB, 2016).

6. Summary and Conclusion

The third report of the Global Biodiversity Outlook (GBO3) revealed that the trends in indicators suggest that the state of biodiversity is declining, the pressure upon it is increasing, and the benefits derived by humans from biodiversity are diminishing, all while the responses to addressing its loss are increasing (SCBD, 2010). Poor people in developing countries are particularly vulnerable to the resulting loss in critical ecological services. Barbier (2009) recommends that we re-orient global discussions on institutional strengthening and governance at the UNCSD around the experiences and needs of the local people. Various scholars articulated a range of issues related to governance of biodiversity, ranging from historical perspectives, evolution of the concept, and links to current global discussions on science-policy interface to the

role of stakeholders, including business, in biodiversity governance (Nilsson, 2011; Smith, 2009; Koetz *et al.*, 2011; Bled, 2009; Soberson and Sarukhan, 2009). It is recognized that the CBD is the first global agreement that addresses all aspects of biological diversity: genetic resources, species and ecosystems. However, we can observe limited opportunities for local biodiversity managers (i.e. indigenous people and local communities) to participate in international policy, while life science lobbies are quite influential in the processes. The representation of indigenous people and local communities (ILCs) has been limited in international governance (Koutouki, 2010).

Global governance of biodiversity point to the emergence of new science-policy paradigm interconnected with contemporary geopolitical equations. When international politics and state powers have to decide action to take in relation to conserving/utilizing biodiversity, the scientific community backed by western organizations led to the creation of a new global governance institution, IPBES. So, two parallel global institutions exist now: one, the CBD, dominated by governments and geopolitical entities and second, the IPBES, dominated by scientific community with some support from States. Although the latter regime is yet to evolve fully, some conflict between the two regimes cannot be ruled out. In the near future, it would be useful to understand, analyse and characterize the inter-institutional issues on various levels, and to observe how international diplomacy handles and resolves the emerging issues.

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