

Sustainable Management of Forest Biodiversity and the Present Malaysian Policy and Legal Framework

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Abstract

Forest biodiversity is crucial not only in the socio-economic and industrial development of a country but also in maintaining environmental stability including the protection of water resources, and the flora and fauna. Under the Convention on Biological Diversity (CBD), forest biological diversity is a broad term that refers to all the life forms found within forested areas and the ecological roles they perform encompassing not just trees but the multitude of plants, animals and micro-organisms that inhabit forest areas and their associated genetic diversity. Forest management and conservation are continuously evolving to manage and conserve forests effectively and to address the causes of deforestation and biodiversity loss. Sustainable forest management involves activities at levels ranging from genes to ecosystems and forest conservation is becoming ever more complex as conservationists attempt to understand and accommodate the needs and rights of people who live in and around forests. Amongst all kinds of ecosystems, tropical rainforests ecosystem and wetland and mangrove ecosystem, both of which constitute the Malaysian forests, are the most species-rich. For sustainable management of forest biodiversity of its forest biodiversity, Malaysia is in dire need of sufficient laws and policies, which will subsequently be translated into effective administrative measures. This paper highlights the efficacy as well as sufficiency of the existing Malaysian laws and policies in managing forest biodiversity in a sustainable manner by comparatively looking into the requirement of CBD as an international regime for sustainable biodiversity management and conservation.

Keywords: Forest biodiversity, Sustainable management, CBD, Malaysian laws and policies

1. Introduction

Forests play an important role in the maintenance of climatic and environmental stability, conservation of invaluable biodiversity as well as supply of clean water besides timber for downstream industries (Chan, 2002). Forests hold the majority of the world's terrestrial species: tropical, temperate and boreal forests offer a diverse set of habitats for plants, animals and micro-organisms. However, these biologically rich systems are increasingly threatened, largely as a result of anthropogenic activities (World Bank, 2000).

Forest biodiversity generally refers to the variety of life including plants, animals and micro-organisms that live in forest areas, and the ecological roles these life forms play (Environment Canada, 2008). In 1992, the Convention on Biological Diversity (CBD) defines forest biodiversity as, "Forest biological diversity means the variability among forest living organisms and the ecological processes of which they are part; this includes diversity in forests within species, between species and of ecosystems and landscapes."

The CBD, adopted during the 1992 Earth Summit in Rio de Janeiro and came into force in 1993, establishes an integrated web of obligations on countries to conserve biological diversity, to use components of biodiversity in a sustainable way and to share the benefits arising out of the use of genetic resources. These obligations are derived from the objectives of CBD (Article 1), which are aimed to pursue firstly the conservation of biological diversity, secondly the sustainable use of its components and thirdly, the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

2. Material and Methods

The primary sources for this research are international convention, which in this study was the Convention of Biological Diversity (CBD), the policies and legislations relating to forest biodiversity management in Malaysia. This study is qualitative in nature by employing analysis of the contents of the primary sources involved. The literal, golden, purpose and mischief interpretation of the related statutes are observed in order to analyze the meaning of the legal provisions involved and the reason why the provisions were written as such. Great assistance also comes from secondary sources such as journal articles and scholarly books as well as sources from the internet to collaborate the points in the discussion.

3. Result and Discussion

3.1 Forest Biodiversity Management under CBD

Under CBD, forest biological diversity is a broad term referring to all the life forms found within forested areas. The ecological roles performed encompass not just trees but the multitude of plants, animals and micro-organisms that inhabit forest areas and their associated genetic diversity. It has also been recognised that forest biological diversity can be considered at different levels, including the ecosystem, landscapes, species, populations and genetics. The CBD Conference of the Parties (COP-2) in Dakar, Senegal further recognised in 1998 that, "Forest biological diversity results from evolutionary processes over thousands and even millions of years which, in themselves, are driven by ecological forces such as climate, fire, competition and disturbance. Furthermore, the diversity of forest ecosystems (in both physical and biological features) results in high levels of adaptation, a feature of forest ecosystems which is an integral component of their biological diversity. Within specific forest ecosystems, the maintenance of ecological processes is dependent upon the maintenance of their biological diversity (*Annex to decision II/9 Cop-2*)."

The roles played by forests are pertinent in the socio-economic and industrial development of a country. Apart from that, forests also contribute significantly in maintaining environmental stability including the protection of water resources, biological diversity and the flora and fauna. Amongst all kinds of ecosystems, tropical rainforests ecosystem and wetland and mangrove ecosystem, both of which constitute the Malaysian forests, are the most species-rich (Ansari, 2008). Although these ecosystems only cover 10% of the world's land area, they have 90% of world species. Forest biodiversity takes the centre-stage (World Bank, 2002) to the struggle of sustainable conservation of biological diversity embedded under CBD due the following reasons: (i) Forests may be the richest of all terrestrial ecosystems; (ii) It provides important sources of food, medicines, energy and building materials; (iii) It sustains the livelihoods of and provides jobs for hundreds of millions of people worldwide; (iv) It offers aesthetic and cultural values; and (v) It contributes to a sense of cultural identity and provides spiritual enrichment in many indigenous and forest-dependent communities (Forest Facts, 2009).

According to the Food and Agricultural Organisations of the United Nations (FAO, 2009), forest management and conservation are continuously evolving to manage and conserve forests effectively and to address the causes of deforestation and biodiversity loss. Sustainable forest management involves activities at levels ranging from genes to ecosystems and forest conservation is becoming ever more complex as conservationists attempt to understand and accommodate the needs and rights of people who live in and around forests.

3.1.1 Obligations of State Parties under CBD

From the objectives of CBD, the web of obligations of State Parties to the Convention to sustainably manage forest biodiversity is comprised of the following:

- 1) Conservation of Forest Biodiversity;
- 2) Sustainable Use of Forest Biodiversity;
- 3) Fair and Equitable Sharing of the Benefits Arising Out of the Utilization of Forest Genetic Resources.

As far as the first obligation, although CBD is silent on the meaning of “conservation”, it can be generally understood as preventing a species from loss, waste or change. Conservation of forests biodiversity must be aimed towards limiting deforestation as well as preventing biodiversity loss to other stressors such as climate change and invasion of alien species.

Under the second obligation to use forest biodiversity in a sustainable manner, it is understood that the pertinent roles held by forests is through providing important sources of food, medicines, energy and building materials and sustaining the livelihoods of and provides jobs for hundreds of millions of people globally. To ensure that these roles can be preserved and further enjoyed by the next generations, sustainable use of forest biodiversity must be maintained.

The last obligation i.e. the fair and equitable sharing of the benefits arising out of the utilization of forest genetic resources requires special attention. Four main aspects need to be regulated namely:

(i) Traditional Knowledge (TK)

Article 8(j) of CBD propagates for the protection of traditional knowledge of indigenous and local communities. Quite related to the principle of sustainable management and use of biological diversity is the need to recognize, protect and enforce the rights of indigenous communities to have continued access to biological resources not only for the continued sustenance of their culture but also to protect their knowledge, acquired over thousand of years of experimentation and experience, about the uses biological resources can be put to particularly in medicinal and pharmaceutical preparations (Latiff & Zakri, 2004). It is obvious that recognizing, protecting and ensuring the rightful place of TK within the broader framework of sustainable use and conservation of biological diversity requires a total review of existing legislation pertaining to the rights of indigenous people, who are mostly located in forests, beyond formal declarations (Shaik & Wan Izatul, 2008). After all, as succinctly put by Etkin (1998),

“More recently these communities (indigenous communities) have come to be appreciated as repositories of not only of knowledge but also of biological diversity itself”.

(ii) Access and Benefit Sharing (ABS)

A compromise between 2 extremes namely state sovereignty over genetic resources and genetic resources as common heritage of humankind (TK). Basically a principle of reciprocity, it serves as the most fundamental conceptual cornerstone of the CBD as enshrined in Article 15 and 8(j) of the Convention. In the midst of work on more appropriate regime on ABS was progressing in many member countries, concerns have been raised in many quarters, mainly diversity rich developing nations, that the full realization of the objectives of Article 15 may effectively be undermined by the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organisation (Shaik & Wan Izatul, 2008). It has been argued that the CBD and WTO/TRIPS “are in conflict with one another” (Suman Sahai, 2005; Anil K. Gupta, 2005).

(iii) Bioprospecting

Involves exploration of wild plants and animals for commercially valuable genetic and biochemical resources (FAO, 2009). Specifically, bioprospecting involves searching for, identifying, and collecting appropriate specimens, from which genetic materials exhibiting desirable characteristics in a commercial product are processed and developed (Pan, 2006).

(iv) Biopiracy

Biopiracy, albeit a like-sounding term to bioprospecting, rejects the legitimacy of bioprospecting in its entirety (Pan, 2006). It refers to the ways that corporations from the developed world claim ownership of, free ride on, or otherwise take unfair advantage of, the genetic resources and traditional knowledge and technologies of developing countries (Dutfield, 2009). Once ABS is carried out on the State Parties, mega-diverse countries like Malaysia will be among the first to be flooded with these corporations lurking to capitalize on its forest genetic resources. To prevent biopiracy, having sound policy and laws on ABS would be imperative on Malaysia.

Parties to the CBD, including Malaysia, are in effect enjoined to institute Legislative, Administrative and Policy (LAP) measures within their national jurisdiction with the purpose of protecting their biodiversity. Prevention of forest biodiversity loss under the purview of CBD is not merely linked to deforestation but also to warrant its

sustainable use and conservation and most importantly to allow fair and equitable sharing of the benefits arising out of the utilization of forest genetic resources by taking into considerations the four main aspects related to it i.e. traditional knowledge of forest inhabitants (the indigenous people), access and benefit sharing of forest genetic resources, bioprospecting and biopiracy, which is a main threat to TK and ABS.

3.2 *The Malaysian Position*

As a state party to CBD, Malaysia is obligated to develop national strategies, plans and programmes by taking LAP measures for the conservation and sustainable use of biological resources and diversity. For a country like Malaysia, which is one of the 12 mega-biodiversity countries of the world, an integrated approach to conservation is necessary to develop cornerstone biodiversity conservation (Isahak Yeop, 2005). Mega-diverse countries are highly rich in environmental and natural resources and these 12 mega-diverse countries, according to EPU (2009), contribute about 75% of the world biological diversity. Other countries sharing the same status are Indonesia, Colombia, Brazil, China, Madagascar, Costa Rica, Peru, Venezuela, Australia, Mexico and Ecuador.

Like any other state parties to the CBD, it becomes incumbent on Malaysia to develop a national forest biodiversity sustainable management regime incorporating the three elements of LAP measures. The National Policy on Biological Diversity was launched in 1998 with the aim to conserve Malaysia's biological diversity and to ensure that its components are utilised in a sustainable manner for the continued progress and socio-economic development of the nation. The Policy Statement reads,

“To conserve Malaysia’s biological diversity and to ensure that its components are utilised in a sustainable manner for the continued progress and socio-economic development of the nation”

Tropical rainforest, as the one in Malaysia, is one the most complex ecosystems in the world (Malaysian Timber Corporation, 2008). By helping to conserve wildlife, genetic resources and providing natural eco-habitats for both flora and fauna, it supplies food and shelter for a great variety of mammals, reptiles, amphibians, fishes, birds and insects, many of which are indigenous only in this part of the world. In a nutshell, the pertinence of forest biodiversity can be recapitulated as ...“The forests play a major role in the regulation of the climatic and physical conditions of the country, safeguarding water supplies, ensuring environmental stability and minimising damage to agricultural lands” (Malaysian Timber Corporation, 2008).

3.2.1 *The Policy*

The National Forestry Policy (NFP) was introduced in 1978 to strengthen and uniformise the forest administration and management in Malaysia. The NFP was revised on 19 November, 1992 to take cognizance of the current concern expressed by the world community on the importance of biological diversity conservation and sustainable utilization of genetic resources, as well as the role of local communities in forest development (Forestry Department, 2011). This revision was made to pursuant to the UNCED Conference in Rio de Janeiro (1992), where CBD was first conceptualised, to further enhance sustainable management of forest resources in the country provides for a balance between the development and conservation needs required achieving sustainable forest management.

The objectives of the National Forestry Policy 1978 (Revised 1993) are mainly to conserve and manage the forest through sustainable management and to protect the environment as well as to conserve biological diversity, genetic resources, and to enhance research and education. The revised NFP has 17 objectives, which includes provisions to manage the Permanent Forest Estates (PFE) in order to maximise social, economic and environmental benefits for the nation and its people in accordance with the principles of sustainable management, to provide for the preservation of biological diversity and the conservation of unique flora and fauna as well to implement programs for forest development through regeneration and rehabilitation operations.

Chan (2002) views that the revised NFP comprehensively addresses and incorporates concerns relating to the conservation of biological diversity, including sustainable utilisation of forest resources, ecological and environmental stability as well as the role of local communities in forest development, as compared to the traditional approach of forest management that focused mainly on timber production. Nevertheless, the revised NFP is still lacking. Objective 14 speaks generally on the conservation of biological diversity through appropriate programmes on the conservation of unique species of flora and fauna but there is no specific mention about the third objective of CBD i.e. fair and equitable sharing of the benefits arising out of the utilization of forest genetic resources, which is in fact the cornerstone of CBD itself.

The importance of incorporating fair and equitable sharing of the benefits arising out of the utilization of forest genetic resources into the revised NFP is due to the reason that as one of the 12 mega-biodiversities in the world,

the Malaysian forests may be in danger. By allowing access to and bioprospecting activities on her abundant forest genetic resources through ABS, Malaysia may be losing some, if not most, of her biological resources. Biopiracy, where corporations from the developed world may claim ownership of or otherwise take unfair advantage of the genetic resources and traditional knowledge and technologies of developing countries like Malaysia, may be perilous to the country's biodiversity and natural heritage. The efforts to protect biodiversity may further be undermined since Malaysia is also a signatory to the World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which established rules for creating and protecting intellectual property and could also be interpreted to contradict the agreements made under the CBD (Wan Izatul at al., 2011).

3.2.2 The Laws

A policy is at best a statement of intent, a considered statement of priorities with regard to a particular subject matter (Shaik & Wan Izatul, 2008). Hence, it must provide the impetus for its actual implementation through the mechanisms of law and administration. Both the ensuing law and administration will manifest the components of the Policy. There are essentially seven existing legislations governing the management of forest in Malaysia, the main being the National Forestry Act 1982. Since forests constitutionally fall under the jurisdiction of States under the State List, this Act was formulated to uniformise and update the various state forests legislations, which were considered as deficient and weak in areas of forest conservation and management planning and in forest renewal operations, which are vital for sustainable forest management (DOF, 2008). This Act was enacted under Article 76(1) (b) that is to provide uniformity in the States of Malaysia by providing for the administration, management and conservation of forestry and forestry development throughout Malaysia.

The Malaysian Forestry Research and Development Board 1985 was enacted for the purpose of establishing a forest research and development institute, in the name of Forest Research Institute Malaysia (FRIM) and also for the administration of research fund in forestry. Amongst the main functions of FRIM is to conduct research into "forest development", which involves the management and development policies as well as activities for all natural and man-made forests, based on sound ecological and economic principles. In doing so, FRIM is also subjected to oversee the achievement of the expressed purposes not only of the production of forest produce but more importantly of the protection of the environment.

The National Parks Act 1980 provides for the establishment and control of National Parks in Malaysia. Although all National Parks in Malaysia are located in the States, this Federal legislation applies throughout Malaysia except in the states of Sabah and Sarawak. This Act is also not applicable to the State Parks of Kelantan, Pahang and Terengganu, which collectively constitute the Taman Negara. In Malaysia, National Parks are established to preserve and protect the wild life as well as plant life in the designated areas. Apart from that, the conservation of objects of geological, archaeological, historical and ethnological and other scientific and scenic interest is also aimed to be achieved through the establishment of these National Parks.

The Protection of Wild Life Act 1972 was enacted to consolidate laws relating to the protection of wildlife, this law prohibits certain activities relating to wild life without licence, permit or special permit. Unlicensed persons are prohibited from the following activities:

- (a) Shooting, killing or taking any protected wild animal or wild bird or the nest or egg;
- (b) Carrying on the business of a dealer of wild animal or wild bird;
- (c) Carrying on the business of a taxidermist;
- (d) Housing, confining or breeding a protected wild animal or wild bird other than as a dealer or a taxidermist;
- (e) Importing or exporting from Peninsular Malaysia any protected wild animal or wild bird or part thereof;
- (f) Keeping a trophy of any protected wild animal or wild bird;
- (g) Entering a wild life sanctuary or a wild life reserve.

Under Part IV (Section 47-50) of this Act, a State Ruler or Yang di-Pertua Negeri is allowed to declare any state land to be a wild life reserve or a wild life sanctuary. Entry to these wild life reserves or wild life sanctuaries is prohibited unless a written permit is first obtained from the Director for Wild Life and national Parks. Even then, the law is very clear that those capable to apply for the permit must either be a licensed hunter or someone who satisfies the Director in writing that his entry into the wild life reserve or wild life sanctuary is for the any of the purposes of art, science and recreation. For the former, his entry is limited only to a wild life reserve because in a wild life sanctuary, the acts of shooting, killing or taking any animal or bird and taking or disturbing the nest of egg of any animal or bird are totally prohibited.

On the other hand, the Aboriginal Peoples Act 1954 provides for the protection, well-being and advancement of the aboriginal people in the Peninsular Malaysia. The Act provides that the State Authority may gazette any area exclusively inhabited by aborigines as an aboriginal reserve. Any area predominantly or exclusively inhabited by aborigines may also be gazetted by the State Authority as aboriginal area, within which there shall not be any land declared as a Malay Reservation or a wild sanctuary or reserve. Similarly, no land within aboriginal area shall be alienated, granted, leased or disposed to persons who are not aborigines and no licence shall be issued for collection of forest produce within an aboriginal area. Nevertheless, enacted before CBD, this law do not contain any provision as such on traditional knowledge of these aborigines as enshrined under Article 8(j) of CBD.

The Environmental Quality Act 1974 mainly relates to the prevention, abatement and control of environmental pollution as well as the advancement of environment. The amendment to this Act in 1985 to include Environmental Impact Assessment (EIA), which was an attempt to conserve its biodiversity through protecting the environment. This amendment prescribes for activities that involve forest lands including:

- a) Land development schemes converting an area of 500 hectares or more of forest land into a different land use;
- b) Drainage of wetland, wildlife habitat or virgin forest covering an area of 100 hectares or more;
- c) Land-based aquaculture projects accompanied by clearing of mangrove forests covering an area of 50 hectares or more;
- d) Conversion of hill forest land to other land use covering an area of 50 hectares or more;
- e) Logging or conversion of forest land to other land-use within the catchment area or reservoirs used for municipal water supply, irrigation or hydro-power generation or areas adjacent to state and national parks, and national marine parks;
- f) Logging covering an area of 500 hectares or more;
- g) Conversion of mangrove forests for industrial, housing or agricultural use covering an area of 50 hectares or more;
- h) Clearing of mangrove forests on islands adjacent to national marine parks;
- i) Other activities, which may affect forest, such as coastal reclamation, and hydro-power projects.

There are two main federal legislations relating to land and inadvertently forest. The National Land Code 1965, which generally provides for the registration of title to land and dealings of lands. The National Land Code was enacted pursuant to Article 76(4) and shall apply only to the States of Malaya (refers to the states in the peninsular Malaysia) and basically reflects the Malaysian Torrens System, which deals in land and land tenure, the registration of title and dealings to land and collection of revenue from land. The Land Conservation Act 1956, meanwhile, is more relevant to the issues of biodiversity conservation and management. This Act was enacted pursuant to Article 76(3), which requires to be adopted by the States in order to be applicable of those States (11 States in the Peninsular Malaysia have adopted this Act). Part II provides for the control of hill land where it expressly prohibits plantation of short-term crops on any hill land except under permit, which can only be issued by the Land Administrator if he is satisfied that such cultivation will not cause soil erosion. Clearings and cultivation of hill land are also prohibited provided there is permit by the Land Administrator.

The most recent of these legislations are the Protection of New Plant Varieties Act 2004, which is a post-CBD legislation. This Act provides for the protection for farmers and plant breeders, including indigenous people, rights in conserving, improving and providing genetic resources for the cultivation of new plant varieties as well as to encourage investment and development of breeding new plant varieties.

At present, there is not a single legislation in Malaysia that comprehensively provides for forest biodiversity conservation and management as a whole, where most of the existing legislations are sector-based (FRIM, 2008). The National Forestry Act 1982, for instance, deals with the utilisation and management of forests while the Protection of Wildlife Act 1972 deals only with protection of wild life. Some of these piecemeal laws, whether at federal or state levels, were passed without specific considerations on the issues of biodiversity conservation and management. Most of these laws were passed years before biological diversity began to take centre stage and when awareness of the pertinence of preserving the global ecosystems, especially amongst the developing countries like Malaysia, was still very low.

4. Conclusion

As a conclusion, there found to be three main hindering factors on the existing Malaysian policy and laws to provide for the sustainable management of forest biodiversity. The first factor is the silence of the National Forestry Policy on the third objective of CBD i.e. fair and equitable sharing of the benefits arising out of the utilization of forest genetic resources, which is in fact the basis of CBD itself. The second factor is the absence of a comprehensive legislation for forest biodiversity management in Malaysia where the existing piecemeal legislations are very much segmented and the final factor that may impede the effort to sustainably manage our forest biodiversity is the failure of the existing legislations relating to forest, which were mostly archaic and enacted prior to CBD, to take into account as well as incorporate the three objectives of CBD i.e. biodiversity conservation, biodiversity sustainable use & fair and equitable sharing of the benefits arising out of the utilization of forest genetic resources.

In the end, it may be surmised that the silence of the National Forestry Policy on the fair and equitable sharing of the benefits arising out of the utilization of forest genetic resources, the absence of a comprehensive legislation for forest biodiversity management along with the failure of the archaic laws to incorporate the three objectives of CBD collectively lead to the insufficiency of the existing policy and legislations to provide for the sustainable management of forest biodiversity in Malaysia.

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