

## **CHAPTER 5**

# **BIODIVERSITY CONSERVATION AND POLICY: EMPHASIS IN MALAYSIA**

### **INTRODUCTION**

Biodiversity or rather the components and factors that make up biodiversity and conservation has been a main concern in Malaysia, and attention to balancing resources use and development took root as early as in the First Malaysia Plan (1966-1970) (1MP) where emphasis was made by the Government on the need to create a most favourable environment possible for accelerated development by doing all it can to stimulate investment and encourage the best possible use of Malaysia's human and natural resource<sup>1</sup>, and with regard to exploitation of forest areas, caution was put forward that exploitation cannot be allowed to be excessive as a portion of the country's forests must be reserved to avoid the danger of sudden climatic changes in the country, safeguard water supplies and soil fertility and prevent flooding and erosion<sup>2</sup>.

The same concern was also flagged in the Third Malaysia Plan (3MP)<sup>3</sup> with the growing concern that land and natural resources were exploited without due regard to ecosystems conservation, leading to the nation's first environmental policy, i.e.<sup>4</sup>:

“664. Malaysia' overall environmental policy will take into account of the following factors:

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<sup>1</sup> See First Malaysia Plan (1966-1970), Government of Malaysia 1966. Chapter 3, paragraph 103.

<sup>2</sup> Ibid. Chapter 7, paragraph 320.

<sup>3</sup> Third Malaysia Plan 1976-1980, Government of Malaysia 1976. Chapter 9.

<sup>4</sup> *ibid* pg 219

- i. The impact that population growth and man's activities in resources development, industrialisation and urbanisation have on the environment;
- ii. The critical importance of maintaining the quality of the environment relative to the needs of the population, particularly in regard to the productive capacity of the country's land resources in agriculture, forestry, fisheries and water;
- iii. The need to maintain a healthy environment for human habitation;
- iv. The need to preserve the country's unique and diverse natural heritage, all of which contribute to the quality of life; and
- v. The interdependence of social, cultural, economic, biological and physical factors in determining the ecology of man.”

The 3MP goes on to illustrate the consequences of development arising from disruption to forest cover, and the practice of activities that reduces the potential of productive forestry and wildlife, soil erosion, siltation of rivers and alteration of existing stable hydrological regimes, which in turn require measures for flood control, regulation of stream flows and purification of water supplies<sup>5</sup>. Subsequent Malaysia Plans have made emphasis on the need to protect and conserve Malaysia's natural biological resources. These policy directions have led to the endorsement of policies

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<sup>5</sup> The current flood incident in Johor, Melaka and Pahang though brought about by heavy rainfall, but the lack of natural and appropriate measures to channel flood waters and proximity of settlements to flood plains is one of the many instances which has confirmed the concerns raised in the 3MP.

and promulgation of laws that have since served to afford protection and management measures to aid biodiversity conservation.

## **5.1 BIODIVERSITY CONSERVATION: POLICY DIRECTIONS**

There at least five national policies that have bearing on components of biodiversity, conservation and biodiversity conservation, this is not including the National Development Plans, which has given emphasis on aspects related to biodiversity since its first plan in 1967. As quoted above, it is ironic that the terms climate change took root almost 30 years prior to Malaysia ratifying the United Nations Framework Convention on Climate Change 1992, and the emphasis then is on the need to protect forests so as not to cause changes in the climate. Key aspects of the policies selected are highlighted below, focus on key points being on matters that can be suited in unifying or integrating current statutory regime.

### **5.1.1 Biodiversity, Conservation and the National Development Plans.**

As stated earlier, in 1966, commitments and focus on the importance of aspects of biodiversity took root, as basis which to guide the way the nation would be built. Four decades ago, the Government mindful that the nation's development relied heavily on its natural resources, put forward caution that over-exploitation is an undesirable target, as it may impact on the environment, in the form of sudden climatic changes, and affect water supplies and soil fertility, as well as cause flooding and erosion<sup>6</sup>. Such was the foresight then, that following from this 1MP, the Second Malaysia Plan (1971-1975) promotion of efficient utilisation of resource was made given emphasis<sup>7</sup>, and the

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<sup>6</sup> See *fn* 2.

<sup>7</sup> Second Malaysia Plan (1971-1975). Government of Malaysia, 1971. Chapter 1 paragraph 22.

quality of forests be enhanced to help contribute to soil and water conservation in addition to developing programmes for afforestation<sup>8</sup>.

The 3MP as illustrated in the introduction showed that Malaysia was pretty much in trend with world development in relation to environmental protection. Malaysia's first ever environment policy is couched in Chapter 9, and in Chapter 3, paragraph 157, it was stated that:

“157. The effects of development on the nation's environment will not be ignored. Impairment of the country's land and forest resources, as well as pollution from industries and urban development have not in general reached such a state that they cannot be dealt with at relatively costs, if action is take to deal with them now. The Government recognizes the importance of adopting sound environmental policies and has therefore brought into force the Environmental Quality Act an established the Department of Environment. The Government will ensure that development will not be carried out in such a manner as to impair the productivity of Malaysia's renewable land and forest resources, and cause the extinction of unique elements of natural ecosystems and lead to excessive and harmful pollution of the environmental resulting in unhealthy living conditions for Malaysian, the loss of recreational resources and the productivity of Malaysia fisheries.”

The 3MP goes on to make policy provisions for wildlife protection (paragraph 684), ecosystems conservation (paragraph 685, with the establishment of sanctuaries, parks

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<sup>8</sup> *Ibid.* Chapter 9, paragraph 443.

and reserves) and measures that will ensure environmental consequences are minimised and early remedial action taken to avoid prohibitive curative costs and promotions of sustained yield management and preservation through maintenance of ecosystems reserves.

The Fourth Malaysia Plan (1981-1985) (4MP) focused on effective management and utilisation of resources<sup>9</sup>. The Fifth Malaysia Plan (1986-1990) (5MP)<sup>10</sup> also placed emphasis on the need to preserve and protect the environment from over-exploitation of natural resources and pollution, taking note on the need to balance development and environment, emphasizing on conservation to ensure that the resulting environmental damage will not negate the benefits of gained during through development so that present and future generations will continue to have access to similar resources. Nature conservation was also given a priority with provisions made to ensure that more parks and reserves are established<sup>11</sup>.

The Sixth Malaysia Plan (1990-1995) (6MP) focus was made on conservation, environmental and ecological balance in the context of sustainable development, with conservation efforts targeted towards forests and marine ecosystems<sup>12</sup>. The Seventh Malaysia Plan (1996-2000) (7MP), in Chapter 19<sup>13</sup>, paragraph 62, made a priority that natural resources be conserved to maintain ecological processes, preserve biological diversity and restore degraded natural resources, in addition to promoting sustainable use and efficiency in resource use and management, as well as preventing the deterioration of fragile ecosystems. Paragraph 62 of Chapter 19 also made specific references to strengthening existing in situ and ex situ conservation of biodiversity and

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<sup>9</sup> Fourth Malaysia Plan (1981-1985). Government of Malaysia, 1981. Chapter 10, paragraph 459.

<sup>10</sup> Fifth Malaysia Plan (1986-1990). Government of Malaysia, 1986. Chapter 9, page 279.

<sup>11</sup> *Ibid*, page 287.

<sup>12</sup> Sixth Malaysia Plan (1991-1995). Government of Malaysia, 1991. Chapter 15, pages 389-410.

<sup>13</sup> Seventh Malaysia Plan (1995-2000). Government of Malaysia, 1995. Pages 581-617.

critical habitats protected. It is also in paragraph 72, that reference is made to biosafety.

The Eighth Malaysia Plan (2001-2005) (8MP)<sup>14</sup> in Chapter 19, paragraph 38 the government proposed the implementation of the Biodiversity Action Plan in various states; regulations to control access to biological resources and measures to address biosafety; management plans for protected areas; identification of critical habitats; development of a biodiversity database. Paragraph 39 of the same Chapter looked at the policy directions for the application of sustainable management of forests approaches to conserve biodiversity, protect watersheds and catchments, improve water quality and ensure sustainable supply of forest products.

The Ninth Malaysia Plan (2006-2010) (9MP)<sup>15</sup>, in Chapter 22, paragraph 30, focused amongst others on protection of critical habitats and inclusions of impacts to ecosystems into environmental impact assessment processes. With regard to forests, the promotion of sustainable forests management continued (paragraph 31). In the recently tabled Tenth Malaysia Plan (2011-2015)<sup>16</sup> emphasis has been made on enhancing forest and wildlife conservation efforts; and ensuring sustainable and safe utilisation of resources.

The policy emphasis in the national development plans leans on the fact that natural resources particularly components of biodiversity are the building blocks of economic development in Malaysia, the continued stress to protect and conserve biodiversity and

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<sup>14</sup> Eighth Malaysia Plan (2001-2005). Government of Malaysia, 2001. Pages 536-554.

<sup>15</sup> Ninth Malaysia Plan (2005-2010). Government of Malaysia, 2005. Pages 453-463.

<sup>16</sup> Tenth Malaysia Plan (2011-2015). Government of Malaysia, 2010. See Chapter 6, pages 306-308.

its components reinforces that commitments held by Government to protect biodiversity in the context of sustainable development.

This bodes well for Malaysia as it is one of the 17 like-minded mega diverse countries in the world, and as the distinction of having within the nation's belly forests reserves that are considered having the highest amount endemic rarity<sup>17</sup>. This indicates where law is concerned, the need to craft provisions that ensures that biodiversity is both conserved and used sustainably is primary, so as to allow the balance to exist between environmental conservation and economic and social development.

### **5.1.2 National Biodiversity Policy 1998 (NBP)**

In Malaysia, the primary policy that puts into context the importance of biodiversity is the National Biodiversity Policy 1998<sup>18</sup>, which was adopted to help provide directions towards integrating actions pertaining to biodiversity conservation in Malaysia through the adoption and implementation of 15 Strategies and 87 action plans. Table 5.1 summarise the key important areas as gleaned from the objectives of NBP.

There are six significant areas to note here, i.e. economic benefits (contributor to national development); food security (complements the primary objective of the National Agricultural Policy, 1991-2000); environmental stability (maintenance of ecological functions and services); national biological heritage (flora, fauna, microorganisms, genetic resources and cultural heritage); scientific, educational and recreational values (promotion and generation of knowledge, capacity building and

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<sup>17</sup> Sabah and Sarawak as noted in the NBP, paragraph 21.

<sup>18</sup> Ministry of Science, Environment and Technology, 1998. National Policy on Biological Diversity Malaysia. Government of Malaysia, 1998.

ecotourism potential); and biosafety (creation, transportation, handling and release of genetically modified organisms).

on NBP objectives.

Table 5.1. Key important areas based

| Objective |  | Significance                                    |
|-----------|--|---|
| 1         | Optimise economic benefits from sustainable utilisation of the components of biological diversity                              | Economic Benefits                               |
| 2         | Ensure long-term food security for the nation  | Food Security                                   |
| 3         | Maintain and improve environmental stability for proper functioning of ecological systems                                      | Environmental Stability                         |
| 4         | Ensure preservation of the unique biological heritage of the nation for the benefit of present and future generations          | National Heritage                               |
| 5         | Enhance scientific and technological knowledge, and educational, social, cultural and aesthetic values of biological diversity | Scientific, Educational and Recreational Values |
| 6         | Emphasize biosafety considerations in the development and application of biotechnology   | Biosafety                                       |

These objective and areas of significance stems from 11 key principles that were formulated to guide policy directions, i.e.:

- i. The conservation ethic, including the inherent right to existence of all living forms, is deeply rooted in the religious and cultural values of all Malaysians;
- ii. Biological diversity is a national heritage and it must be sustainably managed and wisely utilized today and conserved for future generations;
- iii. Biological resources are natural capital and their conservation is an investment that will yield benefits locally, nationally and globally for the present and future;



- iv. The benefits from sustainable management of biological diversity will accrue, directly or indirectly, to every sector of society;
- v. The sustainable management of biological diversity is the responsibility of all sectors of society;
- vi. It is the duty of Government to formulate and implement the policy framework for sustainable management and utilisation of biological diversity in close cooperation with scientists, the business community and the public;
- vii. The role of local communities in the conservation, management and utilisation of biological diversity must be recognized and their rightful share of benefits should be ensured;
- viii. Issues in biological diversity transcend national boundaries and Malaysia must continue to exercise a proactive and constructive role in international activities;
- ix. The interdependence of nations on biological diversity and in the utilisation of its components for the well-being of mankind is recognized. International cooperation and collaboration is vital for fair and equitable sharing of biological resources, as well as access to and transfer of relevant technology;
- x. Public awareness and education is essential for ensuring the conservation of biological diversity and the sustainable utilisation of its components; and
- xi. In the utilisation of biological diversity, including the development of biotechnology, the principles and practice of biosafety should be adhered to.

Based on these principles and objectives, 15 strategies were devised coupled with 87 action plans so as to facilitate the government meet the NBP objectives. The 15 strategy, its key words as highlighted, will be used for consideration later to structure the way the statutory framework in Chapter Eight.

- i. Improve the Scientific Knowledge Base. Here the emphasis is on undertaking studies to assess its direct and indirect values, and identify the potential threats to biological diversity loss, and how they may be countered.
- ii. Enhance Sustainable Utilisation Of The Components Of Biological Diversity. The focus is on identification and encouragement of optimum use, fair distribution of benefits.
- iii. Develop a Centre of Excellence in Industrial Research in Tropical Biological Diversity.
- iv. Strengthen Institutional Framework For Biological Diversity Management with the establishment and reinforcement of mechanisms for planning, administration and management of biological diversity.
- v. Strengthen And Integrate Conservation Programmes emphasising *in-situ* and *ex-situ* conservation areas.
- vi. Integrate Biological Diversity Considerations Into Sectoral Planning Strategies by ensuring all major sectors of planning and development incorporate considerations of biological diversity management.
- vii. Enhance Skill, Capabilities And Competence
- viii. Encourage Private Sector Participation
- ix. Review Legislation To Reflect Biological Diversity Needs focusing on reviewing and updating and where necessary introduce new legislations, with special emphasis on the following areas:
  - commitments under the Convention on Biological Diversity and Agenda 21;

- regulating and managing biological resources including the introduction and implementation of codes of practice for collectors;
  - intellectual property and other ownership rights;
  - development and utilisation of genetically modified organisms with due regard to provisions ensuring safety procedures in their handling and release to the environment;
  - introduction of alien species or population that threaten ecosystems, species and populations;
  - management of threatened or endangered species and populations.
- x. Minimise Impacts Of Human Activities On Biological Diversity, by taking mitigating measures to reduce the adverse effects of human activities on biological diversity.
  - xi. Develop Policies, Regulations, Laws And Capacity Building On Biosafety particularly in relation to genetic engineering, and the importation, creation and release of genetically modified organisms.
  - xii. Enhance Institutional And Public Awareness to enable participation of the public and institutions for the effective conservation and protection of biological diversity.
  - xiii. Promote international cooperation and collaboration in order to enhance national efforts in biological diversity conservation and management.
  - xiv. Promote and encourage the exchange of information on biological diversity at local and international levels.
  - xv. Identify and establish appropriate funding mechanisms for biological diversity conservation and management.

It is noted that the NBP places emphasis on establishing mechanisms, measures, practice and implementation means to ensure that the science related to biodiversity; control of utilisation of biodiversity; research on biodiversity; conservation of biodiversity; control of impacts and biosafety are spelt out through legal reforms, awareness raising and readjustments in institutional and stakeholder arrangements.

What it is asking, particularly through legal reform is that a bridge or common objective, couched in an integrative and comprehensive policy direction, be determined to harmonise existing legal provisions, and steps taken should also include not just strengthening existing statutory regime but also introducing uniformity, and where appropriate a new law.

The NBP spells out key factors that have impeded biodiversity conservation, citing the existing statutory regime as one of the reasons why biodiversity conservation has been sectoral, key statements related include<sup>19</sup>:

- a. There is no single comprehensive legislation in Malaysia which relates to biological diversity conservation and management as a whole, existing legislation are sector-based, with some promulgated without specific consideration given to the issue of conservation and management of biological diversity as a whole. This is true as there is no national statute for biodiversity or statute that translates commitments under the CDB to the national level. Save and except the International Trade of endangered Species Act 2010, the other biodiversity related MEAs discussed in Chapter Four have not been translated to law. The NBP does however make reference to the related MEAs.

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<sup>19</sup> See *fn* 17 (NBP, 1998). Paragraphs 15 – 20, pages 19-20.

- b. Legislations available are also inadequate in that species endangered due to habitat destruction are not protected by way of a national law for endangered species.
- c. There are constitutional issues stemming from the fact that under the Federal Constitution the authority to legislate over biodiversity is not within one single authority, it is to an extent dependent on the component of biodiversity shared between Federal and State legislature or within a particular the responsibility of one authority alone, resulting laws that are federal legislation and state and its application may not apply to the whole of Peninsular Malaysia, Sabah and Sarawak.
- d. Mindful of the constitutional position, the NBP poses the question of how uniformity of laws may be promoted, particularly in respect of matters which fall under State jurisdiction alone.
- e. The current legislative framework creates some restrictions, thereby causing some deficiencies.
- f. The absence of an integrative approach across the sectors, due to the limited scope of various statutes and enactments in relation to biological diversity conservation has led to a lack of consideration of the overall objectives of biological diversity conservation and comprehensive coverage of biological diversity issues, in addition to non-uniform implementation between states.

The NBP advocates that there is a need to mainstream biodiversity considerations in government and governance so as to ensure that the utilisation of biodiversity is sustainable and that due to its value and importance to development and environmental stability, conservation of the same is given priority. It also makes provisions through its strategies to mainstream biodiversity in long term and medium term development

planning, can be taken to read that biodiversity considerations have been included and as far as other policy considerations, aspects related to sustainable utilisation and conservation have also been taken into account (see 5.1.3 below).

Interestingly in its principles, it notes that the duty to conserve is deeply rooted in the religious and cultural values of all Malaysians and that the duty is shared amongst all stakeholders, not just government. From a legal standpoint, the NBP requires a clear outline of mandates that are aligned to an overall objective for biodiversity, in which case here it is the sustainable utilisation and conservation of biodiversity for sustainable development.

### **5.1.3 Related National Policies on Biodiversity**

Malaysia in its Fourth Country Report to the CBD<sup>20</sup> cites ten key national policies that have bearing on biodiversity conservation, which include national development plans in 5.1.1. The summary of key policies and objectives based on what the Ministry of Natural Resources and Environment has identified and modified for the purposes of this section are detailed below.

#### **5.1.3.1 National Policy on the Environment 2002**

The policy aims at achieving continued economic, social and cultural progress in Malaysia and enhancing the quality of life of its people, through environmentally sound and sustainable development. There are eight principles or relevance, i.e.:

- Stewardship of the Environment

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<sup>20</sup> Ministry of Natural Resources and Environment, 2009. Fourth National Report to the Convention on Biological Diversity. Government of Malaysia. (The Fourth National Report to CBD was prepared under the UNDP/GEF funded 2010 Biodiversity Targets National Assessments project for Malaysia. This project was undertaken by the Conservation and Environmental Management Division, Ministry of Natural Resources and Environment.) 94 pages. See pages 43-51. The Fourth Report is referred to here as it is the most current update compiled by the Government of Malaysia in fulfilment of its reporting requirements under the CBD. The previous reports are not referred to as they do not reflect the most current information, particularly pertaining to issues and options undertaken by Malaysia. It is important to note that the report was prepared for the upcoming COP meeting in Japan in 2010.

- Conservation of Nature's Vitality and Diversity
- Continuous Improvement in the Quality of the Environment
- Sustainable Use of Natural Resources
- Integrated Decision-Making
- Role of the Private Sector
- Commitment and Accountability
- Active Participation in the International Community

The Policy's objective actually complements the NBP's objective, as it reads "to conserve Malaysia's unique and diverse cultural and natural heritage with effective participation by all sectors of society", which gives a nod to the principle in the NBP whereby biodiversity is considered heritage. It's strategic approach also has bearing on complementing the NBP, in that it promotes "environmental soundness through research and development, economic efficiency, social equity, responsibility and accountability".

The second strategy of the policy, which focuses on effective management of natural resources and environment, makes reference to these relevant key points:

- Development of a national inventory and audit of environment and natural resources will be maintained and regularly updated, with particular emphasis on depletion and renewability, to serve as a guide to policy formulation and decision making. Appropriate environmental monitoring systems shall be established to facilitate the evaluation of programmes and projects.
- Identification of natural resources areas, particularly those containing biologically rich habitats and ecosystems will be established and maintained as

zones for the conservation and protection of indigenous flora and fauna and genetic resources.

- Management of forests and their resources in a sustainable manner to ensure continued and sustainable economic benefits and compatibility with environmental stability, ecological balance and social stability of communities inhabiting such areas.
- Management of seas, coastal zones, lakes, rivers, mangroves and other wetlands, islands, seagrass and coral reefs in an environmentally sound manner; including the prevention of ecologically unsustainable harvesting of living marine and aqua.

These key points will be summarised and carried forward to Chapters Six and Eight, bearing in mind that the proposed integrative framework should endeavour to facilitate translation of these policy thrusts and directions to regulatory measures.

#### **5.1.3.2. National Forestry Policy 1992**

The National Forestry Policy of 1992 is the revised Policy to the 1977 policy, taking cognisance of the current concerns in the 1990s particularly the importance of biological diversity conservation and sustainable utilisation of genetic resources, as well as the role of local communities in forest management.

The relevant areas in the Policy that can complement the NBP include strategies to dedicate as Permanent Forest Estate sufficient land areas strategically located throughout the country in accordance with the concept of rational land use. The Permanent Forest Estate will be managed and classified under four major functions:



- Protection Forest for ensuring favourable climatic and physical conditions of the country, the safeguarding of water resources, soil fertility, environmental quality, conservation of biological diversity and the minimisation of damage by floods and erosion to rivers and agricultural lands;
- Production Forest for the supply in perpetuity at reasonable rates of all forms of forest produce which can be economically produced within the country and are required for agricultural, domestic and industrial purposes, as well as for export;
- Amenity Forest for the conservation of adequate forest areas for recreation, ecotourism and in promoting public awareness in forestry; and
- Research and education forest for the conduct of research, education and conservation of biological diversity.

The Policy also touches on the need to provide for the conservation of biological diversity and areas with unique species of flora and fauna, including specific areas for the purpose of forestry education and other scientific studies. It also looks at the need to develop a comprehensive programme in community forestry to cater for the needs of the rural and urban communities and to promote active local community involvement in forestry management projects, including agro-forestry projects; as well as undertake and support intensive research programmes in forestry and forest products aimed at enhancing maximum benefits from the forest.

The key factors here to be taken forward, can be summarised as:

- Dedication of protected areas, such as Permanent Forest Estate; Production Forest; Amenity Forest; Research and education forest

- Establish measures for the conservation of biological diversity and areas with unique species of flora and fauna, including specific areas for the purpose of forestry education and other scientific studies;
- Develop a comprehensive programme in community forestry to cater for the needs of the rural and urban communities and to promote active local community involvement in forestry management projects, including agro-forestry projects; and
- Undertake and support intensive research programmes in forestry and forest products

#### **5.1.3.3. National Wetlands Policy 2004**

The aim of this policy is to ensure conservation and wise-use of the wetlands to benefit from its functions and fulfil its obligation under the Ramsar Convention. The relevant objectives are:

- Protect and conserve each type of wetlands.
- Manage wetlands in integration with water catchment areas and river basins,
- Optimise socio-economic benefits of wetlands through sustainable harvesting of wetlands products.
- Integrate wetlands conservation interest into overall natural resource planning, management and decisions.
- Increase scientific and technical knowledge on wetlands.
- Increase public appreciation on the functions and benefits of wetlands.
- Restore degraded wetlands.

The Policy has four key strategies, all of which have bearing on the NBP, i.e.:

- Ensure adequate legislation for conservation and wise use.
- Provide coordination for the efforts of all stakeholders.

- Encourage research on local wetlands.
- Enhance appreciation of the functions and benefits of wetlands respective to stakeholders.

The Policy does link with the commitments under RAMSAR 1971, though not in detail. Based on the objectives and key strategies above, it is suggested that these factors be taken forward to Chapter Six:

- Set out measures to determine what is meant by conservation and wise use, as well as determine functions and benefits of wetlands.
- Set out measures to enable the management of wetlands and restore degraded wetlands.
- Set out measures that can integrate wetlands conservation into overall natural resource planning, management and decisions.

#### **5.1.3.4. Third National Agriculture Policy 1998-2010**

The Policy sets the strategic directions for agricultural development to the year 2010. The focus is on new approaches to increase productivity and competitiveness, and conservation and utilisation of natural resources in a sustainable manner. The relevant policy thrust to NBP, would be the thrust on sustainable management and utilisation of resources, that serves as the guiding principle in pursuing agricultural development. Here the emphasis is on strengthening rules, regulations and incentives to encourage environment-friendly agricultural and forestry practices and to minimise the negative impact of these activities on the environment.

#### **5.1.3.5. National Physical Plan 2005**

The Policy is a written statement on the physical development and conservation in Peninsular Malaysia, with a three-pronged purpose to :

- Enhance National Planning through spatial dimension in the country's economic policy.
- Coordinate sectoral agencies with the introduction of the spatial policies
- Formulate physical planning policies

The fourth objective has bearing on complementing the NBP, i.e., to secure spatial and environmental quality and diversity for a high quality of life. There are two relevant principles:

- Protect national heritage areas and locations, under which greater resolve are dedicated from all quarters to conserve, among others, the natural resources and manage it in a sustainable manner in particular for areas of natural beauty and ecological richness such as pristine forests, hills and wetlands, and habitats for the Malaysian fauna and flora.
- Avoid disrupting ecological stability, by promoting incorporation of guidelines on development on environmentally sensitive into the NPP, that at the same time discourages coastal land reclamation for certain purposes, encourages careful monitoring of developments within water catchment areas and other environmentally sensitive areas, including application of the concept of Integrated River Basin Management.

Key policy statements that complements biodiversity conservation include:

- NPP 18: Environmentally Sensitive Areas (ESA) shall be integrated in the planning and management of land use and natural resources to ensure sustainable development.

- NPP 19: A Central Forest Spine shall be established to form the backbone of the Environmentally Sensitive Area network.
- NPP 20: Sensitive coastal ecosystems shall be protected and used in a sustainable manner
- NPP 22: All surface and ground water resources are strategic assets to be safeguarded and used optimally.

Based on the above, the key factors that can be used for consideration in framing an overarching statute, taking into account the need to bridge biodiversity conservation with land and physical planning and development, which include the need to:

- Develop measures to protect national heritage areas and locations (biodiversity)
- Develop measures and guidelines that avoids disrupting ecological stability
- Develop guidelines for environmentally sensitive areas
- Establish central forest spine
- Protect coastal ecosystems

#### **5.1.3.6. National Urbanisation Policy 2006**

The Policy aims to guide and coordinate urban planning and development to be more efficient and systematic especially in managing the increase of urban population by 2020 with emphasis on a balance development. Relevant policy statements to aid biodiversity conservation include:

- NUP 5. Optimal and balanced land use planning shall be given emphasis in urban Development: Ensure each new development is compatible with the surrounding land use

- NUP 8. Environmentally sensitive area and prime agricultural area shall be conserved: Protect and maintain ESA and prime agricultural area; Establish green areas as buffer zones to limit urban development.
- NUP 19. A planned, effective and sustainable solid waste and toxic management system shall be implemented.
- NUP 26. A sustainable and environmentally friendly development shall form the basis of environmental conservation and improve urban quality of life.

Based on the key policy statement, it can be deduced, the following factors should be given consideration:

- Establish measures to assess compatibility of urban development with surrounding land use
- Develop measures to conserve environmentally sensitive areas and prime agricultural area and establish green areas as buffer zones
- Develop an effective and sustainable solid waste and toxic management system
- Establish measures that incorporate a sustainable and environmentally friendly development approach that shall form the basis of environmental conservation and improve urban quality of life.

#### **5.1.3.7. Farm Animal Genetic Resources Management Plan 1998**

The FAnGR Management Plan for Malaysia was implemented in 1998 to conserve and utilise farm animal genetic resources in a sustainable manner for food security and nutritional wellbeing of the nation. There are a set of objectives, rationale and 17 strategies for effective management of farm animal genetic resources, which is used to support development and management of animal genetic resources at the Department of Veterinary Services in farms in Malaysia. The emphasis is on genetic resources in

animal husbandry, and the factor that can be taken for consideration is the inclusion of measures to control the use, development and protection of genetic resources. Measures for the conservation and utilisation of farm animal genetic resources

#### **5.1.3.8. National Biotechnology Policy 2006**

The Policy provides a framework for the Government, in partnership with key stakeholders, to harness the benefits of biotechnology development that is in accordance with established social and ethical norms. One of its main objectives is to create greater values from agriculture and natural resources utilising unique biodiversity and natural environment.

The Policy is divided into three main phases; Phase I (2005-2010), Phase II (2010-2015), and Phase III (2016-2020). Phase I focuses on capacity building and the establishment of the Malaysian Biotech Corporation (MBC), the establishment of advisory and implementation councils, the education and training of knowledge workers, and the development of a legal and intellectual property (IP) framework. Phase I also looks at the creation of jobs in the areas of agricultural biotechnology, healthcare biotechnology, industrial biotechnology, and bioinformatics. Phase II will emphasize on the business aspects, such as developing expertise in drug discovery and the development based on natural resources, new product development, and technology acquisition and licensing. Phase III will be based on the results achieved in the first two phases and bringing local biotech companies to international status. There are nine thrusts, all of which are relevant, i.e.:

Thrust 1: Agriculture Biotechnology Development. This looks at the transformation and enhancement of the value creation of the agricultural sector through biotechnology.

Thrust 2: Healthcare Biotechnology Development. Here the emphasis is on capitalising on the strengths of biodiversity to commercialize discoveries in natural products as well as position Malaysia in the bio-generics market.

Thrust 3: Industrial Biotechnology Development, i.e. ensure growth opportunities in the application of advanced bio-processing and bio-manufacturing technologies.

Thrust 4: R&D and Technology Acquisition with focus on establishing Centres of Excellence, in existing or new institutions, to bring together multidisciplinary research teams in co-ordinated research and commercialization initiatives. Accelerate technology development via strategic acquisitions.

Thrust 5: Human Capital Development focuses on building the nation's biotech human resource capability in line with market needs through special schemes, programmes and training.

Thrust 6: Financial Infrastructure Development which will apply competitive "lab to market" funding and incentives to promote committed participation by academia, the private sector as well as government-linked companies. Implement sufficient exit mechanisms for investments in biotech.

Thrust 7: Legislative and Regulatory Framework Development, i.e. create an enabling environment through continuous reviews of the country's regulatory framework and procedures in line with global standards and best practices. Develop a strong intellectual property protection regime to support R&D and commercialization efforts.

Thrust 8: Strategic Positioning by establishing a global marketing strategy to build recognition for Malaysian biotech and benchmark progress.



Thrust 9: Government Commitment with the establishment of a dedicated and professional implementation agency overseeing the development of Malaysia's biotech industry, under the aegis of the Prime Minister and relevant government ministries

Here the key factors for consideration is the regulating of the biotechnological industry, from cradle to grave, i.e. from planning of type of development, investments, establishment and operations. It will also require measures that will afford a strong intellectual property protection regime to support research and development as well as commercialisation efforts

**5.1.3.9. Action Plan for the Conservation and Sustainable Use of Fishery Resource Biological Diversity of Malaysia 2006**

The Department of Fisheries Technical Committee on Biodiversity prepared this Action Plan and there are nine strategies that are relevant, i.e.:

- Effective Fishery Resource Conservation and Management
- Reduce Loss of Biological Diversity
- Strengthen Research on Fishery Resource Biological Diversity
- Improve Capacity Building
- Enhance Information Dissemination and Networking
- Control and Management of Fish Trade
- Control and Management of Invasive Alien Species
- Regulation in Biosafety Management
- Control and Management of Biopiracy

Key factors for consideration here would be the inclusion of aspects related to biopiracy and biosafety, through strengthened research programmes, capacity building and enhanced information dissemination and networking. The measures will also have to look at aspects related to control and manage fish trade, invasive alien species, biosafety management and biopiracy.

#### **5.1.3.10. National Action Plan for the Management of Coral Reefs in Malaysia (2008)**

This Action Plan is formulated by the Department of Marine Park Malaysia to guide efforts in the management of marine parks and at the same time conserve and protect marine biodiversity. The action plan includes future directions and guidelines to those utilizing marine parks, stakeholders, agencies and organisations for their planning and decision making, with strategies on:

- Conservation
- Resource management
- Education, communication, consultation and commitment
- Research and monitoring
- Integrated planning
- Capacity building
- Recognition of local communities and stakeholder interests
- Management processes and
- Legislation

### **5.1.3.11 Overall Summary of Related Policies**

The main drivers of the policies listed above are biodiversity conservation, control of impacts and utilisation of biodiversity resources and components. There are at least eight areas for consideration that can be used when framing the integrative statutory framework, which are:

- Establishment of measures for biodiversity conservation, including plans, programmes and guidelines, which are to be included in all aspects of governance systems and processes;
- Establishment of measures to reduce biodiversity loss and for restoration, rehabilitation of degraded areas, habitats and ecosystems;
- Establishment of measures that facilitates and regulate access to resources and knowledge;
- Development of mechanisms to facilitate knowledge generation and sharing, including aspects related to intellectual property rights;
- Development of mechanisms for participation and inclusion of stakeholders;
- Develop mechanisms to facilitate research, as well as foster cooperation and collaboration to help build capacity;
- Develop measures and mechanisms to facilitate and control technological development and exchange; and
- Develop measures that facilitate capacity building.

It is also clear that the policies summarised above are anthropocentric in nature, i.e. the policies create environments that enables man to use resources (biodiversity) for development and improvement of quality of life. This necessitates the need to establish what are the ambits that sets the tone for biodiversity conservation, both purpose, rationale and targets, it is clear from the selected policies profiled and the NBP that

unless there is an overall principle and target, comprehensiveness for a collective action for biodiversity conservation will be difficult. Noted also that there is no clear overarching principle that binds all the policies, though they all fit within the principles that ground the NBP.

## **5.2 BIODIVERSITY CONSERVATION: FOCUS AND EMPHASIS**

One of the commitments to the CBD is the submission of National Reports<sup>21</sup> to the Conference of Parties. Malaysia since ratification, has submitted four reports. The reports are useful sources of reference, as it provides details as to the level of implementation of the obligations under the CBD. The most recent report, the Fourth National Report to the CBD (The 4<sup>th</sup> Report)<sup>22</sup> is relied upon here, as it provides a current snapshot of the focus and challenges with regard to biodiversity conservation.

As it is a report submitted by the government, the content are relied upon verbatim, and read as reflective of the actual and current state of biodiversity conservation in Malaysia<sup>23</sup>. An evaluation of the state and status of biodiversity conservation here is not undertaken as it is the premise of this research that there is a flaw in the current statutory regime, and this section will identify the key focus areas and challenges raised by the Ministry of Natural Resources and Environment (NRE), to be used to facilitate statutory profiling and later identification of integrative framework development.

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<sup>21</sup> Article 26, Convention on Biological Diversity 1992.

<sup>22</sup> See *fn* 20.

<sup>23</sup> See *fn* 20

### 5.2.1 Biodiversity: Components and areas

The 4<sup>th</sup> Report states that there are six thematic areas relevant to Malaysia, as per that proposed by the CBD, with corresponding ecosystems as summarised in Table 5.2 below.

**Table 5.2 Overview of thematic areas and related ecosystems in Malaysia**

| <b>Thematic Area</b>   | <b>Related ecosystems</b>  |
|--|--|
| Forests Biodiversity   | Lowland evergreen forest<br>Lowland dipterocarp forest<br>Heath forest<br>Limestone forest<br>Mixed dipterocarp forest<br>Hill dipterocarp forest<br>Hill mixed dipterocarp forest |
| Mountain Biodiversity  | Montane forest<br>Subalpine forest   |
| Inland Waters Biodiversity   | Peat swamp forest<br>Freshwater swamp forest<br>Riparian forest<br>Rivers, ponds, lakes, etc.<br>Mangrove forest   |
| Marine and Coastal Biodiversity  | Coastal hill dipterocarp forest  |
| Islands Biodiversity (please refer to Forest Biodiversity for non-marine and non-coastal related ecosystems) | Mangrove forests<br>Mudflats<br>Coral reef<br>Seagrass   |
| Agricultural Biodiversity  | Plantations<br>Rice fields<br>Fruit orchards & vegetable farms<br>Livestock rearing and aquaculture farms  |

Source: Ministry of National Resources and Environment, 2009 (as modified).

The 4<sup>th</sup> Report also details species diversity in Malaysia, based on data collected by the NRE in 2007, which is summarised in Table 5.3 below. It is worth noting that the breadth of species focused on is not as exhaustive as that detailed out in Chapter Three. This echoes what was raised by E.O. Wilson, in that there is still much to be done in cataloguing what we have, what state and condition it is in.

**Table 5.3 Estimated numbers of flora, fauna and marine organisms**

| Kingdom/Group/Class                                  | Number of species   |       |         |
|--|---------------------|-------|---------|
|  | Peninsular Malaysia | Sabah | Sarawak |
| <b>FLORA</b>   |                     |       |         |
| Algae  | 377                 |       |         |
| Bryophytes   | 475                 | 582   | 330     |
| Fern and associates                                  | 637                 | 963   |         |
| Gymnosperm   | 27                  | 34    |         |
| Monocots   | 2,010               | 2,170 |         |
| Dicots   | 5,529               | 4,497 |         |
| <b>TERRESTRIAL FAUNA</b>                             |                     |       |         |
| <b>Vertebrate</b>                                    |                     |       |         |
| Mammals  | 229                 | 221   |         |
| Birds  | 742                 |       |         |
| Amphibian  | 242                 |       |         |
| Reptiles   | 567                 |       |         |
| Freshwater fish                                      | 290                 | 100   | 200     |
| Marine fish  | 1,500               |       |         |
| <b>Invertebrate</b>                                  |                     |       |         |
| Butterfly  | 1,031               | 936   |         |
| Leaf Insect  | 1,073               |       |         |
| Freshwater crabs                                     | 102                 |       |         |
| Hard coral   | 500-600             |       |         |
| Soft coral   | 200                 |       |         |
| Mollusc  | 3,000               |       |         |
| <b>MARINE ORGANISMS</b>                              |                     |       |         |
| Coral  | 435                 |       |         |
| Worms  | 9                   |       |         |
| Phytoplankton  | 61                  |       |         |
| Fish   | 700                 |       |         |
| Seashells  | 50                  |       |         |
| Crabs, Barnacles, Prawn, Crayfish, Lobster & Shrimps | 48                  |       |         |
| Marine Fungi   | 56                  |       |         |
| Marine mammals                                       | 21                  |       |         |
| Jellyfish  | 7                   |       |         |
| Turtles  | 4                   |       |         |
| Seaweed  | 289                 |       |         |
| Seagrass   | 15                  |       |         |
| Sponges  | 21                  |       |         |
| Squid, Cuttlefish, Octopus                           | 18                  |       |         |
| Starfish & Sea Urchins                               | 12                  |       |         |
| Sea Cucumber   | 19                  |       |         |
| Sea snakes   | 9                   |       |         |

Source: Ministry of National Resources and Environment, 2009 (as modified).

Of all the species listed in Table 5.3 above, species, which include mammals, birds, reptiles and insects protected based on data collected in 2009 contained in the 4<sup>th</sup> report, 631 species are totally protected in Peninsular Malaysia (55 mammals, 571 birds and 5 reptile species) and 122 are protected (17 mammals, 71 birds, 5 reptiles and 29 insect species) under the Protection of Wildlife Act 1972<sup>24</sup>; 14 species are totally protected (7 mammals, 3 reptiles and 4 plant species) and 227 are protected (73 mammals, 132 birds, 7 reptiles, 2 insects and 13 plant species) under the Sabah Wildlife Conservation Enactment 1997.

In Sarawak under the Wildlife Protection Ordinance 1996, 21 (in addition to all species of *Catacea*) mammals, 26 (in addition to all species of *Phalaropus* and *Ducula*, which will mean an additional 2 to the total figure) birds, 5 (including all species of *Chelonidae* and *Dermochelyidae*, which mean an additional 1 to the total) reptiles are totally protected, whilst 12 mammals (in addition to 7 of which are all species of *Tupaiaidae*, *Chiroptera*, all primates, *Petuaristinae*, *Hystricidae*, *Viverrida*, *Lutra* and *Aonyx* as well as *Felidae*), 17 birds (in addition to 10 species of *Ardeidae*, *Ciconiidae*, *Falconidae*, *Phasianidae*, *Charadiiformes*, *Tytonidae* and *Strigidae*, all species of *Aerodamus*, *Hydrochous* and *Callocalai* as well as all species of *Alcedinidae*, *Picidae* and *Psittacidae*), 8 reptile species (in addition to 3 species of *Tryonichidae*, all species of *Varanus* and *Phyton*) and 1 insect species. What is worth noting is here, there are already differences in the types of protection afforded, some species are covered, some are not, which can lead to problems for migratory species.

It can be summarised here that Malaysia does follow the terms and areas identified by CBD, and it also takes into account CBD's 2010 Targets, with its provisional

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<sup>24</sup> This list would have been modified greatly under the new Wildlife Conservation Act 2010

framework of goals, targets and indicators to assess progress towards the 2010 target. Provisions are also made by relevant departments with the Peninsular Malaysia, Sabah and Sarawak jurisdiction to carry out in situ and e situ conservation<sup>25</sup>.

### 5.2.2 Threats to Biodiversity

The 4<sup>th</sup> report groups the main threats to biodiversity in Malaysia into three groups and six drivers of these threats; i.e.:

| <u>Aspect</u>                       | <u>Threats</u>   |
|-------------------------------------|--|
| a. Threats to ecosystems            | : Land development, pollution, encroachment, climate change and invasive alien species |
| b. Threats to species               | : Poaching and collection; invasive alien species                                      |
| c. Indirect threats to biodiversity | : Climate Change.  |

The drivers of these threats are also identified, and they are:

- Economic growth;
- Demand for food and Agricultural products;
- Demand for goods and services;
- Demand for exotic (wild) meat, traditional and herbal remedies;
- Demand for wild flora as pets and wild ornamental plants; and
- Tourism activities in pristine areas.

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<sup>25</sup> Ibid, pages 19-31.



The 4<sup>th</sup> Report summarised the main threats, implications to the thematic areas, which is reproduced here as Table 5.6. It indicates in reviewing the existing statutory regimes, it is important to note the areas of concern also, to see whether legislative provisions are addressing the same, which will be useful for the profiling exercise in Chapter Six. In addition, when formulating the integrative framework, the components in Table 5.4 will come in handy when identifying and framing appropriate provisions that will introduce uniformity in practice and application of conservation approaches and methods.

Table 5.4 Main Threats to Thematic Areas

| <b>Thematic Area</b>            | <b>Threats</b>  | <b>Impacts/Implications on Biodiversity</b>  |
|---------------------------------|---|--|
| Forest Biodiversity             | <ul style="list-style-type: none"> <li>• Land Development</li> <li>• Encroachment</li> <li>• Poaching and Collections</li> <li>• Climate Change</li> </ul>          | <ul style="list-style-type: none"> <li>• Habitat Loss</li> <li>• Fragmentation of ecosystems</li> <li>• Loss of species, especially endemic and threatened species</li> <li>• Pollution of inland waters</li> <li>• Loss of ecosystems benefits</li> </ul> |
| Mountain Biodiversity           |   |  |
| Marine and coastal biodiversity | <ul style="list-style-type: none"> <li>• Land Development</li> <li>• Encroachment</li> <li>• Over-fishing</li> <li>• Pollution</li> <li>• Climate Change</li> </ul> | <ul style="list-style-type: none"> <li>• Loss and degradation of habitats such as coral reefs and mangrove areas</li> <li>• Loss of ecosystems benefits including degradation of the attractiveness of tourism destination (where relevant)</li> </ul>     |
| Island Biodiversity             |   |  |

Table 5.4. continued

| <b>Thematic Area</b>       | <b>Threats</b>   | <b>Impacts/Implications on Biodiversity</b>  |
|----------------------------|--|--|
| Inland waters biodiversity | <ul style="list-style-type: none"> <li>• Pollution</li> <li>• Land development</li> <li>• Invasive alien species</li> <li>• Poaching and collection</li> <li>• Climate change</li> </ul> | <ul style="list-style-type: none"> <li>• Habitat loss including degradation in lakes and freshwater swamp forests</li> <li>• Loss of species especially endemic and threatened species in lakes, swamps a</li> <li>• Loss of ecosystems benefits</li> </ul>                          |
| Agricultural biodiversity  | <ul style="list-style-type: none"> <li>• Land development</li> <li>• Invasive alien species</li> <li>• Pollution</li> <li>• Climate change</li> </ul>                                    | <ul style="list-style-type: none"> <li>• Loss of species, especially endemic and threatened species in lakes and swamps</li> <li>• Loss of diversity in local species in agricultural sector</li> <li>• Pollution of inland waters</li> <li>• Loss of ecosystems benefits</li> </ul> |

Source: Ministry of National Resources and Environment, 2009 (as modified).

### 5.3 Challenges and Opportunities for Biodiversity Conservation

The 4<sup>th</sup> report has identified climate change as being one of the emerging threats to biodiversity, which will require concerted effort not just nationally but globally. In addition to this, the 4<sup>th</sup> Report identified 13 gaps/challenges, which include:

- lack of targets and timeframes in the present NBP;
- the fact that there are gaps and overlaps in law;

- the need to improve coordination amongst implementing agencies, especially to improve policy planning and programme implementation, as well as the need to intensify consultations between Federal and State governments;
- the lack of a systematic platform or mechanisms to translate the NBP strategies;
- the development of economic instruments and incentives for biodiversity;
- the need for an overall monitoring mechanisms for NBP implementation;
- lack of coherence and complementarities in and for research;
- tailoring capacity building needs within existing University courses, particularly for fields like taxonomy;
- raising awareness about the importance and significance of biodiversity in decision making and planning is still low, thus hindering mainstreaming of biodiversity conservation;
- implementation of statutory measures to regulate access and benefit sharing with regard to genetic resources is still pending;
- measures for marine biodiversity conservation still lags behind terrestrial conservation measures;
- there is a disconnect where management of protected areas are concerned brought about by the different mandates and means of different laws applicable to different states; and
- weaknesses in mechanisms to give due recognition to the role played by local and indigenous peoples as custodians, including the traditional knowledge they posses.

These set of gaps and challenges indicate that there is need to actually contextualise what is meant by biodiversity, the ambit, which is, encompasses, the significance and

benefits as well as the 'role' played in sustainable development. Important too is the clarification of what constitutes biodiversity conservation, custodians and custodianship, which require detailed profiling of roles that can and should be played in biodiversity conservation.

Mainstreaming biodiversity into the development assessment, decision-making and planning processes for example, would require it being treated as a 'whole', rather than a sum of all parts, and there is a need to clearly demarcate whether the 'contribution' is at the upstream or downstream level of development. As noted in 5.1 biodiversity considerations have been included in the five year national development plans, even as early as the First Plan, yet the NBP and the 4<sup>th</sup> report still states that there is much to be desired where biodiversity conservation is concerned. These factors will be brought forward to Chapter 6, to aid profiling and identification of extent of coverage of existing statutory regime over what is termed biodiversity and biodiversity conservation.

Key to consider here is that the policy position, in summary, is that biodiversity conservation should take into consideration three key factors which can be read when formulating the purpose for an integrated statutory framework, they are:

- Biodiversity should be conserved as it is a catalyst for national development, whereby key natural resources such as forests and marine resources will continue as part of the economic contributor to national development;
- Biodiversity should be conserved as it helps ensure the protection of the well being of the nation as well as the environment itself, through the

ecosystems services and functions it provides, and its ability to adapt must be taken into consideration when addressing impacts and threats to it; and

- Biodiversity in itself is our national heritage, as Malaysia is blessed with a mega diversity, which is acknowledged worldwide.

In short, the present policy directions tend to steer as to what can be done and for what specific purpose, the NBP carves out a need for conservation for the purposes that biodiversity serves for economic and social development as well as the maintenance of environmental (including ecosystems) integrity. But the reality is the NBP sits facing the multitude of other policy directions within specific biodiversity related policies, which to an extent makes it difficult to decide which position should be taken as the keystone position.

What is clear is that there is a need to formulate a legislative position that at the very least provides the means by which we can regulate aspects related to thresholds, addressing of threats and impacts and the ‘intelligence’ needed to properly understand what we have and what state it is in for informed decision making. This will manifest in the means by which conservation measures and ‘actions’ are structured, but there is always a need to carefully balance the existing jurisdictional position both legislative and executive over the whole host of factors and aspects related to biodiversity. What the proposed statute will have to set out is the means by which conservation ‘doctoring’ can be carried out, much like the way the Environmental Quality Act 1974 and the Town and Country Planning Act 1974 (in relation to providing uniformed systems to aid land use planning in Peninsular Malaysia) functions.