

Growth Through Sustainable Use of Natural Resources

Strategy Paper

12

INTRODUCTION

TENTH MALAYSIA PLAN, 2011-2015: PROGRESS

ISSUES AND CHALLENGES

Lack of Explicit Measures to Ascertain
Cost of Environmental Degradation

Lack of Financing Mechanism

Conflicting Priorities

Incomplete and Scattered Information
on Natural Resources

Ineffective Implementation of Policies
and Enforcement

Ineffective Communication

Adverse Impacts from Genetic
Engineering

Non-compliance to Development
Guidelines

ELEVENTH MALAYSIA PLAN, 2016-2020: WAY FORWARD

Introduce Appropriate Indicators to
Ensure Sustainability of Natural
Resources

Establishment of a Natural Resources
Inventory

Mainstreaming Natural Resource
Management Towards Achieving
Sustainable Development

Strengthening Financial Mechanism in
Management of Natural Resources

Enhancing Communication, Education
and Public Awareness (CEPA) in Natural
Resources

Minimise Impact of Urbanisation on
Biodiversity and Natural Resources

Safeguarding Natural Resources

Preparedness for Emerging Issues
through Technology and Innovation

Improving Socio-economic Benefits and
Alternative Livelihood of Indigenous and
Local Communities

CONCLUSION

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I. INTRODUCTION

12.1 Malaysia has benefited from its rich natural resources which have contributed significantly to the economy. These natural resources are provided by the ecosystem services¹. As the natural resource base is one of the nation's greatest strength and capital, it is imperative to ensure proper management of the ecosystem services, especially in terms of conservation and sustainable utilisation. Sustainable management of natural resources is important to ensure that current and future generations will continue to enjoy the benefits from nature's endowments while pursuing green growth. This strategy paper presents the way forward to build a more resilient future through the sustainable use of resources in line with the Government's aspiration towards green growth.

II. TENTH MALAYSIA PLAN, 2011-2015: PROGRESS

12.2 During the Tenth Malaysia Plan, 2011-2015, the nation embarked on various efforts to provide better environmental quality for the enhancement of the people's wellbeing. In ensuring the nation's natural resources are conserved, relevant policies and legislations were reviewed to strengthen conservation and enforcement efforts. Key initiatives that were undertaken include restoration and reforestation programmes; Integrated Water Resources Management (IWRM); natural resources governance and stewardship; 1Malaysia Biodiversity Enforcement Operation Network (1MBEON); biodiversity conservation; and sustainable financing mechanisms. Details of the achievements in the Tenth Plan are shown in *Exhibit 12-1*.

¹ **Ecosystem services** are the benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services, such as nutrient cycling, that maintain the conditions for life on Earth.

Source: United Nations Environment Programme (UNEP)

Exhibit 12-1
Tenth Plan Achievements

| Key Initiatives | Achievement |
|--|---|
| Restoration and Reforestation Programme | <ul style="list-style-type: none"> • Increase in forest cover from 56.4% in 2010 to 61.0% in 2014 • 53 million trees planted, which contributed to conservation and protection of biodiversity • 2,509 hectares of mangroves and other suitable species planted for coastal protection |
| Integrated Water Resources Management (IWRM) | <ul style="list-style-type: none"> • Improved water quality in five rivers, namely, Sungai Petani, Kedah; Sungai Galing, Pahang; Sungai Pinang, Pulau Pinang; Sungai Penchala, Selangor; and Sungai Hilir, Terengganu • Addressed water shortages in the Klang Valley through the construction of a water tunnel to transfer raw water from Pahang to Selangor • Environmental enhancement in coastal areas through erosion prevention and coastal rehabilitation programmes carried out in Johor, Kelantan, Pulau Pinang, Sabah, Sarawak, Selangor and Terengganu |
| Natural Resources Governance and Stewardship | <ul style="list-style-type: none"> • Gazettement of 23,264 hectares of forest as Permanent Reserved Forest under the Central Forest Spine initiative • Formulation of the National Water Resources Policy in 2012 in ensuring demand for water in all sectors are met in terms of quantity and quality • Revision of the National Policy on Biological Diversity 1998 in line with Aichi Biodiversity Targets • Development of marine park management plans for Pulau Sibul-Pulau Tinggi, Johor; Pulau Tioman, Pahang; and Pulau Redang, Terengganu • Certification of eight Forest Management Units in Peninsula, two in Sabah and one in Sarawak covering 4.6 million hectares, 927,563 hectares and 88,000 hectares, respectively |
| Enforcement | <ul style="list-style-type: none"> • Commencement of the 1Malaysia Biodiversity Enforcement Operation Network through the National Blue Ocean Strategy involving multi-enforcement agencies |
| Biodiversity Conservation Efforts | <ul style="list-style-type: none"> • Documentation and inventory of 1/10th of 15,000 flowering forest species in Malaysia completed • Crocker Range Park in Sabah listed as Man and Biosphere Reserves by UNESCO in 2014 |
| Sustainable Financing Mechanisms | <ul style="list-style-type: none"> • Establishment of the National Conservation Trust Fund dedicated for conservation efforts • Completion of baseline study on Payment for Ecosystem Services |

Source: Economic Planning Unit, Prime Minister's Department, Ministry of Energy, Green Technology and Water and Ministry of Natural Resources and Environment

III. ISSUES AND CHALLENGES

12.3 Various efforts towards sustainable management of natural resources were implemented during the Tenth Plan. However, several issues and challenges remain to be addressed especially in achieving the desired outcomes of sustainable management of natural resources. Impeding factors identified are lack of explicit measures to ascertain cost of environmental degradation; lack of financing mechanism; conflicting priorities; incomplete and scattered information on natural resources; ineffective implementation of policies and enforcement; ineffective communication; adverse impacts from genetic engineering; and non-compliance to development guidelines.

Lack of Explicit Measures to Ascertain Cost of Environmental Degradation

12.4 Current development activities do not include environmental degradation into overall development costs and in analysing its economic achievements. They do not capture the adverse impact on natural capital or assets, which are used to generate economic outputs. The failure to include environmental costs has put a financial strain on rehabilitation efforts, affecting the livelihood of the people and impacting sustainable growth.

Lack of Financing Mechanism

12.5 The high cost of conservation activities has hindered the effort to manage and conserve the natural resources in holistic and effective manner. Currently, source of financing for conservation is mostly provided by the Government. The National Conservation Trust Fund for Natural Resources was established in 2014 with seed funding of RM10 million which is provided by the Government. However, this is still insufficient to cover the rising cost of conservation activities. At the same time, contribution from private sector and other donors are not forthcoming.

Conflicting Priorities

12.6 At the national level, priority is given to protect environmental quality and to conserve natural resources. However, due to limited availability of financial resources, priority is given on socio-economic development. This sometimes leads to expansion of development into areas that were formerly gazetted for protection, especially in

environmentally sensitive areas (ESA). In certain cases, environment initiatives are viewed in isolation and perceived as a liability.

Incomplete and Scattered Information on Natural Resources

12.7 Information and data to support the management and conservation of natural resources are not sufficient. Various research efforts have been undertaken by research institutions and universities but the information and findings are scattered and kept within the individual institutions. These data and information are important to measure total economic value of the natural resources because they affect how resources are priced and used or replaced.

Ineffective Implementation of Policies and Enforcement

12.8 The current policy implementation on natural resource management has some challenges and limitations. Some of the national level policies that provide overarching guidance to the states on the management of natural resources are the National Forestry Policy 1978, National Policy on Biological Diversity 1998, and the National Mineral Policy 2009. The implementation of these policies remains a challenge as the jurisdiction of matters pertaining to land, forests and water falls under the state governments. This is also attributed to limited capacity and capability to translate the policy into action by the states and local authority.

12.9 Enforcement activities have been executed by various enforcement agencies at the Federal and State level. Even though multi-enforcement agencies were deployed for the enforcement of forestry and wildlife matters, it was unable to fully eliminate illegal deforestation, poaching and illegal wildlife trade. This is mainly attributed to the insufficient resources including advanced surveillance and monitoring equipment. Furthermore, state governments are not able to effectively manage their state forests and parks due to insufficient capacity. For example, the Perak State Park Corporation has only 11 rangers to manage 117,682 hectares park.

Ineffective Communication

12.10 Ineffective communications and engagement with the *rakyat* has impeded the drive for changes in perception and behaviour. Communication and engagement programmes have been ongoing but in an incomprehensive manner and are conducted in silo by the relevant agencies as well as non-governmental organisations. This has led to poor appreciation in issues related to forestry and biodiversity. For example, the current practice of developing awareness programmes are not tailor-made for specific target groups.

Adverse Impacts from Genetic Engineering

12.11 While recognising the importance of scientific pursuits, new and emerging technology of genetic engineering is bound to have some adverse impacts on natural resources and social wellbeing of the *rakyat* if not regulated. These include impacts related to biosafety and bioprospecting. A brief explanation of these new and emerging technologies such as synthetic biology, bioengineering and genetic engineering is provided in *Box 12-1*.

Box 12-1

Synthetic Biology, Bioengineering and Genetic Engineering

Synthetic biology is referred to the design and construction of new biological parts, devices and systems that do not already exist in the natural world and the re-design and fabrication of existing biological systems for useful purposes. Synthetic biology is used as a tool to redesign life which is an extension of biomimetic chemistry, where organic synthesis is used to generate artificial molecules that mimic natural molecules such as enzymes. Recent advances have enabled scientists to make new sequences of DNA from scratch. By combining these advances with the principles of modern engineering, scientists can now use computers and laboratory chemicals to design organisms that do new things like produce biofuels or excrete the precursors of medical drugs.

Bioengineering or biological engineering is the use of artificial tissues, organs, or organ components to replace damaged or absent body parts. It is also the application of engineering techniques to the understanding of biological systems and to the development of therapeutic technologies and devices. Kidney dialysis, pacemakers, synthetic skin, artificial joints, and prostheses are some products of biomedical engineering.

Genetic engineering is the development and application of scientific methods, procedures, and technologies that permit direct manipulation of genetic material in order to alter the hereditary traits of a cell, organism, or population. It is also a technique that produces unlimited amounts of otherwise unavailable or scarce biological product by introducing DNA isolated from animals or plants into bacteria and then harvesting the product from a bacterial colony for example as human insulin produced in bacteria by the human insulin gene.

Source: Synthetic Biology Project and The American Heritage Science Dictionary 1st Edition

12.12 Genetic engineering can manipulate life and the surrounding environment, which may be in direct conflict with cultural and religious values. With rapid progress in biotechnology, synthetic biology is emerging as a tool for designing and constructing biological devices and systems including the creation of life forms that do not naturally occur. While this technology is still in its infancy and may have some useful applications, it raises numerous scientific and technical challenges as well as ethical, biosafety and Intellectual Property Right (IPR) issues.

12.13 The move to link trade with natural resource management has also created new issues for the country, especially in terms of misappropriation of these resources and its associated traditional knowledge. This activity, which is termed as biopiracy has several ramifications to the nation in terms of compromising sovereign rights over these resources and the loss of wealth creation. The prevailing Intellectual Property regime in certain developed countries, which allows the ownership of life² further accelerates the magnitude of this issue. In this regard, Malaysia has yet to take adequate measures in line with the Convention on Biological Diversity and the Nagoya Protocol to have legal and institutional frameworks in place to safeguard the nation's interests on biopiracy.

12.14 The current practice of assessing the viability and safety of Genetically Modified Organism (GMO) is based on assessment documents provided by the proponent. Lack of capacity and resources has resulted in the provision for labelling of GMO and its products as provided under Biosafety Act 2007, and the Food Regulations 1985, under the Food Act 1983 not being fully implemented, resulting in the people not being able to make informed decisions in their choice of consumption. Currently, the implementation of the labelling provision is not effective yet and there is a lack of local capacity to verify and conduct independent assessment of GMO entering the country for food, feed and processing including direct introduction of GMO to the environment. As a result, safety concerns for the *rakyat* are not being adequately addressed as the science in this field progresses. GMO may also compromise cultural and religious beliefs if the issue is not properly addressed.

Non-compliance to Development Guidelines

12.15 Urbanisation in Malaysia has increased rapidly especially during the last two decades when the rate of urbanisation increased from 54.3% in 1991 to 71% in 2010. According to the Second National Physical Plan, the urbanisation rate is expected to increase to 75% by 2020. However, current development plans mainly address the issues pertaining to growth

² **Ownership of life:** Rapid developments in biotechnology during the last decade have enabled corporations and scientists to alter nature's handiwork for commercial profit. A major strategy for private exploitation in this area is to obtain the patent rights to an organism or its component parts.

Source: American Institute of Biological Science

of population and urbanisation but do not adequately consider the issues on climate change and disaster risk management.

12.16 The high rate of population growth requires the development of new areas for housing, social amenities, commercial and other urban land-uses. As local authorities have the power to approve or disapprove any development plans in new areas, they are the first line of defence against destruction of natural resources and biodiversity within their jurisdiction. Local authorities are expected to adhere to the Local Plan (LP) for the district level as the principal planning instrument in guiding and regulating proper conservation, use and development of land towards achieving a quality living environment. However, non-compliance to the LP has resulted in physical development that compromises the environment. In addition, sewerage discharge and effluent from industries that do not comply with environmental standards as well as illegal dumping of wastes are among the factors contributing to the degradation of ecosystem quality. Furthermore, development has encroached into areas unsuitable for development, including natural resources areas, ESA and major agricultural areas.

12.17 Illegal logging, illegal harvesting of plants, poaching of wildlife and over exploitation of natural resources have also resulted in degradation of biodiversity. Unregulated human settlements and activities within or fringing protected areas have taken a toll on natural resources. At the same time, human-wildlife conflicts have resulted in the destruction of crops and loss of lives.

IV. ELEVENTH MALAYSIA PLAN, 2016-2020: WAY FORWARD

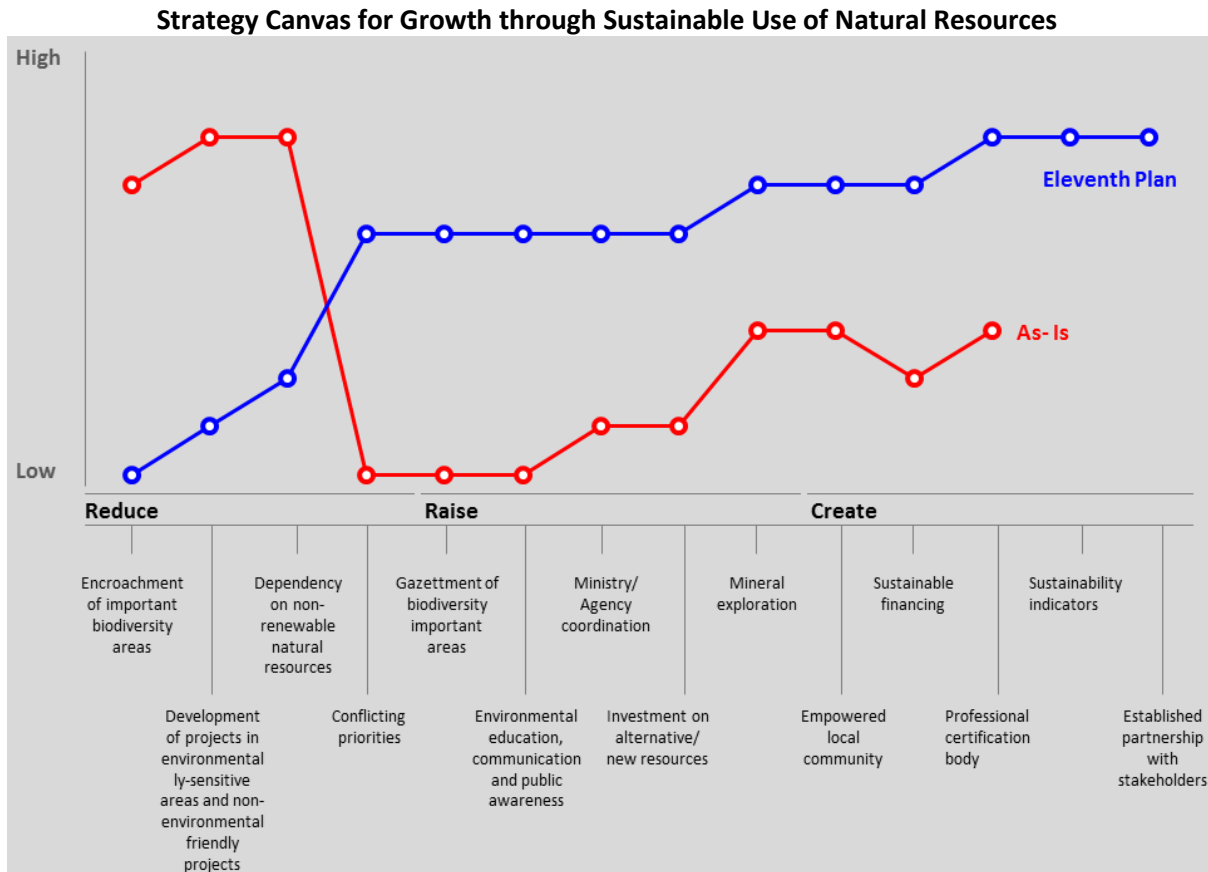
12.18 Efficient management and sustainable utilisation of natural resources are fundamental towards achieving sustainable development and ensuring wellbeing of the nation. The Eleventh Malaysia Plan, 2016-2020, will introduce specific strategies to ensure that sustainable utilisation of natural resources are underlined in all development efforts as follows:

- Introduce appropriate indicators to ensure sustainability of natural resources
- Establishment of a natural resources inventory
- Mainstreaming natural resource management towards achieving sustainable development
- Strengthening financial mechanism in management of natural resources
- Enhancing communication, education and public awareness (CEPA) in natural resources
- Minimise impact of urbanisation on biodiversity and natural resources
- Safeguarding natural resources

- Preparedness for emerging issues through technology and innovation
- Improving socio-economic benefits and alternative livelihood of indigenous and local communities

The key strategies will be supported by a number of initiatives as shown in *Exhibit 12-2*.

Exhibit 12-2



Introduce Appropriate Indicators to Ensure Sustainability of Natural Resources

12.19 The Government will introduce a Genuine Savings (GS) indicator and a Genuine Progress (GP) indicator to monitor and evaluate the use of natural resources and pollution control. These indicators will help determine whether the Government’s policies and strategies are in place to achieve the objectives of sustainability. In addition, a system will be introduced, where appropriate GS data inputs can be obtained on a routine basis from the respective ministries and agencies. At the same time, the Malaysia Sustainable Consumption and Production Indicator (MySCPI) will be introduced to measure the impact of sustainable consumption and production (SCP) initiatives on natural resources.

Establishment of a Natural Resources Inventory

12.20 A comprehensive inventory of natural resources stocks and services will be established by the Ministry of Natural Resources and Environment (NRE) to better manage natural resources. It is important to ensure that information and intelligence on natural resources is collected and valued to obtain estimates of total national wealth of the country, beyond Gross Domestic Product (GDP), which will facilitate in decision-making processes. This includes measuring their rates of change as well as understanding their relationships with social and economic dimensions. Geospatial mapping, through Georadar, will be used to explore natural resources especially minerals beneath the land surface. In addition, geospatial mapping will also be used to strengthen water intelligence in managing water resources.

12.21 The comprehensive natural resources inventory will provide better information and knowledge to guide policy formulation as well as effective implementation of measures. It will also strengthen research and development and commercialisation (R&D&C) to optimise the value of the natural resources. Priority and emphasis will be given to integrate strategic research and development as well as consolidating and enhancing the existing knowledge base. For example, fundamental scientific knowledge in areas such as microbiology, zoology, botany and ecology will provide better control to address the depletion of natural resources.

12.22 This inventory will also assist efforts to reinforce protected area management including rehabilitation and restoration of degraded areas as well as conservation of endangered flora and fauna species in marine and terrestrial habitat. In addition, the monitoring and assessment of the ecosystem health and resources will be intensified and the adoption of best management practices in resource conservation will be pursued.

12.23 With regard to water resources, a mechanism will also be established for data collection, dissemination, and networking. In addition, measures will also be put in place to better assess, evaluate, monitor and analyse the condition of both natural and artificial sources of water.

Mainstreaming Natural Resource Management Towards Achieving Sustainable Development

12.24 During the Plan period, the existing Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) will be strengthened toward a common vision on natural resources conservation. At the same time, Strategic Environmental Assessment (SEA) will be adopted. The SEA is a systematic decision support process, aiming to ensure that

environmental and other sustainability aspects are taken into consideration at the initial stage of policy formulation and planning.

Strengthening Financial Mechanism in Management of Natural Resources

12.25 The current payment mechanism for ecosystem services will be enhanced and expanded nationwide to capture and acknowledge the contribution of natural capital to national income. Studies will be carried out to identify suitable payment methods such as public payment instruments, carbon offsets, carbon tax and corporate tax reliefs. This will enable better management and utilisation of natural resources.

12.26 At the same time, measures will be explored to enable state governments to offset potential revenue loss from natural resources conservation initiatives in ESA. Charges and fees associated with utilisation of natural resources goods and services will be reviewed to reflect the appropriate pricing of natural resources. This will enable the revenue collected to be channelled for better conservation and management of natural resources and ecosystem services. Proper pricing of natural resources will also induce behavioural change that will result in increased appreciation of the value of natural assets.

Enhancing Communication, Education and Public Awareness (CEPA) in Natural Resources

12.27 A national communications, education and public awareness (CEPA) master plan on natural resources will be developed by the NRE with participation of all stakeholders. The objective of CEPA master plan is to enhance capacity, capability and knowledge of government agencies, private entities and the public in the areas of conservation and sustainable utilisation of natural resources. The master plan will propose the establishment of a platform to facilitate knowledge sharing, to promote strategic alliances with stakeholders and encourage public participation in natural resources conservation. Among the CEPA activities that will be pursued in the Plan period are:

- develop and reorient formal and informal education with specific reference to conservation and sustainable use of biodiversity
- develop awareness and participatory programmes for private and public participation in biodiversity conservation
- enhance communications strategy to various segments of society including private, civil society and politicians
- integrate the need to respect and appreciate natural resources by instilling value and appreciation for nature

12.28 The 'MyBioD-My Life, My Heritage, My Future' initiative will be promoted by the NRE with the objective to internalise the appreciation of biodiversity among Malaysians. This is essential to effect change in practise, attitude and behaviour of the public. In this regard, well-coordinated CEPA activities for knowledge sharing as well as strategic alliances with stakeholders will be encouraged to brand and promote the visibility of Malaysia's biodiversity.

12.29 Open and transparent participation of all stakeholders, including the Indigenous and Local Communities (ILCs), is imperative to foster the recognition of natural resources as the nation's heritage that must be appreciated, valued and conserved. This is to enable their greater involvement in conservation and sustainable utilisation of natural resources. Mindset and behavioural change on the protection and sustainable use of natural resources will be pursued through the SCP initiatives.

12.30 To complement all the above strategies, the channels of communication and dissemination of information on the importance of biodiversity, conservation and utilisation of natural resources will be enhanced. This will include the use of social media such as Facebook, Twitter and WhatsApp. Through these efforts, greater awareness, cooperation and support from all levels of society for conservation of natural resources will be achieved.

Minimise Impact of Urbanisation on Biodiversity and Natural Resources

12.31 Engagement between federal agencies and state governments as well as local authorities is important to increase awareness of natural resources conservation in urban planning. A comprehensive Environmental Management Plan (EMP) shall be formulated at state level as a strategic development guideline. In this context, the EMP shall be prepared separately but will be read as part of the LP once gazetted under the Town and Country Planning Act 1976 (Act 172). The following initiatives will be pursued to minimise the impact of urbanisation on biodiversity and natural resources:

- engage with local authorities to promote sustainable development in existing urban space and new planned areas while safeguarding natural resources in ESA
- review and update policy, legislation and strengthen institutional framework for biodiversity conservation, land conversion and sustainable use of natural resources
- enhance environmental management for protected areas, ecology, flora and fauna and buffer zones with emphasis on human-wildlife conflict
- increase the protection of biodiversity-important sites as well as ESA
- enhance the establishment of compact cities and provide green lungs to minimise the impact of urban sprawl on ESA

Safeguarding Natural Resources

12.32 Integrated approaches in decision-making and planning of resources will be adopted and implemented. Currently, water resources, wildlife and forestry, land use, land development, marine areas and marine life are regulated under separate legislations and overseen by different authorities.

12.33 Water resources governance requires the collaborative action of all stakeholders. The central idea is to strengthen the adoption of the Integrated Water Resource Management (IWRM), Integrated River Basin Management (IRBM), Integrated Shoreline Management Plan (ISMP), Integrated Coastal Zone Management (ICZM) and Integrated Lake Management (ILM). Smart partnerships between stakeholders, such as state governments and relevant implementing agencies, will be key to transform the management of water resources. An array of component action plans in the IWRM Implementation Road Map will be implemented by the key ministries and agencies responsible for water resource management or water utility provision, working closely with state governments.

12.34 With regard to wildlife, forestry and mineral as well as marine resources, efforts will be undertaken to strengthen existing institutional framework for biodiversity conservation and sustainable use of natural resources. This will involve a review of existing legislation or formulation of new legislation, guidelines or action plans pertaining to:

- management of corridors under the Central Forest Spine
- Heart of Borneo strategic initiatives
- conservation efforts for threatened habitats (terrestrial and marine) and wildlife species (flora and fauna)
- research and development on terrestrial and marine biodiversity

12.35 The Government will review the effectiveness and strengthen the inter-ministerial or inter-agency coordination councils pertaining to natural resources. Efforts in intensifying multi-agency enforcement initiative to curb encroachment of protected areas and poaching of wildlife will be increased. The 1Malaysia Biodiversity Enforcement Operation Network (1MBEON) will be strengthened to enhance institutional arrangements at state and federal levels. Strategic directions in biodiversity protection will be aligned while funds and manpower will be optimised.

12.36 Standard operating procedures and systems for monitoring and evaluation will be developed and enhanced by NRE and relevant agencies at the federal and state levels. Policy implementation will be monitored while permanent reporting mechanism will be established. In addition, capabilities and skills of relevant authorities will be enhanced through training and certification programmes.

12.37 The gazettement of biodiversity important areas, both terrestrial and marine, especially under-represented ecosystems and ESA, as well as strengthening in-situ and ex-situ conservation efforts will be further undertaken. This is in line with the Aichi Biodiversity Targets of conserving at least 17% of terrestrial and inland water as well as 10% of coastal and marine areas as Protected Areas (PA) by 2020. Conservation efforts of selected wildlife will be increased by protecting endangered plants or animal species in its natural habitat (in-situ) and outside its natural habitat (ex-situ) (e.g. gaur, tiger, sambar deer, elephant, *keruing layang*, *asam batu* and slipper orchid). Appropriate technology and methodologies will be adopted to better manage forestry and wildlife such as Advanced Reproductive Technology (ART) for endangered species such as gaur, Sumateran rhinoceros and sambar deer. Additionally, environmental forensics investigation will be implemented to support site investigation, site remediation, legal support and resource management. At the same time, reforestation and forest enrichment will be strengthened as well as reduction of emission from deforestation and forest degradation (REDD+) initiatives will be supported.

12.38 Platforms to strengthen capacity interface between policy makers, academia, the private sector and the community will be enhanced. This will ensure multi-stakeholder participation for both policy and business considerations. Through this platform, it is expected that a more effective and efficient decision-making process for sustainable development and improved governance will be achieved.

Preparedness for Emerging Issues through Technology and Innovation

12.39 Precautionary measures will be applied when dealing with emerging technologies that manipulate life and the surrounding environment, which may be in conflict with cultural and religious practices. These emerging technologies include synthetic biology, bioengineering and genetic engineering. As such, existing institutions, legal frameworks and capacity of stakeholders will be enhanced. Specifically, the Department of Biosafety, established to regulate genetically modified organisms (GMOs) under the Biosafety Act 2007, will be strengthened in tandem with increasing investments in the biotechnology sector. In addition, coordination efforts with relevant agencies on GMOs detection, inspection and compliance will be enhanced.

12.40 The Government will continue to support efforts in mapping and understanding natural resources and traditional knowledge by providing the enabling environment. Besides mobilising the relevant research and academic institutions, the National Biodiversity Centre will provide the overarching support in terms of coordination and knowledge dissemination.

12.41 A holistic legal and institutional framework will be drawn up to curb the misappropriation of natural resources through the implementation of the Access and Benefit Sharing (ABS) law. This is to ensure that Malaysia will be the beneficiary of traditional knowledge commercialisation. Details on ABS are as shown in *Box 12-2*.

Box 12-2

Access to Biological Resources and Benefits Sharing (ABS)

Access to biological resources means the taking of biological resources from their natural habitat or place where they are found or grown for research and development on any genetic resources derivative or biochemical compounds comprising or contained in the biological resources.

Access to biological resources can lead to benefits for both users and providers. Access to biological resources and benefits sharing (ABS) ensures that the way in which biological resources are accessed and used will maximise the benefit for users, providers and the ecology and communities where they are found. Hence, ABS is important to Malaysia to realise new wealth creation from our rich biodiversity.

A national law is important to be in place for the effective implementation of ABS to ensure:

- that a transparent framework exists to facilitate access to biological resources and to make sure that benefits are shared equitably and in a fair manner
- that users negotiate mutually agreed terms with the providers prior to accessing biological resources

These measures create legal certainty and a fair relationship between providers and users. Providers are confident that users will respect the procedures for access and that they will receive a fair share of any potential benefits. Users feel informed about which authorities they must contact and the measures they must follow to ensure success.

Source: Ministry of Natural Resources and Environment

Improving Socio-economic Benefits and Alternative Livelihood of Indigenous and Local Communities

12.42 Coordinated efforts to improve the socio-economic benefits and livelihood of indigenous and local communities (ILCs) who are dependent on natural resources will be undertaken, as follows:

- promote community and civil society participation, especially ILCs, in planning and management of PA
- enhance capacity building for ILCs through language courses and programmes, such as nature guide and entrepreneurship as well as medical and emergency response
- engage ILCs in restoration and rehabilitation programmes
- promote rational use and benefit sharing of biological genetic resources and associated traditional knowledge

V. CONCLUSION

12.43 Efficient management and sustainable utilisation of natural resources are fundamental towards achieving sustainable development and ensuring wellbeing of the nation. Towards this end, under the Eleventh Plan, the key strategies will be the establishment of natural resources inventory, mainstreaming natural resource management towards achieving sustainable development, strengthening financial mechanism in management of natural resources and enhancing communication, education and public awareness (CEPA) in natural resources.