Degradation of Biodiversity in Sri Lanka

Presentation Structure

- *Introduction to Biodiversity in Sri Lanka – Thiwanka – 2016/MRDP/026*
- *Trends of Biodiversity – Malathy – 2016/MRDP/25*
- *Causes of Degradation of Biodiversity – Manjula – 2016/MRDP/040*
- *Existing Initiatives in Place for Biodiversity Preservation – Vibhavi – 2016/MRDP/033*
- *Failures in Existing Initiatives and Challenges in Biodiversity Preservation – Melanie – 2016/MRDP/028*
- *Conclusion – Gaya – 2016/MRDP/002*

Introduction to Biodiversity in Sri Lanka

Definition

Biodiversity is 'the variability among living organisms from all sources and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems'

- United Nations Convention on Biological Diversity

Components of Biodiversity

- *Eco system Diversity: The variability among ecosystems*
- *Species Diversity: The variation among species*
- *Genetic Diversity: The genetic variation among individuals of a population and that among all the different populations of the same species*

Importance of Biodiversity

- *Human health – sources for medicines*
- *Business and industry – materials for industries*
- *Leisure, cultural and aesthetic value*
- *Agriculture – food sources*
- *Ecological Services*

Biodiversity of Sri Lanka

Taxonomic Group	Number of Species	Number of Endemic Species
Angiosperms	3154	894
Gymnosperms	2	0
Pteridophytes	336	49
Soft corals	35	
Hard corals	208	
Spiders	501	256
Centipedes	19	
Merine crustaceans	742	
Freshwater crabs	51	50
Dragonflies	118	47
Ants	194	33
Bees	130	
Butterflies	245	26

Taxonomic Group	Number of Species	Number of Endemic Species
Leafhoppers	257	
Dung beetles	103	21
Bivalves	287	
Marine gastropods	469	
Land snails	253	205
Echinoderms	190	
Marine fish	1377	
Freshwater fish	91	50
Amphibians	111	95
Reptiles	211	125
Resident birds	240	27 (+6 proposed)
Mammals	125	21

Trends of Bio Diversity

Trends of Protected Area (PA)

- Total protected area coverage in Sri Lanka at recent years is around 1.84 mn ha representing about 28% of the total land area of the country

- Protected areas managed by the Forest Department (FD) and the Department of Wildlife Conservation (DWLC) has increased about 84% from 2008 to 2010.

- The extent of PAs under the FD and DWLC have significantly increased over the years with more valuable wet zone forests are included in the PAs network.

Number and Extent of Protected Area

Protected area Category	Area under each category (ha)	
1. Forest under the FD	4th NR (ha)	2010Ha
National Heritage wilderness area	11187	11427
Conservation forest	76227	118758.7
Other reserved forest	NA	1044008.5
Forest Plantations	72350 (in 2001)	75,556.7(2014)
Mangroves	2163	1153.1
2. Forest under DWLC		
National Parks (2008=14,now 15)	495984	535182
National reserves(2008=4 now 5)	32581	64585
Sanctuaries	262156	376943
Strict Natural reserves 3	31573	31574
Jungle Corridors(Kaudulla-Minneriya) (1)	10360	8777

Changes in international Protected Areas and Ramsar Sites

International Protected area category	Number of Pas and area covered in 2008	Number of Pas and area covered in 2014
Natural World Heritage sites	N=1, 8864 ha The Sinharaja World Heritage site	N=2, 118884 ha New: The central Highlands Serial world Heritage site with 3 forests
Biosphere Reserves Recognized by UNESCO	N=4, Extent 81363.7 ha sinharaja., Kanneliya-Dediyagala-Nakiyadeniya,Hurulu &Bundala Brs	N=4, extent 143106.3 Same reserves, increased area
Ramsar Sites	N-3 8377 ha	N=6, 198027 ha

Trends in Forest System

- Total forest cover of country has depleted from 31.2% of the island in 1999 to 29.7% in 2010.
- The actual forest cover depletion is estimated at about 0.23% of forest area or 4445 ha annually.
- It is a positive feature when compared with the annual deforestation rate of around 40,000 ha during the period 1956 and 1992.
- Deforestation in the past has attributed to several significant changes in forest management

Trend of Wetlands

- Several positive features have occurred for conservation of wetlands in the recent years but size of wet lands continue to be lost, degraded and their resources exploited beyond sustainable level.

- Establishment of Special wetland unit at the CEA to oversee the interest of wetland and to implement the national policy of 2006

Trends in the Coastal and Marine Sector

- There are some significant positive trends observed in the coastal 7 marine sectors.

- Coastal Conservation Amended Act No. 49 of 2011 paves the way for more positive coastal zone management activities

Trends in Agriculture

- Covers rice, plantation crops, minor export crops and livestock
- In the past few years, there has been a positive trends to conserve and use the germplasm of indigenous crops.
- The country has banned several non- conventional pesticides which are likely to be hazardous to human health and environment from 2010.

Causes of Degradation of Biodiversity in Sri Lanka

Biodiversity Hotspot

- Earth's biodiversity is degrading day by day at an alarming speed.
- As a result of that, there are 34 biodiversity hotspots in the world
- A biodiversity hotspot is a region with a high level of endemic species that has experienced great habitat loss.
- Sri Lanka is considered as one of the biodiversity hotspot of the world; one of the two in Indian Sub-continent



Causes of Degradation of Biodiversity

- Loss of natural habitat
- Deforestation
- Mining sand mining
- Invasive species
- Land degradation
- Slash and burn cultivation
- Depletion of coastal resources
- Salinisation
- Degradation of coral reefs
- Water pollution
- Improper waste disposal
- Overuse of agro chemicals



Legal and Administrative Initiatives for the Preservation of Bio Diversity

Legal and Administrative Initiatives for the Preservation of Bio Diversity

- To preserve the biodiversity international community has taken some extraordinary initiatives.
- Major global-level policy commitments acceded by Sri Lanka creates a legal framework par with the international requirements
- The biological resources of Sri Lanka are protected by the 1978 Constitution and several ordinances, acts, regulations and policies.

Legal and Administrative Initiatives for the Preservation of Bio Diversity

- Article 27 (14) of the Constitution - The State shall protect, preserve and improve the environment for the benefit of the community.

- Article 28 (f) of Constitution - Every person has a duty ‘to protect nature and conserve its riches.

- Several key legislative acts and regulations directly and indirectly protect biodiversity.

- Additional administrative policies and action plans also protect biodiversity either at ecosystems or species level.

Key Legal Initiative

- **The Fauna and Flora Protection Ordinance, No. 02 of 1937 and Amendments up to the Act No. 22 of 2009**
- **The Forest Conservation Ordinance, No 16 of 1907**
- **The National Heritage Wilderness areas Act, No 03 of 1988**
- **The National Environmental Act, No.47 of 1980 Act and Amendments**
- **Coast Conservation Act No. 57 of 1981**
- **Fisheries and Aquatic Resources Act, No 02 of 1996**
- **Plant Protection Act No. 35 of 1999**
- **Soil Conservation Act No. 25 of 1995**
- **Felling of Trees (Control) Act No. 9 of 1951**
- **The National Zoological Gardens Act no.41 of 1982**
- **Mahaweli Authority of Sri Lanka Act No. 23 of 1979**

Key Administrative and Policy Initiatives and Plans

- **The National Conservation Strategy of 1988**
- **National Environmental Action Plan in 1991**
- **National Forest Policy of 1995**
- **National Wildlife Policy of 2000**
- **The National Environmental Policy of 2003**
- **National Policy on Elephant Conservation and Management of 2006**
- **National Biodiversity Strategic Action Plan (NBSAP) for the period 2016-2022**

Shortcomings of Existing Initiatives and Challenges to Biodiversity Preservation

Shortcomings of Existing Initiatives

- **Lack of Enabling Mechanisms**
- **Lack of Powers and Limited Resources**
- **Lack of Public Commitment**
- **Corruption and Political Interventions**
- **Inefficient Legal Procedures**
- **Lack of Performance Indicators and Targets to Assess Success of Initiatives**

Challenges in Bio Diversity Preservation

- **Development and Economic Activities**
- **Climate Change and Variability**
- **Natural Disasters**
- **Growing Population**
- **Attitude of Public towards Biodiversity Degradation**





Immediate Actions to be Taken

- **Investing more authority and resources with the existing initiatives**
- **Ensuring the effectiveness and efficiency of such initiatives through regular monitoring**
- **Mobilising the public commitment towards biodiversity preservation**
- **Rooting out corruption**

Concluding Remarks