DANIDA - DEE
Environmental Master Plan Study

Environmental Master Plan Study

Study on Biodiversity

March 1994

Prepared By :

Narendra Prasad
H.C. Sharatchandra

This Report Contains
Restricted Information
and is for Official Use Only

List of Contents

1 Introduction 1

2 Biodiversity of Dakshina Kannada 3

2.1 A Profile 3

2.2 Vegetation 3

2.3 Status and Biodiversity in Dakshina Kannada . . . 4
2.3.1 The Northern Zone 5
2.3.2 Central Zone 8
2.3.3 The Southern Zone 10

2.4 An Assessment of the Different Use Values of Biodiversity of Dakshina Kannada 11
2.4.1 Subsistence Use Value 11
2.4.2 Commodity Use Value 12
2.4.3 Non-Consumptive Use Value 12
2.4.4 Option Use Value 12
2.4.5 Transformative Use Value 13
2.4.6 Existence and Ethical Use Value 13

2.5 Environmental Sustainability Ranking of Utilization of Biodiversity of Dakshina Kannada . 13
2.5.1 National Park, Wildlife Sanctuaries . . 14
2.5.2 Reserve Forests 14
2.5.3 Kumki, Bane, Assessed Waste, C&D Lands etc. 15
2.5.4 Dry Evergreen Coastal Vegetation and Mangroves 15

3 Biodiversity - Issues in Dakshina Kannada 16

3.1 Conservation Strategy for Dakshina Kannada 16
3.1.1 Northern Zone 17
3.1.2 The Central Zone 17
3.1.3 The Southern Zone 18
3.1.4 Establishment of Extractive Reserves of the Wood Timber in Degraded/Denuded Forests 18
3.1.5 Establishment of Model Nonwood Forest Produce (NWFP) Utilization Centres . . . 18

3.2 Status of Large Mammals in Dakshina Kannada . . . 19
3.2.1 "Flagship" mammals for biodiversity conservation in Dakshina Kannada 19

3.3 Status of the Protected Areas (PAS) of Dakshina Kannada 24
3.3.1 Threats to PAS and Causes of Loss of Biodiversity 26
3.3.2 Consequences of loss of biodiversity . . 29
3.3.3 Cultural Traditions of DK Promoting Conservation or Degradation of Biodiversity 30

4 Indicators of Biodiversity 32

4.1 Restoration and Maintenance of Ecosystems, Habitat, Species, Genetic Resources 32
4.1.1 Primary Indicator 32
4.1.2 Secondary Indicators 33
4.1.3 Tertiary Indicators 34

4.2 Prevention of Pollution 36
4.2.1 Primary indicators 36
4.2.2 Secondary indicators 36
4.2.3 Tertiary indicators 36

4.3 Developing a Comprehensive System of Network of Protected Areas 36
4.3.1 Primary Indicators 36

5 Data Requirements for Use of Indicators and Availability of Data in Dakshina Kannada 37

5.1 Primary Indicators 37
5.1.1 Land-Use 37
5.1.2 Land under Forest, Percent of Forest under Natural, Modified, Planted and Degraded Condition 37
5.1.3 Number if Taxa, Taxa Threatened, Taxa with Increasing /Decreasing Populations 37

5.2 Secondary Indicators 37
5.2.1 Distribution of Major Vegetation Associations 37
5.2.2 Extent of Weeds in Vegetation Types . . 38
5.2.3 Rangewise Habitat Loss and Fragmentation 38

5.3 Tertiary Indicators 38

6 Biodiversity Conservation Options for DK 39

6.1 Conservation of Biodiversity vis-a-vis the Social Environment in Dakshina Kannada 40

6.2 Possible Interventions to Maintain Biodiversity in Dakshina Kannada 41

6.3 A conceptual framework of biodiversity conservation 41
6.3.1 The Forest Department 41
6.3.2 Forest Conservation Act 42
6.3.3 Wild Life Protection Act 43
6.3.4 Agriculture Department 44
6.3.5 Animal Husbandry and Fisheries Departments 45
6.3.6 Horticulture 46
6.3.7 Establishment of ICDP 46
6.3.8 Proceed Area Network (PA) 47
6.3.9 Establishment of Network of NGOs 49
6.3.10 Ecotourism 49
6.3.11 Research 50
6.3.12 Environmental Education 51

6.4 Specific Interventions for Biodiversity Conservation in Dakshina Kannada 51

Executive Summary

The district of Dakshina Kannada (DK) has a unique significance in the biodiversity profile of top hot spot areas of the world. The diversity of habitats, ecosystems and existence of seasonal rain forest is unique. This is the only district in the entire Western Ghats that has a substantial extent of lowland evergreen forest. Because of its locational significance the district has also unique distributional records for plants, mammals, reptiles, fishes and birds.

The study of biodiversity of DK has focussed on conative factors for loss of biodiversity. Floristics and vegetational analysis, the adequacy of present day protected area network with respect to representativeness of wide groups of organisms ranging from plants to amphibians. Strategies for biodiversity conservation and monitoring programme by selecting indicators.

An overview of the distribution of vegetation biomes, mammals, amphibians and fishes indicate five major divisions of DK. These are coast, coastal plains, northern central and southern Western ghats. In each of the three Western Ghat divisions status of two important flagship species viz. the Lion Tailed Macaque and the Malabar Civet was reviewed and a number of conservation actions were advocated. The most prominent of these suggested actions on an effective networking of protected areas (PAS), and corridor linkages between disjunct PAS and creating a biosphere reserve in the southern Western Ghats. For the coastal plains, it is suggested that a network of protected areas of lowland evergreen forests be declared for long term genetic conservation and as a possible study sites.

A whole gamut of interventions are suggested to achieve a better conservation status for DK. Prominent among these include some policy issues to expansion of smaller sanctuaries to a wilderness of viable size, preparation of a model management plan for Someshwar Sanctuary, formulating conservation strategy for flagship species and promotion of value added technologies benefitting rural population and selection and inclination of Integrated Conservation Development Programmes (ICDP).