

द्वितीय पत्र :- प्राविधिक विषय

1. Forest Resource Management

- 1.1 Vision, Mission and working Strategy of forestry sector in Nepal
- 1.2 Forest Resources and their functions (social, economic & environmental)
- 1.3 Principles of Forest Management
- 1.4 Review on the Past Forest Management practices in Nepal
- 1.5 Emerging issues in Natural Resources Management in Nepal and around the world
- 1.6 Characteristics of Multipurpose plant species
- 1.7 Principles and practices of Multiple Use Forest Management
- 1.8 Various tools and techniques used in Managing Forest Resources in Nepal
- 1.9 Forest regeneration, plant propagation, growth and yield modeling, silvicultural systems, Thinning, pruning, shrub land improvement
- 1.10 Silvicultural practices and yield regulation for different types of forest conditions in Nepal and adjoining countries
- 1.11 Major International organizations involved in the Forest Resources Management around the world and their activities
- 1.12 Current situation of Forest Resources in Global, Regional and National level.
- 1.13 Forest classifications as per the Forest Act, 1993 and government priority areas for program implementation
- 1.14 Emerging problems of Forest Resource Management, particularly in the Terai and Upland areas of Nepal
- 1.15 Different Management regimes being applied in the Natural and Plantation Forests of Nepal
- 1.16 Silviculture of high value major forest trees, shrubs and herbs species of Nepal
- 1.17 Second and third generation issues in the Community Forestry programs of Nepal
- 1.18 Basic differences between Community Forestry and Leasehold Forestry (below poverty line) in terms of representations, scope of works, incentives, duration of plans and renewal process.
- 1.19 Criteria and Indicators for Sustainable Management of Forest Resources as suggested by different Organizations (national /international) involved in Forest Resources Management
- 1.20 Forest certification – importance, approaches and procedures in the developed countries
- 1.21 Management of forest fire, tree and forest health and application of integrat insect/pest management strategies in forestry
- 1.22 Collaborative Forest Management concept in the management of Forest Resources of Terai and Inner Terai regions of Nepal and the roles of different stakeholders
- 1.23 Present roles of Non-governmental Organizations (NGOs) and Community Based Organizations (CBOs) in managing the Forest Resources of Nepal

2. Forest Resource Survey, Inventory and Research

- 2.1 Principles and Practices of Forest Resource Survey, Inventory and Mapping
- 2.2 Principle and practices of experimental design
- 2.3 Sampling techniques for forest inventory
- 2.4 Application of experimental design in forestry research and development

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- 2.5 Tools and techniques used in research of forest genetics and tree improvement
 - 2.6 Research, extension and development linkages in forestry
 - 2.7 Measuring trees and forests in the natural stand and plantations
 - 2.8 Quantitative Resource Assessment / Inventory techniques of NTFP on forest lands
 - 2.9 Principles and Practices of Remote Sensing (RS), GIS and Space Technology and its application in the overall planning and Development of forestry sector
 - 2.10 Land use/land cover change detection using RS and GIS technology
 - 2.11 Integration of RS and GIS technology in forestry
 - 2.12 Roles of Ministry of Forests and Soil Conservation in utilizing Research and Survey results in the overall Development of the Forestry Sector in Nepal
- 3. Agroforestry**
- 3.1 Theories and principles of Agroforestry
 - 3.2 Agroforestry System practiced in Nepal and elsewhere.
 - 3.3 Criteria for selection of Agroforestry species at different ecological zones of Nepal.
 - 3.4 Characteristics of Multipurpose Tree Species
- 4. Forestry extension and Human Resource development**
- 4.1 Concept of Forestry extension
 - 4.2 Needs for extension in Forestry Development
 - 4.3 Effectiveness of audio-visual aids in Forestry extension communication and their categories for different targeted groups
 - 4.4 Concept, scope & need for Human Resource Development in Forestry
 - 4.5 Needs for Human Resources Development Plan preparation
- 5. Non-timber Forest Products (NTFPs) and its relation to livelihood**
- 5.1 NTFPs as defined by different Organizations
 - 5.2 Role of NTFPs to sustain rural livelihoods
 - 5.3 NTFPs as one of the strategic sectors for poverty reduction in Nepal
 - 5.4 Opportunities and challenges in the promotion of NTFPs in Nepal
 - 5.5 Recent tools and techniques in domestication and commercialization of high value NTFPs in different countries including Nepal
 - 5.6 Planning and strategy development for conservation, management, enterpri development and marketing of high value NTFPs via WTO and TRIPS agreement
 - 5.7 Global trends in organic farming and certification process of NTFPs products
- 6. Forest economics**
- 6.1 Contribution of Forests to GDP in terms of cash and environmental services
 - 6.2 Environmentally friendly forms of Forest Products Utilization
 - 6.3 Demand and Supply situation of Forest Products in Nepal
 - 6.4 Potential Forest Based Industries at different physiographic zones of Nepal.
 - 6.5 Marketing of forest products and global future trend in products certification
 - 6.6 Opportunity in processing of forest products for value addition and employment creation in the rural areas.
 - 6.7 Roles and Responsibilities of Forest based Parastatal Organizations like TCN, Rosin and Turpentine Company and Forest Products Development Board of Nepal in utilizing the forest products.
 - 6.8 Role and importance of Private Sector involvement

7. Biodiversity conservation

- 7.1 Social, ecological and economic values of Biological Diversity
- 7.2 Major Biological Diversity of Nepal and their threats for conservation
- 7.3 Recent policy and programs of the Government to minimize the risks of biodiversity loss in and outside the protected areas.
- 7.4 Park and People interface - a challenge in conserving the biodiversity in the Protected Areas
- 7.5 Criteria and Indicators in Managing Biodiversity at ecosystem, species and genetic level
- 7.6 The roles of corridors and connectivity in wildlife conservation
- 7.7 Biodiversity registration and patent rights- Principles and scope for practice outside the protected areas
- 7.8 Biodiversity conservation outside protected areas.
- 7.9 Roles of the Department of Forests (includes District offices), Department of National Parks and Wild Life Conservation (DNPWC), Community Based Organizations (CBOs), Community Forest Users Groups (CFUGs) and Buffer Zone Councils (BZCs) in conserving the biodiversity of the country
- 7.10 Role of the Army personnel in protecting the Protected Area System of Nepal and the effectiveness of their involvement

8. Soil Conservation and Watershed Management

- 8.1 Concept of land degradation and its consequences on productivity and infrastructure
- 8.2 Basic concepts of hydrological cycle and its relationships to watershed management
- 8.3 Ecology and Economics of biological and engineering measures of soil conservation
- 8.4 Sustainable Soil Management practices in Nepal
- 8.5 Present trials of water harvesting in the Chure and its scope of replications in terms of economics

9. Cross cutting areas in Natural Resource Management

- 9.1 Contribution of Protected Area System of Nepal in promoting Eco-tourism and reducing poverty.
- 9.2 Project Cycle in the Forestry Sector planning and implementation
- 9.3 Logical Framework in Project Designing
- 9.4 Gender and Social equity issues in Forest Resources Management
- 9.5 Good Governance in Natural Resource Management
- 9.6 Concept and process of Monitoring & Evaluation in the forestry sector
- 9.7 Importance of Management Information System in the Forestry Sector of Nepal
- 9.8 History, importance & implication of foreign aid in Forest Resource Management

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Model Questions

Paper II. Analytical review

1. Nepal has prepared the Foreign Aid Policy for the Forestry Sector (1999). Considering yourself as a Chief of the Foreign Aid Coordination Division of the Ministry of Forests and Soil Conservation, critically review this policy and suggest measures to arrange necessary financial resources for the effective management of the forestry sector in Nepal. 15
2. Review critically the history of forest management plan preparation of Nepal. Analyse their lacunas and suggest measures for effective and implementable Forest Management Plan for a Tarai District. 15

Paper II. Analytical review and problem solving

1. Forest encroachment has been considered as a major problem to save Tarai Forests in Nepal. Discuss the problem and suggest how this problem could be resolved. 20
2. Synthesize existing Forest Research Plan/Protocol design for Katus-Chilaune forest type. Design an optimal model for fuelwood and fodder supply system for the CFUG involved in the planning mechanism considering 100 household as users. Use national level firewood/fodder requirement index to estimate the area required for sustainable supply for 10 year period. 20