

LIST OF TABLES :

- 1.1. Geological Succession of The Study Area.
- 1.2. Mean Monthly Temperature and Precipitation of some Stations.
- 2.1. Morphometric and Related Variables, their Dimensions and Symbols used in the Study.
- 2.2. Morphometric variables of the 27 Third Order Basins.
- 2.3. Frequency Distribution of various Morphometric Properties of the Third Order Basins.
- 2.4. Measures of Central Tendency and Dispersions of the Third Order Basins.
- 2.5. Correlation Matrix for 23 Morphometric Variables of the Upper Mahananda Third Order Basins.
- 2.6. Co-efficients for Linear Regression Equations between some Morphometric Properties of the 27 Third Order Basins.
- 3.1. Soil Orders, Sub-Orders, Great groups and sub-groups and their Landform properties.
- 4.1. Slope and soil properties of 51 sample sites
- 4.2. Infiltration Rate at 51 Sample sites.
- 4.3. Correlation Matrix for Pedogeomorphic properties.
- 4.4. Co-efficients of Linear Regression Equations between the various Pedo-geomorphic properties.
- 5.1. Comparative Study of the various Rain-erosivity Parameters of some selected Stations.
- 5.2. Indices of Soil Erodibility.
- 5.3. Rating Table for the Parametric values of the C.F. Factor of Soil Erosion.
- 5.4. Proposed Conservation Model for the Study Area.
- 6.1. Soil properties of the seventeenth Mile Basti Landslide (Case Study No. 1).
- 6.2. Morphology of the seventeenth Mile Basti Landslide.
- 6.3. Rate of Infiltration at different sample sites at the seventeenth Mile Basti and Tindharia Landslide (Case Study 1 & 2).

- 6.4. Soil Properties of the Tindharia Landslide (Case Study No.2).
- 6.5. Morphology of the Tindharia Landslide (Case Study No. 2).
- ~~6.6. Data for the Cross-sectional Survey of the River, 1985-87.~~
- 7.1. Various Hydrological properties of the River, 1985-87.
- 7.2. Discharge-Suspended Sediment Correlation (Monsoonal), 1985-87.
- 7.3. Some Daily Average Discharge Data and their Respective Silt Load, 1985-87.
- 7.4. Some cases of the Progressive changes in suspended sediment Load and Discharge, 1985-87.
- ~~8.1. Correlation of Rainfall, Temperature, Evaporation Loss and Run-off (Monthly) of different stations.~~
- 8.1. Mean Annual Rainfall, Temperature, Evaporation, Run-off of some selected Station.
- 8.2. Mean Monsoonal Rainfall, Temperature, Evaporation Loss of some selected Stations.
- 8.3. Mean Monsoonal Water Resource of the Basin.
- 8.4. Mean Annual Water Resource of the Basin.
- 8.5. A Comparative Study of Water Resources of the Basin.
- 9.1. Major Land Capability classes and sub-class in the Study Area and their respective Geo-environmental Parameters.

LIST OF FIGURES :

1. Locational Map of the Study Area.
 - 1.1. Geological Map.
 - 1.2. Broad Physiographic Divisions.
 - 1.3. Broad Temperature and Precipitation Zones.
 - 1.4. Land-use Map.
- 2.1. Slope Zone Map.
- 2.2. Relative Relief Map.
- 2.3. Drainage Density.
- 2.4. Index Map for the Third Order Basins.
- 2.5. Frequency Distribution Curves for A_3 , D_3 , F_3 , $(L)_3$, $(N)_3$ & P_3 .
- 2.6. A_3 , D_3 , F_3 , P_3 , $(N)_3$ and $(L)_3$, Plotted on Arithmetic Probability paper.
- 2.7. Third Order Basin Classification.
- 2.8. Linear Regression for Aspects of Basin Geometry, Streams lengths and Stream Numbers.
- 2.9. Groups of Highly Intercorrelated variables of the Morphometric properties of the Third Order Basins.
- 3.1. Taxonomic Soil Classification of the Basin.
- 4.1. Index Map for Sample Sites in Pedogeomorphic Study.
- 4.2. Simple linear Relationships among various Pedogeomorphic Parameters of 51 Sample Sites in the Upper Mahananda Basin.
- 4.3. Simple Linear Relationships between Infiltration, various Soil Properties and Slope.
- 4.4. Groups of Highly Intercorrelated Variables of various Pedogeomorphic Parameters.
- 5.1. Rain-Erosivity Map of the Basin.
- 5.2. Soil Erodibility Nomograph.
- 5.3. Soil Erodibility Map of the Basin.
- 5.4. Topographic Erosivity Map of the Basin.
- 5.5. Biological Erosivity Map of the Basin.
- 5.6. Potential Erosivity Map of the Basin.
- 5.7. Predicted Iso-erodent Map of the Basin.
- 5.8. Conservation Scheme for the Basin.

- 6.1. Landslide-prone Areas .
- 6.2. The 17th Mile Basti Landslide (Landslide No. 1).
- 6.3. Block Diagram of the Area of Study (Landslide No. 1).
- 6.4. Soil Properties of the Landslide No. 1 and 2.
- 6.5. Infiltration Curves for the 17th Mile Basti Landslide.
- 6.6. The Tindharia Landslide (Landslide No. 2).
- 6.7. Contour Map of the Landslide No. 2.
- 6.8. Infiltration Curves for the Tindharia Landslide.
- 7.1. Index Map for the Hydrological Study.
- 7.21. Cross-Sections across the River Mahananda, 1985.
- 7.22. Cross-Sections across the River Mahananda, 1986.
- 7.23. Cross-Sections across the River Mahananda, 1987.
- 7.3. Superimposed Cross-Sections.
- 7.4. Drainage Parameters of the River Mahananda at various sections during Pre & Post-Monsoons of 1985-87.
- 7.51. Stage Discharge Diagram or, Rating Curve, 1985.
- 7.52. Stage Discharge Diagram or, Rating Curve, 1986.
- 7.53. Stage Discharge Diagram or, Rating Curve, 1987.
- 7.6. Gauge Height Diagram of the River, 1985-87.
- 7.71. Hydrograph for the River at Champasari, 1985.
- 7.72. Hydrograph for the River at Champasari, 1986.
- 7.73. Hydrograph for the River at Champasari, 1987.
- 7.81. Discharge-Sediment Correlation (Daily) , 1985.
- 7.82. Discharge-Sediment Correlation (Daily), 1986.
- 7.83. Discharge-Sediment Correlation (Daily), 1987.
- 7.9. Sediment-Discharge Correlation (Monthly), 1985-87.
- 7.10. Sediment-Discharge Correlation (Annual) , 1985-87.
- 8.1. Rainfall-Evaporation Correlation of some selected stations.
- 8.2. Rainfall-Run-off Correlation : Regression Analysis of Mean Annual & Mean Monsoonal Cases.
- 8.3. Run-off Map of the Basin (Monsoon)
- 8.4. Run-off Map of the Basin (Annual).
- 9.1. Land Capability Map of the Basin.