RECOMMENDATIONS OF TWO DAYS WORKSHOP ON THRUST AREAS OF RESEARCH IN HYDROLOGY, ROORKEE, JUNE 17-18, 1993

1. SURFACE WATER HYDROLOGY INCLUDING DROUGHT AND WATER MANAGEMENT

- Extreme and deficient precipitation analysis
- Hydrometeorological network design
- Techniques for regionalisation of precipitation characteristics and quantitative precipitation forecasting
- Hydrological aspects of drought and development of drought indices
- Climatic variability and its impact on various hydrological processes
- Hydrological soil classifications, geomorpholigcal studies and preparation of hydrological maps.
- Discharge measurement techniques for turbulent mountainous streams and large rivers & low flows
- Flood plain zoning, paleo flood studies and dam break studies
- Water balance and yield studies for river basins and water bodies
- Physically based hydrological modelling for flow forecasting and operation of the project.
- Application of statistical and stochastic modeling techniques for analysis, design forecasting and regionalisation
- Project Hydrology -methodologies for ungauged limited data situations and risk based design
- Real time operation of reservoirs
- Disaster management (floods and droughts) and water conservation techniques

2. GROUND WATER HYDROLOGY

- Ground water potential of different regions
- Modelling and analysis of groundwater flow
- Analysis of unsaturated flow
- Ground water recharge
- Specific problems- water logging, salinisation, saline intrusion spring flows, artificial recharge, conjunctive use, ground water problems in hard rock areas
- Network design

3. HYDROLOGIC INSTRUMENTATION

- Standardization, development and automation of laboratory and field hydrological instrumentation
- Development of (i) data acquisition systems, and (ii) telemetry systems for hydrological instrumentation

4. ENVIRONMENTAL HYDROLOGY

- Pollution : sources and characteristics in surface and ground water
- Monitoring and modelling of water quantity in water bodies
- Water - land soil -vegetation interaction
- Impact of : urbanisation, afforestation, deforestation, agriculture, land use changes
- Soil erosion and reservoir sedimentation
- EIA studies and software developments
- Water quality standards, and re-use of waste water

5. HYDROLOGICAL PROBLEMS OF SPECIAL AREAS

- Urban areas
- Lakes
- Snow covered areas and glaciers
- Deltaic and coastal regions

6. HIGH TECH APPLICATION, DATA BASE MANAGEMENT SYSTEMS AND EDUCATION AND TRAINING

- Software development for hydrological applications
- Nuclear and remote sensing applications in hydrology
- Data base management system and geographical information system
- Preparation of text books, manuals, guidelines, standards, monograms, course materials and audio visual materials for training and technology transfer