PREFACE

The increasing rate of water resources development activity and utilization of water for various uses has focussed attention on development and application of physically based hydrological models to deal with constantly changing hydrological environment. When the hydrological system is subject to change, or when a realistic physical representation of flow in space and time is required for studies of water quality or soil erosion, the conceptual representation or traditional rainfall runoff models with lumped approach are not suitable.

The National Institute of Hydrology has operational on its computer the SHE Model (Systeme Hydrologique Europeen - Computerized Hydrological Modelling System) developed by Institutes of three countries, namely: Denmark, France, and U.K. This model has capability to consider physical processes of the catchment in a distributed manner including soil, vegetation and land use distribution, topography, etc. and has been transferred to the National Institute of Hydrology by Danish Hydraulic Institute, Denmark on behalf of the agencies who developed the model under a Commission of European Communities (CEC) - Government of India Project. Since the commencement of the 3 year project in November 1987, the Model has already been applied to six sub-basins of River Narmada. Studies have also been conducted to model some typical characteristics of irrigation command areas and to study land use changes.

This workshop is intended for decision makers - senior officers at the level of Chief Engineers or above. The main objective of the workshop is to acquaint the participants about the transfer of technology related with SHE Modelling System to National Institute of Hydrology, the results of application studies, needs and procedure for field investigation, possible other applications of the technology, and future developments.

I am sure that this interaction between the Consultants, Scientists of the Institute, and the participants of the workshop would make it possible for various organisations to reasonably understand the capabilities of SHE Model system and the type of studies that could be conducted in future.

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