

SAWA PGD Fellow : Aishwarya Nandini E

Institution : CWR, Anna university

Designation :

Title : *Developing Performance Indicators for Effective Functioning of Drainage Network*

Email :

Flood Management plays a major role in minimising the socio-economic losses in a basin. In the urban context, this is due to uncontrolled settlements of migrant population along the length of surplus carrying channels which has led to human induced floods and their associated impact. This study focuses on developing a integrated framework to identify an suitable management practice that can combat the effect of flooding.

The concept of Integrated Water Resources Management (IWRM) has been incorporated in developing the integrated framework. The framework consists of three components i.e., flow simulation model, socio-economic model and optimization model (performance indicators). The three components are logically integrated to assess the impact of flooding in-terms of socio-economic loss and to evolve a practically feasible management measures in Veerangal Odai watershed.

The flow simulation model simulates the flood depth and the area under inundation for a corresponding land use pattern for which the model is calibrated. The sociological survey has been completed in the identified inundated areas. The sociological damages are expressed in terms of economic cost and the total loss is estimated through the study as Rs. 1998 per head per day inundation.

The optimization model simulates the flow simulation model by incorporating various management measures into the developed framework. The performance of the management measures are evaluated through three performance indicators namely flood depth, inundated area and resilience period. From the pool of management measures, a suitable management practice or measure which yields best performance values is chosen.

These management measures are also classified under constitutional, institutional and operational functions based on the level of authority at which it should be implemented.

The benefit-cost ratio is worked out for the suggested management measure in order to get an overall idea of the economic feasibility in implementing the project. Through this study, to reduce the flooding and its impact in Veerangal watershed, a management measure has been suggested to regulate the lake storage levels along with lining the channel of a dimension of 5.6 x 2 m. The benefit-cost ratio worked out to be 1.2 which shows that this project is economically feasible and will have good returns for the capital invested.