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<i>Title</i>	:	<i>Building an Enabling Environment of a drainage course to meet the Urban and Peri-urban needs</i>
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Background:

The principles of IWRM can be applied for optimal use of groundwater resources. The water resources infrastructure, its maintenance and utilization can be related to the institutional roles and governance structure in such manner that the economic and environmental benefits are optimised. In metropolitan cities like Chennai, the dependence on groundwater resources is significant, especially for domestic needs. This thesis focuses on a small drainage course in the northern part of Chennai. The groundwater exploitation provides a case for analysis of IWRM principles in suggesting a course of sustainable development.

Objectives:

The objectives of the study are:

- i) To study the demand–supply pattern of the groundwater resources from the chosen study area, for both, urban and peri-urban needs
- ii) To analyse the socio-economic measures available to help resolve revenue issues.

Study Area:

The study was conducted in the area surrounding the region of Valliur village near Thamaraiykkam anicut in the river Kosathalayar in northern suburban Chennai. The region primarily supports irrigated agriculture, mainly paddy crop. The TWAD board, GoTN, for the peri-urban users, and the Metro Water, GoTN, for the urban needs, has started pumping groundwater and transporting them through tankers. Of late, some of the farmers have also started selling groundwater as it is more economical. The situation becomes difficult with over exploitation. This leads to deterioration of the groundwater resources, affecting local water availability and deteriorating the environment.

Research Methodology:

The data collected for the study include hydrological details of the River Kosathalaiyar, the Tamaraiykkam and Valliur anicuts and the hydrological data. The stakeholders' perception was ascertained through a series of meetings comprising of farmers, government officials and others involved in the water trade. Open wells are main mode of water extraction. Nowadays, bore wells with submersible pumps are also used. This invariably leads to the lowering of the water table. The area is underlain by a thick layer of sandy alluvium of about 27 to 30 meters which store ample good quality water that supported agriculture earlier and the water supply at present. However, reports suggest that the quality of water below 20 feet is waning, may be because of saline water ingression. The availability of free power supply for agricultural activities appears to have benefited water extraction.

The methodology for the study addresses the technical issues of assessing the availability of water and the quantum and pattern of water extraction, study of market for the water supply from the area and assesses the implications of social aspects, the stakeholder roles and possible dialogues.

Research Findings:

The results indicate that the local demand vs supply ratio after considering a 2% increase in population size is found to be satisfactory and it could meet the demands of the urban areas. The focus group discussions with stakeholders indicate that the issues of transfer of water for urban and peri-urban use while safeguarding the agricultural needs can be resolved by setting up dialog mechanisms. The economic aspects considered the cost of cultivation for the farmers in the area and the price they get for their produce. The profit, over the costs for selling the water, worked out to be Rs 5870 in one season. The Government agencies also pay Rs. 28 for an hour of pumping. On a basis of pumping for 18 hours a day for a month it fetches about Rs 15,000. It is therefore very attractive for the farmers. However the concerns for the society are also the concerns for the irrigated agriculture and the depletion of the groundwater resources of the area.