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Material Flow Analysis of the Hyderabad Wastewater System

A Case Study for the Catchment Area of the Nadimusalaguda WWTP

The basic aim of the thesis as well as the future work of the SHAKTI group will be to perform a thorough analysis of the Hyderabad integrated urban wastewater system. However, as Hyderabad is a megacity this work can never be done for the entire city of Hyderabad.

Thus we aspire to a stepwise approach starting with the selection of a representative WWTP catchment area to try to combine substance flow analysis and mass balances calculations. This approach will include the in and out coming water streams and loads (households, industries and stormwater and even urban agriculture if significant) as well as the sewer system, the WWTP and the River Musi as the receiving water body.

As the Musi River water quality presently should be the best indicator for the lacks within the sector of wastewater collection and treatment it should be tried to quantify all the non- and point sources of pollution including CSOs as well as direct discharges of untreated streams. The indicator parameters to be looked at should be BOD and COD, phosphorous and/or nitrogen, boron (if available) and at least one heavy metal and if possible for both, the dry and wet weather condition.

Based on the results for the selected model catchment area a rough projection for the whole city of Hyderabad should be done thus giving an idea of the uncertainties if compared with the River Musi pollution load up- and downstream of Hyderabad.

The assessment for the model catchment area will further allow to develop some key figures - about water supply and consumption, per capita wastewater amount and load, water losses within the sewer network, the raw and treated wastewater quality and so on - which should be compared with other catchment areas predominantly in India.

The overall outcome of her thesis shall serve as a basis for the development of a decision support aid to finally identify the most sustainable and cost effective measures to be traced within the second and third phase of the SHAKTI project

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Hyderabad Identity

Targeting at the analysis of the identity of Hyderabad on a macro level, the diploma thesis shows an interdisciplinary approach. In a first step, identity is placed in the wider frame of a cultural landscape. This cultural landscape can be described by its aspects market, politics, way of life and movements taking place within those components. In the context of Hyderabad, the analysis of the cultural landscape is made for three identity clusters: the identities of the historical, the modern and the informal structures. The spatial structures and buildings of the historical and the modern identity are analyzed in a next step shedding light on the use patterns of the involved actors. Finally, scenarios for the future development of the historical and the modern identities are sketched on the basis of the investigation of the cultural landscapes. With this agenda, the thesis is not meant to deliver a comprehensive analysis but to give an overview on the identities of Hyderabad and to show methods for the working process.

Sabrina Krank

historical identity



modern identity



informal identity

**Bilateral Meetings in Hyderabad**

A group of six German representatives from energy-, transportation- and urban planning were in July in Hyderabad for one week. Many bilateral meetings with the Indian research partners and city administration representatives took place during the week. Together with a group of students we started to select typical neighbourhoods for the pilot study which will start end of the year.

A meeting with representatives from "Engineers without Borders" (ewb) lead to a cooperation in the framework of their study in the Rasool Pura area, an informal slum settlement close to the airport. This will too be a reference neighbourhood for the master thesis on ground water issues (see NL 2006.04). In reverse the results from the study carried out from ewb will be a reference for the SHAKTI project neighbourhood studies.

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