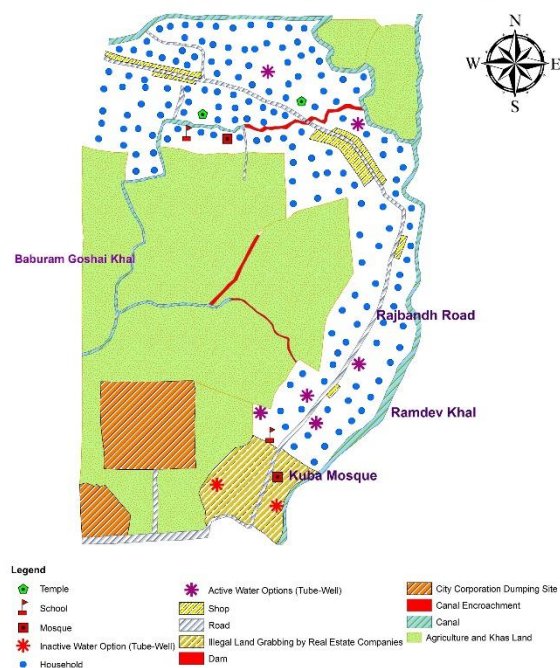


Impact of solid waste dumping and waste water inclusion in Peri-Urban Areas of Khulna City- A case study on Rajbandh and Chawk Ahsan Khali Village

Khulna is the third largest metropolitan city situated in the south-western part of Bangladesh experiencing a rapid growth in peri-urban areas. Climate Change and rapid growth of urbanization are the main causes of water crisis in peri-urban communities. Due to the adverse effects of climatic disasters and urbanization, people from disaster prone coastal areas often migrate to peri-urban areas. Freshwater sources have been polluted over the years due to industrialization, unplanned urbanization and disposal of wastes in rivers and canals. Mayur River water often polluted due to the excessive disposal of solid waste in Rajbandh as well as clinical and household waste from KCC discharge outlets in Chawk Ahsankhali. The major water related problems in this peri urban area include scarcity of safe drinking water, water pollution from urban solid waste, wastewaters, excessive iron and salinity in groundwater.

Social Map of Rajbandh Village

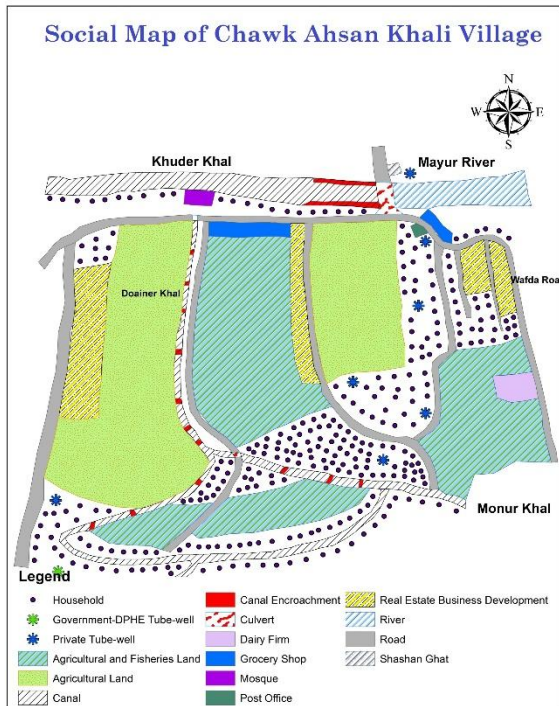


Peri-urban area like **Rajbandh**, beside Khulna city has to face serious environmental damage for waste dumping. It is only 4.2 km far from Khulna city. The total population and number of household of this area is around 2361 and 556 respectively (BBS, 2011). People of this area mainly depend on agriculture and others engaged in day laboring work linked with Khulna city. In Rajbandh, two waste dumping stations exist (one for solid waste dumping maintained by KCC and other one is fecal sludge dumping maintained by SNV). Solid waste dumping station is situated beside Khulna-Satkhira highway road and for this reason the access is much better to discharge the city waste. Around 46 trucks carry 350 to 400 ton solid waste for discharging in this site and this huge amount of waste is dumped without any treatment. The waste is transferred into the dumping site without covering and a bad odor always causes air pollution by mixing with air. As waste is dumping in the Rajbandh area, the environment always experiences a huge negative effect due to chemicals and other contaminants found in solid waste that is seeping into the groundwater and can also be carried by rainwater to nearest Mayur rivers through canals and that is very

harmful for livinghabitats. This dumping station has no better boundary protection and for this reason, waste can mix easily with outside soil, water and air. When polluted water mix with surrounding water and soil, it affects the crops and other agricultural production. In this area, waste dumping is influenced by rapid urbanization and spatial advantages. Fecal sludge dumping station is properly maintained by SNV and it does not create any harmful impact on people's health and livelihoods.

Khulna City Corporation has to maintain this dumping station more technically. Some bad experiences have also here due to bad management. As example, few months ago 5 street children were collecting plastic materials from wastes and an excavator was also working beside them. But due to unconsciousness it causes serious accident. KCC usually burn the wastes but it may cause serious air pollution which is very harmful for the people of the area. People of Rajbandh are also trying to cope with this waste pollution by applying some strategies. As example, we all know that some wastes have good nutrition for plants and they are trying to grow vegetables on waste surface to better use of land. They also built strong boundary line for both crop production and aquaculture so that the waste water cannot contaminate with water. But sometimes, due to natural disaster the polluted water mixes with their water and land that causes serious economic and ecological losses.

Chawk Ahsan Khali village another peri-urban area of Khulna City is developed within the last 10 to 15 years. Before that the area was totally used for agricultural cultivation. Around 100 families live in this village. Agriculture is the main occupation as well as earning source for their livelihoods. Most of them are tenant farmers and only few of them have their own land for cultivation. People are also engaged in fishing but they are very few in number (4-5 households). In the past, farmers used to cultivate single crop (Aman Season) in a year. Now a day they are cultivated two crops (Robi and Aman Season) in a year.



The farmers totally depend on Mayur river water for irrigation. Shallow pump is generally used for irrigation water from the river. 3 to 4 times irrigation is needed for paddy cultivation in robi season. Mayur River water is controlled by Alutola Sluice Gate and the gate management committee does not consider the interest of this area's population regarding gate operation. The villagers are totally dependent on river water for their agricultural works. Because of improper gate operation, farmers couldn't get sufficient river water during their cropping season. Villager Monirul Islam said that, ground water for irrigation purposes is not effective because of salinity. They recommend that at least one gate should be opened always during Robi season to meet the irrigation water demand. Fish cultivation is also being hampered in this area due to scarcity of river water in dry season. Villagers responds that an individual gate at DuainerKhal area is needed for collection and drained out of river water would be a solution for this problem.

Mayur River water are polluted due to the excessive disposal of urban solid waste and clinical waste water. There are 22 drains in the KCC area which directly discharge solid waste and clinical waste water into the Mayur River. Only in Chawk Ahsan Khali, there are at least 10 discharge outlets which regularly discharges clinical waste, solid waste and industrial waste into Mayur River. There is no initiatives for solid waste management and waste water treatment which are responsible for water pollution and water logging in Chawk Ahsan Khali Village. This polluted water creates huge problem on their agriculture. In dry season river water becomes gray in color and people are unable to move in this area because of bad odor. Because of improper gate management and river side encroachment, the waste water couldn't drained out regularly. As a result, it creates huge problems for the villagers. Not only that farmers but also their family members are often suffered by several skin and water borne diseases.

In rainy season, Water logging is a common scenario for the villagers of Chawk Ahsan Khali. Rain water couldn't pass out through Mayur River because of improper gate management. Sometimes the whole village were gone under water for several days in rainy season. Farmers of this area are seriously affected by unexpected flooding of their croplands during rainy season. Often their crops are damaged in the field just before harvesting. Several attempts have been taken by the local farmers and fishermen for negotiations regarding a fair operation of the gates and stopping illegal river side encroachment, all of which were unsuccessful.

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