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Challenges of Sustainable Wastewater Management in Pakistan The Case of Faisalabad (Jabeen, S. & Birner, R.)

What is sustainable wastewater management?

"Sustainable sanitation and wastewater management systems are that minimize depletion of the resource base, protect and promote human health, minimize environmental degradation, are technically and <u>institutionally appropriate</u>, <u>socially acceptable</u> and economically viable in the long term" (Andersson *et al.* 2016).



Introduction and study Area

- 3rd largest populated city of Pakistan (more than seven million inhabitants)
- 'Manchester of Pakistan' (large textile industrial sector)
- Approximately 52 % of population depend on agriculture
- Water stress (semi-arid region, saline groundwater)
- Only 20% of effluents are treated
- Farmers legally won their rights to irrigate their fields with wastewater (Weckenbrock et al., 2011)



Figure 1: Conceptual framework for sustainable wastewater management Source: Author

Methodology

1) Empirical Data

Focus group discussions, In-depth interviews, Net-maps,

Challenges (Results from Fig. 2)

- Incapability of implementing agencies (lacking human, technical and financial resources)
- Legal Implementation gaps (Lengthy litigation process)
- Institutional environment (Nepotism, colleague's interferences, and social and political bonding)
- Weak administrative linkages
- Chaos among institutions about delegation of authority

- and Departmental reports
- 2) Data analysis

Content analysis, IAD framework, Historical institutionalism



(Decentralization)

Implication

- Without considering institutional challenges, the target of sustainable wastewater management cannot be achieved.
- The problem would just be reshaped not solved

MoCC :Ministry of Climate Change MoST: Ministry of Science and Technology EPA: Environment Protection Agency FWASA: Water and sanitation Agency, Faisalabad

Figure 2: Institutional analysis (multiple-level analysis and arenas of choice) Source: Author

IDD: Department of Irrigation and

DOI: Directorate of Industries

Drainage

Reference:

Philipp Weckenbrock, Alexandra Evans, Muhammad Qaiser Majeed, Waqas Ahmad, Nasir Bashir & Axel Drescher (2011) Fighting for the right to use wastewater: what drives the use of untreated wastewater in a peri-urban village of Faisalabad, Pakistan?, Water International, 36:4, 522-534, DOI: 10.1080/02508060.2011.596323

Andersson, K., Rosemarin, A., Lamizana, B., Kvarnström, E., McConville, J., Seidu, R., ... Trimmer, C. (2016). Sanitation, Wastewater Management and Sustainability: From Waste Disposal to Resource Recovery. (S. Caspar Trimmer, Ed.). United Nations Environment Programme and Stockholm Environment Institute: United Nations Environment Programme and Stockholm Environment Institute. Retrieved from http://www.susana.org/_resources/documents/default/3-2636-7-1473948467.pdf



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