Assessment of Rain Water Harvesting Systems in Kathmandu Valley

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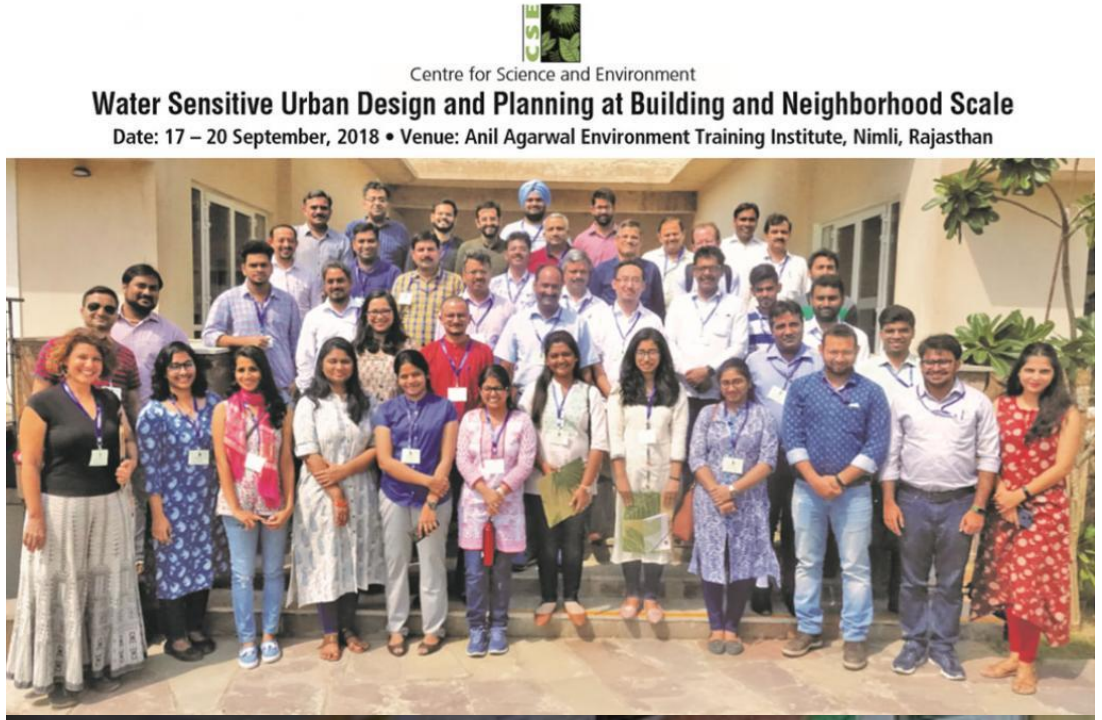
GUTHI

CSE Training

- Water Sensitive Urban Design and Planning in Building and Neighborhood Scale (September 2018)
- Urban Wetland Management (September 2018)
- In-depth knowledge about Rainwater Harvesting System including components, design, O&M etc. which helped me design this assessment .



Rainwater Harvesting System Assessment

- Carried out in 2018-19
- Assessment of 17 institutional and community RWH systems and 52 Household RWH systems
- Checklist created for assessment.
- Components investigated: catchment, annual rainwater harvested/recharged, Use, Operation and Management

Findings

- RWH supplements the existing water supply
- Harvested Rainwater mostly used for non-potable uses - cleaning, washing, gardening etc.
- Major Challenge: Operation and Maintenance
- Lack of proper O&M mechanisms in many community and institutional RWH
  - Repair and maintenance of pipes and gutters
  - Regular cleaning and maintenance
- Lack of proper knowledge about O&M among caretakers
- In household level, almost all RWH system storage type. Good potential to fulfill total water demand. Three kinds of HH users:
  - Opportunistic users
  - Short term users
  - Long term users

Name of Site	Storage/Recharge	Catchment Area (m^2)	Mean Annual Rainwater Supply (litres)
Budhanilkantha School	Both	88729	34071936
Jana Prabhat School	Storage	149.67	191577.6
Vishwo Niketan School	Both	428.97	549081.6
Institure of Engineering	Recharge	81398.4	31256985.6
Institute of Medicine	Both	32158	32929792
Sajha Yatayat	Both	11192	11460608
Bottlers Nepal	Both	1710	1751000
Rani Bari Community Forest	Recharge	69500	26688000
UCEP	Both	21174.6	8659046
Liwali IDP Camp	Storage	668.9	856192
Balbikash IDP Camp	Storage	50.4	64512
Bahu Udeshya IDP Camp	Storage	61.2	78336
Khwopa IDP Camp	Storage	58.8	75264
Rotary IDP Camp	Storage	61.2	78336
Maheshwori IDP Camp	Storage	92.7	118656
Hotel Hiranya	Storage	37.17	17840
Poultry Farm	Storage	37.17	17840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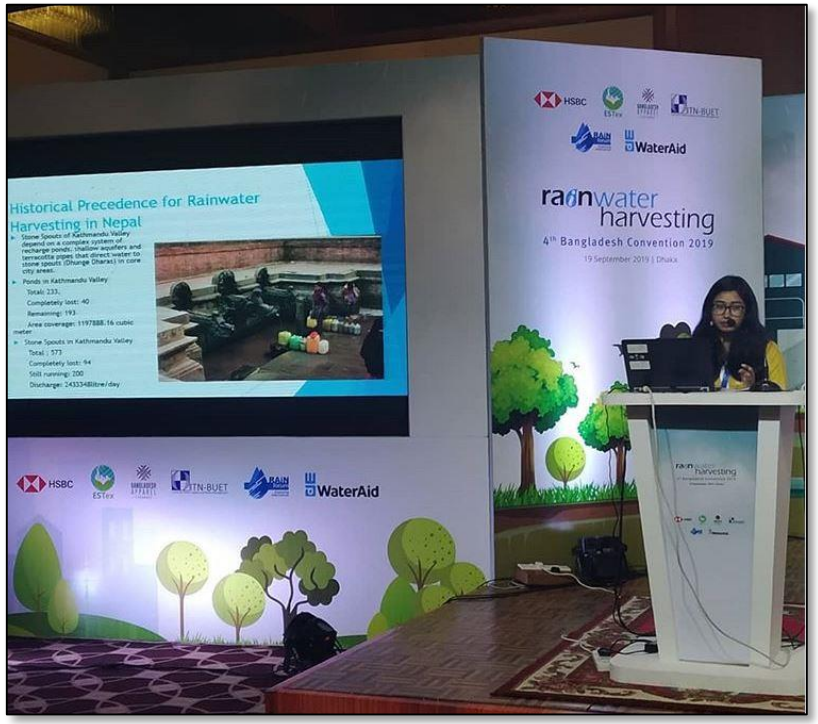
Way Forward

- Learnings from the assessment will be applied in future RWH projects
  - Focus on O&M
  - Service Level Contract in RWH system
  - RWH viable supplement to other water sources in city areas
  - Address concerns about quality of rainwater for potable use
- Knowledge Sharing:
  - Paper presented at 4th National Rainwater Convention, Bangladesh (September 2019)
  - Sharing at Conference on Water Security through Raonwater Harvesting at SriLanka
  - Learning: Global to Local ; Knowledge Dissemination : Local to Global
  - 3 Research Papers:
    - Need of Appropriate Policy Promotions for City Level Rainwater Harvesting in Kathmandu Valley
    - Rainwater Harvesting Quality Assessment and its Potential to address Water Insecurity
    - Post Disaster Community Water Resilience
- GUTHI's upcoming plans
  - RWH implementation at 2 municipalities in collaboration with Geohazard International
    - Recharge project at schools, hospitals and municipality buildings in Kirtipur Municipality
    - Pond Recharge in 14 ropani land (76664 sq ft) in Lalitpur Metropolitan City
  - Policy Guideline advocacy and implementation with local level government
  - Expedite Recharge Kathmandu Campaign
  - Strengthen Regional Forum on Rainwater Harvesting



Thank You!