Responsible water management : Good Practices

Urban Communities are now dependent on multiple sources of water. These sources are typically piped water supply from BWSSB, tanker water supplies from tankers and borewells within the community. This document highlights all the good management practices that communities should adopt to be responsible water users. These practices also helps sound economic and ecological decision making. The principles of these practices are applicable to gated, ungated layouts, apartment complexes, institutional campuses and individual households.

1. **Quantify supply by different sources:**
    a. It is likely that BWSSB water supply will already be quantified through a supply meter. Ensure this meter works well and keep track of supply data. This will help understand reliability of piped water supply.
    b. Keep track of tanker water supplies – ensure the volume of water of each tanker supplied is tracked. This helps monitor that the tankers are actually delivering as much water as they claim to deliver. It also becomes a measure of your dependence of water tanker and therefore your vulnerability to tanker water supply vagaries.
    c. Meter all your borewell delivery pipes and ensure readings are recorded daily. This will help you keep track of how much water you are pumping and which borewells are yielding well and which are not.

2. **Know your Borewells:**
    a. Firstly, as a community, try not to have individual borewells – one borewell for every house is not a great idea. Try and have community borewells and ensure community water supply.
    b. Every time you dig a borewell ensure you **insist on a borewell log.** Keep a record of what happened when you dug a borewell – when did you hit rock, at what depths did you hit fractures in the rock, which of them yielded water and which did not. Ensure this is documented along with how many pipe lengths of casing was required, what capacity motor was introduced and at what depth the motor was hung.
    c. Keep track of changing yields of borewells. The borewell meter mentioned above will help you do this. Document the history of changes of your borewells.
    d. Try and ensure separate electricity metering for each borewell and keep track of electricity bills of each of your borewells so you know how much energy and how much money each borewell is consuming.

3. **Keep tracking water quality:**
    a. Test different sources of water regularly as per the BIS 10500 (2012) standards. You can do this ideally once in six months or atleast once in a year.
    b. Test all your borewells for water quality.
    c. Consider using different qualities of water for different purposes – this means considering investments for separate piping and storage of different qualities of water.

d. Select your water treatment technology based on supply quality of water and required end-use quality of water. Do not blindly invest in "ridding the water of everything" treatment technologies.

4. **Implement consumption metering:**
   - **a.** Ideally every household in your community should be consumption metered. This is very important to keep track of who is using how much water. There has been experience in the city to suggest that just letting people know their consumption and comparing it with others helps reduce consumption. Target a per capita consumption of at most 150 Liters per capita per day (for households) – this is what the city designs its systems on. Today there are various technologies available to achieve "clamp on" metering even when there are multiple inlet points to a single house in an apartment complex.

5. **Introduce proper water tariffs and let your water bill tell a story:**
   - **a.** Do not have water charges mixed with other maintenance charges. Have a separate water bill.
   - **b.** Cost account all expenses related to water separately. Electricity charges of borewells, BWSSB bills, tanker water bills, cost of running your Sewage Treatment plant and other maintenance & operations expenses with respect to water forms the total cost of your water. Use the borewell meters, BWSSB volume of consumption and Tanker supply volumes to calculate your production cost of water per Kiloliter (or per 1000 liters)
   - **c.** Arrive at a "Tariff policy" for water. This should be based on two things – (1) the production cost of water calculated above and (2) the volume of consumption. Let your tariff be an increasing block tariff (eg: 0-8 KL Tariff A, 9KL – 20 KL Tariff B, 20KL -30KL Tariff C and so on and so forth). This tariff should be cheap for necessary use of water (drinking and hygiene) and become more and more expensive for wasteful uses of water.
   - **d.** Let your water bill also be a tool to communicate with the community about water problems & educate them about water issues.

6. **Encourage Rainwater harvesting at individual and community levels**
   - **a.** Goad every household in your community to do rainwater harvesting. Also undertake Community level rainwater harvesting in common areas.
   - **b.** Rainwater harvesting can be storage of rooftop rainwater in tanks for use later or it can be ground water recharge of rainwater runoff from rooftops /parking areas/gardens/common areas such as roads & parks. Keep catchments clean – ensure good solid waste management.
   - **c.** Remember that your rainwater harvesting design should be atleast a 20mm rainfall design. This helps capture 80% of the rainfall falling on the property.
   - **d.** Provide incentives in your water bill to households that do rainwater harvesting.

7. **Ensure proper treatment of waste-water and responsible discharge of the same**

a. It is our duty to leave water back into nature at the same quality it is when we source from it. So invest in your Waste water treatment plant and if it is dysfunctional.

b. Ensure proper operations and maintenance of the Waste water treatment plant. Keep a daily log of its operations.

c. Try and reuse the treated waste water for different purposes – if treated adequately well it can at the least be used for gardening. It can potentially be used for flushing.

d. Explore possibilities that your neighbours may have need for treated waste water – for urban farming / gardening / construction etc. You may even be able to sell it to them.

e. Engage with the city and the city's regulations to ensure that the discharge of your excess waste water is happening in a safe and acceptable way.

8. **Share your data with the city and remember that the plumber, well digger and the mason are your partners**
    a. In the good management of water, you now have a lot of data about your demand, how much pump & supply, about your borewell, about your water quality and about your waste water. Be prepared and willing to openly share this data with the city. It will help to get all regulatory clearances and it will help the city plan better for you.
    b. Remember that the plumber, the well diggers, the masons – all the people who provide you services to keep your life sanitary are your partners. They have knowledge too – listen to their experience and knowledge. Be respectful – and help them get a fair wage, social security and health & accident insurance.

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