

WASTE WATER TREATMENT IN COMMUNITIES



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1. Introduction

Nepal's pride 'the world tallest peak, "Mount Everest" and country of water resources have many rural, sub-urban and urban areas where the ruling problem has been the waste water. The rural areas have been seldom facing waste water problem as being close to natural resources and their general common sense which march them ahead towards best utility of water in every aspects. The prominently occurring problem in sub-urban and urban areas has been waste water and adverse effects carried by it.



2. Waste Water Treatment Method

Understanding the context, many easy simple along with complex methods have been under use by many sub-urban and urban local communities. Generally, the waste water treatment is classified as natural method and artificial method. People from local communities of villages mostly follow natural methods; dilution method and Barren land feeding.

- In dilution method waste water is directed to the clean water sources like rivers which get slowly diluted and get purified naturally.
- In barren land feeding, waste water is deposited to barren land where water gets percolated inside the soil in pure state.

3. Discussion & Results

Understanding the issue, the mostly preferred methods by citizens of sub-urban areas along with urban areas is artificial methods which includes three major steps: physical, biological and chemical treatments of waste water.

Physical treatment of waste water is related with particles present in the waste water, which as whole includes Screening, (blocking of particles like rags, sacs, through use of bars); Skimming (removal of grease substances by skim production) ; Grit removal (heavy gravel like colloidal bricks, soils, small rocks are removed by use of baffles) ; Neutralization (neutralization of waste water by maintaining PH value through use of H₂CO₃ for alkaline state whereas caustic soda for acidic state) ; and lastly Primary sedimentation (removal of those physical suspended particles by settling down). Hence, waste water is somewhat purified and made free of suspended particles.

Moving ahead towards biological treatment, attach culture system and suspended culture system are under use by local communities. In case of attach culture system, the mostly preferred one is Trickling filter in which filtering bed is made by use of fine sand to larger rocks and over which spraying waste water is carried by rotating arms. Then, water passing through filtering bed get purified and collected and used for various household processes even for drinking. This method has been noticed that being mostly used by local communities at urban and sub-urban areas as it needs small space and method is cheap as well.

Marching ahead to suspended culture which is considered to be costly method include activated sludge method in which waste materials are removed in suspended form without use of filtering media by use of aeration tank and settling tank and sludge is generated as waste.

The last not least, treatment, chemical treatment refers to chlorination which is most preferred in local communities of all areas of the country which is easy and cheap. Here, chlorine gas is spreaded in water and in reaction with water kill germs and get evaporated making waste water pure and suitable for drinking. Moreover, different treatment plants are used for water purification with various technologies for purification of drinking water.

Reuse of water has properly followed by local communities dwelling in rural and sub-urban regions as they know the value of water; knowingly or unknowingly. Communities reuses water from their kitchen in their fields, gardens due to lack of sufficient water. By proper reuse of water, the ecological sanitation has been maintained by local communities of rural areas rather than communities of sub-urban and urban areas.

4. Conclusion

Regularly, environmental issues have been raised in various occasions and places in order to get solved. Since waste water created pollution, it has been one of environmental issue being talked. So, voices are being raised in order to find out way to solve problem generated by waste water in local as well as developed communities. Several plans and policies are made and are going on for the preservation of water resources and their detail study.