COURSE CODE: PGD002

COURSE NAME: POST GRADUATE DIPLOMA IN WATER HYGIENE AND SANITATION WASH Monthly

Assignment 5

By Vakhtang Kochoradze 31.12.2018

**Assignments**

1. Paul, a resident in the outskirts of your town, consults you about building a latrine in the compound of his house. He is an open-minded man who is keen to improve life for his family. He has a wife and three young children, and his elderly mother also lives with them. He doesn’t have a tap in his house and gets water from a nearby well. The area has heavy soil and the rock below is impermeable.

1. Which types of latrine are possible choices for him?
2. Which types of latrine would you recommend, and why?
3. What other advice would you give him about the location, design and construction of the latrine?

There are two environmental constraints that Paul is experiencing. First, it is the factor that there is no water in his home and has to get it from a nearby Well. The second is the impermeable soil that is around the area.

These two constraints heavily reduce the number of latrine options Paul has. For example, Simple Pit Latrines or VIP Latrines are not to be constructed on rocky areas, whereas eco latrines require water.

A good option here would be the construction of a Raised Latrine, which is the perfect fit for a rocky ground. If it is possible to dig 1.5m below the ground then the lining above ground can be sealed so that all percolation takes place below ground level. The height of the structure should not be more than 1.5m more than the roofs surrounding the building (WEDC, 2017).

2. Nancy is a laboratory technician. She is analysing a sample of wastewater collected from a pipe that discharges effluent into a river. Name two tests Worknesh could perform to assess the physical characteristics of the effluent.

(b)As part of the analysis she also does a BOD test on the sample and gets an unusually high result. What does the high BOD tell her about the wastewater? What effect could it have on the river?

To assess the physical characteristics of the effluent, Nancy can perform a test on Solids and Odour.

Tests on solids can be made on Settleable solids and suspended solids. Settleable solids are the solids that go to the bottom when the debit and/or the speed of the water flow is reduced. Suspended solids are the particles that do not dissolve in the water and remain in water. The second test Nancy can produce is an Odour test. Water has Odour when there is a biodegradation process going on in the water, and thus a possible contamination with infectious agents.

B) High BOD in wastewater means that there is an abundance of organic matter in the water. This leaves microbe population short on oxygen. Microbial population is essential to decompose the organic matter in the water, without which, the river is risking heavy pollution.

3. What is the purpose of the report of a rapid assessment and who should receive copies of the report? Explain the contents of Rapid Assessment Report

According to the UNHCR (2019), the purpose of the WASH rapid assessment is to assess the conditions of the emergency within the water, sanitation and hygiene pillars, which will ensure an effective planning stage for emergency response. However, the WASH assessment should be followed up by another more detailed assessment once the emergency settles. The assessment should not be conducted later than 3-6 months after an emergency (ibid).

The report must be seen by the commissioning organisation first (WASH Module 5 Notes). However, depending on the level of the emergency and the mandate of the commissioning organisation, the report can be also distributed to other stakeholders that can have a direct impact on the situation. The stakeholders can range from Water supply companies, to health centres and municipality/central government officials (CENN, 2018). In many countries, such assessments are rarely conducted and can serve as a type of inventory taking of WASH conditions in certain areas, therefore, it is of utmost importance that respective stakeholders are informed.

The WASH Assessment must include the key information on all three pillars of WASH: Water, Sanitation and Hygiene. The assessment must break down each of the Pillars into a number of informational sources. For example, if it is the Sanitation pillar, we must know how far is a latrine from the people. To summarize, the WASH Assessment must report what are the infrastructural conditions in terms of WASH as well as what are the informal institutions operating on the ground, what behaviours are institutionized within the society that can breed unwanted WASH conditions.

4. Explain five ways in which urbanisation creates challenges for effective sanitation and solid waste management.

1. Logistical issues arise through the increasing urbanisation. As more people flock the cities, and urban sprawl becoming a factor, collection, transportation and disposal of waste has started to take consume around 50% of Cities’ budgets (Medina, 2010). With the urbanisation process increasing, the Cities lack the capacity to keep up with the resource consumption, which leads to:
2. Uncollected waste. Such waste remains among the neighbourhoods which are dumped at the nearest lots or burned. Such type of waste disposal can lead to numerous health problems, thus becoming another burden for a City (ibid).
3. Ineffective sanitation and waste management creates areas for mosquitos, rats and other types of animals that can become agents of various infections (WASH Module 5 Notes)
4. Generally, poor waste collection takes place in poor neighbourhoods of the cities, thus rendering the poor more vulnerable to diseases and health problems (Vij, 2012)
5. The challenges stated above create conditions that lower the social dynamics and expose human health to various infections, thus, the already burdened city budgets will have public health costs increased, putting more strains on financial capabilities (WASH Module 5 Notes).

5. How do good sanitation and waste management practices bring a positive effect to urban inhabitants? Give examples for effects on:

1. health – With reduced waste, less infectious agents are in the vicinity of the population, thus, less sicknesses.
2. Education – With improved sanitation services, children attend Schools more freely
3. economic conditions – With less sicknesses rampant in the population, it takes off the public health costs from the city budgets as well as health costs for families and other stakeholders. What is more, if the recycling practices are modern, the production costs for companies are reduced as the need for imports are no longer high.
4. the environment – Less litter on the streets, decreased odour and GHGs

References:

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Vij, D., 2012, Urbanization and Solid Waste Management in India: Present Practices and Future Challenges, Procedia - Social and Behavioral Sciences, Volume 37, 2012, Pages 437-447

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