Strategia Netherlands

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**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.
2. **Which types of latrine are possible choices for him?**

As far as Paul’s capacity is concerned, he will probably choose either unimproved latrines or improved latrines simply because the use of latrine although unimproved is much better than open defaecation. Most of the people’s choices lie with unimproved pit latrine if they do have capacity of affording the improved pit latrine because of the cost involved. Anyway, there are so many types of sanitation however, the needs of the users and the resources available should be carefully considered to ensure that the most appropriate type of sanitation is selected. Therefore, in order to choose the most appropriate technology depending on the level and capacity, the probable choice of Mr. Paul will be between unimproved that is, traditional pit latrine which consists of a pit in the ground without a slab. The pit may be wholly or partially lined to prevent it from collapsing and improved latrines, that is, Simple pit latrine**.** This is the cheapest and most basic form of improved sanitation available, and is generally only supplied on a household basis. It consists of a square, rectangular or circular pit dug into the ground, which is covered by a hygienic cover, slab or floor. This slab has a hole through which excreta fall into the pit. Depending on user preference, a seat or squat hole with footrests can be installed, and a lid should be supplied to cover the hole. The latrine is covered with a shelter and should be situated well away from water sources and some distance from the home, a ventilated improved pit latrine, (WHO) Fact sheets on environmental sanitation.

1. **Which types of latrine would you recommend, and why?**

Based on Paul’s possible choices between unimproved and improved latrines, I will recommend to him improve latrine that is, simple pit latrine because it is cheaper and most basic form of improved sanitation that is mostly supplied on average household levels. With improved latrine, that is pit latrine, it is hygienic and usually satisfy the following requirements, namely, it should be safe to used, it should have a structurally sound and cleanable slab floor, it should have handwashing facility with soap, there should be no contamination of groundwater or surface water, it should be free from odour, it should lid to cover the hole.

1. **What other advice would you give him about the location, design and construction of the latrine?**  As for a pit latrine, the location of the pit relative to water sources is of prime importance so that there should be no contamination of ground water or surface water. Also, distance from houses and the users also needs to be considered. If possible, the latrine should be 6-10 m from the home, and located downwind from the house. It is best not to build a latrine in areas where ground water is used as water source, but if this has to be done, the base of the pit should be at least 2 m above the water table. On sloping ground, it should be located below the level of any well or water source, so that any liquid seeping out of the pit flows away from the water source. The minimum horizontal distance between the pit and water source varies with location, soil type and geology. Generally, the pit should be 15 m away from the water source, depending on some public health policies, some authorities recommend a minimum distance of 30-50 m. The latrine should be on a mound so that any water runs away rather than into the pit, and diversion ditches should be prepared around the latrine. The size of the pit depends on the number of people using it and the design period, i.e. the length of time before it is full. Typically, the pit should be at least 3 m deep for a family of five for a design period of three to five years. The diameter should be at least 1 m; up to 1.2 m diameter will make it easier to dig but if it exceeds 1.5 m there is an increased risk of collapse, especially in sandy soils. you need to consider the geology, soil type and topography (the slope of the land) when considering sanitation technologies. In flood-prone areas, it is advisable to raise the mound of the latrine and prepare diversion ditches around it. The cover slab needs to be strong and have a smooth surface so it can be cleaned easily. It may be made of concrete or termite- or rot-resistant timber, with or without stones and mud covering. Various designs of slab are used When the soil condition is rocky and it is impossible to dig a deep pit, the depth of the pit can be extended by building upwards with concrete rings or blocks. However, care must be taken to ensure the structure remains watertight. The level of the water table must also be taken into consideration. The pit must be entirely above the water table at all times of the year. If the water table is near the surface of the ground, the waste in the pit may contaminate the groundwater. Lining the pit prevents it from collapsing and provides support to the superstructure. The pit lining material can be brick, rot-resistant timber, concrete, stones, or mortar plastered on to the soil. If the soil is stable (i.e. no sand or gravel deposits or loose organic materials), the whole pit need not be lined. The bottom of the pit should remain unlined to allow the percolation of liquids out of the pit. The superstructure should be built using locally available materials. These may include a masonry wall made of cement blocks, bricks, or stone with cement or mud bindings; or a wooden structure covered with timber, bamboo, grass/thatch, sticks, leaves of banana or canvas made of sacks. However, the type of superstructure depends on several factors such as a household’s financial capacity, the availability of construction material locally, local customs and traditions, and the availability of skilled artisans. (the open University) latrine construction. So, in nutshell, the pit must be at least 30 m away from the well, and it must also be at a lower level according to the slope of the land. He should also consider the wind direction and place the latrine downwind and at a convenient distance from the house. For the safety of the children, he should choose a SanPlat for the slab. He should seek advice from public health office about possible materials to be used for the superstructure. The materials should be available locally, so that the system is sustainable. He should install a handwashing facility next to the latrine.
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.**
3. The two types of tests for assessing physical characteristics of the effluent are:

To assess the physical characteristics, Worknesh could perform a suspended solids test, the small particles that remain in the water and do not dissolve but can be carried along with waste water She could also measure the temperature of the sample because wastewaters are generally warmer than the ambient temperature and assess the odour because detecting odour tends to be a subjective process but it is possible to measure it in terms of odour units.

1. **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?**

A high BOD test result would tell Worknesh that there was a lot of organic matter in the sample. If this was discharged into the river it would remove oxygen from the water, which would harm fish and other aquatic organisms living in the river because they degrade the waste and, in the process, the use dissolved oxygen from the water.

1. **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.**

The purpose of the report is to summarise the results from the assessment and indicate how well the assessment aims have been achieved. This will provide informed decision for an intervention. After obtaining permission from the funders, it should be sent to all those who with interest in its findings. Apart from the funders, other assessment report recipients could include:

* the local administration
* community representatives
* the local Health Extension Workers team
* any non-governmental organisations (NGOs) or funding organisations who might be willing to finance or support a follow-on programme
* any local WASH programmes. (UNHCR) 2015, WASH Manual and resources

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

According to World Bank (2019), solid waste management, there are several possible answers to this question, but the main challenges from urbanisation are caused by many people living very close together which puts pressure on all urban services. Industries also release waste gases that may contain harmful substances and produce solid wastes that may contain hazardous materials. The rate of increase in population is very fast and the development of infrastructure for water supply and sanitation services cannot maintain the same pace of change. People arriving in cities often live in informal settlements which are developed without planning or control and lack essential facilities for the people who live there and the use of a large number of often badly maintained petrol and diesel used cars, lorries and buses cause additional health problems. Romanus Ugwuanyi (2012).

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

According to Cities Development Initiative for Asia (CDIA) 2014, Solid waste is a major environmental pollution and is responsible for spreading harmful and infectious diseases. Good sanitation and proper waste management creates a healthy and prosperous society because many health problems are associated with poor sanitation and waste management, principle caused by contact with human faeces. Thus, the effects are as follows:

1. **Effects on health**

Good sanitation and waste management help to keep people separate from potential sources of pathogens. They reduce the risk of contaminating water supplies with pathogens and discourage the transmission of disease.

1. **Effects on education**

Healthy children have fewer days off school through illness. When they are at school, healthy children learn better than sick children. Providing good sanitation facilities encourages children to attend school, particularly girls during their menstrual periods.

1. **Effects on economic conditions**

The health benefits promoted by good sanitation and waste make for a more productive community. Less money is spent on healthcare and people lose fewer days off work through caring for the sick.

1. **Effects on the environment**

Good sanitation and waste management means that there will be less faeces and waste deposited in public places and less pollution of the water

**Reference**

1. (WHO) Fact sheets on environmental sanitation.
2. (UNHCR) 2015, WASH Manual and resources
3. Romanus Ugwuanyi (2012), University of Nigeria, urbanization and solid waste management challenges in Nigeria.
4. World Bank (2019), Solid Waste Management
5. Cities Development Initiative for Asia (CDIA), (2014), Enhanced Solid Waste Management Practices Create Positive Impact on Community Health in Battambang City