COURSE: POST GRADUATE DIPLOMA IN WASH

ASSIGNMENT: No 5

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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.

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?

**Answer**

1. Since paul doesn’t have a piped supply of water, he can’t install a water carriage system; instead, he has to install a dry latrine system. The possible choices are a ventilated improved pit latrine, an Arborloo, a urine-diverting latrine or a biogas latrine.
2. The ventilated improved pit latrine would be suitable, but if he has space and farms near him a composting system is recommended, such as the Arborloo or urine-diverting latrine. This would produce useful organic compost and so protect the environment. In the urine-diverting latrine, a fertiliser from urine is also produced. Paul could sell these products to the farmers. The biogas latrine is not recommended because it is suitable only where there are a large number of users.
3. The pit must be at least 30 m away from his 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 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 hand washing 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.

(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?

**Answer**

1. To assess the physical characteristics, Worknesh could perform a suspended solids test. She could also measure the temperature of the sample and assess the odour. (Note that if she was measuring temperature she would have to do this at the point of origin because the temperature could change within a short time.)
2. 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 organisms living in the river.

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

**Answer**

There are a number of reasons why a WASH team may need to carry out an assessment. Usually this relates to the need to get information on the state of sanitation and waste management in a particular town or part of a city and have the ‘facts on hand’ to inform others (particularly political leaders and community members) as they make action plans for improvements.

The assessment can also be used as a monitoring exercise to provide a quick overview of how an urban community has been using its sanitation facilities and waste management system. This could be used to identify the individuals or groups of people who are at the greatest risk of harm from poor WASH practices.

Assessments are also used to help plan WASH facilities in an emergency situation: after a mass movement of people to a refugee camp, for example, or while recovering from a natural disaster.

Note that the assessments discussed in this study session are classed as ‘rapid’. This is because they are intended to provide a quick view of the situation and to identify the key areas for immediate action. In the longer term, it is important to assess the effectiveness of any WASH programme. An initial assessment might be done before the start of the programme to find out the baselineposition(the situation before any improvement programmes are implemented). This would be followed by further assessments during and at the end of the programme to determine its progress. Finally, an assessment carried out sometime after the end of the active phase of the programme would help to determine any long-term benefits achieved. This type of longer-term assessment is part of the more rigorous process of ‘monitoring and evaluation.

The purpose of the report is to summarise the results from the assessment and indicate how well its aims have been achieved. After permission from the funders has been obtained, it should be sent to all those who had an interest in its findings. Apart from the funders, recipients could include:

* Administrator from the department of preventive medicines
* community representatives
* the local health technicians 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.

Assessing the key sanitation and hygiene aspects of a community requires the use of a number of investigation methods. The main methods (Asefa and Tessema, 2000; Feleke et al., 2003) are listed below:

* **Interviews** are conversations between the investigator and members of the community, usually on a one-to-one basis. Depending on the information required, different types of interviews and questions can be used, as described in Box 3.1. The interviewer takes notes of the interview or uses a voice recorder. When conducting interviews it is important to gain the interviewee’s consent before starting and to make it clear how the information will be used. Generally, interviewee’s comments should not be used in reports in a way that allows the person to be identified.
* **Observation**is often combined with interviews. Observationsimply means recording what you see or are aware of. For example, while visiting households, interviewers observe the availability and quality of the sanitation and waste facilities, such as the household latrine, solid waste storage and disposal, and handwashing provision. In addition, the interviewer will try and gain a picture of the use of these facilities through observation and discussions. At the same time, the general condition of the housing, water management and food handling can also be observed. There is a risk that the observer will assess the position against their own personal views (a subjective view), so it is important to have a set of standards to be used by all observers to make the assessment as objective(based on things that can be measured or counted and not influenced by personal opinion) as possible. General observations can be made simply by walking around the area and noting the condition of the town. A typical observation sheet to be completed while observing a household.
* Discussions with the community can provide valuable information about the concerns and health situation of community members that can help to confirm the findings of the interviews and observation. For example, one would expect a high incidence of diarrhoea to be reported if an absence of latrines and hand washing facilities had been identified.
* **Focus groups** can also be useful to find out what people think about a specific issue. A focusgroup consists of a group of about ten people who represent the community as a whole in terms of age, gender, employment etc. The group is coordinated by one of the team whose role is to introduce the subject and pose a few initial questions. The group then discusses the issue in question while the observer makes notes so that they can produce a summary of the group’s views and ideas. The coordinator should take as little part in the discussions as possible and only intervene if arguments develop or if the discussion strays far from the subject under discussion. An example of an informal all-male ‘focus group

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

**Answer**

**Challenges emerging from rural-urban interaction**

Urban centres are usually surrounded by rural communities and the two areas depend on each other to supply many of their needs. Urban areas depend on the rural areas to provide food, fuel and construction materials. In return, the rural community depends on urban areas to supply employment, commercial products, advanced healthcare provision, education and equipment, machinery, and other industrial outputs. Having said this, problems may arise when there is a large temporary influx of people from the rural to the urban areas. Examples include:

* The increased demand for sanitation facilities in the area around a city market
* The manure generated by animals that are brought for sale or used for transport
* The congestion caused by the number of people and animals using the roads.

**Challenges emerging from the urban situation**

Even without the influxes from rural areas, urban centres are congested and crowded. They have often grown without any planning, so the problems arising from the lack of sanitation, waste management and the other infrastructure mentioned above are present. Urban growth also means that there is an increase in the area of land covered with concrete and other hard surfaces

**Challenges from industrial discharges**

Most industries in developing countries discharge untreated or partially treated liquid wastes to sewers, where these are available, or to rivers, streams or ditches. Industries also release waste gases that may contain harmful substances and produce solid wastes that may contain hazardous materials (such as poisons, strong acids, infectious material, etc. that can cause harm to humans because of their properties). As a result, unregulated industries can harm human health and the environment in many ways.

**Challenges from transport**

We have already mentioned problems from traffic congestion, but the use of a large number of often badly maintained petrol- and diesel-fuelled cars, Lorries and buses cause additional health problems. The exhaust gases from these vehicles contain fine particles, partly burned fuel and acidic substances that make breathing difficult and cause irritation of the lungs. While this is a problem for all people, it is much worse for the old, the very young and the ill, especially those with heart problems or who suffers from asthma

**Challenges to society**

Increasing urbanisation puts pressures on society as a whole as well as on the environment. People who migrate to cities may become unemployed and then need to be provided for. This puts pressure on welfare provision and on the charities that provide assistance to the hungry and the homeless. Even people who have jobs find it difficult to find somewhere to live and may develop illegal unplanned settlements that affect the planning and service provision of the government sectors. These settlements also add to the city’s sanitation and waste problems.

The urban population requires daily supplies of food, fuel and other goods which can put pressure on the infrastructure needed to deliver and sell these goods. Once goods reach the end of their lives they become waste, increasing the pressure on the waste collection and treatment systems.

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

1. health
2. education
3. economic conditions
4. the environment

**Answer**

* **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.
* **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.
* **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.
* **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 and soil.

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