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| **WASH ASSIGNMENT 4-MODULE 4-READY** |

**COURSE TITLE: POST GRADUATE DIPLOMA IN WATER, HYGIENE & SANITATION.**

**STUDENT NAME: JAMES MARIK LUETH.**

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QN1. A public –private partnership is any collaboration between public bodies, such as a municipality or even the government, and private companies in the water supply/distribution system. The belief is that private companies are some efficient and better run than bureaucratic public bodies, and the management skills and financial acumen that they bring will create better value for money for customers. The incentive for the private companies is the profit that can be generated. PPPs have become popular, to the extent that the number of people served by private water operators in developing and former Communist countries increased from 94 million in 2000 to more than 160 million in 2007 (Marin, 2009). The following are some of the factors to consider when assessing the performance of a public –private partnership providing water supply services to the public/community.

**Accessibility:**

What proportion of the population has access to water? The distance to the water point should be less than 1 km or 30 min walking time. Pickering and Davis (2012), using survey data from 26 sub-Saharan countries, found that the further away a water

source/point was, the less water was used; when the distance was more than 30 minutes away, households collected less water than was necessary for basic needs.

**Affordability:** Is the cost of the water needed less than 5% of the household’s income?

**Cost recovery:** Is the cost of providing the water being recouped?

**Minimization of non-revenue water:** Is this reduced to no more than most 15%?

**Water quality:** Is there adherence to national standards?

**Operational efficiency:** What is the quantity of water supplied per capita? What is the duration of water supply in hours per day?

QN2. Safe and reliable drinking water has always played a prominent role in the development of human civilization. However, access to safe, adequate and reliable water is not always present. There may be emergencies in the water supply system that result in a break in supply.

Three possible natural causes of water emergencies include; **drought;** occurs when there is a deficiency in precipitation over an extended period of time, resulting in a water shortage. The lack of rain means that the water flow in rivers is reduced, lakes and pools shrink in size or may dry up, groundwater and soil moisture are depleted, and crops are damaged. Prolonged drought can lead to a major national and regional food insecurity crisis.

**Flooding;** is an abnormal rise in the water level and may result in overflowing of streams or rivers. Flood waters can destroy infrastructure, including houses, roads and water supply systems, as well as agricultural crops, which ultimately causes a shortage of food supplies in the country. Besides the destruction of property, people and animals may be killed, especially when flash floods occur.

**Earthquake**

An earthquake can cause serious damage to infrastructure on and in the ground. Pipes and treatment plants will be destroyed by a high-magnitude earthquake and the communication systems (such as road and rail networks) often become non-functional, making the delivery of emergency water supplies difficult.

Three possible causes of water emergencies due to humans include; accidental contamination of the water supply (as in the Camel-ford incident), microbial contamination of water sources due to human mismanagement (such as the cholera outbreak in Haiti); deliberate poisoning of the water supply as an act of terrorism.

b) The possible options for safe water supply during a water emergency are; delivery of water to consumers by water tank and or bottles. Treatment of the water at the household to render it safe (e.g. by boiling).

QN3. A sanitary inspection is a survey of the surroundings of a water source to identify possible health hazards and sources of pollution.

a) When conducting a sanitary inspection of an abstraction point at a river, you would need to take an appropriate checklist of questions to ensure that you inspect thoroughly and don’t forget anything. You will also need a notebook and a pen or pencil to record all the information you collect.

b) Important things to look for include the location of any latrines or other possible sources of contamination (due to farming or industrial activities) relative to the river, the possibility of any landslide or mudflow, a good solid fence, a screen on the intake, the presence of a dam, the presence of a filter and if a filter is present, that it’s operating properly and whether there is any uncontrolled flow.

QN4. A **Water Safety Plan** is a plan to ensure the safety of drinking water through a risk assessment and management process that considers all the points in water supply from the catchment to the consumer. It is a means of preventing and managing threats to a drinking water supply system, before anything goes wrong, taking into account all the stages of the supply process from the water catchment to the consumer.

The water safety plan is necessary to ensure that the water is produced and delivered to consumers is safe. It also ensures that the chance of an incident disrupting the continuous supply of water is minimized.

QN5. The two types of water supply maintenance are; breakdown maintenance and preventive maintenance. Preventive maintenance is better because it helps prevent break downs and ensures that the assets can be used until the end of their service life. By undertaking preventive maintenance, crises, which are costly, can be avoided.

***Key references.***

WASH post graduate module 4 –water safety and distribution; Strategia Netherlands

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