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**QUESTION ONE**

**What is Sanitation and Hygiene?**

Sanitation is the hygienic means of promoting health through prevention of human contact with the hazards of wastes as well as the treatment and proper disposal of sewage or wastewater. Hazards can be physical, microbiological, biological or chemical agents of disease.

According to the WHO/UNICEF, (WHO/UNICEF JMP website: <http://washdata.org>),Sanitation services refer to the management of excreta from the facilities used by individuals, through emptying and transport of excreta for treatment and eventual discharge or reuse.

Inadequate sanitation is a major cause of disease world-wide and improving sanitation is known to have a significant beneficial impact on health both in households and across communities.

2.5 billion, one in three people in the world, lack adequate sanitation and most of these individuals live in developing countries, or the majority world living in conditions of poverty and marginalization.

Lack of improved sanitation is a global crisis directly impacting the health, education, productivity and economic status of a household and often becoming the catalyst towards propelling a family out of poverty. Inadequate sanitation, particularly in the context of urbanization, allows for sewage or waste to flow directly into streams, rivers, lakes and wetlands, affecting coastal and marine ecosystems, fouling the environment and exposing millions of children to disease

Hygiene isa set of practices performed to preserve health. Also according to the World Health Organization (WHO), "Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases. It includes personal hygiene, hand washing, menstrual hygiene management and food hygiene. It also includes attention to keeping surfaces in the home and workplace, including bathroom facilities, clean and pathogen-free.

Hygiene has long-established links with public health, but was not included in any MDG targets or indicators. The explicit reference to hygiene in the text of SDG target 6.2 represents increasing recognition of the importance of hygiene and its close links with sanitation. Hygiene is multi-faceted and can comprise many behaviors, including hand washing, menstrual hygiene and food hygiene.

Maintaining a high level of personal hygiene can help increase confidence and self-esteem, leading to a healthy lifestyle. But the failure to keep up a standard of hygiene may have many implications. Not only there is a high risk of getting an illness or infection but also there are many social and psychological issues are possible due to poor hygiene.

Types of hygiene practices includes; hand hygiene, body hygiene, special hair application, oral care, and clothes hygiene Hand hygiene, in particular, is one of the most common means by which pathogens are transmitted.

In fact sanitation and hygiene have an enormous impact on public health around the world, Providing access to sufficient amounts of safe drinking water, building adequate sanitation facilities (even a simple latrine), and introducing effective hygiene behaviors are essential to reducing the burden of disease worldwide. Preventable water-borne diseases like diarrheal disease are contracted by a lack of safe water, adequate sanitation and hygiene practices. Thus, Diarrheal disease has affects nearly 1.7 billion people each year, and is the second leading cause of death in the developing world especially among children under five years of age.

**QUESTION TWO**

**Why are water, sanitation, and hygiene important?**

Water, sanitation and hygiene are important to our development model as a country or community. When we work with communities to help them become self-sustaining, the component of WASH, are the first things to put in place followed by other sectors like education, health and economic development;

The WASH component i.e. Water, Sanitation and hygiene are very important aspect of the public health sector development. Thus, Water without sanitation and hygiene doesn't work, because the clean water gets contaminated so easily. When people defecate in the open due to lack of sanitation facilities or sometimes ignorance, the rain water will wash the fecal matter into ponds, rivers, and other water sources, spreading disease and bacteria. So if the three WASH component are effective, then it reduce the burden of contracting sanitation related diseases such as diarrhea, Typhoid, cholera to mention a few;

Also, Education about the WASH component is very important, because it help people to know how disease spread and the preventive measures. If people are not taught how diseases spread, the clean water could easily be contaminated through dirty water containers, dirty hands, and dirty dishes. These practices are a major cause of diarrhea, which contributes to child deaths.

Improved sanitation reduces environmental burdens, increases sustainability of environmental resources and allows for a healthier, more secure future for the population and access to safe clean water reduces infection form water born related disease.

Water, sanitation and hygiene speed up the achievement of all MDG's, helping eradicate extreme poverty and hunger; achieve universal primary education; promote gender equality and empower women, reduce child-mortality; improve maternal health; combat malaria and other diseases as well as ensure environmental sustainability.

Together, these three aspects of development are commonly referred to as “WASH.” Alone, each of these three aspects reduces diseases by 11-44 percent, but when combined, water, sanitation, and hygiene together can reduce mortality by an average of 65 percent.

Water, sanitation and hygiene improve on the public health sector of the community because the three WASH component depend on each other in a way that without a clean, safe source of water nearby it is nearly impossible for communities to have adequate sanitation facilities or practice good hygiene. Likewise, without proper sanitation and hygiene, safe water will become contaminated and water projects will not be sustainable.

The aspects of WASH also help communities not to practice Open defecation because open defecation leads to the spread of harmful pathogens through feet, hands, flies, food, and water. If hand washing with soap is not practiced, germs and disease can spread rapidly.

Through WASH, people are taught to Keep themselves clean, properly dispose human waste (feces and urine) for good health. If wastes are not taken care of in a safe way, our feces and urine can pollute the environment and cause serious health problems, such as diarrhea, worms and cholera. Many of these problems can be prevented through personal cleanliness (hygiene) - washing hands, bathing, and wearing clean clothes and Public cleanliness (sanitation) — using clean and safe toilets, keeping water sources clean, and disposing of garbage safely.

Access to safe water and adequate sanitation, together with good hygiene practices, can reduce the transmission of some neglected tropical diseases (NTDs), for example trachoma and intestinal worms. Trachoma is transmitted by flies, fomites (e.g. skin, hair, clothing, or bedding) and direct contact. Preventing transmission of trachoma can be achieved through access to clean water, appropriate hygiene practices that promote face washing, and access to proper sanitation for the disposal of human waste.

Intestinal worms, affecting nearly 900 million people worldwide, is most prevalent in communities where people have inadequate access to toilets or hand washing facilities. Worms are transmitted through faecal-oral contact or enter through the skin of the feet in areas of open defecation. Access to safe water and adequate sanitation will help communities affected by both trachoma and soil-transmitted helminths (STH) to escape from the perpetual cycle of infection and reinfection.

**QUESTION THREE**

What is open defecation?

Open defecation is defined as the practice of people defecating in fields, forests, bushes, bodies of water or other open spaces and rather than using toilet to defecate. Open defecation is widely used in literature about water, sanitation and hygiene (WASH) issues in developing countries. Open defecation causes public health problems in areas where people defecate in fields, urban parks, rivers and open trenches in close proximity to the living space of others people.

Defecating in the open is an affront to dignity and risk to children’s nutrition and to community health. The elimination of open defecation is recognized as a top priority for improving health, nutrition and productivity of developing country populations and is explicitly mentioned in sustainable development goals 6 (SDG targets 6); to ensure availability and sustainability management of sanitation and water for all by 2030.

Globally 4.5 billion live without a safe toilet, however, Open defecation rates have been decreasing steadily. From 2000-2015, the number of people practicing open defecation declined from 1,229 million to 892 million, an average decrease of 22 million people per year.

All SDG regions saw a drop in the number of people practicing open defecation, except for sub-Saharan Africa, where high population growth led to an increase in open defecation from 204 to 220 million, and in Oceania), where open defecation increased from 1 to 1.3 million. Nine out of ten people practicing open defecation now live in just three regions, particularly in Central and Southern Asia, Eastern and Southeast Asia and Sub-Saharan Africa. Ending open defecation by 2030 will require a substantial acceleration in current rates of progress. ([www.un.org](http://www.un.org), 2013).

**QUESTION FOUR**

**What is Sanitation Marketing?**

Sanitation marketing is an approach to increase sanitation coverage in the community by selling sanitation products and services. Sanitation marketing is considered as a business where services and products can be sold by providers and retailers to interested consumers to improve on their sanitation and have a better health.

Sanitation marketing promotes an appropriate product at the right price, which can be a latrine, toilet, or other excreta disposal system. It also brings together supply and demand, and conduct market research to understand consumer demand, and scale up the supply and demand for improved sanitation facilities to the community particularly the poor people. Sanitation marketing stimulate market mechanisms through the application of the marketing mix, including product, place, price, and promotion of the commodity. (Cairn cross, 2004).

To have effective sanitation marketing, there is need to conduct formative research to understanding what products the target population desires and what price they’re willing to pay for them to avoid low demand by the households. In fact Sanitation Marketing move people further up the sanitation ladder compared to approaches such as community led total sanitation (CLTS) that only focus on ending open defecation.

Marketing sanitation products and services involves several players including but not limited to distributors, wholesalers and retailers of sanitary wares, local producers, service providers, masons and laborers, CSO/private sector and the public sector/ government which plays the regulatory role all motivated by their own self-interest in response to monetary, political, and other incentives**.** (USAID/HIPS, 2010)

**QUESTION FIVE**

**What are some of the biggest challenges you face in teaching hygiene and sanitation?**

Teaching has to do with three main expectation that is, expectation from the students, school administration and from the parents of the students or community. Thus,

The biggest challenges teachers face in teaching hygiene and sanitation are as follows;

1. Teaching feminine hygiene for girls; once girls reach their puberty, the school attendance drops drastically because of the stigma surrounding menstruation and at end they do not attain the right knowledge about hygiene and sanitation.
2. Lack of sanitary facilities and limited access to water; water and sanitation go together, without the other component, it becomes meaningless to teach neither hygiene nor sanitation.
3. High level of illiteracy among the students; many students lack basic education especially in the Republic of South Sudan, due to the protracted civil war in the country and for this matter few children are studying in the school and many do not know how to practice proper personal hygiene.
4. The culture of open defecation; some of the communities in South Sudan particularly the pastoralist communities, their children (students) do not adhere to the teaching of hygiene and sanitation. Most prefers open defecation in the bushes, forest, rather than to a designated toilet and also drink water from unprotected water sources which is a big challenge as it risk the spread of water born and sanitation related illnesses.
5. Seasonal migration of the people; in regards to pastoralist children (students), their parents are always mobile without permanent settlement. This contribute negatively to the student who is supposed to attend hygiene and sanitation lessons and the teacher will not be able to pass the knowledge to them as they migrate with their parents to new location.
6. Under developed WASH component; in South Sudan, the WASH components are still under developed due to the continuous political crisis in the country. Most of the sanitation facilities and leaning structures have been destroyed and learning is being conducted in open air space environment without water in place making teaching hygiene and sanitation a big challenge.

**QUESTION SIX**

**What is sustainable sanitation?**

Sustainable sanitation is a sanitation approach designed to meet certain criteria such as keeping the environment clean, to have hygienic living conditions in the community and to work well over the long-term. Sustainable sanitation system is aimed to protect and promote human health by providing a clean environment and breaking the cycle of disease infection. (SuSanA, 2008)

In order to be sustainable, a sanitation system has to not only be economically viable, socially acceptable, technically and institutionally appropriate, but it should also protect the environment and natural resources.

Through sustainable sanitation system we are made to understand than human excreta are not a waste, but actually valuable resource that would produce significant amount of energy, and use as plant nutrients for their proper growth and development. Thus, some of the technologies used in some countries in Africa that have helped keep sanitation sustainable include;

1. Water-less toilets;

The technology is used in East-Africa’s urban slums, with an incentive that invites more and more civilians to use it. The toilet collects the waste, which is converted into nutrient rich organic fertilizer, which is then sold to the local farmers.

1. Energy Generating Toilets;

The waste is collected in a biodegradable film by a simple and efficient sealing technology. Exploiting the simple biological process of Anaerobic Digestion, which is basically the process of organic waste consumed by microorganisms in an oxygen-free environment; the toilet ends producing energy in the form of biogas.

The waste is also used to produce fertilizer for plants. The Anaerobic Digestion leaves the waste in a semi-liquid form, which is then used as manure for planted crops.

This was a technology that was experimented with in Madagascar. It turned out to be efficient, convenient, odorless, clean, and produced by-products that would give the locals an opportunity to earn profits.

1. Dehydrating Toilets

Dehydrating toilets are those that separate the liquid and solid waste.

The container is primed with coconut husk which absorbs any liquid that falls in it. This allows the solid matter to remain dry and odorless. To help the decomposition process, the matter is stirred briskly. To keep the smell out, the unit has an integral fan that pulls the moisture out of the space, keeping it dry and odor-free. Such systems are mainly suitable for regions with higher average temperatures, long dry and short rainy seasons or arid climatic conditions with high evaporation rates.

**QUESTION SEVEN**

**What are the steps for planning and implementing a successful WASH behavior change campaign?**

Planning is the process of identifying the right activities required to achieve the desired goals. Providing access to WASH services to the community alone is not enough without considering the aspect of the behavior change to enhance sustainability of the WASH sector. Therefore, the steps to consider in implementing a successful WASH behavior change campaign are as follows;

Step1. Understanding the needs of the community; it is important to understand first the needs and also considering the values, aspiration, behaviors and barrier change before implementing a WASH project to the community. This can be done by conducting an assessment or survey research through focus group discussion as well as observational field studies to get first-hand information about the community in the case study.

Step2. Community social forces; community based social norms and customs are also important part in regards to implementing WASH to the community. In order to do this, stakeholders has to be involved to gain their support and exert pressure for adoption of better WASH operation and maintenance.

Step3. Community participation; when people are engaged to participate directly in the implementation of WASH activities it gives a sense of ownership and sustainability of the WASH sector. People may commit themselves because they want to have continuous access for water, sanitation and hygiene services, hence better life and improvement in their livelihood.

Step4. Human resources; in order to implement successful WASH behaviors, there have to be trained personal have experience, knowledge and skills they need to implement changes in WASH behaviors change. The availability of locally trained WASH personal makes it easier to implement WASH behavior change. Where there is a gap in knowledge, provide training to the staff to learn new ways of bringing behavior change in WASH.

Step5. Resources mobilization; to implement any activity there is need for funds to facilitate certain transaction during the implementation of the project. Therefore, resources have to be mobilized locally from the community for the implementation of WASH behavior change.

Step6. Type of technology to be use; it is also important to consider the technology to be applied when implementing WASH activities. Simple technology is easily adopted by the community as well as operation and maintenance; more advance technology could bring challenges in case it breaks down, people may face difficulties in finding the spare parts.

Step7. Visualization of the activities; WASH behavior change campaigns are more effective when the community can see the threats or benefits of their actions. If these are too abstract, achieving results can be difficult. More so, community should be involved in the initial start of the project planning, design and implementation so that they can sustain it in the long run. People often become engaged in the activity when they understand the source of their needs, like water.

Step8. Monitoring strategy; this is one of the most important steps to WASH behavior change campaign. Activities being implemented should be monitored regularly to measure the progress and to know whether it is achieving the desired objectives of the project. A large number of studies show that while education and advertising can be effective in creating awareness and in changing attitudes, changes in behaviors rarely occur as a result of simply providing information but rather continuous monitoring of the behavior under study.

**QUESTION EIGHT**

**What are the challenges faced by WASH Projects in Africa**

WASH projects in Africa are faced by the following challenges;

1. High demand for basic WASH services like water and sanitation, most people in Africa live without access to clean drinking water and sanitation facilities. In a review of 18 African countries inadequate sanitation alone was estimated to cost these countries USD 5.5 billion annually in economic losses –equivalent to between 1 percent and 2.5 percent of GDP in the countries reviewed (World Bank, 2012).
2. Policy challenges; There are significant inequalities in access to WASH between rural and urban areas. For instance rural sanitation is often the least prioritized of all the sub-sectors due to low budget allocations from government sources and a reliance on donor funds and household expenditure. Also sometimes inequities in service delivery linked to access between rural and urban areas and the poor often pay more services and directly from their own pockets.
3. Conflict of interest among donor agent on WASH activities; some donor agents prefers to implement only one of the three WASH components due to project design and funding. Say provision of safe drinking water and does not do on the sanitation aspects yet they are all important. Donors always look for the most cost effective component and avoid the expensive living many house hold vulnerable of other services.
4. The challenges of effective coordination of the WASH Projects; the diverse nature of the WASH sector underscores the need for effective co-ordination and communication. WASH is considered as a single sector in the service delivery; where water is an input to a network and wastewater the output but due to the diverse nature of WASH, It does however lead to effective coordination of the components.
5. The challenge of financial constraints; most of the Africans government depends on foreign funding/donor to develop their WASH sector and this kind of funding is not sustainable in the long run. To develop WASH sector, it requires greater capital investment especially where it involve a technology and most of the African countries could not afford to fund, hence low development of the WASH projects.
6. Under developed infrastructures; most of the Africans countries have poor infrastructures which negatively affecting the implementation of WASH projects. Poor infrastructures hinder the development of WASH projects in the rural areas and hence retard economic development.
7. Low level of skills training on WASH; as WASH projects requires knowledge and skills, there are few people with knowledge and skills in the WASH sector and this phenomenon couple with limited funding pose a big challenge to WASH project in Africa.
8. Political instability; in case like South Sudan, has affected the implementation of WASH projects in the country due to the protracted civil war which has displaced hundreds of thousands of people to the neighboring countries. Where there is political crisis, the WASH sector is directly affected including the beneficiaries.

**QUESTION NINE**

**You have visited one of the schools in your locality. What part of its surroundings can you see that satisfy the criteria for disease prevention? List the parts of the building and its surroundings, and state why they are important**.

The parts of the surrounding of the school I visited in my locality (Rumbek girls’ primary school) that satisfy the criteria for disease prevention includes,

1. The presence of four VIP latrines which are used for human waste disposal by the students and their Teachers. The latrines consist of a pit, slab, vent pipe and the superstructure. The slab is essential to separate waste from the people using it, the vent pipe reduces smells and flies, and the superstructure ensures privacy.
2. The presence of hand washing facilities outside the latrines made up of Tippy Taps, Jerri can with Tap and piece of soap located in front of each of the four toilets for washing hands after visiting the toilets by the students and Teachers.
3. The availability of ten rubbish bins buckets for collecting litters around the school environment to avoid flies and prevent spread of diseases.
4. The presence of a hand pump with effective fence and clean surrounding to provide safe and clean drinking water to the students and the Teachers. This will prevent diarrhea and Typhoid which are easily contracted from drinking water from unprotected source.
5. Clean and covered drinking water containers for use by the students and Teachers
6. The presence of urinal shelters for both boys and girls with drainage channel constructed on the floor in connection with the wall. This help to keep toilets cleaner and prevent spread of diseases.

**QUESTION TEN**

**You have asked the local county government to provide a license for your new hotel in town. The inspector asks you to assist him to describe the basic hygiene for your business before licensing. Kindly describe.**

Since my local hotel deals in food selling from an in-built restaurant, the waitresses always wear proper clothing and footwear which are suitable for their job, which in this case is food selling.

This is the best way to maintain the cleanliness of food, and is a standard, followed by the food selling employees of my hotel. The clothing includes an apron, coat, and hairnet and sometimes gloves while working to ensure no food gets contaminated because customers may contract food born disease and become sick.

I am also planning to introduce hotel uniform to be worn in the kitchen of the hotel. More than one uniform will be purchased for each employee so that they wear the uniform and keep clean regularly. I also ensure that waitresses have their long figure nails trimmed and hair covered with a piece of cloth on at all times when cooking, preparing and serving food as this is another basic hygiene practice which must be followed at all times by all hotel employee.

I always make sure that my restaurant employees wear gloves as they are a necessity which should be kept clean and sanitized at all time to prevent the spread of bacteria. Not only that, all jewelry must be removed when dealing with food, because jewelry could be a main source of negative micro-organisms.

Wearing the correct footwear which is sturdy, clean and comfortable is a must. I have informed my waitresses that any footwear worn in the food selling environment within the hotel must not cross contaminate areas; therefore it is best to dedicate one pair of shoes to be worn solely in the kitchen and not worn anywhere else.

My employees are aware that keeping their hands clean is an absolute must as it is a daily process for us all. Keeping one’s hands clean in food preparation within hotels is required as it can prevent the spread of diseases and hotels to ensure clean environments. This is a way to combat possible bacteria and contaminating agents inside the workplace. It is also a basic method to avoid diseases coming from other workers in the area.

I always ensure that the waitresses and cooks wash their hands before working, after lunch, after a visit to the toilet or any time that their hands touch food. At my hotel, I have placed a hand washing sink around the facilities to ensure that all staff, particularly the ones working in the food preparation department, and all customers wash their hands properly with soap in order to prevent contamination and prevent anyone from getting disease.

Another practice which is kept in mind in my hotel is ensuring that the tools and equipment used for food preparation are clean and sanitized. Bacteria are usually present in tools and equipment that are not cleaned and sanitized regularly, particularly in such a big hotel whereby tools and equipment are continuously used. They are also present in the shopping carts and other supplementary materials which are used inside the food preparation area.

Bearing all of that in mind, the best way to keep all of these objects clean is by regularly sanitizing them with an antibacterial agent. Not only that, we ensure all of the eating dishes, saucepans and other food equipment within the hotel or kitchen are dry up properly in the sun on racks to help minimize the risk of outbreak of diseases.

Lastly, to make sure anyone does not bring bacteria and contaminants into the hotel or kitchen, a footbath is placed at the entrance for people to step on. Even though this act is the simplest among the practices mentioned, it is definitely an effective way for self-sanitation including a hand washing facility.

**QUESTION ELEVEN**

**You have to make a plan of action for the promotion of WASH in your town. Briefly describe the activities that need to be included in your plan.**

The activities to be included in my plan are described as follows;

1. Promotion of WASH component to the public; i will plan to conduct WASH sensitization to all inhabitants of the town so that the people understand water, sanitation and hygiene to help reduce spread of water and sanitation related diseases.
2. Conduct WASH stakeholders training; to gain the support of the town leaders about the three component of WASH and also help them learn how to find out more information on why the WASH issues exist in a household. The participants will also gain a clear understanding of the best practices for supporting the town dwellers in changing their behaviors of WASH practices with the aim of achieving improved livelihoods.This stakeholders will include, town mayor, clerk,public heaalth officers, couty administrators and the police.
3. Formation of community hygiene promoters; the promoters will sensitize the town inhabitant the important of WASH and advise people how to adop good hygiene behavior and practices. They will also help to monitor any warning signs of disease out break in the twon and report to the health department.
4. Formation of water yard management community; this body is form to sustainably manager the operation and maintenance of the water facility, so that people in the town continiue to access safe and clean drinking water.
5. Construction of public toilets; this toilets will help people to defecate in designated area whenever there is a call instead of open defecation. The public toilet will be free of charge but maximum care will be provided by the county department.
6. Promotion of hand washing facilities; this activity will focus on the households residing in the town to have a hand washing facility for use after visiting the toilet to prevent diarrhoea diseases.
7. Resource mobilization; resources will be mobilize from the inhabitants of the town or from donor agencies for the effective implementation of WASH commponet. For instance municiapal solid waste require resources to enabel effective management.
8. Advocate for effective WASH policies and regulation: this is to protect the citizen rights and ensure sustainable amanagement of water resources and sanitation facilities.Good WASH policies stimulate economic development of the society.
9. Monitoring or follow up of the planned activities. To find out whether the planned activities were implemented or not, a team will be form comprising of public health officers and officials from the county health department to monitor the implementation of all the WASH activities

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