**Final examination**

**QUESTIONS**

1. What is Sanitation and Hygiene?

Sanitationrefers to thefacilities like latrine or toilet connected to a septic tank or sewer. Water and sanitation are two sides of the same coin. The same for sanitation and hygiene. Without proper sanitation public health is at risk.

Hygieneis related toa set of activities that improve public and personal health. It concerns:

* food hygiene
* personal care like handwashing
* household hygiene is about keeping the house (waste) and washing facilities clean, including safe removal of wastewater and excreta (sewerage or latrine exhaustion)
* food storage
* water storage

1. Why are water, sanitation, and hygiene important?

People need water to survive. It is needed in agriculture, for cooking, washing and personal care. Unsafe water, bad or missing sanitation and bad hygiene can cause several illnesses like diarrheal diseases, bacterial infections (E-coli, cholera, typhoid) and viral infections (Ebola). To prevent those illnesses, it is important that people have access to good working sanitation and safe drinking water and at the same time practice good hygiene. WASH practices promote good health and dignity, reduces health costs, school absenteeism and improves labor participation.

1. What is open defecation?

If people do not have access to toilets or latrines, they defecate in the open air. It will be clear that this is not a desirable situation. Not only does it lead to more diarrheal diseases but it is also unsafe for women.

1. What is Sanitation Marketing?

This is a mix of social and commercial marketing to create demand which will trigger the scaling up of the sanitation facilities. It is important that the products and services offered match the expectations of the target population. It is not only about selling products and facilities, but it also concerns a message on awareness. It is important that people understand why they must use the WASH facilities and pay for it. The marketing is a continuous process and the message should be repeated constantly. If not, there is a risk that people will fall into old habits again.

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

It is not an obvious message and people tend to fall in old habits again. It is important to include local champions: local people that can spread the message in the communities. Because of the prestige they enjoy, people trust them and will accept their message.

1. What is sustainable sanitation?

SDG 6.2 focuses improved sanitation meaning not just provide a basic service but a service that not only meets the expectations of the users but that also lasts a long time. The Dutch government includes sustainability clauses in its contracts with local governments which states that the infrastructure will function for at least 10 to 15 years and this way guaranteeing sustainable services. The services should not only be technically, economically and social sustainable but also protect the environment and natural resources. It is not enough to just install toilets or latrines, but the removal and processing of fecal sludge is also essential. The source of the water used needs also attention because a sustainable service can only be provided if the provision of water is guaranteed.

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

Assuming that improved WASH infrastructure has been installed conform the wishes of the target population, a behavior change campaign can be started.

Activities:

1. Selection of community champions that will be trained to distribute the message. Champions are born local leaders.
2. Train health workers for two reasons: they have to learn themselves about hygiene and apply this but can also inform patients and their families about the necessity of hygiene measures.
3. School teachers should be trained so they can teach the children. Children then can become ambassadors in their own homes.
4. Prepare messages on hygiene practices:

* Include cross contamination cycle in the messages. People have bacteria and viruses in their intestines and if hands are not washed (properly) faster toilet use, the viruses and bacteria enter the intestines again, causing all kinds of diseases.
* Importance of (buying)clean water and safe storage of water (vector control)
* Personal hygiene (hand washing, bathing, clean clothes)
* Safe food storage
* The advantages of improved WASH services-lesser health problems
* It is best to restrict a message to 1 topic like hand washing

1. Distributing of message via:

* Local champions
* Local radio stations
* Health workers
* School teachers: they can also show handwashing to children
* Posters
* Organize activities on special days like international handwashing or toilet days
* Local authorities

1. It is important to implement the awareness activities during a long period because behavior change is a long-term activity.
2. What are the challenges faced by WASH Projects in Africa.

I have never been to Africa and will take India as country of reference.

* In India millions of people still lack access to WASH facilities. The government of India has the intention to make the country open defecation free in 2019. This goal will certainly not be achieved. The same for access to safe water for everyone. But at least they have an ambition and plans to do it.
* The challenges of WASH projects are various:

1. There exists a gender gap: men are quite fine with open air defecation but for women this is different. They are for cultural reasons not allowed to defecate after sunrise and have to do it early in the morning or after sunset. This makes defecating very dangerous for them since they can not see the wild animals in the field (snakes, scorpions, tigers) but they also are at risk because men can harass/rape them.
2. In the rural areas most people are not only poor but also lack education. Especially the low castes. It is hard to convince them of the importance of WASH services and they can not pay (much) for the services. It is almost impossible to setup financial services in these areas.
3. When it comes to safe water people consider transparent water as clean and drink it. They often see no relation between the water and diseases like diarrhea and painful joints. In rural parts people prefer to use the free rainwater instead of paying a little amount for guaranteed safe water. But in overpopulated and industrial areas, the rainwater is not safe, also not in the rural parts. A lot of time and energy has to be invested in demand creation.
4. It is hard to convince investors to invest money in WASH infrastructure. They consider WASH as a high-risk sector with a low margin. Most investments are done with grants (government, international donors, CSR finance of local companies). Upscaling is almost not possible because of the lack of financing.
5. In India a number of organizations have setup decentralized water kiosks but most of these have not yet reached break-even (lack of demand, lack of investments, high CAPEX and small margin).
6. 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.

I will describe the ideal situation (I never encountered one in Latin America or Asia)

* Classes: need mosquito screens to avoid malaria and dengue
* Bathrooms: separate toilets/ latrines for boys and girls to stimulate acceptance/use and safety for especially girls
* Bathroom doors need working locks to guarantee more safety
* Bathroom doors need a certain height to guarantee privacy
* Handwashing facility needs to be clean and provide its users with soap. Better not use cotton towels because they are not hygienic when used by more people
* Water pools should be avoided to control vector breeding
* Garbage should be collected by government trucks or transported to landfills.
* If latrines/toilets are connected to sceptic tanks or cesspool those should be cleaned regularly
* Playground should be kept clean and have a fence to keep animals outside
* Water facilities should be maintained properly, and the surroundings need to be kept clean and dry.

1. 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.

Hygiene concerns (i) the preparation of food, (ii) hygiene of the rooms and bathing facilities, (iii) personal hygiene of staff and (iv) swimming pool area(v) and handling of garbage

Ad i In the case that a hotel serves food it needs to follow the Hazard Analysis and Critical Control Points (HACCP), a risk assessment concerning preparation, storage and reheating of foods. The kitchen needs also to be spic and span including floors, pots and pans and cutlery.

Ad ii A hotel has to setup a protocol for how to clean the rooms and how often. Special attention has to be paid to the bathroom facilities because if these are not well cleaned, the next guests can be infected with e-coli and other bacteria and fungi.

A hotel also needs a policy on Legionnaires Disease control which concerns the temperature of the water (at least 60C).

Ad iii It is also important that the staff of a hotel practices personal hygiene to avoid contamination via hands of guests. It is also better for the PR of a hotel.

Ad iv Hotels with a swimming pool should not only take care of legionella prevention but the swimming water must be safe and clean and so also its surroundings.

Ad v A safe handling of the garbage is very important. This concerns the kitchen waste, the garbage of the clients in the rooms and the overall hotel environment. The garbage should be collected and in the best case is pickup up by community garbage trucks. If that service does not exist it can be brought to a landfill.

1. 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.

I assume that recently a WASH structure has been installed in my town and that there are funds available for the promotion activities.

Activity plan:

1. Organize official ceremony to inaugurate the WASH structure;
2. Invite the people of the town via newspaper advertisements, radio spots, SMS messages, megaphone, posters, flyers and word of mouth;
3. Invite relevant people to this ceremony: local authorities; local utility; local radio and newspaper; schools and health centers. Ask the mayor to cut the ribbon, together with a schoolboy and schoolgirl.
4. Distribute flyers and posters with hygiene messages;
5. Send regularly SMS messages on hygiene;
6. Use megaphone to inform people about upcoming WASH activities;
7. Regularly organize discussions on radio about WASH related topics and invite people to the studio. Listeners can ask questions by phone.
8. Select local champions and train them so they can inform people and convince them of the importance of using the facilities;
9. Provide the first 20 liters of safe water for free to each customer;
10. Organize regularly handwashing demonstrations and distribution of soaps in schools;
11. Organize regularly community meetings to inform people and involve them actively;
12. In case the water kiosk has a water-ATM and people are using water ATM cards, I would like to connect these to a voucher system: for every X liters of water bought, customers get Y% reduction on goods sold by cooperating stores (we do this in India and people are enthusiastic about it).