APPLY GOOD SANITATION AND HYGIENE PRACTICES

Ethiopian Technical and Vocational Education and Training Programme

Based on Water Supply and Sanitation Works

ETQF Level I (EOS-2017)

Competency Based Learning Module

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Preface

Ethiopia has embarked on a process of reforming its TVET-System. Within the policies and strategies of the Ethiopian Government, technology transformation – by using international standards and international best practices as the basis, and, adopting, adapting and verifying them in the Ethiopian context – is a pivotal element. TVET is given an important role with regard to technology transfer. The new paradigm in the outcome-based TVET system is the orientation at the current and anticipated future demand of the economy and the labor market.

The Ethiopian Occupational Standards (EOS) is the core element of the Ethiopian National TVET-Strategy and an important factor within the context of the National TVET-Qualification Framework (NTQF). They are national Ethiopian standards, which define the occupational requirements and expected outcome related to a specific occupation without taking TVET delivery into account.

Undertaking the operation and maintenance functions and actions effectively and efficiently requires the strengthening of the technical, operational and managerial capabilities of the water supply and sanitation staff. This unit of competency aim to apply basic sanitation and hygiene practices within a range of service industry operations. It requires the ability to follow predetermined procedures, identify and control simple hazards and take particular sanitation and hygiene measures to ensure colleagues and self at a health risk in house hold level.
The module mainly focuses on how to follow sanitation and hygiene procedures and identify hazards, report any personal health issues, prevent food and other item from contamination, and prevent cross-contaminations by washing hands. Issues relating to national and territory legislation and regulations and industry ethical and conduct standards are also discussed. Ways of identifying potential hazards to ensure suitable management of risks and assessment activities to ensure they do not compromise the health and safety of self and others are also included.

The expected outputs of this program are the acquisition and implementation of the following units of competence:

- Follow sanitation and hygiene procedures and identify hazards
- Identify sanitation and hygiene hazards
- Report any personal health issues
- Prevent food and other item contamination
- Prevent cross-contaminations by washing hands

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CHAPTER ONE

INTRODUCTION TO WASH

Introduction

In developing countries like Ethiopia, most of the diseases affecting the public are related to poor WASH services and practices. For Example, Trachoma is linked to inadequate face washing habit often caused by insufficient quantity of water. Diseases like diarrhea are caused by people ingesting (eating or drinking) bacteria or other infectious agents, frequently in contaminated water and/or food. The contribution of water technology professionals by promoting optimal WASH practice is vital to prevent WASH borne diseases and improve the health and related problems at household level.

Chapter Objective

This chapter will help trainees to discuss the importance of water, sanitation, and hygiene (WASH) for the diseases prevention and improved health and nutritional status of individuals and the community by familiarizing with the terminologies and identifying the different component of WASH.

Learning Objectives

At the end of this chapter the trainees will be able to:

- Define the basic terms in WASH
- Indentify the purpose and Importance of WASH
- Describe basic Components of WASH

1.2. Concept and Definition of WASH

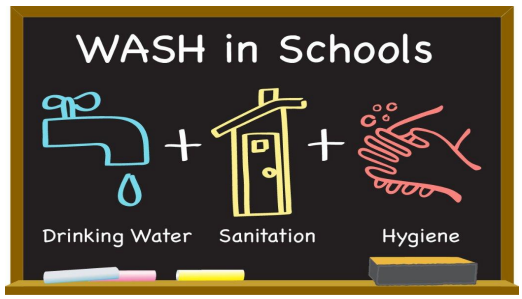
1.2.1. Definitions of WASH

WASH is an abbreviation that stands for Water, Sanitation and Hygiene. Due to their interdependent nature, these three core issues are grouped together to represent a growing sector in Ethiopia. While each are separate field of work, each is dependent on the presence of the other. For example, without toilets, water sources become contaminated; without clean water, basic hygiene practices are not possible. Therefore, to improve the health status of people, there must be standard latrine utilization with proper hand washing facility, using soap/ash, that enable people to improve their hygienic

practices. The absence of one of them can't able people to have optimal WASH practices and maintain improved health behavior.

1.2.2. Description of WASH components

The three component of WASH (Water, Sanitation and Hygiene) are further discuses below.



A. Water

Sustainable access to safe, ample and wholesome water in human being is basic right. People need water for different purpose, that include drinking, maintain personal hygiene, wash clothes and utensils, prepare food, clean home and the resident environment, etc. For all these services of water, there are different standards that is developed from the international to national level to maintain healthy and lead productive life. A person without access to improved water sources have high chance of water related health problems. Communities' water sources should not be far from their homes, as it typically falls to women and girls to spend much of their time and energy fetching water and expose them to different hazards. Safety of drinking water is a growing concern in many parts of the country. Drinking water sources are increasingly under threat from contamination, which impacts on the health of children by causing diarrheal diseases that hinder their optimal growth and development, skin disorders, and different health problem. It largely affects the economic, environmental and social development of communities and nations.

B. Sanitation

The word **sanitation** comes from Greek word "Sanita" meaning "Clean". Sanitation is proper disposal of wastes (solid and/or liquid waste) to prevent humans from contact with wastes. As wastes are the sources of contaminants and pollutants, sanitation include promoting health through the prevention of wastes from water system, environment and housing, the control of vectors (living organisms that transmit diseases, known as vector borne diseases), to have a clean environment. It focuses on onsite management and proper disposal of waste produced by human activities. It is a

comprehensive term that is more than just toilets which work together to form a hygienic working, and living environment.

There are different types of sanitation relating to particular situations, such as:

- **Basic sanitation**: Refers to the management of human **faeces** at the household level. It means access to a toilet or latrine.
- **Onsite sanitation**: The collection and treatment of waste at the place where it is produced.
- **Food Hygiene**: Refers to the hygienic measures for ensuring food safety.
- **Housing Sanitation**: Refers to safeguarding the home environment (the dwelling and its immediate environment) from wastes.
- **Environmental Sanitation**: The control of environmental factors that form links in disease transmission. This category includes solid waste management, water and wastewater treatment, industrial waste treatment and noise and pollution control.
- **Ecological Sanitation**: The concept of recycling the nutrients from human and animal wastes to the environment.

C. Hygiene

The word ***hygiene*** comes from the Greek word "Hygiea", meaning "goodness for health", and it deals with personal and community health.

Hygiene refers to behaviors that can improve cleanliness and lead to good health, such as frequent hand washing, face washing, hair, closings, tooth, anal, menstrual hygiene and bathing with soap and water. Good hygiene practices reduce the incidence of diseases like pneumonia, trachoma, scabies, skin and eye infections and diarrhea-related diseases like cholera and dysentery. Washing hands with soap, ash, sand or any locally available detergents at critical times, like after going to the bathroom or before eating, preparing food can have a significant impact on people's health. It is estimated that washing hands with soap and water could reduce diarrheal disease-associated deaths by up to 50%. A large percentage of food borne disease outbreaks are spread by unhygenic hands. Appropriate hand washing practices can reduce the risk of food borne illness and other infections.

1.2.3. Purpose of WASH

WASH is essential to meet the Millennium Development Goals related to environmental sustainability and health. Optimal WASH enhance medical treatment outcome in health facilities; maintain environmental conditions and increase productivity.

Optimal WASH practice prevent individuals from water born, water washed, water based and other water related diseases as behavioral and facilities get improved. Special emphasis is given to optimal wash practices to prevent children from diarrheal diseases, intestinal parasites, prevent trachoma, scabies, and other water washed problems. This will help to promote the health growth and development of children without any growth faltering. Pregnant and lactating mother benefit from optimal WASH practices as it prevents them from such kinds of diseases and unhealthy condition to improve the health of the child and the mother. It also boosts dignity and help to have healthy and happy life.

Improvements in water supply and sanitation in the last 20 years have helped to cut the incidence of diarrhea. In addition, optimal wash practice help family to have healthy and joyful life as wash related diseases do not cost them for medical treatment. This help the economy of the family to be saved. In addition, the working age do not spend their time at hospital for WASH related diseases treatment. It also has benefits for the community as a marker of healthy community when their village is open defecation free and every individual practice optimal WASH behavior. Women feel proud of their hygienic practices help them to take part in any development aspect in the community as their male counterparts.

1.3. Aim and Goal of WASH Program

The aim of any WASH programme is to promote good personal and environmental sanitation in order to protect health and prevent diseases. An effective WASH programme relies on an exchange of information between the different WASH stakeholders in order to identify and apply key water, sanitation and hygiene problems and culturally appropriate and sustainable solutions. Ensuring the optimal use of all water supply and sanitation facilities and practicing safe hygiene will result in the greatest impact on public health.

The **goal of water and sanitation projects** in Ethiopia and throughout the world is to bring benefits to the lives of people by improving the supply of safe water and access to sanitation. Assessing the status of water and sanitation provision and measuring improvement requires a standardized set of definitions of the different types and levels of service. **Figure 1** clarifies the terms and presents them as ladders of improvements in water and sanitation.

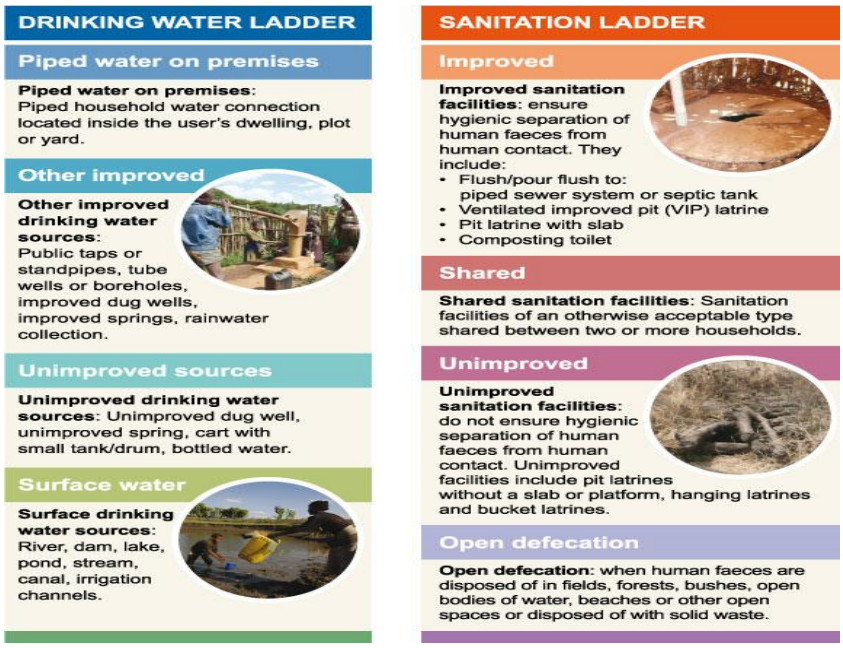


Figure 1 Drinking Water and Sanitation ladder

(**Sources**: WHO/UNICEF JMP water supply and sanitation categories)

The idea of the ladder provides a useful measure of progress. Once you have gathered data, by using your knowledge of the sanitation and water supply ladders, you can identify where the majority of people are placed on the ladder. This will enable you, in collaboration with wash stakeholders, to come up with a plan to move the community members up the ladder.

1.4. Challenges of WASH in Ethiopia

Even though, WASH services brings many benefits, the reality on the ground is that globally we are a long way from achieving these benefits for all people. Studies have shown that in many parts of the world, access to WASH services is still very low. Figures 2 and 3 from OWNP Module strength this issues as indicated below.

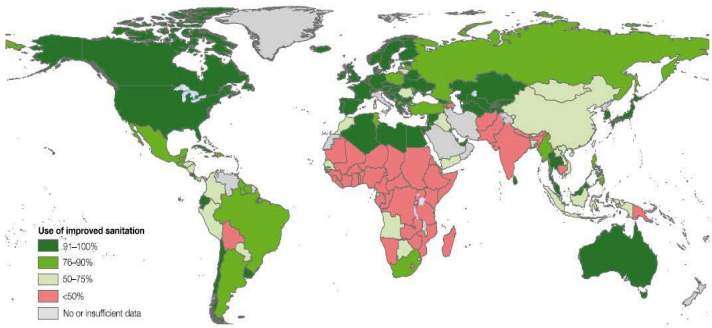


Figure 2 Percentage of population using improved sanitation facilities (GLAAS, 2010)

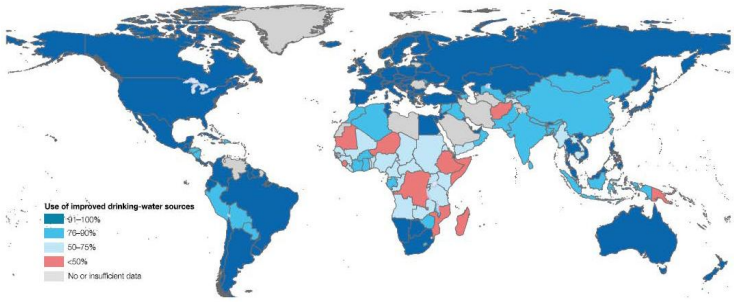


Figure 3 Percentage of population obtaining drinking water from an improved source (GLAAS, 2010)

One WASH National Programme document, indicates that in Ethiopia about 37% of the population are still practicing open defecation (JMP, 2014a). In 1990 this figure was 92%, which indicates the significant change in the past 25 years but even with this improvement, the current situation is still appalling.

Some of the common challenges facing the WASH sector in Ethiopia are:

- The scale of the problem,
- The Problem needs huge investment of time and money to design and build new infrastructure.

There have been a number of other problems with past projects that have reduced their effectiveness. These problems include:

- Some projects have disregarded community participation. This meant the communities did not feel any sense of ownership of the service and failed to look after it.

- Financial procedures were separate and different for each donor or aid organization, which was inefficient and time-consuming.
- The need for collaboration between ministries, bureaus and offices on WASH has not been recognized in the past.
- In many cases, projects were implemented only in selected locations which did not bring benefit to everyone.
- The level of implementation to bring behavioral change is very limited despite the significant contribution of behavioral change practices to bring optimal wash practices.
- Subsidy driven approach did not help to sustain some of the interventions in the open defecation free villages and kebeles.

In response to these many challenges, the Ethiopian government has developed the One WASH National Programme (OWNP). The OWNP is a consolidated national programme designed to improve WASH services for the Ethiopian people.

1.5. Chapter Summary

- WASH is an abbreviation that stands for Water, Sanitation and Hygiene.
- The aim of any WASH programme is to promote good personal hygiene and environmental sanitation in order to prevent diseases and promote health. Special emphasis is given to children and women as they are vulnerable to wash related health problems.
- The goal of water and sanitation projects in Ethiopia and throughout the world is to bring benefits to the lives of people by improving the supply of safe water, access to sanitation and improve the hygienic practices.
- The scale of the problem and the need for huge investment and money are some of the common challenges facing the WASH sector in Ethiopia
- In response many challenges of WASH sector, the Ethiopian government has developed the One WASH National Programme.
- The One WASH National Programme (OWNP) is a consolidated national programme designed to improve WASH services for the Ethiopian people.

1.6. Self-assessment Question on Chapter One

1.Write definition of WASH

2.What is the aim and goal of WASH Program

3.Write the challenges in Ethiopian WASH sector and its remedial action

CHAPTER TWO

SANITATION AND HYGIENE PROCEDURES AND HAZARDS

Introduction

Hygiene and sanitation promote producing safe food. Food safety is achieved through the hygiene and sanitation procedures that we follow to ensure our food remains wholesome and as free from contamination as we can make it. Minimum standards of hygiene and sanitation are prescribed by law and must be followed.

Chapter Objectives

This chapter provides the basic knowledge, skill and attitude required for sanitation and hygiene procedures and hazards which helps in applying optimal sanitation and hygiene practices.

Learning Objective

At the end of this chapter trainees will be able to:

- Discus sanitation and hygiene procedures & hazards
- Explain sanitation and hygiene procedures
- Discus sanitation and hygiene policies
- Undertake sanitation and hygiene practices
- Identify prevention and controlling methods

2.1. Sanitation and Hygiene Hazards

A hazard is the potential for harm (physical or mental). In practical terms, a hazard often is associated with a condition or activity that, if left uncontrolled, can result in an injury or illness. Identifying hazards and eliminating or controlling them as early as possible will help prevent injuries and illnesses.

Chemical and biological hazards are agents that can make you sick. They can get into the body through the nose, mouth, or skin to cause harm.

Chemical hazards are gases, vapours, liquids, fumes or dusts that can result in poisoning, lung disease, skin irritation, or damage to other parts of the body. Examples include cleaning products, asbestos, and pesticides.

Figure 4 Sources of chemical hazard in a household

Biological hazards are living organisms that can cause infectious diseases and allergies. They include viruses, bacteria, and moulds. Biological hazards are commonly caused by poor sensation and Hygiene Practice. Diarrhea is the common hazard or problem of poor sanitation and hygiene. Diarrhea is defined as the passage of three or more loose or liquid stools per day. Most diarrheal deaths are among children under the age of five and within low-income countries, the very poor suffer much more from diarrhea than others. While most diarrhoeal diseases associated with poor WASH tend to be endemic, some are epidemic in nature – notably, cholera and typhoid fever.

Cholera is an acute diarrhoeal disease that can kill within hours if left untreated, and it is a continual public health problem in many parts of the world. Researchers have estimated that every year there are roughly 1.4 million to 4.3 million cases, and 28,000 to 142,000 deaths per year worldwide. The majority of reported cholera cases and deaths occur in Africa. Furthermore, the continent suffers from explosive outbreaks that result in high levels of both morbidity and mortality.

2.2. Control, Prevent and Eliminate Hazards

2.2.1. Common Intervention Methods

Sanitation and hygiene promotion are still the two most effective interventions for controlling endemic diarrhoea. An additional potentially critical intervention would be to improve food hygiene, which may prevent many diarrhoea deaths, especially in hot climates where food hygiene is difficult to maintain.

Figure 5 Improper waste management and disposal, example of poor sanitation (*Photo Credit: Kefyalew Muleta)*

With regard to cholera, although it is largely perceived to be a waterborne disease, person-to-person transmission, limited access to sanitation, an inadequate water supply and poor hygienic practices may contribute to the rapid progression of an epidemic.

2.2.2. Control Measures

The effect of interest here is the reduction in diarrhoeal disease as a result of improvements in WASH. It is not necessarily helpful to separate out the three WASH interventions, as they act upon interlinked transmission pathways, and often cannot be provided in isolation from each other.

2.2.3. The Hierarchy of Control Measures

The principle that some control measures are better than others is well established in health and safety management systems and legal systems across the world. The Hierarchy of Controls, an internationally established framework to prevent and control safety and health hazards by identifying effective interventions promoted by the international labour organization (ILO), holds that the most effective intervention is complete elimination of the hazard.

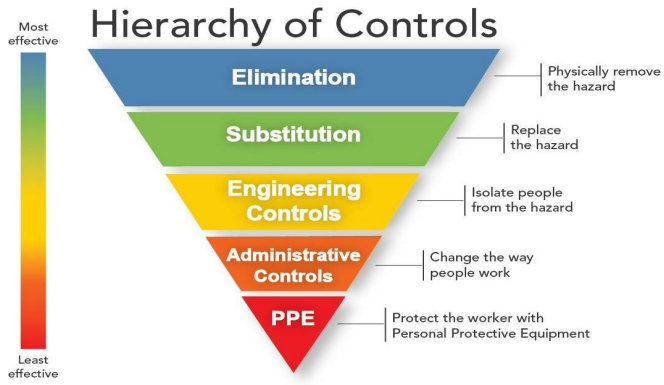


Figure 6 The hierarchy of control measures

The diagram on figure-9 above makes it clear that the best solution to a workplace safety or health problem is to remove the hazard altogether. Where that is not possible replacing the hazard with something which is less risky is preferred. Where that is not possible solutions which are engineered into the system and provide protection automatically to most workers are preferred.

The hierarchy of control measures contains six risk control measures, in order of priority:

1. Elimination or substitution of hazards
2. Tools, equipment, technology and engineering
3. Safe work methods
4. Hygiene and welfare
5. Personal protective equipment
6. Health/medical surveillance

Figure 7 Some health hazards that you may find

The risk control measure of hygiene and welfare provides a distinct consideration for WASH in order to promote welfare in the workplace. In a risk assessment, stakeholders must evaluate and decide if their existing hygiene and welfare facilities prove sufficient to cope with the risks from the workplace hazards.

The following table provides some examples in broad categories, which may assist in the process of tailoring training tools with WASH principles.

Table 1 Intervention methods of hazards related to WASH

WASH hazard prevention/control method	Examples of interventions
Elimination	▸ Incorporate safe, adequate, and dignified WASH access in worksite design ▸ Design safe WASH access for people with disabilities
Substitution	▸ Eliminate/minimize the provision of nutrition-poor beverages and provide sources of safe drinking water
Engineering controls	▸ Water supply piped to premises ▸ Various high- and/or low-tech water purification technologies and devices ▸ Provide portable drinking water stations, water coolers, or water fountains ▸ Provide hands-free and continuous hydration systems for outdoor workers who are exposed to heat ▸ Improve and upgrade sanitation facilities (e.g. improved engineering in the construction of latrines)
Administrative controls	▸ Allocate rest breaks and arrange compensations not to discourage rest breaks ▸ Establish privacy rules/ mechanisms for bathrooms and toilets ▸ Provide hygiene awareness training and information for both supervisors and workers ▸ Institute housekeeping practices, including the cleaning and maintenance of sanitary facilities, cooking areas, welfare facilities, locker areas, and temporary worker housings.
Hygiene and Welfare	▸ Provide washing and sanitary facilities ▸ Store contaminated work clothing and personal protective equipment (PPE) in an appropriate place and do not allow workers to take them home ▸ Provide laundering facilities to clean contaminated work clothing ▸ Provide clean water
PPE and protective clothing	▸ Provide gloves, aprons, and other protective gear for improved hygiene ▸ Use separate clothes at work when there is an exposure transfer possibility between the workplace and the home

2.2.4. Eliminating Hazards

Considering safe and adequate WASH early at the workplace design stage is the most effective way to eliminate hazards. The design stage could plan WASH accessibility for people with physical disabilities, gender-specific sanitary facilities, privacy issues, and other.

"Administrative controls" refer to worksite policies and practices aimed at controlling WASH related hazards and exposures, like cleaning and storing PPE and protective clothing provide a

barrier between a worker and pesticides. WASH principles are particularly relevant for the proper maintenance of PPE, as well as for effective decontamination after use to reduce the risk of hazardous exposures for workers, and for their families (in the form of "take-home exposures").

A WASH-focused hazard identification process during worksite walk-through inspections can use measures like the provision of safe drinking water, gender-specific toilets that can be used in privacy and dignity, hand-washing stations, sanitation facilities (e.g. showers, lockers for personal clothes), welfare facilities (kitchens, cantinas, rest areas), as well as general tidiness of the work environment.

It can also help detect less obvious organizational factors, like worksite WASH policies and practices, rest-room breaks, work hours, and compensation mechanisms that may shorten rest breaks (e.g. piece rate vs. hourly wages).

2.3. Sanitation and Hygiene Policies

2.3.1. General

Policy are defined as the set of procedures, rules and allocation mechanisms that provides the basis for programmers and servicers. They set priorities and provides the frame work within which resource are allocated for the implementation. Polices are implemented through four types of instruments.

I. Law that provide the overall framework
II. Regulations Design strands, tariff, buildings, planning regulations and contract
III. Economic Incentives such as subsidies and finesse for poor practice, and
IV. Assignment of Rigs and Responsibility for institutions to develop and implement the programs

2.3.2. Sanitation and Hygiene Policies Goal and Strategies

Improving sanitation and hygiene is recognized by the Government of Ethiopia as an important precursor to poverty eradication. Although there is some variance in emphasis and approach, sector policies converge around overall environmental health goals which emphasize sanitation and hygiene promotion as key interventions to prevent disease, protect the environment and enhance socio-economic development.

Both the ministry of health (MoH) and ministry of water, irrigation and electricity resources (MoWIE) have sound sanitation components in their wider policies which converge in the goals:

- To protect and promote the health of the population and assure a friendly and healthy environment by controlling the environmental factors which are the direct and indirect cause for the spread of environmental health-related disease
- To increase access to sustainable sanitation services and safe water supply.

Main strategy objectives in line with policies are:

Households

All households have access to and use a sanitary latrine. The resulting behavior aimed at is:

- ✓ Reduced incidence of diseases deriving from faecal contamination
- ✓ Reduced incidence of waterborne, washed, water related, and water based diseases

Institutions

Appropriate latrines with urinals and hand washing facilities with detergents are installed at schools, health posts, markets and public places.

Communal Latrines

Where space is limited in peri-urban and urban slum areas, appropriate communal latrines are made available under community or private sector management.

Liquid Waste Management

Effective liquid waste management systems are in place for promoting re-use and recycling. In particular, this covers organic matter, and exploring and promoting biogas or ecological sanitation options.

Safe Water

All drinking water supplies are routinely monitored for physical, chemical and bacterial pollutants and/or contaminants.

2.4. Sanitation and Hygiene Responsibilities

Primary responsibility for the different aspects of sanitation and hygiene promotion lies with the ministry of health (MoH) and the regional health bureaus, mainly health extension workers and other health professionals at community level.

Responsibility for facilitating complementary activities is allocated between ministries and bureaus as follows:

1. Water resources for water supply, water point drainage and waterborne sewerage
2. Rural development for overall rural community development and administration
3. Municipal and Urban Health Departments for urban on-site sanitation, hygiene promotion and solid waste management
4. Environmental Protection Agencies for environmental policy, strategy development and regulation
5. Education for school water sanitation and hygiene
6. Agriculture for biogas and ecological sanitation development.

2.5. Laws and Policies Affecting Sanitation and Hygiene

Policies

The key policies which include sanitation are:

- The Health Policy
- The Ethiopian Water Resources Management Policy
- The Draft Environmental Health Policy
- National Hygiene and Sanitation Strategy for Ethiopia
- One WASH National Program

Proclamations

There are a number of proclamations which provide support for regions, zones and woredas to develop a regulatory framework which can back-up the above policy directions.

The proclamations include the following:

- Public Health Proclamation - the proclamation states that no person shall dispose of solid, liquid or any other waste in a manner which contaminates the environment or affects the health of the society. Art. 12 No. 2 (no enabling bylaws).
- Ethiopian Water Resources Management Proclamation
- Environmental Protection Authority Establishment Proclamation.

2.6. Sanitation and Hygiene Practices

Hygiene and sanitation practices are the things we do to keep clean ourselves, the food product and the living environment. This includes:

- Hand washing
- Clean clothe
- Following work instructions
- Cleaning the plant during and after production

2.6.1. Personal Hygiene

Personal hygiene is an important aspect of how you take care of and demonstrate your respect for yourself. Good personal hygiene is an important aspect of taking care of your health, and also influences how people respond to you in a working and social situation. Maintain personal cleanliness and hygiene according to company policy to prevent illness, contamination and infection.

Good personal hygiene practices are an essential part of providing safe food to our customers. Among these hygiene practices, the most important is hand washing.

Figure 8 Hand washing, the most important part of good personal hygiene

Steps of handwashing

Poor personal hygiene may include: -

- Poor personal habits
    - Digging nose or ear
    - Putting fingers in mouth
    - Rubbing of eyes by unclean hands
    - Spitting without shielding
- Sharing of personal items, eg. tooth brush, towels, etc.
- Sharing of eating & drinking utensils or food & drinks

Environmental hygiene deals primarily with:

- Cleanliness & housekeeping of premises & facilities – toilets, classrooms, play & eating areas, etc.
- Disinfection of changing & eating surfaces and objects including toys.
- Waste management – disposal of litter, diapers, etc.
- Control of ***vectors***/pest

Why is toilet hygiene very important?

- Raw sewage contains billions of microorganisms, including pathogenic ones.
- Good to close the toilet bowl before flushing!
- Food hygiene
- Kitchen facilities

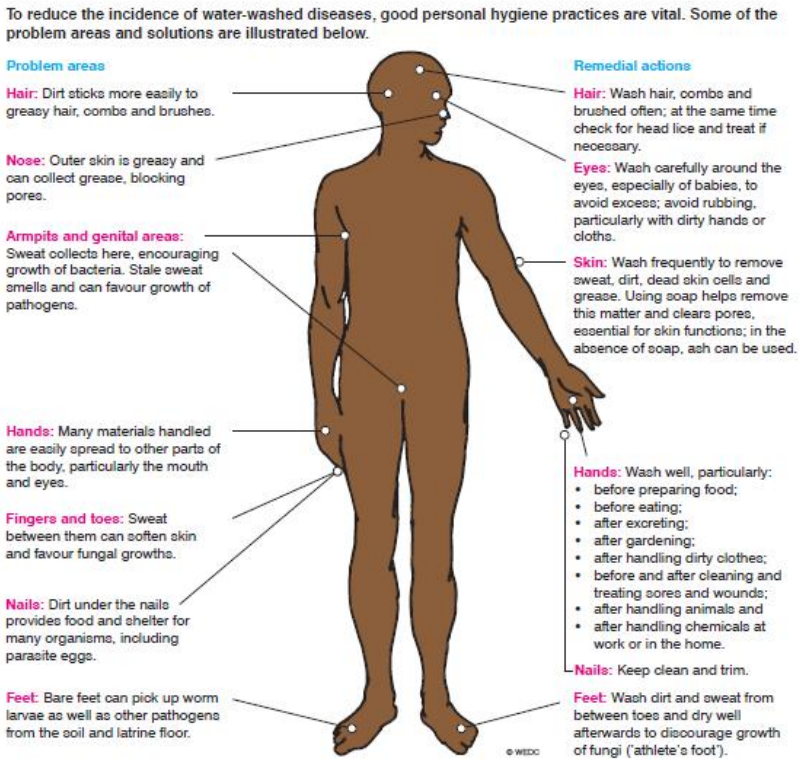


Figure 9 Personal hygiene problems and solutions

2.6.2 Household level

Awareness on improved hygiene standards and the need to change current practices is the first step toward successful hygiene behaviour change. Communities need to be educated on the advantages of hygiene behaviour change. Improved hygiene practices lead to better health and less illness among the adult population as well as children and the elderly. Adults can have a more productive life, and children will miss fewer classes at school, whereas the households can also spend less on medical bills. They will have a more convenient life, especially when women and girls have access to safe latrines, and do not have to wait until dark to relieve themselves. It also gives the household a higher status in the community if they have access to a latrine and show improved hygiene behaviour. In this regard, it is important to note that it is not always the perceived health benefits that motivate households to change their hygiene behaviour.

To start hygiene behaviour interventions, it is best to identify the most dangerous hygiene behaviours first and seek sustainable solutions to address those. Often this is related to a lack of access to safe sanitation facilities or the use of contaminated water for drinking purpose. In case of lack of sanitation facilities at household level, special attention should be given to children under the age of 5, as they often defecate nearby the house, and are most vulnerable to the effect of diarrheal diseases.

While introducing hygiene behaviour change, it is most effective to promote only a few simple and achievable targets at a time. Any hardware interventions should be affordable without outside financial support. Changes in hygiene behaviour could also been seen as a threat for some members of the household, like the elderly who might be less recipient to accept any change in their behaviour pattern.

While undertaking hygiene behaviour change for household level, it is important to all members of the households; men, women, children and the elderly, as all have their specific needs and reasons to change their behaviour (or not).

Household Level Hygiene Behavior Change Process Check List

1. Assess current hygiene status and practices through knowledge, skills and practice (KAP) surveys or similar exercise with all members of the household.
2. Identify high risk hygiene behaviour practices with adverse health impact
3. Conduct good hygiene behaviour education for all members of the household
4. Jointly with the households, identify one or two poor hygiene behaviour practices that need (and want) to address to minimize health risks to the household
5. Make household level hygiene behaviour change plan,
6. Regular follow up and review by the Hygiene promoters

2.6.3. Community Level

A first step for addressing hygiene issues at community level is to do an assessment on the current hygiene practices and community hygiene status. Like at household level, it is important to identify the most pressing poor hygiene behaviours or conditions that need to be addressed. It is important to realize that different seasons in the year often have different pressing hygiene issues.

In the rainy season there can be a lot of stagnant water around in the community, whereas in the dry season, shortage of water can pose other problems. For successful community level hygiene behaviour transformation, it is crucial to include all sections of the community in the planning and

implementation phases of the intervention. It is important to aim for hygiene behaviour transformation for the entire community, and not focus on certain groups only.

For instance, if there are only a few members of the community who continue practicing open defecation, they can bring the entire community at risk for the spreading of diseases. Community level hygiene behaviour transformation interventions should be linked with follow up activities at household level. Assuring communities understand the importance of hygiene in reducing infectious disease is the first step in changing hygiene behaviors for the better. Research has shown participatory processes are effective in encouraging behaviour change. Healthy hygiene approaches can improve the living conditions and health of communities. When adapted to local conditions and shared in participatory processes, these approaches build self-esteem and foster a sense of ownership in healthy hygiene practices.

Community Level Hygiene Check List

a. Assess current community level hygiene knowledge and practices, with focus on latrine use, handwashing, food hygiene, water treatment and use and storage related hygiene and environmental hygiene and identify any gaps in safe hygiene practices.

b. In the community assessment, identify differences in perceptions and practices between the various population groups like men, women, children, elderly, disabled and sick and other marginalized groups.

c. Check communities' perception of the identified safe hygiene practice gaps, and assess if community feels a need to address these.

d. Identify and support actions that create a demand within the community to address key safe hygiene practice gaps as identified above.

e. Identify jointly with community the priority hygiene practices that require change, and make plans for community level behaviour change for 1-2 practices at a time only. Once these practices are adopted by the community, the programme can move on with addressing the next set of hygiene behaviours.

2.6.4. School hygiene and sanitation

School children have proven to be an excellent entry point to promoting hygiene behaviour changes as they are generally more receptive for change. Children also take hygiene message back home and in their communities, so that the impact of school based hygiene interventions can spread out to the wider community.

Figure 10 A water point in elementary school of one of rural areas of Ethiopia (Photo: Abera Kumie)

(Water points are a foundation for good hygiene)

To promote good hygiene behaviour at schools, it is essential to combine hardware and software components to produce a healthy school environment and to develop or support safe hygiene behaviours.

The hardware components:

- drinking water
- hand washing
- excreta disposal
- solid waste disposal facilities in and around the school compound.

Software components: activities that promote conditions at school and practices of school staff and children that help to prevent water and sanitation-related diseases and parasites

The water supply and sanitation conditions of schools have become a public health concern in recent years. A Ministry of Health report in 2007 about school hygiene in Ethiopia indicated that the majority of surveyed primary schools did not have access to drinking water sources or adequate sanitation facilities for hand washing and excreta disposal.

Other studies in Ethiopia among school children indicate that upper respiratory infections, skin infections, abdominal discomfort, eye infections, gastroenteritis(diarrhoea) and tonsillitis are the commonest ailments for school clinic visits. The provision of school hygiene and sanitation ensures the rights of students to acceptable hygiene practices, safe water supply, latrines and a healthy school environment in general.

Check List for Hygiene Promotion at Schools

i. Identify past and ongoing hygiene promotion activities at school, and assess its effectiveness through observing current hygiene practices of students and staff related to latrine use, handwashing practices, cleanliness of school compound, and access to safe water.

ii. Current school level hygiene knowledge, practices, and facilities with focus on latrine use, handwashing with soap, food hygiene, water use and storage related hygiene and environmental hygiene and identify any gaps in safe hygiene practices.

iii. Discuss school hygiene development needs and plan with all stakeholders involved; education authorities, teaching staff, parents and students to come to realistic plan and mobilise support from stakeholders.

iv. School health clubs to be at the center of hygiene promotion and follow up activities.

v. Assure availability soap and cleaning materials.

vi. Identify special needs and develop facilities ***menstruation hygiene management*** at school level.

vii. Identify special needs and develop facilities to secure school WASH facilities and services are inclusive for all.

viii. Encourage students to promote hygiene messages to their families and wider community.

CHAPTER SUMMARURY

- Policy are defined as the set of procedures, rules and allocation mechanisms that provides the basis for programmers and servicers.
- Hygiene and sanitation practices are the things we do to keep ourselves, the plant and the food product we process clean.
- Food safety is achieved through the hygiene and sanitation procedures that we follow to ensure our food remains wholesome and as free from contamination as we can make it.
- Good personal hygiene is an important aspect of taking care of your health, and also influences how people respond to you in a working and social situation.
- Communities need to be educated on the advantages of hygiene behaviour change.
- To start hygiene behaviour interventions, it is best to identify the most dangerous hygiene behaviours first and seek sustainable solutions to address those
- While undertaking hygiene behaviour change for household level, it is important to all members of the households; men, women, children and the elderly, as all have their specific needs and reasons to change their behaviour (or not).
- Hazard often is associated with a condition or activity that, if left uncontrolled, can result in an injury or illness.

Self-assessment Question

Math terminologies in column A with their definitions in column B and Write the answer on space provide

Answer	COLUMN A	COLMUN B
	1.Law	A. Poor Personal Habit
	2.Policy	B. Waste management
	3.Regulation	C. Provide the overall framework
	4. Economic Incentives	D. Hand Wash
	5. Digging nose or ear	E. Design strands, tariff ,buildings, planning

		regulations and contract
	6. Environmental hygiene	F. Set of procedures, rules and allocation mechanisms that provides the basis for programmers and servicers
	7.Hazard	G. Chance of Injury
	8.Risk	H. Subsidies and finesse for poor practice
		I. Potential for harm (physical or mental).

1. Mention the key Policy which include sanitation.
2. Define Hygiene and Sanitation practice and list some Examples
3. Write the hardware components in school sanitation and Hygiene
4. Write the hierarchy risk control measures

CHAPTER THREE

HAZARD IDENTIFICATION

Introduction

Hazard identification is the process of identifying hazards in water supply system sanitation and hygiene at house household and/or community level. In order to understand what hazard identification involves, it is first necessary to understand the nature of hazards in water supply systems.

Chapter Objective

The focus of this chapter is to identify and control simple hazards and take particular sanitation and hygiene measures to prevent health risks and promote optimal nutritional status.

Learning Objectives:

At the end of this session trainees will be able to: -

- Discus water supply sanitation and hygiene hazards identification methods
- List/explain duties of the sanitary technician
- Identify hazards by inspection in water storage, river, spring box etc.
- Describe the role and responsibility of stakeholders in sanitation and hygiene practices

3.2. Hazard Identification Methods and Procedure

3.2.1. Definition of Hazard Identification

Hazard identification includes:

- Physical hazards
- Chemical hazards (nitrate, arsenic, fluoride, pesticides, algal toxins, cleaners' liner chemicals lubricants, flocculants, ph adjusters, disinfection byproducts, copper, lead, cleaners' petroleum, heavy metals, organic toxicants, herbicides, rodenticides, pesticides, impurities in treatment chemicals)
- Biological hazards (bacteria, viruses, protozoa, and helminths)

The objectives hazard identifications to make sure sustainable, safe, and adequate water supply system is established and maintained; hygienic practices are the ways of life by using sanitation facilities so as to ensure the nutritional and health status of community/households. It is making the WASH facilities free from the hazards to improve health and productive community.

3.2.2. Methods of Hazard identification

There are a number of activities, which can be undertaken as an aid to identifying the hazards present in the community. These activities, which will assist in the hazard identification process, include:

- Walking through the community service area (such as toilet, schools, water points, religious area etc.);
- Take notes of 'people issue' or any special character. Example illness.
- Conducting household/ community area inspections; and/or
- Use checklists
- Analyzing available information from the local institutions like health facilities, religious facilities, etc;

There are several methods which are used to identify hazards, such methods include: -

1. Inspecting procedures
2. Conduct of site safety audits
3. Completion of a safety checklist
4. Observation of daily activities
5. Investigation of accidents and incidents
6. Review of injury or illness registers
7. Environmental monitoring of the workplace
8. Investigation of staff complaints or reports of safety concerns
9. Review of staff feedback via consultative processes such as meetings, surveys or suggestion box submissions.

In this level, the Inspecting procedure method of hazard identification has taken as an example and discussed as below.

I. Sanitary Inspection of Home

Good-quality water can be supplied by water utilities but there is potential for the water to become contaminated by the user through using unclean water vessels for collection of the water, and poor handling practice at home (for example, by not storing the water carefully, and using contaminated containers to take water from the storage vessel).

As you know, water is said to be safe to drink when it is free from pathogens and from physical and chemical contaminants. This needs to apply right up to the point when the water

is drunk. Identifying and assessing the potential risks associated with the collection, storage and use of water is therefore a very important part of the inspection.

Figure 11 Water being collected at hand pump in rural Ethiopia (WHO, 1997)

If you were conducting a sanitary inspection, you would need to ask users or observe their practice on:

- How they collect the water and the types of vessel they use (for example, jerrycans, buckets or pots)
- How the vessels are handled and stored when not in use
- Whether the vessels are used for purposes other than water collection that may contaminate them
- Whether users know how to collect safe water and keep it safe
- How often the water container is washed using detergents?
- Whether the water is treated or disinfected after collection
- Hygiene practices of users (especially those of young children).

3.3. Stakeholder in Hazard Identification

3.3.1 Definition of Stakeholders

A stakeholder is defined as any individual, group or organization that has an interest in something. In this instance we are talking about the stakeholders with an interest in the provision of water, sanitation and hygiene in Ethiopia. Those stakeholders may be part of or associated with non-governmental and government organization.

The major four stakeholders of the government from national to woreda/community level with their role and responsibilities of sanitation and hygiene summary are given below:

1. Ministry of Water, Electricity and Energy (MoWIE) – provide water supply and perform water testing
2. Ministry of Health (MoH)- concerns sanitation, hygiene, water quality monitoring and WASH in health institutions.
3. Ministry of Education (MoE)- WASH and health clubs in schools, support to Technical and Vocational Training Colleges and Health Science Colleges
4. Ministry of Finance and Economic Development (MOFED)- public financial management, channeling government and donor funds, and financial management and reporting.

In addition to the above four GSH, there are several other government stakeholders that involved in water supply, sanitation and hygiene.

- Directorates of Women, Children and Youth Affairs
- Ministry of Federal Affairs
- Water Resources Development Fund
- Ministry of Urban Development, Housing and Construction development partner as one stakeholders consist of various types of organization and groups of people that contribute to address water, sanitation and hygiene problems.

There are three main types of non-governmental stakeholder: -

1. Major stakeholders: These are organizations that directly contribute funds to COWASH account (CWA) at federal level.

2. Associated stakeholders: These are organizations that provide funding for the construction of water supply, sanitation and hygiene facilities, technical assistance, supplies and other support.

3. Collaborating stakeholders: These are organizations that provide assistance to sanitation and healthy sector Programme other than construction of WASH facilities.

Development partner is a term that is widely used in the field of international development aid to describe any organization working in partnership with national and local government bodies. It does not have a precise definition – there are different types of partnership – but it is applied to organizations that provide development assistance in some form. The development partners include:

- Donors,
- Non-governmental organizations/civil society organizations,
- Non-governmental organization
- Civil society organization
- Development Assistance Group /Water Sector Working Group
- Private Sectors
- Community organizations

3.3.2. Recording and Reporting in Hazard Identification

Potential WASH should be monitored through the water system and periodic checkup should be planned and performed in to minimize the risks and take timely action. To do that the water cadre should document the conventional WASH system.

The recording of WASH hazards is classified as:

- Certain hazards that could potentially case catastrophy: once a day
- Hazards likely to happen: one per week
- Hazards that happen moderately: one per month
- Hazards unlikely to happen: one per year
- Rarely happening hazards: one every five years

Recoding these hazards donot address the safety and sustainability of the WASH system. It need to be reported in order to taking corrective action at all. Therefore, formal reporting system for the performed activities and additional support for further intervention should be communicated timely to the respective WASH government sector/stakeholder.

Chapter Summary

- Hazard identification is the process of identifying hazards in water supply system sanitation and hygiene at house household and/or community level.
- Good-quality water can be supplied by water utilities but there is potential for the water to become contaminated by the user through using unclean water vessels for collection of the water, and poor handling practice at home.
- There are three main hazards or contaminants. These are the physical hazard, chemical hazards and biological hazards.
- Stakeholder are individuals, groups and organizations that will be influenced by and affected by the water supply and sanitation services.
- The major Stakeholders can be summarized as Government organizations, Non-governmental, Development partners, Private Sectors and community organizations stakeholders.

Self-Assessment Questions of Chapter 3

1. What is hazard identification?
2. List at least 3 hazard identification methods?
3. Describe some duties of sanitary technician in sanitation and hygiene hazard identification
4. List stakeholder that are involved in your resident hazard identification?

CHAPTER FOUR

ISSUES IN PERSONAL HEALTH

Introduction

Good health requires certain efforts and cannot be purchased. It the result of having safe, sustainable and ample water supply, adequate sanitation facility and maintained hygiene behaviours and healthy dietary practices to main nutritional status. Cleanliness inside and outside the house, along with proper sanitation helps in keeping the environment disease free. Knowledge of first aid can be of great help in saving a victim's life in case of an emergency.

Chapter Objective

In this chapter the trainees will discuss characteristics of good health and nutritional status and the various factors that help to maintain it.

Learning outcomes

After completing this chapter, you will be able to:

- Define health and differentiate between personal and community health;
- Explain the role of proper/optimal nutrition, and healthy habits in maintaining good health;
- Define hygiene and suggest ways to show that health and hygiene are interrelated

4.2. Personal Health

4.2.1. Health and Hygiene

Different people may consider good health differently. But to define it formally, health is a state of complete physical, mental and social well-being. Good health may enable us to do well at work and in life. To keep ourselves free from diseases and to have good health, we should be careful about hygiene. Thus, health and hygiene go hand in hand or they are interrelated. Proper nutrition, physical exercise, rest and sleep, cleanliness, and medical care are essential parts of maintaining good health. Health includes both personal and community health.

Taking care of oneself to remain healthy and free from diseases is personal health. The food consumed to maintain health should be grown by safe water, processed safely and consumed in an optimal amount and maintained throughout the life.

Some important aspects of good personal health are as follows:

1. Healthy and balanced diet: Obtaining a balanced diet depends on one's choice and what one can usually afford. It also includes hazards free and correct proportion of carbohydrates, proteins, vitamins, minerals and roughage in your diet.
2. Personal hygiene**:** There are some activities you perform everyday in order to keep yourself clean. These activities are:
    - *Regular toilet habits*: Regular bowel movements keep us free of body wastes generated health problems inside the body.
    - *Washing hands before eating*: Having food with dirty hands may make us sick because the dirt in our hand might carry certain disease causing germs. We should wash our hands after going to the toilet. Washing hands with soap make them germ free.
    - *Bathing regularly and wearing clean clothes*: Dirt is a place for germs to grow. Bathing regularly keeps your body free of dirt, body lice and germs.
    - *Cleaning the teeth*: After eating food, some food particles may remain sticking to your teeth. These food particles form a medium for the germs to grow, harm your gums and teeth, and cause bad breath. Brushing of teeth every day do not let the germs grow. Brushing of teeth before going to bed is a very good habit.
    - w*ashing hair, cleaning eyes, ears and nails*: Regular washing and combing of hair helps in preventing dirt accumulation to keep the germs away. Nails should be clipped regularly; nail biting is unhygienic and must be avoided.

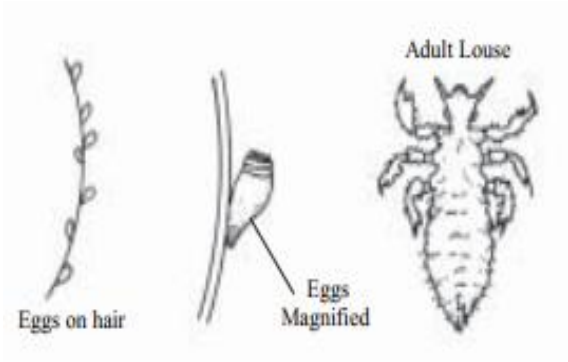


Figure-12: Regular Cleaning and combing keeps hair free from lice

3. Domestic Hygiene

   • House should be kept clean and free from dirt, flies and germs.

   • Cooking utensils, plates, cups and other utensils should be kept clean.

4. Safefood and water

   • Fruits and vegetables should be washed in clean water to make them free from germs and pesticides (chemicals sprayed on plants to keep them insect free) before consumption and cooking.

   • Water used for drinking, cooking, bathing and washing utensils should be from a clean source.

5. Cooking with care: Food should be prepared in a clean kitchen and in a clean manner.

   • While cooking food, it is important to heat it to high temperature to kill any germs present in it.

   • Cooked food should be eaten fresh or stored in cool, fly-proof place.

   • Milk stored in the refrigerator or outside should be boiled again to make it germ free.

4.3. Personal Health and Hygiene Risk

Infection can be transmitted through:

- Consumption of water or food that has been contaminated through environment, washing or cooking.
- Hand to mouth transmission when availability of water for personal hygiene is reduced.
- Vectors (e.g. flies and mosquitoes) which breed near waste sites and stagnant water.

Inadequate WASH service can lead to an increased risk of several diseases including: diarrhea, Hepatitis A, Cholera, Typhoid and Shigella Dysentery, Intestinal helminthes, Malaria and Trachoma.

Inadequate management of human excreta poses a serious health risk due to potential contamination and loss of local water sources.

Children's excreta can be particularly high risk. it is more infectious than adults, yet often perceived by communities to be less so.

Lack of adequate supplies of clean water restricts the functioning and safe practices of health facilities and health workers. Pathogenic risks from exposure to medical waste in-clude Hepatitis B & C, HIV, haemorrhagic fever, skin respiratory and gastroenteric infections; it is estimated that 20% of health care waste is infectious.

Table 2 Health risk prevention methods

1. Waste disposal	Throw everything that is not necessary for the process away immediately.
2. Chemical containers – Full & Empty	Store them correctly and separately or dispose of them immediately and correctly.
3. Working areas	Clean working areas.
4. Open wounds	Cover them immediately and wear an additional pair of disposable gloves. If there is any danger of exposure to the food product, the person should rather be placed on light duty.
5. Hand washing	Wash hands as per the previously discussed procedure as prescribed.

Figure 12 Young girl collecting water in Malawi, 2011

The following are identifying health risks with water and sanitation

- People still practice open defecation, contaminating the river,
- Most villagers are fishermen and many community members enter the river on a daily basis,
- Hygiene practice is generally poor,
- Although the snails live attached to the rocks, snail control is not applicable in this vast river.

4.4. Food Handling activities

Raw food Transportation

Raw food which is to be cooked can be safely handled with bare hands. Cooked or ready-to-eat foods should be handled with utensils such as tongs, spoons, spatulas or disposable gloves. If gloves are worn, they must be changed at least hourly or sooner if they become torn or if there is a change in task. Always wash hands before putting on gloves. Always put on new gloves when changing from raw food to ready-to eat food. Never touch food with gloves that have been used for cleaning.

Cook and Heating

Thoroughly cook all foods, especially those of animal origin. When cooking meat, ensure juices run clear. If reheating food, ensure that it is brought to the boil and simmered for at least five minutes. Thaw frozen food before cooking. If the food is to be cooked from a frozen state, take extra care to make sure that the food is cooked right through.

When thawing food, do so in the bottom part of the refrigerator. Microwave ovens can be used to thaw food provided that the food is cooked immediately afterwards. Never refreeze food which has been thawed.

Food Storage and Display

Food naturally contains bacteria and some food may contain food poisoning bacteria. If food is not stored, displayed or transported correctly, these bacteria can multiply to dangerous levels. One of the most important factors for growth is temperature. The temperature range between 5ºC and 60ºC is known as the temperature danger zone. 'High risk' foods must spend only the minimum possible time in this zone. Food that is displayed should either be wrapped or covered. Refrigerated display cases must be able to maintain foods below 5ºC.

- Transporting Food

Ensure that all food that is delivered to you is done so in a vehicle that prevents contamination of the food. Food must be transported completely separately from chemicals such as detergents.

4.5. Food Hygiene

Maintaining food hygiene is making the food free from microbial contaminants ny reducing the different hazard discussed in chapter three. Food hygiene is very important to have healthy, safe, nutritious food that is good sources of nutrient and energy to support the health of most vulnerable community groups/ children and pregnant and lactating women.

When handling, preparing, cooking, and storing food, the individual must keep the food safely, healthy person that do not drop his/her fluids, hair, nail and keep his personal and working areas hygiene that do not contaminate food to have safe, nutritious food that support and promote the growth and development.

Specially the food prepared for children, pregnant and lactating mothers should be maintained safe throughout its journey as these age groups need special attention for their health and improve their nutritional status.

Poor food hygiene results in food borne diseases. Food borne diseases are diseases that could be caused by inappropriate food handling, cooking, storage practices and poor personal health condition of the food handlers during preparation. Most communicable diseases dominant in the rural community of Ethiopia like shigellosis, cholera, giardia, typhoid, typhus, are some of the food born and water borne diseases. The high episode of these diseases affect the nutritional status of women and child very badly. Therefore, special attention should be given to these vulnerable age groups.

Chapter Summary

- Cleanliness inside and outside the house, along with proper sanitation helps in keeping the environment disease free.
- Good health may enable us to do well at work and in life. To keep ourselves free from diseases and to have good health, we should be careful about hygiene.
- Proper nutrition, physical exercise, rest and sleep, cleanliness, and medical care are essential parts of maintaining good health. Health includes both personal and community health.
- Inadequate WASH service can lead to an increased risk of several diseases including: diarrhea, Hepatitis A, Cholera, Typhoid and Shigella Dysentery, Intestinal helminthes, Malaria and Trachoma.
- Maintaining food hygiene is making the food free from microbial contaminants ny reducing the different hazard discussed in chapter three. Food hygiene is very important to have healthy, safe, nutritious food that is good sources of nutrient and energy to support the health of most vulnerable community groups/ children and pregnant and lactating women.

Self-assessment Questions

1. Write some important aspects of personal health
2. Discus infection transmission ways?
3. Mention some of health risks with water and sanitation

ANNNEX

ANNEX-1

ANSWER KEY FOR SELF ASSESSMENT QUESTION

1.1. CHAPTER ONE

ANSWER Q-1

WASH is an abbreviation that stands for Water, Sanitation and Hygiene.

ANSWER Q-2

The aim of any WASH programme is to promote good personal and environmental sanitation in order to prevent diseases and promote health. The goal of water and sanitation projects in Ethiopia and throughout the world is to bring benefits to the lives of people by improving the supply of safe water and access to sanitation.

ANSWER Q-3

Some of the common challenges facing the WASH sector in Ethiopia are:-

- The scale of the problem,
- The problem needs huge investment of time and money to design and build new infrastructure.

In response to these many challenges, the Ethiopian government has developed the One WASH National Programme. The One WASH National Programme (OWNP) is a consolidated national programme designed to improve WASH services for the Ethiopian people.

1.2. CHAPTER TWO

1	C	6	B
2	F	7	J
3	E	8	M
4	K	9	L
5	A	10	G

Answer Key-Q-1

- The Health Policy
- The Ethiopian Water Resources Management Policy
- The Draft Environmental Health Policy.

ANSWE Key for Q-2

Hygiene and sanitation practices are the things we do to keep ourselves, the food product we process need to be clean. This is maintained by:

- Hand washing.
- Clean uniforms.
- Following work instructions.
- Cleaning the plant during and after production.

ANSWER-3

- Drinking water
- Hand washing
- Excreta disposal
- Solid waste disposal facilities in and around the school compound.

ANSWER for Q-4

1. Elimination or substitution of hazards
2. Tools, equipment, technology and engineering
3. Safe work methods
4. Hygiene and welfare
5. Personal protective equipment
6. Health/medical surveillance

1.3. CHAPTER THREE

Answer 1: Hazard identification is the process of identifying hazards in water supply system sanitation and hygiene at house household and/or community level.

Answer 2: List at least 3 hazard identification methods?

10. Inspecting procedures

11. Conduct of site safety audits
12. Completion of a safety checklist
13. Observation of daily activities
14. Investigation of accidents and incidents
15. Review of injury or illness registers
16. Environmental monitoring of the workplace
17. Investigation of staff complaints or reports of safety concerns
18. Review of staff feedback via consultative processes such as meetings, surveys or suggestion box submissions.

Answer 3: Observe their practice on:

- How they collect the water and the types of vessel they use (for example, jerrycans, buckets or pots)
- How the vessels are handled and stored when not in use
- Whether the vessels are used for purposes other than water collection that may contaminate them
- Whether users know how to collect safe water and keep it safe

Answer 4.

- Civil society organization
- Development Assistance Group /Water Sector Working Group
- Private Sectors
- Community organizations

1.4. CHAPTER FOUR

ANS Q-1

- Healthy and balanced diet
- Personal hygiene
- Domestic Hygiene
- Safe food and water

- Cooking with care

ANS Q-2

- Consumption of water or food that has been contaminated through environment, washing or cooking.
- Hand to mouth transmission when availability of water for personal hygiene is reduced.
- Vectors (e.g. flies and mosquitoes) which breed near waste sites and stagnant water.

ANS Q-3

- People still practice open defecation, contaminating the river,
- Most villagers are fishermen and many community members enter the river on a daily basis,
- Hygiene practice is generally poor,
- Although the snails live attached to the rocks, snail control is not applicable in this vast river.

ANNEX-2: Attached video for practical Training

1. https://www.youtube.com/watch?v=di2Yxd9cA1U
2. https://www.youtube.com/watch?v=oZ2aiT7ceo4
3. https://www.youtube.com/watch?v=KihgZDYSfks

ANNEX-2: Reference and Further Reading

1. Water, Sanitation and Hygiene (WASH) Training Document (Draft)