EHS 204

INTRODUCTION TO ENVIRONMENTAL HEALTH SERVICES

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CONTENTS **PAGE**

MODULE 1 DEFINITIONS AND COMPONENTS OF ENVIRONMENT AND ENVIRONMENTAL HEALTH

Unit 1 Definitions and Components of Environment

Unit 2 Definitions and Components of Environmental Health

Unit 3 Definition and Strategies of Environmental Health Services

UNIT 1 DEFINITIONS AND COMPONENTS OF ENVIRONMENT

CONTENTS

1.0 INTRODUCTION

I believe you have read the course guide? If so, it means you now have a general understanding of what module 1 is about and how it fits into the course as a whole.

This module is made up of the following 3 units:

- Definitions and components of environment
- Definitions and components of Environmental Health (EH)
- Definition of Environmental Health Service (EHS) and ecological relationship and interdependence of the components of Environment.

In this unit, you will learn various definitions of environment and the components of environment. The word 'environment' is derived from a French word '*Enviromer*' which means 'surrounding'. Yes, you are reading this unit in a particular surrounding or in an environment. At any point in time, you must be in an environment- whatever you are doing.

This makes it necessary for you to know something about your surroundings. At least you should know what your surrounding or environment is, and which part or component of environment it belongs. Anything short of this will amount to you not being able to describe parts of your body or locate them. Therefore, you have to pay maximum attention to this unit which will serve as a solid foundation for other units in the remaining modules of this course.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define environment as 'surrounding', as the "sum total of all conditions" and as "external conditions and factors"
- classify the different components or parts of environment
- explain the different components or parts of environment and environmental effects of human behaviours.

3.0 MAIN CONTENT

3.1 Definitions of Environment

Here, let us consider the following.

a. Definition of environment as a "surrounding"

Do not forget this- as an oncoming Environmental practitioner, you should be able to define environment in a simple professional language. For instance, according to Asthana and Asthana(2003) environment encompasses everything which surrounds us- the "air which we breath, the soil on which we stand, water, living and non-living things around" (Asthana and Asthana, 2003).

b. Definition of environment as "the sum total of all conditions"

In another instance, Barrow (1995) defined environment "as the sum total of the conditions within which organisations live".

c.As external conditions and factors

Similarly, Miller (1994) defined environment as all "external conditions and factors, living and non-living, which affect an organism or other specified system during its life time".

You will now realise that environment means and include the air, water, soil, plant and animal etc., all of which you interact with and which influence you either positively or negatively depending on how you control or make use of them. You are also part of the environment. Now that you are familiar with what environment means, it is also necessary for you to know what make up or constitute the environment so that you will be able to identify, classify, list and explain the components of environment for your practice.

3.2 Components of Environment

Here, let us look at the following.

a.Physical component of the environment

The physical environment consists of the non-living (abiotic) part of the environment i.e. air, water, light, heat, radiation, gravity, pressure, climate, soil, shelter/housing etc.

b. Biological environment

Here, we are talking of all the living things in an area (i.e. plants, animals and microorganisms constitute the biological environment.

c. Social environment

This is the part of the environment that focuses on humans. In essence, it represents the situation of human beings as members of society (i.e. family groups, villages or urban communities/culture (i.e. beliefs and attitude), the organisation of society (i.e. policies and government, laws and the judicial system), the educational system, transport and communication and social services (i.e. health care and related factors) all of which interact to shape social life, behaviour and other relationships.

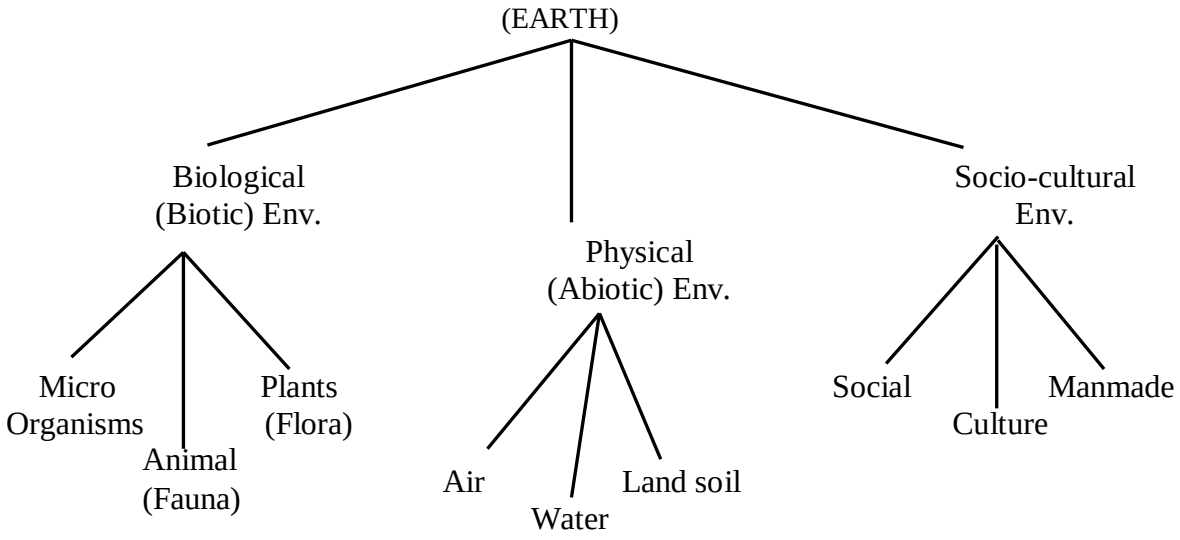

Fig.1.1: Components of the Environment.(*Source*: Barrow, 1995)

3.3 Explanation of the different Components of Environment

As mentioned earlier on, the term environment can be broadly defined as one's surroundings. To be more specific we can say that it is the physical and biological habitat that surrounds us. The two major classifications of environment are considered below:

3.3.1 Physical Environment

This includes external physical factors like air, water and land etc. This is also called the Abiotic environment. The physical environment can be further subdivided into the following four segments or parts:

- ***Lithosphere***: The earth's crust consisting of the soil and the rocks.
- ***Hydrosphere***: This comprises all water resources both surface and groundwater. The world's water is found in oceans and seas, lakes and reservoirs, rivers, streams, springs and wells. Rainwater is serving as a source for many sources of water supply.
- ***Atmosphere***: It is the gaseous envelope surrounding the earth and extends up to 500kms above the earth's surface.

The composition of the atmosphere is as follows:

Nitrogen	78.1%
Oxygen	20.9%
Water vapour	0.1 – 5%
Carbon dioxide	0.03%

- ***Biosphere***: The biosphere is a capsule encircling the earth surface wherein all the living things exist. This portion extends from 10,000m below sea level to 6,000m above sea level. Life forms do not exist outside this zone. The biosphere covers parts of other segments of the environment viz- lithosphere, hydrosphere and atmosphere.

Life sustaining resources like food, water and oxygen present in the biosphere are being withdrawn and waste products in increasing quantities are being dumped.

Note that you have a challenge because the biosphere has been absorbing these wastes and assimilating them. However, rate of waste dumping has gone beyond the assimilation capability of the biosphere and signals of this environmental stress are becoming evident.

3.3.2 Living Environment

The live components of the environment comprises of plants, animals and microorganisms (bacteria and fungi). They carry out different functions and based on their role, they are classified into three main groups. They are:

- Producers
- Consumers
- Decomposers.

Products are mainly green plants having chlorophyll. They produce carbohydrates by photosynthesis process. In effect the plants convert solar (sun) energy into chemical energy using water and carbon dioxide. They are Autotrophic (autotrophs- self-feeders) since they produce their own food; they store the remaining food for the consumption of man and animal.

Consumers are living things which do not have chlorophyll, and hence, they are unable to produce their own food. They rely on the producers for their food requirements. They are Heterotrophs.

Decomposers are called Sapotrophs and are mainly micro-organisms like bacteria and fungi. Dead organic materials of producers and consumers make up their food; they breakdown the organic matter into simple compounds during feeding process. These simple compounds (nutrients) are absorbed by the producers thus completing a cycle of exchange matter between the biotic and abiotic components of the environment.

3.3.3 The Socio and Cultural Environment

You will remember that this is the part of the environment that focuses on human, representing the situation of human beings as a member of society and as a 'guest' in the environment. It includes the aspects of social interactions including its products such as beliefs, attitudes, taboos, etc.

The damage to the environment is caused mainly by man (anthropogenic) i.e. man-made. There are also natural disasters (non-anthropogenic). The natural impacts are non-preventable and on many occasions unpredictable. However, knowledge of natural hazards is essential in order to take mitigative

(preventive and control) actions so that loss of life and property can be minimised.

On the other hand, manmade disasters are preventable if environmental practitioners are alive to their professional responsibility. This is why you need to understand what environment is, what constitute the environment, and how the different parts of the environment relate or their interdependence.

Your practice to deliver environmental health services shall go a long way to prevent, or control environmental disasters like flooding, fire, droughts, volcano, cyclones, hurricanes and tornadoes. When the environment is properly managed, it enhances healthy living in all aspects of life of man.

4.0 CONCLUSION

In this unit, you have learnt about the definitions of environment, the various components or parts of environment, how they relate and their interdependence.

5.0 SUMMARY

In this unit, environment was defined as: a 'surrounding', the "sum total of all conditions", and as external conditions and factors. Environment was also classified into, physical, biological and social cultural environment. It has also been made clear to you that the different components of environment include water and food sanitation, housing, pest control, air pollution, etc.

6.0 TUTOR-MARKED ASSIGNMENT (TMA)

1. Define environment as:
   (a) 'Surroundings'

(b) ‘The sum total of all conditions’

(c) ‘As external conditions and factors’.

2. List the three main components of environment.
3. List and explain- briefly, the interrelationship and interdependence of physical, biological and socio-cultural components of environment.

7.0 REFERENCES/FURTHER READING

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UNIT 2 DEFINITIONS AND COMPONENTS OF ENVIRONMENTAL HEALTH

CONTENTS

1.0 INTRODUCTION

In unit 1 of this module, Environment was defined in 3 main ways – (a) as 'surroundings' (b) as 'the sum total of the conditions' and (c) as 'external conditions and factors'…. In this unit, the twin brother/sister of Environment i.e. Health which forms Environmental Health will be discussed. It is Environmental Health that makes Environment to be manageable for human use. As you are familiar with the definition of Environment including its components, so also you should be familiar with Environmental Health.

It is in this unit you will learn what constitute Environmental Health its relationship with environment. You cannot be an effective and efficient Environment Manager without adequate knowledge of Environmental Health. Thus after studying this unit certain things will be required of you. They are listed in these objectives below:

2.0 OBJECTIVES

At the end of this unit you should be able to:

- define Environmental Health as:
  - (a) totality of all factors
  - (b) conditions that determine the quality of life
  - (c) as an aspect of Public Health
  - (d) as defined by World Health Organisation.
- list the various components of Environmental Health
- relate the definition of Environment with and to the definitions of Environmental Health.
- explain the relationship between Environment, Environmental and Environmental Sanitation.

3.0 MAIN CONTENT

3.1 Definitions of Environmental Health

3.1.1 Definition of Environmental Health as the theory and Practice

Environmental Health is the theory and practice of assessing, correcting, controlling and preventing those factors that can potentially or adversely affect the health of man both at the present and future generations.

3.1.2 Environmental Health as conditions that determine quality

Environmental Health also refers to environmental conditions that determine quality of living of organisms that inhabit the various ecological systems.

3.1.3 Environment as an aspect of Public Health

Environmental Health is the aspect of public health concerned with all the factors, circumstances and conditions in the environment or surrounding of human (i.e. air, water, land, housing etc.) that can exert an influence on human health and well being (Amadi, 2011).

3.1.4 Environmental Health as defined by the World Health Organisation (WHO)

"The World Health Organisation (WHO) defined Environmental Health as comprising those aspects of human health, including quality of, that are determined by physical, biological, social and psychological factors in the environment".

3.2 Various Components of Environmental Health

3.2.1 List the various components of Environmental Health

You should have realised by now, that the components of environment form the components of Environmental Health, the difference is that

environmental health is controlling, or directing the components of environment for our benefits.

You will also notice that some definitions of environment refer to it as 'factors' or as 'conditions' in our surroundings. These are the same as components which Environmental Health is directing or controlling for a healthy living.

3.2.2 Components of Environmental Health

According to EHORECON (2007), components of Environmental Health include:

(1) Waste management

(2) Food hygiene and control

(3) Pest and vector control

(4) Environmental health control of housing and sanitation

(5) Epidemiological investigation and disease control

(6) Air quality management

(7) Occupational health and safety

(8) Water resources management and sanitation

(9) Noise control

(10) Protection of recreational environment

(11) Radiation control and abatement

(12) Educational activities (health promotion and education)

(13) Promotion and enforcement of environmental quality standards.

(14) Collaborative efforts to study the effects of environmental hazards (research).

(15) Environmental Impact Assessment (EHIA) and

(16) Management of emergency situations (disaster, flooding, disease outbreaks) etc.

3.3 Environment in Environmental Health

3.3.1 Environment in Environmental Health i.e. relating the definitions of Environment with and to the definitions of Environmental Health

To bring out clearly the influence of Environmental Health on environment, it is necessary to relate one or two of their respective definitions to buttress the point. The intention is to prepare your mind to practice environmental health in Environmental Health Services.

For instance, Amadi (2011) defined Environmental Health as an aspect of public health ***concerned with*** all the ***factors***, ***circumstances*** and ***conditions*** in the environment or surrounding of human (i.e. in air, water, land, housing etc.) that can exert an influence on human health and well being. In this definition, environmental health is concerned with the components of environment which can exert negative or positive influences on us.

That concern is your work which you practice in Environmental Health Service. You must concern yourself with environment. As a matter of fact, Environmental Health aims at fulfilling or meeting the fundamental objectives of Public Health (PH) which include:

- prevention of epidemic and the spread of disease.
- protection against environmental health hazards.
- prevention of injuries.
- promoting and encouraging healthy behaviour or practices.
- responding to disasters or emergencies and assisting communities in recovery.

- assuring the quality and access to environmental health services.

In another definition of Environmental Health, it portrays Environmental Health as a 'theory' you should learn and as a 'practice' you should engage in. The definition says environmental health refers to the theory and practice of assessing, correcting, controlling and preventing those factors in the environment that can potentially affect adversely the health of ***present*** and ***future generations***. This definition is calling your attention to your cognitive, affective and psychomotor (practical) domains for present and future generations.

Before you move to study the contents of objective number 3 in unit 1, attempt the following questions to assess how much you have assimilated from the contents of objectives 1 and 2.

(1) Define Environmental Health (EH) as a branch of Public Health (PH).

(2) List 5 components of Environmental Health (EH).

You may now proceed to study objective number 3 i.e. relating the definitions of environment with and to the definitions of Environmental Health (EH).

3.3.2 Explaining the relationship between Environment, Environmental Health and Environmental Sanitation

I am deliberately repeating the concepts and definitions of Environment and Environmental Health to acquaint you with them and avoid the common error of replacing one with the other. Such an error undermines professionalism and affects the practice of Environmental Health.

I will now add Environmental Sanitation to Environment and Environmental Health. Again, they are Siamese triplets similar and almost identical.

3.3.3 Physical, biological and social cultural

The physical, biological and social cultural components of Environment are to be assessed, monitored, controlled and manipulated by Environmental Health to make environment conducive for living. We have the components of the environment determining our state of health. But what is sanitation?

3.3.4 Environment, Environmental Health and Environmental Sanitation

Sanitation is a French coinage Sanitas – meaning health. According to WHO sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces. The word sanitation also refers to the maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal.

Sanitation is the hygienic means of promoting health through prevention of human contact with the hazards of wastes. Hygienic means of prevention can be by using engineering solution (e.g. sewerage and wastewater treatment), simple technologies (e.g. latrines, septic tanks) or even by personal hygiene practices (e.g. simple hand washing with soap, ash or clay) (Amadi, 2009).

The term sanitation can be applied to a specific aspect, concept, location or strategy, such as:

- Basic sanitation – refers to the management of human faeces and the household level.
- Onsite sanitation – the collection and treatment of waste is done where it is deposited. Examples are the use of pit latrines, septic tanks etc.
- Food sanitation – refers to the hygienic measures for ensuring food safety.

From the various definitions of sanitation, you would have realised that while Environmental Health is assessing, controlling or correcting the Environment; sanitation is the actual provision of facilities to carryout Environmental Health be it in waste management, food hygiene etc. and it is specific of food sanitation onsite sanitation, water sanitation as mentioned earlier on but environmental health is general.

The National Sanitation of USA defined sanitation "as a way of life, it is the quality of living that is expressed in the clean home, the clean farm, the clean business, the clean neighbour and the clean community. Being the way of life, it must come from within the people. It is nourished by knowledge and growing as an obligation and ideal in human relation".

Now, let us compare Environmental Health with Environmental Sanitation. The Federal Ministry of Environment Nigeria defined Environmental Sanitation as the ***principles*** and ***practices*** of effecting healthful and hygienic conditions in the Environment to promote public health and welfare, improve quality of life and ensure a sustainable environment. It is also a range of interventions, designed to improve the management of excreta sullage (wastewater) drainage and solid wastes.

The essential component of Environmental Sanitation are solid waste and medical waste management, excreta and sewage management, food sanitation, sanitary inspection of premises, market and abattoir sanitation, pest and vector control, management of urban drainage, control of reared and stray animals, disposal of the dead, weed and vegetation control, hygienic education and promotion which form the contents of this 2 unit course. "Introduction to Environmental Health Service", Environmental Health and Sanitation have far-reaching implications on the achievement or otherwise of Millennium Development Goals (MDGs).

Definitely, you cannot deliver Environmental Health Services in your professional practice if you are not familiar with the concepts, definition, relationship etc. between Environment, Environmental Health, Sanitation and Environmental Sanitation. This is a solid foundation on which you will build the other 2 modules and study units of this course.

4.0 CONCLUSION

In this unit you have learnt the various definitions of Environmental Health. It is good to be aware that Environmental Health is a theory and practice of controlling the environment, as conditions that determines the quality of life and as an aspect of public health. You have also learnt that environmental sanitation is the principle and practice of effecting healthful and hygienic conditions in the environment.

This is because you will need the knowledge of environmental health to develop your skills to practice environment sanitation using basic principles. You are also familiar with the components of environmental Health and environmental sanitation giving you the scope of your operation.

5.0 SUMMARY

A summary of the major points in this unit is that:

(1) Environmental Health was defined as:

   (a) The theory and practice

   (b) Conditions that determines quality of life

   (c) An aspect of public health

   (d) Defined by World Health Organisation (WHO).

(2) The various components of environmental health as listed by EHORECON (2007) were also discussed.

(3) The concepts and definitions of Environment, Environmental Health, Sanitation and Environmental Sanitation were also related and compared.

6.0 TUTOR-MARKED ASSIGNMENT (TMA)

(1) Define Environmental Health as:

(a) 'A theory and practice'

(b) 'Conditions that determine quality of life'

(c) 'An aspect of public health'.

(2) List and briefly explain 5 components of Environmental Health

(3) Define Sanitation

(4) What is Environmental Sanitation?

7.0 REFERENCES/FURTHER READING

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Unit 3: Definition, modern approaches and strategies of Environmental Health Services.

Table of Contents

1.0 INTRODUCTION

In unit 2, Environmental Health was defined in various dimensions. If you will recall, Environmental Health was defined as a theory and practice, as a condition that determines quality of life, it is an integral of public health through which Environmental Health Services are rendered to the citizens. The materials in this unit will explain to you, what environmental health services stand for, modern approaches to environmental services and strategies of carrying out the services.

This study is equally very important because it will consolidate materials or points discussed in units 1 & 2 of this module and will therefore prepare you adequately to render environmental services effectively and efficiently. It is expected of you, that at the end of the unit, you would have achieved the objectives listed below:

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define Environment Health Services
- enumerate the various modern approaches to Environment Health Services
- apply different strategies/principles to enhance effective and efficient Environment Health Services.

3.0 MAIN CONTENT

3.1 Definition of Environmental Health Services

Environment health services can be defined as those functions rendered by Environment health service providers who have been trained, registered and licensed having acquired necessary skills and knowledge that are fundamental in rendering environmental health services.

Environment health service providers include but not limited to Environmental Health Officers, Environmental Health Technologists, Environmental Health Technicians, Environmental Health Assistants, Cleaners, Public Health Nurses, Occupational Hygienists, Scientific Officers, Laboratory Technologists etc.

Examples of Environment Health Services include:

- Water management
- Water sanitation
- Pest management
- House to house inspection
- School sanitation
- Inspection of hospitalities
- Inspection of workplaces and factories.

You would have inferred from the definition of Environment Health Services that, they are services that are to be rendered by professionals and not by quacks. This is why you should pay, maximum attention to this course – 'Introduction to Environment Health Services' so that you will not be found wanting in your official functions and assignments.

Now that you can define with examples Environment Health Services, you should also study the various modern approaches to Environment Health Services. Environmental Health (EH) is a dynamic discipline because environmental factors and conditions kept on changing as human population increases, as industrialisation and technology expand, modern technology needs modern approach.

3.2 Modern approach to environment health services

Environment Health (EH) aims at fulfilling or meeting the fundamental objectives of public health which include:

- Prevention of epidemics and the spread of disease
- Protection against environmental health hazards
- Prevention of injuries
- Promoting and encouraging healthy behaviour or practices
- Responding to disaster or emergencies and assisting communities in recovery
- Assuring the quality and access to environmental health services.

The achievement of these laudable public healthy objectives i.e. Environment Health Services is through the health approaches:

1. A system of Environment Health Management
2. Sound Technology
3. Sound Scientific principles
4. Research.

In this approach, Environment Health Services can be measured or evaluated to demonstrate whether they are meeting the people's needs or not. In order for you to achieve objective number 2 of Unit 3 of module 1, there is the need to give brief explanations on the 4 modern approaches mentioned earlier on viz:

3.2.1 A System of Environmental Management

- Environmental management is describing how the environment is being controlled, directed or manipulated and carefully using its vast resources to benefit mankind.
- Environmental management thought of as a multi-disciplinary process in which different types of Environmental Managers interact with the environment and with each other to pursue a livelihood.
- Environmental management can be understood as a field of study characterised by a set of ***concepts*** and ***approaches*** that interrelate in a distinctive way.

Note that, the definition of Environmental Management in bullet number 2 is buttressing the definition in bullet number 3 and vice-versa.

The essence of Environmental Management is that through a systematic analysis, understanding and control, it allows man to continue to evolve his technology without profoundly altering natural ecological system.

These salient definitions of Environmental Management, will stimulate and equip you to render Environment Health Services. In spite of numerous environmental hazards arising from man's activities in the environment, environmental management is not intended to declare environment 'a no go area' but what development or technology introduced into the environment should not ***profoundly alter natural ecological system***.

3.2.2 Sound Technology

What do you think of when you hear the word technology? You are reminded of such things as machines, labour-saving devices or industrialisation. Technology includes these, of course, but it has a wider meaning.

The root of the word is a Greek term that means “art, craft and skill” – in other words knowing how to do something.

If environmental health services are to be properly organised and executed, there is the need for a sound physical technology and behaviour technology. One of the concepts of Primary Health Care (PHC) is the use of simple physical technology i.e. simple health facilities that are not complex or sophisticated beyond the understanding of the users. Many environmental health service devices in the areas of pollution control, water sanitation and waste management are so complex that they cannot be adapted for use in the tropics.

The term behaviour technology refers to the science, art, skill or craft of influencing socially important human behaviour. The imbalance of physical and behavioural technology seems to be at the root of many environmental health problems. It is not that physical technology itself is bad or dangerous, it is without knowing how to control it – we are in danger of it controlling us.

3.2.3 Scientific Principles

This is another modern approach to Environmental Health Services. In the past Environmental Health Providers e.g. Sanitary Inspectors now called Environmental Health Officers could seize, condemn and destroy any food substance that is suspected to be unfit for human consumption without any scientific proof that the food substance has been polluted or contaminated.

Such unscientific approach could not be accommodated in the modern day Environmental Health Services. There must be scientific (empirical) proofs or evidences that a premises is noisy, or that a particular premises has excessive heat or pollutants. There are devices or tools for environmental monitoring in environmental health services. You must be conversant with these devices and their uses in Environmental Health Laboratory.

3.2.4 Research

For Environmental Health Services to be efficient and effective, Environmental Health Providers should undertake research activities to solve environmental health problems. We need research in all the components of environmental and environmental health for a sustainable healthy environment.

Before you to go the 3rd objective of this unit, please answer the following questions:

1. What is Environmental Health Service?
2. List and briefly explain 2 modern approaches to environmental health services.

Now that you know how to approach the delivery of environmental health services in the modern ways, the next thing for you is to know how to plan i.e. (strategise) to

apply the methods of approaching environmental health services delivery. This takes you to the 3rd objective of unit 3 i.e.:

3.3 Strategies Used in Environmental Health Services

The strategies include:

- Monitoring of environmental and health status to identify community environmental problems.
- Diagnosing and investigating environmental health problems and hazards in the community.
- Informing educating and empowering people about environmental health issues.
- Mobilizing community partnerships to identify and solve environmental health problems.
- Developing policies and plans that support individual and community environmental efforts.
- Linking people to needed environmental health services and assure provision of such services when otherwise unavailable.
- Assuring a competent environmental health workforce.
- Evaluating the effectiveness, accessibility and quality of personal and population based environmental health services.
- Conducting research into new insights and innovative solutions to environmental health problems and issues.

4.0 CONCLUSION

In this unit, you have learnt the definitions of Environment Health Services, modern ways of approaches and strategies of environmental health services. It is a further improvement on your knowledge of environmental health service delivery especially now that you can define environment, environmental health and environmental health services and their components.

A sound knowledge of the main contents of unit 1 will lead you easily to module 2 of this course.

5.0 SUMMARY

The main or salient points discussed in this unit include:

- Definitions of Environmental Health Services
- Modern approaches to Environmental Health Services viz through:
  (1) A system of Environmental management
  (2) A sound technology
  (3) Sound scientific principles
  (4) Research activities.
- Strategies used as Environmental Health Services

6.0 TUTOR MARKED ASSIGNMENT (TMA)

1. Define with 2 examples Environmental Health Services.
2. List and explain 2 approaches to Environmental Health Services.
3. List 5 strategies of Environmental Health Services.

7.0 REFERENCE AND FURTHER READING

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Module 2: ENVIRONMENTAL HEALTH PRACTICE (EHP)

Unit 4: Definitions of Environmental Health Practice and Tools for Environmental Health practice

Contents

1.0 INTRODUCTION

You will recollect that we discussed about the definitions of Environment, Environmental Health, Environmental Health S**e**rvices and their components in Module 1. The contents of the module will build on the foundation laid by module 1 and all its study units.

You are about to go into practising Environmental Health Services. This is where you will know what you will be practising and the tools or materials for such practices. Please, read on.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- describe Environmental Health Practice (EHP)
- define tools for Environmental Health Practice
- list tools for Environmental Health Practice
- describe tools for Environmental Health Practice.

3.0 MAIN CONTENTS

3.1 Description of Environmental Health Practice

Environmental Health practice is better described than being defined because it is the actual practical activities of the authorised environmental service providers for the purpose of delivering efficient, effective and quality Environmental Health services to the populace.

If Environmental Health which is the control of all factors and conditions in man's physical environment, which exercise or may exercise deleterious effects on man, then it is the professional knowledge and skills of Environmental Health providers that will identify, assess, direct and control all such 'factors' or 'conditions'

manipulating them in such ways that they are prevented, controlled or their effects are drastically reduced. Such is Environmental Health practice.

Furthermore, one of the key factors in improving human health is to identify and understand the basic biological processes that are altered by the environmental factors that trigger (stimulate) disease processes to begin or the cause of disease to be substantially altered. This is Environmental Health practice. Essentially, Environmental Health practice helps in creating and maintaining environments or surroundings that promote good public health within the community, inclusive of ensuring such basic health requirements as availability of clean water, clean air, safe food etc. for the citizenry.

Again, environmental sanitation also means Environmental Health practice. According to the World Health Organisation (WHO), sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces.

The word sanitation also refers to the maintenance of hygienic conditions, through service i.e. (Environmental Health Services) such as garbage collection and waste water disposal.

The Federal Ministry of Environment, Nigeria defined environmental sanitation as the principles and practice of effecting healthful and hygienic conditions in the environment to promote public health and welfare, improve quality of life and ensure sustainable environment.

Just as sanitation can be applied to a specific aspect, concept, location or strategy e.g. basic sanitation on-site sanitation, food sanitation, environmental sanitation etc. it is the same with Environmental Health practice. Environmental Health practice

covers sanitary inspection of premises, control of communicable diseases, disposal of wastes, water quality control, good and sanitary housing condition, food hygiene and sanitation, pollution control etc. All these were captured in the course description of EHS 204 i.e. ("Introduction to Environmental Health Service").

3.2 Definition of Tools for Environmental Health Practice

3.2.1 Definition of Tool

Ordinarily, the word 'tool' means an instrument that can be used to perform a specific function or functions. A motor mechanic uses spanners, screw drivers, jack etc. to perform his/her professional services, medical doctors, nurses, lawyers, pharmacists etc. have their respective professional tools to perform their services.

3.2.2 Definition of Environmental Health Practice Tools

The tools in Environmental Health practice comprise of those that are not visible and those that are visible.

3.2.3 Non-visible Environmental Health Practice Tools

These are made up of:

- Acquisition of relevant academic and professional knowledge and skills to practice. Another tool in this regard are the ethics of the profession. They are tools within which the practitioners must operate for self discipline and integrity.

- Environmental Health Laws – Environmental Health practice has to be operated within the armpit of the relevant laws, rules and regulations. It is the laws that empowers Environmental Health Officers for instance to enter any premises within the hour of six in the morning and six in the evening or at any other reasonable hours for the purpose of carrying out

sanitary inspection of premises. Environmental Health Officers need no 'Charge Warrant' like the Police to enter any premises. You will realise, that environmental laws, rules and regulations are formidable tools in environmental health practice without which environmental health functions cannot be performed. You must be conversant with all environmental laws, rules and regulations to guide your operations.

3.2.4 Visible Environmental Health Practice Tools

Now that you have the knowledge, skills and legal power to enter premises for your practices or functions, you need visible or tangible tools, instruments or gadgets to perform your functions accurately and with precision. You will recollect our discussions on modern day environmental health services in module 1 where inter-alia it was mentioned that you need practical and scientific approaches to environmental health services now than ever before for efficiency, effectiveness and to avoid the possibility of court litigation from aggrieved clients.

There are many of such visible or tangible tools that you have to use in Environmental Monitoring which is an integral part of environmental health practice. Tools are also equipment or materials that enhance your service performance – your handset, motor vehicle, biro and papers etc. are inclusive.

Environmental Monitoring can simply be defined as the continuous assessment of the quality of an environment or a surrounding. It also means the surveillance of the environment to ensure that it does not contain any substance that can endanger life or the conditions do not degenerate to such that will endanger health (Oluwande, 2007). In general, environmental monitoring is done in order to gain information about the present level of harmful or potentially harmful substances being discharged into the

environment. It is a veritable tool in Environmental Impact Assessment (EIA) or Health Impact Assessment (HIA).

The following organogram explains the step-by-step procedure of environmental monitoring.

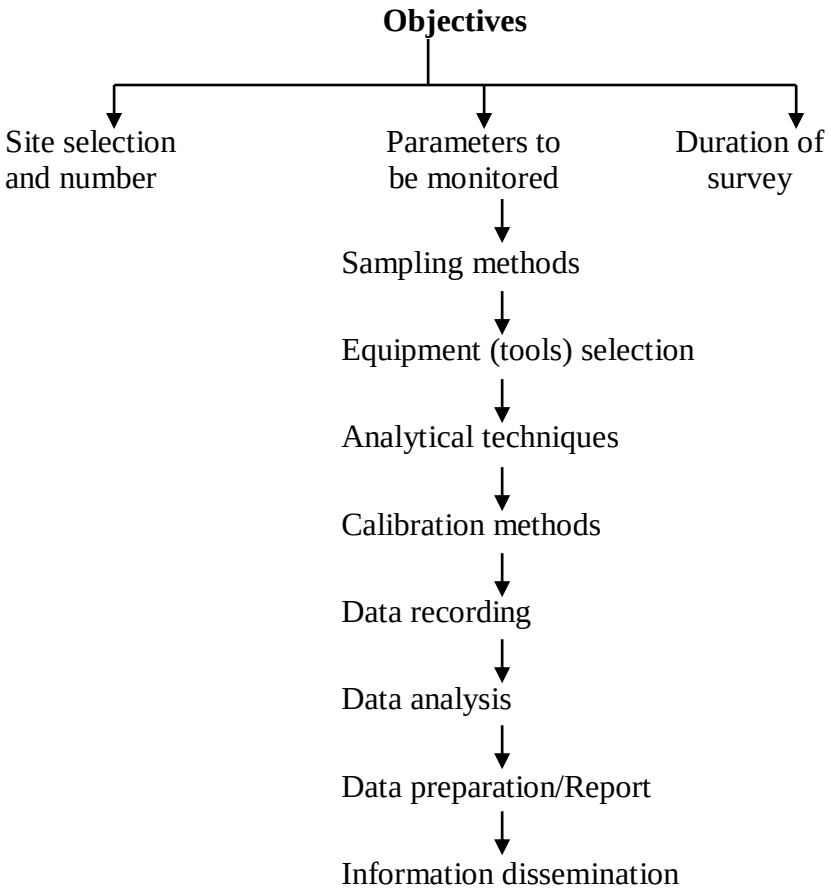


Fig 2: **EIA Procedure** (*Source*: (UNAB, 2008).

Before discussing the last 2 objectives of unit 1 of module, please attempt the following questions:

1. What is Environmental Health Practice?
2. Explain the meaning of tools used in Environmental Monitoring.

Now, read about the 3rd objective of this unit i.e.

3.3 List tools in Environmental Health Practice.

3.3.1 List of tools in Environmental Health Practice

The list of the tools used in Environmental Health practice includes but not limited to:

- Environmental laws, rules, regulations and ethics
- Geographical information system in environmental management (GIS)
- Sound level meters
- British dust-fall gauge
- Lovibond comparator
- Microscopes
- Thermometer & Thermocouple
- Carbon-monoxide Drager gas detector
- Assembled Sampler and shelter
- Owens automatic dust counter
- Hydrogen Fluoride Orsat Gas Analyser
- Air sampler
- Noise Dosimeter
- pH Taster

Source: (Olorunda et al, 2007)

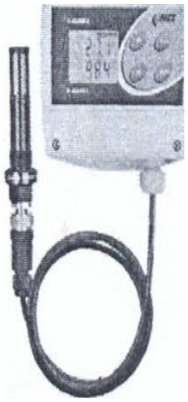
The 4th objective of this study unit is:

3.4 To describe tools for Environmental Health Practice.

As mentioned earlier, the above list of Environmental Health Practice tools did not exhaust the entire list of the tools. Many of them are available in the Federal Ministry of Environment, EHORECON Secretariat, Abuja and some State Ministry of Environment.

3.4.1 The descriptions are explained pictorially in the following pictures:

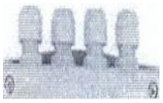
3.4.2 Geographical Information System in Environmental management



113021 P compressed air temperature and humidity regulator

code: 1-13021 P

Humidistat, thermostat with too relay outputs. T+RH probe from hard anodized duralumin for compressed air up to 25 bars with I m cable. Cable lengths 2m or 4m available optionally, Outdoor, indoor use.



H3430 temperature and humidity regulator with RS4S5 output

code: H3430

Humidistat, thermostat with tee relay outputs. Outdoor,
indoor use.

H3061 temperature and humidity regulator with 230Vac/SA relays

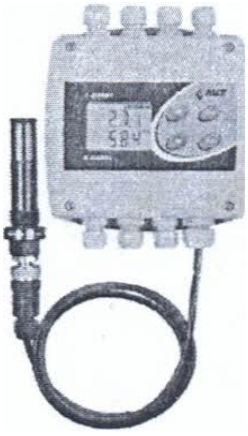
code: H3061

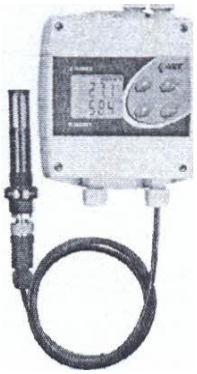
Humidistat, thermostat with too relay outputs. Outdoor, indoor use.

H3331 P compressed air-temperature and
humidity regutator with RS232 output

code: 1-13331 P

at, thermostat with tee relay outputs.
robe
d anodized duralumin for compressed
25
I m cable. Cable lengths 2m or 4m

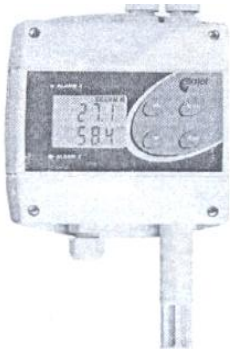




H3061P compressed air temperature and humidity regulator with 230Vac/SA relays

code: H3061 P

Humidistat, thermostat with two relay outputs. T+RH probe from hard anodized duralumin for compressed air up to 2S bars with 1 m cable. Cable lengths 2m or 4m available optionally. Outdoor, indoor use.



H3060 temperature and humidity regulator with 230Vac/SA relays

code: H3060

Humidistat, thermostat with two relay outputs. Outdoor,
indoor use.

H3331 temperature and humidity regulator with RS232 output

code: 1-13331

Humidistat, thermostat with two relay outputs. Outdoor, indoor use.

113023 temperature and humidity

code: H3023

Humidistat, thermostat with tee relay outputs. Outdoor, indoor use. Duct mount.

C3120 Thermo-hygrometer

code: C3120

'Thermometer, hygrometer is designed for direct measurement of temperature, relative humidity. Audio and
optical alarm of measured values. Memory of minimum and
maximum measured values. Function Hold - manual storing
of actual values for later displaying.

C0321 Thermocouple thermometer dual

code: C0321

High accuracy thermometer for thermocouple J, K, S. Audio Minimum/maximum memory. memory of minimum and certificate automatic compensation of thermocouple cold

C3121 P Thermo-hygrometer for compressed ail-measurement

code: C3121P

Thermometer, hygrometer is designed for direct measurement of temperature, relative humidity. Audio and
optical alarm of measured values. Memory of minimum and
maximum measured values. Function Hold - manual storing
of actual values for later displaying.

C3121 Thermo-hygrometer

code: C3121

Thermometer, hygrometer is designed for direct measurement of temperature. relative humidity. Audio and optical alarm of measured values. Memory of minimum and maximum measured values. Function Hold - manual storing of actuaJ values for later displaying.

C3633 Thermo-hygrometer with magnets

code: C3633

gh accuracy thermometer - hygometer. Audio and
tical
rm of measured temperature.
inimum/maximum
emory. memory of minimum and maximum
nperature
cluded traceable calibration certificate.

C3631 Thermo-hygrometer code: C3631
High accuracy thermometer . hygometer. Audio and optical alarm of measured temperature. Muununn/maxrmurn memory. memory of minimum WH.! maximum temperature included traceable calibration certificate.

- GIS is a system for capturing, storing, checking, manipulating, analysing and displaying data which are spatially referenced to the earth (DoE 1987; pg. 132).
- It is a powerful set of tools for collecting, storing, retrieving at will transforming and displaying spatial data from the real world (Burough, 1986; pg. 6).

4.0 CONCLUSION

I hope you were able to increase your skills and knowledge in delivering Environmental Health Services in your professional practice.

For instance, if you are able to describe what you are practising, how and when you are practising it and with what tools or equipment, which formed the main contents of this study unit, you would have gained more knowledge and skills to practice or deliver environmental health services.

5.0 SUMMARY

In this study unit, the following salient points were discussed:

- Description of Environmental Health Practice.
- Definition of Environmental Health Practice tools i.e. he visible and non-visible tools.
- List of Environmental Health Practice tools
- Description of Environmental Health Practice tools.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

(1) Explain the concept of Environmental Health Practice.

(2) What are tools in Environmental Health Practice?

(3) Enumerate 5 different tools in Environmental Health Practice

(4) Describe 2 of the Environmental Health Practice tools you enumerated above.

7.0 REFERENCE/FURTHER READING

Amadi, A.N. (2011): *ABC of Environmental Health* (1st ed.) Owerri: Ugooma Publishers Ltd.

Note on Monitoring Compiled by Soyingbe, A.A. (2007).

Olorunda, O. et al (2007). *Monitoring & Modelling Techniques of Environmental Pollution* (1st Ed.). Akure, Nigeria: His Mercy Publishers.

Oluwande, P.A. (2006). *Environmental Monitoring & Pollution Control*. Ibadan: O.A.U.P.

Portable Instruments/COMETSYSTEM, 2011. Available at http://www.comets.system.c2/products/portable-instrument.

Unit 5: Concept of Methods of Assessing Environmental Practice

Contents

1.0 INTRODUCTION

Now that you are very familiar with some tools or equipments for environmental monitoring which you learnt in unit 1 of this module, in unit 2, you will know why you are doing what and how you are doing it. In simple term unit 2 will explain to you the need for you to assess your practices or your functions in the environment and what methods you will or should use to assess your practices. The knowledge you have gained so far in module 1 will be of tremendous use in this study unit.

2.0 OBJECTIVES

At the end of this study unit, you should be able to:

- explain the concept of assessing Environmental Health Practice (EHP).
- identify methods of assessing Environmental Health Practice.
- describe methods of assessing Environmental Health Practice.

3.0 MAIN CONTENTS

3.1 Concept of need for assessing Environmental Health Practice

At any point of time, the environment of a locality is a dynamic entity which represents a set of complex interactions between its components like the atmosphere (air), hydrosphere (water), lithosphere (soil) and the biosphere.

Environment is always in a state of perpetual or regular change. These changes occur in nature very slowly and do not always result into hazards. However, human activities in agriculture, industrialization, urbanization, construction and exploitation of environmental resources can result into serious adverse impact on the environment. We need to appraise the environment more regularly to avert disasters.

Economic growth and development improve the quality of life but have negative effects on the quality of environment which on the long run may affect the very

quality of life and basic purpose of all development activities could be defeated. As much as the earth is the source of natural resources that man must harness for the production of good needed for his wellbeing. However it is also the sink which will eventually absorb the waste generated in the course of transforming the natural resources to finished products.

Hence, planning for development must include environmental concerns and a balance has to be achieved between environmental protection and development activities. This is the real essence of assessing the environment or appraising it.

Environmental health practice assessment acts as check and balance between development activities or economic activities and protection of the environment. It suggests and measures environmental standards; it also measures the quality, efficiency and effectiveness of Environmental Health practitioner or providers. It also assesses the effectiveness or otherwise of preventive, control or mitigating measures. This in simple term describes the concept of Environmental Health Practices and reasons behind it. It assesses the practices of both environmental users and environmental managers.

3.1.1 Methods of assessing Environmental Health Practice

Now that you know what is it to assess or appraise environmental health practices, you should also learn to identify and be able to describe the methods of assessing or appraising the practices. This is the second objective of this unit. The methods include:

3.1.2 Routine Sanitary Inspection of premises

The Federal Republic of Nigeria through the Federal Ministry of Environment Abuja has developed a detailed policy guidelines on sanitary inspection of premises. You must avail yourself a copy.

However, the guideline inter-alia (impart) explain thus:

"On visiting a premises, the first thing an Environmental Health Officer does is to present his/her identity card and introduce himself/herself to the owner or occupiers of the premises informing him/her about his/her mission. After the introduction, the inspection of the premises commences. The procedure for routine sanitary inspection of premises is systematic, beginning as follows:"

- External inspection
- Internal inspection
  - (a) The floor
  - (b) Walls
  - (c) Ceiling
  - (d) Passage
  - (e) Rooms
  - (f) Ventilation
  - (g) Toilet accommodation
  - (h) Bathroom accommodation
  - (i) Kitchen
  - (j) Water supply
  - (k) Refuse disposal
  - (l) Excreta disposal.

Source (Policy Guidelines on Sanitary Inspection of Premises, FME, 2005).

In routine or special sanitary inspection of premises, Environmental Health Officer is assessing or appraising his/her own efficiency as well as how the owners or occupiers of the premises are practising sanitation or environmental health.

3.1.3 Data collection and Record Keeping

You should know that assessment of Environmental Health Practice is a continuous exercise, where you will need your past and present data and record to be able to anticipate or predict the future.

For instance, the incidence and prevalence rates of malaria jump or fluctuate with the intensity of rainfall, availability of water supply determines the prevalence of guinea worm infection.

Be keeping adequate record of the climatic conditions, you will be able to forecast when a disease, flooding, fire outbreak etc. are likely to occur. In this case, you are monitoring and assessing environmental health practice by keeping adequate and accurate records.

It is an open fact, that in Nigeria, we cannot determine the volume of refuse that we are generating on daily, weekly, monthly and on yearly basis. It is one of the factors why solid waste management has been a recurring and nagging problem in the country. This is a challenge to me and you.

Before you study another method of assessing Environmental Health Practice, please, attempt the following questions:

1. Briefly explain the concept of assessment of Environmental Health Practice.
2. List 2 reasons for Environmental Health Practice.
3. Explain the meaning of Routine Sanitary Inspection of Premises.

Well-done, you can now proceed to read and learn about Environmental Impact Assessment (EIA).

3.1.4 Environmental Impact Assessment (EIA)

This is one of the main methods of assessing Environmental Health Practice. Environmental effect can simply be defined as any alteration of the environmental components. For an Environmental Impact Assessment (EIA), an effect is a process that affects the ecological system and that is set in motion or accelerated by the project, plan or policy under study.

The objective of their identification in an EIA is the recognition of the links between the sources of perturbation (disturbance) and the final consequences with eh goal of assessing any variations induced (Olorunda et al, 2007).

Environmental Impacts of a project are those resultant changes in environmental parameters, in space and time compared with what would have happened had the project not been understudied. The parameters may be any of the type of environmental receptors (i.e. air quality, water quality, noise level etc.).

According to Munn (1979) Environmental Impact Assessment (EIA) can be described as a process for identifying the likely consequences that could arise

from a developmental activity and which could have direct or indirect adverse consequences on the health of the people living in the geographical area. Environmental Impact Assessment (EIA) was established by Decree No. 86 of 1992 in Nigeria.

3.1.5 Environmental Auditing

I want you to note that Environmental Impact Assessment (EIA) is for proposed project and NOT for existing project. You can therefore not proposed EIA for a project that is already in place, this you have to assess through Environmental Auditing (EA).

Environmental Auditing aims at assessing compliance of proponent with Environmental Impact Statement (EIS) recommendations or standard prescribed. It can also involve comparing actual outcomes with predicted outcomes and can be used to assess the quality of production and the effectiveness of mitigation. Environmental Auditing has component which involves or requires checking the environmental performance of the existing project at regular intervals. It is this regular checking of the project that constitutes environmental auditing. I hope you are following the trends of this unit 5?

I want you to note that Health Impact Assessment (HIA) and Environmental Health Impact Assessment (EHIA) are derived from or are the offshoots of EIA.

- Health Impact Assessment (HIA) – What is it? Is the stock taking or evaluation of the overall or marginal gains and or deficiencies in the total wellbeing or aspects of health status of a defined population as a

result of health programs, natural occurrences or other manmade interventions of social, economics, political, engineering or ecological, scope such gains or deficiencies can be measured in terms of longevity (mortality), wellness and health promotion (morbidity) and productivity (Abanobi, 1999).

- On the other hand, Environmental Health Impact Assessment (EHIA) can be defined categorically, in precise terms as a systematic process to identify, predict and evaluate the environmental health effects of proposed actions and projects (Brown, 1998). It is also defined as a means of assessing the health related problems deriving from the environment and health related impacts of policies and other interventions that affect the environment in ways that take account of the complexities, interdependencies and uncertainties of the real world. As, it takes a broad and inclusive concept of both the Environment and Health.

Whenever they are appropriate, social, cultural and health effects are integrated as a core aspect of Environmental Health Impact Assessment (EHIA) particular attention is given in Environmental Impact Assessment and Health Impact Assessment (HIA) practice of preventing, mitigating and offsetting the significant adverse effects of proposed undertakings (Fullerk, 1999).

You would have noticed that the lines of demarcation have slight differences between Health Impact Assessment (HIA) and Environmental Health Impact Assessment (EHIA). Both of them are more specific on the health of man in the environment and how man himself is impact on the environment.

4.0 CONCLUSION

In this unit, you have learnt the concept and why you should assess Environmental Health Practices. The various methods of assessing environmental health practice were discussed with emphasis on the similarities and differences between Health Impact Assessment (HIA) and Environmental Health Impact Assessment (EHIA) all of them within Environmental Impact Assessment (EIA). Environmental Auditing was also discussed. From these discussions, you would now be able to describe the concept and enumerate reasons for the assessment of environmental health practice you could also list and describe methods of assessing Environmental Health Practice. I am also reminding you of the need to keep accurate records of your practices as discussed in this unit.

5.0 SUMMARY

A summary of the major points in this unit is that:

(a) The concept or the meaning of assessing Environmental Health Practice (EHP) described.

(b) Reasons for assessing Environmental Health Practice were enumerated.

(c) The following methods of assessing Environmental Health Practice were listed and discussed.

i. Routine Sanitary Inspection of Premises

ii. Data Collection
iii. Record keeping
} Geographical Information System (GIS)

iv. Environmental Impact Assessment (EIA)

v. Environmental Auditing

vi. Health Impact Assessment (HIA)

vii. Environmental Health Impact Assessment (EHIA)

6.0 TUTOR MARKED ASSIGNMENT (TMA)

(1) Briefly describe what it means to assess Environmental Health practice.

(2) List 2 reasons for assessing Environmental Health practice.

(3) List 4 methods you can use to assess Environmental Health practice.

7.0 REFERENCE/FURTHER READING

Amadi, A.N. (2009). *Modern Environmental Sanitation* (1st Edition) Ugooma Printing and Publishing Company Limited, Owerri.

Barrow, C.J. (1995). Development and the Environment (1st Ed.). New York: Longman Groups Ltd.

Olojoba, A.O. (2009). Occupational Safety Services and Public Health (1st ed.). Ughelli: Ama Ohoror Printing Press Coy.

Olorunda, O. et al (2007). *Monitoring and Modelling Techniques of Environmental Pollution* (1st ed.). Akure: His Mercy Publishers.

Unit 6: Skills and Roles of Environmental Health Practitioners

Contents

1.0 INTRODUCTION

Unit 3 which you are about to learn shall build on your understanding of unit 2 which is the "concept of methods of assessing Environmental Health Practices." This unit shall teach you the necessary professional skills that you should acquire to practice or carryout your functions. Your roles will also be enumerated and explained. This will help you in no small way to carry out your functions without shirking your responsibilities or usurping the roles or functions of other similar professionals. It will also prevent duplication of function.

It is therefore very important, that you pay close and maximum attention to this unit. You can only be called a professional if you have the necessary professional skills. Please, strive to achieve the underlisted objectives:

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain the ordinary meaning of the word 'skill'
- describe the skills needed by Environmental Health Practitioners
- list the roles of Environmental Health Practitioners

3.0 MAIN CONTENTS

3.1 Definition of the word 'skill'

You will recollect that in Module 1, unit 3.2.2 you learnt something on the word technology which means art, craft or skill i.e. knowing how to do something. Skill means ability to do something having mastered the technique(s) of doing such thing.

For instance, if you know the procedures and techniques of carrying routine sanitary inspection of premises, or you know the procedure or the techniques of taking water samples for bacteriological examination or for chemical analysis. You must have

gained those skills before you can perform the functions. That is what is meant by skill. Even then, we have different types of skills viz:

3.1.1 Theoretical skills

These are the skills you have to learn by attentively studying your notes. It forms the basis for practical skills. It is in the theoretical skills you will learn – what, how, when and why you are performing certain function or functions.

- **Cognitive domain**

It taxes your cognitive domain, because you will be required to recollect, definitions, concepts and relevant examples.

- **Affective domain**

Here your keen interest in the profession is taken into consideration which is a function of your ability to be very creative, discretional, efficient, effective health professional.

3.1.2 Practical skills

This is the domain of psychomotor skill. For instance, when you must have learnt theoretically how to construct a beehive or a bar less incinerator. You have to put the theory into practice i.e. reality of life by practically constructing any of the said incinerators, from the foundation to the end.

3.2 Skills needed in Environmental Health Practice

Skills needed in Environmental Health Practice by environmental health practitioners. The skills you will need as Environmental Health Practitioners are functions of your roles.

For instance, an Environmental Health Officers will require as many skills or techniques to carry out the various functions in environmental health. You will

remember, that environmental health is the control of all those functions in man's physical environment which exercise or may exercise deleterious effects on his/her health. In other words, you must have adequate professional skills to make water, air, housing, food substances etc. fit, suitable or safe for humans.

Before you learn something on your roles as environmental health practitioners, please attempt the following questions:

1. In your own words – explain the meaning word 'skill'
2. List 3 types of skills you know.

Now you can proceed to learn something on your roles as environmental health practitioners.

3.3 What are roles?

Roles can be described as a part to be played or what one has to contribute as part of a whole to make a whole. In carrying this part, you are performing your functions or you are performing your expected role.

3.3.1 Roles of Environmental Health Practitioners.

Environmental Health practitioners through a concerted or joint efforts have to perform the under-listed roles at varying degrees. The Environmental Health Officer Registration Council of Nigeria (EHORECON) listed the duties or roles of Environmental Health Officer from that suggested by World Health Organisation. This world body has identified and listed the roles of EHOs to include:

- Waste management
- Environmental health control of housing and sanitation
- Epidemiological investigation and control

- Protection of recreational environment
- Radiation control and health
- Control of frontiers, air and seaports and border crossing
- Pollution control and abatement
- Educational activities (health promotion and education)
- Promotion and enforcement of environmental health quality and standards
- Water resources management and sanitation
- Pest and vector control
- Food hygiene and safety control
- Occupational health and safety
- Air quality management
- Environmental health impact assessment (EHIA)
- Noise control
- Collaborative efforts to study the effects of environmental hazards (research)

When most or all of these roles are effectively and efficiently performed by Environmental Health practitioners, all ‘factors’ or ‘conditions’ that may be injurious to health are prevented, controlled or effects mitigated.

It is equally relevant to give a typical example of a role among many roles that Environmental Health practitioners have to play. For instance, the World Health Organisation Expert Committee on Public Health Aspects of Housing (1961) states clearly that Environmental Health Practitioners have a leading role to play among the key actors in building regulations and town planning.

The reason is that, as part of their statutory duties in the field of preventive medicine, they have moral obligations to ensure clean environment consistent with national objectives. Therefore, they must focus attention on problems of housing deficiencies that pose the greatest risks to majority of the human population.

First they must assess the sanitary quality of housing, second, they must establish abatement programmes to remove hazards; third they evaluate or measure the effectiveness of the remedial actions.

Based on the above and in line with the National Environmental Health practice Regulations (2007) and the National Policy Guidelines on House-to-house Inspection (2005), Environmental Health practitioners perform the following functions:

1. Sanitary Inspection of Building and other premises to detect and abate nuisances (hazardous conditions) that may endanger the health and lives of the resident;
2. Enforcement of sanitary (Environmental health) standards in buildings (both new and existing buildings) as provided in the laws and regulations.
3. The vetting of building plans for proposed building for necessary approval, including the continuous check visit to building under construction to ensure compliance with stipulated standards.
4. Assistance in physical planning/development of plans for a new building or existing building.

5. Ensuring that housing after construction is adequately, safely and hygienically maintained and used by occupants in accordance with the legal requirements.
6. Education and enlightenment of both private and public land developers on the importance of hygienic housing and the need to adhere strictly to regulatory standards.
7. Advice to government agencies and policymakers on their roles in enforcing housing laws, building regulations and standards.
8. Organise seminars and workshops for stakeholders on ways to promote housing and building sanitation.
9. Collaborate with town planners, architects, engineers, builders, land developers and other relevant stakeholder on ways of promoting better housing standard and building practices.
10. Conducting research as modern methods of housing appraisal and education of the public in the promotion and maintenance of healthy housing standard (WHO, 1961; WHO, 1967; Nnah, 2002; Zacchaeus, 2008; WHO, 1991, WAHEB, 1991; Amadi, 2011).

4.0 CONCLUSION

Judging from your performance in the test that you attempted in this unit, I could infer that you are able to achieve the 3 objectives listed for this unit. By now, you are able to define the word ‘skill’; you know we have theoretical and practical skills which also means techniques.

You could also identify your roles as one of the Environmental Health practitioners. This will help you a great deal in your understanding of unit 4 of module 2.

5.0 SUMMARY

The principal points learnt in this unit are:

(1) Definition of skill

(2) Types of skills

  (a) Theoretical skills (Cognitive and Affective domains)

  (b) Practical skills (Psychomotor domains)

(3) Skills needed by Environmental Health practitioners

(4) What are roles

(5) Roles of Environmental Health practitioners.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

(1) What is skill?

(2) Mention 2 types of skills.

(3) Define role.

(4) List 5 roles of Environmental Health Officers.

7.0 REFERENCE/FURTHER READING

Amadi, A.N. (2011): *Modern Environmental Sanitation* (1st ed.) Owerri: Ugooma Printing and Publishers Ltd.

Barrow, C.J. (1995). *Developing the Environment: Problems & Management*. Great Britain: Longman Scientific.

Conz, J.O. (1998). *Environmental Problem/Behavioural Solution*, California: Brooks/Cole Pub. Coy.

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Unit 7: Skills and Roles of Environmental Health Regulators

Contents

1.0 Introduction

This is the last unit of module 2 i.e. Environmental Health Practice. In order of logical sequence, definition of Environmental Health and tools for Environmental Health Practice was discussed in unit 1, followed by concepts of methods of assessment of Environmental Health practice in unit 2, skills and roles of environmental health practitioners was also discussed in unit 3. Unit 4 is intended to consolidate or bring together all that you have learnt in module 2. Environmental Health Regulators have vital roles to play in environmental management, they are stakeholders like Environmental Health Practitioners, hence the need for collaborative efforts. Please read on.

2.0 OBJECTIVES

At the end of this study unit, you should be able to:

- identify Environmental Health Regulators.
- list the skills of Environmental Health Regulators.
- enumerate the roles of Environmental Health Regulators.
- identify areas of collaborations between Environmental Health Practitioners and Environmental Health Regulators.

3.0 MAIN CONTENTS

3.1 Who is an Environmental Health Regulator?

An Environmental Health Regulator can be described as a person or group of persons or a corporate body who have concern for the environment and therefore, decided to protect environmental resources and prevent such resources from being abused in any form.

For instance, an Environmental Health Officer regulates environmental health through enlightenment and or enforcement programmes. He has the skills, the

knowledge and the professional competency to regulate environmental health. Other professionals that regulate environmental health include: Public Health Nurse, Occupational Hygienists and Scientific Officers among others.

Apart from professionals like the EHOs there are few individuals who can be called Environmentalists, they volunteered to protect environmental resources both living and non-living resources. Typical examples include – Late Ken Tsaro Wiwa and Late S.L. Edu.

We also have corporate and international bodies that are Environmental Health Regulators. We have the following among others:

3.1.1 Nigerian Environmental Study/Action Team (NEST)

The mission of NEST "is to empower people at all social and economic levels, for sustainable interaction with the environment". "NEST hopes to achieve its mission by increasing knowledge about the environment and sustainable development issues and by increasing the capacity of Nigerian to respond sustainably to issues".

3.1.2 Federal Ministry of Environment

The Federal Ministry of Environment regulates Environmental Health in Nigeria. It has many organs and agencies like NESREA that helps to regulate the components of the environment. The Federal Ministry of Environment also formulate environmental policies e.g.:

policy guidelines on solid waste management	January 2005
policy guidelines on school sanitation	January 2005
policy guidelines on sanitary inspection of premises	January 2005
policy guidelines on market sanitation	January 2005

policy guidelines on pest and vector control January 2005

The policies were designed to uniformly regulate environmental health.

3.1.3 EHORECON

Environmental Health Registration Council of Nigeria (EHORECON) also regulates environmental health in Nigeria. The Council registers Environmental Health Practitioners like Environmental Health Officer, Environmental Health Technologist, Environmental Health Technicians and Environmental Health Assistant. The Council also regulates the conduct of Environmental Health Service Providers in Nigeria like the cleaners, refuse contractors and those who carryout fumigation in premises. EHORECON was established in ACT 11 of 2002. It has the following mandate:

- to register all Environmental Health Officers in Nigeria
- to register all Environmental Health Providers in Nigeria.
- to determine the level and quality of education to be possessed by Environmental Health Officers and Environmental Health Service Providers.
- to enforce Environmental laws, rules and regulations.
- to sanction environmental offenders or defaulters.
- to train Environmental Practitioners.
- to collaborate with relevant stakeholders within and outside Nigeria for effective monitoring of the environment.
- to formulate policies and guidelines on environmental issues.

3.1.4 NESREA

In 1999 FEPA was scrapped and its functions taken over by the Federal Ministry of Environment. In 2007, the National Assembly established the National Environmental Standards and Regulations Enforcement Agency (NESREA), a parastatal of the Federal Ministry of Environment. NESREA Act repealed FEPA Act of 1988 and was established by Act No. 25 of 2007. NESREA's mandate includes the following:

- enforcement of environmental standards regulations, rules and laws, policies and guidelines.
- protection and development of the environment, biodiversity conservations and sustainable development in Nigeria.
- liaison with stakeholders within and outside Nigeria.

OTHERS — There are various laws, rules and regulations that are used in regulating Environmental Health. They are Environmental Health Regulators. They provide the framework and legal authority within which various professionals, corporate bodies will act or perform their duties. Environmental Regulators cannot operate without a law backing them. We have many Environmental Health Regulations in Nigeria. They include:

3.1.5 Air pollution laws and regulation

The existing air pollution laws and regulation in relation to environmental protection in Nigeria can be classified into two distinct strata thus:

1. the pre – 1988 laws
2. the laws enacted since 1988.

What these two groupings share in common is that each of the existing environmental protection laws in specific provisions prohibited certain

activities or conduct which are detrimental to the wholesomeness and safety of the environment and impose varying sanctions (penalties) for violation or non-compliance.

(A) The pre 1988 laws

The following are the list of the pre 1988 Federal statutes:

- Criminal Code ss. 245-247
- Petroleum Decree, 1969 ss. 2, 7 & 8.
- Petroleum (Drilling and production) Regulation, 1969.
- Minerals Act, 1915
- Public Health Act, 1958
- Oil Pipelines Act, 1956 s. 17
- Explosive Act 1964
- Nigerian Atomic Energy Commission Decree, 1976
- Associated Gas Re-Injection Decree, 1979
- Associated Gas Re-Injection (Amendment) Decree, 1985
- Forestry Act, 1937
- Quarries Decree, 1969
- Land use Decree, 1978
- Factories Decree, 1987.

(B) Laws enacted since 1988

The important air pollution control laws and regulation enacted since 1988 include:

- Harmful Wastes (Special Criminal Provisions etc.) Decree No. 42, 1988
- Federal Environmental Protection Agency Decree No. 58, 198 as amended to Federal Environmental Protection Agency Cap. 131, Law of Federation of Nigeria (Abatement) Act, 1992.
- National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulations 1991. ss 1-9.
- National Environmental Protection (Management of Solid and Hazardous Wastes) Regulations, ss. 1-15 of 1991.
- Environmental Impact Assessment Decree. No. 86 of 1992.

Added to this, are the various Laws and Edicts by different governments of the state to complement the federal statues.

With these various laws, rules and regulations in place before 1988, you will realise that we have more regulations to control Environmental Health but the political will to do so is very weak.

3.1.6 International Environmental Regulations

These include:

- UN Law of the Sea (1986)
- UN Convention on Biological Diversity (1992)
- UN Frame Convention on Climate Change (1994)
- UN Convention to Combat Desertification (1997)
- Stockholm Convention on Persistent Organic Pollutant (2001, 2004).

3.2 The Skills of Environmental Health Regulators

The skills of Environmental Health Regulators cannot be different from the skills of Environmental Health Practitioners which were enumerated in unit 3. However, individuals Environmental Health Regulators who are not professional should have special ability or natural endowment to have passion or deep concern for the environment. Like we found in Late Ken Tsaro Wiwa who laid down his life in defence of his environment, Late Chief S.L. Edu from Lagos State used his personal money to buy a large acre of rainforest in Eastern Nigeria in order to maintain the vast biological diversity of the forest when the then Eastern government wanted to clear the vast forest for a project. The forest is still intact till date.

A law that will regulate the Environmental should be potent with enabling power. Environmental laws, rules and regulations that are weak shall provide loopholes for contraventions.

3.3 The Roles of Environmental Health Regulators

The roles of Environmental Health Regulators include:

- Regular monitoring and surveillance of the environment for the purpose of detecting conditions or factors that may be dangerous to health.
- Making effort or collaborating with relevant stakeholders to abate or get rid off of environmental hazards.
- Carrying out enlightenment, awareness and sensitization programmes on environmental matters.
- Undertake research programmes.
- Undertake educational programmes in form of workshops, seminars and symposia.

3.4 Area of Cooperation between Environmental Practitioners and Environmental Health Regulators

Environmental Health Practitioners and Environmental Health Regulators in some instances, they are different especially where professionals like Environmental Health Officers will serve as practitioners and at the same time as Regulators.

In another instance, the various State Environmental Protection Agencies or Commissions have organs or facilities for enlightenment, enforcement and regulations. NESREA, EHORECON can educate, enlighten and enforce environmental laws, rules and regulations to protect humans and environment.

However, such bodies like Nigerian Environmental Study/Action Team (NEST) can carryout enlightenment, sensitization, education programme but cannot formulate environmental laws, rules and regulations and cannot also enforce regulation nor abate environmental hazards. This is where the issue of collaboration comes in.

4.0 CONCLUSION

As mentioned in the introduction to this unit, the unit consolidates the contents of units 1, 2, and 3 because it is in unit 4 that you learnt about who an Environmental Regulators are, their roles, skills and their relationship with Environmental Practitioners.

This unit also dealt to a certain extent with Environmental Health Regulations at State, Federal and International levels. As an Environmental Practitioners or Regulators, you cannot perform any of your professional duties outside the laws. This underscores the need for you to be conversant with relevant laws and regulations.

5.0 SUMMARY

In unit 7 of module 2, important points discussed include:

- Who are Environmental Health Regulators?
- What are the skills and roles of Environmental Health Regulators?
- Regulatory bodies like:
  (a) The Federal Ministry of Environment.
  (b) The EHORECON
  (c) The NESREA
  (d) The NEST
- You have learnt about the various treaties or Environmental Convention of the United Nations.
- Also in this unit, you learnt about the collaboration between Environmental Health Practitioners and Environmental Health Regulators.

6.0 TUTOR MARKED ASSIGNMENT (TMA)

1. In your own words describe what is meant by Environmental Health Regulators.
2. List 5 skills that an Environmental Health Regulator should possess.
3. List 5 roles of an Environmental Health Regulator.
4. List 3 Environmental Regulatory bodies in Nigeria.
5. Enumerate 5 United National Environmental Conventions.

7.0 REFERENCE/FURTHER READING

EHORECON: *National Guidelines on Environmental Practice in Nigeria* (2007).

Federal Ministry of Environment: *National Policy on Integrated Disease Surveillance and Response* (IDSR) (2005).

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Module 3 IMPLEMENTATION, REGULATION AND ENFORCEMENT

Unit 8 Implementation, Regulation and Enforcement of different Environmental Health Components at Homes and Schools.

Table of Contents

1.0 INTRODUCTION

Emergencies and disasters can occur anywhere in the world, affecting human health, people's lives and the infrastructure built to support them. Environmental problems arising from badly managed environment are connected to their effects on the physical, biological and social environment that pose a threat to human health, well being and survival, shelter, water sanitation, disease vectors, pollution etc. This is why module 3 which is the last in this course discusses on how to implement, regulate and enforce environmental services in relation to different environmental health components so as to avoid emergencies and disasters.

Like others, you are part of the environment, your property are there in the environment, you should therefore not take the issues of implementing, regulating and enforcing necessary laws, rules and regulations to sanitise the environment lightly.

Unit 1 of module 3 will teach you how to plan, strategise for effective implementation, monitoring and evaluation of your services. You will also learn how to apply relevant environmental laws, rules and conventions to regulate environmental health components and also how to carry out enforcements on defaulting environmental components. This is the particular area where your skills, knowledge and professional expertise and competence are highly needed. Happy reading.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain the concepts of implementation, regulation and enforcement of environmental health components.
- plan the implementation, regulation and enforcement of environmental health components of:

(a) Homes

(b) Schools.

- execute the implementation, regulation and enforcement of environmental health components of:

(c) Homes

(d) Schools.

3.0 MAIN CONTENTS

3.1 The concept of implementation of environmental health components

Having prepared yourself by fully being conversant with your professional skills, knowledge and the necessary tools you need for your services, you need at this level to put in place (i.e. implement) all what you have learnt in Modules 1 and 2. In other words, implementation means to put 'in place' or to 'put into use'. However, you cannot put in to use your professional knowledge and skills abruptly, you need prudent planning.

The central theme of planning is to organise an activity or function in a disciplined way and to evolve (create) guidelines for an organisation to achieve a better result. Planning is the most valuable technique to coordinate the efforts of your department to implement environmental health component at homes and schools.

- **Regulation**

  When you regulate, you control, moderate, arrange, direct, guide or manage environmental health components in such a way that they will not pose any threat or danger to public health. This will remind you of the concept of environmental health itself i.e. the management or control of all deleterious effects, that are or may be dangerous to lives and properties. This is what you

are supposed to do in this case of homes and in schools. You have gotten all it takes to regulate environmental health at these levels.

- **Enforcement: What is it?**

  Enforcement is the application of a set of legal tools formal and informal designed to impose legal sanction to ensure that a definite set of requirements is complied with. In other words, compliance is the ultimate goal of any enforcement programmes.

  It is a state in which (in this context) environmental requirements are achieved and maintained. Evolution of enforcement strategies is woven around the premise that for any regulatory situation there are three groups of people:

  (a) Those who will violate no matter what (The Recalcitrant)

  (b) Those who will comply no matter what (The Civil)

  (c) Those who will comply only if violators have been punished (Stubborn). Majority of the population falls in this last category.

3.1.1 Implementation, regulation and enforcement of environmental health components at homes

Having learnt what implementation, regulation and enforcement stood for or meant, you are now to implement, regulate and enforce environmental health at homes, etc. You should avail yourself of the following sanitary inspection of premises forms approved by the Federal Ministry of Environment 2005:

(a) Form E.S.1 Sanitary Inspection of Premises Form (Appraisal)

(b) Form E.S.2 Sanitary Inspection of Premises Form (Routine)

(c) Form E.S.3 The Call Back Form

(d) Form E.S.4 Notice to Abate Nuisance Form

(e) Form E.S.5 Component Form

(f) Form E.S.6 Complaint Acknowledgement Form

(g) Form E.S.7 Closing Order Form

(h) Form E.S.8 Withdrawal of Prohibition Order Form

(i) Form E.S.9 School Sanitation Form

(j) Form E.S.10 Market Inspection Form

(k) Form E.S.11 Abattoir Inspection Form

(l) Form E.S.12G Inspection of Private Slaughterhouse Form

(m) Form E.S.12R Inspection of Private Slaughterhouse Form

(n) Form E.S.13 Certification of Registration of Food and Premises Form

(o) Form E.S.14G Inspection of Pest and Vector Control Outfit Form

(p) Form E.S.14R Inspection of Pest and Vector Control Outfit Form

(q) Form E.S.15 Environmental Sanitation Report Form.

The purpose of housing is to minimise physical and biological hazards in the environment and to promote the health and wellbeing of the inhabitants. Houses, shall therefore be constructed, maintained and occupied in a manner as to ensure optimal physiological and psychological need of the occupants (NEHPR, 2007). Take note of the words – 'constructed', 'maintained' and occupied. They summarise the procedure of building construction from foundation till when occupied and put into use. You should therefore follow the following steps to implement and regulate environmental health at homes: visit the premises (maintain necessary ethical conduct).

(a) Demand for the approved building plan of the premises (House) to confirm whether or not it conforms with building regulation requirements e.g. access, building line, setback, drainage system, toilet facilities, ventilation, water

supply, waste management (Ref. pg 6 – 13 FME Policy Guidelines on Sanitary Inspection of Premises, 2005).

(b) Record your findings on the appropriate form sanitary inspection of premises forms.

(c) Where you need to issue an abatement notice for structural nuisances (i.e. defects or defaults on building). Write the notice properly, correctly and appropriately.

Regulation and Enforcement

Regulation and enforcement of environmental health components at homes begin whenever Abatement Notice (A/N) is issued and served on appropriate defaulters or offender(s).

- Carry out your follow up activities to verify compliance with the orders of abatement notice.
- On non-compliance, apply to a court of law for issuance of Court Summons.
- The court bailiff to serve the court summons on the offender(s).
- Appear in court to defend your case.
- On successful defence of your case, the court may on application:
  (1) Make a summary order or nuisance order – section 8 (2) of the Public Heath Law of Nigeria. The Nuisance order may be:
    — An abatement order,
    — A prohibition order,
    — A closing order, or
    — A combination of such orders.
- Again, verify compliance with any of the orders issued. For instance, if the court invoke a closing order on a premises for certain contravention, visit the

premises to ascertain if such contravention(s) has or have been rectified. In which case the closing order is removed by the court at your instance.

- If the owner or occupants of the house refused to comply with the nuisance order, you should notify the court again. Take note that the owner or occupants have defaulted an Abatement Notice now he/she or they have defaulted a Nuisance order.
- On your request, the court shall now forcibly carry out the contents of the Nuisance order e.g. demolition of a dilapidated building or construction of a sanitary latrine. The cost of such activity shall be borne by the owner(s) of the house.
- Power to sell premises. Section 9(1) of the Public Health Laws of Nigeria (Aug. 1957) says: "If an order of the court or notice of the health officer for the abatement of a nuisance by the occupier or owner is not complied with because the occupier or owner cannot be found or because the occupier or owner is imprisoned, the health officer may apply to the court for an order to have the nuisance abated, and all costs and expenses incurred in connection therewith shall be paid to the health officer by the occupier or owner and may be recovered as a debt."

(2) "If no owner or occupier can be found or if the expenses are not paid within six months after the completion of the abatement of such nuisances, the court may order the premises upon which the work shall have been done or any part thereof or any movable property found thereon belonging to such occupier or owner to be sold to defray the said cost and expenses".

(3) "The rules of court relating to sales in execution of decrees shall mutatis mutandis apply to such sale."

Thus the implementation, regulation and enforcement of environmental health components are carried out at homes.

3.1.2 Implementation, Regulation and Enforcement of Environmental Health Components in Schools

Implementing, regulating and enforcing environmental health components in schools are not all that distinctly different from how and what is done at home level. Although schools are not residential premises, but healthful school environment, in terms of safety, sanitation and beauty maintained in all educational institutions in your area. This is because the environment in which the teachers teach is as important as what is done there and a healthy environment contributes reciprocally in no small measures to the health of pupils/students and staff.

Strategies for Implementing School Sanitation (Environmental Health Components)

- Advocate for routine sanitary inspection of schools.
- Revise and update school curricula to include sanitation and hygiene education
- Orientate all teachers and students on the significance of sound school sanitation and hygiene education.
- Educate school food vendors on sound hygiene behaviours.
- Establish environmental sanitation committee in schools.
- Organise school competitions and reward winners.
- Develop appropriate IEC materials on school sanitation.
- Foster the establishment of environmental sanitation clubs in schools.

- Conduct research into the various factors affecting sound school sanitation (Policy Guidelines on School Sanitation FME, 2005).
- Regulation and enforcement of environmental health components in schools through:
    1. Routine sanitary inspection of schools in your areas of jurisdiction.
    2. Use the appropriate sanitary inspection forms, to record all complaints or deficiencies.
    3. Consider the following:
        (a) site of the school
        (b) size of the school
        (c) playground of the school
        (d) school buildings
        (e) sanitary facilities – water supply, waste management, toilet facilities, food sanitation etc.
    4. The procedure for school inspection is systematic starting from:
        (a) External parts – e.g. overgrown weeds, drainage system, playground etc.
        (b) Internal parts – floors, walls, roof and ceiling, passages, classrooms, dormitories, health post or First Aid room etc.
        (c) General – Your comments etc.
    5. At the conclusion of the inspection, the findings and recommendations are discussed with the head of the school and relevant staff.

Enforcement

Follow the same procedures of:

- Issuance of Abatement Notice or
- Court Summons or
- Apply for Court or Nuisance Order which may be:
  - — a prohibition order
  - — a closing order
  - — a abatement order or
- You need to do the follow up to verify compliance or non-compliance with the Nuisance Order.
- Where the school authority refuses to comply with the Nuisance orders, the Court through you, would forcibly carry out the order of the court as explained.

4.0 CONCLUSION

School inspection falls under Healthful School Environment which is a component of environment health. You should direct your conscious efforts towards well organised programme of cooperation of home, school and community in matter affecting the health of the pupils/students. This is because the pupils of school are their homes and communities of school. In other words, most of the health needs and problems which we often find among the pupils are a mirror held against the faces of their homes and school.

Thus, your effort in the implementation, regulation and enforcement of environmental health components in schools shall have a ripple or chain or multiplying effects on homes (housing) and the communities that accommodates the students.

5.0 SUMMARY

The principal points discussed in this unit include:

1. The conceptual definitions of.

   (a) Implementation, (b) Regulation, and (c) Enforcement.

2. Implementation of environmental health components at home and schools.

3. Enforcement of environmental health components at home and schools.

4. A list of approved sanitary inspection forms.

   (a) Procedures for: (a) House inspection (b) School inspection.

5. Application of laws to logically and conclusively enforce compliance.

6.0 TUTOR-MARKED ASSIGNMENT (TMA)

1. Explain the following in your own words:

   (a) Implementation

   (b) Regulation

   (c) Enforcement.

2. Enumerate the procedure of inspecting a residential building.

3. List 5 components of internal part of classroom you will inspect.

4. Explain the following:

   (a) Abatement Notice (A/N)

   (b) Court Summons

   (c) Court Orders

   (d) Power of the Court of Sell Premises.

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Unit 9: Market places, Recreational and Hospitality facilities

Table of Contents

1.0 INTRODUCTION

Implementation, regulation and enforcement of Environmental Health components at homes and in schools which you learnt in unit 1 of this module is not the ultimate, you need to do the same thing in market, recreational and hospitality facilities because all of these are parts of the Environmental Health components and they are very important in our lives. Implementation, regulation and enforcement at these three places will be the focus of this unit. The principles of carrying out the implementation regulation and enforcement are the same as what you have learnt in unit 1.

Markets for instance, occupy an important position in our lives particularly the women folks. Markets usually attract large gathering of buyers, sellers and especially pre-school children who have accompanied their mothers to markets. The interaction between buyers and sellers in markets provide opportunities for the spread of communicable diseases with considerable potential to become endemic and graduate to epidemic dimensions.

Equally, the importance of recreational facilities cannot be over-emphasised. Exercise is the oldest single approach to physical health, mental and social wellbeing of man.

Also, we cannot remove the influence and impact of hospitalities like hotels on human lives. Job mobility, economic, social activities and tourism have made hotel services to become compulsory for many people. Hence, you need to implement, regulate and enforce Environmental Health component to all these aforementioned places. You will learn a lot, if you can achieve the following objectives.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain the concepts of market, recreational and hospitality facilities.
- describe the relationship between these facilities.
- plan the implementation of Environmental Health components at the facilities.
- execute the regulation and enforcement of Environmental Health components at these facilities.

3.0 MAIN CONTENTS

3.1 The concept of market places, recreational and hospitality facilities

Markets are places where we buy and sell. They are age-long institutions. We have traditional and modern markets, they hold on daily basis or periodically on specific days. In terms of impact on the environment, markets in Nigeria may be classified as small, medium and large. Small markets usually serve local communities. They are usually easy to keep clean at the end of the day's transaction.

Medium markets, on the other hand serve large communities and interactions and generation of wastes are more pronounced. Cleaning is not very easy in medium sized markets at it is in small markets.

Large markets are usually central and vast with stalls and open places for transactions. Large markets promote intra/inter township, states and in some cases national trading. Adequate provision of sanitary facilities is required in markets irrespective of size.

The concept of recreational facilities

Recreation serves as an important component of our contemporary society and has become a fundamental and universal human need as man has found outlets in its participation for self-expression and self-satisfaction.

Recreation with its concepts has some words which make it functional and these operative words are: play, leisure and free time, which sometimes are used interchangeably.

Recreation is activity through relaxation after hours of work and thus thorough recreation provides the self-confidence that enables the participants to develop their full potential. Participation as an escape mechanism prevents mental, physical and psychological stress, as people or the participants are recreated.

The conditions or factors at recreational facilities must be conducive and should not pose any hazards or danger to health. People can recreate in sporting or games activities, depending on individual interest and capability.

The concept of hospitality facilities

Hospitality facilities are places that can provide comfort and welfare for individuals, in many cases, it substitutes our homes i.e. home away from home. Nowadays, economic, political, social, educational activities including tourism are encouraging the proliferation of such hospitality facilities like hotels of all grades or categories, guest houses, restaurants, etc.

In some cases, we have a situation where an hospitality facility is serving as a market place, place of recreation and also an hospitality facility such as we have in big or 5-star hotels.

I want you to note the correlation between market places – where you can buy or sell, recreational facility where you can have maximum comfort and welfare, one dovetail into the other.

3.1.1 Implementation of Environmental Health components at market places, recreational and hospitality facilities

- **Implementation of environmental health components at market places**

In unit 1 of this module, you were able to implement, regulate and enforce environmental health components of homes and in the schools. I want you to carry or transfer the same principles you used or employed to unit 2 (3.1.1).

Implementing environmental health components of market places simply means market sanitation. It has similar procedure processes or steps as what you have in sanitary inspections of houses.

- **Procedure for Routine Market Inspection**

Routine market inspection shall be scheduled and the opportunity used to educate the traders on market sanitation and hygiene during a general post inspection debriefing by so doing, you are implementing environmental health facilities in the market.

On visiting a market, you will introduce yourself and present your identity card to the market manager or the head of market who will pilot or accompany you during the inspection. The involvement of the market representatives in the inspection process and the general debriefing shall promote the principles of involvement and participation.

Using the market sanitation inspection form, all deficiencies or nuisances found in and around the market place are noted. At the conclusion of the inspection, the findings shall be discussed with the representatives of the various traders groups e.g. during a general meeting called for the purpose and they shall be allowed to suggest ways of abating or correcting the nuisances.

The procedure for market inspection is systematic viz:

- External inspection of the market
- Internal inspection of the market.

The general conditions of access roads, drainage system, toilet facilities, floors, walls ceiling, ventilation and lighting.

- **Implementation of environmental health components at recreational facilities**

You need to adopt the same approach by introducing yourself and showing your identity card to the manager of the recreational facility. Imagine you want to inspect environmental health facilities at Polo club, Tennis club etc. you must comport yourself with adequate preparation and display of high professional skills and competence which you have learnt in modules 1 & 2 of this course. The reason being that people of high integrity e.g. past head of state, head of service of the federation, vice chancellors etc. are usually members of these recreational clubs.

You need one or two authorised persons to guide and pilot you as you go on inspection of the facilities. Record your findings on the approved inspection forms and discuss them with the chairman or members of the executive of the recreational facilities.

You must pay close attention to:

1. Access roads
2. External parts of the facilities
3. Internal parts of the facilities
    - Types of recreational facilities
    - Spacing / spaces
    - Ventilation and lighting
    - Water supply
    - Toilet facilities
    - Safety devices etc.

- **Implementation of environmental health components at hospitality facilities**

I hope you are getting used to the method of implementing environmental health components at homes, schools, market places and recreational facilities.

You will find it easy to implement environmental health components in an hotel – i.e. big or five-star hotel like NICON Hilton, Eko hotel, Airport hotel, Premier hotel and all those in that category or below it.

Again, you need to uphold the ethics of your profession in terms of your mode of approach, dressing and conduct.

A hotel is a house, and its inspection should follow the systematic procedure of sanitary inspection of a residential building. Taking note of:

1. The name and address of the owner of the hotel.
2. Address of the hotel.
3. Date of inspection.
4. Access and intra roads
5. Drainage system
6. Health safety devices
7. Signs of pest infestation
8. The conditions of the walls, floors and ceiling
9. Methods of waste management
10. Source of water supply etc.

Your findings are recorded on approved inspection forms and discussed with the appropriate authority for necessary action.

3.1.2 Regulation of environmental health components at market places, recreational and hospitality facilities

Before going into this, please attempt the following questions:

1. Explain what is meant by market places
2. What is recreation?
3. With concrete examples, explain what is meant by hospitality facilities.

Notwithstanding that during market, recreational or hospitality facilities inspection, you are supposed to discuss your findings with the appropriate persons or authority, which is not to suggest that you should compromise your professional judgement. Where you are to serve Abatement Notice (A/N), it should be written and served accordingly.

Routine inspection of environmental health facilities is to monitor and regulate laid down standard for sanitary facilities. You are there to inspect, implement and regulate such facilities.

Your professional judgement should be without bias, prejudice or malice.

3.1.3 Enforcement of environmental health components at market places, recreational and hospitality facilities

Be informed that compliance with environmental health rules and regulations is always a problem among corporate bodies who own this markets or recreational or hospitality facilities, hence, you need to be resolute, honest and dedicated to maintain your integrity and personality. It is also a problem getting government or federal, state or local government level to obey sanitation laws. In Nigeria, most if not all our big local markets are under the authority of the local government.

However, the law is no respecter of anybody, therefore, in enforcing sanitation laws in the markets, recreational facilities and hotels, you should:

1. prepare and serve the Abatement Notice; if the owners/occupiers failed to comply with the terms of abatement notice
2. apply for court summons. If found guilty but again failed to carry the court rulings.
3. apply for Court order or Nuisance order e.g. section 8(2) of the Public Health Laws of Nigeria.
    - Abatement order – to abate nuisance
    - Closely order – to close down the place
    - Prohibition order – to prohibit the sale of certain goods/items

- Combination of closing and prohibition order

If the offender or offenders again refuse to comply with the court order:

4. inform the court accordingly and apply for permission to effect the Court order e.g. demolition of dilapidated building and destruction of large consignment of contaminated food items e.g. fish or frozen turkey.
5. Make necessary arrangement to effect the Court order you may need to apply for police protection.
6. When the assignment has been performed, write your report to the Court.
7. You need to apply to claim all expenses incurred when carrying the assignment which will be fully borne by the owner or owners or occupiers of such facilities – part 2 Nuisances (Section 9).

Thus, you would have enforced environmental health components or facilities of market places, recreational and hospitality facilities.

4.0 CONCLUSION

In this unit, you have learnt about the concept of market places, what recreation means and the meaning of hospitality facilities. You also learnt about the principles guiding the implementation of environmental health components in market places, recreational and hospitality facilities. You should also remember the step by step procedures of regulating and enforcing environmental standards of these components of environmental health.

5.0 SUMMARY

A summary of the major points in this unit is that:

- Market was defined as a place where buying and selling takes place.
- There are components or types of markets.
- To recreate means to play, have a free time or a leisure.
- Recreational facilities promote healthy living.
- Hospitality facilities include hotels, guest houses and restaurants.
- We need hospitality facilities for our economic, social, political, educational activities and tourism.
- These environmental health components should be well implemented not only by routine sanitary inspection but also by implementing such strategies of forming e.g. market committee or maintain constant link with the stakeholders of these facilities as a sustainable approach.

In spite of all efforts people will contravene or break environmental health laws, hence the need to evoke or make use of the relevant laws, rules, regulations, and policy guidelines to regulate and enforce environmental health standards in these facilities.

6.0 TUTOR-MARKED ASSIGNMENT (TMA)

1. Explain the concept of a market place.
2. Define the word recreation.
3. With relevant examples, explain what hospitality facilities mean.
4. Briefly explain how you will ensure the sustainability of implementation, regulation and enforcement of environmental health standards in a market place.

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Unit 10 At Workplaces/Industries

Contents

1.0 INTRODUCTION

In this unit, you are going to learn about occupational health as a component of Environmental Health and how you will implement, regulate and enforce its provisions in workplaces and industries.

Occupational health by definition is concerned with health in its relation to work and the working environment. Originally it was limited to diseases and injuries attributed to the working environment, the work itself or conditions of work. It used to apply to factories/industries and similar workplaces.

Now its scope has widened to include all workplaces e.g. agriculture, mining, transport etc. Within the occupational health are occupational services which as defined by International Labour Organisation means

"A health service entrusted essentially with preventive functions and is established in or near a workplace and responsible for advising the employers, the workers and government on:

- requirements for a safe and healthy working environment;
- the adaptation of work to the capabilities of industrial workers in the light of their physical and mental state of health;
- the requirements of a working environment which will facilitate optimal physical and mental health in relation to work."

I want you to note from the onset what is occupational health, what it entails and your own part as a preventive officer. All of these are embedded (inside) in the definition. This will serve as a guide as you read on.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define a workplace, an industry or a factory.
- state reasons for implementing, regulating and enforcing environmental components in workplaces and industries.
- implement environmental health components in workplaces and industries.
- regulate and enforce environmental health components in workplaces and industries.

3.0 MAIN CONTENT

3.1 What a workplace is:

A workplace can be defined as a working environment where a worker or workers is/are gainfully employed to perform defined artisan, vocational, skilled or professional functions. A workplace may be an office, workshop, a farm, an industry or a factory.

3.1.1 An industry

An industry can be defined as a workplace designated for the manufacturing of ***goods*** e.g. household materials, building materials, transport materials etc. Some industries produce ***services*** as we have in the health, defence, agriculture, education industries.

There are large modern industries and small traditional ones. Some are formally established and licensed while others belong to the informal sector. The informal sector refers generally to all activities that operate largely outside the system of government benefits and regulations.

A factory

The Factories Act, Cap 126 Laws of the Federation of Nigeria (LFN) 1990 was primarily designed to govern, order and regulate industrial activities generally. Section 89(1) of the Factories Act, 1990 which is in peri material

with section 175 of the English Factories Act, 1961 which replaced section 151 of the 1937 Act, defines factory "as any premises in which or within which or within the close or cartilage or precinct of which ***one person*** is or more persons are employed for any process for or incidental to any of the following purposes namely:

(a) the making of any article or of part of any article; or

(b) the altering, repairing, ornamenting, finishing, cleaning, washing or the breaking up or demolition of any article; or

(c) the adoption of sale of any article, being premises in which or within the close or cartilage or precincts of which the work is carried on by way of trade or for the purpose of gain or over which the employer of the person or persons employed therein has the right of access or control. Any premises belonging to or in the occupation of the Government of the Federation or of a State or Local Government constituted under any Act or Law shall NOT be deemed to be a factory by reason only that the work carried on therein is not carried on by way of trade for the purpose of gain.

From the foregoing, you would have realised that the words – workplace, industry and factory usually mean one and the same thing, although may be of various dimensions or sizes. However, an industry or a factory are so-called by that nomenclatures because person or persons are gainfully employed therein or within and they are carrying on productive activities. However, Federal, State and Local Government offices cannot be called factories because government produce social services or not necessarily to make profits.

You need to get a clearer understanding of the concepts of a workplace, an industry and a factory to avoid confusion. Everyplace where person or persons are working whether government or private owner, small or big is a workplace but not all workplaces are factories. All workplaces may be called industries, but not all industries are factories.

3.1.2 Reasons/Rationale for implementing, regulating and enforcing environmental health components at workplaces, industries and factories

I am aware that you knew why you should inspect residential premises but workplaces, industries and factories are premises largely owned by entrepreneurs who are out to exploit or maximize profits at the expense of their workers or employees, hence your professional interventions to save workers from the exploitation of their employers. You should know that:

- There are safety and health standards i.e. technical standard for design, quality etc. and environmental standards for hygienic factors (chemical, noise, temperature etc.) standards are idealistic while policies should be idealistic. Therefore student should guide policy formulation.
- There are more small scale/informal industries where dropout or stark illiterates are employed. They need your professional guide because their understanding of occupational health and safety matters is limited.
- You will also discover that child labour is being practised i.e. child abuse in many of our factories.
- Consideration is not given to proper placement in many of our industries/factories e.g. women are forced to handle or operate complex machinery that could better be operated by men.

- Safety devices and Personal Protective Devices (PPD) are not encouraged in many of our factories to the deterrent of workers because at times the equipment and devices cost fortune.
- Many factory workers are working under severe stresses of all sorts. These reasons and many more are why you should implement, regulate and enforce environmental health services/components for the safety of workplaces and workers.

3.1.3 Implementing Environmental Health Components in Workplaces/ Industries/Factories

The Factories Act is implemented by Factories Inspectors viz. Environmental Health Officer, Nurses Occupational Health, Nursing and Occupational Hygienists. Each of them have their different respective roles to play just like in School Health Services.

As an Environmental Health Officer, you are to ***prevent*** hazards and risks in workplaces. The Factories Act make provisions for safety, health and welfare of workers in factories and other places as earlier defined.

You are to implement the Factories Act in the following ways:

- study and understand the provisions of the Factories Act.
- remember that the Public Health Law of 1st August, 1957 made provisions for Right of Entry (Section 10) for detection and abatement of nuisances from any premises (part 2 and 7 of Public Health Law of 1957 are relevant).
- you are to have a comprehensive inventory of the Workplaces/ Industries/Factories in your areas of jurisdiction.

- prepare a systematic/strategic work plan to guide your routine or special inspection of workplaces.
- use the appropriate Sanitary Inspection Forms as approved by the Federal Ministry of Environment 2005 and not your old Routine Inspection Book (RIB).
- keep proper records of accidents, dangerous occurrences etc.
- apart from your routine inspection, organise seminars workshops periodically for factories workers.
- An authorised member or members of staff/management of the workplace/industry should conduct you round while on inspection and during your debriefing.

3.1.4 Regulating Environmental Health components in Workplaces/ Industries/Factories

Now that you have implemented environmental health components in workplaces through routine or special sanitary inspection of premises, your next line of action is to regulate environmental health component in these premises.

In regulating environmental health components in workplaces, you should:

- Implement the relevant portion of the Factories Act, Cap 126 of the Law of Federation of Nigeria (LFN) 1990 i.e. provisions for safety and health and welfare of workers in factories and other workplaces.
- You must have set your standards i.e. safety and health standards both technical standards for design, quality etc. and environmental standards for hygienic factors noise, temperature, spacing, use of Personal Protective Devices (PPD).

- During your visit to any workplace/industry carryout thorough sanitary inspection using the format of:
  (a) Observing safety and health standards IN FRONT of the workplace – access road, drainage system beauty (aesthetic) etc.
  (b) Observe the RIGHT, the LEFT sides and the back of the workplace/industry. These are the EXTERNAL parts of the workplace/industry/ factory.
  (c) You can now concentrate on the INTERNAL parts of the premises what are the conditions of:
    - the floors, walls, ceiling, roof
    - the temperature, noise level, spaces between machinery and operators (Ergonomics)
    - are there enough escape routes?
    - are the safety devices e.g. fire extinguisher and health education/information posters enough and strategically placed?
    - are the workers in the workplace/factory provided with and are using Personal Protective Devices (PPD)?
    - are the sanitary conveniences, cloak rooms, canteens, First Aid boxes, sickbay etc. provided and are enough?

There are many more of the health and safety standards that you must regulate to conform with approved in Health and Safety Environment (HSE) standards.

Do not forget to make abundant use of your environmental health monitoring tools that you learnt about in module 2 of this course. Typical example is the noise docimeter that you can use to measure noise/sound level whether it

conforms with approved standard. Usually the threshold Limit (THL) or Occupational Exposure Limit (OEL) of noise is about 98dB.

When safety and health standards are not met or conformed with, the authority of the workplace/industry/factory would have violated the provisions of the Factories Act, Cap 126 of the LFN 1990. There is then the need to enforce the provisions.

Take note that implementing, regulating and enforcing Environmental Health Components in workplaces/industries is a continuum, one leading to the other in a systematic form. But before you study enforcement procedures in workplaces, attempt the following questions:

1. Define a workplace
2. Explain the meaning of a factory
3. What is an industry?

3.1.5 Enforcing Environmental Health components in workplaces, industries or factories

- Remember that the provisions of the Factories Act of Nigeria was derived from the International Labour Organisation (ILO) convention No. 161 and Recommendation No. 171 which was based on ILO instrument, Occupational Health Services Recommendation No. 112 of 1959. Nigeria is a member of ILO and the provisions of the ILO are binding on her (Nigeria).
- Article 9 of the ILO convention and paragraph 36 of the recommendation require multidisciplinary composition of Occupational Health Safety (OHS) team. This requirement is due to the fact that the

nature of problems to be solved in workplaces, industries/factories are multidisciplinary in character.

Multidisciplinary approach in implementing, regulating and enforcing environmental health components is a strategy of identifying, assessing, analysing and controlling occupational health problems jointly as a teamwork so that experts representing competent areas bring their knowledge to team discussion where decisions are made.

The disciplines relevant for occupational health services are occupational health (medical), occupational health nursing, Environmental Health Officer (industrial hygienists), industrial toxicologists, ergonomists, safety engineer etc.

However an Environmental Health Officer has the legal right to implement, regulate and enforce environmental health components in workplaces. You are usually at the grassroots where there are proliferations (many) of small scale industries most of which are not conforming with standards.

For such types of workplaces, industries/factories you could use (part 2 section 7(1) of the Public Health Law (LFN) and

(a) serve Abatement Notice (A/N) on non-compliance.

(b) serve Court Summons (prosecution)

(c) when found guilty, apply for "Court Order" or Nuisance section 8(2) of Public Health Law order which may be:

  (i) an abatement order

  (ii) a prohibition order

  (iii) a closing order

(iv) a combination of such orders.

For instance, a workplace or an industry could be closedown using the provision of the court closing order if the situation warrants such action.

(d) when in spite of the closing order, the owner or the authority of workplace/industry failed to effect the prescribed remedies, you report back to the court asking for permission to execute the prescribed works or measures e.g. provision of sanitary conveniences in a particular workplace or factory (see Execution of Works section 5, 6 & 7 of the Public Health Laws (LFN).

(e) the costs of executing the works shall be borne by the owner or authority of the workplace or the industry. Section 9 (1, 2 & 3) can be invoked or used to recover the costs.

Such is the power of Environmental Health Officer to enforce Environmental Health component in workplaces, industries/ factories using the appropriate legal instruments.

4.0 CONCLUSION

So far, you are now very conversant and familiar with the concepts of workplace, industry and factory where environmental health components (occupational health and safety) are to be implemented, regulated and enforced.

You would have realised also that the importance of occupational health and safety for the workers including yourself cannot be overemphasized. It is one of the most important components of environmental health. In fact, a healthy population is an integral factor in the development process itself. To achieve the desired goal there must be well-organised occupational health and safety infrastructure and consolidated regulated machinery.

5.0 SUMMARY

The salient points discussed in this unit are:

1. Concepts or definitions of:

   (a) Workplaces, (b) Industries, and (c) Factories

2. Occupational health and safety as a component of environmental health.
3. Relevant Factories Laws
4. Reasons why you need to implement, regulate and enforce environmental health components.
5. Need for a team approach in occupational health and safety.
6. Procedures and processes of implementing, regulating and enforcing environmental health components in workplaces, industries and factories.

6.0 Tutor Marked Assignment (TMA)

Attempt the following questions:

(1) Define a workplace

(2) Differentiate between an industry and a factory

(3) What is occupational health and safety?

(4) With an example, explain the meaning of Factory Act.

(5) List the procedure of enforcing compliance with Health and Safety standards in a workplace.

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