Sub-theme 2.1. Health Promotion and Disease Prevention

Rationale

In Ethiopia, 85% of illnesses are due to communicable diseases and unsafe living and working conditions. Contaminations of the environment by potentially hazardous pathogenic organisms and chemicals are the causes of the majority of the illnesses. The contaminations are primarily due to improper disposal of human and animal wastes and poor hygienic practices. Contaminants pollute the water people use for drinking and working. This has favoured water-borne diseases.

There are a number of zoonotic diseases that pose risks to human health. These are caused by pathogenic bacteria, viruses, fungi, and parasites. As a result, every year, millions of people are affected by illnesses. The emerging interdisciplinary field of conservation medicine "One Health System", which integrates human and veterinary medicine, and environmental sciences, is largely concerned with zoonoses.

With the advent and expansion of industrialisation and agricultural mechanisation and automation, the environment is increasingly contaminated by toxic substances that adversely affect the health of individuals. By providing safe living and working environments, the occurrence of this huge disease toll can be prevented and the health of an individual be promoted.

Aim

The main aim of this sub-theme is to undertake research on health promotion and disease prevention including studies on safe water supply and waste management, control of communicable diseases, housing, and occupational health and safe working condition.

Description

This sub-theme focuses on studies related to identification, development, and provision of safe water supply; management of human and animal wastes; prevention and control of communicable diseases with particular focus on malaria, tuberculosis, diarrhoea, water and airborne diseases, diseases that are transmitted by vectors and large animals; proper housing, illumination, ventilation and diseases associated with improper housing; and occupational health and hygienic practices as well as safe working conditions. The sub-theme also deals with finding ways of protecting workers from potentially hazardous poisonous chemicals and toxic substances.

Expected Output

- Enhanced knowledge on safe water supply and waste management
- Up-to-date knowledge on zoonotic disease management and control
- Enhanced knowledge, skill, and technology to reduce the burden of communicable diseases including diarrheal diseases, TB and malaria
- Better knowledge on proper housing including illumination, and ventilation and disease control as a result of overcrowding
- Better awareness about safe working conditions and behaviours

Potential Collaborators

Federal and regional health offices, WHO, UNICEF, CRDA, wash Ethiopia, environmental protection agency

Research Areas

2.1.1. Safe water supply and effective waste management

This research area encompasses studies on assurance of drinking water quality, enhancing access to potable water, liquid and solid waste management, promoting community sanitation and personal hygiene, addressing water pollution issues, and waste disposal. Emerging

contaminants, which include heavy metals, pharmaceuticals, and synthetic organic compounds are also studied under this research area.

2.1.2. Prevention and control of communicable diseases

This research area focuses on epidemiologic, diagnostic, preventive, curative and control strategies of communicable diseases particularly malaria, tuberculosis, and HIV. It also includes other infectious diseases such as diarrheal disease, water-borne diseases, vector-borne diseases, febrile illnesses, chronic infectious diseases, and emerging and re-emerging infectious diseases. This research area also entails linkages between communicable diseases, and personal hygiene and sanitation.

2.1.3. Prevention and control of zoonotic diseases

This research area focuses on public health risks and management of zoonoses and other health threats at the human-animal-ecosystem interface. It also focuses on addressing health promotion, and preventive and curative aspects of zoonotic diseases. Salmonellosis and campylobacteriosis and other zoonotic bacterial diseases including anthrax, brucellosis, infection by pathogenic *Escherichia coli*, leptospirosis, plague, Q-fever, shigellosis and tularaemia will be given a particular focus. Parasitic diseases such as cysticercosis/taeniasis, trematodosis, echinococcosis/ hydatidosis, toxoplasmosis and trichinellosis; viral diseases like rabies, avian influenza, Crimean-Congo haemorrhagic fever, Ebola and Rift Valley fever, and other emerging or re-emerging zoonotic diseases will also be addressed under this research area.

2.1.4. Occupational health, safety, and risk management

This research area focuses on determination of the magnitude of occupational health hazards, awareness and unsystematic use of hazardous chemicals, utilisation of safety measures, and effect of toxic substances on the environment, human, animal, and plant health.

2.1.5. Housing/health problems in residential and institutional environment

The research area deals with the physical structure of housing units, the relation between housing units and physiologic and psychological needs of families/individuals, protection against diseases and injuries, fire and electric hazards, and toxic and explosive gases. It also deals with elements of housing and their effects upon the health of occupants and the incidence of disease and injuries. In addition, policy issues on housing and residential neighbourhood environments are taken into consideration.

2.1.6. Physical fitness and exercises

The research area focuses on sporting and physical fitness activities among different age groups of humans, disease patterns, and nutritional status of individuals. It also deals with the link between sport and immunological responses of the body during health and disease condition. The influence of sporting and physical fitness activities among the disabled and individuals in debilitated conditions will also be researched.

Beneficiary

Industries, policy makers, and the wider public