International Scholars Journals

African Journal of Geography and Regional Planning ISSN 2736-1586, Vol. 9 (4), pp. 001, December, 2022.
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Perspective

Levels and constraints that affect biological hazards

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Received: 21-Nov-2022, Manuscript No. AJGRP-22-88695; Editor assigned: 23-Nov-2022, PreQC No. AJGRP-22-88695 (PQ); Reviewed: 07-Dec-2022, QC No. AJGRP-22-88695; Revised: 15-Dec-2022, Manuscript No. AJGRP-22-88695 (R); Published: 22-Dec-2022

DESCRIPTION

Natural risks include extreme weather conditions and climate occurrences. Despite the fact that catastrophes can occur everywhere on the planet, certain areas are more susceptible to certain risks than others. When they take lives and livelihoods, natural disasters are considered catastrophes. Natural hazards may be divided into four major categories: geological, hydrological, meteorological, and biological. Geologic risks include things like earthquakes, landslides, debris flows, flooding, problematic soils, volcanic and rock hazards, snow avalanches, and sand blasting.

Examples of hydrologic hazards include flooding and associated events like landslides and river scour. Meteorological dangers include very high or low temperatures, heat waves, cold spells, hurricanes, tornadoes, droughts, and severe storms. A variety of contaminants, such as bacterial and viral illnesses, can be biologically dangerous. Fungal contamination is categorized based on the mycotoxins that these organisms create as chemical pollutants. Salmonella, *Listeria monocytogenes*, and pathogenic Escherichia coli bacteria are among the biological risks that are routinely assessed under the Animal Food Contaminants programme. Among the most harmful biological viruses include the Norwalk virus, Rotavirus, and Hepatitis A virus. These germs may be harmful to animals if they consume tainted food.

Biological hazard symbols

- When combined with a DANGER sign, label, or paragraph, a black biohazard graphic is placed behind a red or white backdrop.
- When combined with a WARNING sign, label, or paragraph, a black biohazard picture is placed behind an orange or white backdrop.
- When combined with a CAUTION sign, label, or paragraph, a black biohazard picture is placed behind a yellow or white backdrop.
- When combined with a NOTICE sign, label, or paragraph, a black biohazard picture is placed behind a green or white backdrop.

Biohazard Levels

Diseases are divided into four levels of biohazard by the Centers for Disease Control and Prevention (CDC), with Level 1 posing the least risk and Level 4 posing the worst. Level 1 to Level 4 posing refers to the Bio Safety Level (BSL) 1-4 rating system for laboratories and other facilities (Pathogen or Protection Level)

- Level 1 biohazards include a variety of cell cultures and non-infectious bacteria, as well as *Bacillus subtilis*, Canine hepatitis, *Escherichia coli*, and varicella (chickenpox).
- Level 2 biohazards include *Salmonella*, Lyme disease, mumps, measles, scrapie, dengue fever, HIV, certain strains of influenza A, hepatitis A, B, and C, some influenza B strains, Human respiratory syncytial virus, Lyme disease. Clinical specimens can be used safely for regular diagnostic work while following Biosafety Level 2 standards and procedures.
- Level 3 biohazards include Anthrax, West Nile virus, Venezuelan equine encephalitis, SARSCoV-2, MERSCoV-2, influenza A H5N1, hantaviruses, typhus, Rift Valley fever, Rocky Mountain spotted fever, yellow fever, and malaria are a few examples of bacteria and viruses that can cause severe to fatal disease in humans but for which vaccines or other treatments are available.
- Level 4 biohazards include viruses like Nipah virus, Bolivian hemorrhagic fever, Marburg virus, Ebola virus, Lassa fever virus, Crimean-Congo hemorrhagic fever, and other hemorrhagic illnesses that cause serious to deadly illness in humans and for which there are no vaccines or any treatments.

Factors affecting biohazard includes Transmission methods, Direct/indirect contact, vector borne and air borne factors, dose of infection, number of microbes, agent virulence and viability (the capacity to reproduce), virulence ability, vulnerability of the host, vaccine, immune system, and skin disorders, maternal infection, work conditions, and allergies.

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