



Introduction to Environmental health

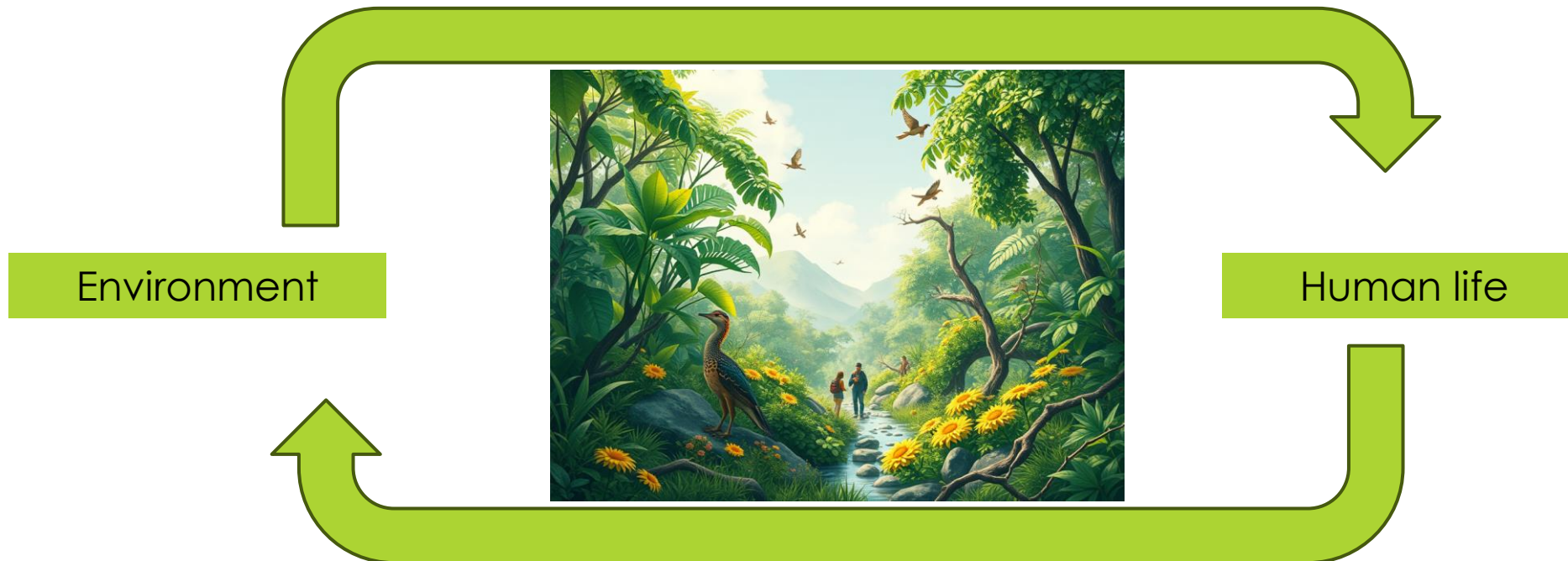
DR.M. SIVA DURGAPRASAD NAYAK, MD, PHD
ASSISTANT PROFESSOR,
DEPARTMENT OF COMMUNITY MEDICINE

Contents

- ▶ Introduction
- ▶ Types of Environment
- ▶ Environment and its impact on Human Health
- ▶ Environment Health Problems
- ▶ Protection from Environmental Health problems
- ▶ One Health

Introduction

- Environmental health focuses on the interactions between the environment and human health.



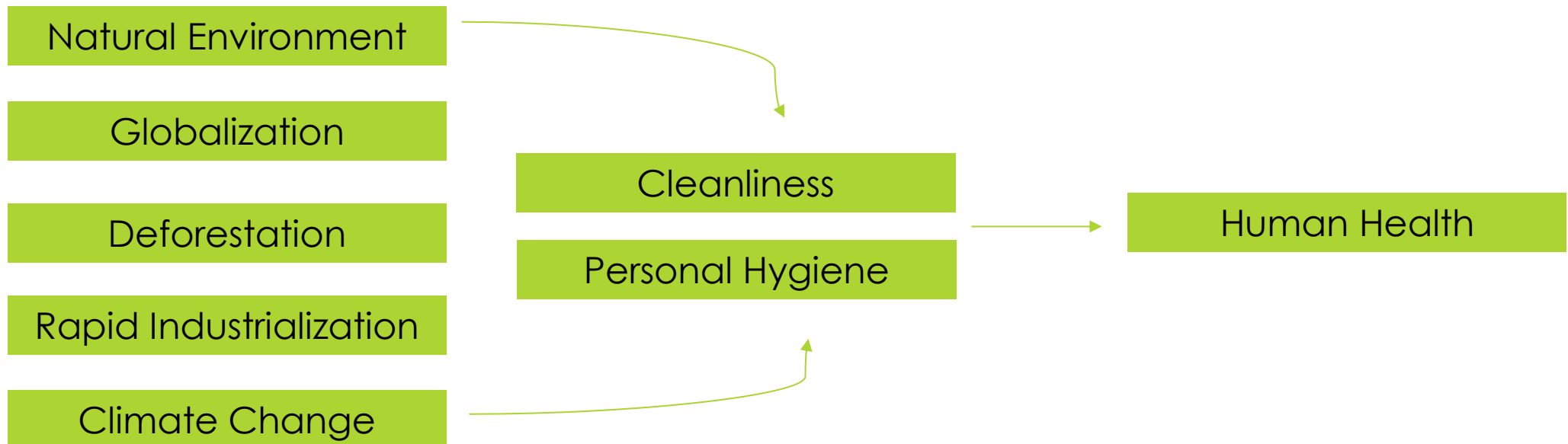
What is Environment?

- ▶ The environment refers to **all external conditions, both natural and artificial, that affect living organisms.**
- ▶ It includes physical, biological, and chemical components that influence human health and survival.
- ▶ **The environment plays a crucial role in determining the quality of life and the prevalence of diseases.**



Introduction

- It involves understanding the impact of natural and manmade environments on human well-being and implementing measures to mitigate adverse effects.



Environment and Positive Health

- ▶ A clean and balanced environment directly contributes to good health by reducing exposure to harmful pollutants, ensuring safe drinking water, and providing clean air.
- ▶ Poor environmental conditions lead to diseases like respiratory infections, waterborne diseases, and vector-borne illnesses.

Types of Environment

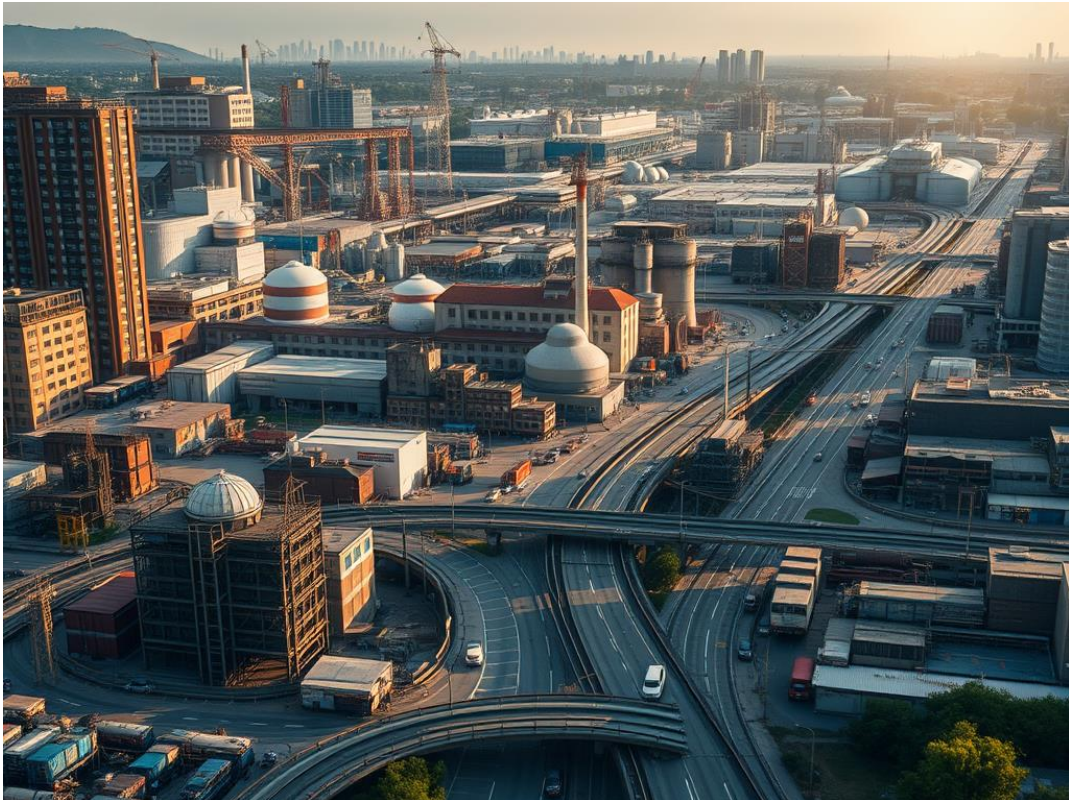
- ▶ The environment can be broadly classified into two different groups:
 - ✓ Natural Environment
 - ✓ Manmade Environment
- ✓ Macro Environment
- ✓ Micro Environment

Natural Environment



- ▶ **Natural Environment:** Comprises air, water, land, flora, and fauna, which exist without human intervention. Includes forests, rivers, mountains, oceans, and air.
- ▶ **Example: Amazon Rainforest, which provides oxygen and maintains biodiversity.**

Manmade Environment



- ▶ **Manmade Environment:** It includes human-made structures such as buildings, roads, factories, and technology.
- ▶ **Example:** Industrial cities with high pollution levels like Beijing.

Macro Environment



- ▶ It refers to large-scale environmental factors that affect a broad population, such as climate change, pollution, and natural disasters.
- ▶ **Example: Global warming affecting global climate patterns and human health**

Macro



- ▶ **Micro Environment:** It Involves immediate surroundings that directly impact an individual, such as home, workplace, and community hygiene.
- ▶ **Example: Household sanitation practices ensuring disease-free living conditions.**

What is Sanitation

- ▶ Sanitation refers to public health conditions related to clean drinking water, proper sewage disposal, hygiene, and waste management. It prevents the spread of diseases and improves community health.



What is Suchi or Saucha

- ▶ **Suchi or Saucha is a Sanskrit term meaning purity and cleanliness, both physical and mental.**
- ▶ In daily life, it emphasizes personal hygiene, clean surroundings, and mental clarity, which contribute to holistic health and well-being.



Environmental Health Problems - Water

- ▶ **Availability and Accessibility to sufficient water is the main problem**
- ▶ **Water related health problems include**
 - ▶ **waterborne diseases like cholera, Typhoid,**
 - ▶ **Hard water problems like Renal calculi, Dry skin**
 - ▶ **Fluorosis problems like Dental and Skeletal problems**
 - ▶ **Lead contamination may cause brain damage or Renal problem**

Environmental Health Problems - Air

- ▶ Acute exposure to air pollutants may cause
 - ▶ Cough, shortness of breath, throat irritation etc.
- ▶ Chronic exposure to indoor or outdoor air pollution may cause
 - ▶ COPD, Silicosis, Asbestosis,
 - ▶ Cardiac failures,
 - ▶ Dementia,
 - ▶ Birth defects etc.

Environmental Health Problems - Noise

- ▶ Excessive noise exposure can have **short-term and long-term** effects on physical and mental health.
- ▶ The impact depends on **intensity (measured in decibels, dB), duration, and frequency of exposure.**
- ▶ **More than 60 dB intensity can cause**
 - ▶ Non induced Hearing loss
 - ▶ Sudden Hearing loss
 - ▶ High blood pressure
 - ▶ Sleep disorders
 - ▶ Mental Health problems

Environmental Health Problems - Climate

- ▶ When body exposed to excessive heat it results
 - ▶ Heat cramps, Heat exhaustion, Heat stroke.
- ▶ Exposure to excessive radiation may cause
 - ▶ Acute problems like sun burns, nausea etc.
 - ▶ Chronic problems like
 - ▶ Cancers
 - ▶ Sleep disturbances
 - ▶ Birth defects

Environmental Health Problems – Vectors

Arthropd	Disease s transmitted
Mosquito	Malaria, Filaria, Dengue fever, Chikungunya fever, Japanese Encephalitis
House fly	Typhoid, Paratyphoid, Cholera
Sand fly	Kala azar
Louse	Epidemic typhus
Itch mite	Scabies
Cyclops	Guinea worm disease, Fish tapeworm

Protection from Environmental health problems

- ▶ **Individual level** : Personal Hygiene, Hand wash, Personal protection equipment
- ▶ **House level**: Pucca houses, Separate Kitchens, Toilets usage, Cleanliness within and around house, Windows, Doors screens, LPG Fuel, Stop smoking within house, etc.
- ▶ **Organization level**: Cleanliness of premises, Using Dustbins, Engineering measures to protect employees health

Protection from Environmental health problems

- ▶ **Village/ City level:** Providing safe water, Collecting and disposal of solid waste, Drainage canals maintenance, Careful permission for industries releasing pollutants etc.
- ▶ **State/ National level:** Policy making and implementation for sanitation and hygiene
- ▶ **International level:** Guiding the governments to improve environmental conditions and decrease pollutants

Actions Taken by the Government of India

- ▶ **1. Swachh Bharat Abhiyan (Clean India Mission)** – Aimed at improving sanitation and hygiene.
- ▶ **2. National Action Plan on Climate Change (NAPCC)** – Targets sustainable development and climate resilience.
- ▶ **3. National Air Quality Index (NAQI)** – Monitors and controls air pollution.
- ▶ **4. Namami Gange Programme** – Works on cleaning and rejuvenating the Ganga River.
- ▶ **5. Plastic Waste Management Rules, 2016** – Regulates plastic use and disposal.

International Organizations Addressing Environmental Health Problems

- ▶ **1. World Health Organization (WHO)** – Works on air and water quality, sanitation, and disease prevention.
- ▶ **2. United Nations Environment Programme (UNEP)** – Focuses on climate change and sustainability.
- ▶ **3. Intergovernmental Panel on Climate Change (IPCC)** – Provides scientific research on climate change impacts.
- ▶ **4. United Nations Framework Convention on Climate Change (UNFCCC)** – Works on international climate policies.

Recent International Conferences and Summits

- ▶ **1. COP28 (2023)** – Addressed climate change mitigation strategies.
- ▶ **2. UN Climate Action Summit (2023)** – Focused on global carbon reduction commitments.
- ▶ **3. World Health Assembly (2023)** – Discussed environmental determinants of health.

One Health

- ▶ **One Health is an integrated approach that recognizes the interconnectedness of human health, animal health & environmental health.**
- ▶ It promotes collaboration between various sectors to tackle health challenges such as zoonotic diseases, antimicrobial resistance, and ecosystem degradation.



► Thank You..

