







Environmental Health

Environmental Health

- ✓ Across the world, the environment is a key determinant of health and well-being.
- ✓ Clean air, stable climate, adequate water, sanitation and hygiene, safe use of chemicals, protection from radiation, healthy and safe workplaces, sound agricultural practices, health-supportive cities and built environments, and a preserved nature are all prerequisites for good health (WHO).
- ✓Globally, nearly 25% of all deaths and total disease burden can be attributed to environmental factors.
- ✓Unimproved water and sanitation, ambient air pollution, indoor pollution from solid fuels, and lead exposure are among the leading contributors to global burden of disease.
- ✓In addition, many current and emerging exposures in food, water, soil, air, and consumer products adversely affect human health.

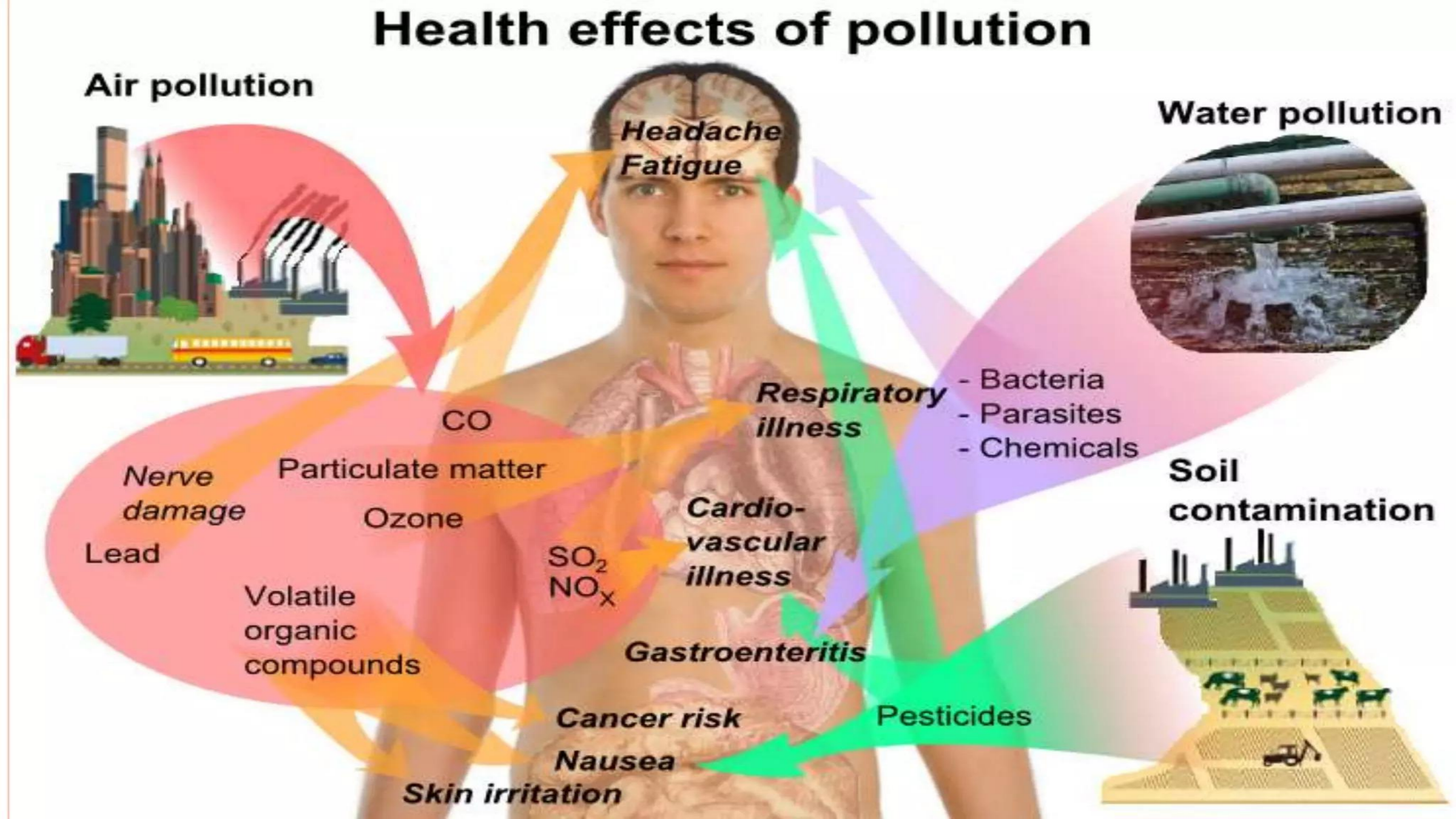
Why Is Environmental Health Important?

- Maintaining a clean healthy environment is central to increasing quality of life and years of healthy life.
- lower the burden of preventable environmental diseases that are disproportionately felt by residents of poor developing countries.

***The reasons for this disproportionate effect in poor countries include lack of modern technology, weak protective environmental laws and regulations, a lack of awareness, and poverty.

- Healthier environments could prevent almost one quarter of the global burden of disease. The COVID-19 pandemic is a further reminder of the delicate relationship between people and our planet (WHO).

Health effects of pollution



WHO Definition of Environmental Health

It 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.

What Is Environmental Health Science?

"The study of those **factors** in the environment that affect human **health**" under these conditions:

Factors ("pollutants" or "toxicants" = Hazard) in air, water, soil, or food … that human activities produce.

Transferred to humans by inhalation, ingestion, or absorption (exposure).

Production of adverse health effects as a result of that exposure.

Scopes of environmental health

- Air quality
- Food quality
- Water quality
- Occupational health
- Solid waste management
- Environmental Protection
- Housing sanitation
- Vector control
- Disinfection and sterilization
- Institutional hygiene
- Hygiene and quarantine services

Environmental sanitation

(Environmental health program)

- It is the study of all factors in man's physical environment that may exercise deleterious effects on his health, well-being, and survival.
- In general, environmental sanitation breaks the chain of disease transmission through three basic strategies:

Promotion, prevention, and control of diseases through various environmental interventions

Basic Requirements for a Healthy Environment

Clean air

Safe and sufficient water

Safe and adequate food

Safe and peaceful settlements

Stable global environment

Hazards in the Environment

What are Hazards?

- ✓Things in the environment that are harmful are called **hazards** and include things like chemicals, disease-causing bacteria, loud noises and even stress in our life.
- ✓hazards can be natural or human-made.

Types of Hazards in the Environment

Chemical: Air pollutants, toxic wastes, pesticides, VOCs

Biological: Disease organisms present in food and water, also Insect and animal allergens

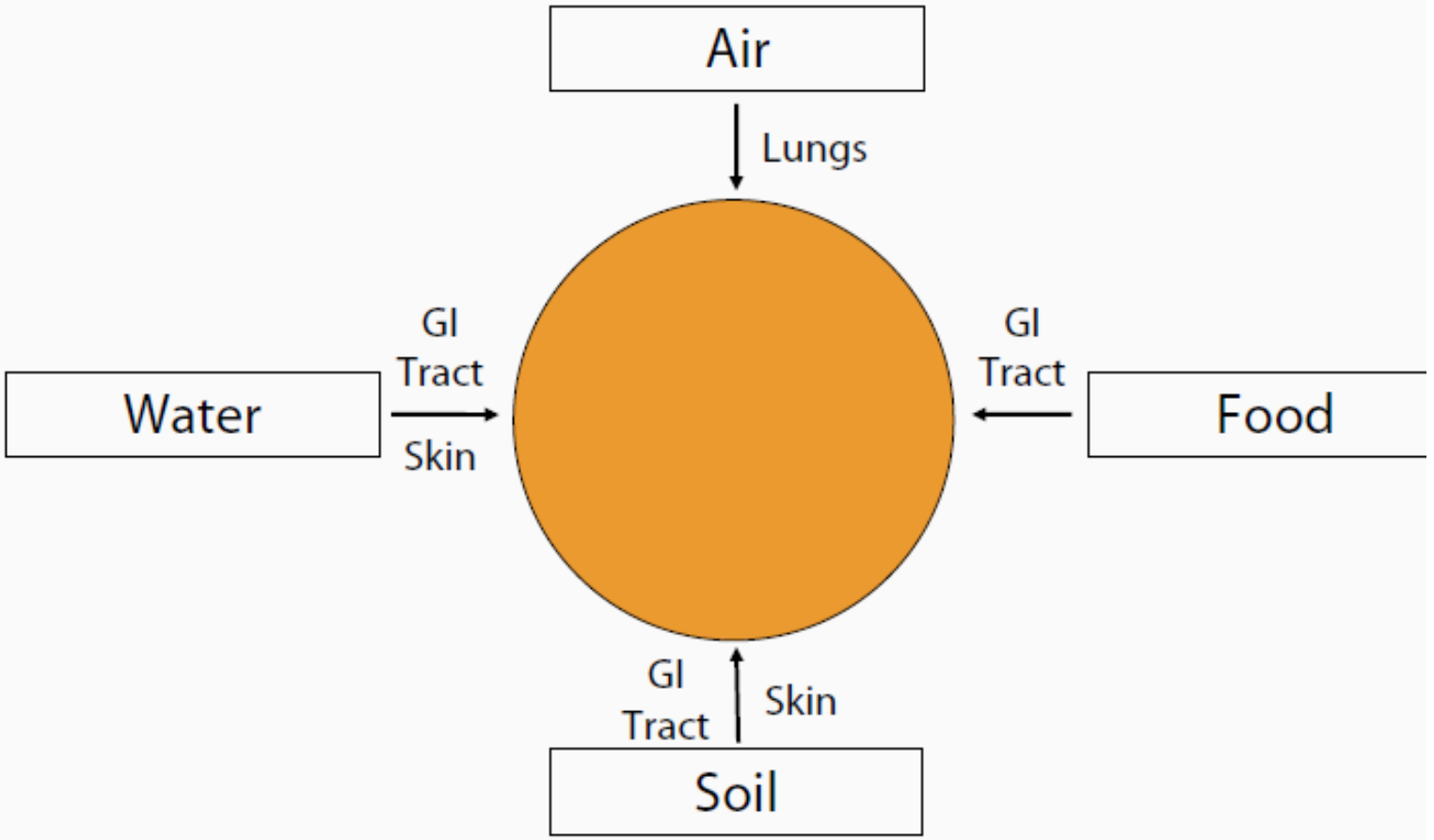
Physical: Noise, ionizing and non-ionizing radiation

Socioeconomic: Access to safe and sufficient health care

Routs of exposure

How do hazards get transformed to our bodies????

- Routes of exposure through gaseous, liquid, and solid medi



Adapted from Moeller, D.W.

Environmental health plays an important role in dealing with disease causation:

- ✓ Etiological or **causative** agent
- ✓ A **reservoir** or source of infection of the causative agent
- ✓ A mode of **escape** from the reservoir
- ✓ A mode of **transmission** from the reservoir to the potential new host
- ✓ A mode of **entry** to the new host
- ✓ A **susceptible host**

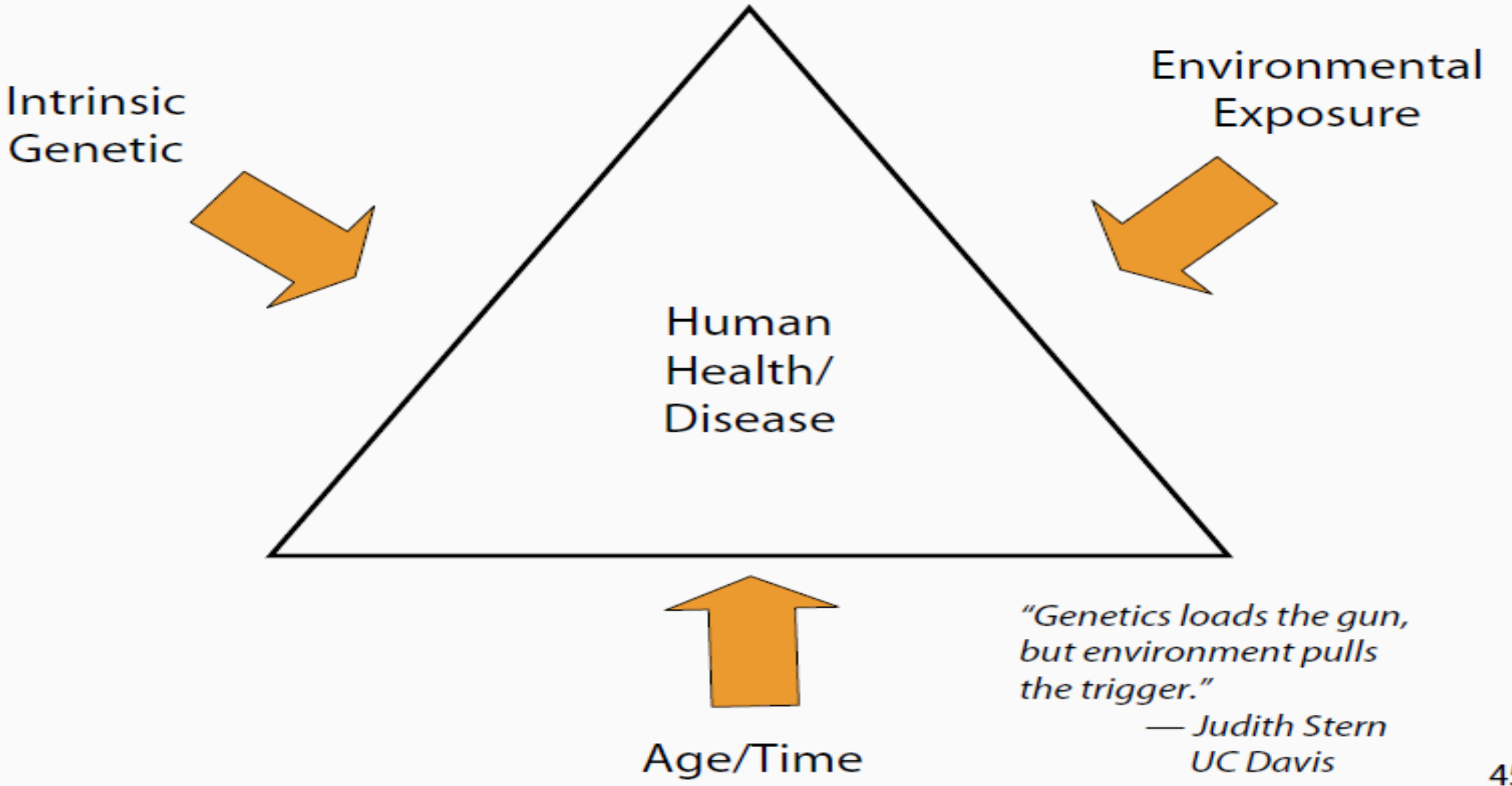
i.e. Environment

Epidemiological triad or disease causation



- **ENVIRONMENTAL FACTORS:** housing, Air, Water, Food, etc.
- **AGENT:** Biological, Chemical, Physical, etc.
- **Host characteristics:** age, gender, race, marital status, genetic profile, and occupation

Environment Pulls the Trigger



"Genetics loads the gun, but environment pulls the trigger."

— Judith Stern
UC Davis

Health Effects of Hazards

Acute vs. delayed onset

Clinical vs. subclinical manifestations

Transient (reversible) vs. chronic (irreversible)

Examples of Manifestations

Lung disease

Reproductive effects

Teratogenic effects

Neurologic effects

Immunosuppression and hypersensitivity

Cancer

Vulnerable Groups (susceptible)

Low socioeconomic status

Women

Children

Elderly

Ethnic minorities

Disabled

Indigenous peoples

- ❑ All of whom are often more vulnerable because of Genetics or They are not empowered to change their environment

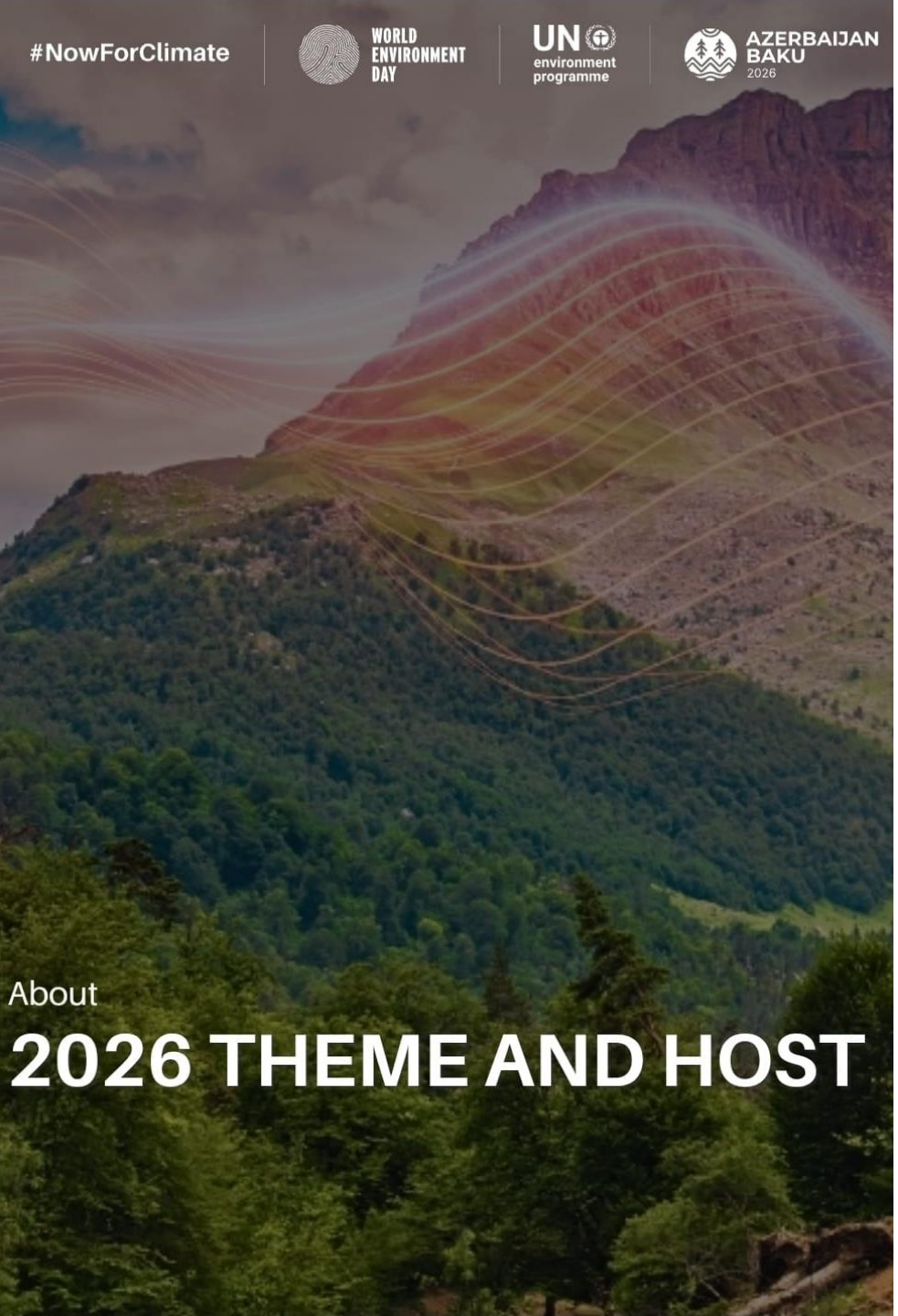
World Environment Day (WED)

In 1972, the UN General Assembly designated 5 June as World Environment Day (WED). The first celebration, under the slogan "Only One Earth" took place in 1973. In the following years, WED has developed as a platform to raise awareness on the problems facing our environment such as air pollution, plastic pollution, illegal wildlife trade, sustainable consumption, sea-level increase, and food security and others. Furthermore, WED helps drive change in consumption patterns and in national and international environmental policy.

Why take part?

Time is running out, and nature is in emergency mode. To keep global warming below 1.5°C this century, we must halve annual greenhouse gas emissions by 2030. Without action, exposure to air pollution beyond safe guidelines will increase by 50 per cent within the decade and plastic waste flowing into aquatic ecosystems will nearly triple by 2040.

We need urgent action to address these pressing issues.



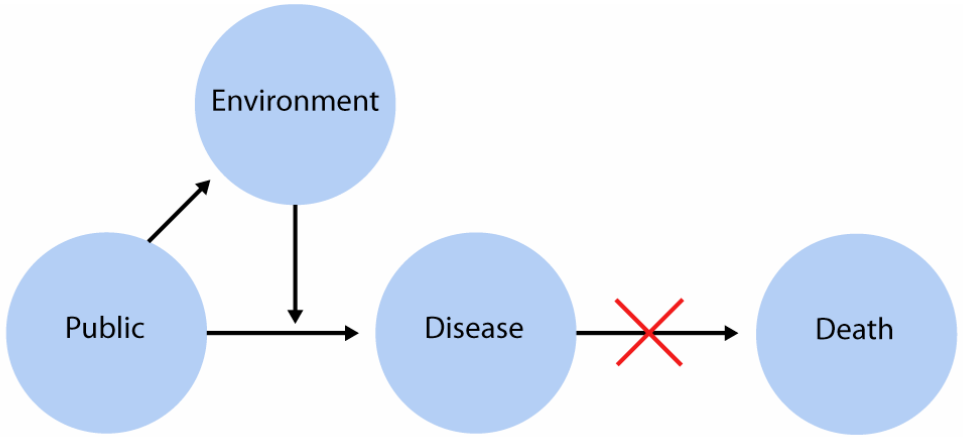
WED, 2026

- **Host country:** Azerbaijan (Baku)
- **Theme:** ” Inspired by Nature. For Climate, For Our Future.”
- **Slogan**: #NowForClimate
- **Ford Focus areas:**

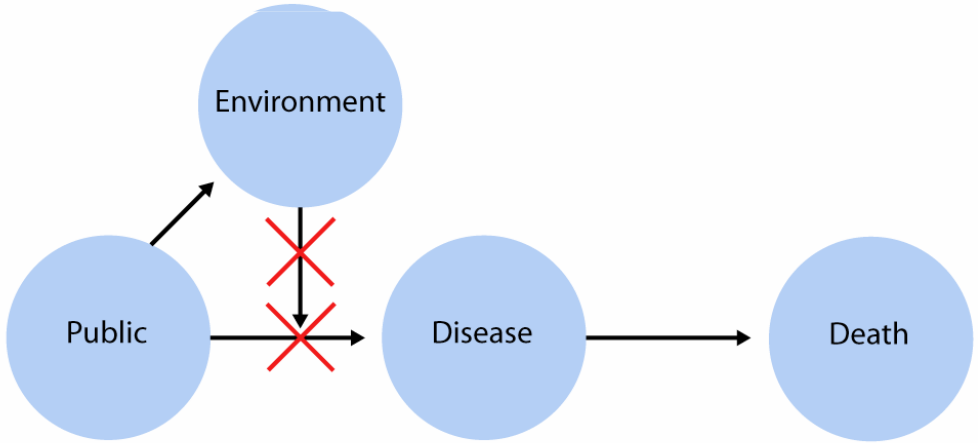
Climate Action, Biodiversity Conservation, Renewable Energy Transition.



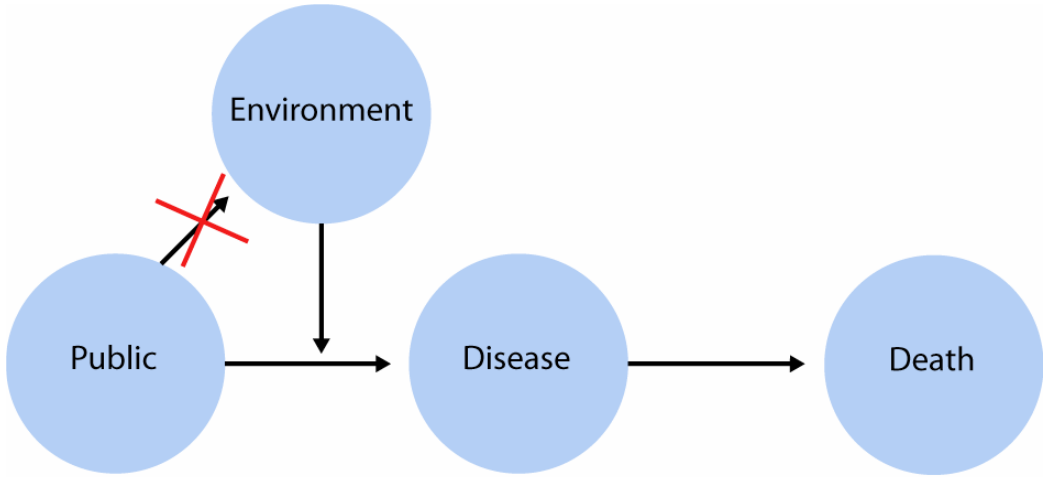
Improving Human Health and Environment: 3 Models



Clinical Intervention Model



Public Health Intervention Model



Environmental Stewardship Model

- The public health intervention model concentrates on the maintenance of health through education and keeping the environment safe.
- This includes:

applying policies, appropriate organization, sanitation legislation, technology, etc.



The environmental justice (EJ)

- It means that everyone has the right to live in an environment that does not make them sick, regardless of their race, culture, or income.

The EJ process

- Who is producing the hazard?
- Who is being exposed?
- Who are the decision-makers?
- Establish a dialogue between decision-makers, scientists, and the affected community
- Empower community members to bring about change.
- Share information and decisions with community members

COP

The conference of the Parties(COP) to the UN Framework Convention on Climate Change (UNFCCC)is an international climate summit which is held annually unless the Parties (the countries involved)decided otherwise. At COPs , world leaders gather to work together on solutions to tackle climate change.



For the first time, world leaders promise to end deforestation by 2030, and to reduce emissions by 30% by 2030 (compared to 2020 levels).

THE END