

Climate Change and Public Health Impact

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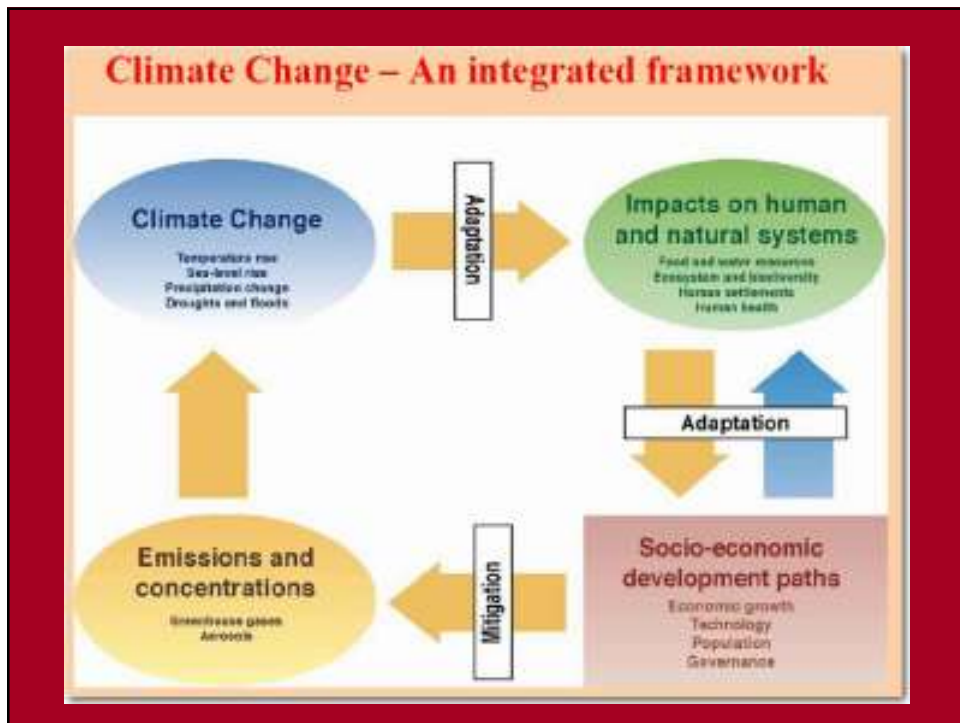
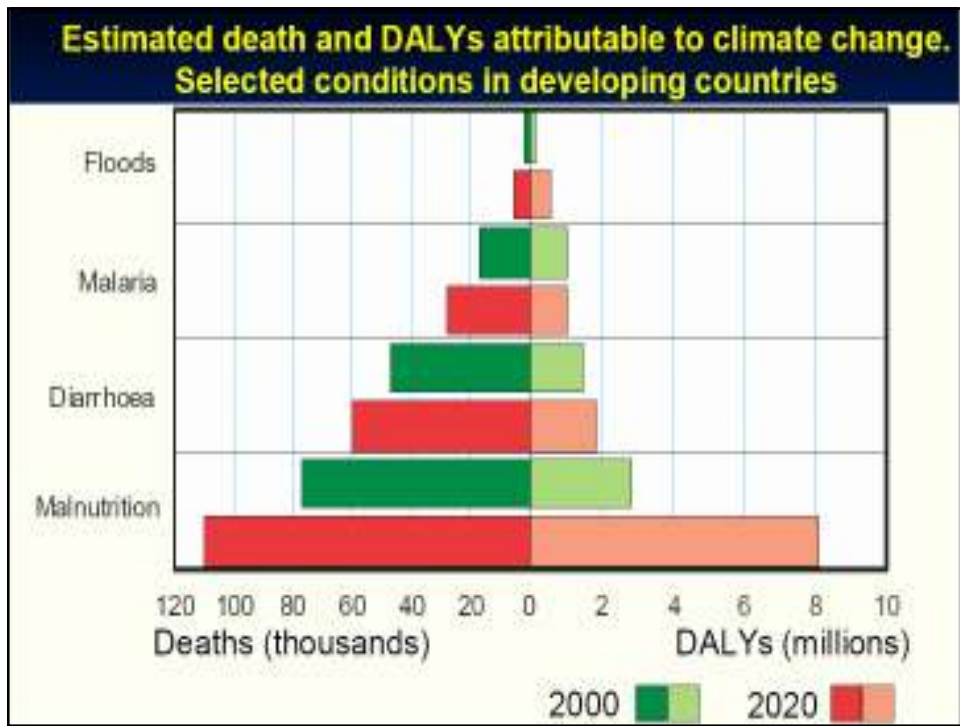
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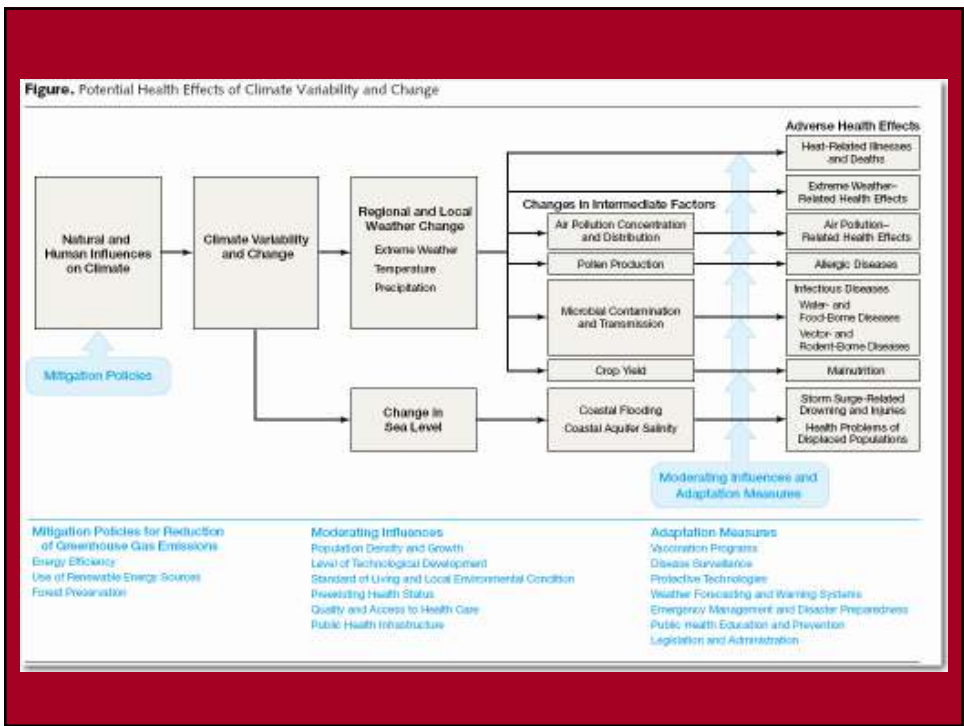
Deaths Attributed to Climate Change NOW 150,000 per year



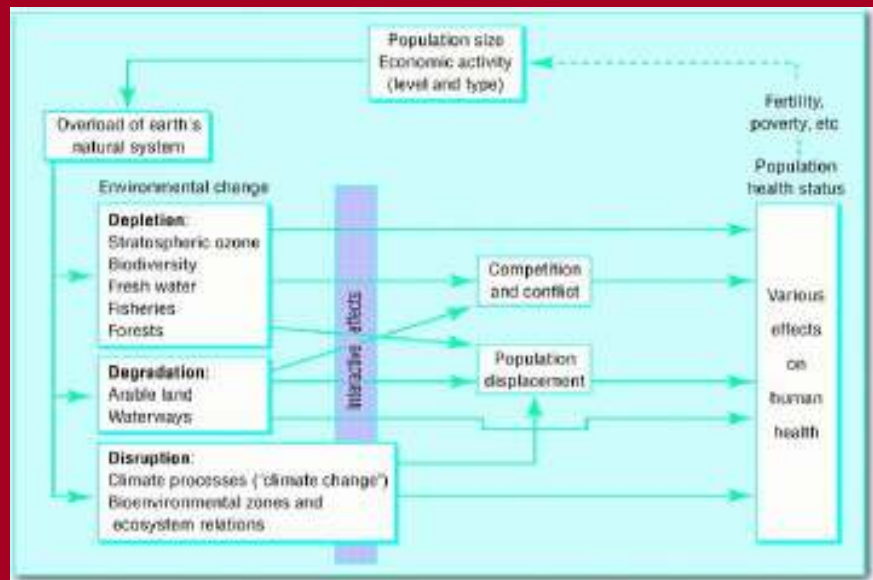
Patz, Jonathan, et. al (November, 2005). Impact of regional climate change on human health. Nature, Vol. 438.

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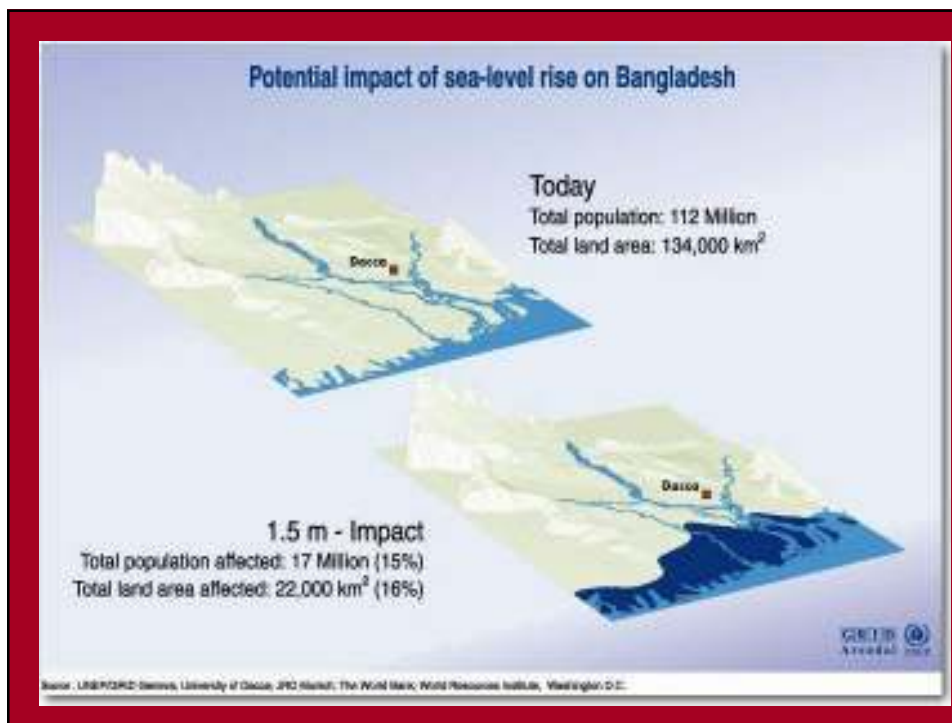
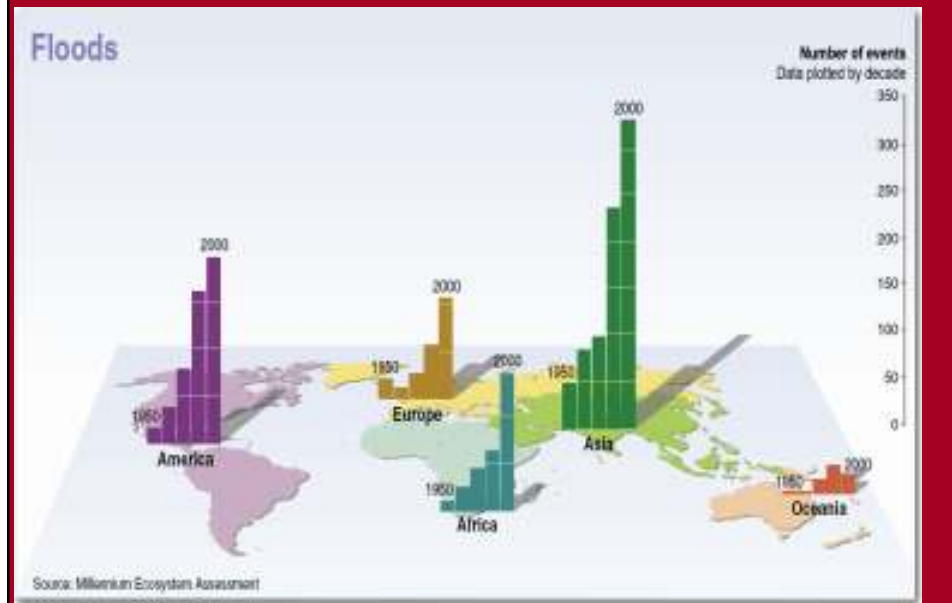




Global environmental change: causes and consequences



Number of flood events by continent and decade since 1950



Health Impact of Climate Change

- Physical Extreme Temperature – Heat Stroke, Cold
- Increase in Vector Borne Diseases eg. Malaria, Dengue, Japanese Encephalitis, Chikungunya, Filaria, Kala Azar (Leishmaniasis)
- Increase in Water borne diseases – Cholera, Typhoid, Hepatitis, Amoebic & Bacillary Dysentery
- Increase in Respiratory problems – ARI, Asthma, Bronchitis, COPD
- Increase Zoonotic Disease – Leptospirosis,
- Increase in hunger, starvation, malnutrition
- Increase stress, conflict and violence

Outbreaks in the Past

- 1988 Cholera – Trans Jamuna, Delhi
- 1994 Plague - Beed, Surat
- 1994 Falciparum Malaria - Rajasthan (over 4000 Deaths (Deaths of Goats & sheep cause ???))
- 1995 Falciparum Malaria - Assam
- 1996 Dengue, Dengue Hemorrhagic Fever - Delhi
- Falciparum Malaria - Mewat

Outbreaks in the past contd....

- Japanese Encephalitis – Gorakhpur
Saharanpur
- 2005 Chikungunya – Andhra Pradesh
- 2006 Chikungunya – Kerala
- 2007 Leptospirosis in Kerala ,at
present Mumbai

Climate Impacts on Malaria

Some facts about Malaria-Climate relationship

Malaria is sensitive to climate conditions and to the weather.

This relationship can be best understood in relation to the malaria life cycle. There are maximum, minimum and optimum temperatures for the development and survival of the parasite and the vector of the malaria.

Increase in temperature show an increase in feeding and egg laying frequency of the vector

Climate Impacts on Malaria contd...

- A high risk of malaria and excessive rainfall can be expected in years following the onset of La Nina and opposite during El Nino events.
- Climate change is also expected to affect malaria indirectly by changing ecological relationships that are important to the vector, parasite in the malaria transmission.
- Examples of such indirect forces are deforestation, urbanization and habitat changes due to climate change that may affect species, which are able to survive in that changed climate
- The amount of precipitation affects the amount of surface water within which the malaria vector can breed.

{McMichael and Githeko, 1999' Patz and Lindsay, 1999}

Denial of Health Hazards

- Effects of certain
 - Drugs,
 - Chemicals,
 - Pesticides,
 - Asbestos
 - Tobacco
 - Genetically Modified Foods
- Oil and Gas
- Green House Gases

Mad cow Disease
Bovine Growth Hormone
Plastics
Green House Gases
Fossil Fuels Carbon Dioxide,
Methane , Nitrogen Oxide
Chloro Fluorocarbons (CFC's) Oil &
Gas Carbon Monoxide ,Petroleum
Lead ,Benzene,Toluene,Ethyl
Benzene ,Xylene

.Respiratory Infections
Spiralling Medical Care Costs.
Increasing emergence of Drug
Resistance
Increasing Allergies to
Chemicals , fumes , Dust
,Pollens Parthenium
Decreased Body Resistance

Per Capita Water Availability in India

1947 5150cu.m

2000 2200cu.m

2017 1600 cu.m

Climate change Water shortages due to drought & Desertification ,
Poisoning with Toxic Effluents &
Untreated Sewage

FACTORS WORSENING CLIMATE CHANGE HEALTH IMPACT

- Low priority to Health 0.9% G.D.P.
- Shift from Public Health to Privatized Curative Care – 80% Out of Pocket expenditure
- Changing concept of Health and Health Care
- Neglect of Socio Economic Environmental Determinants of Health
- Shift towards Market Driven Technological Fixes
- Structural Adjustment Program – to cut Social Sector Expenditure Denial of Basic Needs
- To Decrease fiscal deficit while losing crores in decreased Import Tarriffs

- **Corporate led / Influenced Policy Making Profitable Nonessentials ,given priority over Basic Needs No Social Audits**
- **World Health Report 1995**
“Bridging the Gap” –
International Classification of Diseases New Category was added - ICD Z 59.5 = Extreme Poverty.Increasing disparity between & within Nations
- **Large Population**
 - **Below Poverty Line**
 - **in ecologically vulnerable areas**

**Climate Change Food Insecurity
 Malnutrition Hunger
 Drought
 Bundelkhand , Saurashtra ,
 Rajasthan , Chattisgarh .
 Floods Bihar East UP.
 Displacement of People
 Worsened by Changed land use
 for Nonfood crops ,
 Biofuels,Projects**

Agrarian Crisis & Food Crisis

India one of the most malnourished countries >40%
World's <5yrs Underweight (GHI 2007)(33% New borns
Low Birth Weight babies
79% children Anaemic
46% Children <3yrs Moderately Severely Underweight
38% Stunted 19% Wasted, Malnourished

Denial Of Food Crime Against Children

Between the years 1998-99 & 2005-06 the Percentage of Wasted children has INCREASED from 15.5% to 19%
Stunting Deficit in Height for Age
Wasting Deficit in Weight for Height. Underweight Wt. for Age

Climate Change Natural Disaster

Heat Wave

2000 Orissa >2000Deaths

2003Andhra

Pradesh1421deaths

France 15000deaths in few
weeks

West Europe70,000more
deaths than equivalent period

Water Shortage

Heavy Rains Floods

July26-27 2005Mumbai

Over 944mm rainfall in a single
day.killing over 600 pople

Barmer,Rajasthan

Ahmedabad

Bangalore

Calcutta

- Unprecedented loss of livelihoods
- Unprecedented Displacement of People
- Existing Agrarian Crisis
- Unfolding Global and National Food Crisis
- Unfolding Water Crisis
- Retaliation to the increasing Injustice with increasing civil strife & violence

Deteriorating Human Development Index

- **Loss of Human Values of Caring , Compassion , Kindness ,Insaniyat Quotient**

The Climate Change will worsen the situation unless root causes are addressed

- Power imbalance – misuse of power in using global&National resources,Natural Resources , Global Commons
- Unsustainable, Disparity Creating, Environment Destroying, Economic Globalization
- Unregulated Growth of Multinationals and Predatory Market Liberalization putting Trade and Markets before Human Health ,Human values
- Unprecedented Growth of Global Trade Involving Movement of Goods, Services,Food Vegetables(Food Miles) and People(poor as contract labour & migrants
- Developing Countries aping the Energy guzzling Unsustainable Western Consumption model.

- Debt ridden as well as aspiring developing countries are adopting industrial models which are contributing to climate change.
- Weak Regulatory & Compensatory Mechanism
- Eg. Ongoing Bhopal Gas Tragedy, Toxic Effluents seeping in soil & subsoil water .
Failure to address contemporary Health challenges in Health Policy, Medical Education eg Occupational Health , Environment & Health , Global Warming & Climate Change
- Failure of Corporate Responsibility. Bhopal Gas Tragedy Denial of Sodium Thiosulphate the only Antidote for Cyanide like Poisoning .
Refusing the Clean up Liability

