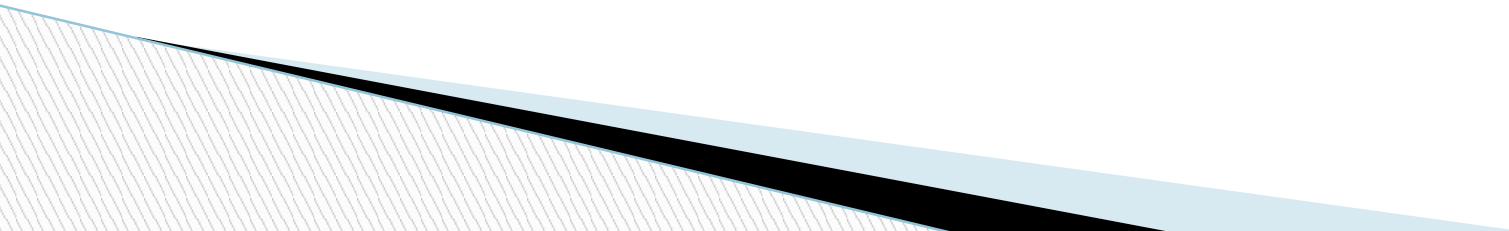


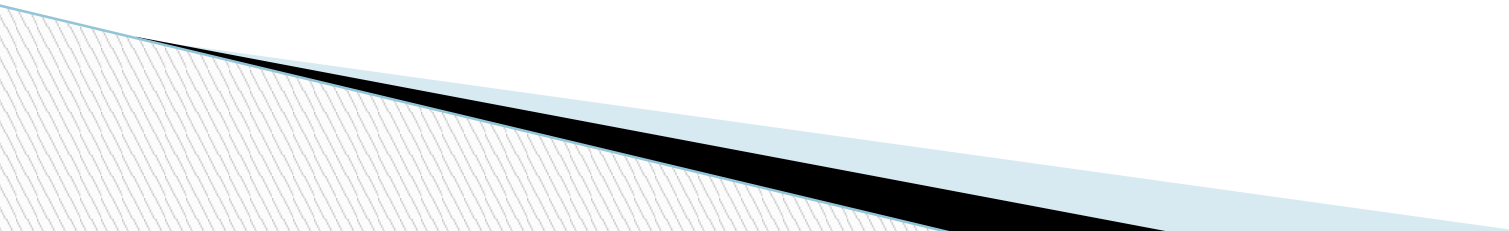
Various economic activities and their impact on Public and environmental health

Agricultural Developments (Development of Irrigation Schemes)

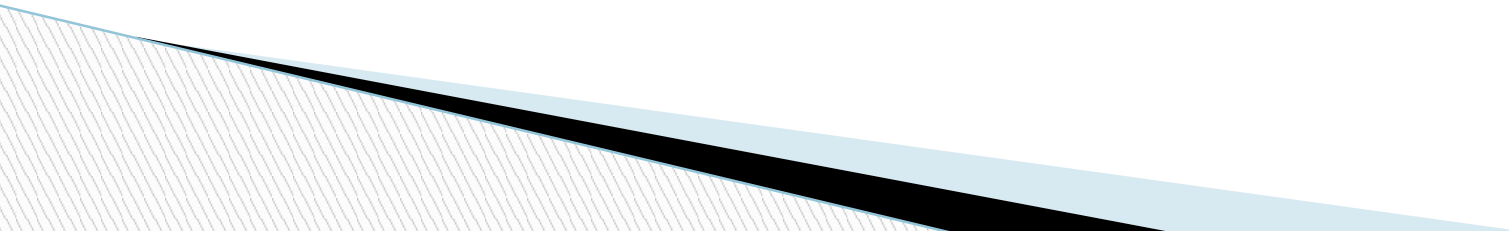
Advantages

1. Raise incomes (Create employment)
 2. Improve food security increasing the potential for better nutrition and health.
- 

Health effects

1. Transmission of waterborne or water related diseases.
They include
 - cholera, typhoid, dysentery.
 - schistosomiasis (bilhazia)
 - malaria.
 - onchocerciasis.
 2. Transmission of Vectorborne diseases due to
 - (i) location of dwelling.
 - (ii) economic expansion and migration.
- 

Environmental changes brought about by irrigation practices and have effects on health.

- (i) Simplification of habitat.
 - (ii) Increase in the area of surface water.
 - (iii) A rise in water table.
 - (iv) Changes in the rate of water flow.
 - (v) A modification of micro - climate.
 - (vi) Urban development.
- 

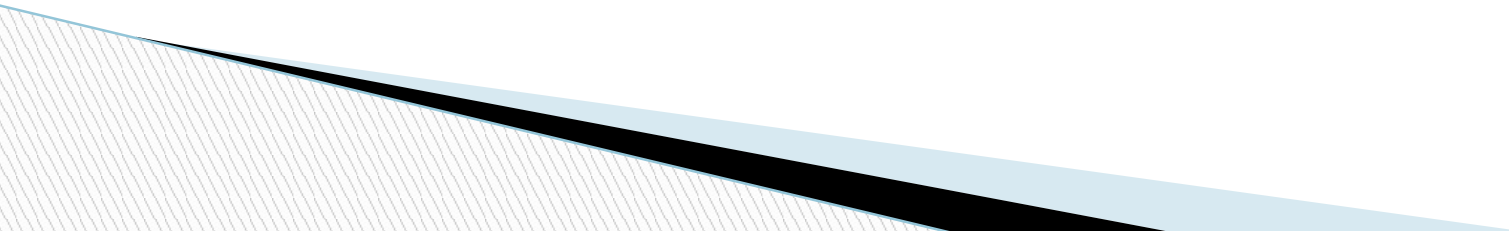
Impact of farming on water quality

- Contamination of ground water and surface water by
 - (i) Fertilizers & chemicals.
 - (ii) Animal wastes.

NB: Drainage water with high salinity and excess of nutrients has contributed to increases in the concentration of total dissolved solids & eutrophication of lakes and reservoirs.

Forestry and Health

Advantages of forests

- (i) Soil protection (erosion)
 - (ii) Improve soil fertility.
 - (iii) Protect cash crops / crops.
 - (iv) Provide timber.
 - (v) Habitat for animals & plants.
 - (vi) Source of animal feeds.
- 

Latest developments

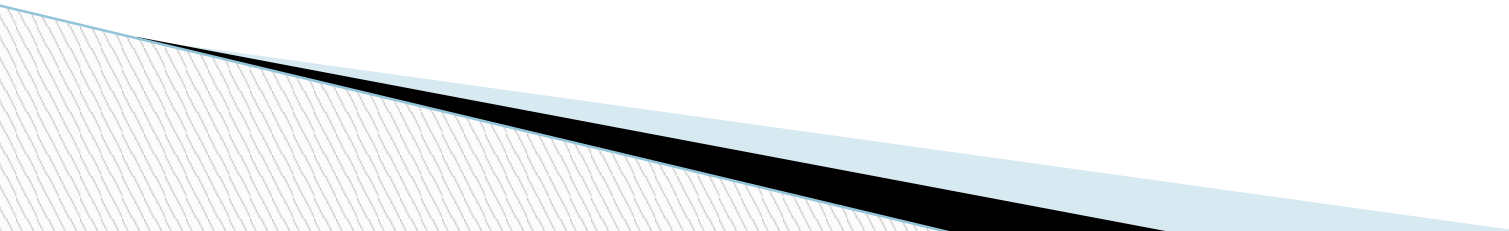
- Rapid deforestation for:
 - (i) Timber
 - (ii) Crop production
 - (iii) Cattle ranching
 - (iv) Urban developments

Health effects

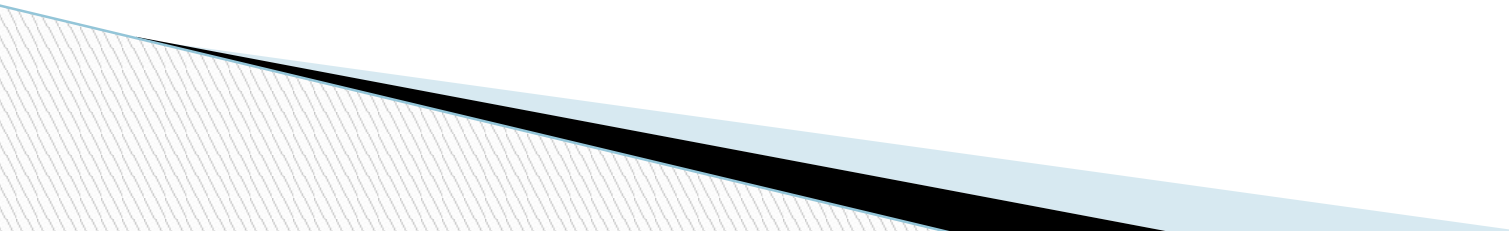
- (i) Flooding in fertile lands
 - Malnutrition, hunger
 - Animal /wildlife /people conflict (injuries and death)
 - Zoonotic diseases.

Energy use & Health

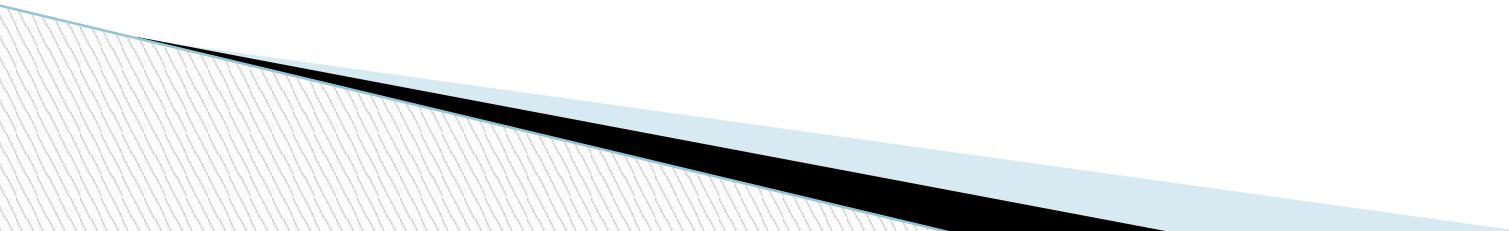
Energy use & Health Benefits

1. Fossil fuels (electricity) helps in improved food handling, storing, packaging and cooking.
 2. Domestic & commercial refrigerators helps in safer food storage.
 3. Metal cooking stores eliminate pathogens as opposed to earthenware pots.
 4. Energy use in hospitals helps in emergency generators and therefore reliable services.
 5. Transport – motorization e.g ambulances, health care personnel to reach patients, distribution of drugs & other hospital equipments.
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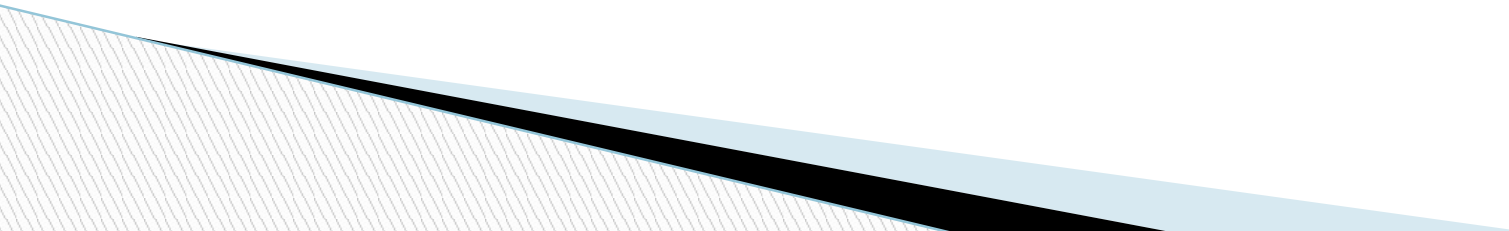
Environmental & health effects

- (1) Air pollution – carbon dioxide, oxides of nitrogen, sulphides etc.
 - (2) Incomplete combustion – black smoke (carbon, carbon monoxide and oxidized organic compounds)
 - (3) Fossil fuels contain organic or inorganic (Sulphur dioxide)
 - (4) Inorganic impurities particularly in coal (mercury), lead, aluminium and arsenic.
 - (5) Major sources of urban air pollution include coal fired or oil fired power stations, motor vehicles, home cooking, heating and industries.
 - (6) Lead in paint in old buildings and use of lead pipes is also a source of exposure for children.
- 

Health effects from air pollution

- (i) respiratory diseases.
 - (ii) Smog
 - (iii) Destruction of ozone layer.
 - (iv) Mortality / morbidity for the under five children.
 - (v) Acid rain.
 - (vi) Green house effects & global warming
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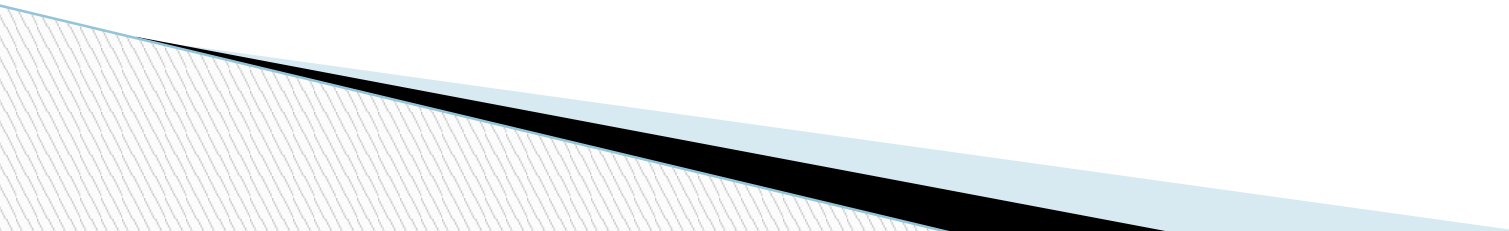
Health effects of hydro power

1. Among the dam construction workers
 - (i) Accidents
 - (ii) Illnesses
 - (iii) Deaths
 2. Displacement of people causing stress
 3. Disruption of food supplies and lack of housing, etc.
 4. Vectorborne diseases.
 5. Lowering of the ground water will lead to water shortage.
 6. Exposure to electromagnetic fluids increasing risks of cancers (leukemia and nervous system)
- 

Other energy related accidents

- (i) Burns, scalds and accidental fires from portable heaters, cookers and open fires.
- (ii) Indoor pollution from fossil fuels:
 - Lung cancer (respiratory cancer)
 - Inflammation of the respiratory tract.
 - Chronic pulmonary disease.
 - Chronic bronchitis.
 - Impaired vision (health damage to conjunctiva and cornea.)

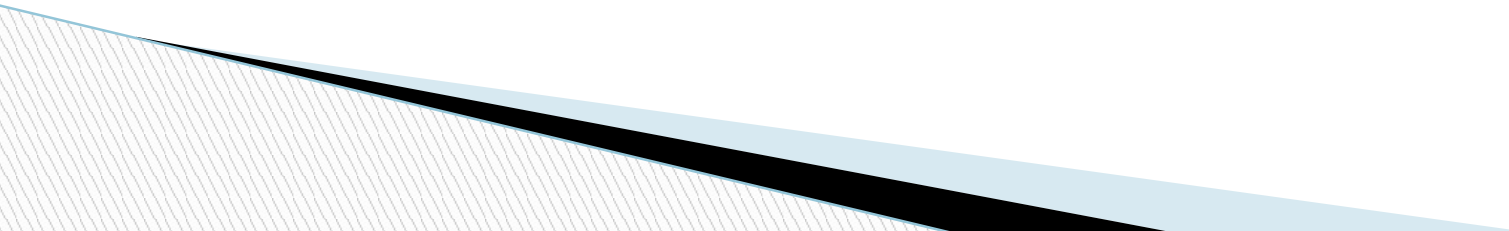
Strategies to minimize the adverse Health effects.

- (i) Better design of heating stoves & better ventilation.
 - (ii) Reducing air pollution from fossil fuel use.
 - (iii) Efficient & conservation of energy.
 - Modifying lifestyles and work practices e.g reducing the use of private car in the city and adopting public transport systems.
 - (iv) Research development and use of renewable energy resources e.g solar, wind and renewable biomass.
 - (v) Risk assessment and preparedness.
 - (vi) Environmental health assessment. e.g HIA and EIA/EA
- 

Industry and Health

occupational exposure

Common occupational diseases.

- i. Silicosis – coal mining.
 - ii. Pneumoconiosis – coal mining.
 - iii. Lead poisoning – paints etc.
 - iv. Noise induced hearing loss.
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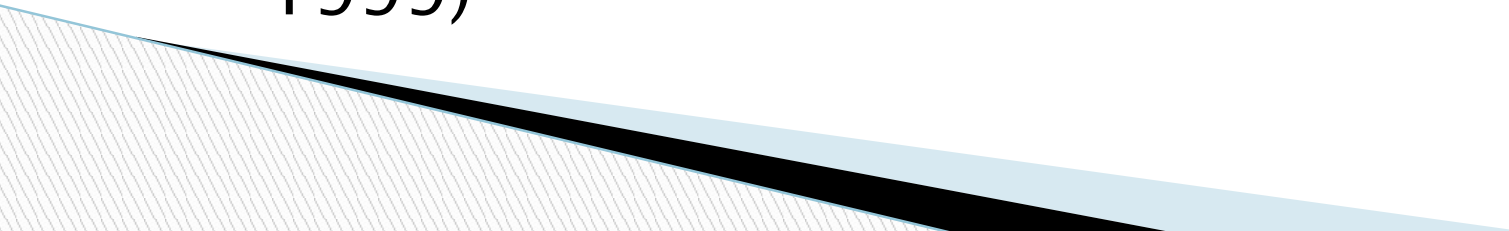
Health risks to the public

- i. Lead and asbestos substances brought home on workers clottings.
- ii. Water contamination from industrial wastes.
- iii. Industrial pollution from industrial wastes to rivers or coastal fisheries decreasing availability of food sources.
- iv. Industrial emission leading to green house gas concentrations and thus to global warming.

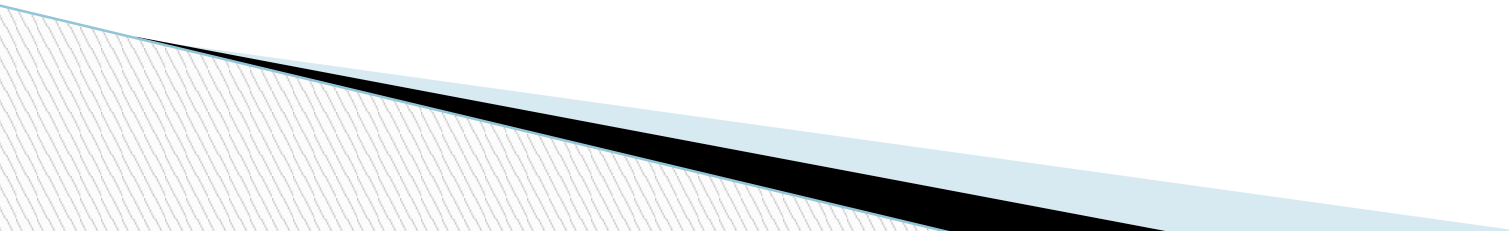
Accidents

- i. From toxic substances from accidental release of toxic chemicals in factories during transport, stored, explosions, fire and collisions.

Strategies to minimize adverse Health effects

- i. Co ordination among stakeholders to control the adverse effects of industrialization on health.
 - ii. Education & awareness of the adverse effects on health and environment of chemical pollution noise etc.
 - iii. Appropriate technology to eliminate/ reduce pollution.
 - iv. Risk management programmes.
 - v. Incorporation of health & environmental considerations in the planning of new industries.
 - vi. Application of law enforcement to control pollution (EMCA, 1999)
- 

Population and Health

1. Population size – world population (7.5B)(UN)
 2. Population dynamics (Kenya – 45M)
 - i. life expectancy in Kenya
 - Men – 61
 - Women – 64
- The mortality experience of a population is better expressed in terms of life expectancy at birth.
 - A major component of mortality is death by infants.
- 

Causes of Death.

- Developing countries – gastro intestinal and respiratory diseases.
- Developed countries – cardiovascular diseases.
- Mortality from cardiovascular diseases will rise in future in developing countries due to life span increases and lifestyle habits especially smoking and diet change.
- High mortality of infections and respiratory diseases is probably the combined result of overcrowding and poor nutrition but much could be prevented or alleviated by immunization and use of modern drugs.
- The environment has an indirect role in morbidity from circulatory and many climate diseases.
- Malaria exerts more than/ multi deaths a year mostly among children and seriously reduces the productivity of the affected.

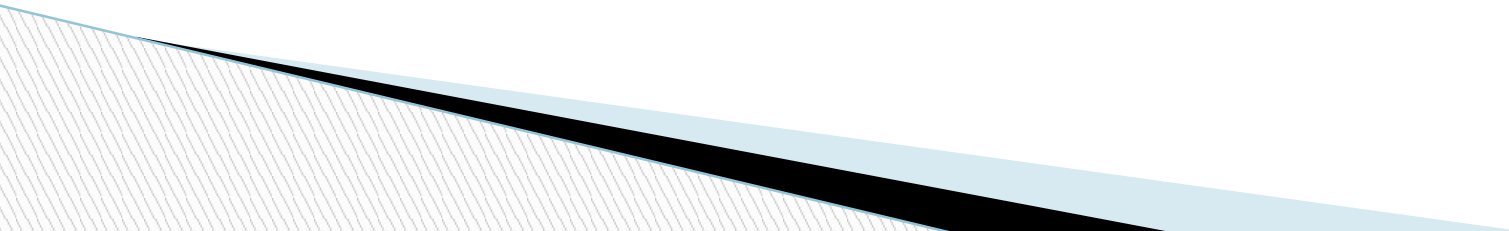
Migration & urbanization

1. Rapid grow in urban population.

Health and environment problems

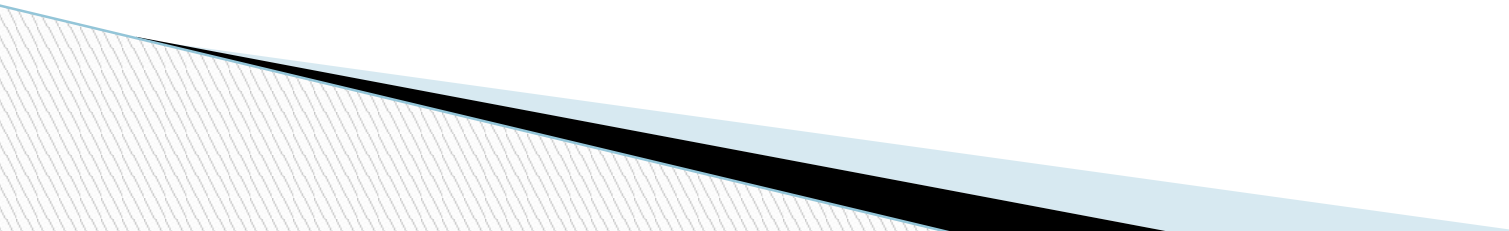
- i. Risk of outbreaks of fire and diseases
- ii. Pressure on adequate housing, water, sanitation and health care.

Effects of population growth on human health.

- i. Inadequate resources (land, food, energy, air and water)
 - ii. Overcrowding leading to infectious and contagious diseases.
 - iii. Risks to famine, lightning, drought, floods and strong winds.
 - iv. Increased urban climate rate, accidents, conflicts and pollution in general.
 - v. Chemicals e.g carbon monoxide from motor vehicles and other gases from industries and factories including Sulphur oxide and hydrocarbons.
 - vi. Air pollution from toxic substances.
 - vii. Air pollution leads to suffocation, heat and lung diseases, poisoning, respiratory diseases, asthma, bronchitis and cancer.
 - viii. Water pollution – industrial effluents, sewage and refuse.
 - ix. Solid waste
 - x. Pollution of heavy metals (industrial process – mercury, lead find their way into lake & rivers – polluting drinking water)
- 

Poverty and health

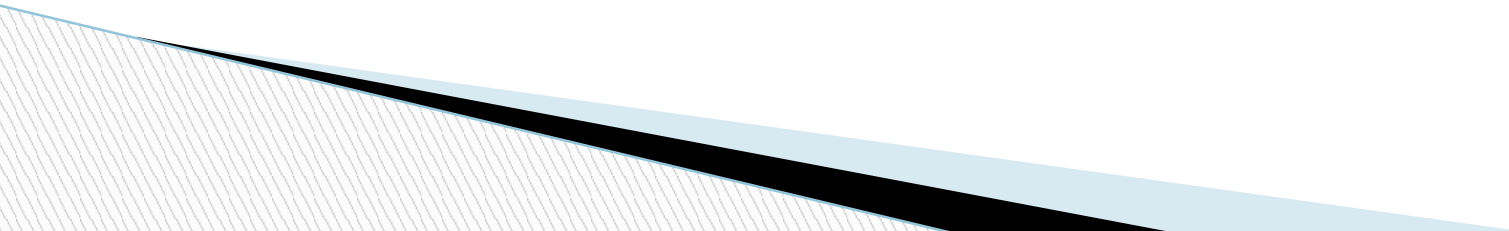
Definition of poverty

- Inability of an individual or household to attain a minimum standard of living (world bank, 1990)
 - Associations between poverty and health .
 - i. Much lower life expectancy.
 - ii. High infant mortality rate.
 - iii. Higher incidence of disablement.
 - iv. Suffer more from communicable diseases.
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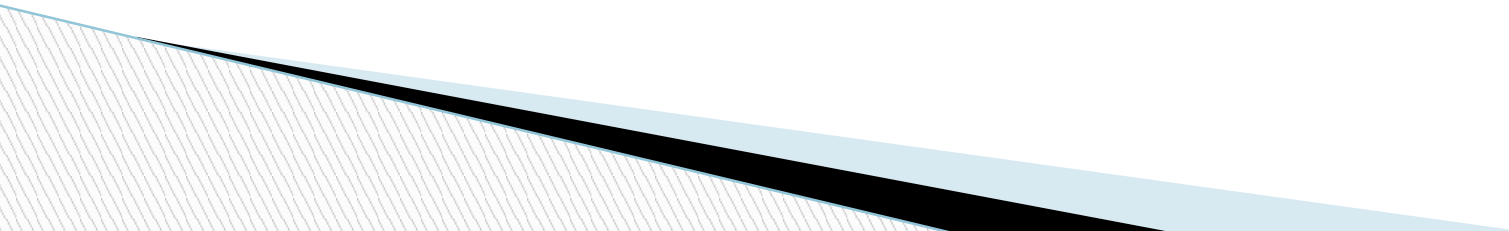
NB:

- i. Poverty is largely due to lack of income/ asset.
- ii. Estimation of poverty in a county is based on the number of people with incomes below a certain defined level.
- iii. An alternative way of calculating the number of people living in poverty is to count how many lack a minimum standard of living which include .
 - i. Adequate food
 - ii. Safe and sufficient supplies of water, secure shelter, access to education and health, provision for the removal of domestic wastes.

Rural and urban poverty

- i. (NB) report indicates that poor urban dwellers tend to suffer more than rural dwellers.
 - ii. The urban poor are housed in slums or squatter settlements and often counted with;
 - iii. Stressful overcrowding.
 - iv. Bad/ poor sanitation.
 - v. Contaminated water.
 - vi. Higher rates of diseases & death.
- 

Indicators of poverty

- i. Hunger – little or no food because of lack of money to buy food.
 - ii. Disease and death – lack of adequate & quality food the body is vulnerable to disease.
 - iii. Illiteracy – no money for education.
- 

Human settlements, urbanization & health

Housing & basic services

Link between housing & health

- i. Physical structure.
- ii. Provision of adequate water and cooking.
- iii. Washing laundry.
- iv. Food storage and removal of human waste water.
- v. Site and neighborhood (security against injury and disease vectors)

NB: health & safety aspects of housing are concentrated in:

- i. Design
 - ii. Physical infrastructure
 - iii. Building materials
 - iv. Building performance(light and ventilation)
- 

Housing and health

Link between housing and health.

- i. Structure of the shelters (protection against heat, cold, noise & invasion of dust, rain, insects & vectors)
- ii. Water availability (quality & quantity)
- iii. Disposal (solid & liquid)
- iv. Quality of housing site (safety)
- v. To consequences of overcrowding. – Habitability (no. of occupants) (accidents, airborne infection, pneumonia & TB)
- vi. Food, safety standards (storage facilities)
- vii. Vectors & hosts of diseases associated with domestic environment (cockroaches)
- viii. Home as a work place (occupational health and storage of toxic/chemicals/ equipment etc.(first aid equipment))
- ix. Cost of the house – (stress of insecure tenure)
- x. Social aspect(internal characteristics, quality & safety of the neighborhood)

END