

# **Social Issues and The Environment**

# From Unsustainable to Sustainable Development

1. DEVELOPMENT

2. BENEFITS OF DEVELOPMENT

3. IMPACTS OF OUR PRESENT DEVELOPMENTAL  
ACTIVITIES

4. SUSTAINABLE DEVELOPMENT

5. SUSTAINABILITY OF A SYSTEM DEPENDS UPON  
CARRYING CAPACITY OF A SYSTEM!

## 6. WHAT IS CARRYING CAPACITY A SYSTEM AND

WHAT HAPPENS WHEN THE CARRYING CAPACITY IS  
CROSSED?

## 7. TWO KEY ASPECTS OF SUSTAINABLE DEVELOPMENT

- INTER-GENERATIONAL EQUITY
- INTRA-GENERATIONAL EQUITY
- *Inter means between or among.; intra- means within*

## 8. WHAT IS THE SOLUTION / WHAT WE HAVE TO THINK / PLAN & ACT

## 9. WHAT ARE THE POSSIBLE STRATEGIES TO ACHIEVE SUSTAINABLE DEVELOPMENT

# 1,2,3.Development, Benefits and Impacts

- **MEANING:** Construction of Dams/roads/Railway lines/mining/Population growth/Industrialization
- **Measurement of Human development:** Earlier by Economic Status (of a country) alone
- **Benefits of this development:** Improvement in Quality of Human Life (in Short Term)
- **Impacts of this development:** (MANY)
  1. RICH Countries Become RICHER; while POOR Countries Become POORER
  2. In Developing Nations: Disparity in Income Levels grown to Very high between Rich and Poor
  3. Developed Nations: Realized that their lives are getting seriously affected.

PARAMETER	DEVELOPED NATIONS	DEVELOPING NATIONS
POPULATION SIZE (% of WORLD)	20%	80%
RESOURCES CONSUMPTION (% of WORLD)	80%	20%
POLLUTION GENERATION (% of WORLD)	80%	20%
IMPORTANT PROBLEMS FACED	POLLUTION EFFECTS/CONSEQUENCES (FLOODS/DROUGHT/NEW DISEASES)	POVERTY AND POPULATION EXPLOSION

- This type of development did NOT Improve the Quality of Human

Life in the Long-Run BECAUSE OF:

1. Excessive Drawing/Usage of Resources **than** Nature can regenerate
2. More Pollutant generation
3. Loss of Biodiversity

## 4. Sustainable Development

- More **equitable use** of resources is required aiming at short term economic gains for a long term sustainable growth.
- **“meeting the needs of the present without compromising the ability of future generations to meet their own needs”** (G.H. Brundtland)





## 5. SUSTAINABILITY of a system depends upon CARRYING CAPACITY

- **SYSTEM:** Living organisms with their associated resources.
- **WHAT IS CARRYING CAPACITY A SYSTEM :**
  - i) Supporting Capacity: Capacity to Regenerate/Reproduce/Bounce Back
  - ii) Assimilation/digestion Capacity: Capacity to tolerate Different Stresses(Diseases/pests/Natural disturbances)

## 6. WHAT HAPPENS IF THE CARRYING CAPACITY IS CROSSED?

Over -exploitation of a resource

resulting in

Beginning of Environmental Degradation

Continues

Till it reaches a point of No-Return back

(e.g. Species Extinction, Soil degradation etc.)

# 7. Two Key Aspects of Sustainable Development

- INTER-GENERATIONAL EQUITY:
  - Handing over A safe, Healthy, Resourceful Environment to our future generation.
- INTRA-GENERATIONAL EQUITY
  - Using Technological Developments that promote economic growth of poor countries so that wealth gap between different nations can be reduced.

## 8. WHAT IS THE SOLUTION/WHAT WE HAVE TO THINK/PLAN & ACT

- PLAN DEVELOPMENTAL ACTIVITIES KEEPING IN VIEW

I) ENVIRONMENT PROTECTION

II) CONSERVATION OF NATURAL RESOURCES

III) CONSERVATION OF BIODIVERSITY

# 9. POSSIBLE STRATEGIES/ MEASURES TO ACHIVE SUSTAINABLE DEVELOPMENT

- DEVELOPED NATIONS should:
  - Pay a fair price for all the resources Drawn from other Countries
  - Take the responsibility of Treating Environment Pollution
- DEVELOPING NATIONS should:
  - Reduce their Population size
  - Plan developmental activities equally
  - Discourage Urbanization

- Use locally adaptable, eco-friendly and resource efficient technology; that uses less Resources, produce less waste
- Practice 3R's principle
- Promote Environment Education/awareness
- Use resources as per the carrying capacity
- Conduct a free and fair Environment Impact Assessment(EIA)

**WE ALL: THINK GLOBALLY AND ACT LOCALLY**

# How to test if a Project Proposal can achieve the goals of sustainability?

- Does it protect our biodiversity?
- Does it prevent soil erosion?
- Does it increase forest cover?
- Does it cut off the emissions of CFC, SO<sub>x</sub>, NO<sub>x</sub> and CO<sub>2</sub>?
- Does it reduce waste generation?
- Does it bring benefits to All?

Economy

Environment



jobs  
prosperity  
wealth  
creation

sustainable  
economy

natural  
environment  
renewable  
resource

sustainable  
development

social  
equity

local  
environment

social inclusion  
communities

Society



# Sustainable Development

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graph TD; SD[Sustainable Development] --> SE[Social Equity]; SD --> EE[Economic Efficiency]; SD --> ER[Environmental Responsibility]; SE --> SE_L["•Living conditions<br>•Equal opportunity<br>•Social cohesion<br>•International solidarity<br>•Maintenance of human capital"]; EE --> EE_L["•Economic growth<br>•Efficiency and competitiveness<br>•Flexibility and stability<br>•Production / consumption<br>•Employment<br>•International trade"]; ER --> ER_L["•Consumption of resources<br>•Materials and wastes<br>•Risks<br>•Rate of change<br>•Natural and cultural landscape"];
```

## Social Equity

- Living conditions
- Equal opportunity
- Social cohesion
- International solidarity
- Maintenance of human capital

## Economic Efficiency

- Economic growth
- Efficiency and competitiveness
- Flexibility and stability
- Production / consumption
- Employment
- International trade

## Environmental Responsibility

- Consumption of resources
- Materials and wastes
- Risks
- Rate of change
- Natural and cultural landscape

A diagram illustrating the three pillars of sustainable development. It features a blue triangular roof with the text "Sustainable development" inside. Below the roof are three white columns. The left column is labeled "Social", the middle column is labeled "Environment", and the right column is labeled "Economy". The columns are supported by a grey base.

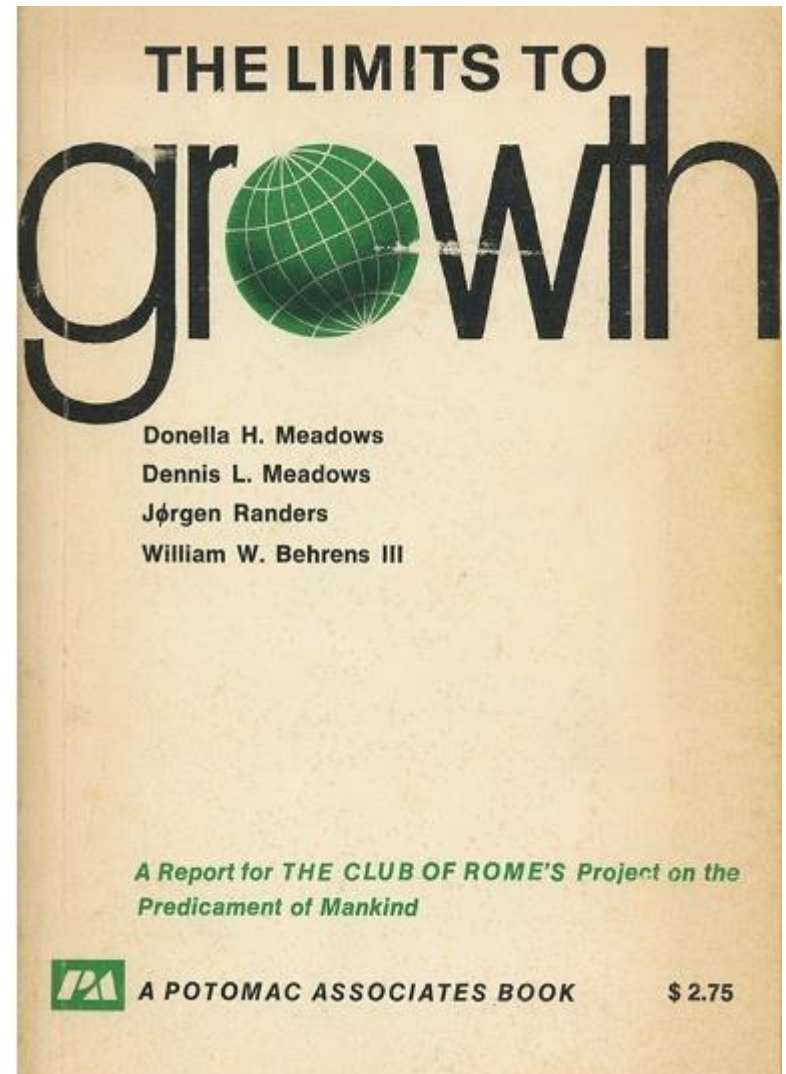
**Sustainable development**

**Social**

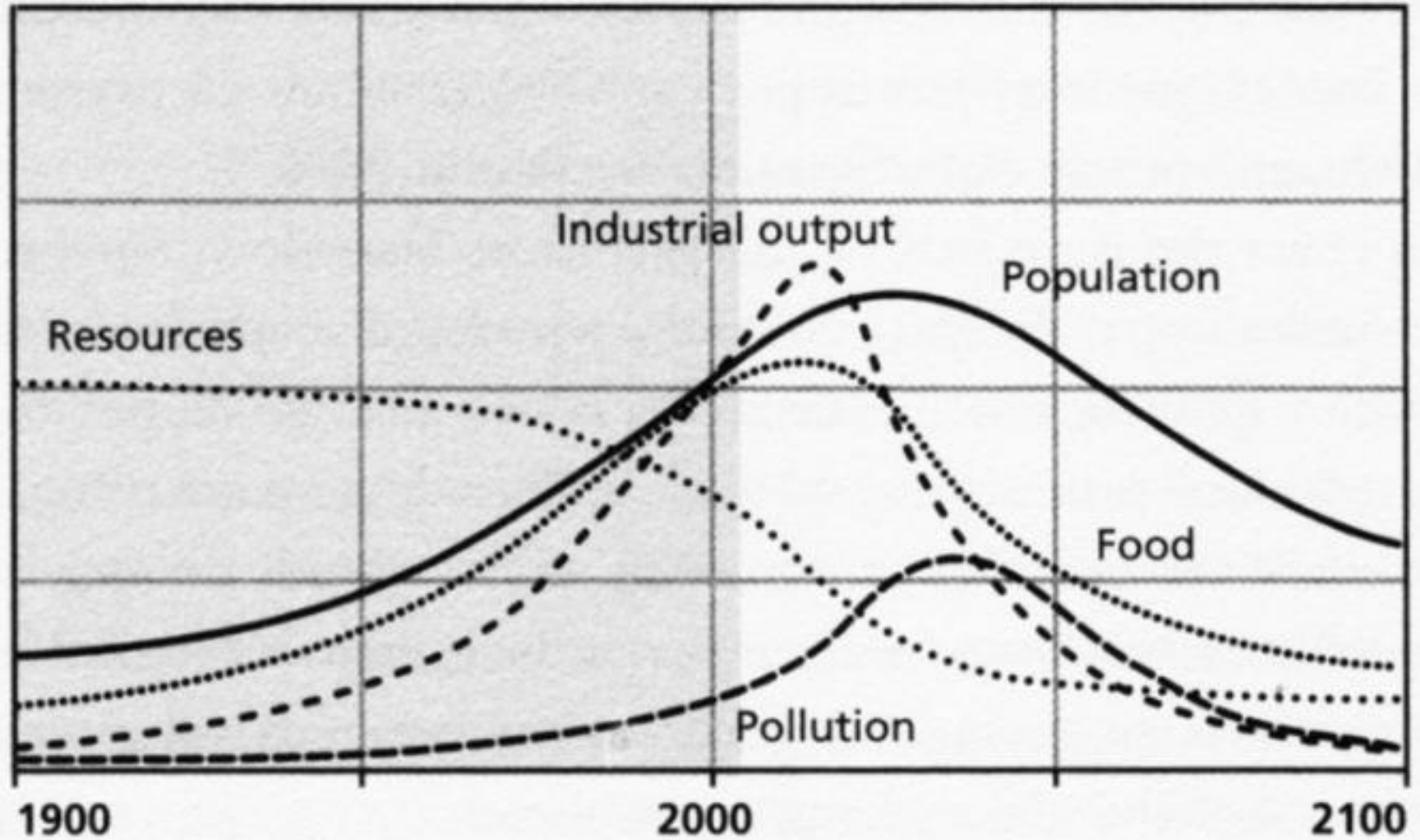
**Environment**

**Economy**

- Over-exploitation of natural resources and “The Limits to Growth” (Meadows et al., 1972) — Unsustainable development
- **Argument** - “unchecked consumption and economic growth on our finite planet was leading the Earth towards ‘overshoot’ of its carrying capacity, followed by disaster”.



# State of the World



- **Agenda 21, Rio Earth Summit**

- UN conference on Environment and Development (UNCED) held at Rio de Janeiro, Brazil in 1992

- Agenda 21: Proposes a global program of action on sustainable development in social, economic and political context for the 21<sup>st</sup> century.

- **Development projects** (dams, major highways, mining, industries and tourism development) can seriously damage ecosystems that support the ecological health of a region.

- Economic benefits of a project must be weighed against the possible environmental costs before a project is permitted.

# Urban Problems Related to Energy

- World population: >7 billion
- Urban population in the world – 2/3<sup>rd</sup> of the total population.
- Cities – main centers of economic growth, trade, education, and employment.
- Due to rapid urbanization, it is difficult to accommodate all the industrial, commercial & residential facilities within a limited municipal boundary.
- Higher standard of living in Urban areas – results in high material and energy consumption and waste generation as compared to that of rural areas.

# Energy demanding activities

- **Residential and commercial lighting.**
- **Transportation** - including automobiles and public transport systems.
- ✓ Urban transport mainly **depends on fossil fuels.**
- ✓ Use of personal transport rather than public transport systems.
- ✓ Load of particulate matter and CO from the exhaust of vehicles, rise in the cases of respiratory diseases.

- **Industrial activities** consuming a large proportion of energy.
- Proper **waste disposal** using energy-intensive/demand techniques.
- **Prevention and control of air and water pollution** requiring energy dependent technologies.
- Modern life style using large number of electrical gadgets in everyday life.
  - Use of air conditioners in stead of fans, in hot climates.
  - High rising buildings depend on energy to operate lifts.



# Case study – Energy efficiency

- Urban residential and commercial facilities are responsible for ~ **35%** of USA's GHG emissions.
- Buildings need to be made **energy efficient** and reduce CO<sub>2</sub> emissions, which cause 'heat islands' or pockets of high temperature over these urban areas.