

# Sustainable Development



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# What is Sustainable Development?

In terms of Brundtland Commission, Sustainable Development (SD) is “the development that meets the needs of present without compromising the ability of future generations to meet their own needs.”

# HISTORY OF SD

- The concept of SD has been rooted in distant pasts.
- It is evident from the works of Thomas Malthus on the dangers of population growth in the late 1700s.
- The concern began with the 1974 UN Cocoyoc Declaration, which addressed the use of natural resources in sustainable way.

# History Contd.

- In 1982, UN established the World Commission on Environment & Development (WCED) headed by Gro Harlem Brundtland, known as Brundtland Commission.
- They published their report 'Our Common Future' in 1987, which got the worldwide attention on Sustainable Development.
- More recently the UN sponsored United Nations Conference on Environment & Development (UNCED) in 1992 in Rio de Janeiro. The conference delegates approved 5 agreements designed to foster the diff. Aspects of sustainability.

# **OUR COMMON FUTURE**

**THE WORLD COMMISSION**

**ON ENVIRONMENT**

**AND DEVELOPMENT**

**Global level**

**National level**

**Regional level**



**Social**

**Economic**

**Environment**

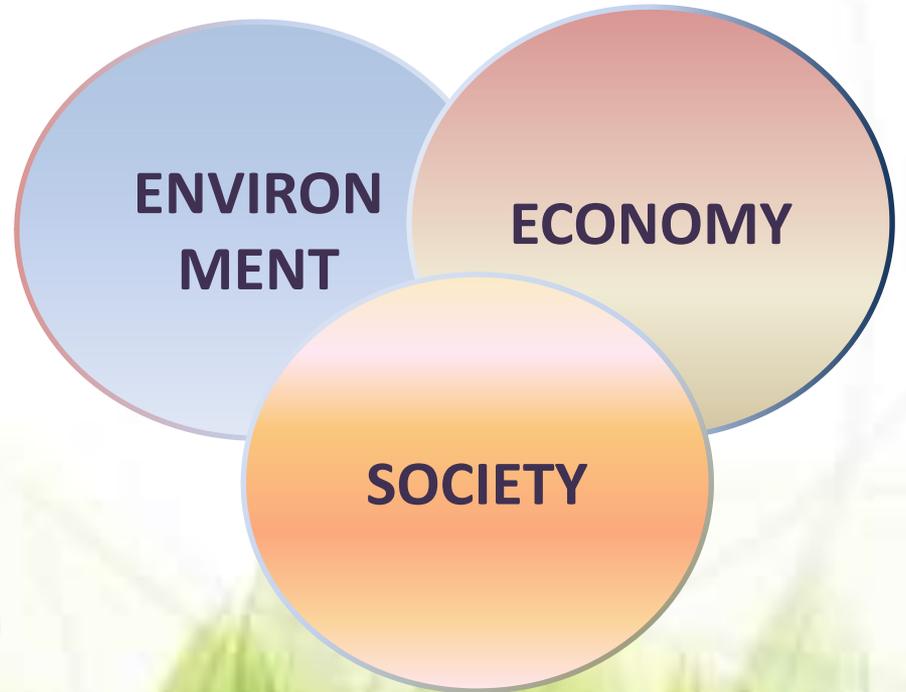
# 5 Agreements

- Agenda 21
- The Rio declaration on Environment & development
- The statement of principles on forests
- The framework convention on Climate Change
- The convention of biological diversity



# 3 key elements of SD

- Environment
- Economy
- Society



(WCED, 1987)



# Environmental Sustainability

Environment sustainability involves decision making and taking actions to protect the natural world, by focusing on preserving the capability of the environment to support human life.

- Biodiversity
- Materials
- Energy
- Biophysical interactions



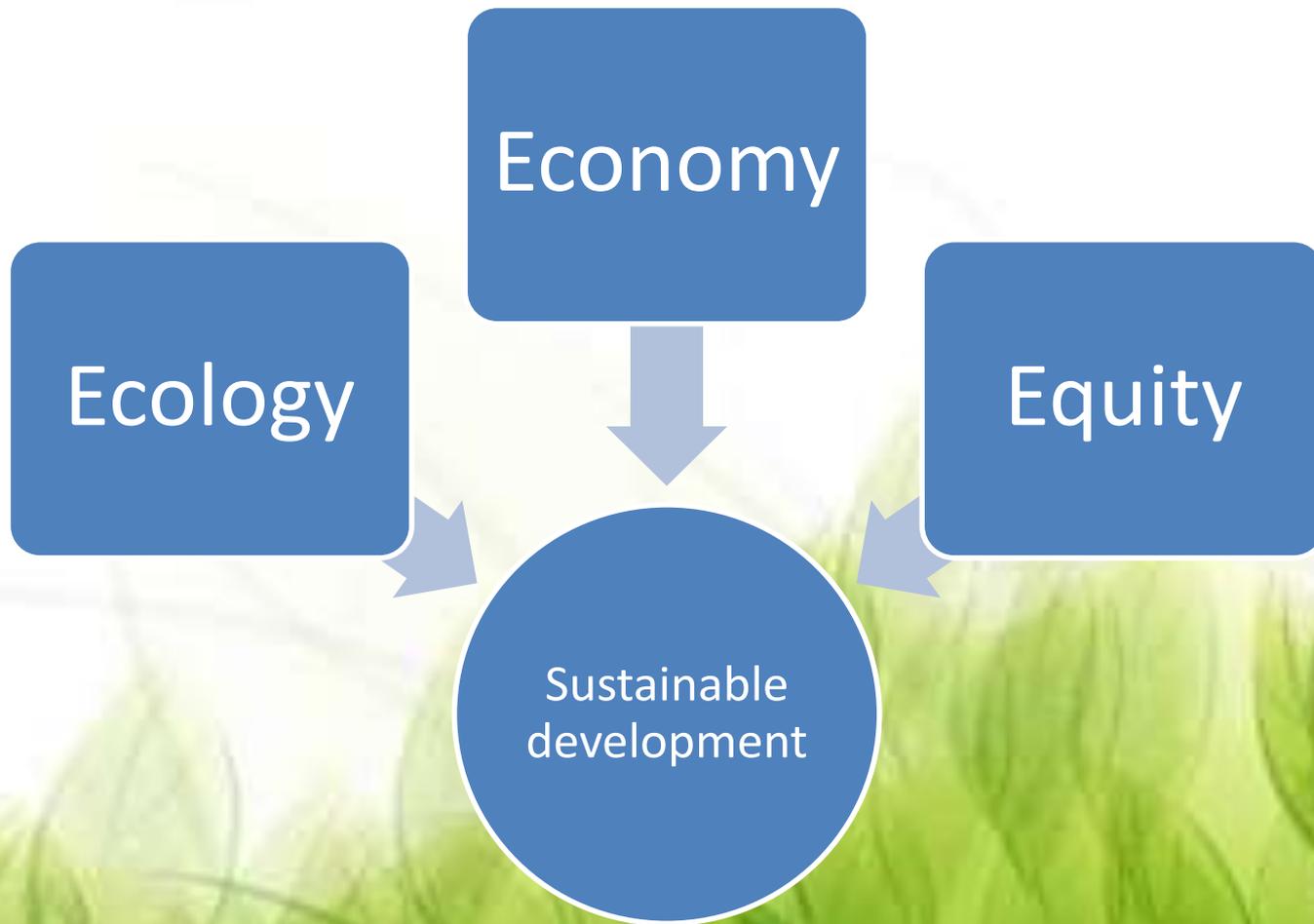
# Economic Sustainability

- The use of various strategies for employing existing resources optimally so that a responsible & beneficial balance can be achieved over the longer term.
  - Money & capital
  - Employment
  - Technological growth
  - Investment

# Socio-political Sustainability

- The ability of a community to develop processes & structures which not only meet the needs of its current members but also support the ability of future generations to maintain a healthy community.
- Human density
- Equity
- Quality of life
- Institutional structures
- Political structures

# The 3E's Model



# Sustainable Development : Problems

- Depletion of finite resources -  
fuels,soil,minerals,species
- Over use of renewable resource-  
forests,fishes,wildlife,public funds
- Pollution  
(air,water,soil)
- Inequality  
(economy ,political ,social ,gender)
- Species loss: endangered species

**(WCED,1987)**

# Solutions

- Cyclical material use(3R's)
- Safe reliable energy
- Life based interests:  
health,creativity,communications
- intellectual &spiritual development

# Ecological Controls Of SD

According to the Brundtland Report, SD program have come to be distinguished as promoting either weak or strong.

## **WEAK SD**

- Key concept- Economic Sustainability
- Cost/benefit analysis
- Consideration of financial costs
- Used to evaluate 'trade off'

## **STRONG SD**

- Key concept- Ecological sustainability
- No consideration of financial costs

Gardner(2006) suggests 3 basic criteria for maintenance of natural capital and ecological sustainability.

- ❖ For renewable resources, rate of harvest mustn't be more than rate of regeneration :- **Sustainable Yield.**
- ❖ The rate of waste generation shouldn't cross the assimilative capacity of the environment :- **Sustainable Waste Disposal**
- ❖ The depletion of non-renewable resources should require comparable development of renewable **Substitutes** for that resources.

# Revolutionary thinking in economics is needed

- Conventional economic systems is largely dependent on the continuous growth & expansion of fossil fuel based markets, goods and services.
- However, natural resources are depleted at ever increasing rates.
- Without the ability to plan & regulate resource use in the long-term there is no hope for sustainability.

# Economic indicators to be responsive to progress in SD

- ✓ **Genuine human program:**
  - **Genuine progress indicator (+)**
  - **Happy Planet Index(+)**
  - **Well being index (+)**
- ✓ **Renewable energy platform:**
  - **Carbon foot print(-)**
  - **Energy intensity(-)**
- ✓ **Social equity:**
  - **access to improved water and sanitation(+)**
- ✓ **Protect and restore natural capital:**
  - **Ecological footprint (-)**
- ✓ **Economic localization:**
  - **Miles to market (-)**

**(Source: Talberth,j. 2008)**

# Economic objectives featured in the framework of SD

- Promote progress based on multiple dimensions of human well-being
- Enhance the usage of the renewable energy sources
- Encourage the fair distribution of resources & opportunity.
- Protect & restore natural capital
- Promote a local economy

# Sustainable Food production

This method takes into account environmental, health, social & economic concerns.

- Local & seasonal food production
- Organic & sustainable farming
- Reduce foods of animal origin & maximize welfare standards
- Fair trade certified products
- Food democracy (food system & supply)
- Reduction of waste & packaging

# Renewable Energy



- RE is projected to play a central role in most GHG mitigation strategies ,which must be technically feasible& economically efficient so that any cost burdens are minimized.
- For example : solar energy ,wind energy, geothermal energy

# Carbon Markets

- The Kyoto Protocol to the UN Framework Convention on Climate Change has established an international Carbon Market.
- Under this protocol, 38 industrialised countries agreed that by 2012 they would cut GHG emissions to an average of 5% below 1990 levels.
- The protocol has formed a market for trading Carbon credits.
- The structure of the agreement is implemented through a cap & trade program.

# The Ecocity Concept(Green cities)

- Ecocity is a city built off the principles of living within the means of the environment.
- The ultimate goal of many ecocities is to eliminate all carbon waste , to produce energy entirely through RE sources , stimulating economic growth , reducing poverty, improving life quality.
- Concept was given by 'Urban Ecology' organization, California,1975.



Thank You

Go Green!

*Submitted to: Dr. Ritu Singh*