



Theme 3 (Part 1)

Measuring Environmental Issues: The Scale and Elements

EC SO6001: Sustainable Communities & Global Development



Sustainable Development

A Reminder

- Meeting the needs of the present without compromising the ability of future generations to meet their own needs
 - (Brundtland (1987): Our Common Future)

Measuring the Issues

European Committee on the Environment, Public Health & Food Safety (ENVI)

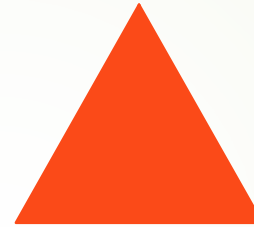
- The committee is responsible for environmental policy and environmental protection measures, in particular concerning:
 - a) air, soil and water pollution, waste management and recycling, dangerous substances and preparations, noise levels, climate change, protection of biodiversity,
 - b) sustainable development,
 - c) international and regional measures and agreements aimed at protecting the environment,
 - d) restoration of environmental damage,
 - e) civil protection,
 - f) the European Environment Agency;

European Committee on the Environment, Public Health & Food Safety

ENVI Conceptual Tools



Scale of
the issue



The Elements of
Sustainability



Decision
Making



Values,
ideology,
strategies

based on (Barr,
2008)



Scale of the issue



- Scale
 - An ordered series of graduated quantities, values, degrees, etc.
 - Relative magnitude
 - Literally, how large or small is the issue to be evaluated

The Scale May Be . . .



- Physical / geographical / spatial
 - size of the area effected, habitat or geographical sub-unit effected
- Ecological
 - does this effect single species, whole ecosystems, individuals, communities or whole populations
- Jurisdictional
 - local government, municipal, regional, federal, global



Scale of the issue



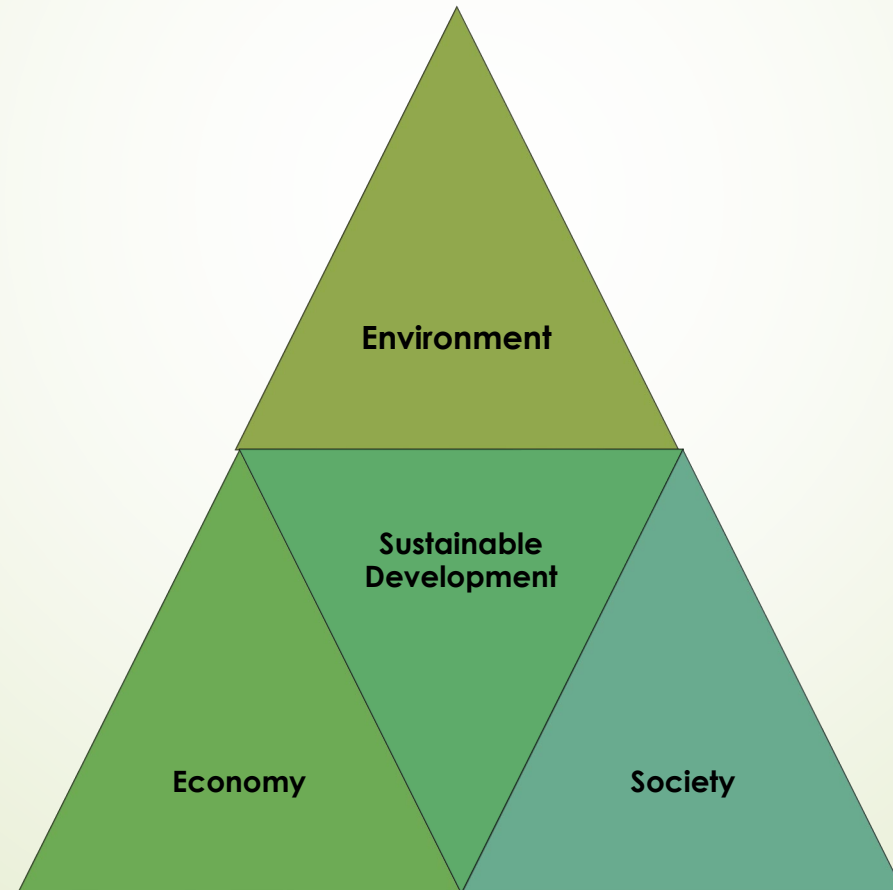


Jurisdiction

- The legal power to
 - administer and enforce the law
- The exercising of this power
- The region within which this power is valid or in which a person has authority
- In terms of decision-making NGOs, community groups and individuals
 - Can try to influence those with jurisdiction

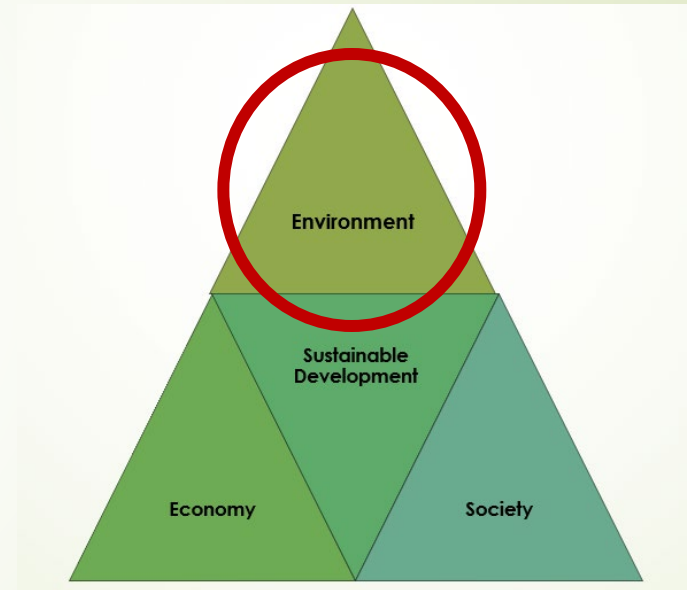
Elements of Sustainability

➤ (World Commission on Environment and Development, 1987)



Elements of Sustainability Environment

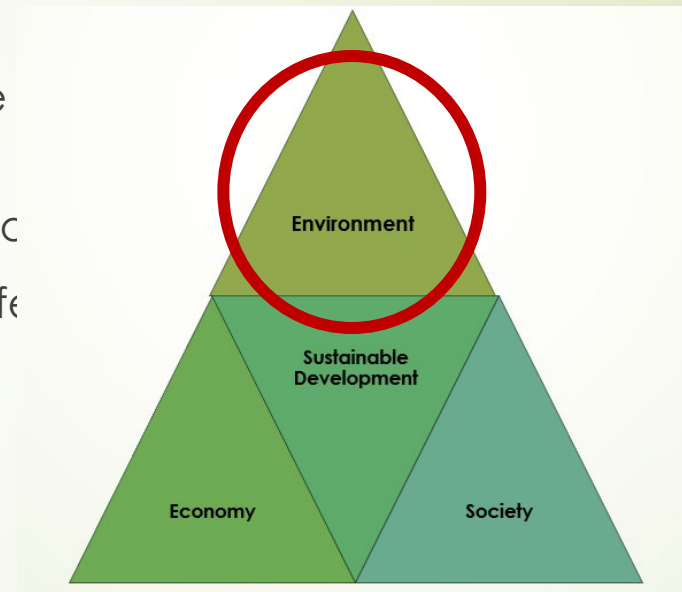
- Biodiversity
- Availability of materials
- Energy
- Biophysical interactions



Elements of Sustainability Environment

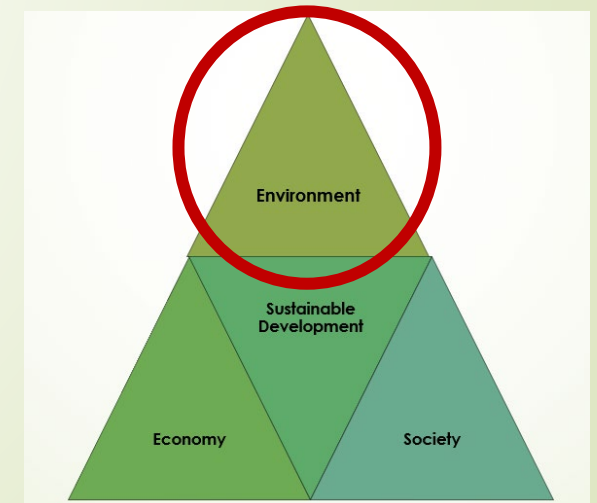
➤ Biodiversity

- Within an ecosystem the flora and fauna are biodiversity
- The greater the biodiversity the richer the ecosystem
- Reducing biodiversity can have unknown effects on agriculture



Elements of Sustainability Environment

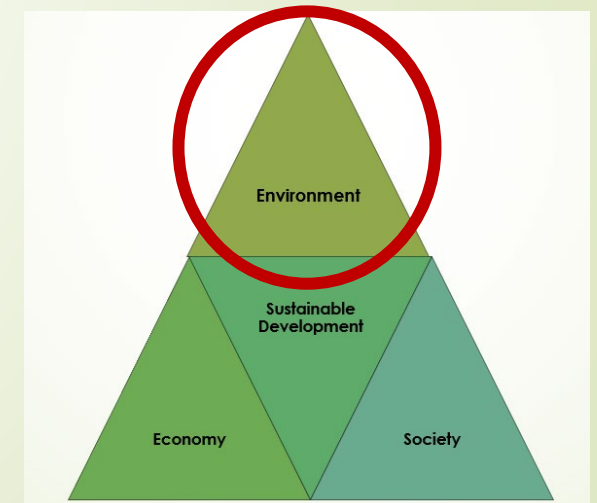
- Availability of materials
 - Materials such as stone and metals are finite and alternatives to these should be found where possible
 - The extraction of such materials should have as little environmental impact as possible
 - Renewable materials need to be harvested in sustainable ways



Elements of Sustainability Environment

➤ Energy

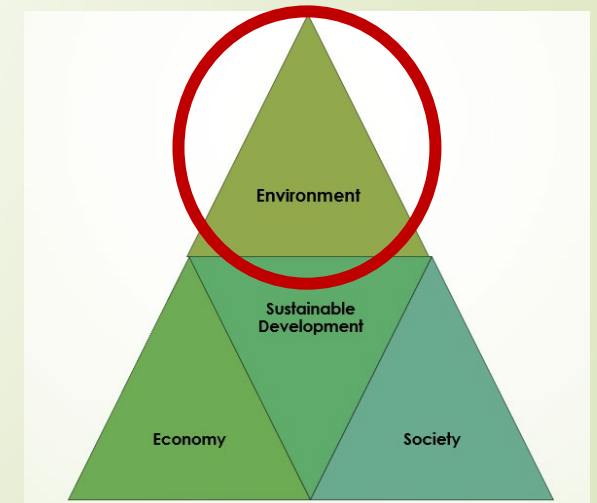
- Sources of energy such as fossil fuels are finite and alternatives to these should be found where possible
- The extraction of fossil fuels should have as little environmental impact as possible
- Renewable sources of energy should be encouraged



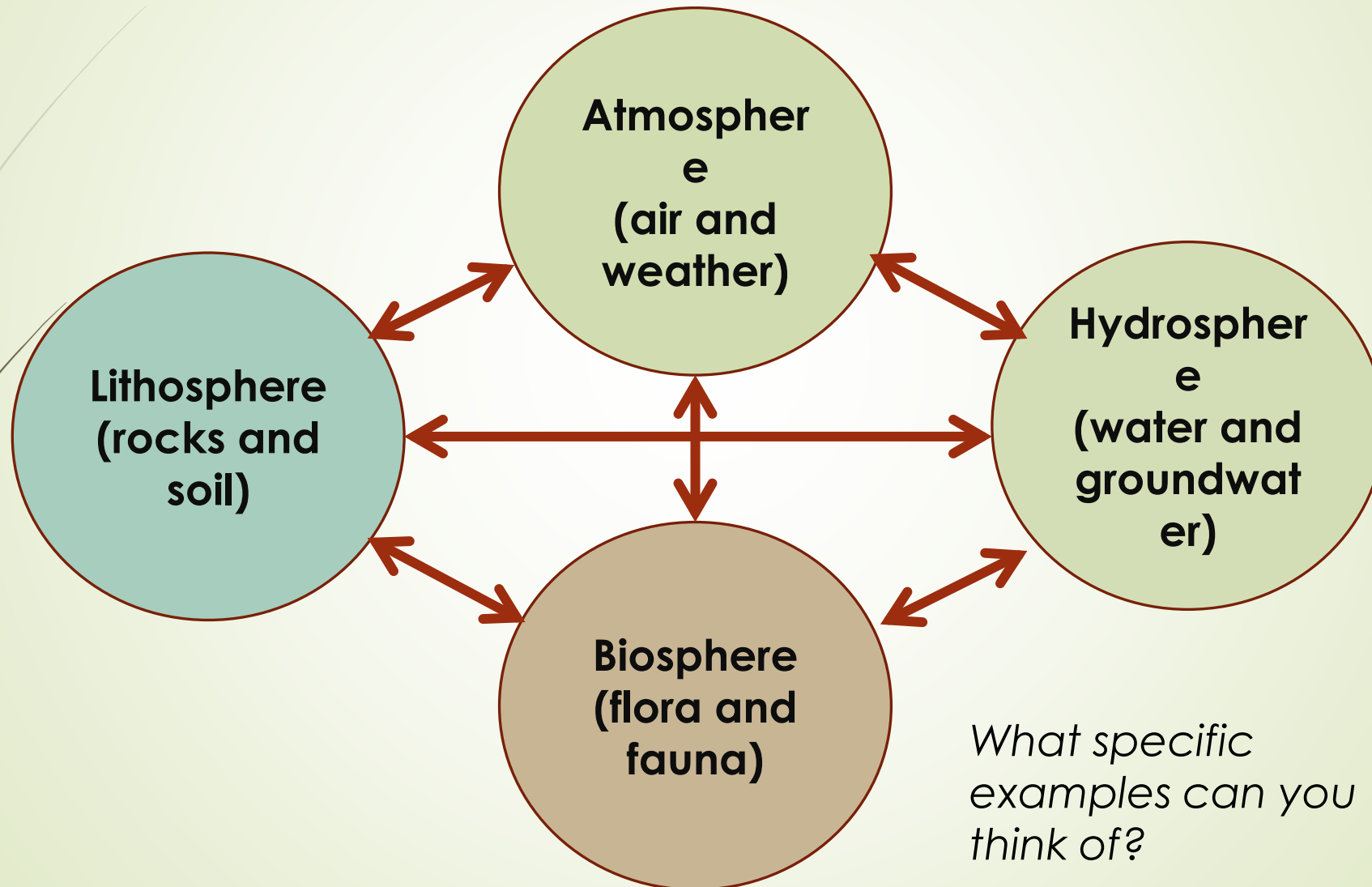
Elements of Sustainability Environment

➤ Biophysical Interactions

- There are four biophysical 'spheres' which are all interlinked and activity in one of these 'spheres' will have effects on the others

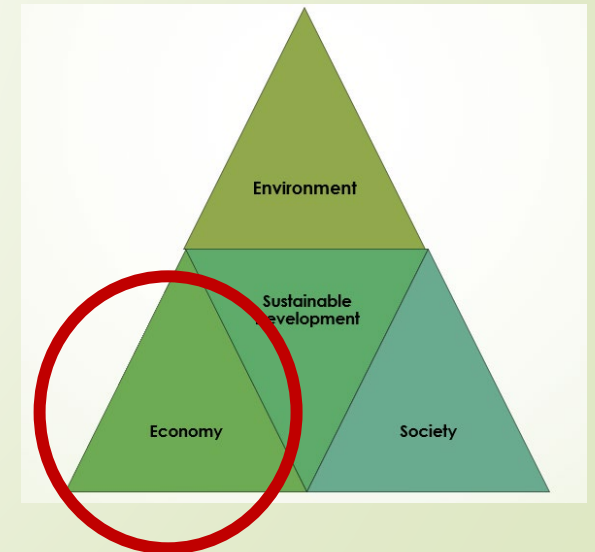


Elements of Sustainability – Biophysical Interactions



Elements of Sustainability Economy

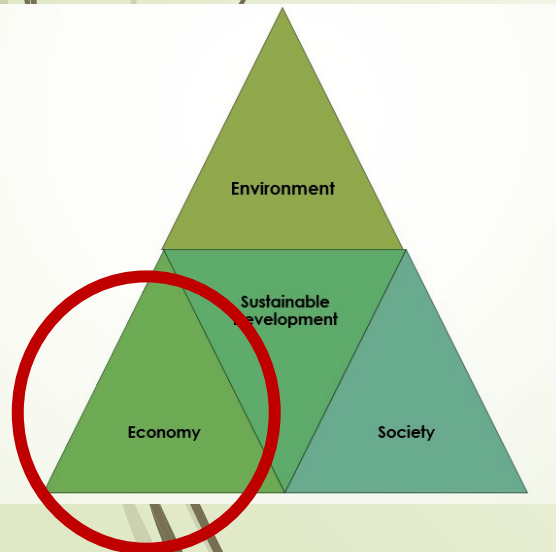
- Money and Capital
- Employment
- Technological growth
- Investment
- Market forces



Elements of Sustainability Economy

- Money and capital
 - five types of capital
- Natural capital
 - resources (e.g. coal) and processes (e.g. reforestation)
- Human capital
 - health, skills, knowledge & motivation
- Social capital
 - organisations that organise and utilise natural & human capital (e.g. families, communities, businesses, NGOs)
- Manufactured capital
 - machinery, buildings, luxury goods
- Financial capital
 - notional value produced by exploiting the other forms of capital (e.g. shares, bonds, banknotes)

<https://www.forumforthefuture.org/project/five-capitals/overview>



Elements of Sustainability Economy



➤ Employment

- continued employment relies on sustainable development
- (e.g. the loss of employment when mines become uneconomical)

➤ Technological growth

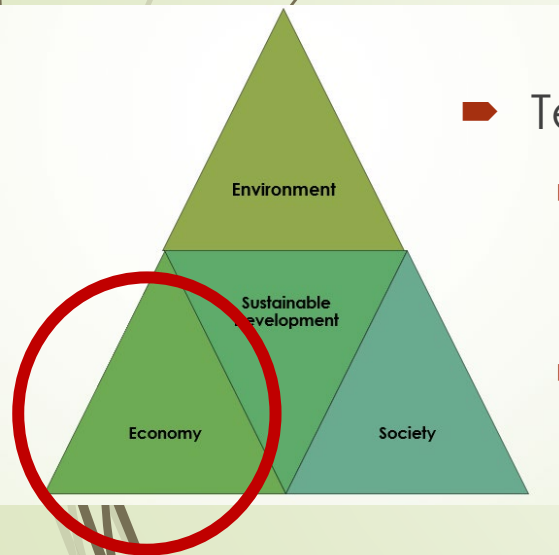
- technological innovation can create sustainability [techno-centric sustainability]
- (e.g. hydroponics, clean technology)

➤ Investment

- in the past investment only focused on generating profit, today there is a growing sustainable investment movement

➤ Market forces

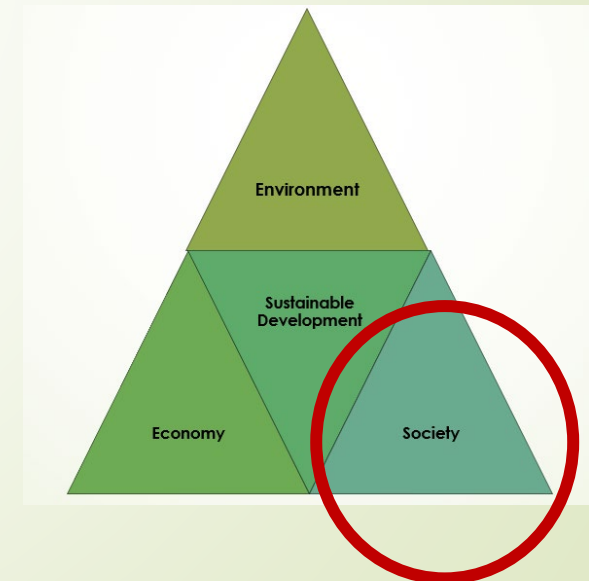
- changes in demand can affect sustainable development
- (e.g. ethical consumerism)
- *What is ethical consumerism?*



Elements of Sustainability Society

- Human diversity
 - Cultural
 - Linguistic
 - ethnic
- Equity
 - dependence
 - independence
 - interdependence

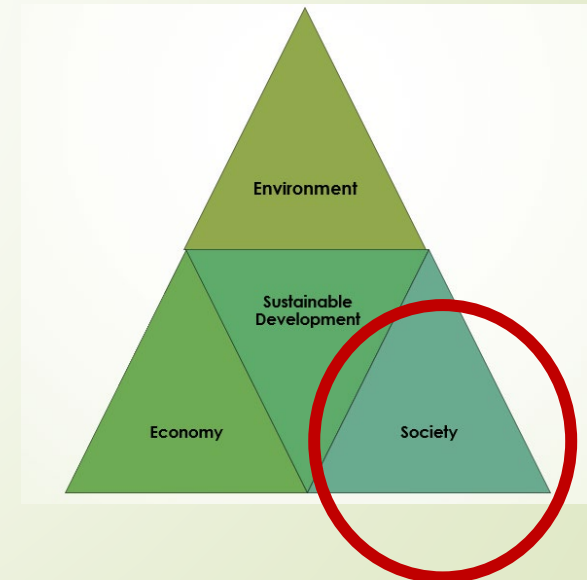
- Quality of life and/or well-being
- Institutional structures and organisations
- Political structures



Elements of Sustainability Society

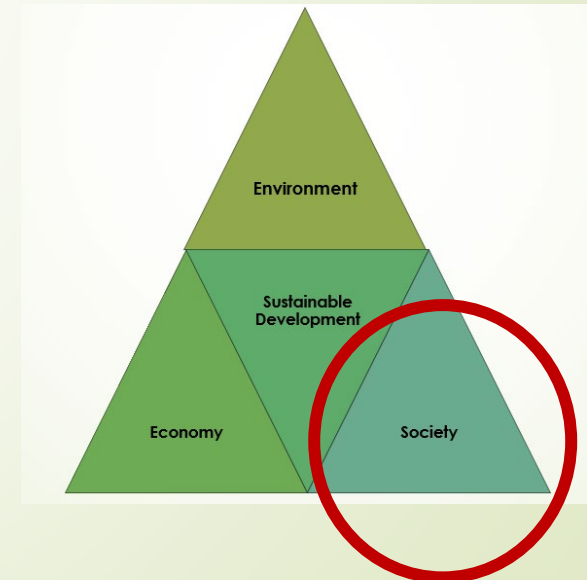
➤ Human Diversity

- Globalisation leads to the loss of cultural and linguistic diversity as dominant cultures subsume those of developing countries
- Loss of cultural diversity can lead to a loss of environmental knowledge
- Minority societies will disappear over time



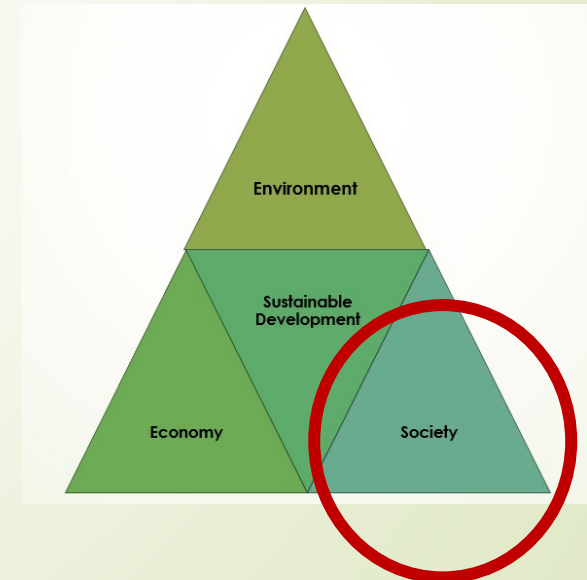
Elements of Sustainability Society

- Equity
- Ownership of resources, land , materials and wealth is not evenly distributed
- Billions live in poverty when there is wealth to ensure health and wellbeing
- UN and Government handouts result in dependence rather than independence



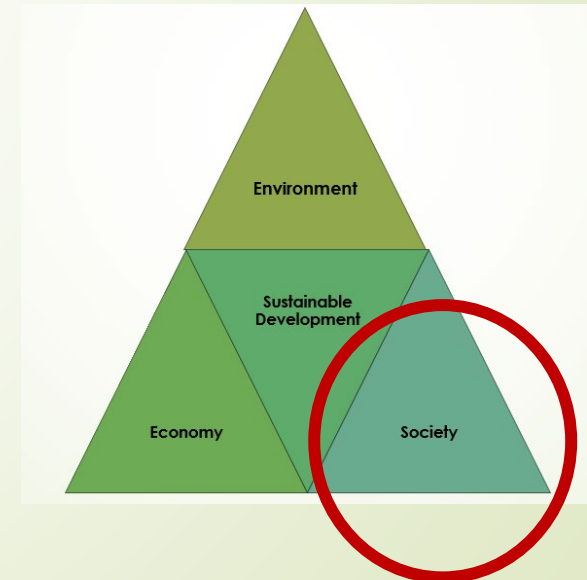
Elements of Sustainability Society

- Quality of life and wellbeing
 - Unsustainable exploitation of resources impoverished indigenous communities
 - Unethical employment practice leads to unhealthy working and living conditions
 - Over-urbanisation, poor diet, lack of exercise

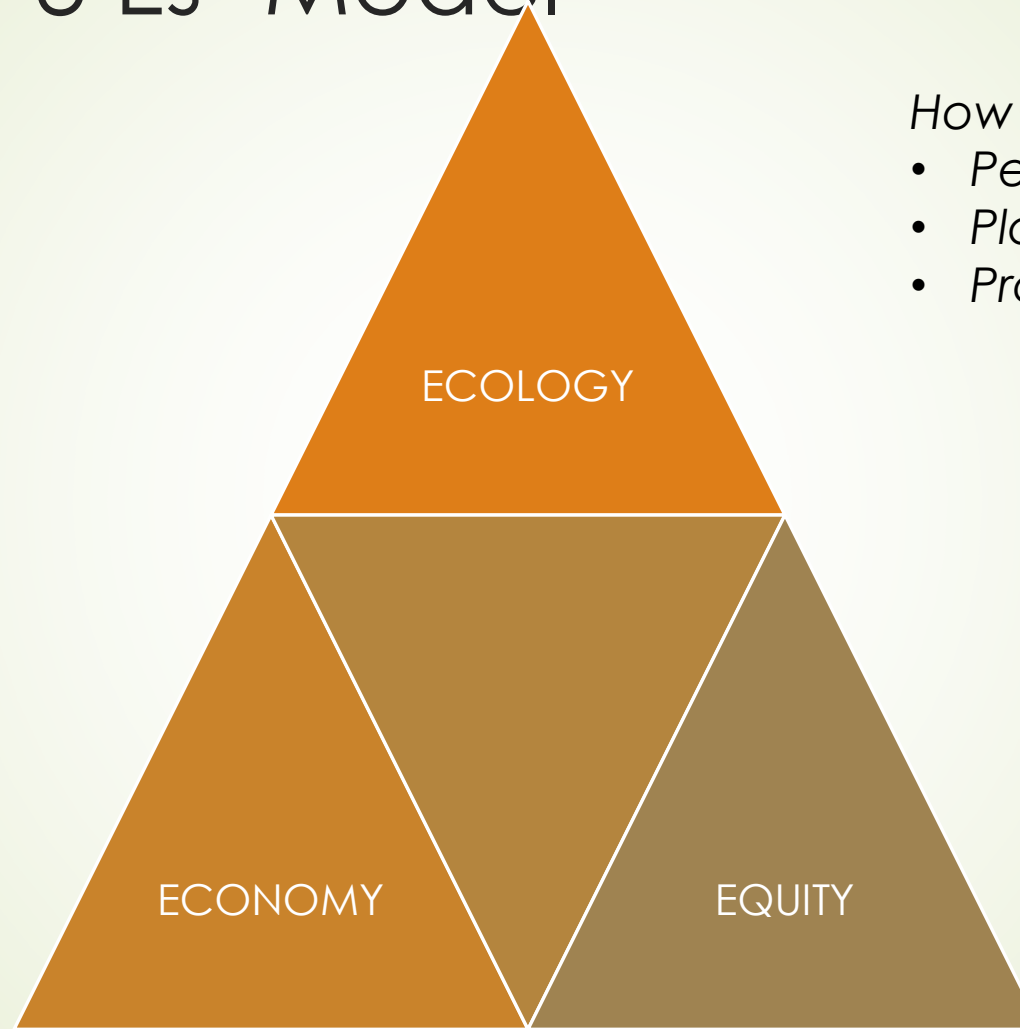


Elements of Sustainability Society

- Institutional and Political Structures
 - Most current institutional and political structures are not focused on sustainability
 - Institutions are primarily still focused on profit
 - Political structures are focused on what is electorally possible not what is necessary



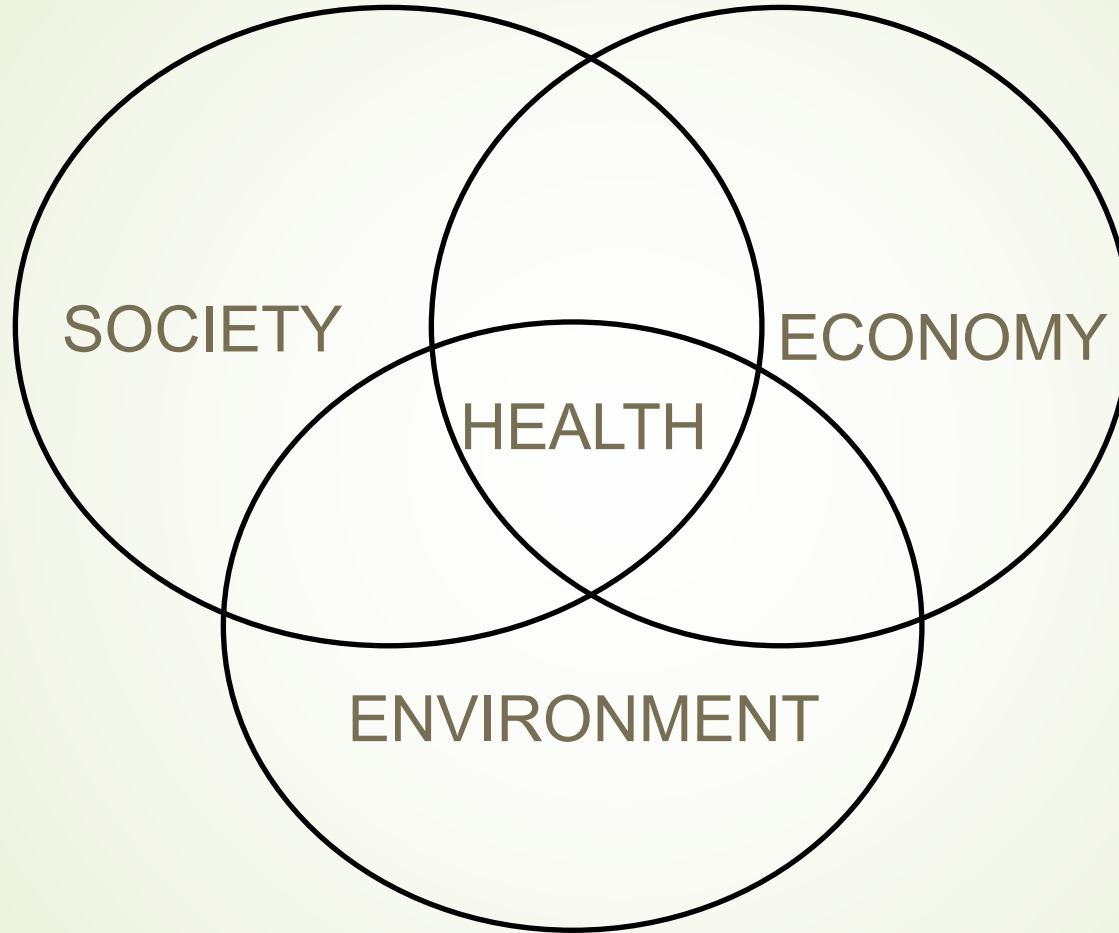
The '3 Es' Model



How does this relate to

- *People*
- *Planet*
- *Profit?*

The Healthy Community Model



(NHS, 2014)



Sustainability: PROBLEMS

- ▀ Depletion of finite resources
 - ▀ fuels, soil, minerals, species
- ▀ Over-use of renewable resources
 - ▀ forests, fish & wildlife, fertility, public funds
- ▀ Pollution
 - ▀ air, water, soil
- ▀ Inequity
 - ▀ economic, political, social, gender
- ▀ Species loss
 - ▀ endangered species and spaces

(WCED, 1987)



Sustainability: SOLUTIONS

- Cyclical material use
 - emulate natural cycles; 3 R's (reduce, reuse, recycle)
- Safe reliable energy
 - conservation, renewable energy, substitution, interim measures
- Life-based interests
 - health, creativity, communication, coordination, appreciation, learning, intellectual and spiritual development

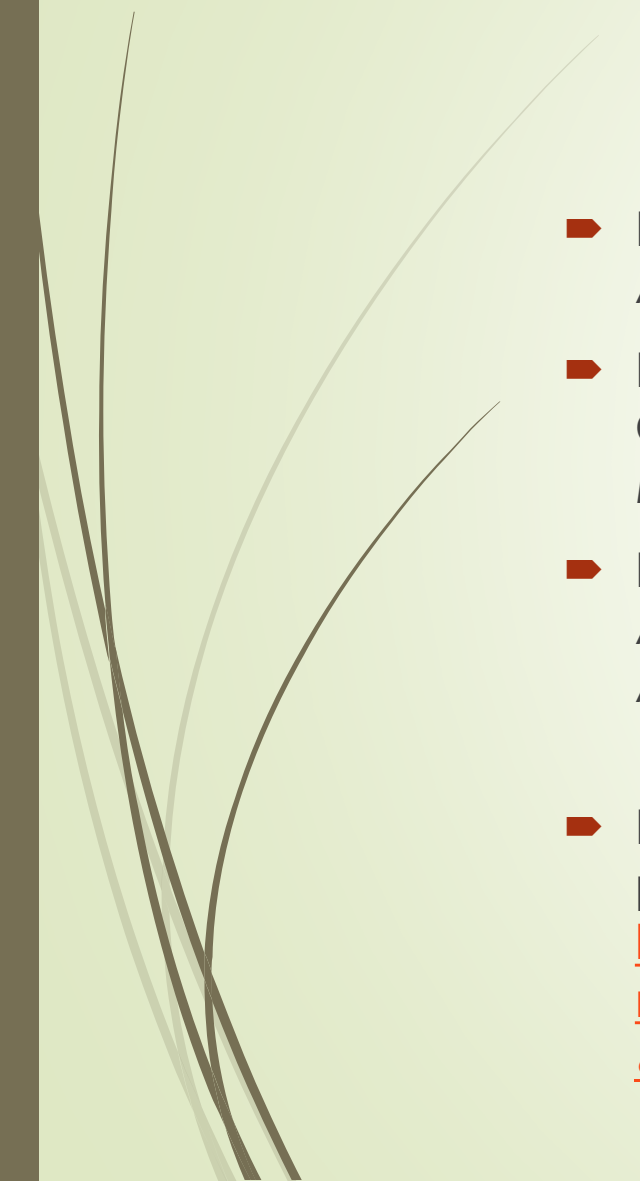
The Story of Stuff

- ▶ Watch this video on the way that our economy works at present and make notes on any points that you feel are important.
- ▶ ***N.B. If we have time to watch this in Lecture then please discuss the video with the rest of the group.***





Reference List



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- Barrett, S., Kidd, J., 1991 *Pathways: Towards an Ecosystem Approach*. Royal Commission on the Future of the Toronto Waterfront, Toronto, 168 pp.after Macdonald, D. 1991. *The Politics of Pollution*.
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