



ECSO6001: Sustainable Communities & Global Development

Theme 2: Measuring Environmental Issues

Part 1: Scale and Elements of Sustainability

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)

Sustainable Development

Why should we look at sustainable development?

*Paul Gilding is a Fellow of the University of Cambridge's
Institute for Sustainability Leadership*

Guided Study Activity: Why Is Sustainability Important?



***What arguments does Paul Gilding make? Take notes as
we watch the video.***



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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:

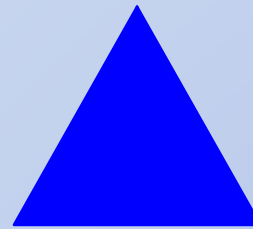
- (a) air, soil and water pollution, waste management and recycling, dangerous substances and preparations, noise levels, climate change, protection of biodiversity,
- (b) sustainable development,
- (c) international and regional measures and agreements aimed at protecting the environment,
- (d) restoration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

ENVI Conceptual Tools

European Committee on the Environment, Public Health & Food Safety



Scale of the
issue



The Elements of
Sustainability



Decision
Making
Processes

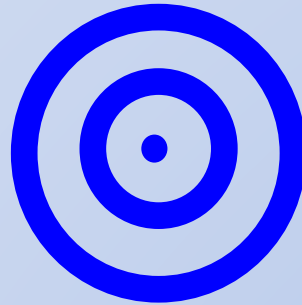


Values,
ideology,
strategies



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based on (Barr, 2008)



The Scale of the issue



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Scale of the issue

Scale

- An ordered series of graduated quantities, values, degrees, etc.
- Relative magnitude

(Webster's Encyclopedic Dictionary, 2012)

- Literally, how large or small is the issue to be evaluated and addressed



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

Geographical / Spatial

Global
Continent
Country
Province
Region
Municipality
Neighbourhood
Household
Individual

GLOBAL / MACRO



LOCAL / MICRO

Jurisdictional Decision Making

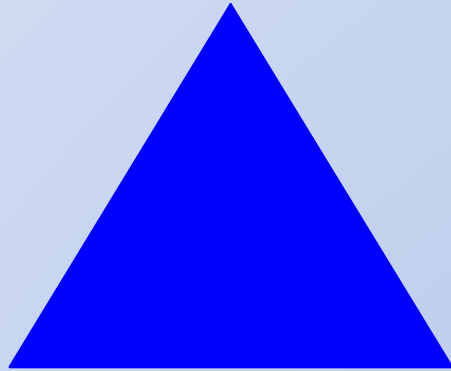
United Nations
Supra-governmental
National Government
(NGOs)
Local Government
(Community Groups)
(Individuals)



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

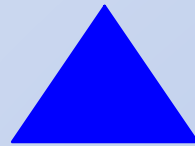


The Elements of Sustainable Development involved in the issue



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The Sustainable Development Triangle

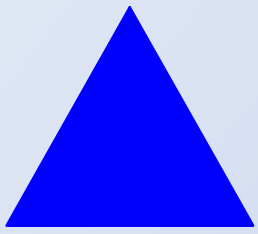


We have already discussed this concept (The Tripartite Model) in our previous Theme.

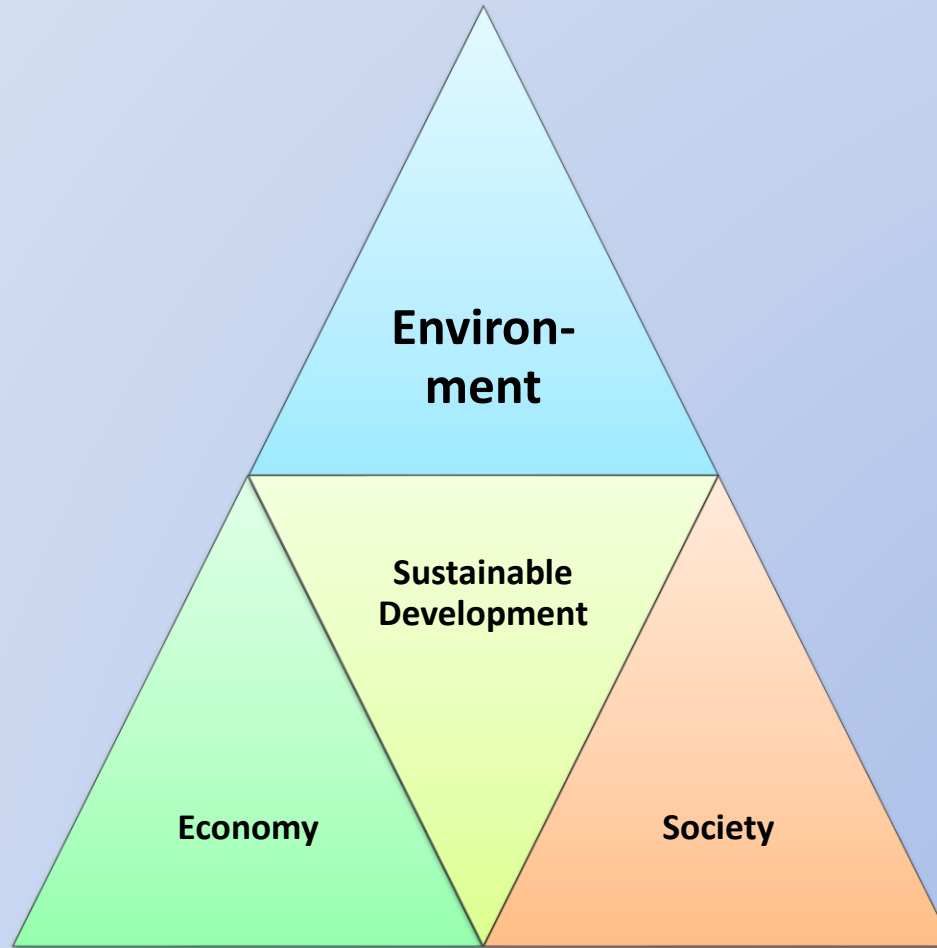
What are the three aspects of the triangle?



Now share these with the larger group.

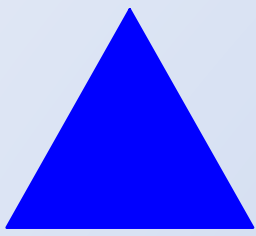


Elements of Sustainability



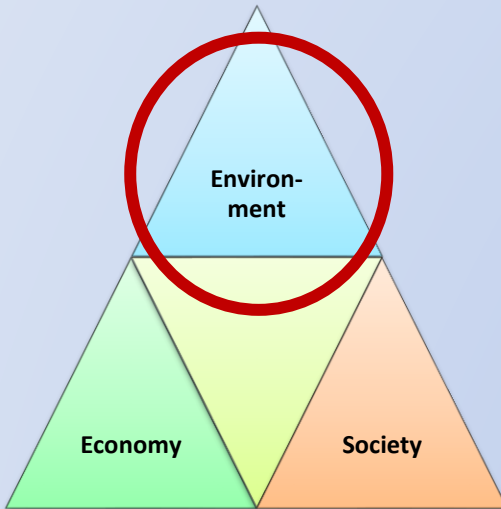
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(World Commission on Environment and Development, 1987)



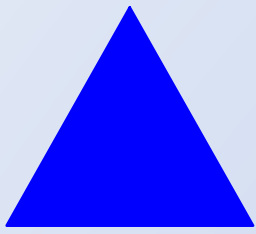
Elements of Sustainability

Environment



- Biodiversity
- Availability of materials
- Energy
- Biophysical interactions

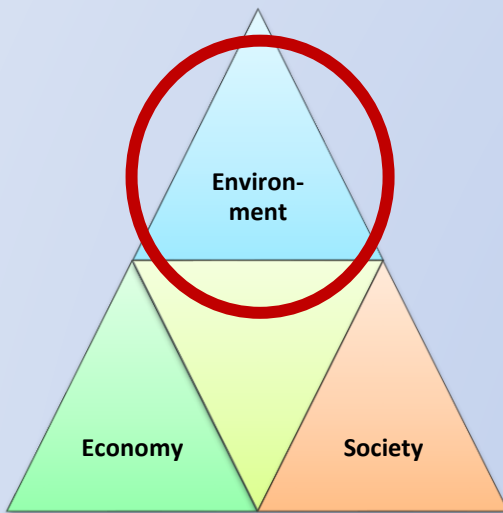




Elements of Sustainability

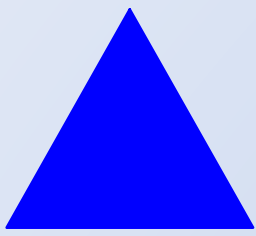
Environment

Biodiversity



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

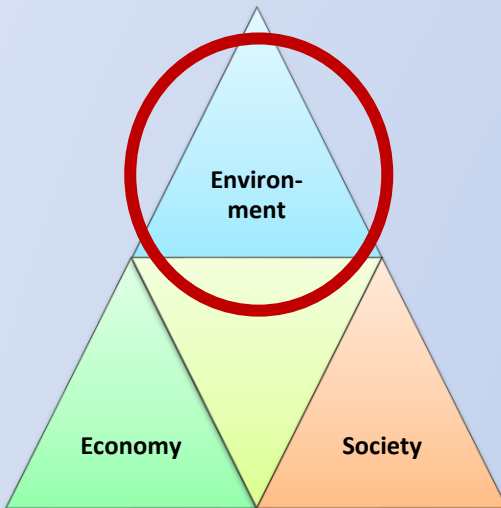




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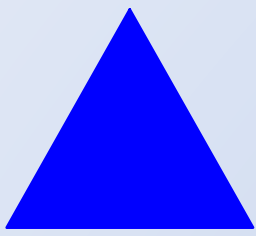
Environment

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

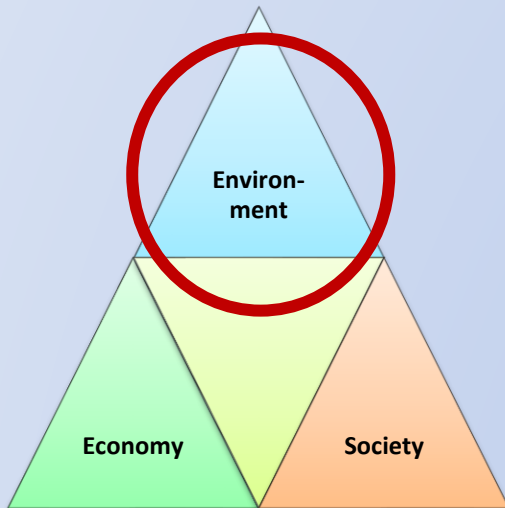




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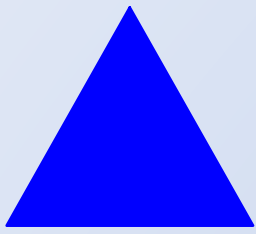
Environment

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

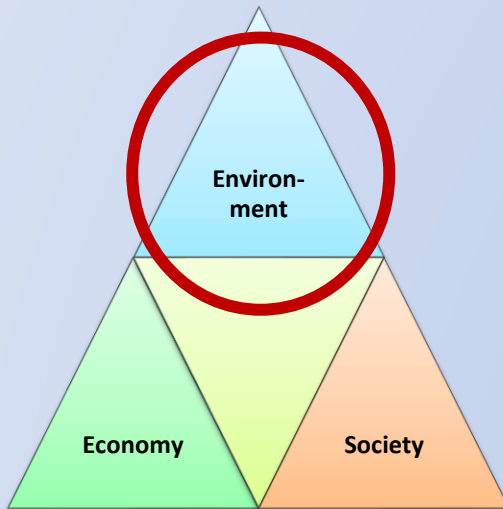




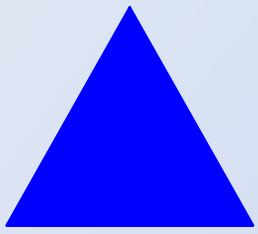
Elements of Sustainability

Environment

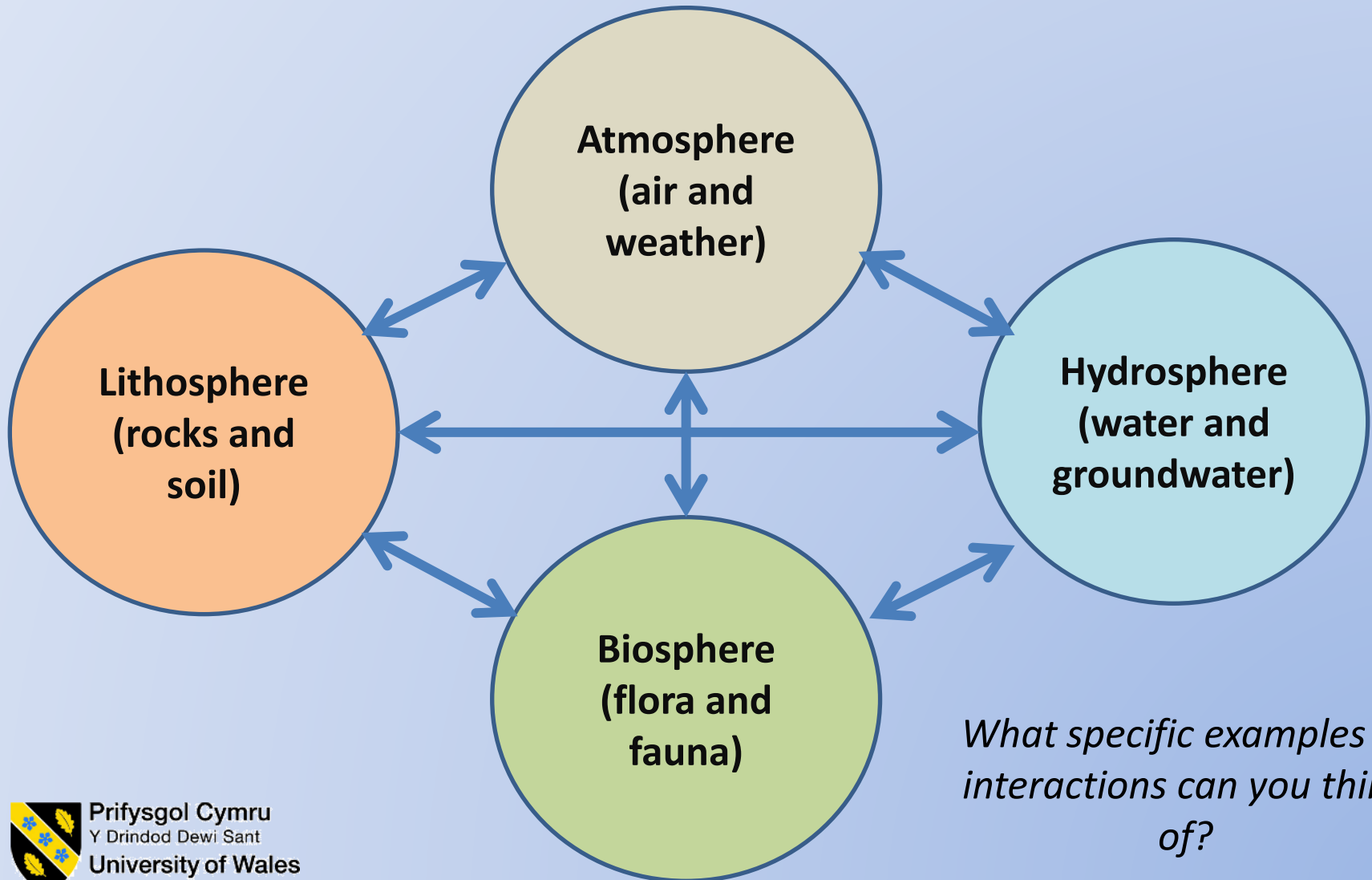
Biophysical Interactions



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

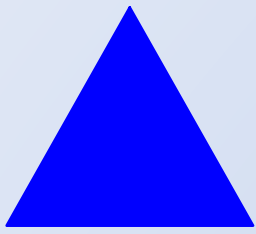


Elements of Sustainability – Biophysical Interactions



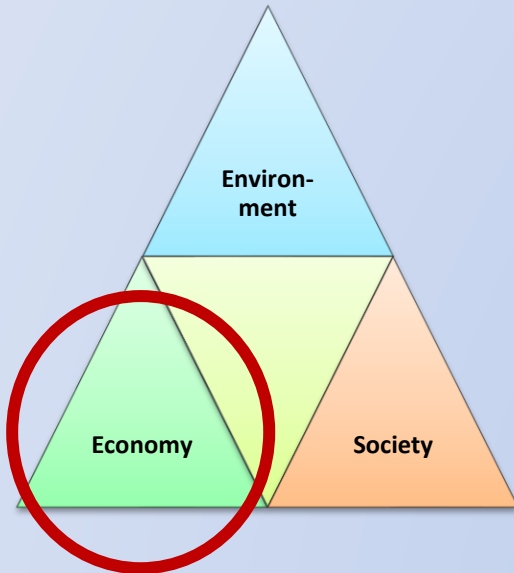
What specific examples of interactions can you think of?





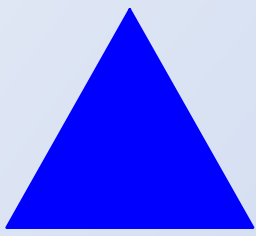
Elements of Sustainability

Economy



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

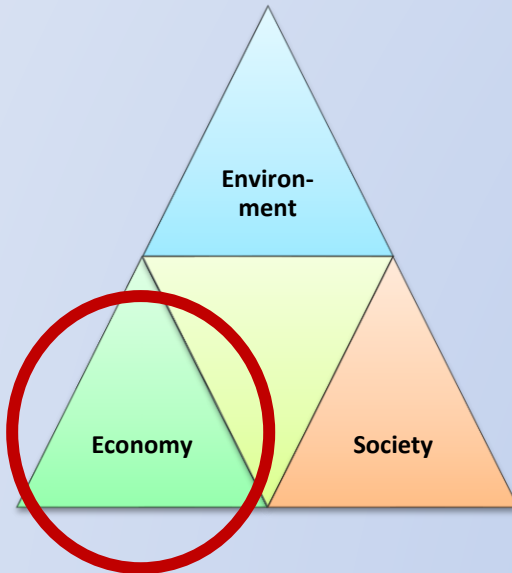




Elements of Sustainability

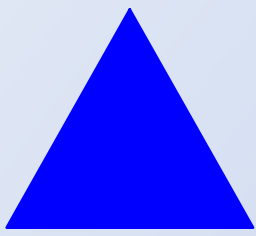
Economy

Money and capital – five types of capital



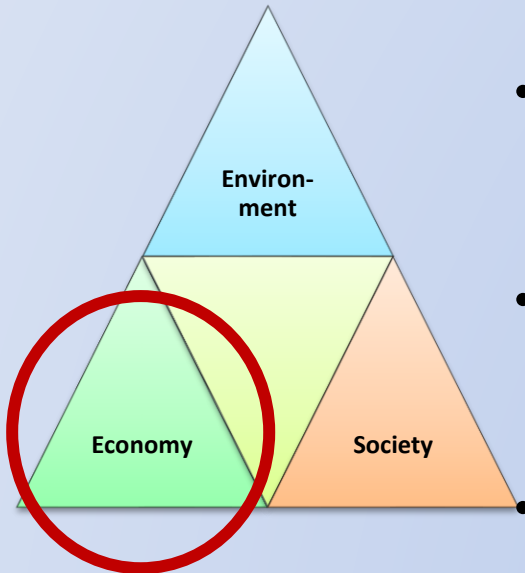
- **Natural capital** – resources (e.g. coal) and processes (e.g. reforestation)
- **Human capital** – health, skills, knowledge & motivation
- **Social capital** – organisations that organise and utilise natural & human capital (e.g. families, communities, businesses, NGOs – see Bourdieu)
- **Manufactured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





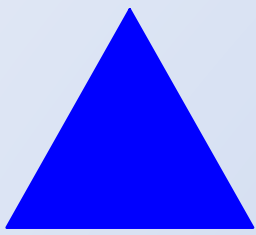
Elements of Sustainability

Economy



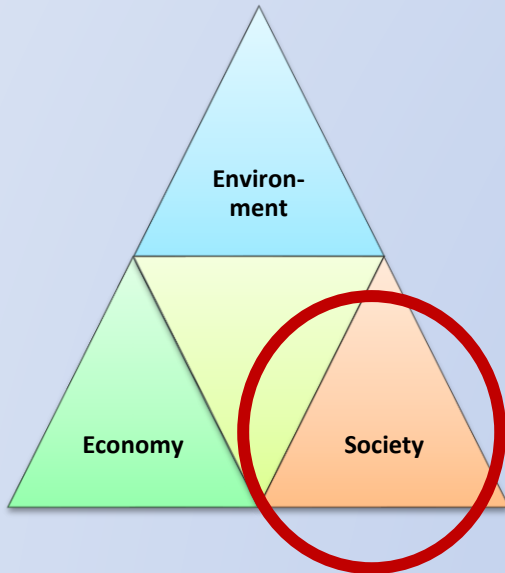
- **Employment** – continued employment relies on sustainable development (e.g. the loss of employment when mines become uneconomical)
- **Technological growth** – technological innovation can create sustainability [techno-centric sustainability] (e.g. hydroponics, clean technology)
- **Investment** – 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)





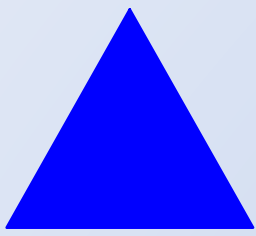
Elements of Sustainability

Society



- Human diversity (cultural, linguistic, ethnic)
- Equity (dependence / independence / interdependence)
- Quality of life / well-being
- Institutional structures and organisations
- Political structures

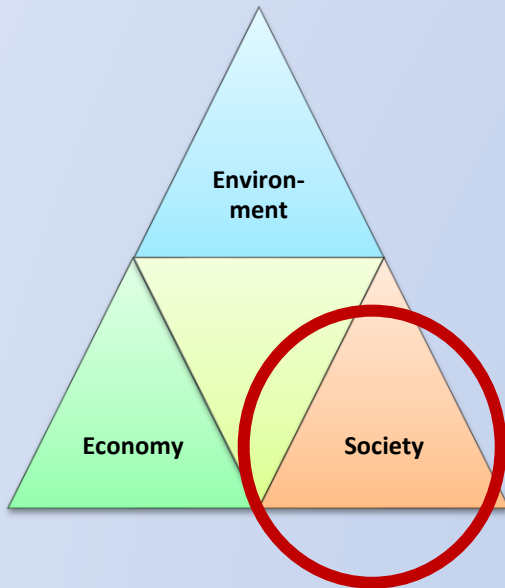




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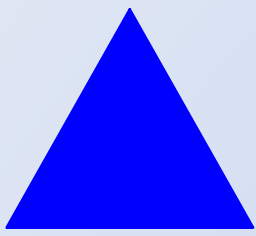
Society

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

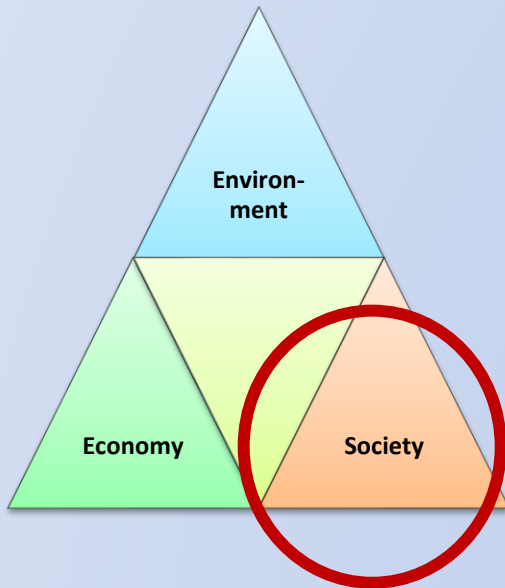




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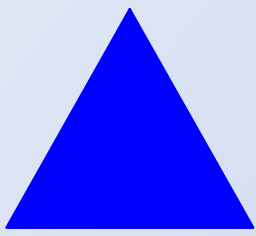
Society

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

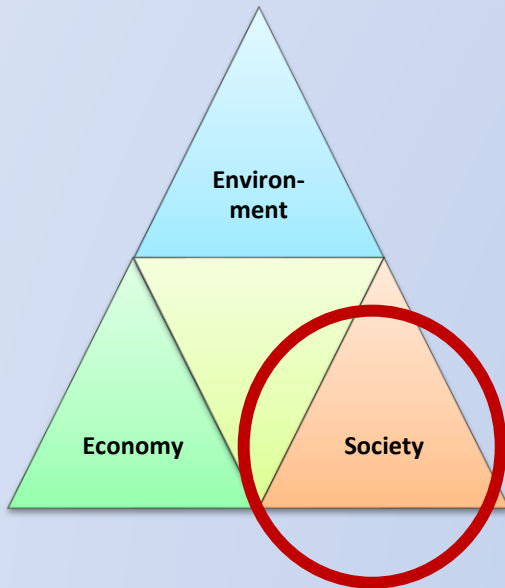




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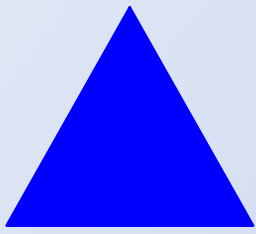
Society

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

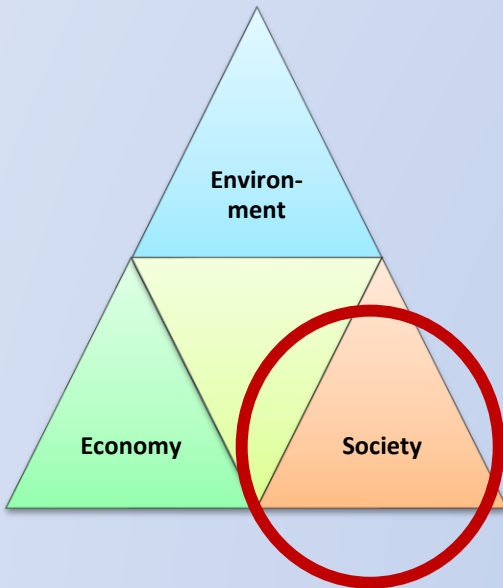




Elements of Sustainability

Society

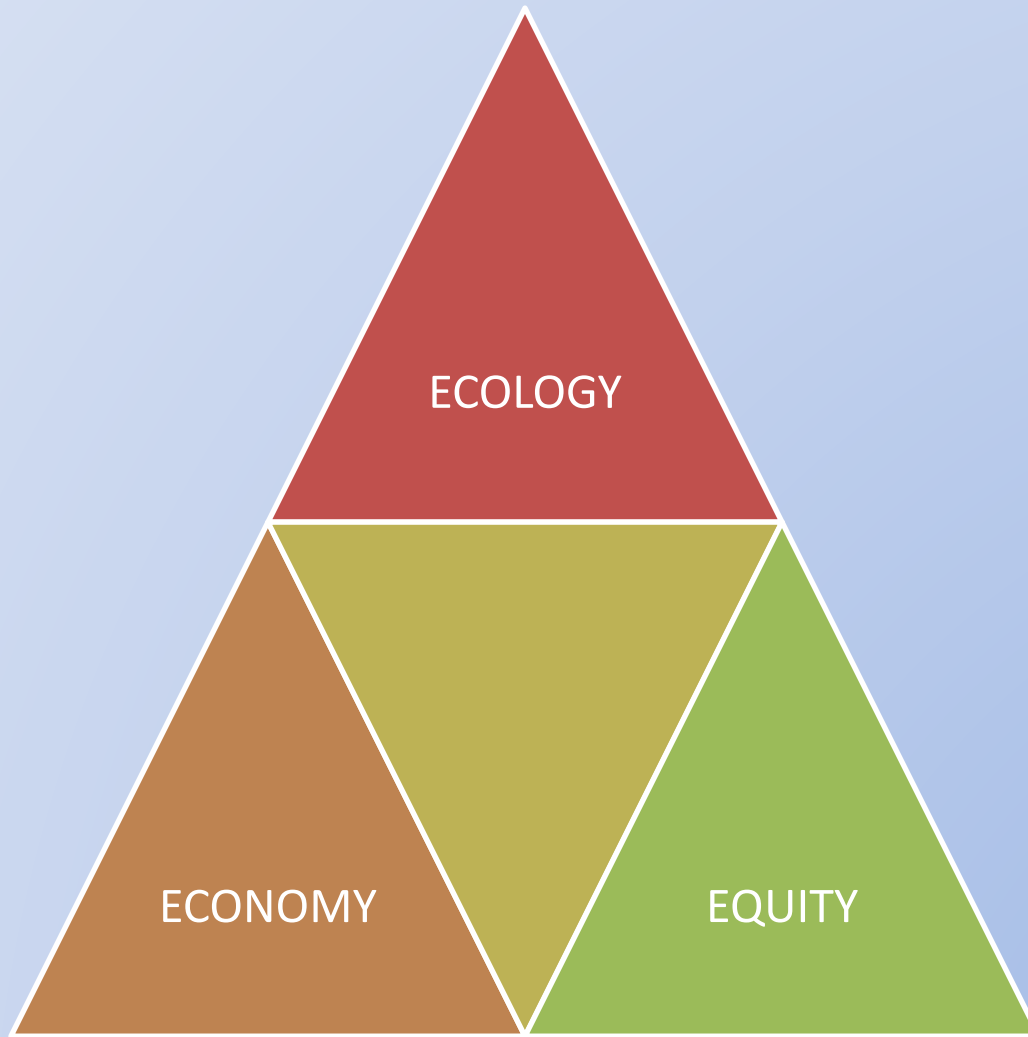
Institutional and Political Structures



- 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

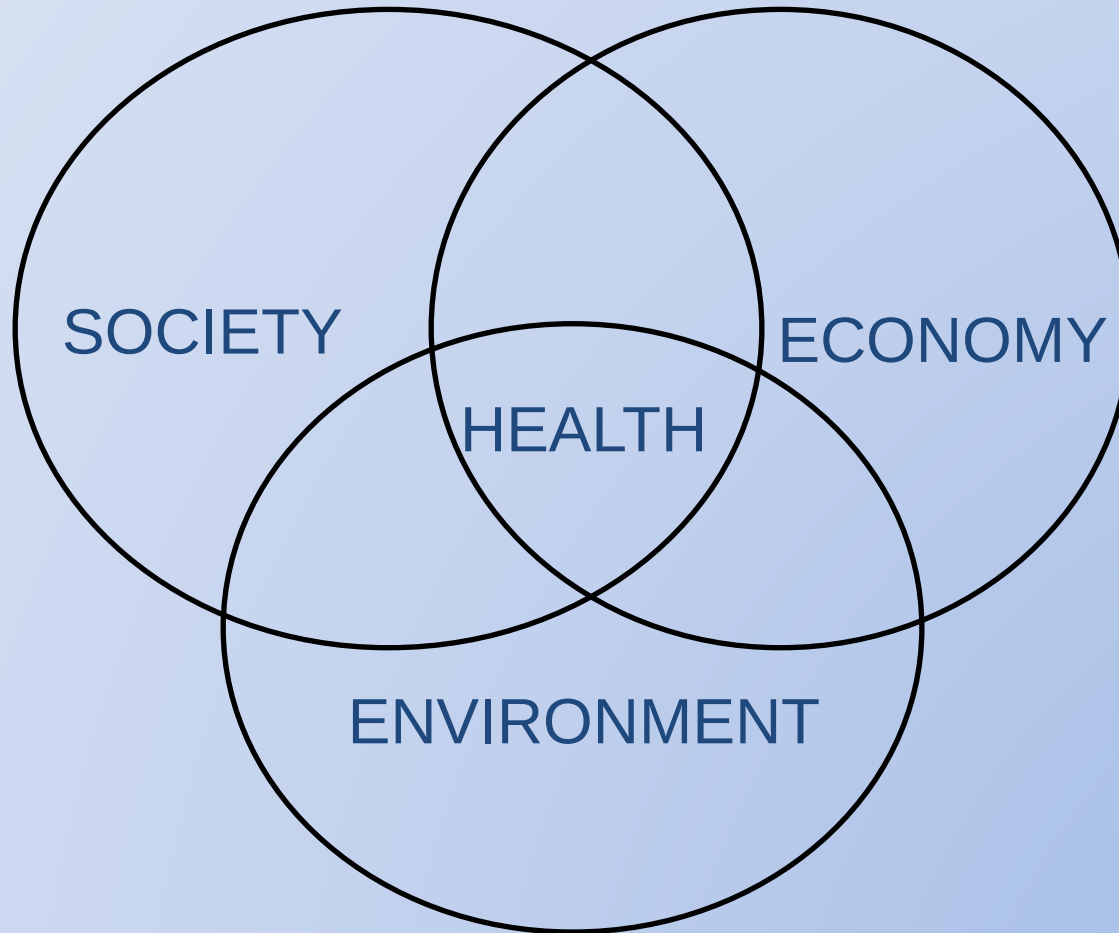


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How does this relate to People, Planet, Profit?

The Healthy Community Model



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

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.

Make notes on any points that you feel are important or any questions that you have



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Bibliography

- Barr, S (2008) *Environment and Society: Sustainability, Policy and the Citizen*, Aldershot, Hamps: Ashgate Publishing.
- 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*. Available at [Pathways : towards an ecosystem approach : a report of phases I and II of an environmental audit of Toronto's East Bayfront and Port Industrial Area : Royal Commission on the Future of the Toronto Waterfront \(Canada\) : Free Download, Borrow, and Streaming : Internet Archive](#) [Accessed 14/11/2024]
- European Committee on the **Environment**, Public Health & Food Safety (ENVI)
- Forum for the Future (No Date) *The Five Capitals: A framework for sustainability* Available at: [The Five Capitals - a framework for sustainability | Forum for the Future](#) [Accessed 14/11/2024]
- Fukuyama, F (2008) 'The Latin American Experience, *Journal of Democracy*, Vol. 19. No. 4, pp.69-79. [THE LATIN AMERICAN EXPERIENCE – ProQuest](#) [Accessed 14/11/2024]
- Gilding, P. (No date) *The Earth is Full* TEDEd Available at: [The Earth is full - Paul Gilding | TED-Ed](#) [Accessed 14/11/2024]
- Kuhlman T & Farrington J (2010) 'What is Sustainability? ' *Sustainability*, Vol. 2. pp. 3436-3448. Available at: [What is Sustainability? – ProQuest](#) [Accessed 14/11/2024]



Bibliography

- Merriam-Webster (2004) *Merriam-Webster Online Dictionary*, Halo Press.
- NHS England (2014) *Sustainable, Resilient, Healthy People & Places: A Sustainable Development Strategy for the NHS, Public Health and Social Care system*, Cambridge: The Sustainable. Development Unit. Available at: [Layout 1](#) [Accessed 14/11/2024]
- WCED (1987) Report of the World Commission on Environment and Development: *Our Common Future* Stockholm: UN. Available at: [Report of the World Commission on Environment and Development](#) : [Accessed 14/11/2024]
- Webster (2012) *Webster's Encyclopedic Dictionary*, Halo Press.
- Wilderer, P (2007) 'Sustainable Water Resources Management: the Science behind the Scene', *Sustain Science*, Vol. 2, pp. 1-4. Available at [Sustainable water resource management: the science behind the scene – ProQuest](#) [Accessed 14/11/2024]