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Sustainability: What Does It Mean for Development

The Art of Enterprise
UDIA State Conference 2007
26 October 2007



What is Sustainability?

Brundtland - Our Common Future	Sustainable Development	<i>“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”</i>
UK Government	Sustainable Development	<i>“Ensuring a better quality of life for everyone, now and for generations to come.”</i>
Australian Government	Ecologically Sustainable Development	<i>“Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.”</i>

Improving human wellbeing without compromising the local or global environment over the long term.



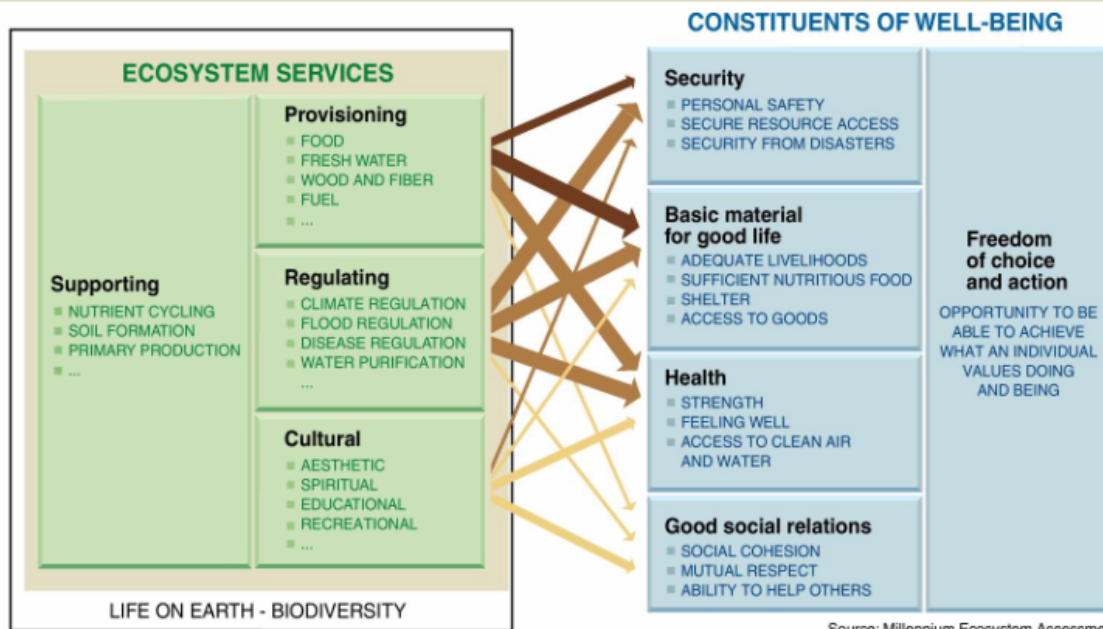
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Human Wellbeing

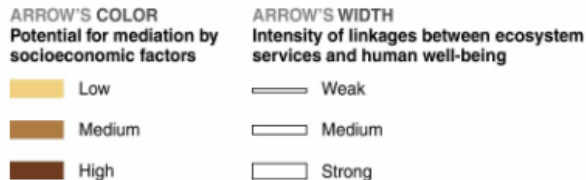
What Constitutes Wellbeing?

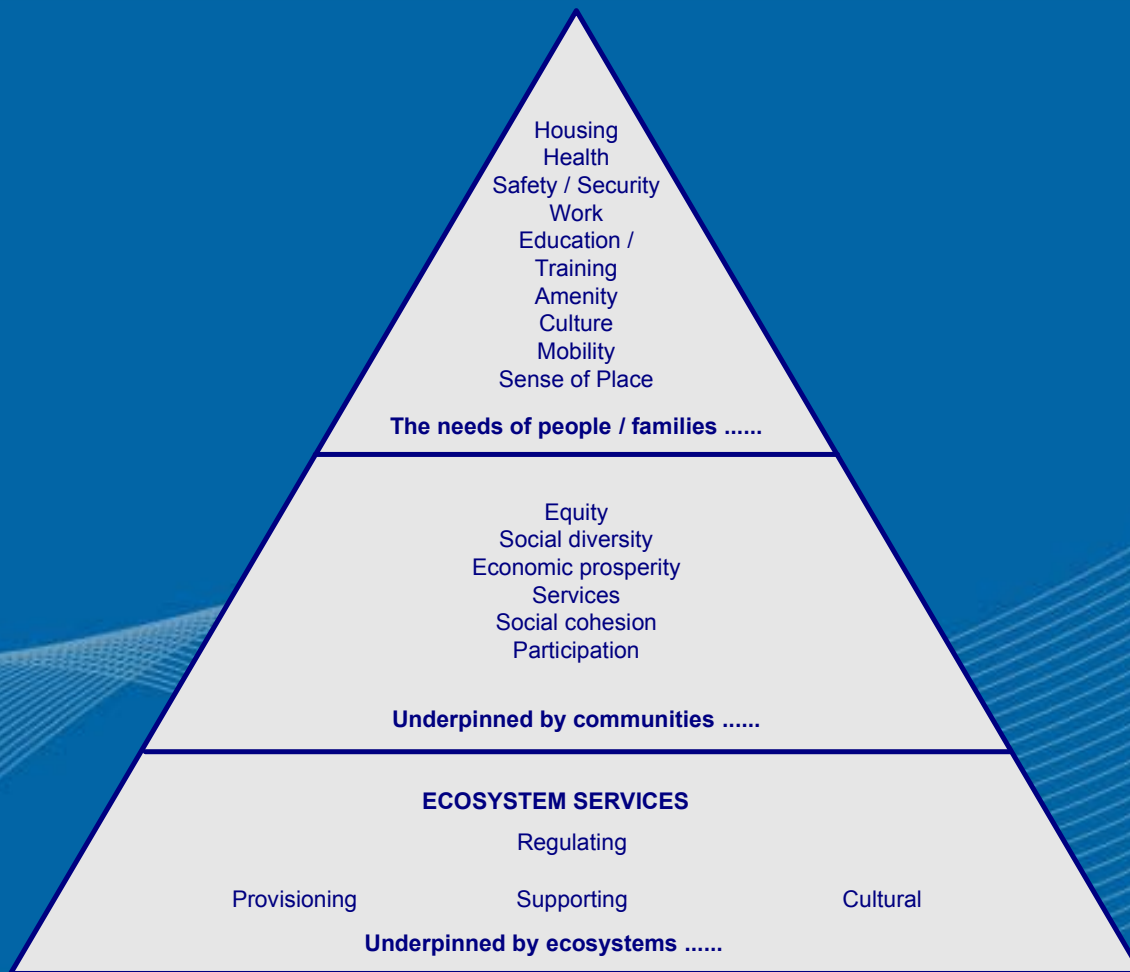
Subsistence	<i>the basics of wherewithal of survival</i>
Experience	<i>comforts and pleasures beyond subsistence (eg music, literature)</i>
Belonging	<i>identity that derives from being part of a group</i>
Self actualisation	<i>the setting and achievements of personal goals</i>

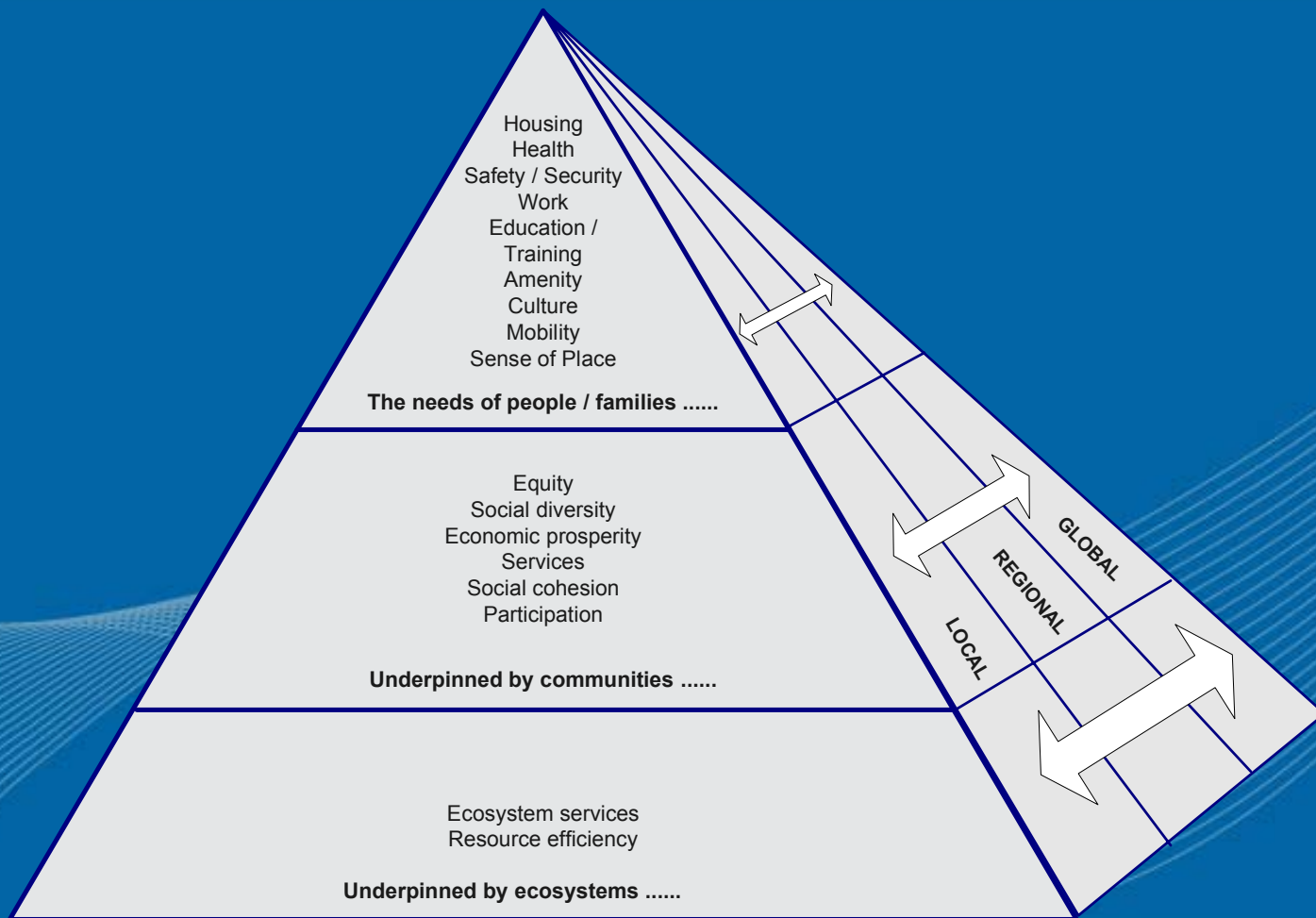
Focus: Consequences of Ecosystem Change for Human Well-being



Source: Millennium Ecosystem Assessment



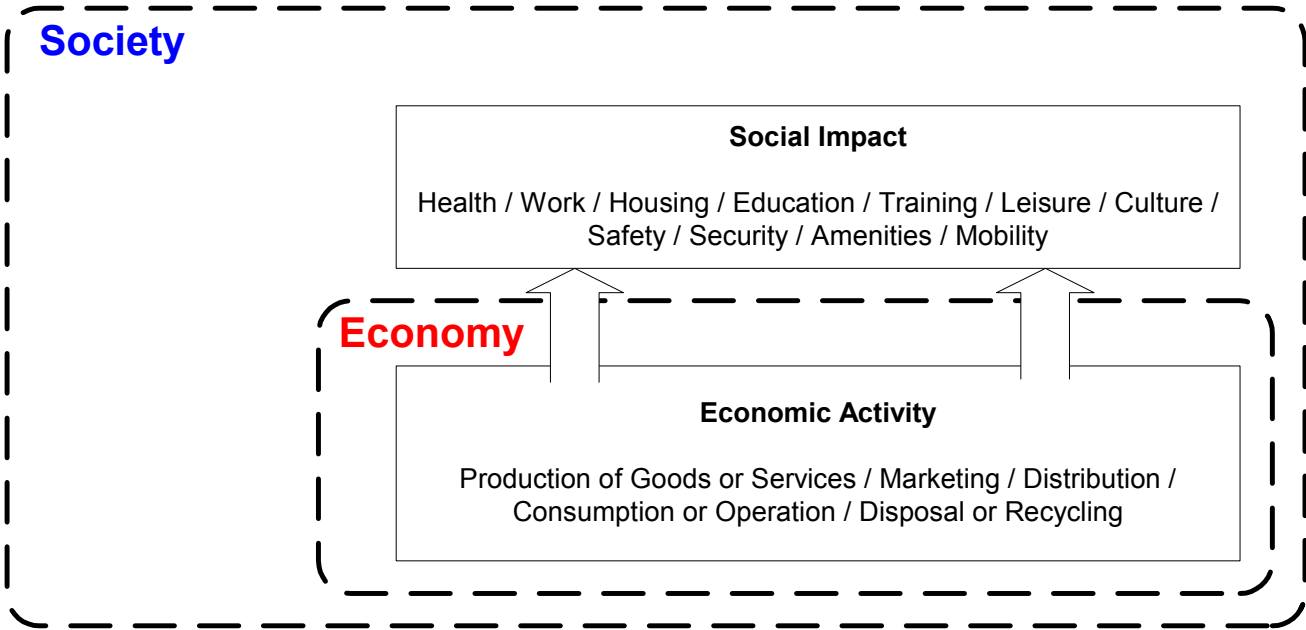






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The Economy



Environment

Society

Economy

Social Impact

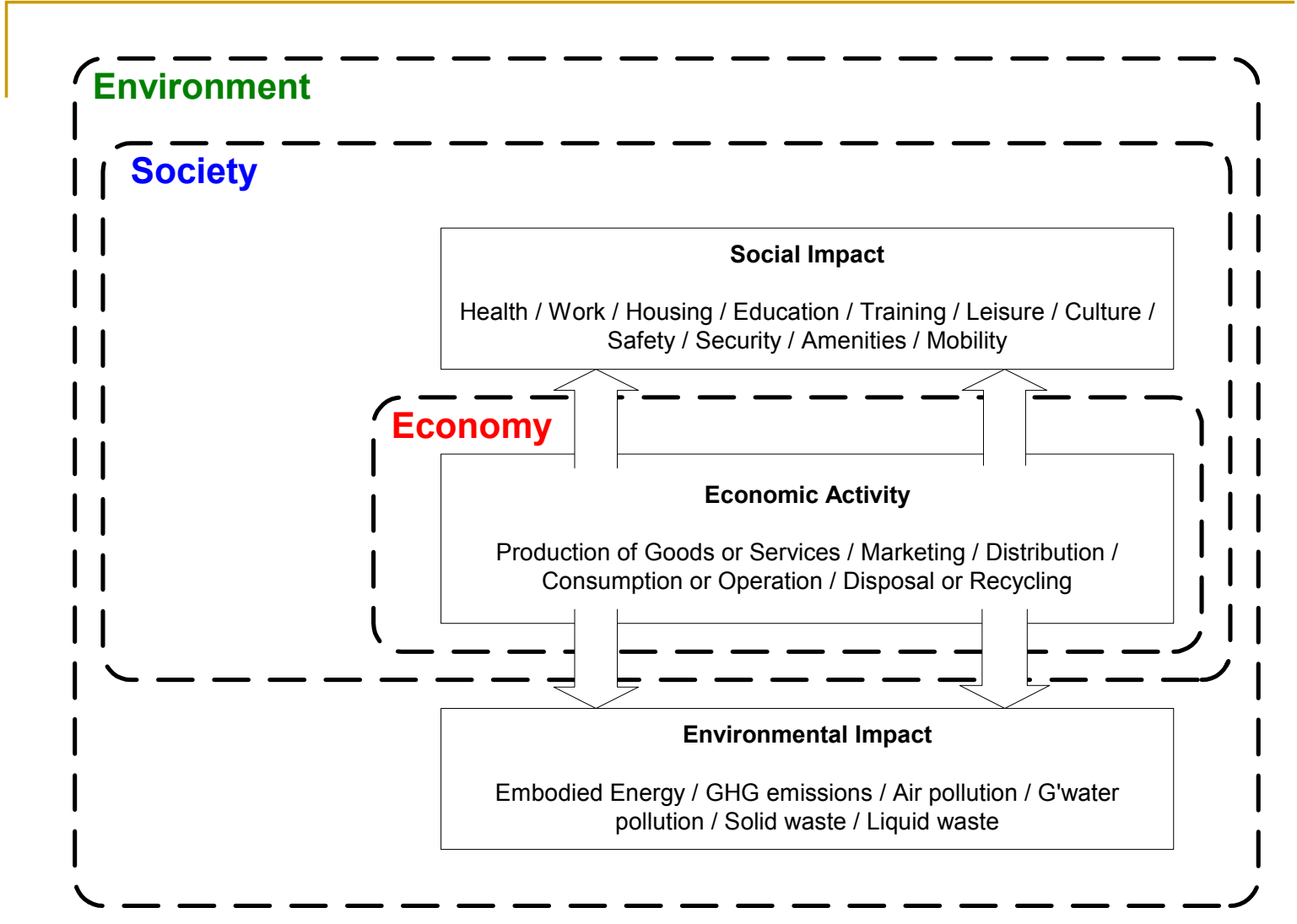
Health / Work / Housing / Education / Training / Leisure / Culture /
Safety / Security / Amenities / Mobility

Economic Activity

Production of Goods or Services / Marketing / Distribution /
Consumption or Operation / Disposal or Recycling

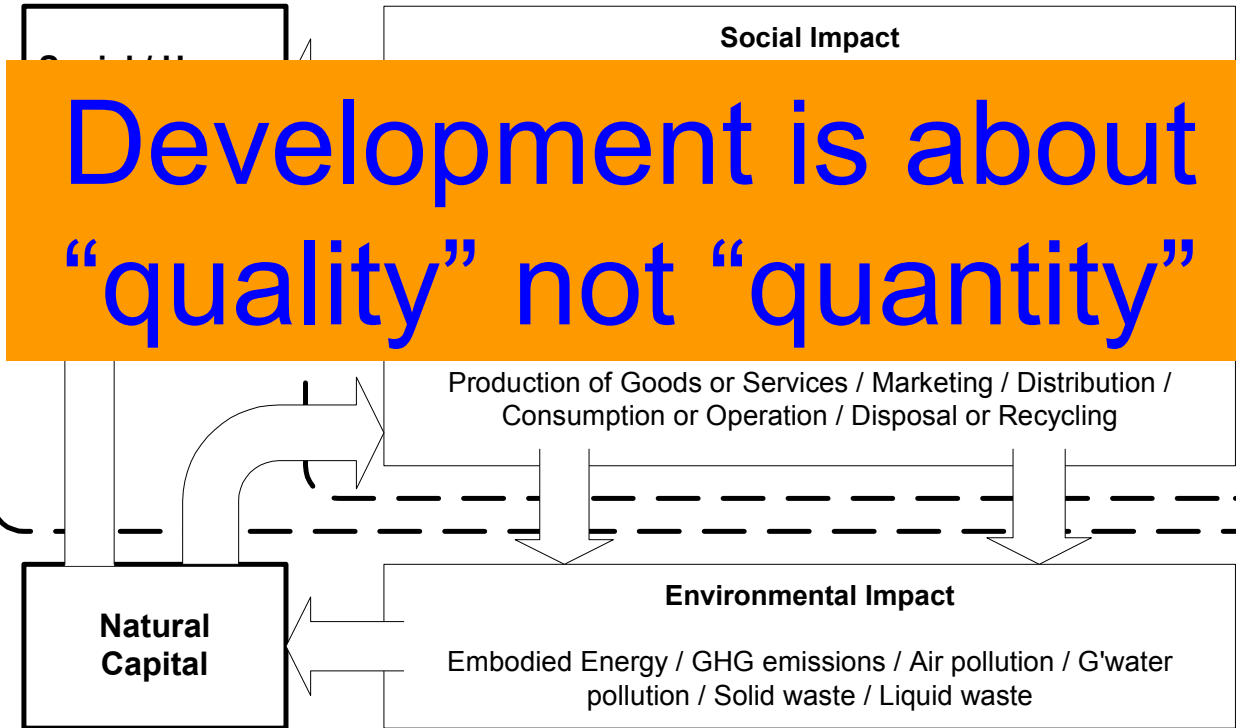
Environmental Impact

Embodied Energy / GHG emissions / Air pollution / G'water
pollution / Solid waste / Liquid waste

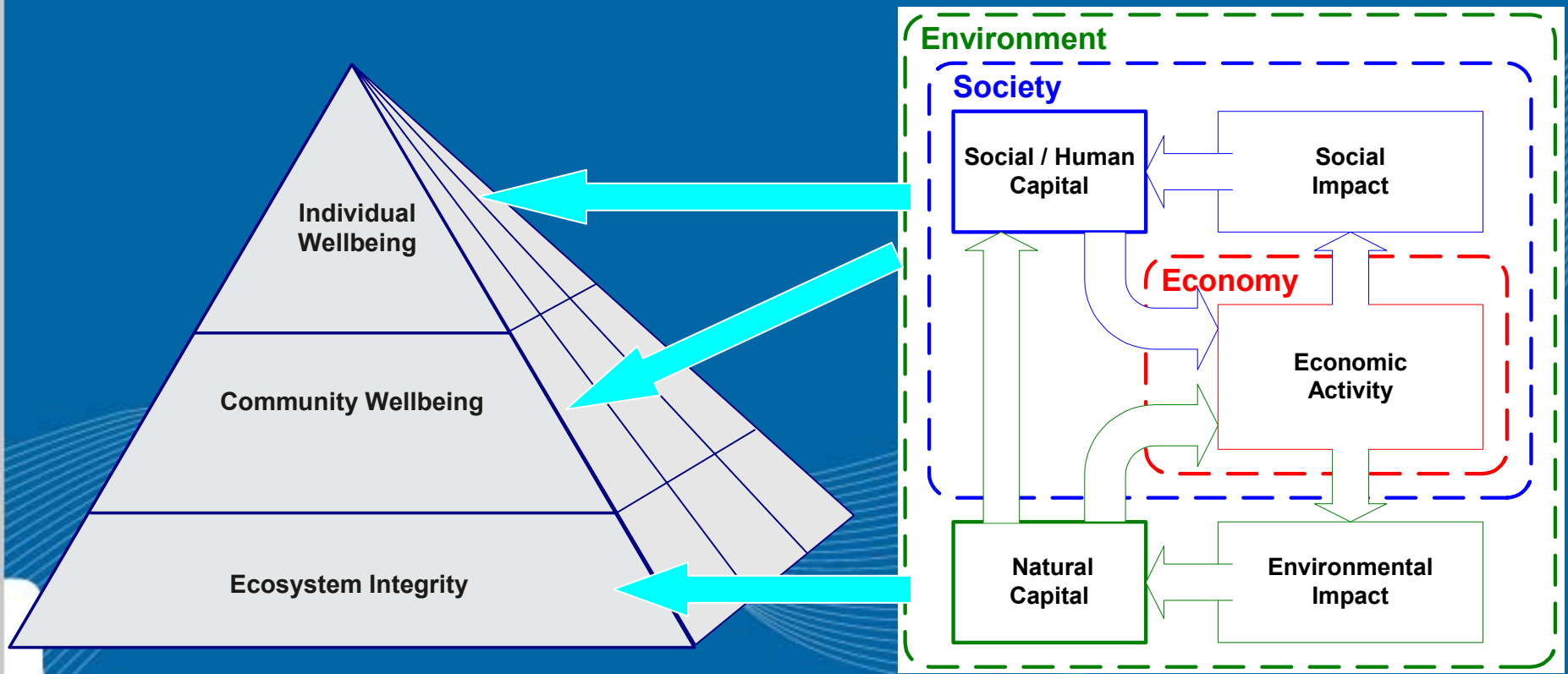


Environment

Society



The Link Between Economy and Wellbeing

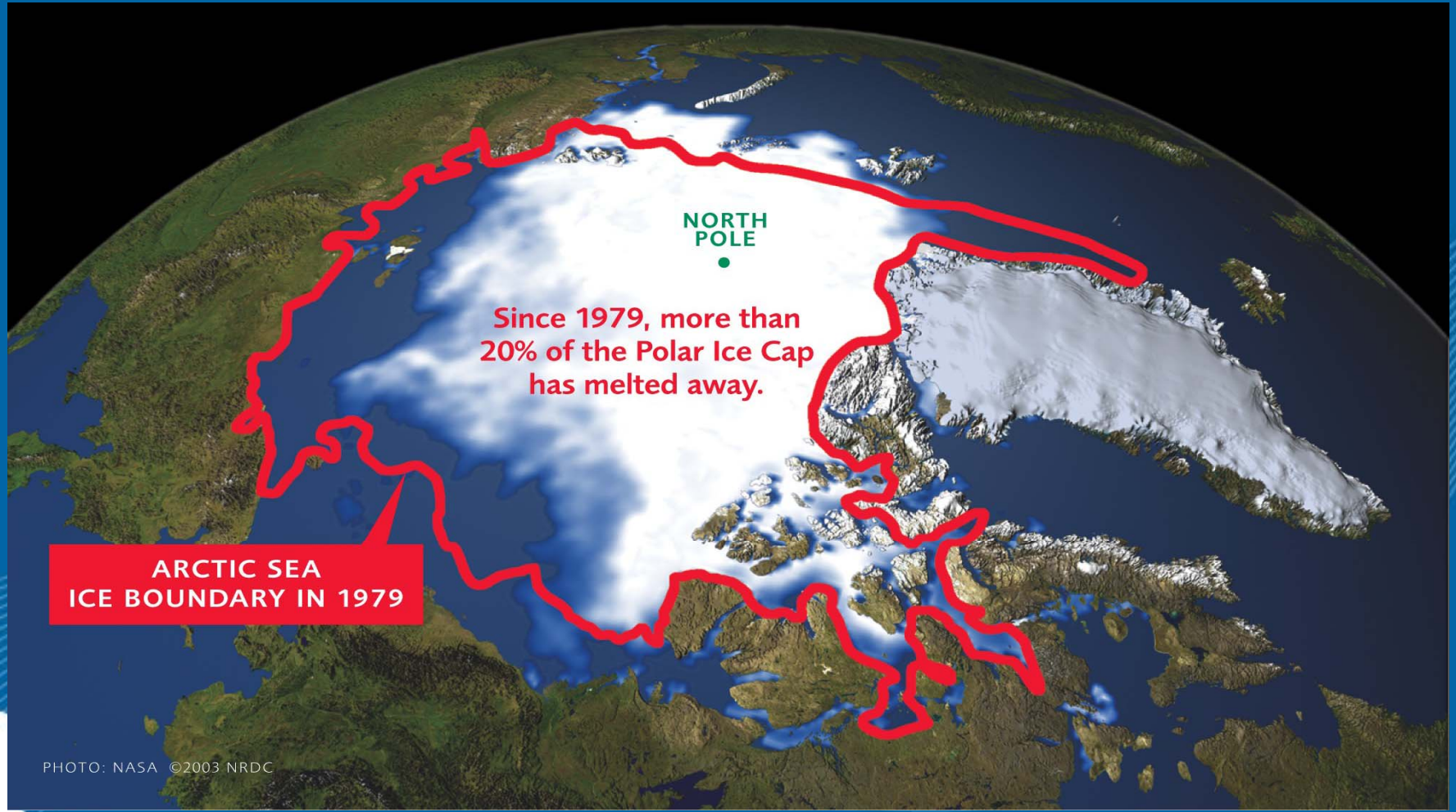




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Why the Urgency?

The effects of 0.6C global warming



Great Aletsch Glacier (Switzerland)

F. Martens, Alpine Club
London



GLOBAL
I G B P
CHANGE 1858

Pictures provided by Hanspeter Holzhauser and
Wilfried Häberli, University of Zürich,
Switzerland,

haeberli@geo.unizh.ch; holzi@geo.unizh.ch

2001

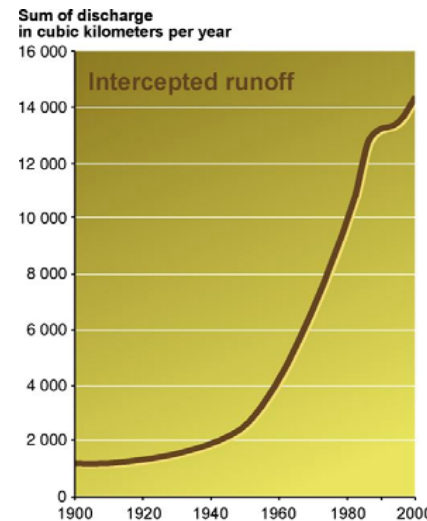
PAGES
PAST GLOBAL CHANGES

Millennium Ecosystem Assessment Findings

- Largest assessment of the health of Earth's ecosystems
- Experts and Review Process
 - Prepared by 1360 experts from 95 countries
 - 80-person independent board of review editors
 - Review comments from 850 experts and governments
- Governance
 - Called for by UN Secretary General in 2000
 - Authorized by governments through 4 conventions
 - Partnership of UN agencies, conventions, business, non-governmental organizations with a multi-stakeholder board of directors

Unprecedented change: Ecosystems

- ❑ 20% of the world's coral reefs were lost and 20% degraded in the last several decades
- ❑ 35% of mangrove area has been lost in the last several decades
- ❑ Amount of water in reservoirs quadrupled since 1960
- ❑ Withdrawals from rivers and lakes doubled since 1960

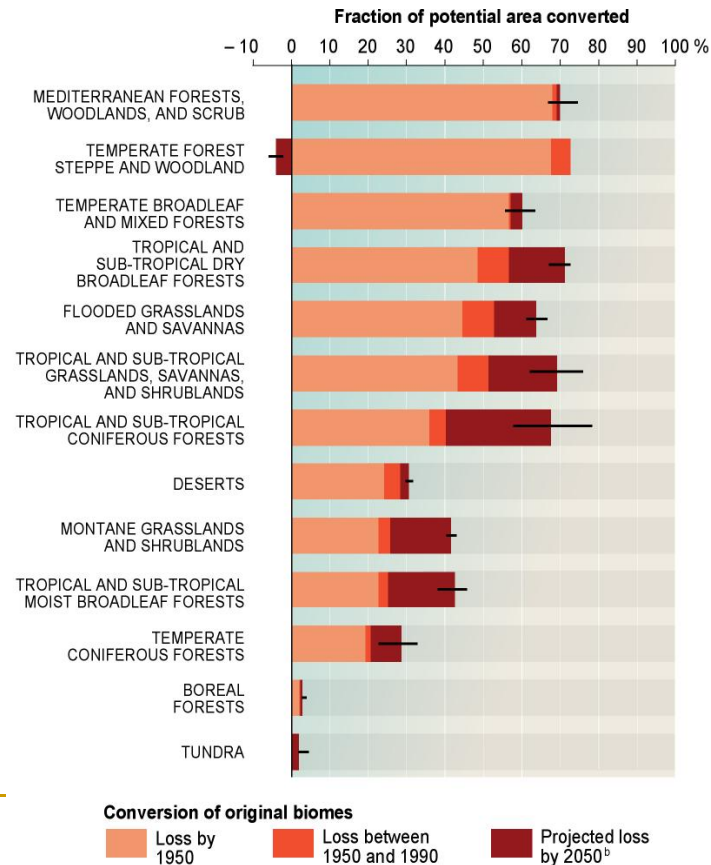


**Intercepted Continental Runoff:
3-6 times as much water in reservoirs as in natural rivers**

(Data from a subset of large reservoirs totaling ~65% of the global total storage)

Unprecedented change: Ecosystems

- 5-10% of the area of five biomes was converted between 1950 and 1990
- More than two thirds of the area of two biomes and more than half of the area of four others had been converted by 1990

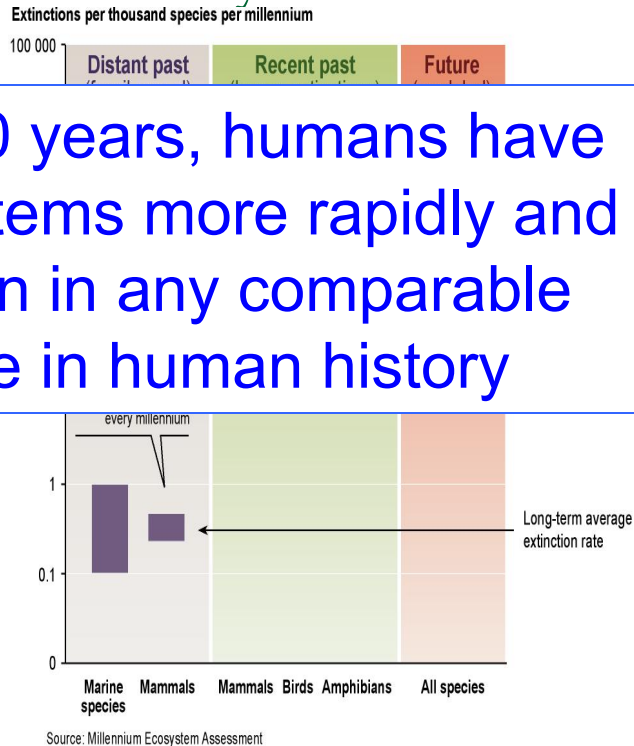


Significant and largely irreversible changes to species diversity

- Humans have increased the

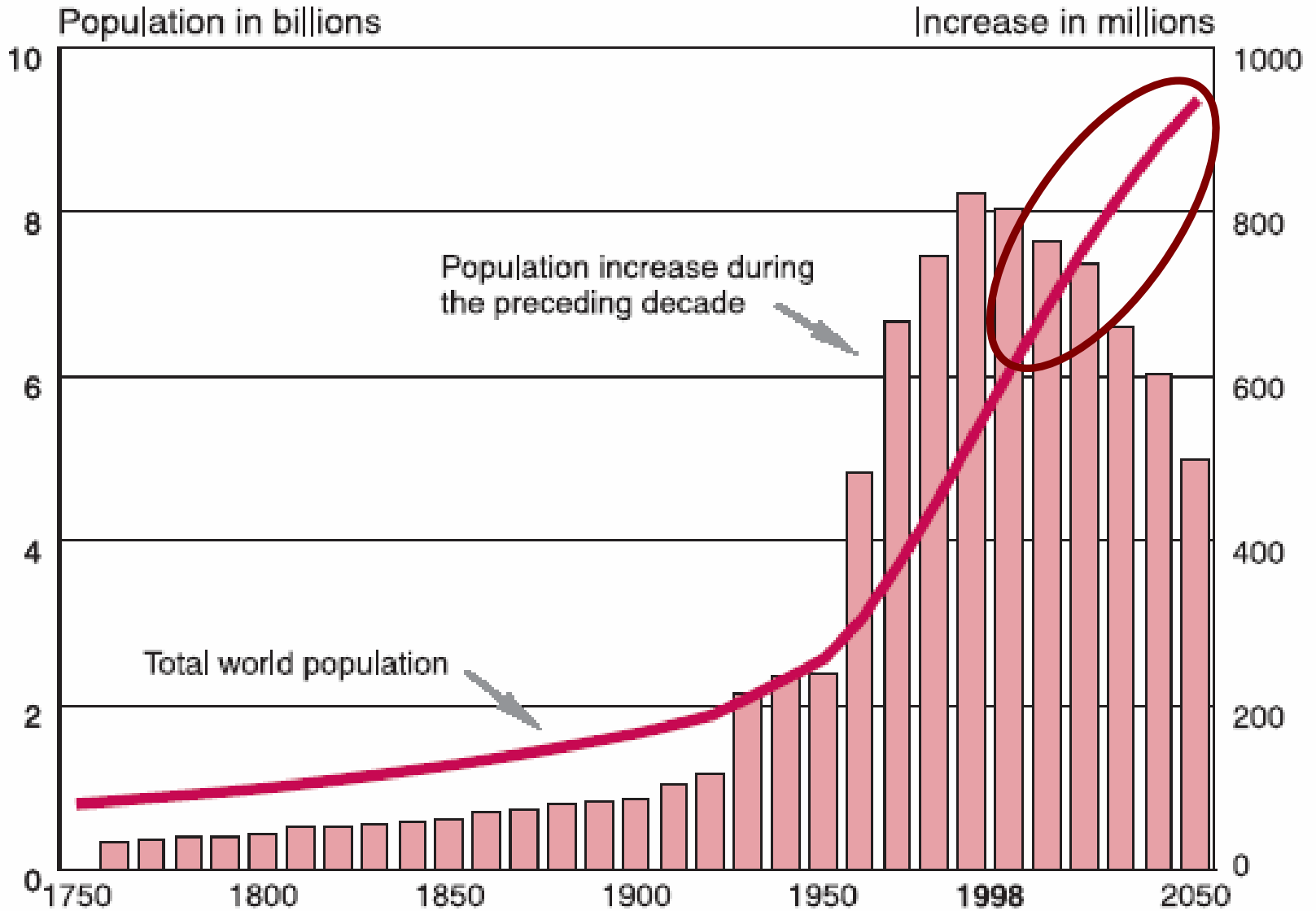
Over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history

- 1 amphibian species are currently threatened with extinction (*medium to high certainty*)



Peak Oil

- "The OPEC embargoes in the 1970s provide an historic lesson and offer insight to the potential impacts of petroleum shortages (see section 5.4). Shortages, albeit temporary in the 1970s, drove oil prices higher, and led to high inflation, high unemployment and high interest rates, all at the same time. These adverse effects can be expected in the future if the U.S. once again experiences a supply shock." **US Department of Energy.**



Source: United Nations (1995:97) and U.S. Bureau of the Census, International Data Base.

The Message ...

- Most of the environmental and social damage has been an unintended consequence of economic activity
- The economic activity has improved quality of life for most (not all) people
- The **sustainability** of our quality of life is threatened into the future by these trends:
 - Population growth
 - The legacy of our economic and social infrastructure
 - BaU thinking



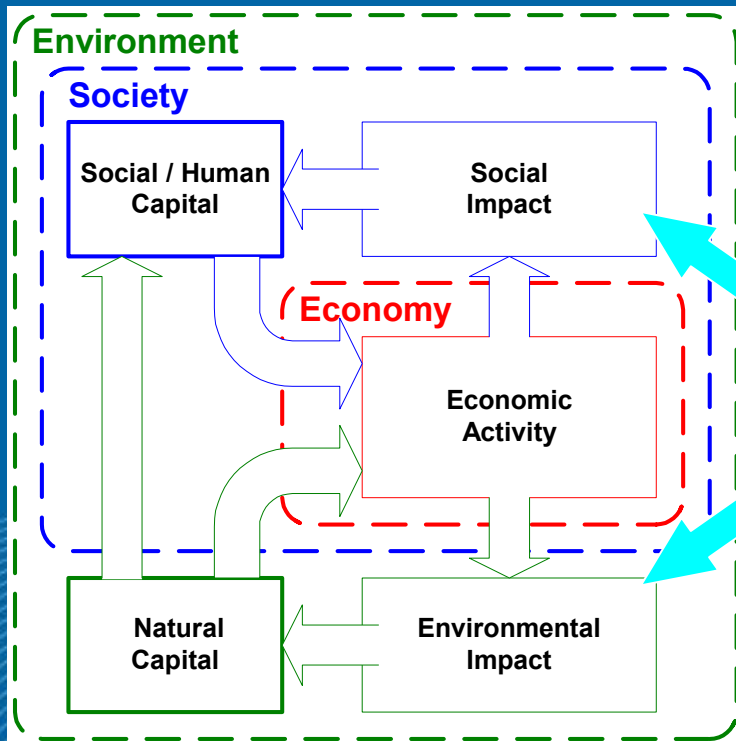
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How Should We Respond?

What it Means for Economic Planning

- Understanding the future not in terms of GDP (ie the volume of economic activity) but:
 - constraints imposed by retention of ecological integrity
 - our broader social “needs”
- Prioritising economic activity that contributes to sustainable quality of life, in terms of both:
 - Outcome (ie the goods / services produced)
 - The means (impacts of production)

Broadening our Evaluation of the Business Case



Management of impacts:

- Minimise the negatives
- Maximise the positives

Enhancement:

- Increased socio economic spinoff
- Environmental offsets

Enhancement - examples

- Executing projects in a manner that promotes indigenous employment
- Rehabilitation of degraded environments as part of land development activity
- Water resource projects that reduce overall GHG emissions
- Power project that capture / store carbon beyond that produced

Some Challenges for WA

- 
- Climate Change
 - Peak Oil
 - Non-renewable resource base
 - Salinisation of agricultural land
 - Population Growth
 - Indigenous disadvantage
 - Matching skills to needs
 - Demographics
 - Biodiversity loss
 - Degradation of arable land
- Existing paradigm of economic development
 - Sustainable production
 - Mobility
 - Housing
 - Employment
 - Education & Training
 - Aged care
 - Indigenous business development
 - Sustainable food production

Future Directions for the Industry

- Build partnerships with Government and community to:
 - Set development objectives (socio-economic, community, environment and resources)
 - Refine assessment processes to deliver these objectives
- Be “responsive” to the community through alignment with government policy, eg Network City

WA State of the Environment Report 2006

Statewide priorities

Priority rankings for environmental issues



Very high priority

Climate change

Population and consumption

Greenhouse gas emissions

Introduced animals

Phytophthora dieback

Weeds

Land salinisation

Salinisation of inland waters



Particulates

Changed fire regimes

Clearing

Soil erosion

Altered water regimes

Loss of wetlands

Loss or degradation of fringing and instream vegetation

Degradation of marine habitat

Settlement patterns



Photochemical smog

Soil acidification

Acidification of inland waters

Erosion and sedimentation of inland waters

Eutrophication

Introduced marine pests

Transport

Water use in settlements

Energy use in settlements

Waste generation and disposal

Heritage conservation and management



Indoor air

Air toxics

Oxides of nitrogen

Overgrazing

Trawling

Land contamination

Marine contamination

Appreciation and support for heritage

Statutory recognition and protection of heritage



Lower priority

Stratospheric ozone depletion

Sulfur dioxide

Carbon monoxide

