RE-INVENTING PROGRESS: WELCOMING A CHANGING WORLD

Ian Lowe

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Geelong Vision 2050, Scenario 3 version 2

The fundamental premise

- Future is not somewhere we are going, but something we are creating
- Many possible futures
- We should be trying to shape a sustainable future , i.e. one that can be *sustained* for the foreseeable future

Unsustainable futures

- **Rapid population growth**
- **Growing consumption per person**
- **Deplete mineral resources, e.g. Oil**
- **Over-use fisheries, forests, water**
- **Disrupt climate, lose biodiversity**

"Our present course is unsustainable – postponing action is no longer an option"

– GEO 2000 [UNEP 1999]

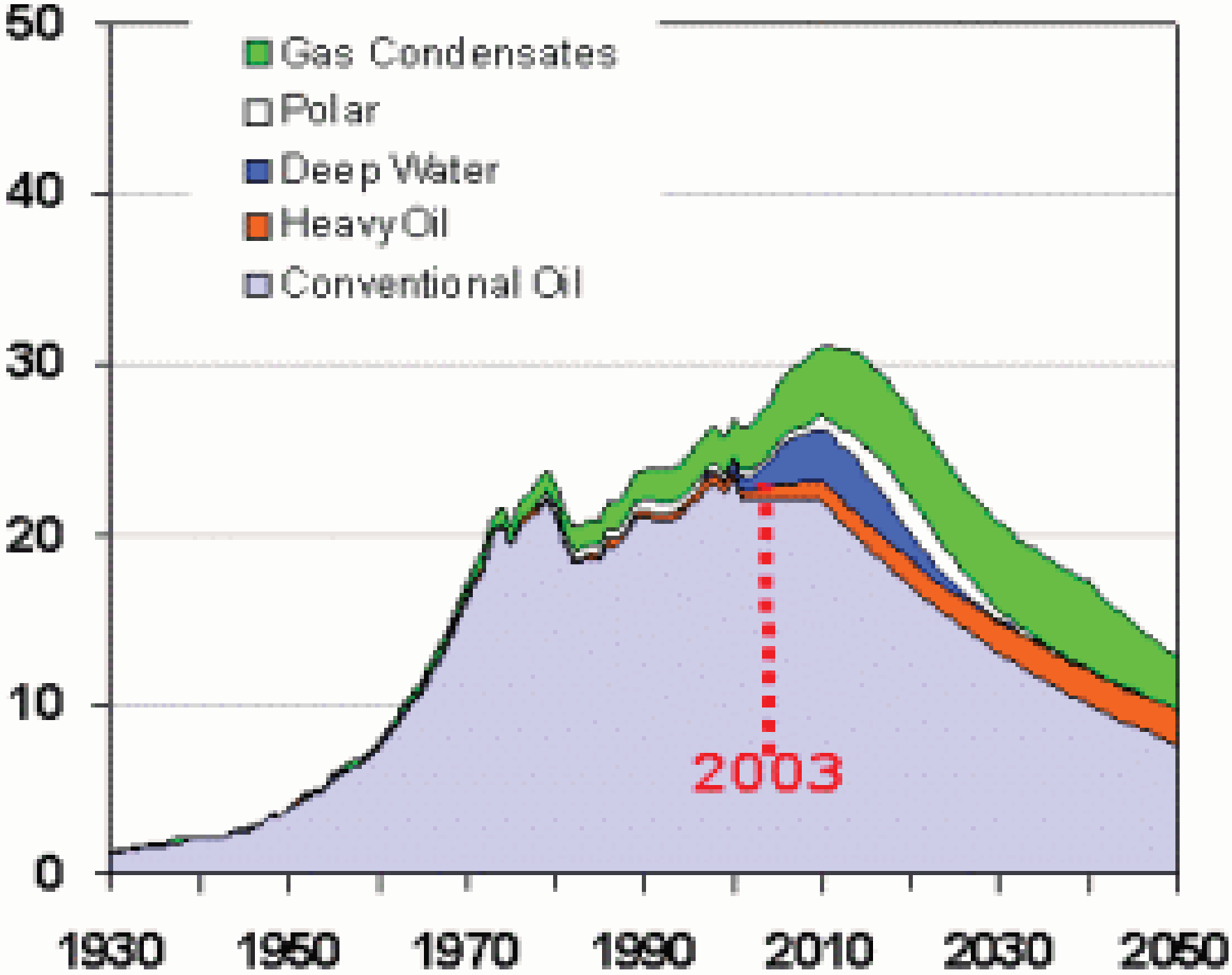

OBJECTS IN MIRROR ARE CLOSER
THAN THEY APPEAR

ABS: Measures of Australia's Progress

Since 1990, all economic indicators positive

Social indicators mixed

All environmental indicators worsening


50
40
30
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Gas Condensates
Polar
Deep Water
Heavy Oil
Conventional Oil
2003
1930
1950
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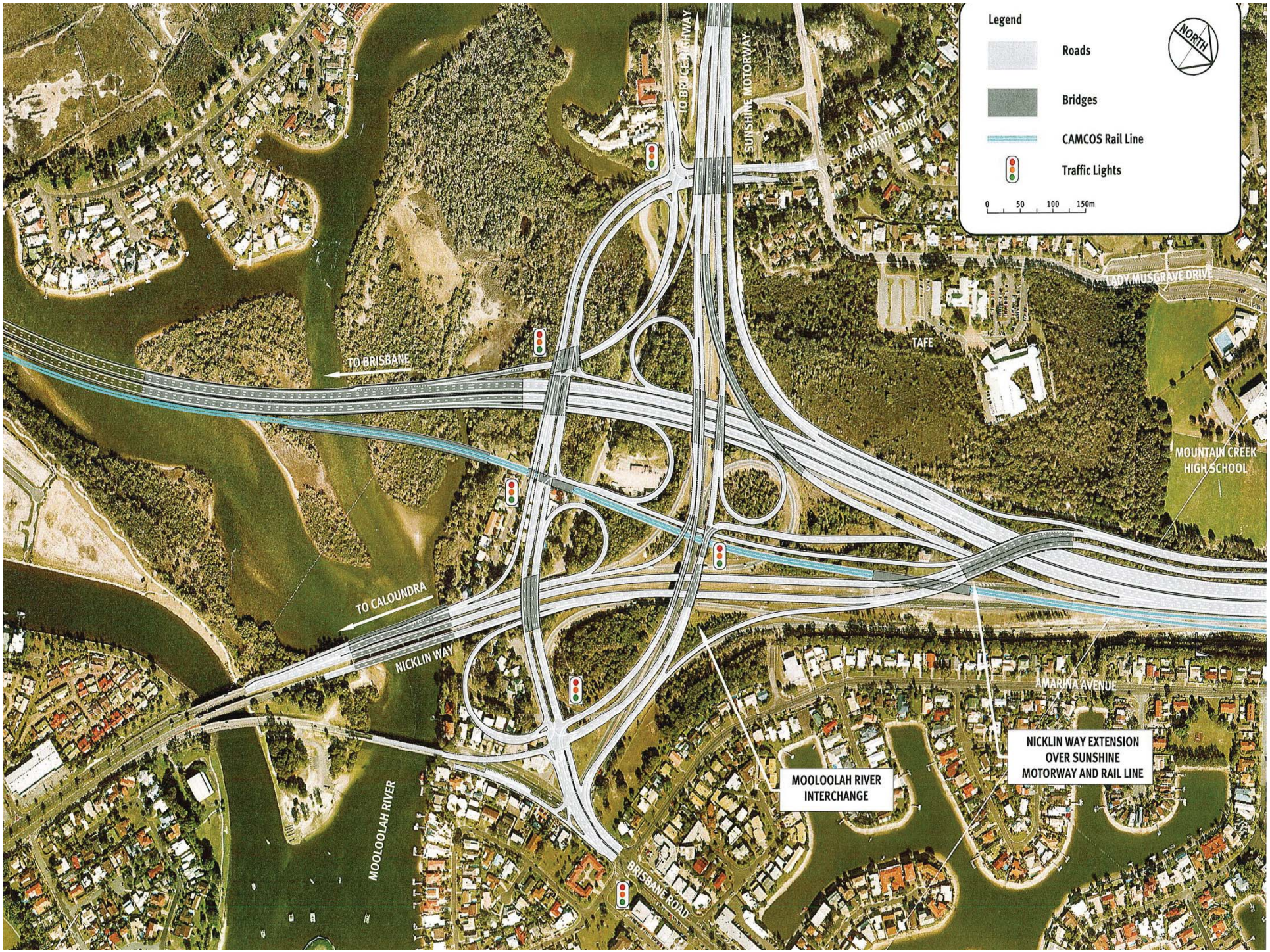
2010
2030
2050


Legend
Roads
Bridges
CAMCOS Rail Line
Traffic Lights
0 50 100 150m
NORTH
TO BRISBANE
TO CALOUNDRA
NICKLIN WAY
SUNSHINE MOTORWAY
KARAWATHA DRIVE
LADY MUSGRAVE DRIVE
TAFE
MOUNTAIN CREEK HIGH SCHOOL
AMARINA AVENUE
BRISBANE ROAD
MOOLOOLAH RIVER
MOOLOOLAH RIVER INTERCHANGE
NICKLIN WAY EXTENSION OVER SUNSHINE MOTORWAY AND RAIL LINE

The inevitable conclusions

- Transport fuels will become steadily more expensive
- Supply disruptions will become increasingly likely

Significance

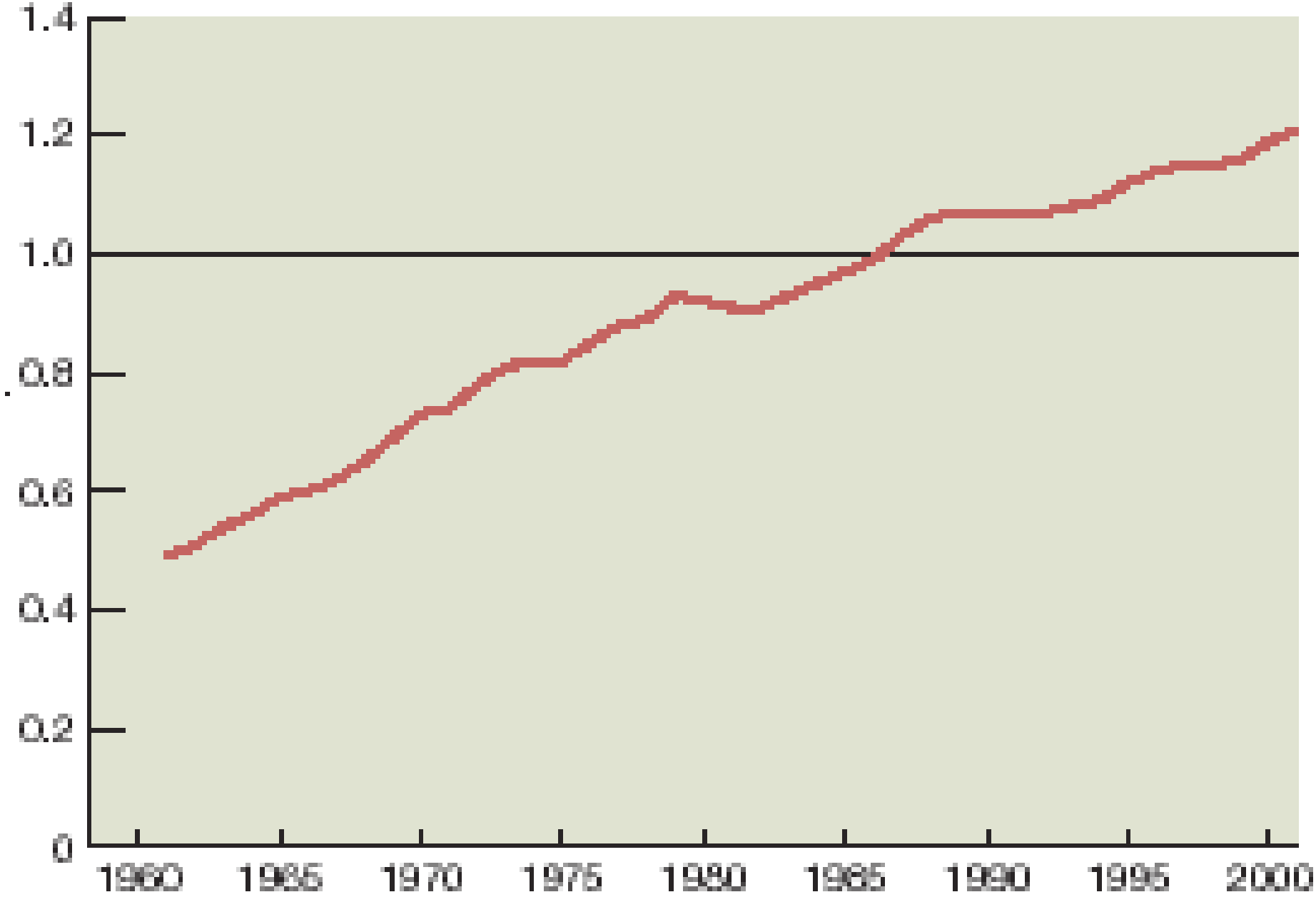
- Obvious role in transporting people
- Food production & distribution
- Manufacturing & distributing

Sustainable resource use

- Reduce, re-use, recycle
- Clean energy supply
- Efficient use
- Internalise *all* costs

Ecological Integrity

Fig. 2: **HUMANITY'S ECOLOGICAL FOOTPRINT,** 1961–2001



Unprecedented Changes

- More land converted to cropland since 1945 than in 18th and 19th centuries together
- 20% world's reefs lost, 20% degraded
- 35% mangroves lost in recent decades
- Reservoir water quadrupled since 1960
- Withdrawals from rivers, lakes doubled

Biogeochemical Cycles

- Since 1960:
  - Flows of biologically available nitrogen in terrestrial ecosystems doubled
  - Flows of phosphorus tripled

- > 50% of all synthetic nitrogen fertiliser ever used has been used since 1985

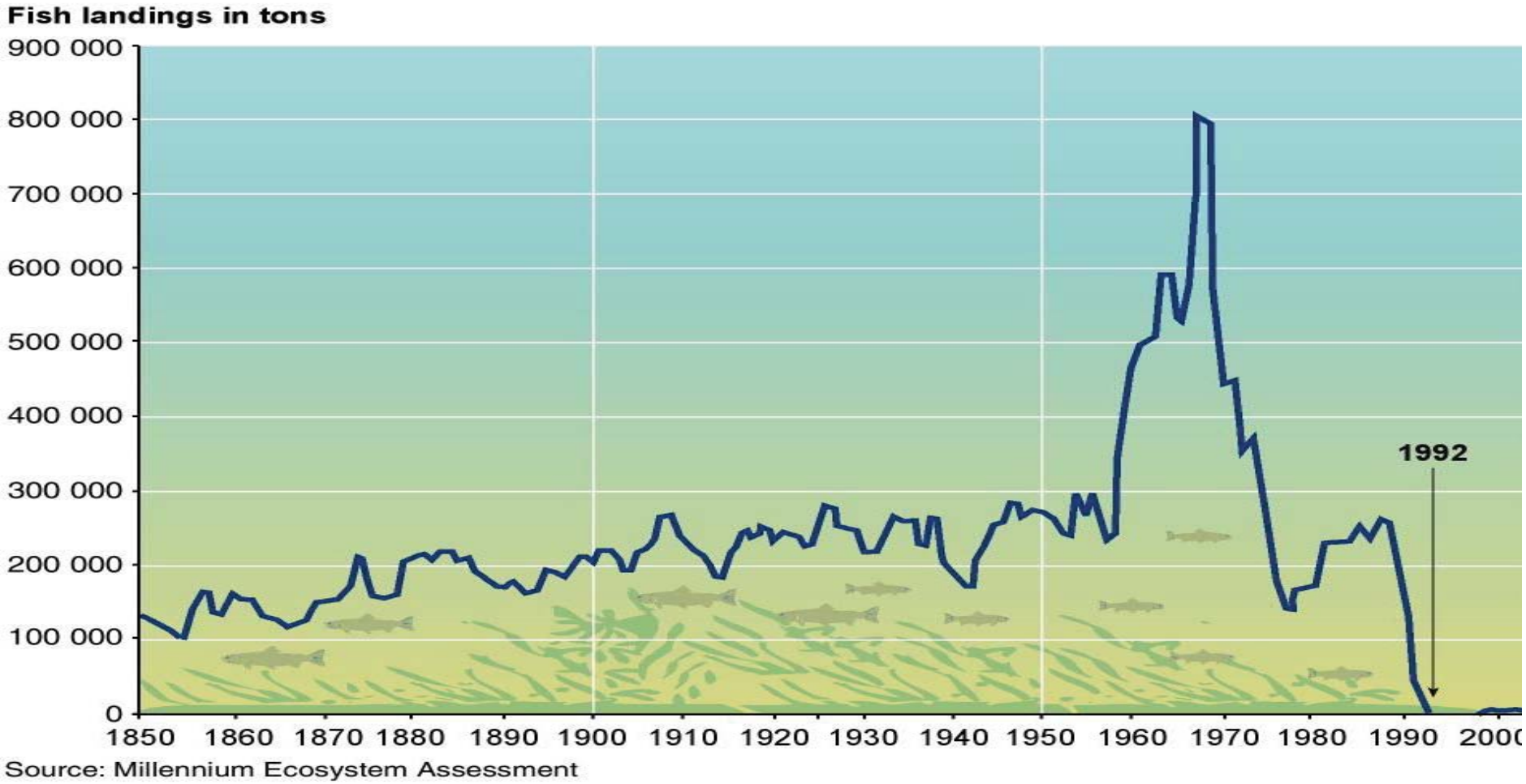
Humans now produce as much biologically available N as all natural pathways. This may grow a further 65 % by 2050.

Increased likelihood of non-linear changes

There is *established but incomplete* evidence that our impacts on ecosystems are increasing the likelihood of non-linear changes … with important consequences for human well – being.

Millennium Assessment Report 2005

An example of non-linear change



Millennium Assessment Report 2005

Integrity of ecological systems

- Protect, restore ecological integrity
- Concern for biological diversity
- Nature & biosphere reserves
- Protect endangered species, threatened ecosystems
- Control introduced species

The Knowledge Base

- Much damage done by applying narrow knowledge to part of the system
- Need much better understanding of complex natural systems, including links between local and global processes
- Use this improved understanding to reduce the impacts of human activities

Social & Economic Justice

- Eradicate poverty
- Equitable development
- Gender equity
- Human dignity

Equitable development

- Equitable distribution within and between nations
- Trade supports sustainable resource use, environmental protection, labour standards
- Transparent, accountable organisations

NOT JUST A NEW CENTURY

But a *just* new century !

UNDP study

Universal provision of clean drinking water, adequate nutrition, shelter, basic health care and education [including reproductive advice for women] would cost a massive sum:

5 % of the global military budget !

RESILIENT PEOPLE RESILIENT PLANET A Future Worth Choosing

THE 2012 REPORT OF THE UNITED NATIONS SECRETARY-GENERAL'S HIGH-LEVEL PANEL ON GLOBAL SUSTAINABILITY

Membership of UN panel

- Co-chairs: Tarja Haloren, President Finland
- Jacob Zuma, President South Africa

- Members from Australia, Barbados, Brazil, Canada, China, Denmark, India, Japan, Korea, Mexico, Mozambique, Norway, Russia, Spain, Sweden, Switzerland, Turkey, UAE, USA
- Politicians, scientists, economists

Summary of key issues

- Unprecedented prosperity, planet "under unprecedented stress"
- > 1 billion live in poverty
- Development model unsustainable
- "new nexus" – food, water, energy
- Need for integrated thinking
- New sustainability indicators
- Policy linked to science

ENERGY, WATER, FOOD

The Critical Three Factors

IEA World Energy Outlook 2008

"nothing short of an energy revolution"

Water

- Survival: clean drinking water
- Food: critical for plant growth, animals
- Production: crucial input

- Supply declining: rainfall change, glacier retreat

- Link to warming: drying climate

- More people, greater needs, less resources

Augmenting water supply

- Traditional approach: damming rivers
- Globally, about 300 large dams a year
- Fewer promising sites
- Social and ecological impacts
- Run-of-river extraction
- Desalination with renewable energy
- More effective use !

FOOD

- UN estimate: 50 % more by 2030
- Loss of productive land
- Reduced available water
- Oil scarcer, more expensive

- More must be produced with less resources
- Again, storage & distribution crucial
- Global situation

The Linkages

- Food production requires energy and water
- Water supply requires energy
- Energy supply requires water

Hence need for integrated approaches

The drivers of the challenge are “unsustainable lifestyles, production and consumption patterns and the impacts of population growth”

The main point for policy

"Integrating environmental and social issues into economic decisions is vital for success... bring the sustainable development paradigm into mainstream economics", recognising that "the cost of inaction far outweighs the cost of action"

"A macro - economy predicated on continual expansion of debt - driven materialistic consumption is unsustainable ecologically, problematic socially and unstable economically"

UK Sustainability Commission

“these recent crises - fuel, food and finance - are simply the three canaries in the mine. These are the early warning signals that our current *economic* system is simply *not sustainable*.”

WEF Global Agenda Summit, 2008

Flaws in economics

- * Unsustainable: over - consume and degrade resources
- * Unfair: multiply financial advantages
- * Unstable: lack resilience in a time of growing volatility and rapid change.
- * Undemocratic: inadequate democratic control and accountability

New economics must:

- Fully realise individual potential through advancement of human rights, including the right to thriving livelihoods, quality education, effective social safety nets etc.

- Protect and nurture the richness of the natural world in ways that confront and rectify intensifying threats to humans and other species.

Sustainable community will

- Have stabilised its population & footprint
- Use resources sustainably to produce a dynamic, flexible economy
- Be approaching a zero waste society
- Have drastically cut carbon emissions
- Require developments biodiversity +ve
- Be committed to improving equality
- Therefore serious TBL assessments
- Process for difficult decisions

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Conclusion

- Many challenges to develop sustainably
- “peak oil”, decline of natural systems, climate change, water and food production, population growth, economic system
- **O P P O R T U N I T I E S**
- Creating the future
- Coherent vision owned by community
- Conscious choices to approach that vision


Questions ?