

Global food security



challenges

and

choices

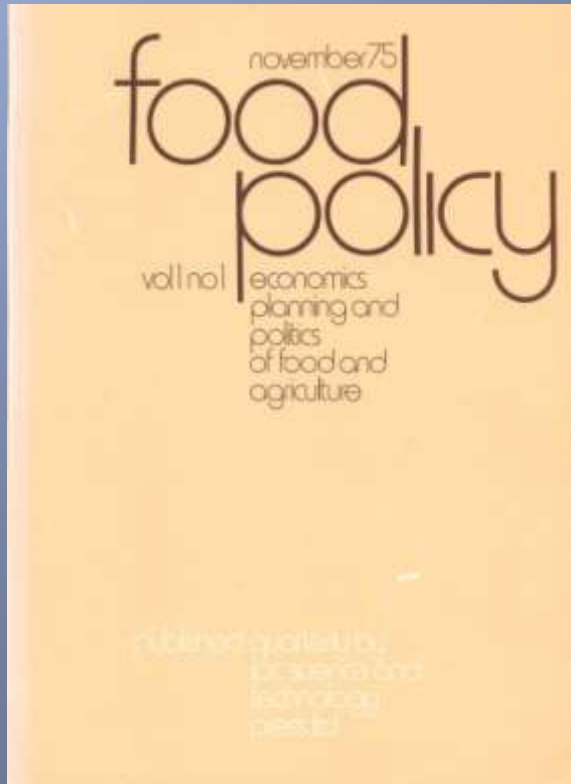
Geoff Tansey

Brussels, 31 May 2010

www.tansey.org.uk

Energy crisis

Food crisis



food
policy

Volume 1 Number 1 November 1975

2 Food Policy – editorial aims

3 The world food problem – national and international aspects
Tim Josling

15 The world food situation – a consensus view
Don Paarlberg

23 Agricultural exports as an instrument of diplomacy
William Schneider, Jr

32 Soviet grain – problems and prospects
Alec Nove

41 Urban bias and food policy in poor countries
Michael Lipton

53 Nutrition and development – dynamics of political commitment
John Osgood Field and F. James Levinson

62 Energy and food production
Gerald Leach

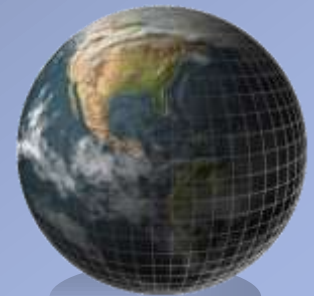
74 Conferences
Through science and nutrition to human well-being, Kyoto, Japan, 3-9 August 1975 – David J. Thurnham
Long-term climatic fluctuations and the future of our climate, Norwich, UK, 17-23 August 1975 – Michael J. Ford

77 Books
Nourrir Dix Milliard D'Hommes? by Joseph Kintzmann – Denis Bergmann
Can Britain Feed Itself? by Kenneth Mellanby – George Allen
Size and Efficiency in Farming by D.K. Britton and Berkeley Hill – J.M. Currie

80 Reports

- Feeding the world – E.M. Ojala
- The world food council – more than a garnish? – Robin Sharp
- International Food Policy Research Institute established
- New world food and nutrition study – Joel Bernstein

NIEO?



Déjà vu?

- ‘The food crisis of the past two years has drawn attention dramatically to both the interdependence of production, trade, stocks and prices and the serious unpreparedness of the world as a whole to meet the vagaries of the weather.’
- ‘The concept of food security is broad and complex but its cornerstone is a system of grain reserves that will protect the world against the effects of violent fluctuations in food production and food prices.’

Assessment of the World Food Situation Present and Future, prepared for the UN World Food Conference, Rome, November 1974, Quoted in *Food Policy*, Vol 1, No1, November 1975, p2

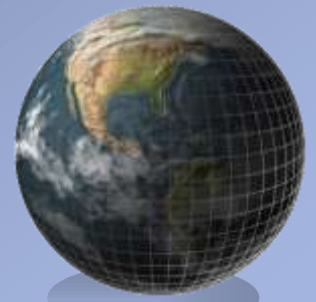
‘Food security – not yet’, Comment, *Food Policy*, Vol 1, No 4, August 1976, p270



Food Policy

- **Influences** the set of **relationships** and **activities** that interact to **determine what, how much, by what method and for whom food** is **produced, distributed and consumed**

Modified from *Food Policy*, OECD, 1981



A dysfunctional system globally

- Just over 1 bn people undernourished
- 2 billion micronutrient deficient
- About 1.2 billion overweight - 300 million obese
- Affects poor most, N & S
 - US Supplemental Nutrition Assistance Program (Food Stamps) - \$37.7bn, 2008(prov)
- 2.5bn people in agriculture (1.3bn smallholders)
 - 75% of poor (<\$2/day) in rural areas



Ingredients for food security

No single recipe will ensure food security for all individuals, households or nations. The basic ingredients – illustrated below – are well-known, although their quality and availability vary greatly from region to region. FAO's comprehensive national food security programmes are designed to help countries develop their own recipes for success.



Land and water

The quality of land and water resources affects overall productivity. Ownership patterns influence the way the land is managed.



Storage facilities

Storage conditions affect the safety and quality of food, the level of waste, and the amount held in surplus for future emergencies.



Processing

Farm produce is processed in various ways – dried, milled, canned, bottled, etc. The quality of processing determines the food's nutritional value and longevity.



Prepared food

People eating outside the home – at street stalls, restaurants or factory canteens – depend upon good standards in food preparation for high-quality, safe food.



Money and credit

Both individuals and governments need money – or credit – to finance growth and development.



Family and culture

Family backgrounds, cultural traditions and religious beliefs influence acceptance or rejection of certain foods and eating patterns.



Transport

Better transport means fresher food; poor transport facilities may hamper distribution and discourage production.



Resource management

The ingenuity, technical know-how and management skills of a nation's food producers determine how well resources are used.



Employment

The nature and location of food industries – from production to processing and distribution – determine who benefits from the employment and income they create.

Income
People who do not produce their own food need employment – formal or informal – to earn an income so that they can buy food.

Water and sanitation
Clean water supplies and adequate sanitation facilities are essential for good nutrition.



Farm equipment and inputs
The availability and appropriateness of equipment and inputs such as fertilizers affect food quality and productivity.



Radio, TV and newspapers
The mass media can raise public awareness of nutrition and publicize ways to improve it.



Kitchen
Raw and processed food is transformed into meals in the home by cooking and presenting it in culturally acceptable ways.



Advertising
Advertising promotes particular foods and can therefore encourage good – or bad – eating habits.



Political structures
The responsiveness of political structures to the needs of the poor is a key factor in ensuring food security.



Fuel
Fuel is needed for cooking and preserving food. Over 2 000 million people in the developing world depend on increasingly scarce supplies of wood and charcoal.



Government policies
Government policies in many areas – including agriculture, forestry, health, public works, interest rates, budgets, and social services – affect access to safe food.



Exchange rates
Currency values affect the price of exports, the cost of imports, and the balance of trade. Overvalued rates encourage food imports and may undermine local food production.



Distribution
The effectiveness and cost of the distribution chain – storage, transport, wholesaling and retailing – affects food quality, availability and accessibility.



Education
The availability and content of general and specialist education influences people's knowledge about good nutrition and how to achieve it.



Research and development
Scientific research and technological developments bring new production techniques and greater understanding of how diet affects well-being.



Food security - FAO



- A situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life



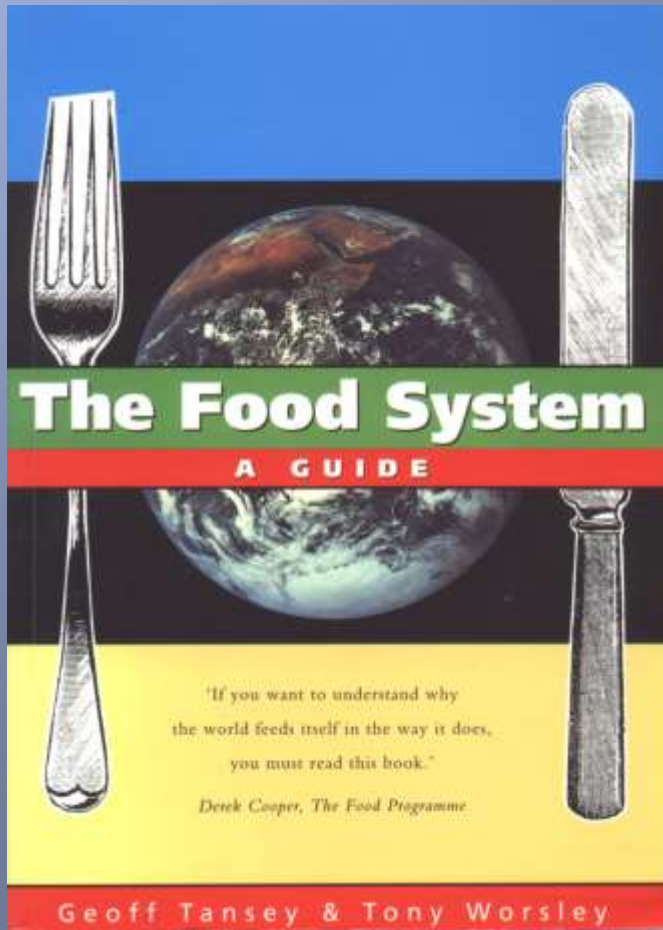
Sustainable Development Commission - food security

genuinely sustainable food systems:

- where the core goal is to feed everyone sustainably, equitably and healthily;
- which addresses needs for availability, affordability and accessibility;
- which is diverse, ecologically-sound and resilient;
- which builds the capabilities and skills necessary for future generations.



Key words



- Power
- Control
- Risk
- Benefits



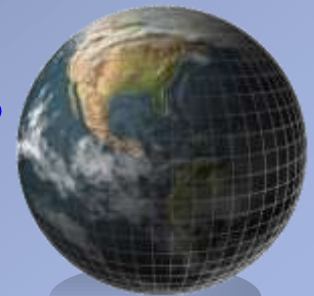
Food Sovereignty - Six Principles

1. **Focuses on Food for People** and Right to Food, rather than export commodities
2. **Values Food Providers** and respects their Rights, rather than squeezing them off the land
3. **Localises Food Systems**, rather than promoting unfair global trade
4. **Puts Control Locally**, rather than remote TNCs
5. **Builds Knowledge and Skills**, rather than depending on alien technologies such as GM
6. **Works with Nature**, rather than using methods that harm beneficial ecosystem functions, such as energy intensive monocultures and livestock factories.



Food System actors

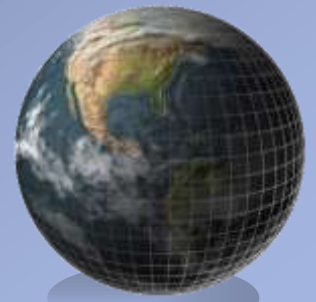
- **Input suppliers**
- Farmers
- **Traders**
- Workers
- **Processors / manufacturers**
- **Wholesalers / retailers**
- **Caterers**
- Consumers / citizens
- **Governments, policy makers, lobbyists**



Limited demand

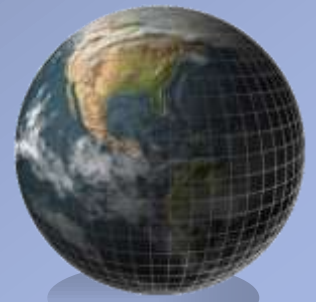
- saturated markets

- Increased competition
- Technology
- Increased productivity
- Diversification



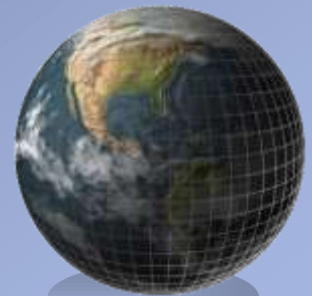
Key trends

- Economic Concentration
- Global markets
- Control
- Geo-political shifts



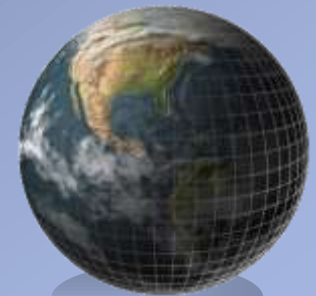
Tools for control

- Political, military & economic power
 - Historically shaped today's system
- Science
- Technology
- Information
- Management
- Laws, rules, regulations
 - From national to global



1990s - global food rules change

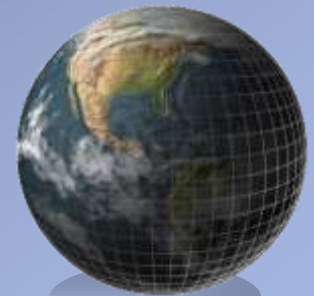
- Convention on Biological Diversity (UN)
 - Conserve, sustain, share benefits
 - Traditional & indigenous knowledge
- International Treaty on Plant Genetic Resources for Food and Agriculture (UN)
 - Farmers' Rights, IPRs, sharing benefits, managed commons
- World Trade Organisation
 - Trade liberalisation, agriculture, TRIPS, SPS



Importance of 'Intellectual Property'



- Underpins
 - 'knowledge economy'
 - media & entertainment, software
 - pharmaceuticals / biotechnology
 - brand power
- Means to
 - Exclude others, capture and appropriate benefits



Language and reality

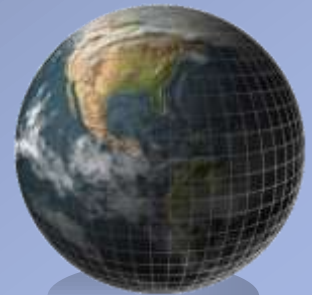
- Investment protection
- monopoly (or exclusionary) privileges
 - IMPs not IPRs
- Facilitate form of private taxation



Costs of granting IMPs

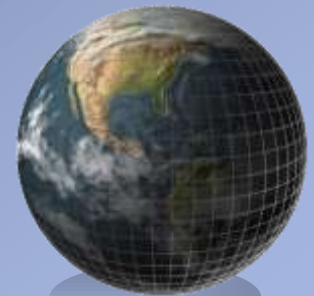
- Shift market power
- Higher consumer prices
- Increase cost of knowledge acquisition
- Facilitate anti-competitive practices
 - cross-licensing
 - tie-in sales
 - buy-up patents
 - threaten law suits

World Bank, WDR, 1998



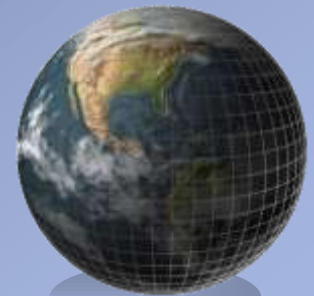
Globalising IP rules

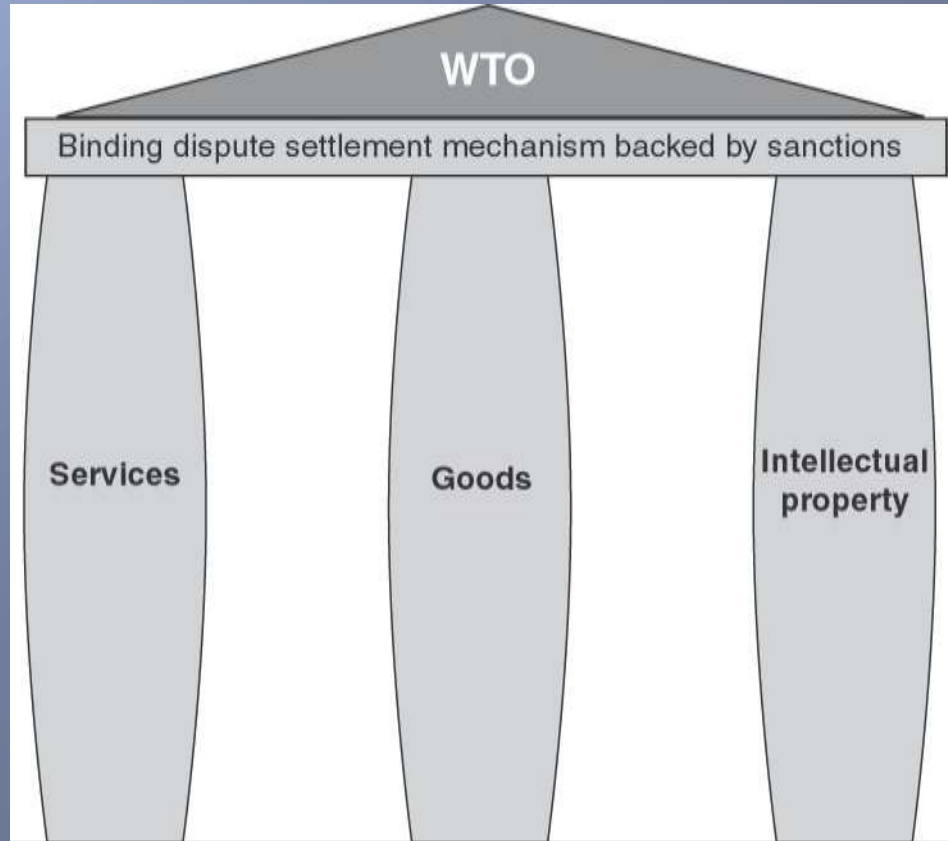
- WIPO ♦ GATT
- GATT power play - WTO
 - a few key industries led
- TRIPS - Trade-Related Aspects of Intellectual Property Rights
 - minimum, enforceable standards, for all



TRIPS at the World Trade Organisation (WTO)

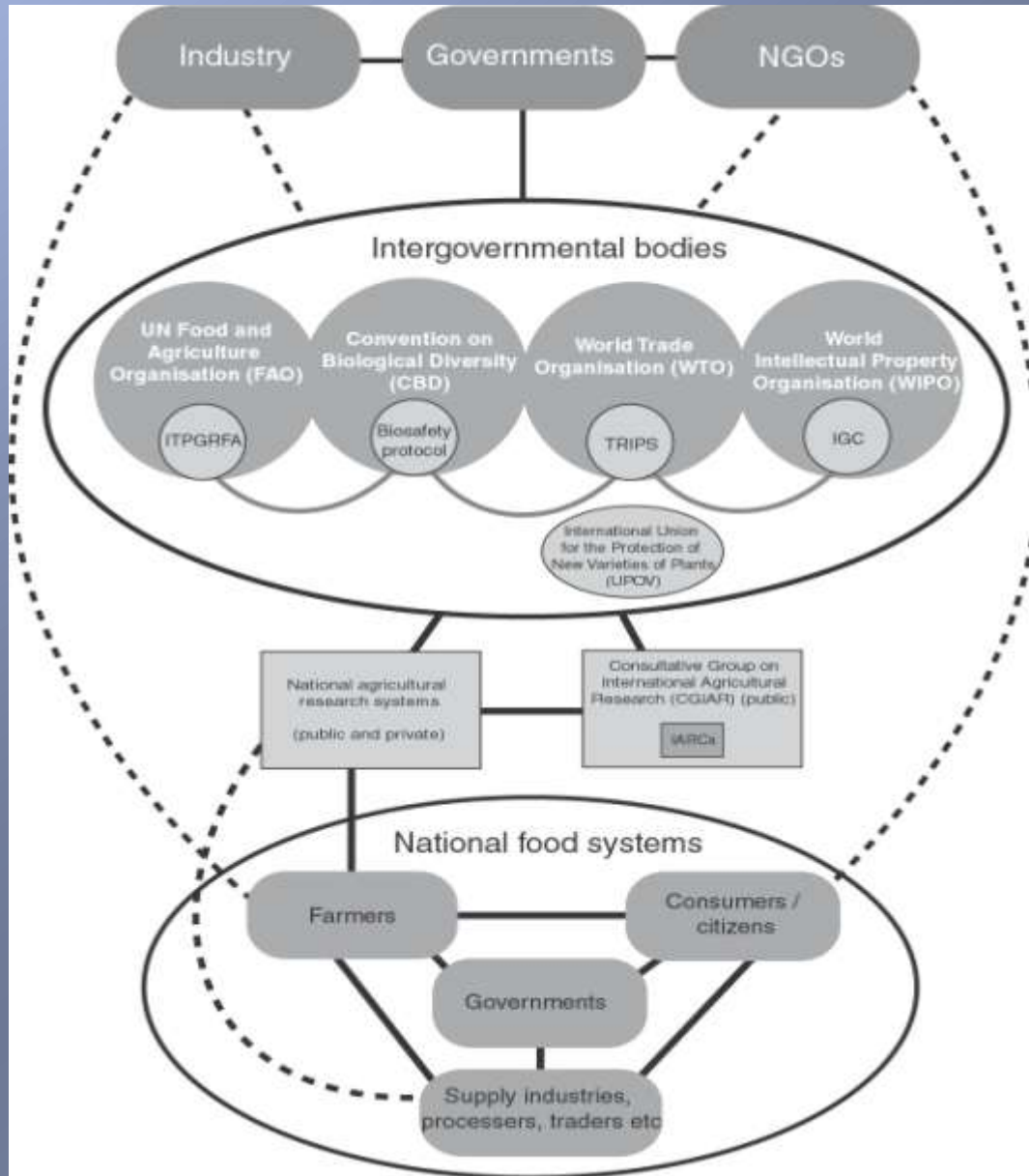
- Kicking away the ladder (Ha Joon Chang)
- Requires patenting of microorganisms, plant variety protection (not necess UPOV)
- Option not to patent plant and animals



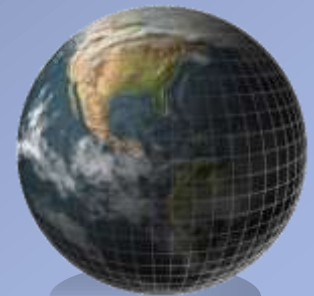


Thanks: Food Ethics Council



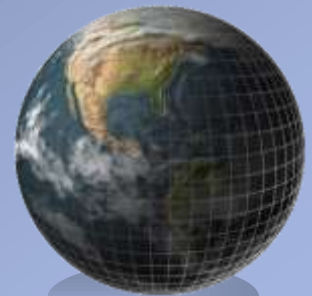


Thanks: Food Ethics Council



Changing face of research and development

- Access to knowledge / seeds
- Freedom to operate / exchange
- Skewing questions asked, solutions sought
- Going which way - milestones?
 - Open access, distributed innovation, ecologically supportive or the pharma model



A well-fed world

1974..... Now.....

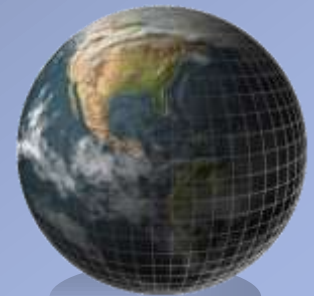
2050?



Requires changes within
and beyond the food
system

What kind of innovation do we need to secure our future food?

- local / institutional / political / financial / social / economic / legal
not just technological /
- Sustainable production & sustainable consumption



What kind of innovation?

We are in our current fix because of an excess of financial innovation, driven by ever-increasing thirst for short-term profit.

.... We now need to rewrite the rules of finance and global business.

Angel Gurría,
OECD Secretary General,
27 January 2009,

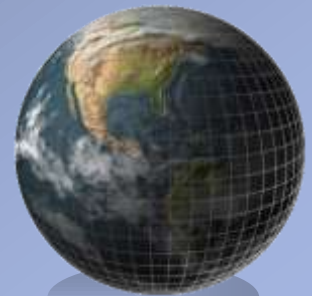


In what context?

- the real threats to our world

- Climate change
- Competition over resources
- Marginalisation of the majority world
- Global militarisation

Source: Abbott, Rogers and Sloboda, Oxford Research Group



Global wealth distribution, 2000

- 10% of adults own 86% global household wealth
- 50% own barely 1%
- Average person in top 10% owns nearly 3000 times wealth of average person in bottom 10%

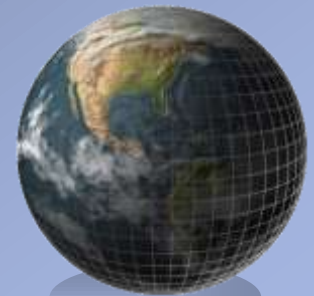


Source: WIDER Angle, 2/2006

Prosperity without growth (for N)?

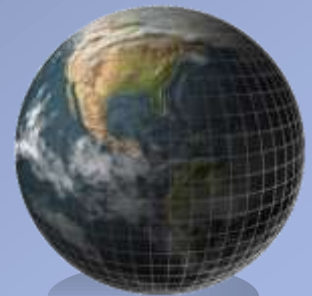
- There is as yet no credible, socially just, ecologically sustainable scenario of continually growing incomes for a world of nine billion people
- Simplistic assumptions that capitalism's propensity for efficiency will allow us to stabilise the climate and protect against resource scarcity are nothing short of delusional

Tim Jackson, SDC



Beyond current assumptions

- Will we in the EU be able to consume what we want, when we want, from wherever we want? Should we be able to?
- Have we any historical responsibility?
 - GHG emissions + ecological debt
- Innovation EU internal practice and policies (agrifuels and CAP) not only policies towards developing countries



Thinking about systems

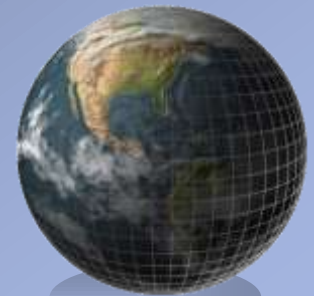


and how to change them

Donella H. Meadows, *Thinking in Systems - A Primer*, Earthscan, 2009

Leverage points

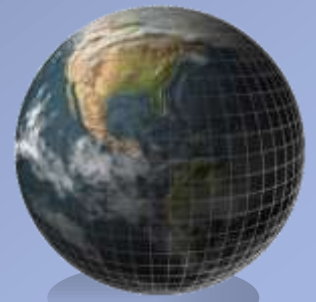
- Rules, incentives, punishments, constraints
 - Who has power over them
- Self organisation - power to add, change, evolve system structure
 - Diversity, variability, experimentation
 - Losing control
- Goals - purpose or function of system
 - Core issue, who can change
- Paradigm - mind set
 - Shifting changes rest
- Transcending paradigms
 - No paradigm is true, model accurate
 - Be clear of purpose



Food system goals

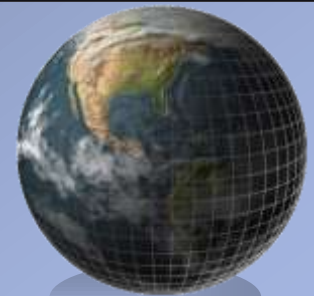
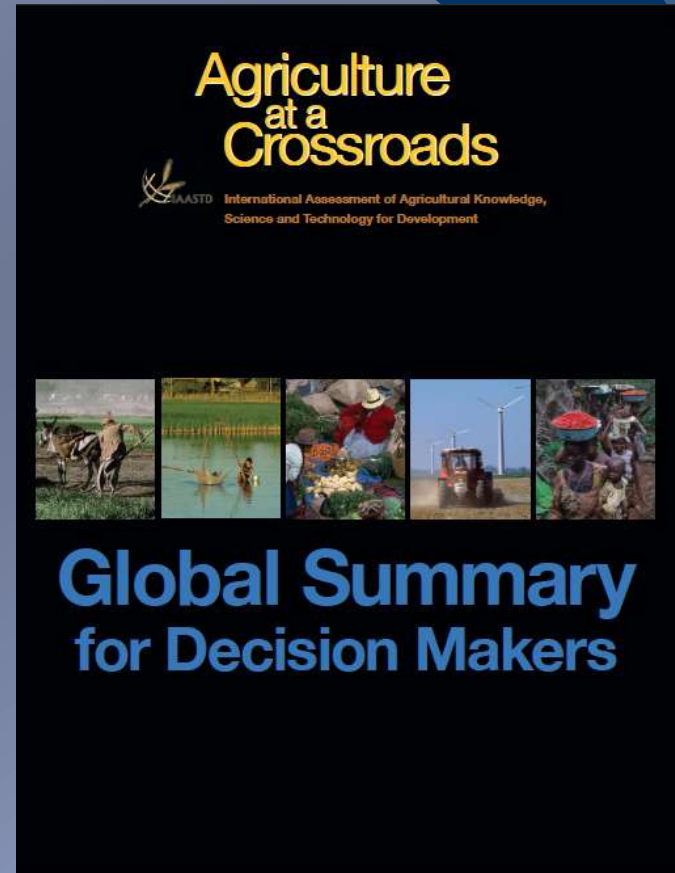
- sustainable
- secure
- safe
- sufficient and nutritious (healthy)
- equitable
- culturally appropriate

diet for all....forever



Changing Paradigms

- A new ecological economics
 - SDC - prosperity without growth in N, different in S
 - Sarkozy Commission - beyond GDP / GNP
- To agro-ecological farming systems from industrial, fossil fuel based systems
 - Small farmer focus



Why R&D fails small farmers

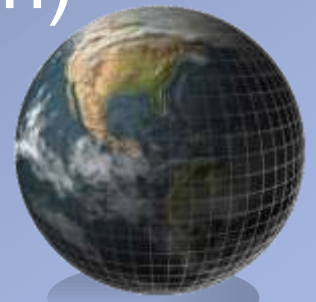
- too technocratic
 - failed to take account of the political and economic conditions in which such farmers found themselves
- way such R&D is conceived
 - arrogant and contemptuous attitudes among 'experts'
- opposition from commercial entities
 - to R&D that farmers could easily copy or breed from and which reduced the market for their products.
- reductionist approach to science
 - simplistic focus of R&D on specific disciplinary aspects, linked to the input-output industrial approach

Source: Jonathan Harwood, Centre for the History of Science, Technology & Medicine, Univ Manchester



Agro-ecology

- Achieving natural ecosystem-like characteristics while maintaining harvest output (Gleissman)
- considers interactions of all important biophysical, technical and socioeconomic components of farming systems (Altieri)



Innovation in agricultural research

- Anticipatory
 - Immediate & future ecological and social impacts
- Promote long-term systems-level research at multiple scales
- Better integrate natural and social sciences
- Use sustainability analysis as guiding principle

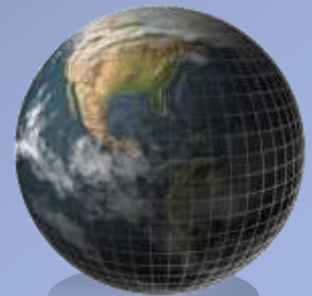


Source: Gliessman, Agroecology

Innovation in agricultural education

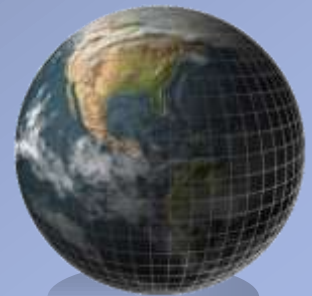
- Interdisciplinary curricula
 - Integrate complex elements of food systems
 - Include goals of food security and equity
- Change emphasis
 - From maximising single crop production to maintaining complex food systems
- Include experiential learning in farming communities

Source: Gliessman, Agroecology



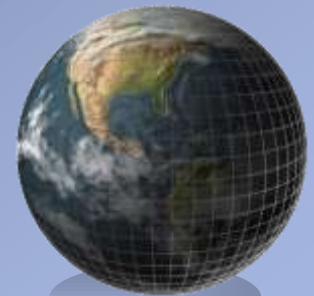
Rewriting rules, laws, incentives

- On the framework for the actors
 - R&D
 - UPOV, patents & Seed laws
 - Oligopolies, Anti-trust, competition
 - Liability & redress
 - Right to Food - from soft to hard law, with enforcement?



Rewriting rules, laws, incentives

- Linking nutritional well-being to farming systems
 - Marketing and advertising
 - Waste: from field to plate
- Governance and financial systems
 - Multilateral, national & local
 - TNCs
 - Commodity trading
 - Stocks



Alternative futures

- Collapse (still a real danger: eg economic, nuclear war, disease, environmental disasters)
- techno-dominance / corporate feudalism
 - Bifurcation (rich 2 billion use all tech available to enhance / maintain their lifestyles, rest contained by technologies of control or killed off in disasters - the “Liddism” of Paul Rogers)
- ecological balance / diverse / resilient / fair



Food is a lens and a connector in a changing world



‘ No part of the human
race is separate from
other human beings or
from the global
ecosystem’

Donella H. Meadows, *Thinking in
Systems - A Primer*, Earthscan, 2009