



Equity within limits

Rethinking Globalisation in the Light of Contraction and ConvergenceTM

A four year, eight partner project funded by the EU FP7



Five countries – eight partners

- Systems modelling (food sector) to explore convergence.
- *Compendium of case studies and engagement practices*
- Unified framework for Convergence
- Analysis of existing policies for convergence
- Interdisciplinary filter
- *Recommendations to EU for policy and research*





A global system that is under stress



- **Global 'super-tanker' trends** demographics, trade and finance globalisation effects, economic and geopolitical shifts, technology and automation, political ideologies ...
- **Consequences of human activity** climate change, pollution, inequality, international terrorism, militarisation, securitisation, new diseases...
- **Hitting the limits** resource constraints: energy, food, water, metals, minerals and Earth's capacity to cope with pollution ...
- **Systemic failures** economic crises, divergence of wealth, inequalities, collapse from over-complexity

... a multitude of problems



"Every problem interacts with other problems and is therefore part of a set of interrelated problems, a system of problems.... I choose to call such a system a **mess**".

(Ackoff, 1974)



Robert Horn adds in a few more characteristic of what he calls a **social mess**:

- Data often missing or uncertain
- There is great resistance to change
- Numerous possible intervention points
- The consequences are difficult to imagine
- Problem solver(s) out of contact with the problems





Every **wicked problem** is a symptom of another problem and is indefinable, never-ending, interconnected, untestable, irreversible, irreproducible.

(Rittel & Webber)

Super-wicked is where time is running out, there is no central authority and those seeking to solve the problem are also causing it.

(Levin)



"Looks like Lancelot's starting an arms race."

Divergent problems are those where the parties increase their differences over time, polarising debate into fixed and self-reinforcing positions – like an arms race.

These are problems that Gregory Bateson describes as schismogenisis.

We **hold back information** or support to others because we feel that they are holding back - we develop an arms race of non-contribution to a problem.



John Casti suggests that the characteristics of almost all complex systems are a medium-sized number of intelligent, adaptive agents interacting on the basis of local information.

Like a game, a complex global issue is one where the number of players and pieces is not too small and not too big but just the right number to create interesting patterns of behaviour.

The players are intelligent and are able to modify and generate the rules of the game so that an ecology of rules emerges but the agents only have local information and **no one has access to what all the other agents are doing**.

These are the conditions to generate emergent properties.



Gabriele Brammer discusses complex global issues as having:

- multi-party interests,
- a politically charged history,
- diverse cultural contexts,
- large in geographical, temporal, hierarchical and population scales.
- many unknowns

... add in that they are multi-scale with interactions across the scales.

Omnishambles ...



Complex Global Issues = super-wicked, social and environmental messes, with a history, full of divergent problems that are large, multi-scale, political, culturally diverse and in which we all hold back from contributing to solutions, and everything is constantly changing, with a medium-sized number of intelligent agents each with local knowledge who adapt and modify the rules of the game from which new and unforeseeable phenomena emerge to taunt us.

Routes forward:

Do nothing – treat the system as a 'market' and rely on it working itself out

Reform – change the parameters in the system, turn the knobs up or down.

Autonomy - delink to relink – build a parallel system, be ready with an alternative when the system collapses.

Transformation – change the structure of the system, 2nd order change.

Subvert - adopt subtle, oblique approaches, maybe expedite collapse.



Three horizon model



Time

Penetration %



Researching complex global issues

The need for transdisciplinary approaches and systems thinking is obvious but are they used to prop up the old order, or restructure to a new one, or are they delinked from the mainstream, or even subversive?

END



Systems Thinking deals with unknowns:

- conceptual maps show the strength of evidence for different elements and relationships can easily be depicted, allowing *known unknowns to be highlighted*.
- soft systems methodology *uncovers the different world views,* both tacit knowledge (unknown knowns) and unknown unknowns
- causal loop diagrams highlight likely *unanticipated adverse outcomes*.
- models of systems can determine the *degree of uncertainty and sensitivities*.
- conceptual models allow a range of *possible outcomes* to be explored using different scenarios.



Why

We need to understand the big-picture issues that influence:

how a problem manifests and is understood the unknowns considered to be pertinent the possibilities for acting on the problem

where integrated research support might best be targeted

CONVERGE project

Rethinking Globalisation in the Light of Contraction and Convergence

Five countries – eight partners

Systems modelling (food sector) to explore convergence – Iceland, Bristol and India.

Compendium of case studies and engagement practices (Fair trade, Transition movement etc.)

Unified framework for Convergence

Analysis of existing policies

Interdisciplinary filter

Recommendations to EU for policy and research



Objectives

Number	Title
1	To develop the concept of convergence across social, economic and
	ecological systems in the context of globalisation
2	To test convergence as a framework for holistic indicators
3	To evaluate how national, EU and international policies and
	agreements conflict or support processes of convergence, and to test
	the convergence frame with policy communities and stakeholders
4	To investigate how different methods of community engagement can
	contribute towards building sustainable communities in the North and
	South, and to test the convergence frame with local stakeholders.
5	To identify processes of Convergence through case studies
6	To use a wide range of disciplines to analyse the results of objectives 1
	to 5, and synthesise new understandings into a multi-scale conceptual
	framework.
7	To recommend how to integrate Convergence into the internal and
	external policies of the EU
8	To communicate and disseminate the findings of CONVERGE to
	different end-users through a range of media.

Ranking

Inherent contradiction

Scalar ranking One point in time – ranking possible for where we are.

Vector ranking

Historical trend data – ranking possible for direction and value.

Extrapolation extends this

Connection to desired end – here come the limits.

Convergence measurements – direction and rates of change.



FIGURE 3 CRUDE BIRTH RATE (PER 1000 POP) PROJECTIONS. SOURCE: UN POPULATION DIVISION





Five categories based on calories



Category	Pop (bn)	Examples
Established food powers	0.5	USA, Canada, Australia
Emerging food exporters	0.7	Latin America, Russia, Ukraine, parts S.E Asia
Barely self sufficient	3.4	China, India, Indonesia
Rich food importers	0.5	EU, Japan, Oil rich states
Poor and food insecure	1.4	Sub Sahara, Central America

Some countries are blessed: land, soil fertility, natural resources, low population densities, early industrialisation, modern agriculture, strong governance ...

Some are not blessed.

Towards a converging world



Each country within each category develops a trajectory that suits their circumstances:

- Reducing global environmental impact
- Increasing equity within and among

Global dynamic trade balance – exporting and importing

Population and development policies that match

L. O. A. F

	Gross over generalisation
Locally produced	Local equity may improve but is global impact considered?
Organically grown	Environment is main concern
Animal friendly	Animals first
Fairly traded	Concerned with global equity but environment comes second

How do we develop a perspective that closely combines 'development' and 'equity'?



Convergence principles

Everyone has the right to a fair share of the Earth's resources and human constructions to secure their wellbeing and that of all future generations.

But what do we mean by:

- o Everyone
- 0 Right
- Fair share
- Earth's resources
- Human constructions
- o Secure
- o Wellbeing
- Future generations



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Two directions emerge

- 'Equity' (Development, social justice)
- 'Operating within planetary limits for all time' (Environment)

These two directions are often separately pursued

Quadrant model

Contracting – living within limits



Expanding – disregarding limits

Convergence as a platform for policy

Convergence brings equity and limiting our impact on the planet into the debate - both directions to be considered simultaneously.

It is the global goal of reversing divergence and reaching ever closer union.

It is a platform for policy making.

END

Homeorhesis



Homeorhesis, meaning "similar flow", is a concept where systems return to a trajectory of change, as opposed to systems which return to a particular state, which is termed homeostasis.

It describes the tendency of developing or changing organisms to continue development or change towards a given destination or 'omega' point*, even if disturbed in development.

*Omega point: supreme point of complexity and consciousness

Planetary Boundaries

