

Grounding Global Challenges and the Relational Politics of the Rural



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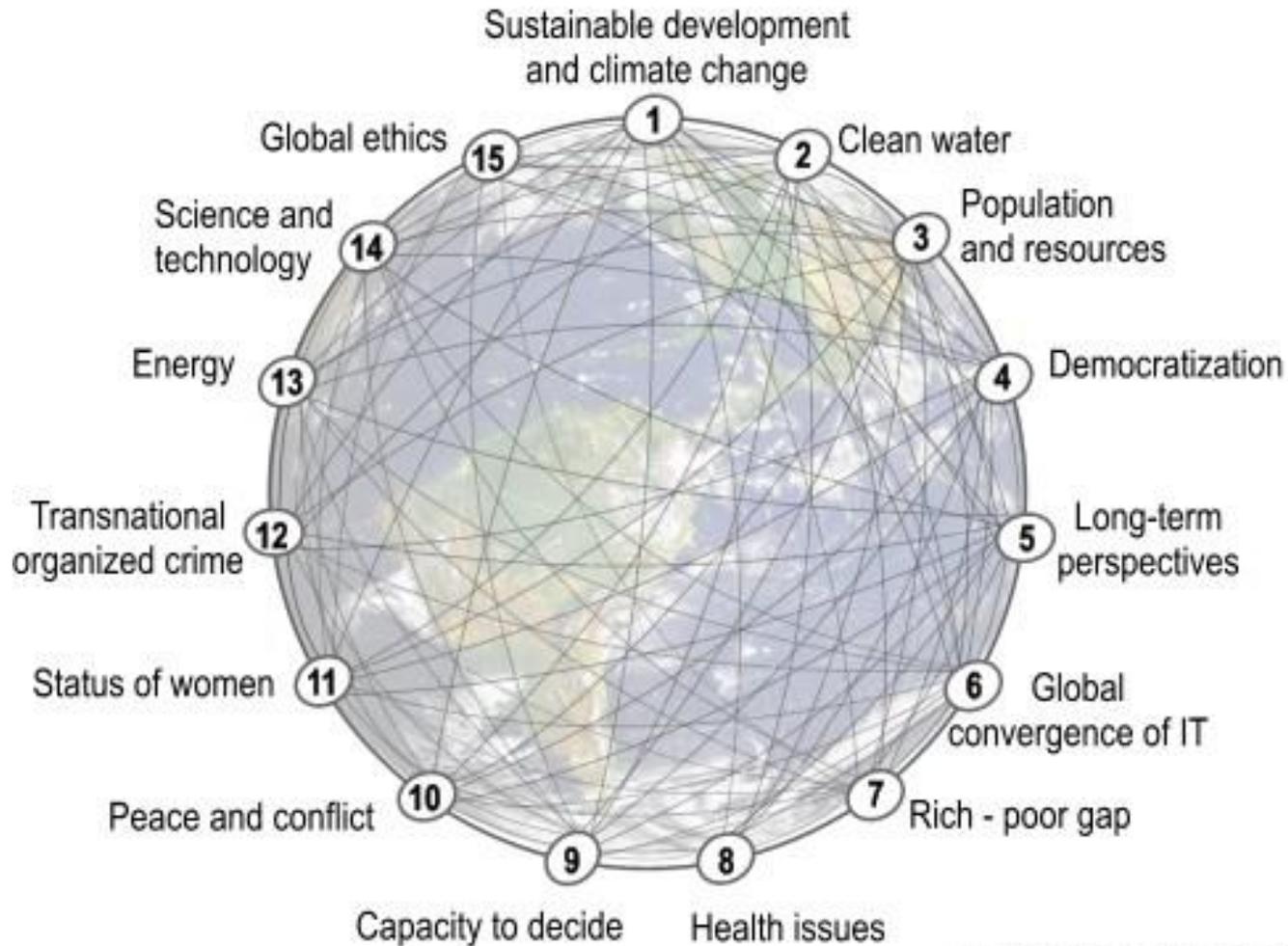
The rise of 'global challenges'

- Discourse of 'global challenges' increasingly framing the policy/research interface in the 21st century
 - 'Grand challenges', 'societal challenges', 'global uncertainties'
- Emphasis on addressing problems with wider-reaching social, environmental or economic potential impacts, requiring coordinated action.
- Prioritisation of both policy and research agendas
- Abstraction of issues and 'solutions' from their grounded contexts
- Intersection of 'global challenges' with the relational politics of place (and especially in this paper, the relational politics of the rural)

Grand challenges and global challenges

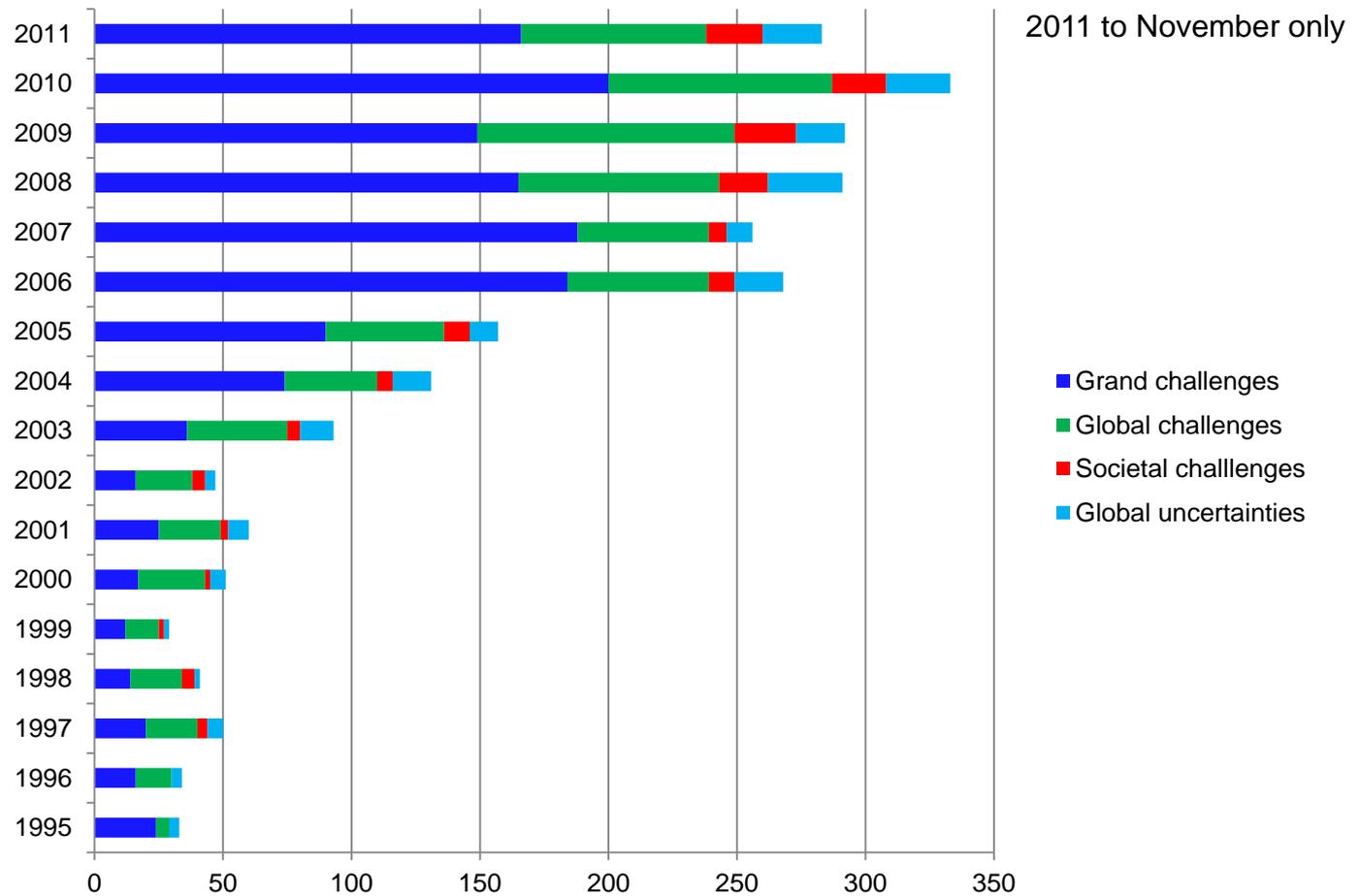
- Omenn (2006) notes the importance of ‘**grand challenges**’ in driving scientific innovation since 19th century
- ‘Grand challenges’ as difficult scientific problems whose resolution has transformative impacts
- ‘**Global challenges**’ gained currency since 1990s, highlighting the inter-dependency of social, environmental, political and economic problems that are not constrained to any one national context
 - Sadler (1997) *Global Challenges*
 - Millennium Project (Smithsonian Institute & UN University)

15 Global Challenges facing humanity



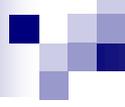
by The Millennium Project
www.millennium-project.org

Search results in Scopus for 'global challenges' and related terms, 1995-2011



Global challenges

- Moderating, mitigating and adapting to processes of climate change and their impacts
- Securing a stable and sustainable supply of food to feed an increasing world population (food security)
- Providing clean water supplies and managing water resources responsibly (water security)
- Meeting global energy demands in the context of declining finite resources (energy security)
- Preserving biodiversity and protecting endangered species and habitats
- Managing rapid growth in the world population and increasing pressures from migration and urbanization
- Responding to security threats from terrorism, crime, disease and economic instability
- Managing instability and uncertainty in a globalized economy
- Tackling inequalities in wealth, literacy and health



Global Challenges Discourse

Convergence around a 'global challenges discourse' that:

- Consolidates global consciousness and awareness of global interconnectivity and inter-dependence
- Frames problems as global in scope and therefore requiring coordinated responses
- Aligns policy, commercial and scientific agendas around shared priorities
- Promotes technocratic solutions, including those based on scientific and technological innovation

Global challenges and research

“The increasing pressure on natural resources, our changing climate, an ageing population and uncertainty arising from international terrorism and conflict are challenges that affect us all. Governments, researchers, industry and others have recognised that more can be achieved by working together in a coordinated way than working alone and have placed these 'Global Challenges' at the heart of international and national policy and research agendas.”

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STFC Futures - Solutions to Global Challenges

Introduction

The increasing pressure on natural resources, our changing climate, an ageing population and uncertainty arising from international terrorism and conflict are challenges that affect us all. Governments, researchers, industry and others have recognised that more can be achieved by working together in a coordinated way than working alone and have placed these 'Global Challenges' at the heart of international and national policy and research agendas.

The Futures Programme was created as STFC's response to ensuring that skills and technology originally developed to address fundamental research questions are harnessed effectively to provide solutions to the global challenges.

Visit our [background page](#) to find out more.

Programme activities

Energy

The UK faces unprecedented challenges to the environment, the economy and the future security of its energy supplies. Science and technology is addressing these challenges by helping to find new and innovative ways to deliver secure, clean and efficient energy.

Environment

Life on Earth depends on the environment, and ensuring the future health of our planet presents huge challenges. Science and technology can address challenges such as managing scarce resources, reducing pollution, and understanding and mitigating the impact of climate change - providing the right connections are

Global challenges and research

- Research Councils UK (RCUK)
 - “Address key global challenges using research as a driving force for change”
 - Funded 6 programmes on ‘societal challenges’
- National Science Foundation (USA)
 - ‘Innovate for Society’ program “addressing pressing national and global challenges”
 - Commissioned exercises identifying ‘grand challenges’ in discipline areas
- European Union Framework Programme
 - “science to address ‘grand societal challenges’”

Scientisation of global challenges

- Translation of complex global issues into scientific problems involves abstraction from social and geographical context
 - Generalisation and modelling
 - Break-down into targeted scientific experiments
- Discourse emphasizes interdisciplinarity, but cooption by scientific community leads to social science inputs being defined by scientists
 - Inclusion of social and economic factors in models
 - Foresight research and forecasting
 - Behaviour change mechanisms
 - 'Human impact' studies (e.g. climate change)

Scientisation of global challenges

- Development of ‘solutions’ to aspects of global challenges that deliver improvements in theory, but which are detached from the social, political, cultural and geographical conditions of delivery
 - Renewable energy technologies
 - GM crops
- Solutions incorporated into policy assume a ‘reality’ as possible trajectories in an uncertain future.
- Example of ‘virtualism’: “the tendency to see the world in terms of idealised categories, a virtual reality, and then act in ways that make the real conform to the virtual” (Carrier, 1998, p 5)
 - Virtualism in environmental policy and management – Carrier & West (2009)
Virtualism, Governance and Practice

What about the rural?

- Many highlighted 'global challenges' have a clear rural dimension
 - Food security
 - Clean water supply
 - Energy sustainability
 - Climate Change
 - Biodiversity
- Management of rural resources
- Activities that are inextricably entwined with rural economies, societies and cultures
- Addressing these global challenges will have profound implications for the use and regulation of rural space

What about the rural?

- Scientisation of global challenges discourse abstracts food production, water supply, energy generation etc from rural settings
- Rural space constructed as a functional space across which technocratic solutions can be rolled out
- Rural communities open to enrolment on a purely economic basis
 - 'New rural-urban compact' (Gutman, 2007)
 - Inherent neoliberal tendencies of the global challenges discourse

Food Security



FEAST OR **FAMINE**

THE GLOBAL FOOD CRISIS AND YOUR DINNER PLATE

Special week-long series starts this **Saturday** **THE VANCOUVER SUN**

Food Security

- Epitome of a ‘global challenge’: complex, global problem with far-reaching potential impacts, requiring coordinated, interdisciplinary action
- Climbed up policy and research agendas
- *Both* strong body of scientific research in biosciences and agricultural science, *and* strong body of critical social science research, *but with limited engagement*
- Technological solutions proposed by life sciences offer more attractive narratives to policy-makers than the complex and politically challenging accounts of social scientists

Food security as a scientific problem

“Continuing population and consumption growth will mean that the global demand for food will increase for at least another 40 years ... But the world can produce more food and can ensure that it is used more efficiently and equitably. A multifaceted and linked global strategy is needed to ensure sustainable and equitable food security”

Godfray et al. (2010) Food Security: the challenge of feeding 9 billion people, *Science*, 327, 812-818.

“The necessary changes to global agriculture are not just a matter of quantity. In addition to increasing yield, there are further challenges concerning food quality, nutritional benefit, distribution to match production with need, managing potentially adverse impacts, and reducing the environmental impact of technological change. All of these depend to a greater or lesser degree on scientific research.”

Royal Society (2009)

<http://royalsociety.org/Reapingthebenefits/>



Using research to ensure the security of the world's food

The UK's main public funders of food-related research and training are working together through Global Food Security to meet the challenge of providing the world's growing population with a sustainable, secure supply of good quality food from less land and with lower inputs.

[Find out more about the issue](#)

The UK is
60%
self-sufficient in food
production

More than
1Bn
are undernourished; a
sixth of the world's
population

[More facts and figures](#)

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Beetles play an important role in reducing weeds

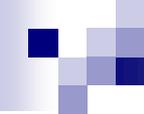
25 July 2011

What is food security?

Duration: 0:03:47, [Read video transcript.](#)

[Enlarged video](#)





Listed Research in Food Security

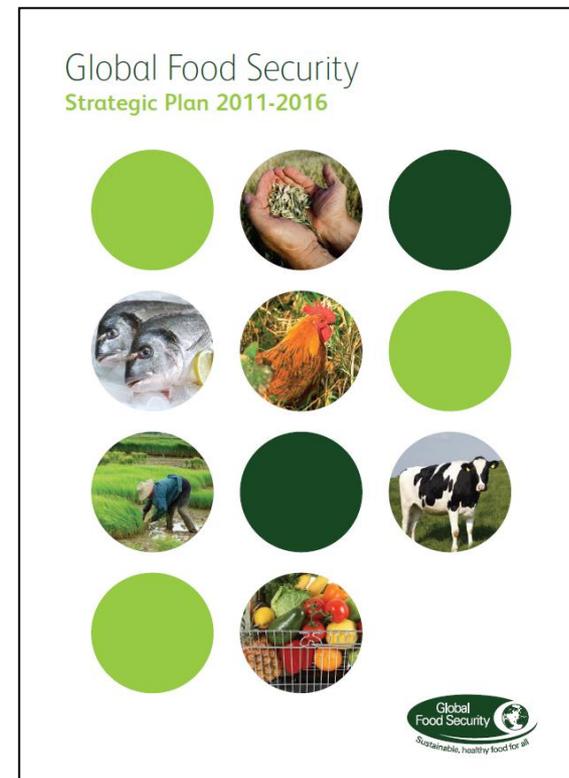
www.foodsecurity.ac.uk

- Bioscience insights into wool and feather growth
- Growing plants with friendly fungi
- Pest management: comparison of conventional and organic agriculture
- Animal welfare and food security
- Defending crops with maths
- Developing improved tomato varieties
- Modelling bee pollination
- Improving chicken feed efficiency
- Improving freshwater fish farming
- Livestock dietary improvements
- Reducing water use: more crop per drop

Strategic plan for Global Food Security programme

Contains not a single reference to:

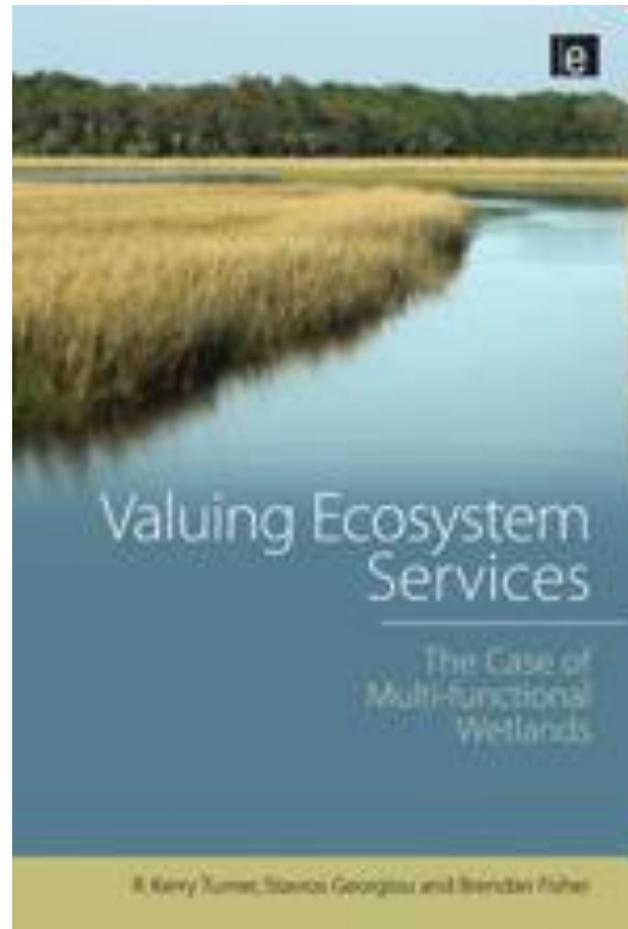
- Rural communities
- Family farms
- Contribution of agriculture to rural economies
- Social contribution of farming
- Local food systems
- Rural landscape
- Peasant farmers or depeasantization
- Food sovereignty
- Global commodity chains or global value chains
- Organic farming
- Food deserts
- Supermarkets



Food Security and the Rural

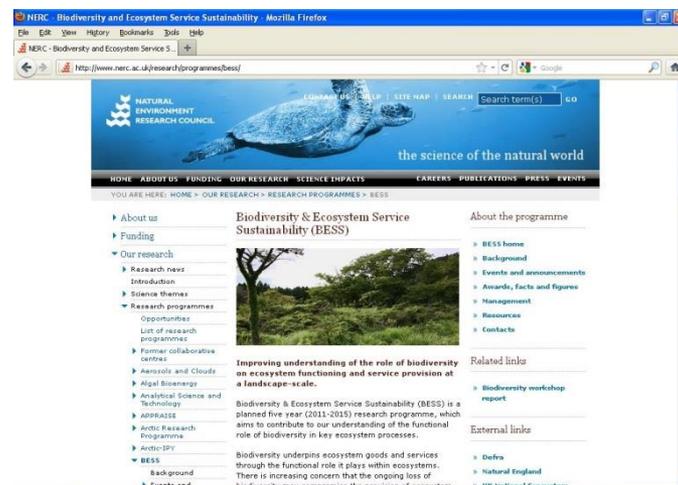
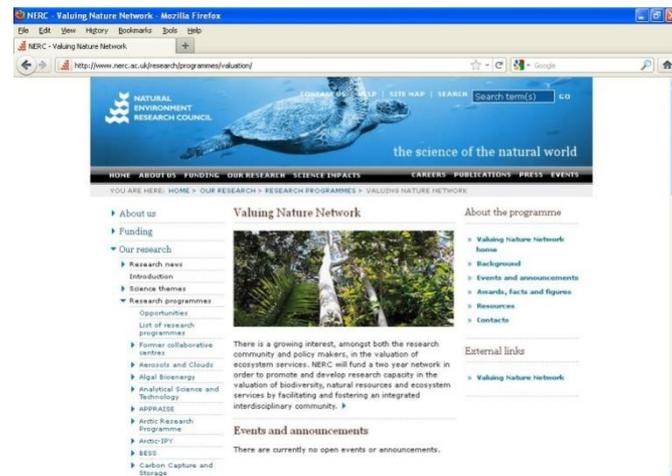
- Food security presented as a problem that can be addressed through scientific research and technological innovation
- Little explicit recognition of the social and cultural contexts in which changes to food production would need to be enacted in rural societies
- Solutions imply reassertion of neo-productivist methods of farming and application of GM technologies, with key role for agri-food industry and liberalization of agricultural trade
- No acknowledgement of existing resistance to such developments in many rural areas and cultures
 - Indian farmers resistance to proprietary hybrid seed
 - Opposition to 'super-dairies' in UK

Ecosystem Services



Ecosystem Services

- Technocratic response to ‘global challenges’ including climate change, biodiversity and water security.
- Payment to farmers and landowners for ‘ecosystem services’ provided by their land including:
 - Carbon sequestration and storage
 - Flood alleviation
 - Water purification
 - Habitat provision
- Fusing of scientific modelling of ecosystem systems and services and an economic delivery model based on market mechanisms



A new rural-urban compact?

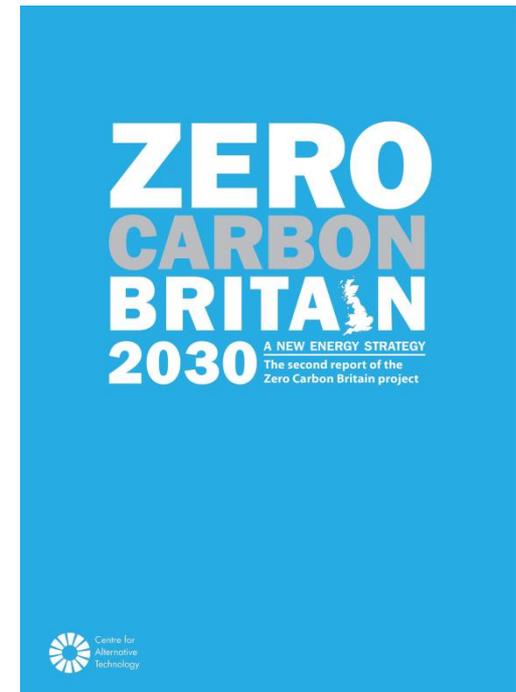
“Some back-of-the-envelope numbers can show us what the economics of such a new rural-urban compact would look like. A world-wide rural ecosystem services bill of \$3 trillion a year would be a bargain, considering that estimates of the current value of the world ecosystem are ten to twenty times higher ... Yet \$3 trillion a year would more than pay for the annual costs of conservation and the adoption of sustainable agricultural practices worldwide (some \$300 billion a year, according to James et al. 1999). It would also be enough to triple the income of the world rural population and still represent no more than 10% of the world GDP.”

Gutman (2007), in *Ecological Economics*, p 385

Zero Carbon Britain

Scenario for land use in 2030:

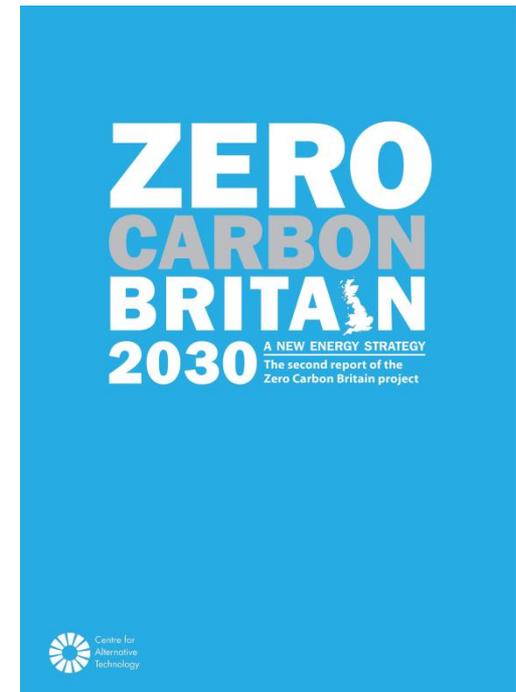
- Grazing land reduced from 11 million ha to < 2 million ha
- 80% reduction in sheep and dairy cattle numbers
- 90% reduction in beef cattle herds
- Only 29% of land currently used for food production still used to produce food



Zero Carbon Britain

Released land used for:

- Energy crops (miscanthus, short rotation coppice wilow, energy silage)
- Nitrogen-fixing legumes
- Afforestation to increase carbon sequestration
- Restoration of peat moors
- Intensive livestock and horticultural units concentrated in urban and peri-urban locations



Ecosystem services and rural land use

- Conceptualisation of rural land understood only through its ecological systems and economic value not its settled socio-cultural character and meaning
- Projection of future land use that treats the rural as a blank, functional space
- Practice of virtualism as policies are developed and advanced to reshape rural space according to assessments of ecosystem services and models of future land use
- Missing questions about the willingness of rural residents and stakeholders to accept and accommodate these changes and the limits of financial instruments in achieving change

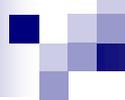


Bringing the rural back in

- Responses to global challenges risk being compromised by a lack of grounding in rural communities that are central to their delivery
- Missing insights from 20 years of rural geography and rural sociology research
- Neglecting lessons from last 50 years of spatial planning policy and land use conflicts







The politics of the rural

“The sum effect of these changes is a shift from ‘rural politics’ to a ‘politics of the rural’. Whilst the former is defined as politics located in rural spaces, or relating to rural issues, the latter is defined by the centrality of the meaning and regulation of rurality itself as the primary focus of conflict and debate.”

Woods (2003) in *Journal of Rural Studies*



The relational rural

“The countryside is hybrid. To say this is to emphasize that it is defined by networks in which heterogeneous entities are aligned in a variety of ways. It is also to propose that these networks give rise to slightly different countrysides: there is no single vantage point from which the whole panoply of rural or countryside relations can be seen.”

Jon Murdoch (2003) in *Country Visions*, p 274

- Need for understanding of global challenges and their responses to be grounded in the relational politics of the rural

Relational politics of the rural

Relational politics of place

Relational understanding of place “that is no longer reducible to regional moorings of to a territorially confined public sphere, but is made up of influences that fold together the culturally plural and the geographically proximate and distant”

Amin (2003), in *Geografiska Annaler* p 37

- Involves a *politics of propinquity* and a *politics of connectivity*

Politics of propinquity

- Places as “sites of heterogeneity juxtapositioned within close spatial proximity” (Amin, 2003, p 38)
- “the politics of a local society made up of bit arrangements and plural cultures that never quite cohere or fit together can no longer be cast as a politics of intimacy or shared regional cultures”

Amin (2003), p 38

- “different microworlds find themselves on the same proximate turf, and that the pull on turf in different directions and different interests needs to be actively managed and negotiated, because there is no other turf. In other words, it is a politics shaped by the issues thrown up by living with diversity and sharing a common territorial space.”

Amin (2003), p 39

Politics of connectivity

- “a relational politics of propinquity rules in everything that vies for attention in a given location. As such, it is a politics that cannot be confined to the everyday local or to the intimate, so that spaces of the international or national can be treated as spaces for another kind of politics (e.g. the politics of regulations, standards, ‘big’ issues, state affairs)”

Amin (2003), p 39

- Places as “sites of multiple geographies of affiliation, linkage and flow” (Amin, 2003, p 38)

Relational politics of the rural

Politics of propinquity

- Functional representations of rural space in global challenges discourse are just one set of meanings vying for articulation in particular rural places
- Different global challenges and responses can project contrasting claims to rural space (e.g. energy crops vs food production)
- Implementing responses to global challenges in rural places involves negotiating and contesting competing claims to the meaning of rural space.

Relational politics of the rural

Politics of connectivity

- Global challenges discourse intrinsically connects the local and the global
- Global challenges and their responses reconfigure the wider entanglement of relations that constitute rural places
- Contests over actions and developments related to global challenges spill-over from specific rural localities to mobilize networks that enrol external actors and forge connections with other grounded cases.

GLOBAL-RURAL



- European Research Council Advanced Grant
- 'The Global Countryside: Rural Change and Development in Globalization'
- February 2013 – January 2018

6 linked work programmes:

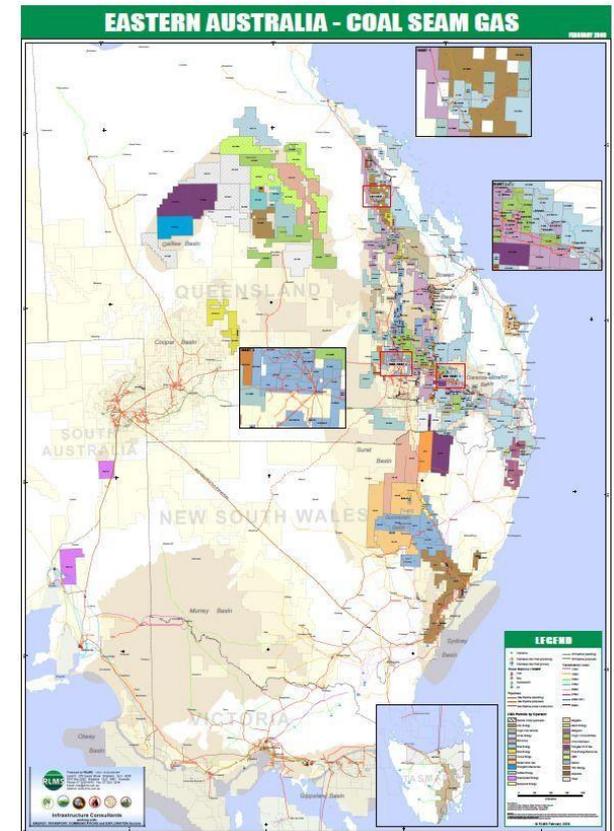
- (Re-)Assembling the Global Countryside
- Mapping and Narrating the Global Countryside
- A Countertopography of Everyday Globalization
- Differential Global Engagements in Emerging Rural Economies
- **Rural Assemblages and Grounding Global Challenges**

1) Mining and Farming on the Liverpool Plains, Australia



Mining and Farming

- Response to global challenge of energy security
 - Targeting of unexploited coal reserves
 - Use of new technology of 'fracking' to develop new energy source of coal seam gas
- Geological representation of the Liverpool Plains as a site of untapped coal and coal seam gas reserves



Mining and Farming

Politics of propinquity

- Conflict with alternative, existing representations
 - Fertile agricultural land
 - Indigenous claims to land
- Competing claims and priorities of energy security, food security and water security



Mining and Farming

Politics of connectivity

Connections to discourses of food and water security:

“It is inconceivable that the NSW Government would put at risk NSW’s most productive dryland farming land, in a time when food security and the Murray-Darling Basin is at risk. The threat of coal seam gas mining further exacerbates this threat.”

www.saveliverpoolplains.com

“As the driest inhabited continent on earth, with only an estimated 6 per cent of arable land across Australia, the preservation of these productive lands and finite water systems is clearly of national significance.”

Senate Committee, quoted by *Sydney Morning Herald* 02/12/09

Mining and Farming

Politics of connectivity

- Corporate ownership and Chinese land purchases
- Economic contribution of mining to Australia
- Federal and state politics and politicking
- Debates on sustainability and climate change
- Support from overseas for food security stance (Sydney Morning Herald, 01/08/11)
- Connections to coal seam gas campaigns elsewhere (e.g. Gaslands film)

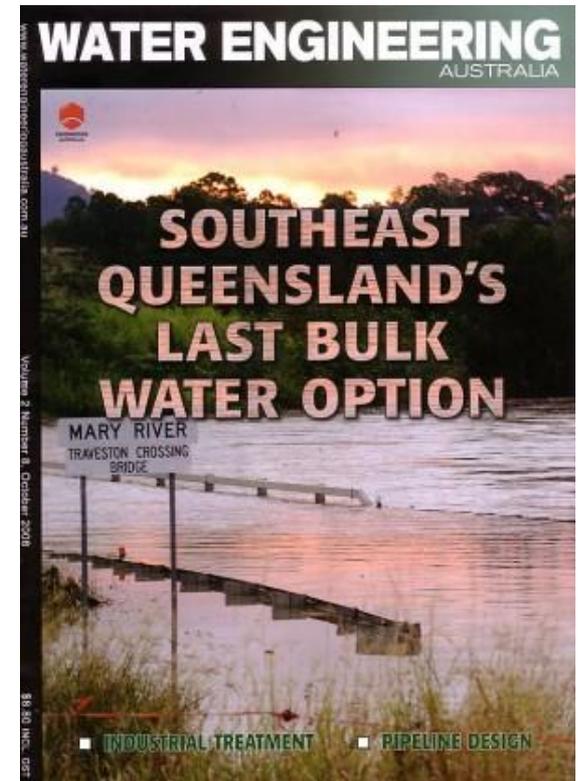
2) Traveston Crossing Dam and the Mary River, Australia



Traveston Crossing Dam

- Response to global challenge of water security, based on engineering solutions rather than scientific discovery
- Functional representation of the land as an appropriate site for a reservoir
- "The Traveston Crossing Dam will provide water security for south-east Queensland. It's a great site for a dam"

Peter Beattie, quoted by AAP News Wire, 09/06/07



Traveston Crossing Dam

Politics of propinquity

- Contesting the representation of the area as an appropriate site for a reservoir

A shallow proposal *The proposed Traveston Crossing dam when full would have an average depth varying between only 3.5 and 5 metres. The geometry of this could be compared to storing water in an open rainwater tank 3 metres across and 2.5 millimetres deep.*

Before dam:



After dam:



'I don't know why we keep building these (expletive) dams. Not only do they cause environmental and social disasters, with very few exceptions they all fail to do what they were supposed to do in the first place.

'Look at the Amazon, where they've all silted up. What is the reaction to that? They're going to build another 80 of them. It's just barmy. We must have beaver genes or something... There's just this kind of sensational desire to build dams, and maybe that should be looked at and excised from human nature.

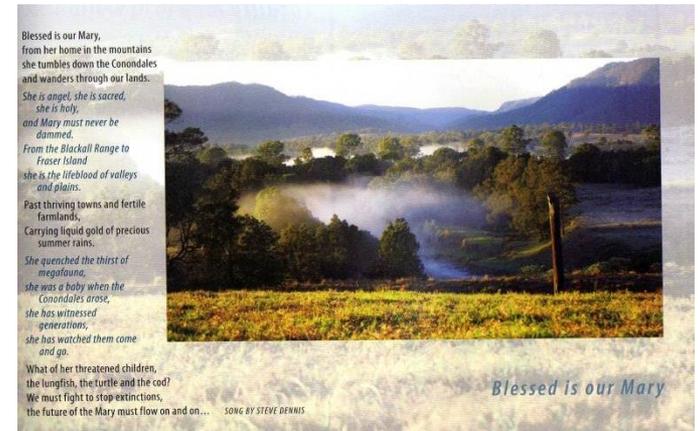
Douglas Adams, author of 'The Salmon of Doubt,' spoke these words just before his death in the year 2000, discussing the Baiji River Dolphins which were almost extinct due to the Three Gorges Dam being built in China. The last 20 of these dolphins were declared extinct in 2006, the same year the proposed Mary River dam was announced.

'Maybe the Human Genome Project can locate the beaver/dam-building gene and cut that out.'

Traveston Crossing Dam

Assertion of alternative representations of the Mary River basin:

- Home
- Fertile farmland
- Natural habitat
- Aboriginal country
- Family inheritance



Traveston Crossing Dam

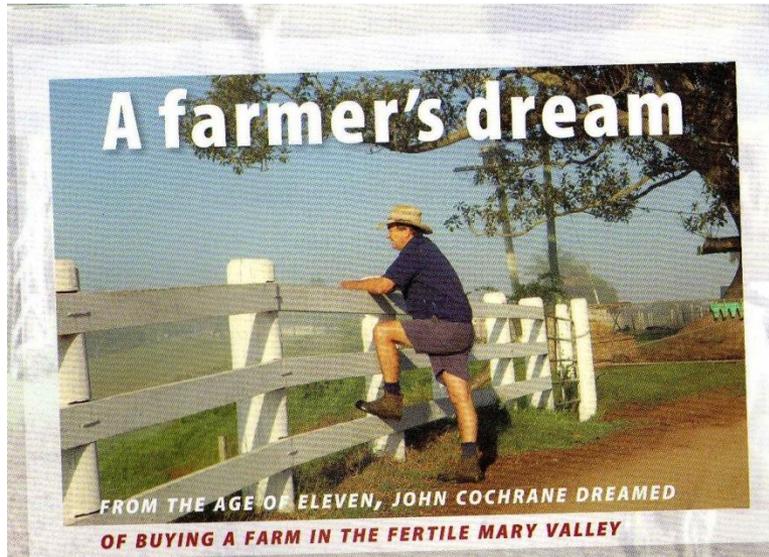
Politics of connectivity

- Connections to competing spatial claims of global challenges including food security, climate change and biodiversity

“The food security of a nation is under threat, which means the viability and liveability of our nation is equally at risk. Farmers are being driven from the land by Global Warming, while those remaining face the inescapable consequences of Peak Oil. Good farming land near cities will be increasingly important as these two crises combine to make cheap food a thing of the past. Traveston Crossing dam will ruin south-east Queensland’s deepest, most reliably watered dairying land.”

Save the Mary River Coordinating Group (2008)

Traveston Crossing Dam



'This land is among the best food-producing land in Australia,' says John, who was raised on a dairy and realised his childhood dream 13 years ago when he purchased a dairy property for his own family. After spending more than \$1million to build a new rotary computerised dairy, the Queensland government announced a dam in the valley, right on top of his state-of-the-art property.

Losing the farm he loves has caused much sorrow for John and his family.

'We've had some dreadful times. They don't understand that when a farmer follows his dream, it's the livelihood for the next generation as well. The mines are full of frustrated farmers who can't afford to buy into a good farming property. High-quality farming land like this is hard to find, and we need to keep it for producing food. Population and food consumption is increasing. Why drown the best agricultural land?'

If a dam is built in the Mary Valley, 26 great dairy farms will be lost in the inundation zone, along with many other prime beef and high-quality food-producing properties.

'This land is among the best food-producing land in Australia.'

Traveston Crossing Dam

Politics of connectivity

Climate change:

“As if this is not enough, the dam will simultaneously undermine our international commitments to the Kyoto Protocol, and the coming Carbon Trading scheme, because flooding will generate vast quantities of Greenhouse gases.”

Save the Mary River Coordinating Group (2008)

Biodiversity:

- Mary River cod
- Lungfish
- Mary River turtle



Conclusions

- For serious progress to be made in addressing global challenges, technocratic strategies that involve changes to the relational constitution of rural space and society need to be grounded in the relational politics of the rural.

- Research agenda for rural social scientists:
 - Challenge functionalist representations of the rural and educate scientists, economists and policy-makers
 - Inform development of research programmes, to ensure that emerging solutions are grounded in spatial context
 - Further investigate the relational politics of the rural. Need for ethnographic research.
 - Follow the connections, including international collaborative research, and research spanning rural and urban contexts, global north and global south
 - Employ participatory methods to help broker progressive outcomes in rural communities.