Transition Towns and Sustainable Development

Prospects for resilient communities in an age of climate change and ‘Peak Oil’

Dr. Stewart Barr

Outline

- Vulnerabilities and uncertainties in an age of climate change and ‘Peak Oil’;
- From global sustainability to local resilience
- Building local ‘resilience’ for the future;
- Transition communities and the challenges of a post ‘Peak Oil’ world.

Vulnerabilities and Uncertainties

In the UK

2020s 2030s 2040s 2050s 2060s 2070s 2080s

Severe risks to national infrastructure: coastal defences, sewage system, rail

Modest increase in agriculture yields

Floods like those of 2007 will be frequent

Several UK species struggle to adapt.

Heat wave of 2003 will be 'normal' by the 2050s

By 2080, 4°C rise in average summer temperatures

Temperature of the hottest summer days up by possibly 10°C

Up to 40% reduction in summer rainfall

Source: Intergovernmental Panel on Climate Change Fourth Assessment Report (2007), UK Climate Projections (2009), Stott et al Human contribution to the European heat wave of 2003, Nature (2004)

Vulnerabilities and Uncertainties

IS GLOBAL WARMING OVER?

By Julie Carpenter

FOR a minute there it seemed the global warming debate had finally been settled. For years scientists and sceptics have raged against each other on the crucial topic new research hailed "the most definitive study into temperature data gathered by weather stations over the past century" appeared to come to an authoritative conclusion.

Global warming IS real it said, strengthening the need for us all to reduce carbon emissions and boost efforts to try to save the planet.

And this research was headed by a physicist who had previously been a sceptic of global warming and an outspoken critic of "alarmists" plotting it, lending the results even greater credibility.

Prof Richard Muller had spent two years trying to discover if the mainstream scientists were wrong but concluded they were right. Furthermore, he said, his team's results, he concluded, "proved you should not be a sceptic, at least not any longer". Case closed.

But is it? Not according to Prof Judith Curry, a member of Prof Muller's team, who claims the same results have shown that global warming has stopped - plunging the rest of us into a quandary of what and who to believe.

When Prof Curry heard that Prof Muller was using the Berkeley Earth Surface Temperature (BEST) findings would put an end to climate change scepticism he good she was a sceptic, "at the end of scepticism," she exclaimed. "To say that is the biggest mistake he has made. When I saw he was saying that, I just thought, 'Oh my God'."

Prof Muller, of Berkeley University in California, and Prof Curry, who chairs the Department Of Earth And Atmospheric Sciences at America's Georgia Institute of Technology, were part of the BEST project that carried out analysis of more than 1.6billion temperature recordings, collected from more than 39,000 weather stations around the world.

Prof Muller appeared on Radio 4's Today Programme last Friday where he described how BEST's findings showed that the world's average temperatures had risen by about 1 degree Celsius, a figure which is in line with estimates from Nasa and the Met Office.

When asked whether the rate had stopped over the last 10 years he said the data "did not support the notion of having slowed down," he replied and a graph issued by the BEST project suggests a continuing and steep increase.

But this last point is one which Prof Curry has furiously rebuttled. In a series of scientific reports Prof Curry has accused Prof Muller of "cherry picking" the decline in rates of global warming.

She says that BEST's research actually shows that there has been no increase in world temperatures for 13 years. She has called Prof Muller's comments "a huge mistake" and has said she has no intention of having any future on the project with him.

"There is no scientific basis for saying that global warming hasn't stopped," she says. "To say that there is detracts from the credibility of the data, which is very unfortunate.

"New research also seems to back up Prof Curry rather than Prof Muller.

A report published by the Global Warming Foundation, which is based on the UK's Hadley Centre's records of world average temperatures over the past 10 years and it is absolutely flat, suggesting that temperatures have remained constant.

This issue is crucial because the levels of carbon dioxide in the air have increased by 10 per cent over the last decade and if temperatures have remained constant during that period it would suggest there is no direct link between carbon gas emissions and global warming.

Previously carbon dioxide emissions - from the burning of fossil fuels and from deforestation - have been considered the "main driving force" of climate change, the most damaging effects of which are thought to be the melting of the polar ice caps and the rise in sea levels as well as an increase in extreme weather events such as floods and droughts.

Prof Curry said: "What is going on here it doesn't look like it's being dominated by carbon dioxide," says Prof Curry.

Prof Muller has made it clear that the BEST study was not conducted in order to gauge the causes of global warming, saying the study "made no assumptions on how much of this is due to human activity and how much is natural". He and his scientists - who also included this year's physics Nobel Winner Saul Perlmutter - set out purely to determine once and for all whether climate change had occurred.

The group had been suspicious of previous results which confirmed a rise in global temperatures, believing that their work may be skewed by the "urban heat island effect" where increasing urbanisation around weather stations was causing the temperatures increases recorded over the past 50 years. But their exhaustive research discovered that the urban heat effect could not explain the global temperature increase of about one degree Celsius since 1950.

'I distance myself from what has been done'

IT IS well to point out that Prof Curry is not disputing the one degree Celsius increase. She is disputing Prof Muller's suggestion that temperatures haven't levelled off in the last decade.

Indeed she says this global warming standstill since the end of the Nineties - which has been completely unexpected - has serious consequences for the causes of climate change and has already led many climate scientists to start looking at alternative factors that may have contributed to global warming, other than carbon gas emissions, which could include changes in the influence of clouds, natural temperature cycles and solar radiation.

What she also seems furious about is the way that Prof Muller went about publishing BEST's results without consulting her and before a proper "peer review" process had taken place. "I do not how I would have played it," she has said. "I was informed only when I got a group email. I think they have made errors and I distance myself from what they did. It would have been smart to consult me."

This is, you can be sure, not the last we will hear on the debate.

It's one of the hottest feuds in science - climate change zealots insist that we're still destroying the planet but now another scientist warns the cast-iron evidence just isn't there

HOTLY DISPUTED: Professors Judith Curry and Richard Muller don't agree over the same set of results

THE VOICE OF THE SCEPTIC CELEBRITIES

THE term "climate change" is, according to Lord Lawson, "a propagandist's term, to trip off the tongue nicely". The former chancellor has also become famous for what he calls "the global warming nonsense".

Children's TV presenter Johnny Ball says he has been "mocked, vilified, besmirched" for his views on the emphasis on the damage caused by carbon dioxide has been "massively over-stated".

NOT CONVINCED: TV's Johnny Ball

Environmentalist David Bellamy is among others who have been publicly lynched as climate change deniers.

Bellamy has said: "I'm sceptical about man-made climate change. The Government says that the carbon dioxide will kill us all. It's not a poison it's the most important gas in the world. Carbon dioxide is an airborne fertiliser. How can farmers grow increasing amounts of food without a rise in CO2?"

But he admits his views have had a hugely adverse effect on his career. "I used to be very popular but most of the green people won't even speak to me anymore. When I was sacked from the Wildlife Trusts because of my views they didn't tell me, I read about it in the paper."

Last June Lord Monckton, the outspoken deputy leader of UKIP, claimed the Australian government's chief climate change adviser Professor Ross Garnaut held fascist views.

At a Los Angeles conference he quoted Prof Garnaut as saying: "The outsider to climate science has no rational choice but to accept that, on the balance of probabilities, the science is right in pointing to high risks from unmitigated climate change."

"That's a fascist point of view," said Lord Monckton, a vehement climate change sceptic. "That you merely accept authority without question. Heil Hitler, on we go."

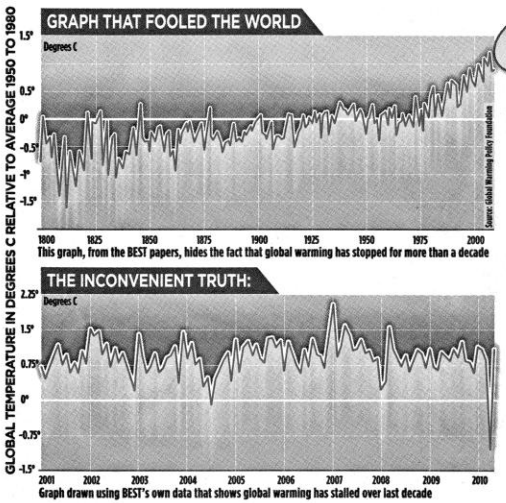
He later said: "I have written to Ross Garnaut to withdraw unreservedly and to apologise humbly."

But Garnaut himself admitted that the nature of the discourse surrounding climate change has become "less civilised, noisier and more ignored".

FROZEN OUT: TV's David Bellamy

JOANNA DELLA-RAGIONE

Scientist who said climate change sceptics had been proved wrong accused of hiding truth by colleague



'Of course this isn't the end of sceptism … when I saw he was saying that I just thought 'Oh my God'

DOUBTS: Professor Judith Curry

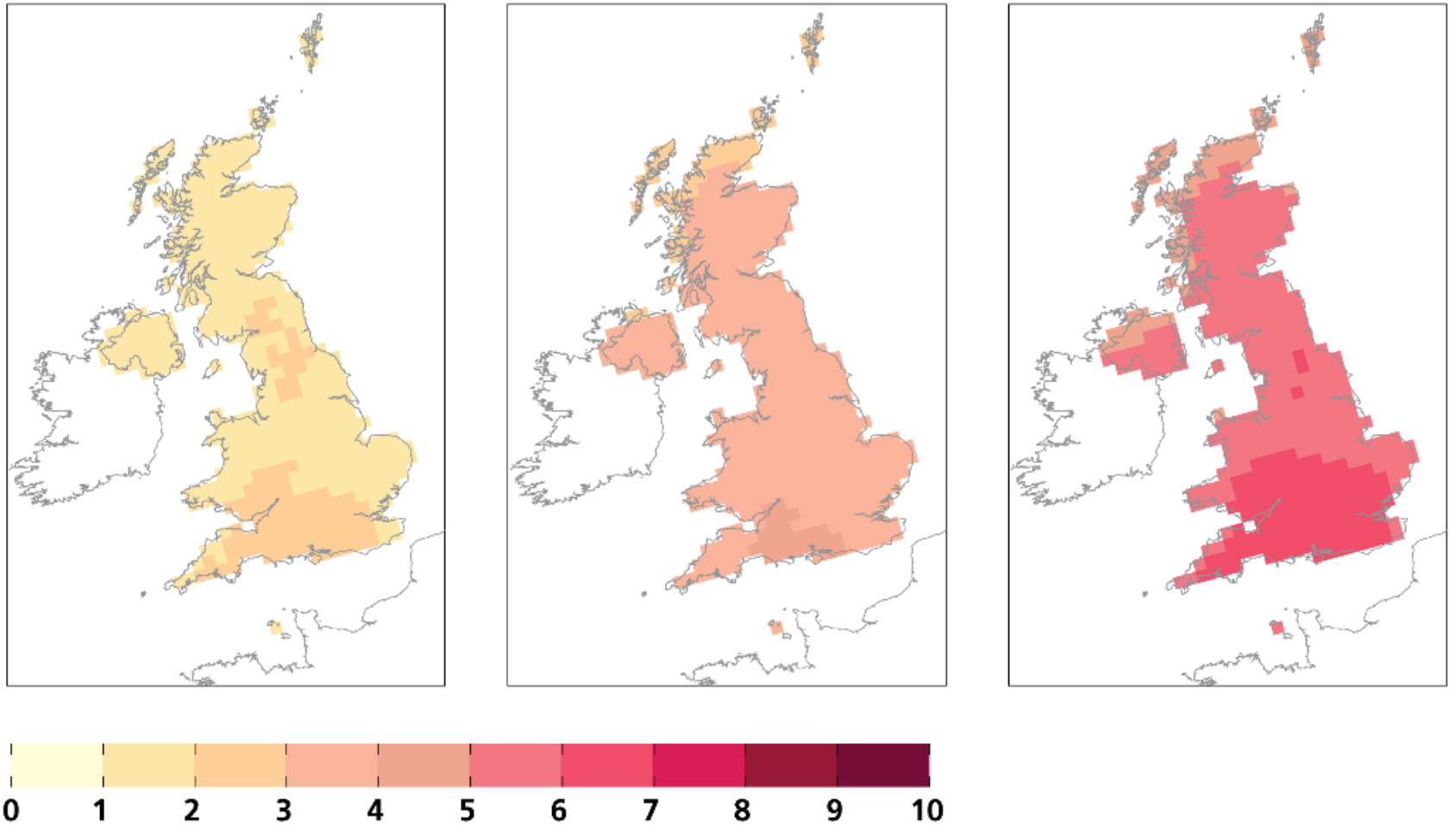
UK CLIMATE PROJECTIONS

Summer

10% probability level
Very unlikely to be
less than

50% probability level
Central estimate

90% probability level
Very unlikely to be
greater than



Change in summer mean temperature (°C) for the 2080s, Medium emissions scenario

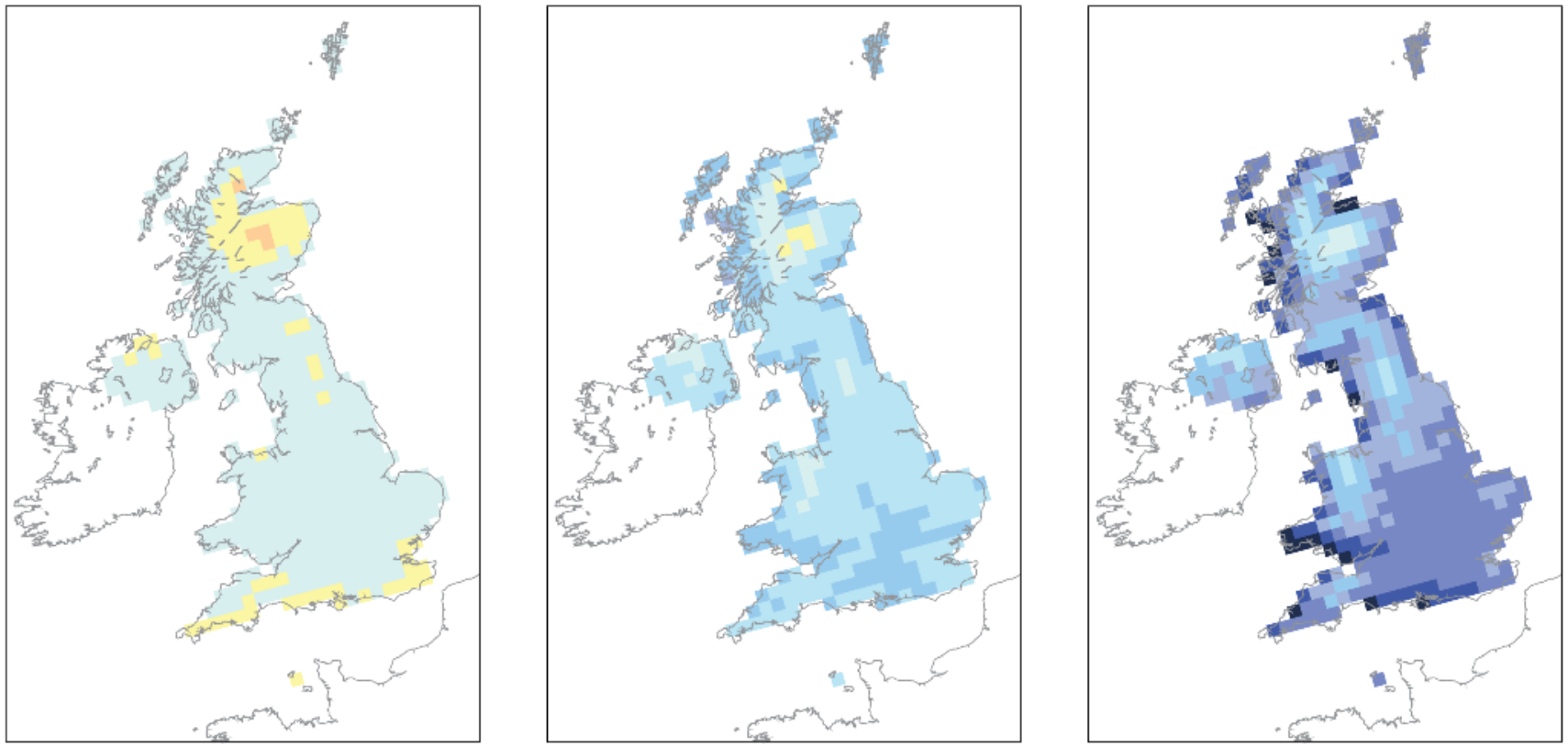
UK CLIMATE PROJECTIONS

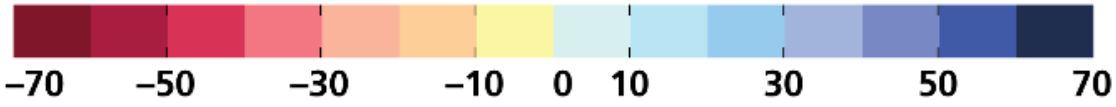
10% probability level
Very unlikely to be less than

50% probability level
Central estimate

90% probability level
Very unlikely to be greater than

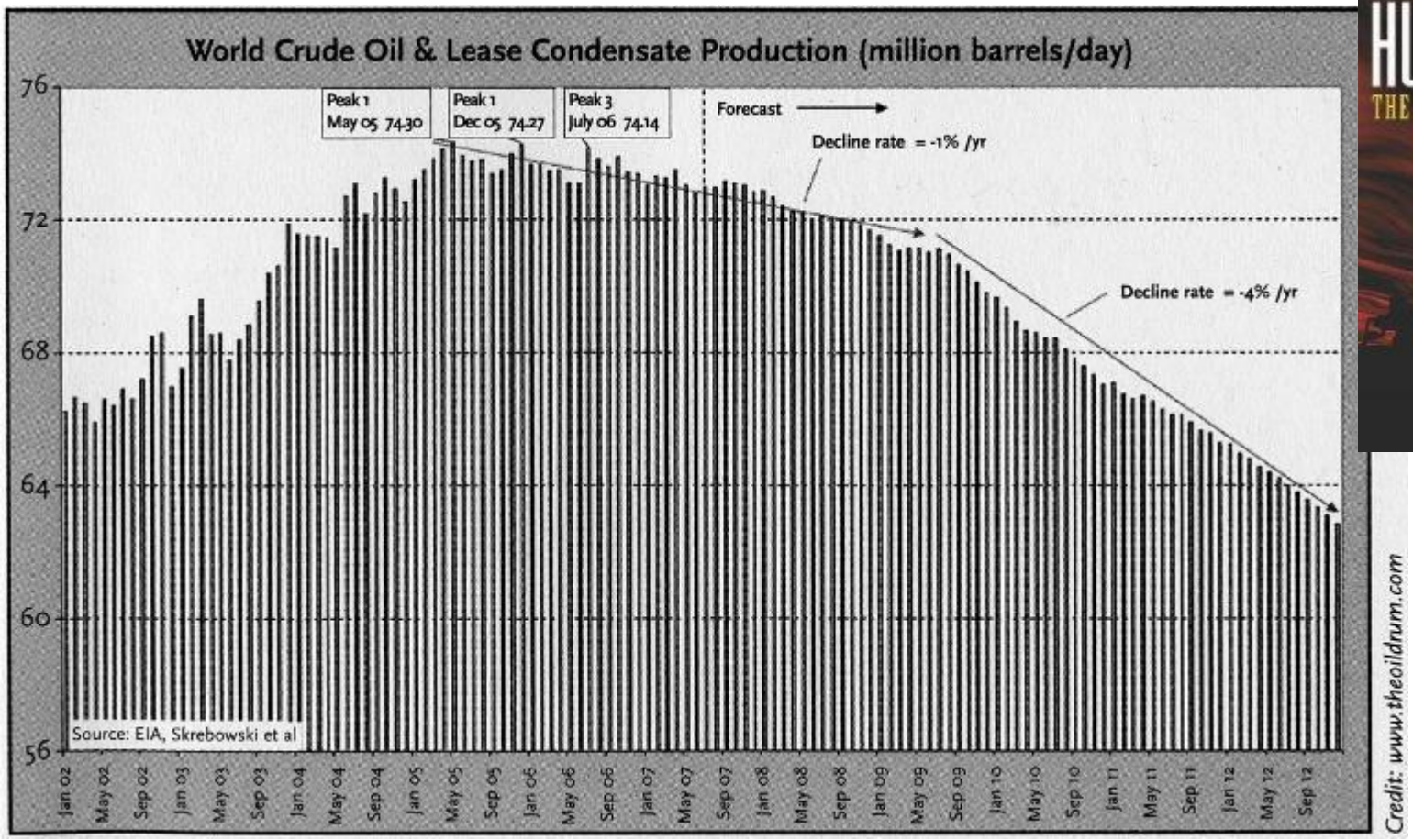
Winter

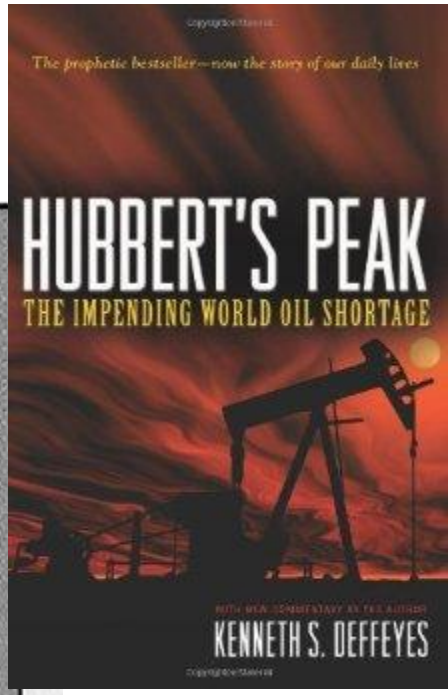




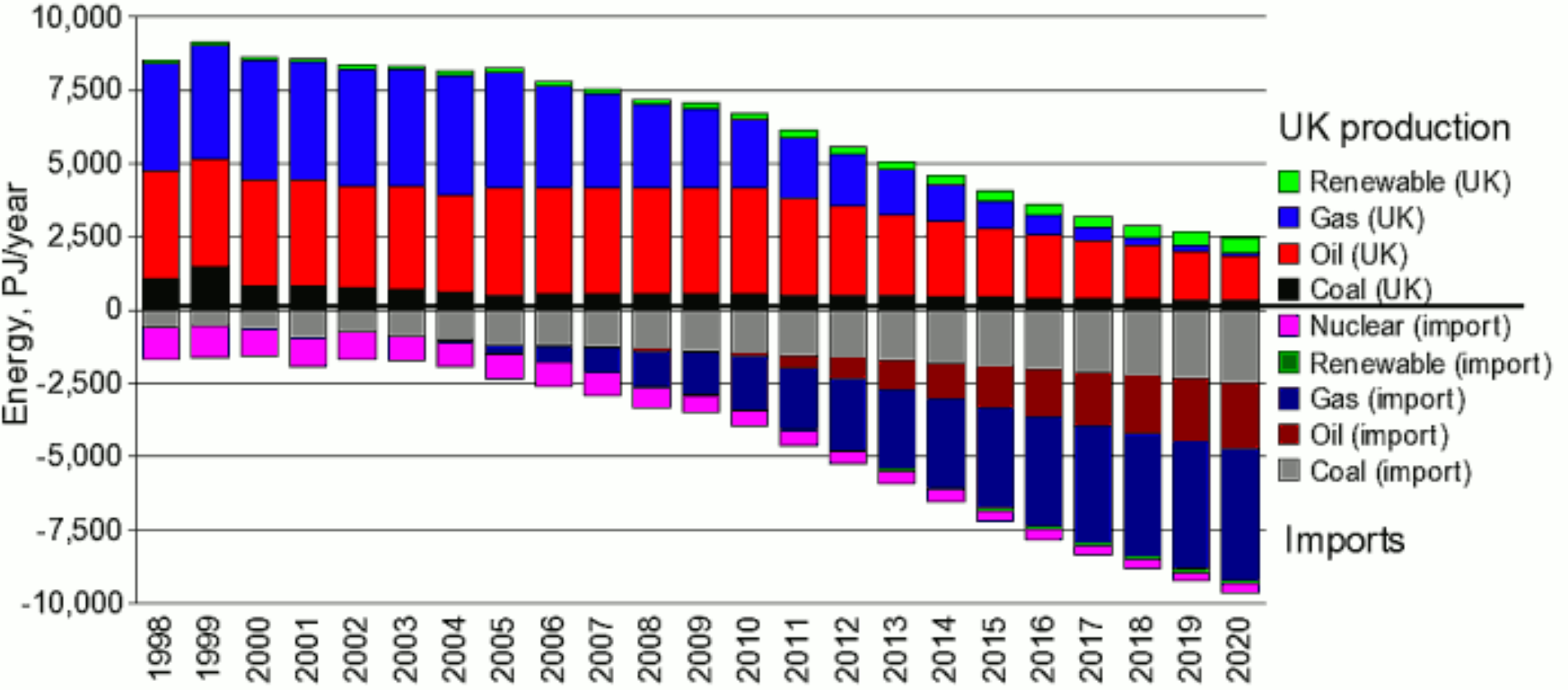
Change in winter mean precipitation (%) for the 2080s, Medium emissions scenario

Vulnerabilities and Uncertainties





Vulnerabilities and Uncertainties



From Global Sustainability to Local Resilience

- From considering distant and globalised concerns to local threats;
- From deploying reactionism to promoting activism and situated pragmatism;
- From ‘governing’ sustainability to place-based decision-making;
- Ideas of local resilience…

Building local ‘resilience’ for the future

- Resilience as a natural systems approach (Adger, 2000):

“[The]…ability of a system, from individual people to whole communities, to hold together and maintain their ability to function in the face of change and shocks from outside” (Hopkins, 2008, p. 12).

Building local ‘resilience’ for the future

“In this way it may involve measures aimed at mitigation (prevention) and adaptation (one form of reactionism), but resilience is also **an active, community-based, internally-driven and holistic approach that should, in theory, provide greater protection against external shocks**” (Barr and Devine-Wright, in press, presenter’s emphasis).

“By shifting focus away from an ultimate end goal of sustainability, to an ongoing process of enhancing resilience, **managers, planners, council members, and residents can examine the community in its entirety, the interrelations among the various elements within a community**, and how these elements collectively enhance community resilience and ultimately move a community toward sustainability” (Callaghan and Colton, 2008, pp. 932-933, presenter’s emphasis).

Resilient Communities (Hopkins, 2008)

Not adding Resilience

- Centralized recycling
- Ornamental tree plantings
- Sourcing organic food internationally
- Imported 'green building' materials
- Low-energy buildings
- Carbon offsetting
- Ethical investing
- Buying choral CD's
- Sky sports
- Consumerism

Adding Resilience

- Local composting
- Productive tree plantings
- Local procurement specifying local production, supporting emerging and new industries
- Specifying local building materials
- The local 'Passivhaus'
- Local community investment mechanisms
- Local currencies
- Singing in the local choir
- Playing football
- Reciprocity

The ideal ‘Sustainable Community’

“A group of people who share common culture, values and / or interests, based on social identity and / or territory and who have some means of recognising and (inter)acting upon these commonalities” (Dictionary of Human Geography, 2009).

In this Context...

"A sustainable community:

*Utilises nature's ability to provide for **human needs**, without undermining its ability to function over time;*

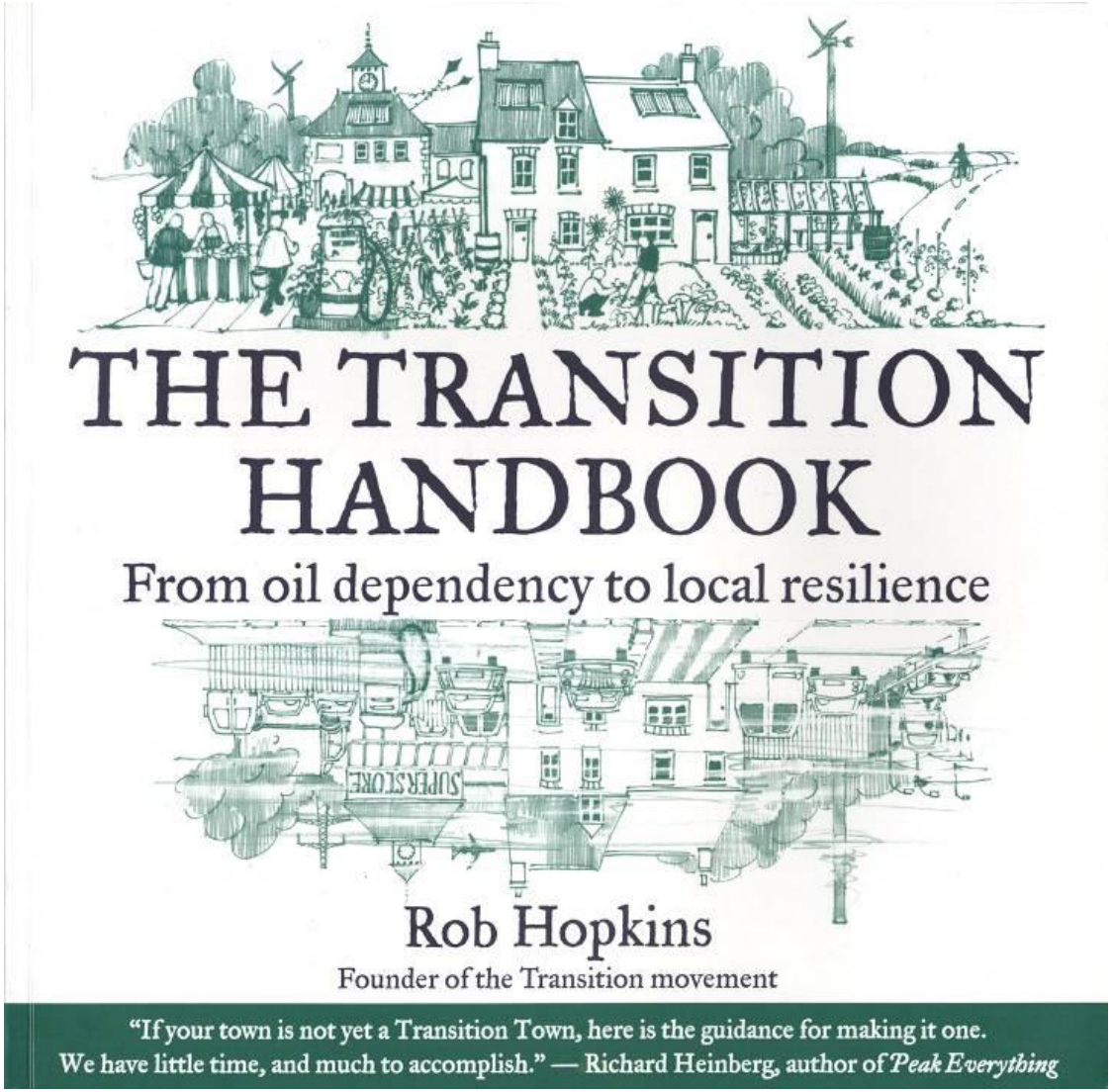
*Ensures the **well-being of its members**, offering and encouraging tolerance, creativity, participation and safety;*

***Empowers people with shared responsibility**, equal opportunity and access to expertise and knowledge with the capacity to affect decisions which affect them;*

*Consists of businesses, industries and institutions which **collaborate as well as compete, are environmentally sound**, financially viable and socially responsible, investing in the local community in a variety of ways"*

(Rogers and Ryan, 2001, 282)

Transition communities and the challenges of a post 'Peak Oil' world



Key attributes of Transition

- Sustained and tangible social transformation;

- Place-based communities:

"Have a desire to advance ecological sustainability, community self-reliance, and social well-being in Vancouver? To grow more food? To connect with others in your community to create positive local responses to things like climate disruption, depletion of natural resources, and economic instability?"

- A re-connection with nature and natural systems;

- A non-political framework for governing;

- Inner Transition:

"in many instances the greatest resilience for the community is, it is argued, to be found in an inner changing of the self that becomes open to change and alive to the possibilities of new ways of living in a post-Transition world" (Barr and Devine-Wright, in press).

Transition Priorities

- Energy descent planning;
- Local food growing and community supported agriculture;
- Reduced consumption and a reliance on local procurement;
- Environmentally sustainable mobility;
- Active discussion of Transition through regular community meetings and open space events...

‘Governing’ Transition

“Successful Transition Initiatives need an unprecedented coming together of the broad diversity of society. They dedicate themselves to ensuring that their decision making processes and their working groups embody principles of openness and inclusion…The intention of the Transition model is not to centralise or control decision making, but rather to work with everyone so that it is practiced at the most appropriate, practical and empowering level, and in such a way that it models the ability of natural systems to self organise” (Transition Network, 2012).

Challenges for Transition

- Working within or outside the Neo-liberal economic framework: the challenge of consumption;
- Being part of everyday political, social and economic realities in localities;
- Presenting a united message through consensus decision-making;
- Focusing on the controversies of ‘environment’... and the ‘opportunities’ of economic crisis;
- Vision(s): governance, scale, power, democracy, boundaries of the future.

A Dystopian future?