

21st Century Research Collaboration Workshop

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Warwick University



Organised by:
Environment Research Funders Forum
and
UK Collaborative on Development Sciences



Workshop Report by:
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21st Century Research Collaboration Workshop Report

Preface

The Workshop, funded by ERFF and UKCDS, and planned in collaboration with the Institute of Development Studies (IDS), brought together UK public bodies that fund or use environmental research or trained scientists with key UK funders and stakeholders who provide support for the development sciences research base. Research councils, knowledge intermediaries, scientists, researchers, NGOs, government agencies and departments thus all participated in an open-ended discussion about the relationship between scientific excellence, user-driven research and collaboration in a search to find new ways of doing research.

The Workshop was chaired by **Dr. Steve Killeen**, the Head of Science at the Environment Agency and Chair of the Environment Research Funders' Forum and facilitated by **Dr. Alister Wilson** of Waverley Management Consultants, www.waverley-consultants.com.

The organisers would like to thank the presenters, all those who contributed to the Workshop, the chair, Steve Killeen, and the facilitator, Alister Wilson.

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Introduction

This report is the main output of a Workshop that was held in October 2008 to ask ‘**how funders organise research that is rigorous, more globally constructed, user-oriented, capacity enhancing and, ultimately, more influential?**’, given the global experiences of climate change, energy use, security, identity, inequality, migration and food insecurity – which demand a wider range of actors and perspectives be brought to bear to explain, understand and change the dynamics in these areas.

A growing variety of approaches (such as the Intergovernmental Panel on Climate Change, third-generation Research Programme Consortia, mini-Sterns, innovation networks, market-based solution offers, decentralised hubs and social networking) aim to address these challenges in the environment and development field. As research funding increases, the need for effective management of these resources becomes as important as the quality of the research. The workshop explored how different approaches can be used to balance the – often competing – research challenges of fostering genuine collaborations, enabling southern leadership, increasing the diversity of actors and voices and maximizing available financial resources; while maintaining the world-class quality and capacity of UK research.

Workshop Objectives

- To share information and experiences about new and different research models and raise awareness of future possibilities
- To stimulate ‘better’, more collaborative, cross-cutting activity both across disciplines and sectors, and between northern and southern research partners
- To consider possible ways in which research can increase links to, and relevance for, end users

- To set out implications of new and different research models for research, policy and practice
- To envision and encourage new models in funding calls

Appreciating the Challenges

Steve Killeen, Head of Science at the Environment Agency and Chair of the Environment Research Funders’ Forum laid out the challenges to be discussed:

- Thinking differently to achieve our core objectives
- Being innovative in our approach – the future will be more challenging
- Seeing collaboration as key

The workshop presented an opportunity to explore opportunities and challenges in relation to **Living with Environmental Change** which is an ongoing ten-year programme, aimed at providing decision makers with the best tools and knowledge to effectively manage and protect vital ecosystem services while responding to environmental change; and **The Changing Water Cycle** which is being designed as an integrated and collaborative research project examining the global water cycle in relation to changing climate and land use.

Living with Environmental Change

www.lwec.org.uk

The programme was introduced by Andrew Watkinson, the incoming LWEC Director. He asked:

“How do we best work together to produce world class science that meets the needs of society?”

The Living With Environmental Change partnership is a major new initiative bringing together 20 UK organisations funding, undertaking and using environmental research. The specific aim of creating the partnership is to accelerate the delivery of research on environmental change into policy and business by aligning research, policy and business needs through a process by which research is co-designed and co-produced.

The LWEC initiative derives from the recognition that our planet faces unprecedented change and needs to address a number of global and local challenges in order to ‘deliver science to policy’. The challenges that need to be addressed include climate change, population growth, infectious diseases, food security and poverty alleviation, all of which have a water component. LWEC thus has a ‘considerable challenge’ in providing government, business and society with the foresight, knowledge and tools for UK leadership in mitigating, adapting to and capitalising on environmental change. It is important though that the challenges are addressed in a cross-cutting and interdisciplinary framework, in order that we can deliver a low carbon society, ensure food, water and human security and increase the resilience of vulnerable people and places.

In order to facilitate the development of the interdisciplinary evidence, tools and processes that need to inform public and policy debates and the decision making

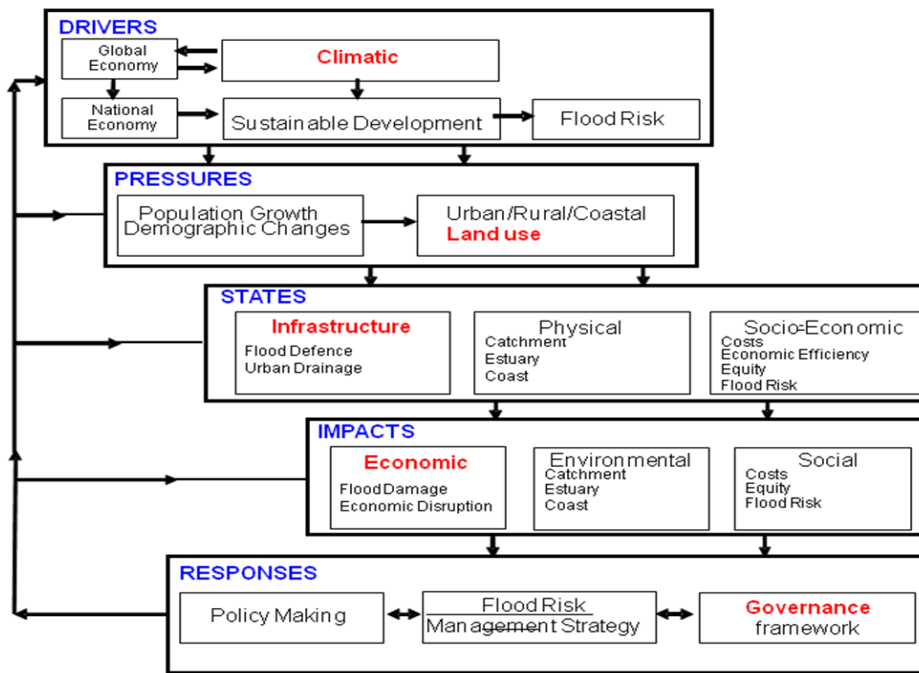
process it is essential that the dialogue between science, policy and delivery is made more effective. There needs to be an on-going exchange of information: scientists should be attentive to policy priorities and challenges while policy makers need, where appropriate, to develop policy within the context of the available scientific evidence.

It is therefore seen as essential that for the most effective delivery of science to policy that the LWEC programme should be co-designed and co-produced. This approach is sometimes referred to more formally as the analytical-deliberative approach – which seeks to combine analysis and deliberation across research, analysis and policy, but with a continuing dialogue to enable people to work and learn together. This model maximises the impact on policy and practice by providing sustained contacts with users and linking policy networks with research users.

Take, for example, the water cycle and flooding system. This must be recognised as a socio-environmental-technological system in which we seek to understand the drivers of change, the pressures they create and the response options within a systems framework (see Figure 1). The approach provides ‘information and good science’, but it also needs to be recognised that there are a number of additional elements that are required for successful adaptation in a changing world. These include education and communication, linking with other planning processes, risk management, legislation and financing.

LWEC’s expected outcomes, over the next 10 years, include: **evidence based science** which provides **systemic, integrated research across policy spheres and scales**, which is **participatory** and has genuine **stakeholder engagement**, but which is **decision-specific**. All of these things are necessary if we are to meet LWEC’s vision of producing ‘world class science’ that meets the needs of society.

Figure 1 A systems approach to the water cycle and flooding



NEW APPROACHES:

Lessons from the Rural Economy and Land Use Programme

www.relu.ac.uk

Drawing from the experiences of the Rural Economy and Land Use Programme (RELU), Philip Lowe took the participants through some of the lessons learnt. RELU is an interdisciplinary science programme which involves 40 disciplines. It has two fundamental demands: firstly, the need for 'joined-up science' and secondly, the need for socially-accountable science. Achieving these demands involves finding new ways of doing science: introducing different framings of questions and complex problems, recognising that

“Scientists are very good at answering questions, but not good at formulating questions.”

and seeing innovation as a combined socio-technical process in which natural scientists tend to have a 'science push' view of technical change; while social scientists have a 'society pull' view of the same process. Philip Lowe argues that of course we need both and using the socio-technological model of change allows for this interdisciplinarity.

Understanding socio-technological change thus means understanding human agency in the environment; working with scales and spatiality of socio-technical systems; understanding social and commercial needs; re-framing science; finding new creative roles for social science in innovation; and tackling barriers to the application of world class science. RELU attempts to achieve this by having a root-and-branch approach to interdisciplinarity. This involves strategic cooperation between three Research Councils in the form of: a pooling of funds; joint decision-making; combined approach to peer review and project assessment and an integrated approach to data management. Nonetheless, encouraging interdisciplinary capacity building requires effort, you have to 'encourage researchers to talk together'

through seed-corn funding and workshops to develop shared perspectives

Socially accountable science is a demand for science and research to be more relevant and responsive to societies' needs. This involves widespread stakeholder involvement (as active partners in setting research agendas), diverse forms of engagement, a two-way exchange between researchers and users. Such an approach goes beyond knowledge transfer and thinks about stakeholder involvement in knowledge production.

In thinking about how to transfer scientific findings, Philp Lowe argues that informal networks are critical:

“Science is best transferred by warm bodies.”

Presenting the right evidence to the right person is not enough; it's all about networking and building active capacity for knowledge exchange. RELU has realised that it has to move from a 'Knowledge Transfer' model (in which a narrow focus on technology transfer and commercialisation underplays stakeholders' multiple forms of expertise and the social practices of innovation) to a 'Knowledge Exchange' model (in which knowledge is seen as

pluralistic and inclusive; and in which knowledge exchange is an iterative process that engages stakeholders as active partners) to encourage a two-way exchange of ideas, intelligence and understanding. Nonetheless it was hard to get sustained engagement and RELU came to recognise that:

- It is promoting a model of social learning, it is not about creating stakeholder 'steering groups' (or making scientists slaves to stakeholders). Instead stakeholders and scientists put their knowledge and experience on the table and are at risk.
- Soft knowledge transfer through informal networks can be more important than impersonal forms. It therefore introduced mechanisms for facilitating this, such as 'work shadowing' and visiting fellowship schemes in organisations and businesses researchers might want to inform and influence.

Extracts from **Small Group Discussions** addressing the question: **How do we best work together to produce world class science that meets the needs of society?** What are participants' experiences of working together?

One group of participants questioned the durability of the LWEC collaborative banner, arguing that the 'feel good' sensation will pass as barriers to collaboration become evident. For example, there is a lack of clarity about what participants will get out of collaboration and raised expectations are unlikely to be met as partners are unable to influence their own organisations' agendas and approaches.

Other participants discussed some of the barriers that they have experienced, such as coordinating different organisational timetables; the fact that they don't always get buy-in; that people drift away; or that different organisations have different priorities or varying governance structures and finally that applied science is often not valued in academia.

Another group of participants highlighted the ways in which funding organisations made it impossible to achieve their own objectives, such as the need to fund 'world class research' but also wanting 'research that is really useful'. Organisations' competitive approach to funding and contracts; different institutional cultures; a tension between 'the day job' and creativity required to go beyond this also hindered collaboration.

Horizon Scanning & Scenario Building: Supporting Research & Challenging Policy

www.foresight.gov.uk

Alun Rhydderch's presentation explored the approach developed by the Foresight projects on Future Flooding and the Detection and Surveillance of Infectious Diseases. He argued that the current research model is often based on past trends, paradigms and self-reinforcing themes. Echoing Philip Lowe's presentation, this means that scientists are good at answering questions, but bad at framing them. Even when research does break out of this mode, it finds it hard to negotiate with policy 'decisionism' – the need to make all research linked to a specific policy decision. The use of new technological tools (wikis, social networking, etc.) can improve collaboration, but also run the risk of watering down the research and of data overload: as Alun Rhydderch said:

“We are drowning in peer-reviewed data, what we need are well-informed expert views. We want to draw on the best research and put it forward in ways that can be used for policy research.”

This is achieved by *Foresight* through

1. “Scan Issue Papers”: a process whereby 250 papers mapping new ground for policy-oriented research, future science and technology issues are drawn together in order to foreground evidence and to make it accessible and evident

www.sigmascan.org

2. “Dimension Papers”: a ‘meeting-point’ of evidence (bottom-up) and policy questions (top-down)

The principle underlying Horizon Scanning is forward-looking, but it seeks to move beyond a ‘single expected future’ to evaluate a ‘range of possible futures’ and consider implications for today’s decisions. In so doing, Horizon Scanning seeks to Look Ahead (beyond usual timescales), to Look Across (going beyond the usual sources) and to Build Resilience and Adaptability into its strategy.

In its commitment to using the best available evidence, Foresight has developed new approaches to the way it works. It now spends considerably more time debating the research questions, asking who owns these questions and what kinds of outcomes are desirable. It therefore spends a third of its time on scoping and defining the question with a diverse range of stakeholders. This is ‘painful’ as the workshops always bring in difficult views

“We don’t move forward until everyone is really agreed. The commitment is worth it”

and assures the support of senior people. Only then do we move on to more complex outlooks and scenarios.

Overall, Alun Rhydderch emphasised Foresight’s activities building up a library of themes around which new research can be done and providing research which can be used in policy planning and the development of a ‘Dimensions Toolkit’ to be published shortly. In final thoughts, he too stressed the use of the analytical-deliberative model, and the potential of multi-actor hypothesis-building and policy testing to deliver new perspectives for research. Even so, the process should not be ‘pre-planned’ in that it should not be too specific up front or ‘too prescriptive’. For Foresight, science is about researching, testing and trying out ideas – a process in which conflicting data is highly valuable.

“Our way of making progress is about listening to contradictory versions”

360° Research – Globally Constructed Development Research

www.ids.ac.uk

Lawrence Haddad from the Institute of Development Studies (IDS) explored the significance of ‘points of view’ in a presentation which built on Andrew Watkinson’s ideas on the ‘deliberative process’, on Philip Lowe’s emphasis on ‘multiple perspectives’ and on Alun Rhydderch’s notion of ‘looking beyond the usual suspects’. He reported on an IDS review which posed the question: ‘How do we need to ‘re-think’ development research?’ IDS undertook a global consultation with partners, alumni and others who examined the big development challenges in their contexts and asked what this meant for research and policy. In total, 42 round-tables were held around the world; 1300 participants (50% researchers and 50% policy and practitioners) were involved. The process was not ‘scientific’ as there was no guiding frame and it was organised by self-selection and enthusiasm. The round-tables explored the key development challenges and opportunities, both for their context and for IDS.

A convergence of concerns emerged from this global consultation, namely: China, climate change, migration, conflict, energy. All around the world, people are concerned with these issues, but often with very different framings. For example, in Sub-Saharan Africa people talked about flooding, seasonality and changing weather patterns, but they didn’t call it climate change. Despite the convergence of issues, a divergence of approaches to development emerged. There was a real desire to find one’s own way and no grand

narrative dominated. Nonetheless, there were lots of complaints about accountability and development’s ability to brush aside failure without learning from the experiences.

Global collective action derives from globally constructed knowledge (or a 360 degree perspective). This is very difficult to do and to fund. Does it compromise ‘quality’ in terms of the HEFCE Research Assessment Exercise measures or sound action? When is it ‘good enough’? Connecting global and local knowledge is however more important than ever. This is not about the North/South divide, but rather about learning ‘across development stories and experiences: learning from public policy research and experience in the USA, UK and Sweden for example and learning from southern countries. It is a call for greater symmetry in partnerships where research, power differentials, access to funding and support are not such that everyone relies on northern partners.

The challenges that arise from this 360 degree global research include:

- Developing new funding sources which match international development and domestic funding
- Nurturing new partnerships with organisations more geared to domestic issues
- Creating new relationships which are less hierarchical and which aim to overcome differential power relations, capacity, etc.
- Developing new standards of accountability, ethics, quality which in turn will define the purpose of research and assist in overcoming trade-offs

The 360 degree research process suggests that development research needs to be reinvented. We need to be reflexive about how we do our work and on what. Currently development research focuses on a smaller and smaller number of countries, but we need to think more globally. We need 360 degree research and to facilitate North-

South and South-North learning. A country like Nigeria is both local and situated in global knowledges, but global knowledge is not USA or EU policy distributed globally. We need to think beyond western or northern knowledge to 'globally constructed global knowledge'. This needs to have strong accountability and needs to be a deliberative process. In global development research validating the questions, especially with reference to framing, is as important as the answers produced.

Innovation Networks

www.wbs.ac.uk

Harry Scarborough of the Warwick Business School pointed out that the business research agenda has not historically focused on the environmental change agenda. He therefore is 'here to learn and make links', not only with policy and science communities, but also with the business community. His link to this meeting is through a previous collaboration and reflects the importance of personal networks for spanning boundaries and bringing people together.

Harry Scarborough's presentation focused on innovation networks from a business school perspective, yet the themes resonate with topics discussed earlier in this Workshop. He began with the example of the iPod, the development of which reflects the way businesses are thinking about and developing new products through networks and partners.

The iPod is a fantastic example of an innovation network in which an alliance of business companies develop new products and practices. The creation of iPod took about six months and involved a technology entrepreneur and a start-up partner. This was a benchmark of openness and speed:

"We no longer do things for ourselves or focus on our own R&D, we exploit others with different expertise to produce world-leading innovation"

Making better use of distributed knowledge and expertise requires a shift from a closed to an open model of innovation. This is more effective for tapping into a wider array of opportunities and capacities but also raises questions about how to manage this open-ended model. How does one understand the relationship between science, business and policy when it is far more open and interactive?

The Open (or Interactive) Model of Innovation involves intensive knowledge-sharing among multiple groups and individuals with interactive innovation occurring across firm boundaries. Networks are key to this and exist in many different types as well as at many different levels. In addition, different kinds of networks support different kinds of knowledge exchange. An open innovation system also changes the division of knowledge within and between various groups and actors. This means that it is necessary not only to understand what types of knowledge various actors bring in, but also what roles they play.

Social network analysis provides a framework for understanding how and why actors take on different roles and how they find new ways of collaborating which, in turn, create new positions of power in networks. Thus new brokers and gatekeepers emerge to control the flow of knowledge. In addition, the spill-over effects at industry level lead to technology clusters in which specific geographic regions get endowed with certain technology capacities and resources. This influences how companies source and identify partners and resources.

Finally, it is important to recognise that building networks is not same as building communities. Policy makers like networks

because it is about building relationships through resources and it is possible to create new research networks quickly. Networks are good for flows of information and for personal relationships, but don't develop collective ways of knowing or shared languages. These community-orientated attributes take longer to create.

There is often a tension between developing a network at policy level and the community. In the example of the UK Policy Initiative around Genetics Knowledge Parks, tensions arose between the developing network and the scientific community. Policy makers developed new interdisciplinary networks which challenged existing (discipline-specific) scientific communities. However, as these policy networks expanded and created new scientific communities, policy makers got frustrated by the 'fuzziness' and slow growth of emergent science and stopped supporting the networks.

User-Generated Knowledge for Policy and Research

www.livelihoods.org

Carl Jackson from IDS Knowledge Services, focused on user-generated knowledge and creating spaces for reflection and learning. His presentation addressed the third aim of workshop, namely to assess ways in which research can increase links to and relevance for end users. He began by posing questions about what an 'end-user' is, pointing to the negative associations – of finality, of dependence, as consumers and as lacking agency – often associated with this term. Arguing that the kind of language we use can refresh our mental models of research practice, Carl Jackson suggested that end-users should perhaps be rephrased as end creators, systemic users or simply as others.

Drawing on a project which sought to create a space within which knowledge for policy

and research could be co-created by people with diverse roles within and links to research processes, the presentation focused on the Livelihoods Connect project. There were two main drivers from the UK Department for International Development (DFID) that initiated this project: First, a period of policy drift had been exacerbated by being cut-off from external feedback, particularly the critical voices of partners and beneficiaries, despite DFID prioritising the need to support and keep open cycles of learning was a priority by DFID. Second, was the recognition that privileging research-based knowledge had undermined insights and lessons from policy and practitioner communities and had contributed to a growing gulf between research priorities, policy and practitioner needs.

The idea of a Learning Platform was launched in 1999 and brought together

- Lessons accumulated from implementing research ideas and professionals' own reflection and learning
- Novel applications and extension of models and concepts
- Field tested applications of tools that helped to apply abstract research models to particular contexts and conditions
- Profiles of key organisations and individuals with capabilities in the interpretation and application of research-based ideas
- Details of opportunities to learn about and discuss new tools and insights at workshops, training events and conferences

This approach was different in three ways. It didn't see the challenge as a logistical one.

“It was about warm relationships between people, not documents out the door”

and, in so doing, facilitated human and organisational learning and sharing rather than a one way dissemination of knowledge. It challenged assumptions about who had a role to play and who could demonstrate agency and supported new categories of knowledge intermediaries. And it sought to attribute more equal value to different forms and sources of knowledge.

The Livelihoods Connect project and the international network it generated has outlived the initial research and other funding opportunities. Collaboration over this length of time and geographical reach would not be sustainable if it did not include many other practitioners, policy makers, students, NGOs, businesses, and intergovernmental organisations whose diverse links and activities account for the Livelihoods Network's resilience. As greater transparency, democracy, processes and ideas emerged through collaborative relationships, Southern partners were able to develop leadership roles such as directing research consortia and offering training programmes.

This approach of facilitating open spaces for reflection and learning was found to be more applicable when a majority of founding participants want to embark on a process of transformation or are already responding to drivers for change; when there is a desire to get more diversity and equality of participants and ideas; when there is a larger goal, change or principle that acts as an umbrella under which different interests can be mobilised; and when there is a kernel of applied research that offers learning benefits to new participants. The approach is less applicable when there is no credible facilitator to initiate the space and hold it open; when there is a need to span language communities; and when actors are geographically dispersed with insufficient resources for face-to-face trust-building events. Some physical scientists found the approach – which relied on creativity with language and inter-personal relations – to be insufficiently rigorous, but other

participants insisted on the open and egalitarian nature of the approach.

The lesson is thus that collaborative cross-cutting research practice is supported by developing spaces for learning and reflection. The Livelihoods Connect approach of including diverse actors from the inception of an open research processes and remaining involved once funding has ceased, demonstrates researchers' commonalities as they tackle major multidisciplinary challenges.

Extracts from Workshop Discussions: How Can We Apply Ideas in Policy and Practice?

What are the useful and exciting insights coming out of the presentations on new approaches?

- Innovation presents a very different angle, in which it is easier to see the motive for collaboration. One needs a really good reason to do this and its often harder to see the rational for collaboration in policy work
- The big test is to remove the money and then ask 'why collaborate'? Money gets in the way with its administrative, legal, personal dimensions. If you remove the money and focus on the outcomes, people can no longer hide behind money. ... Collaboration is more than providing money
- There is a tension because research councils have a dual role. They are responsible for maintaining the health of science debates and excellence and they have to demonstrate relevance and impact. The tendency is to focus on the former and hope that the second follows from this

What are the opportunities for applying these approaches to diverse areas of

environmental research, policy and practice?

- As regulators, sometimes we forget that we do 'science'. We get into a rut and don't do enough reflecting and horizon scanning. But when we draw on scientific knowledge, when we do invest in learning, we recognise benefits

What are the main differences or divergences between these approaches? Do you see any problems in applying them?

- It is a challenge to communicate the value of complex Foresight and scenarios approaches to policy makers who are seeking 'yes/no' decisions. Because policy makers feel accountable for the decisions they make, they want 'actual evidence' to make decision
- Civil servants are obsessed with protecting their ministers which means that they are very risk averse and fear failure. Nonetheless, their success is also dependent on their relationships with political actors who can often act as gatekeepers
- Policy makers are often not prepared to accept the many possible outcomes that may emerge from the choice of options taken.
- There is a temporal dimension to collaboration between research funders which might be serial and not simultaneous. Regulators have different perspectives on what is risky or do-able
- Research councils organisational structures can limit the possibilities for collaboration

Building on the presentations and discussions, workshop participants identified the following design principles (with considerable overlap between them) as significant ways to move forward:

Create a culture of collaboration: This may involve planning and funding for strong stakeholder engagement from the start of the process. Alternatively, a proactive process that seeks to create more symmetry of knowledge across researchers, to build complementarity and to counter project isolation, could be developed. A 'project incubator' could, for example, map overlapping problems, address multiple framing, and develop social business groupings, and in so doing, look for new research possibilities that are not limited by fixed calls for proposals.

Design collaborations effectively: This involves drawing in a wide range of stakeholders at the design stage of the programme. As regards Research Councils, a number of suggestions were made: potential collaborators should have an opportunity to meet/network before putting in bids; Research Councils should include 'other' organisations in calls for bids and pay for the time these organisations contribute to the process; calls for research programmes should not be too rigid or specific, but rather should allow for a range of concepts and approaches to be used. One suggestion was to use an iterative (or sandpit) approach to develop the project and get the right research in the right place. This involves creating opportunities – prior to the call for collaboration – during which researchers and funders can build their capacity to participate in bids and implementation of research; building relationships between research partners through visits and co-designing the call by involving potential researchers from a range of funding bodies.

Think strategically about collaboration: This could involve taking a mixed approach to funding (seed corn, pilots, pump priming); providing incentives for collaboration where there is added value in doing this (rather than encouraging collaboration for its own sake); funding

continuity of engagement between participants; provide resources for networks beyond the immediate research community; recognising the benefits and risks of collaboration and identifying the different kinds of contributions that contribute to collaboration, building consortia of interested groups and finally, untying the subject funding (i.e. helping the funder to 'let go').

Resource the development of the research question: One suggestion was that funding for stakeholder involvement could be provided upfront in order to scope out partners, describe drivers and convergence of interests, develop 'users and researchers' framing of questions before submitting a research proposal. Other suggestions were that questions could be clearly framed in order to be able to identify who should be collaborating.

Build effective teams: Recognising that this requires people from different disciplines (natural and social scientists) and to create a balance between different disciplines. In addition, it is necessary to identify key conduits or intermediaries to guide the research development and partnership process and to find ways of managing collaborative ventures effectively.

Build skills and capacity: Organisations need to be flexible and willing to engage and support the process, recognise the costs of commitment (investing in partnerships, etc.). Effective teams should be built through funding the development of skills and capacities. There also needs to be clarity on the techniques to build collaborative partnerships and to specify how partnerships will be established and sustained.

Recognise that collaboration is only worth it if it adds value: This involves addressing concerns about risk and

possible consequences of research for end users' (esp. policy makers who must make practical decisions based on the research); being clear about likely benefits and shared outcomes; recognising that innovation comes from the synthesis rather than the individual components; and placing less emphasis on "World Class" research, focusing instead on 'influential' research. It also involves identifying the value added by each partner (what will each partner get from the collaboration, what greater good will collaboration lead to, is collaborating an incentive or disincentive for partners)? Focusing on the added value of collaboration requires asking 'What can you and your partners deliver that you cannot do on your own'? This in turn means defining collaboration as more than attending meetings and recognising that everyone has to get something out of the collaboration (this is not just doing your own thing under the guise of collaboration).

Manage collaborative ventures effectively: Address questions about intellectual property rights at the start of the process, support spaces for adoptive learning and determine the principles for payment (after demonstrating results, after building collaboration?).

Case Study: The Changing Water Cycle possibilities for Partnerships

www.nerc.ac.uk/research/themes

The Natural Environment Research Council's science priorities are defined within its strategy Next Generation Science for Planet Earth. Within this there are seven science themes and a theme leader has been appointed for each theme.

Louise Heathwaite is the theme leader for Sustainable Use of Natural Resources. She explained the Theme Leaders' role in advising the NERC Science and Innovation Strategy Board (SISB) on science challenges and opportunities, engaging with the wider community and stakeholders to identify strategic science actions.

NERC supports new science both in 'Responsive Mode' where the science is assessed solely on the basis of science quality, and 'Research Programmes' where the science areas to be supported are based on strategic priorities. The theme leaders are responsible for the latter. They prioritise potential actions on the basis of fit to strategy and scientific 'opportunity' (in terms of competitive advantage, timeliness, partnerships, cost-effectiveness etc.). Examples of cross theme actions are Ecosystems Services and Poverty Alleviation (ESPA) and the forthcoming Changing Water Cycle programme

The Changing Water Cycle cuts across three science themes: Climate System, Sustainable Use of Natural Resources and Natural Hazards. The programme will support interdisciplinary science with the goal of building and sustaining capacity for a systems approach to the changing water cycle across various scales. High level science goals will aim to develop integrated, quantitative understandings of the changes taking place in the global water cycle and

improving predictions. In addition, the programme has a strong users focus and international agenda, so research will be focussed both on UK/Europe and also Africa and/or South Asia. This is seen by NERC as a flagship contribution to LWEC; seeking to respond to and minimise risks to human and natural systems caused by changes to the water cycle.

www.nerc.ac.uk/research/themes/tap/tap-large.asp

Ned Garnett, the Changing Water Cycle Programme Manager from NERC (nedg@nerc.ac.uk), presented the case study on the Changing Water Cycle. This has a £10 million commitment from NERC over the next 4 years and seeks to build strong national and international partnerships. However partnerships like this also present a number of challenges and risks. Ned presented his potential 'fears' such as:

The Changing Water Cycle will have the following high-level science goals, which will be addressed across all three NERC science themes:

- Develop an integrated, quantitative understanding of the changes taking place in the global water cycle
- Improve predictions for the next few decades of regional precipitation, evapotranspiration, soil moisture, hydrological storage and fluxes.
- Understand how local-regional scale hydrological and biogeochemical processes are responding and will respond to changing climate and land use.
- Understand the consequences of the changing water cycle for water-related natural hazards e.g. floods and droughts

- NERC's aims and objectives become compromised
- everything takes longer than planned
- there is less control and it becomes more difficult to make decisions
- partners' experience changing priorities during the programme
- organisations find it difficult to partner because their funding models run on different time scales
- the programme simply becomes too big and unmanageable

It is easier therefore for the programme manager to 'keep the blinkers on'. However the potential benefits of partnership are great and building such partnerships is a key objective of NERC's new strategy which stresses that:

“The scientific community, partners and stakeholders need to work in a fully integrated yet flexible way to make multidisciplinary research successful.”

The Changing Water Cycle will promote interdisciplinary research across the natural sciences, acknowledging the interrelated nature of climate, water management, land, soils, etc. It also recognises the importance of knowledge exchange.

There are several possible partnership models (which are not mutually exclusive)

A: Knowledge Exchange with users of outputs

B: Alignment of the Changing Water Cycle with other related programmes in partner organisations to developing cross-linkages

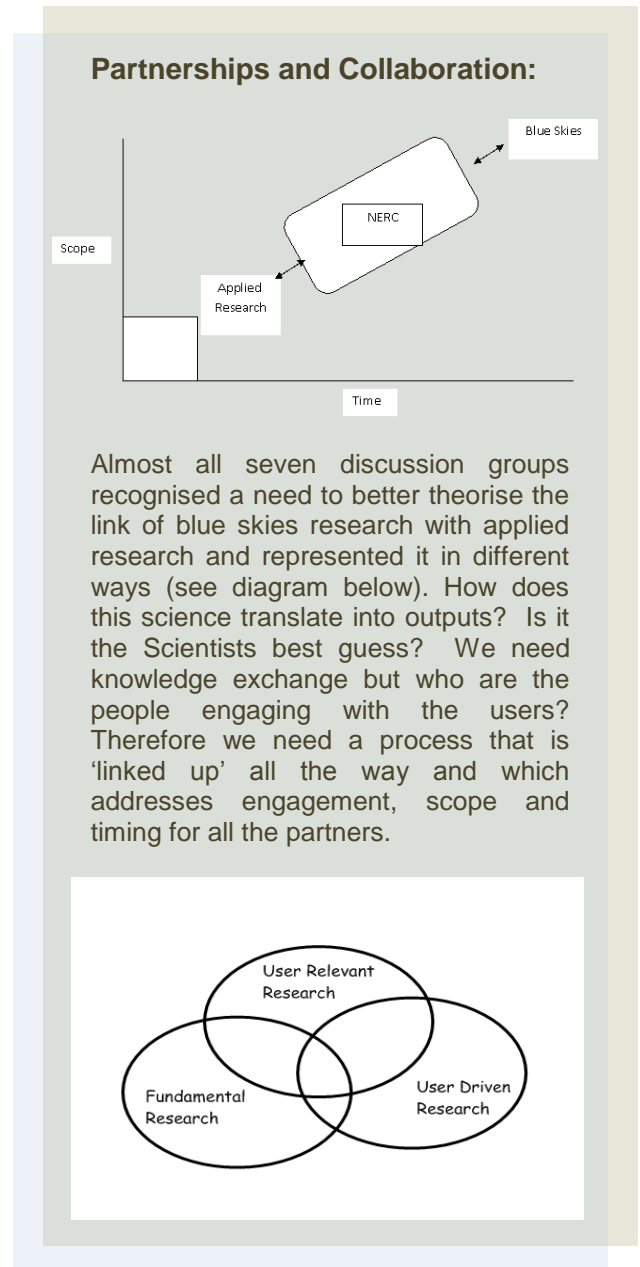
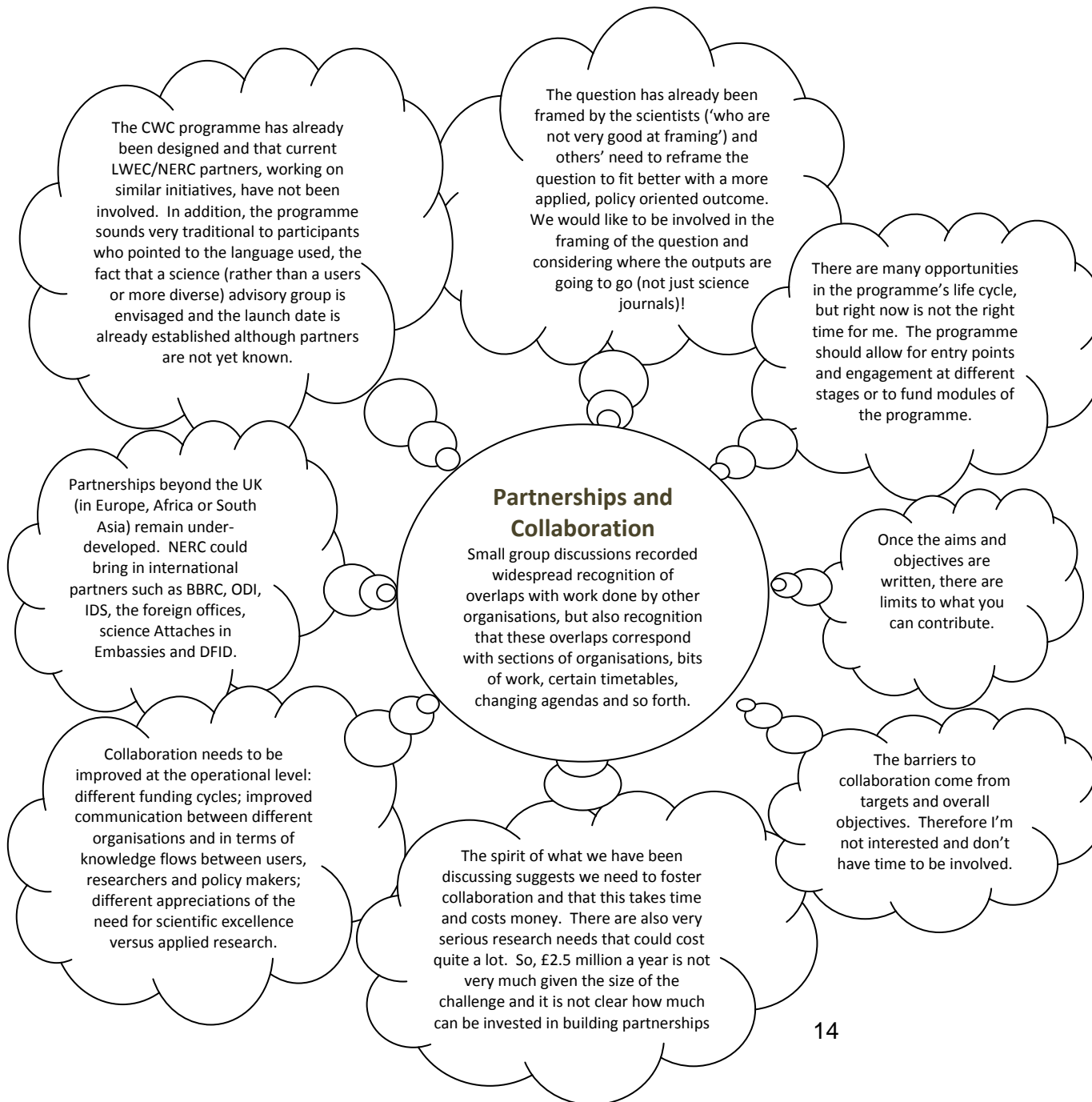
C: The co-funding of research

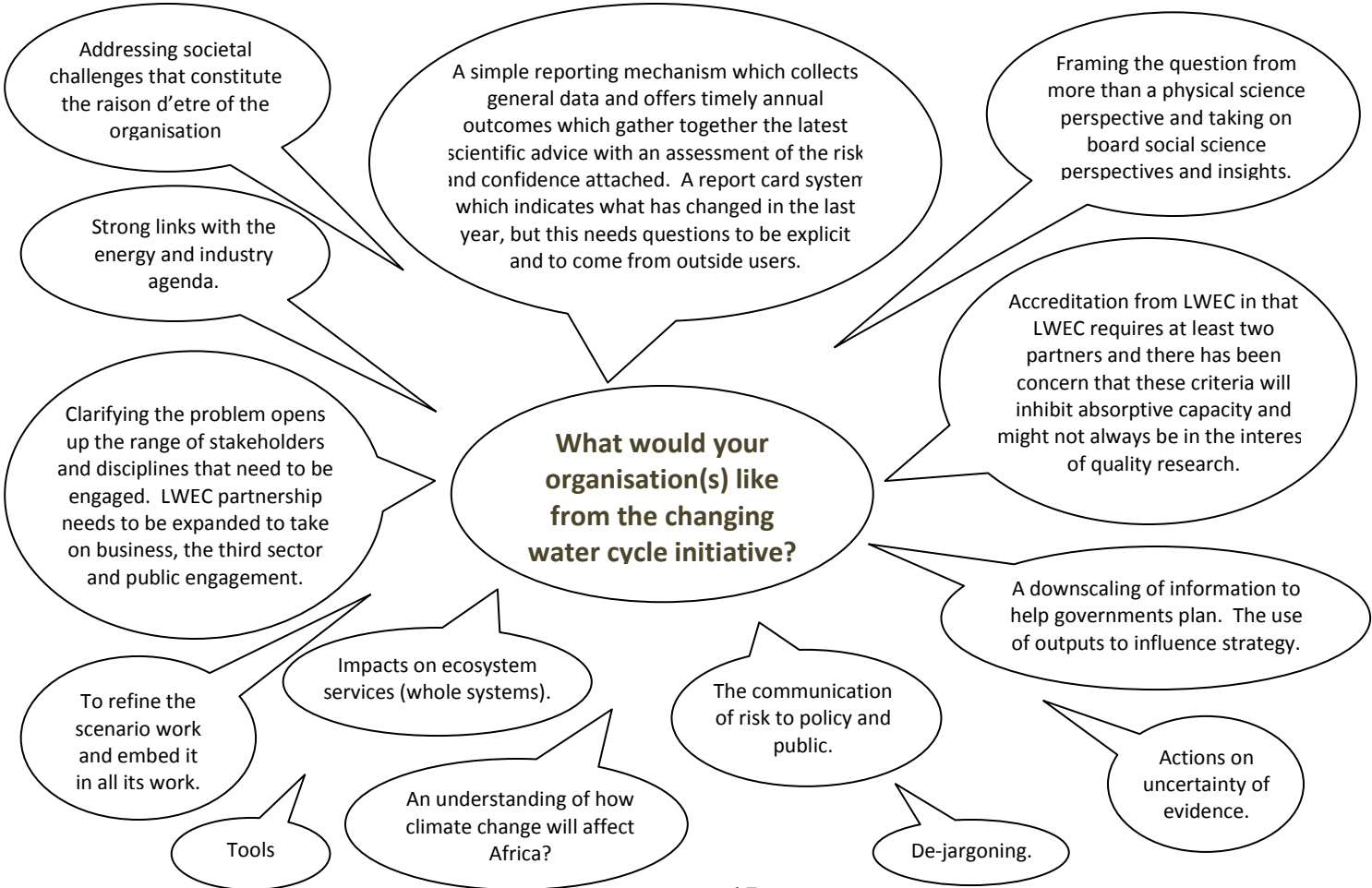
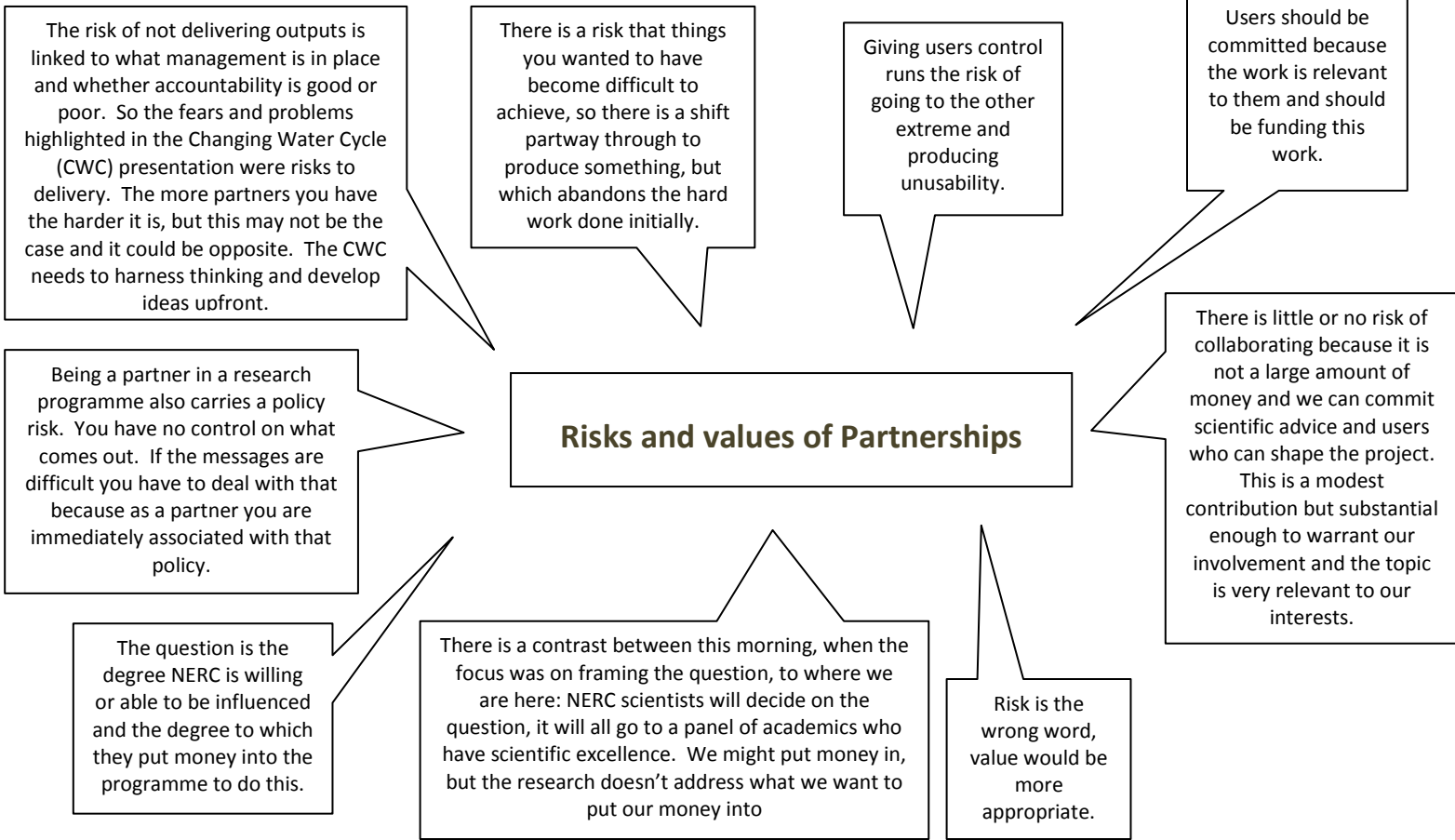
The next steps will involve approaching potential partners, an official Changing Water Cycle Launch on 5 February 2009 and the creation of a Science Advisory Group to further develop the science priorities for the programme.

The Changing Water Cycle: possibilities for partnerships

Figures 2 and 3 summarises the working group discussions which explored how effective science–policy partnerships could be developed around the changing water cycle theme. Participants explored the risks and value of partnerships and their desired outcomes. The session concluded with an initial assessment (Figure 4) of organisational potential for collaboration within the Changing Water Cycle theme

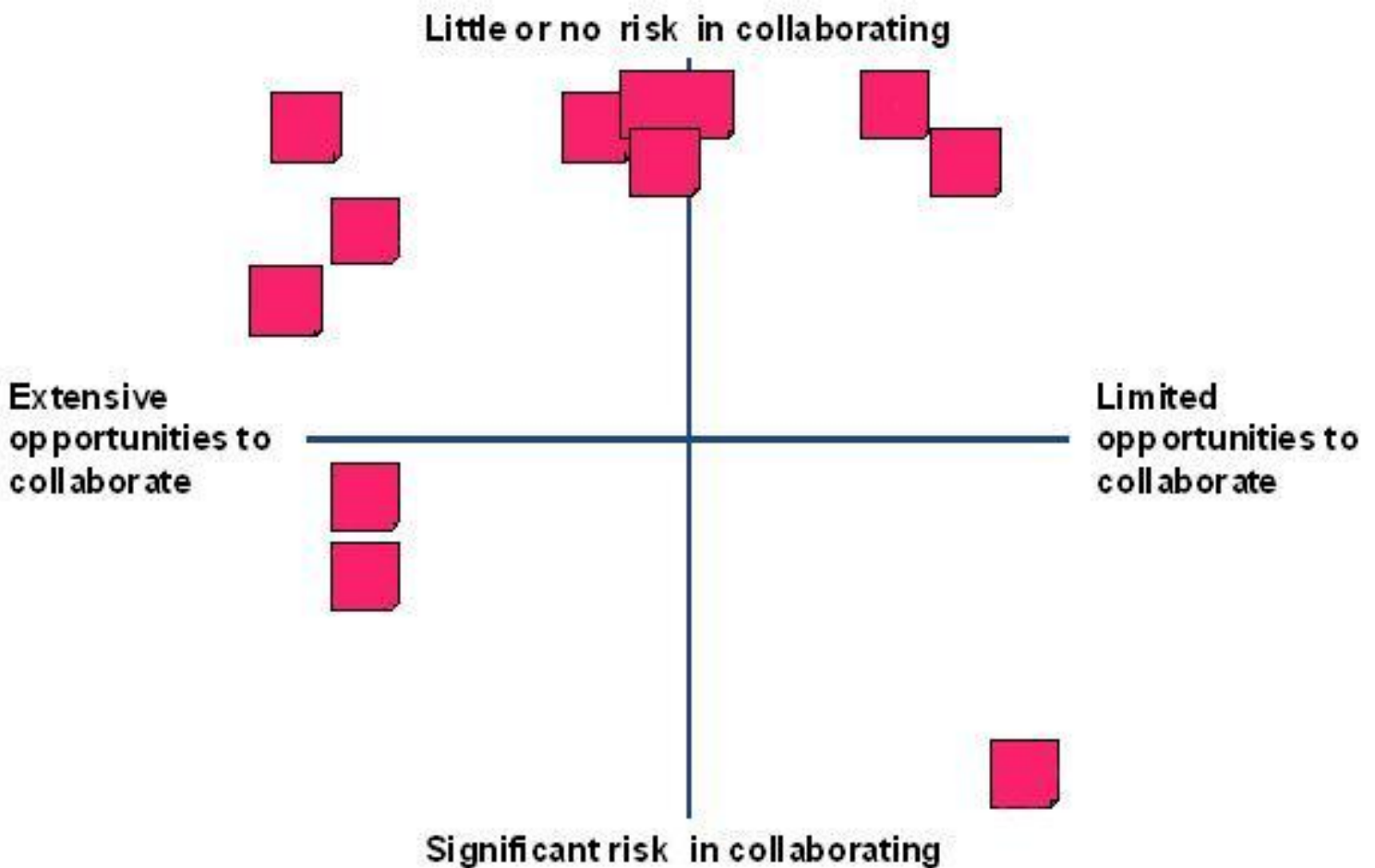
Figures 2 and 3 Workshop participants' insights into how The Changing Water Cycle might develop effective collaborative science-policy partnerships





Collaboration, as examined in this workshop, carries with it both benefits and risks. Figure 4 explores the workshop participants' (as either individuals or through organisational affiliation) possibilities for collaboration on the Changing Water Cycle programme, and provides their indication of the associated risks. The diagram illustrates that different partners might experience similar opportunities, but with some exposing themselves to far greater risks. This reinforces the recognition that partnerships may need to be flexible, with different entry and exit points, and with different forms of collaboration providing different kinds of value, in order to maximise this challenging endeavour.

Figure 4 Initial potential for collaboration in the Changing Water Cycle programme



Plenary session

- If we are going to be successful at collaboration, the 'lead' collaborator needs to design entry points throughout the process that allow other collaborators (or potential collaborators) to join in ...and, sometimes, to leave and come back again later.
- Different organisations see different value in – and seek different types of value from – collaboration.
- For many organisations, the risk in a collaborative project is that the collaboration doesn't work – not (so much) that the science doesn't deliver.

- To what degree is NERC (or any collaborator) willing or able to be influenced by partners? When collaborators put money down, to what extent does (should) that money secure influence?
- We may need to revise the peer review process. Peer review can damage collaboration because different scientists pick holes in thinking to such an extent that the collaborative venture is irreparably weakened.

Observations from the workshop:

John Holmes from Oxford University: pointed out that collaboration and partnerships are an important shift not just for the scientific policy community. Firstly,

“What we’ve seen today is that it takes a lot of time, effort and resources to get collaboration to work and this is manifested in the trust and understanding needed. This creates real value over time,”

but how does this fit with a funding model which has a two or three year life cycle. Does it mean that we are creating new relationships and then dissolving them just when we need them? Secondly, collaboration takes a lot of effort and we need to organise to make this possible. The framework elements of research programmes need to shift. We need to examine what determines quality, how do we assess incentives for researchers and policy people to engage with each other? What new skills, in addition to networking and facilitation, are important and how do we recognise that not everyone can do this? Thirdly, new people are entering into this arena – there are interpreters, knowledge brokers and end-users. Engagement is important but everyone is busy. Can these new people help provide leverage?

John Thompson from IDS: Firstly, I would echo the emphasis on trust-building. There

is a general receptiveness to partnerships, but also severe risks and tradeoffs. It may not work out, but there is a good chance that it will and it may be worth the effort. At IDS we have a lot of experience on this.

Secondly, the process need not be planned, but it is necessary to have clarity of focus and translators can help to speak to the different constituencies, understand and interpret the different languages. Ultimately though it is crucial to have clarity on why we are here and where we are going.

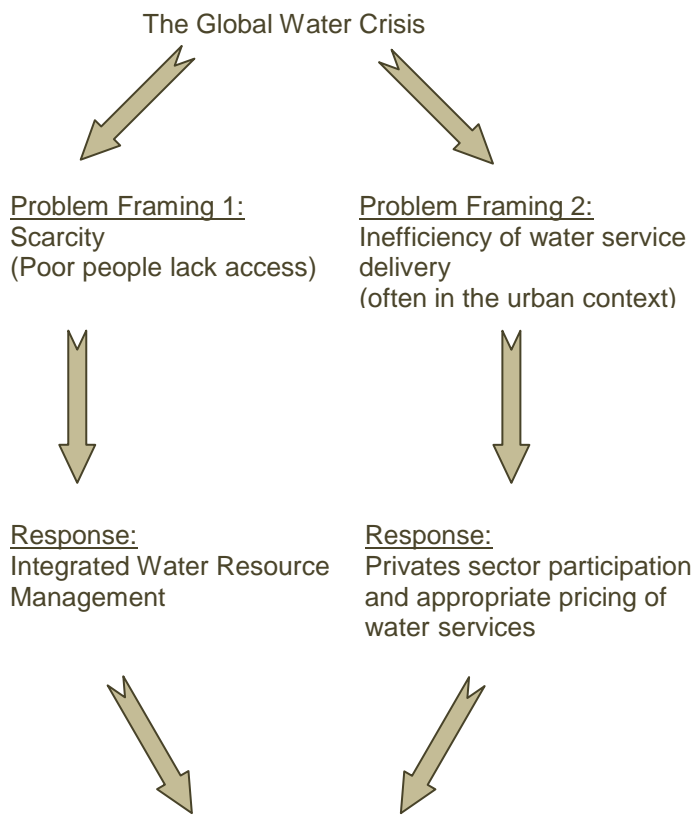
Thirdly early engagement with other stakeholders is vital. This is not only the usual suspects, and not exclusively stakeholders, but the business community, civil society, NGOs. This is particularly important in the water and environment contexts. Not just here in the UK, but throughout the world. How do we do this, involving all these people at the beginning?

One way is through the framing of the questions. We’ve heard today that science is bad at posing the questions, but good at answering them. As shown in Figure 5.

“Initial framings matter enormously in the debate in the water sector. Whether the global water crisis is framed as a problem of scarcity or a problem of inefficiency influences the policy response that is taken.”

Ultimately however, in a development context, one might want to ask whether this improves access and control for the poor. How does framing shift the focus from politics and distributional aspects to questions of efficiency?

Figure 5 Framing the water science policy agenda



Both of these framings and responses are right, but from a development perspective, neither will ensure poor people gain better access to water and sanitation, since the principal reasons they do not have adequate access lie in entitlement failures, not water resource scarcity or inefficient service delivery. This is fundamentally an issue of politics, local governance and distribution and, therefore, requires a different problem framing and response.

The international promotion of Integrated Water Resource Management (IWRM) has been linked to a misleading narrative of a 'global water crisis'. The basic message of this narrative or 'framing' is that the world is running out of water, that the consequences of this growing scarcity are increasingly evident, and that only by giving water resource conservation and management higher priority can this emerging crisis be averted. In this crisis narrative, current water problems are just a foreshadowing of the problems to come if the appropriate messages are not taken to heart. Advocates of IWRM assert that it will increase the amount of water available to all sectors – domestic, agriculture, industry, environment – and help increase access for the 1.1 billion people who did not have access to an improved source of drinking water.

The international promotion of Private Sector Participation (PSP) has also been linked to an equally misleading narrative of 'public sector water crisis'. This has led to inflated claims for the private sector and large multinational water companies in particular. The basic message is that public utilities are under-funded, inefficient, overstaffed, unresponsive to their customers, easily manipulated by politicians to serve short-term political ends and, in low-income settings, are often providing subsidised services to the relatively well off while the poorest go without. PSP, its proponents claim, would bring finance and efficiency, and attend to the demands of customers rather than politicians.

Concluding Thoughts From Steve Killeen

It is easy to talk about collaboration, but very hard to do and we need to think about why. People do it in order to be seen as part of a club or a network, or to block opposition to your work and research. Or perhaps because it is similar to a core objective in your organisation and it builds on a good relationship which works.

Collaboration is a huge challenge to LWEC. In terms of the tension between excellent and relevant science, we have to be prepared to trade off.

“But the more explicit our discussion of risk, the more collaboration and partnerships might work. The more superficially we do this – just because we are encouraged to – the less it is likely to work.”

ERFF and UKCDS will continue to work with their members and stakeholders to support activities which lead to successful collaborations. They will seek to identify solutions to the barriers that have been discussed at this workshop. Both organisations welcome comment and dialogue on this topic.