

**Societal and Economic Impact Evaluation
Relu
(REFERENCE PS110020)
PART TWO**

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RANGE OF TYPES OF IMPACTS (p.2-3)
PROJECT CASE STUDIES (p.4-15)
PROGRAMME CASE STUDY (p.16-21)
ANALYSIS, PROGRAMME-LEVEL COMMUNICATIONS (p.22-28)
VIGNETTE: MULTI-FACETED LEADERSHIP (p.29-13)
KEY OBSTACLES (p.32-33)
LESSONS LEARNED BY PARTICIPANTS: ENHANCING IMPACTS (p.34-40)
REFLECTIONS ON EVALUATION METHODOLOGY (p. 41-63)

RANGE OF TYPES OF IMPACTS

Unusually, we have actually been able to elicit and compare researcher and stakeholder views as to types of impacts generated, through not only interviews but also quantifiable survey responses. For each of the five impact types (Conceptual, Instrumental, Capacity-building, Enduring Connectivity and Attitude/Culture Change), researchers and project-level stakeholders were asked about the role of their project, and researchers and programme-level stakeholders were asked about the role of the overall programme. In short, at both the Programme and the Project level, Researchers and Stakeholders saw a range of impacts as having been generated. The conclusion that Relu led to multiple, different types of impacts is robust.

For instance, as noted in the Report, even the famously elusive Instrumental Impacts, seen by the lowest percentages, were still seen by a third (34.4%) of Project Stakeholder survey respondents and nearly half (48.6%) of Researchers as having been generated by *projects* and by over half (54.6%) of Programme Stakeholders and 83.3% of Researchers as having been generated by the *Programme*. Conceptual Impacts were seen by the highest percentages: as arising from *projects* by 70.6% of Project Stakeholders and 97.3% of Researchers, and as arising from the *Programme* by 95.3% of Programme Stakeholders and 88.9% of Researchers. The four types of impacts other than Instrumental Impacts were seen as arising from *projects* by high percentages of Researchers (75.7% to 97.3%) and by lower percentages, albeit still more than half (53.7% to 70.6%) of Project Stakeholders and from the *Programme* by high percentages of Researchers (88.9% to 91.6%) and also quite high percentages of Programme Stakeholders (70% - for Enduring Connectivity so perhaps “low” due to lack of knowledge- ranging to 95.4%).

Figure: Types of Project and Programme Impacts, as Seen from Different Perspectives (compiled across two questions, three surveys, Question 6 Programme Stakeholders, Q6 Project stakeholders, Q11 Researchers)

The overall PROGRAMME itself led to Instrumental impacts. answered by Programme stakeholders and Researchers)				
The PROJECT led to <u>Instrumental</u> impacts (e.g. actual changes in policy or practice). (Answered by Project Stakeholders and Researchers)				
Answer Options	Programme stakeholders	Researchers Re Programme	Project stakeholders	Researchers-re project
Strongly Agree	9.1%	25.0%	4.5%	21.6%
Agree	45.5%	58.3%	29.9%	27.0%
Neutral	40.9%	16.7%	56.7%	35.1%
Disagree	4.5%	0.0%	7.5%	13.5%
Strongly Disagree	0.0%	0.0%	1.5%	2.7%
Responses	22	36	67	37

The overall PROGRAMME itself led to Capacity-building impacts. answered by Programme stakeholders and Researchers)				
The PROJECT led to <u>Capacity-building</u> impacts (e.g. training of students or professionals). (Answered by Project Stakeholders and Researchers)				
Answer Options	Programme stakeholders	Researchers re Programme	Project stakeholders	Researchers Re project
Strongly Agree	27.3%	63.9%	6.1%	32.4%
Agree	63.6%	25.0%	48.5%	48.6%
Neutral	9.1%	11.1%	37.9%	16.2%
Disagree	0.0%	0.0%	7.6%	2.7%
Strongly Disagree	0,0%	0.0%	0.0%	0.0%

Responses	22	36	70	37
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The overall PROGRAMME itself led to Conceptual impacts (answered by Programme stakeholders and Researchers)
The PROJECT led to Conceptual impacts (e.g. broad understanding/awareness raising). (Answered by Project Stakeholders and Researchers)

Answer Options	Programme stakeholders	Researchers re Programme	Project stakeholders	Researchers Re project
Strongly Agree	52.4%	47.2%	13.2%	37.8%
Agree	42.9%	41.7%	57.4%	59.5%
Neutral	4.8%	11.1%	27.9%	0.0%
Disagree	0.0%	0.0%	0.0%	2.7%
Strongly Disagree	0.0%	0.0%	1.5%	0.0%
Responses	22	36	70	37

The overall PROGRAMME itself led to Attitudinal or Cultural impacts. answered by Programme stakeholders and Researchers)
The PROJECT led to Attitudinal or Cultural impacts (e.g. increased willingness in general to engage in new collaborations). (Answered by Project Stakeholders and Researchers)

Answer Options	Programme stakeholders	Researchers re Programme	Project stakeholders	Researchers Re project
Strongly Agree	40.9%	47.2%	9.0%	24.3%
Agree	54.5%	44.4%	50.7%	51.4%
Neutral	4.5%	8.3%	37.3%	24.3%
Disagree	0.0%	0.0%	3.0%	0.0%
Strongly Disagree	0.0%	0.0%	0.0%	0.0%
Responses	22	36	70	37

The overall PROGRAMME itself led to Enduring Connectivity impacts. answered by Programme stakeholders and Researchers)
The PROJECT led to Enduring Connectivity impacts (e.g. follow-on interactions). (Answered by Project Stakeholders and Researchers)

Answer Options	Programme stakeholders	Researchers re Programme	Project stakeholders	Researchers Re Project
Strongly Agree	20.0%	55.6%	11.9%	43.2%
Agree	50.0%	33.3%	41.8%	40.5%
Neutral	30.0%	11.1%	43.3%	13.5%
Disagree	0.0%	0.0%	1.5%	2.7%
Strongly Disagree	0.0%	0.0%	1.5%	0.0%
Responses	22	36	70	37

PROJECT CASE STUDIES

Project-level Case Study: comparative impacts of food sourcing

Project

Comparative assessment of environmental, community and nutritional impacts of consuming fruit and vegetables produced locally and overseas.

Project investigator

Professor Gareth Edwards-Jones, School of Agriculture and Forest Sciences, University of Wales, Bangor.

Research team (Bangor, Surrey and Makerere (Uganda) universities:

Llorenç Mila i Canals, Dr Anna Croft, Paul Cross, Graham Day, Dr Rhiannon Tudor Edwards, Dr Barry Hounsome, Ian Harris, Dr Almudina Hospido, Dr Natalia Ivashikina, Dr David Jones, Dr Georgia Koerber, Dr Philip Nyeko, Dr Claire Paisley, Dr Katharina Plassmann, Prof Deri Tomos, Dr Monica Truninger, Dr Andrew Wilson, Elizabeth York.

Grant amount, phase, dates

RES-224-25-0044, £869,067.13, Phase 1 of RELU, 01/12/2004 - 30/03/2008.

Research summary

The project assessed the pros and cons of 'local food', comparing case studies of cabbage and broccoli, peas and beans and lettuce and leafy salad for the UK market grown in different parts of the UK, Spain, Uganda and Kenya. It generated new evidence on greenhouse gas emissions, taking into account soil emissions that are usually left out of life cycle assessments. The team also evaluated the health of farm workers, the nutritional quality of food, local environmental impacts and cultural values. Methods included field work on farms, interviews with farmers about their businesses, focus groups and one to one interviews with local people in rural areas and a large scale survey of urban consumers.¹

Key findings

The project generated detailed findings on environmental impacts, consumers' perceptions of local food, factors influencing shoppers' choice of vegetables, the impact on health of local versus imported food, and the health and welfare of farm workers.² Some key points:

- For some UK crops, greenhouse gases from greenhouses were greater than emissions from transporting crops by truck from overseas.
- Carbon footprinting of produce is very complicated, but using a simplistic approach could be inaccurate and have unfair consequences for developing countries which export food; in order to provide useful information it must include an analysis of the entire lifecycle of the product.
- Consumers were aware of the complexity and ethical debate around local food, and while they were generally supportive of local food, their shopping habits were influenced by a range of pragmatic constraints that affected their purchasing behaviour.

Users and stakeholders

Consumers, farmers, agricultural workers, food growers and manufacturers, food marketing companies, supermarkets and other food retailers, government departments (Defra, WAG), agencies (Natural England, etc) and regulators (Food Standards Agency, etc), media.

Key types of impact

Instrumental impact (actual changes in policy or practice).

Conceptual impact (broad new understanding/awareness raising).

Highlighted non-academic impact: instrumental

¹ Anne Liddon, Land to mouth. Exploring the links between sustainable land use and the food we eat, RELU Briefing Paper No 8, March 2008, p3.

² Edwards-Jones, Gareth et al (2008). Comparative Assessment of Environmental, Community & Nutritional Impacts of Consuming Fruit & Vegetables Produced Locally: Full Research Report, ESRC End of Award Report, RES-224-25-0044. Swindon: ESRC, pp 32, 42, 44, 48, 50.

According to the project team, “The research made a significant contribution to debates on carbon footprinting at a time when this issue was coming to prominence, resulting in strong engagement and application of ideas in the commercial sector.”³

“The project put to bed many comments about local food and food miles and created clarity about the whole lifecycle.” [David Gregory, formerly Technical Director, Marks & Spencer Foods]

Gregory added: “At the time [2004-5], Defra, parliamentarians and the press were backing local over imported food because of its lower food miles. What this particular research did was to provide scientific evidence that showed the issue was broader, and that the whole lifecycle of food had to be taken into account. It showed that a holistic approach was essential in assessing all the impacts: on the environment, health, employment and business. It showed that the press and other stakeholders were being too simplistic in their backing of local foods.

We used the research to inform discussions with our supply base too, because after two seasons of water shortages in Spain, we were considering how far we balance supply from other sources such as Africa. To improve our understanding we employed our own researcher, an outstanding EngD student at Surrey University, Sarah Sim, who investigated how to connect life cycle analysis and social issues and thus how we could strengthen the evidence base for our sourcing decisions and sustainability policy...

...The RELU project was thus a useful element in a range of information we used to develop a more thorough weighing up of our options.” [Gregory]

An additional instrumental impact on the private sector was the spinout of a technical services company for the fresh produce industry in 2008. Bangor University and Gs Marketing formed a joint venture company, Footprints4food, which provides environmental footprint assessments to companies.⁴

Other non-academic impacts

Conceptual

This research was well timed to challenge then-fashionable assumptions about food supply and environmental impacts. It generated an appreciation of the more complex “big picture” within which food sourcing has to be considered.

“The research helped to explore the complexity of the food system. It highlighted many of the multiple drivers and impacts in the supply of food, including the trade-offs and synergies between environmental, economic and social factors.” [James Petts, Natural England]

“The project put a stop to policy makers’ uncritical, intuitive faith in localism for food, and showed it was an ill-informed philosophy.” [Paul Cross, project research team]

Capacity building

According to Gareth Edwards-Jones, the project developed the interdisciplinary capacity of five post-doctoral researchers, two PhD students and ten investigators. Participating in RELU enhanced their understanding of other disciplines and increased their potential to engage in further interdisciplinary projects in future. Two of the researchers gained insight into related industry through work shadowing placements, and all of the researchers attended RELU/Research Council training courses and conferences. Through working with Universities in Uganda and Kenya the project increased the experiences of academics and students in those universities. One academic from Makerere University spent three months at Bangor in 2008/09.⁵

Attitude change

The usefulness of this kind of research to the private sector was also reflected in the decision of the supermarket company Waitrose to endow a Chair of Sustainable Agriculture at Aberystwyth University’s Institute of Biological, Environmental and Rural Sciences as a personal chair for Gareth Edwards-Jones, which he was to hold from 2010 alongside his

³ Project impact statement.

⁴ <http://www.footprints4food.co.uk/>

⁵ End of award report, pp 52-3.

position as Professor of Agriculture and Land-Use Studies in Bangor. (However he became ill and died in 2011.)

Routes toward impacts

The project team engaged in several ways with multiple stakeholders to increase the knowledge and capacity of horticultural workers, business owners and consultants. It discussed the research results with the technical directors of major retailers including Tesco, Sainsbury's, Safeway, Co-op, Morrisons and Waitrose. It presented the research at internal meetings at Unilever and Syngenta. It produced a paper for the World Bank with recommendations on how to make emerging carbon labelling schemes fair for developing countries.⁶

Integrated research that draws on different areas of expertise and evidence can have a particularly powerful effect on stakeholders' thinking and ultimately on public opinion. "Research that is interdisciplinary and holistic can definitely influence opinion formers such as the media and prominent interest groups." [Gregory]

Key knowledge exchange lesson

For academic researchers: Anticipate and prepare for changes in media and public attitudes and interests, and hence in policy makers' priorities.

Priorities constantly shift in the policy arena, which may affect how far and for how long a particular academic research initiative can have impact. For example, carbon footprinting was a central and crucial element in this project. The project showed that carbon footprinting using life cycle analysis can generate quantitative evidence that allows sources of produce to be compared; and it is easier to use than more ephemeral facets of worth. However, water footprinting could conceivably become a more sought-after comparator in future.

Researchers generally should acknowledge the shifting context.

For Research Councils/Funders: Some positive research impacts on policy makers can carry risks.

According to James Petts, "...because the project's methodology concentrated on a set of measurable indicators via Life Cycle Analysis, it only provided part of the environmental picture. One needs to consider other factors, such as biodiversity, landscape character, and public access to farms. LCA does not generally include indicators for these aspects, as they are harder to measure. With a lot of potential for confusion amongst consumers about the 'right thing to do', there is a need to keep messages simple for the public. Similarly, there is a risk that the complexity and ambiguity in the food system could discourage researchers and policy makers from advocating greater connection by the public in their local food and farming systems."

⁶ Project impact statement.

Project-level Case Study: Water Catchment Management

Project

Developing a Catchment Management Template for the Protection of Water Resources: Exploiting Experience from the UK, Eastern USA and Nearby Europe

Project investigator

Mr Laurence Smith, Centre for Development, Environment and Policy, SOAS, University of London

Research team (SOAS; University of East Anglia; Cornell University; University of Kent)

Dr Kevin Hiscock; Professor Andrew Jordan; Dr David Benson; Professor Keith Porter; Ms Mary Jane Porter; Dr Alastair Bailey; Dr Tobias Krueger; Mr Alex Inman; Dr Marco Civitareale.

Grant amount, phase, dates

RES-229-25-0009-A (and RES 229-31-0008), £ 724,153.26, Phase 1 of RELU, 08/06/2007 - 31/12/2010

Research summary

Diffuse water pollution is difficult to assess and control. Pollution control must be integrated with management of land, flood risk, water abstraction and the economic and social goals of communities. Researchers looked at catchment management and governance regimes in the UK, Europe, USA and Australia. They tested the lessons learned through catchment assessment and planning in two case studies in England and developed an interdisciplinary, participatory approach and a new modelling tool.⁷

Key findings

The project generated a 'template' to guide integrated catchment governance through:

1. The use of science and communications tools to guide policy, decision-making and management measures;
2. Collaborative partnerships and stakeholder participation that direct and enhance decision making; and
3. Decision-making and implementation at the level which is most effective and accepted within catchments.⁸

Tools developed included a report card now adapted by the Environment Agency and an innovative modelling tool.

Users and stakeholders

Farmers, water companies, Rivers Trusts, Defra, Environment Agency, Natural England, media, academia, international partners and practitioners in water protection and watershed/catchment management.

Key types of impact

Instrumental impact

Conceptual impact

Capacity building impact.

Highlighted non-academic impact: instrumental

1) Input into Policy Approaches

According to the project team, "The project's outputs, including the 'template', Report Card and modelling approach have become established parts of the evidence informing national water and environmental policy."⁹ Exploration of these Instrumental Impacts on policy/governmental approaches illustrates the way in which Conceptual Impacts can help lead toward these more tangible changes, and indeed how Enduring Connectivity can help to reinforce them.

⁷ Anne Liddon, Changing Landscapes, some achievements of the Rural Economy and Land Use Programme, Briefing Series 15, November 2011, p13

⁸ Laurence Smith, Catchment Management for the protection of Water Resources: A 'Template', November 2010 p2

⁹ Laurence Smith, Relu end of project report, p 9

For example, findings from the project have fed into policy makers at a variety of events. National [final project] workshops were attended by Defra's water policy team and senior Environment Agency staff. As a result of this and various other interactions, Laurence Smith was invited by Defra's Claire McCamphill to make a presentation of the project's key findings at Defra's national Water stakeholder forum on March 22nd 2011. Richard Benyon, the Parliamentary undersecretary for Natural Environment and Fisheries announced the adoption of a 'catchment management approach' at the event. According to McCamphill, the five presenters selected to speak that day "all introduced important constituents of catchment management" because it is essential "for ministers to see and hear how research (for instance with stakeholders) can be used, and how tools such as report cards have worked in other places. This can help them have confidence that what they think they want to see happen is achievable and is backed up by social and physical science".

In August 2011 Defra and the EA launched their vision for the 'Catchment Management Approach' and 25 pilot schemes, to be evaluated by the end of 2012. Ten pilots will be led by the EA but other organisations, including environmental charities, local government and water companies, were invited to bid as 'host organisations' and to lead the coordination of a further fifteen. This is a significant policy initiative and a bold trial of a more decentralised and adaptive approach.

According to Claire McCamphill, Laurence Smith and his team played a valuable role in the development of the Catchment Management Approach. She describes the build up to the pilots as a "snowball effect of a number of initiatives such as a judicial review (JR) by some NGOs, an alternative approach being articulated by the Rivers Trust on how to respond to the JR, research including Relu's Catchment Management work and a willingness by Defra to listen and embrace change, all coming together at the same time. There was a synergy between what all these actors were pushing for – because of this consensus on what needed to happen it was easier to commit to a change in direction."

More specifically, Claire says: "Laurence was able to host a workshop involving a roundtable discussion that helped lead to the Catchment Management pilots, at which certain options were ruled in, and others ruled out." She adds "there's a 20% chance that the catchment pilots wouldn't exist, or wouldn't be formulated as they are, if Relu hadn't been involved." Embedding the project's findings in stakeholders' approaches can be seen in 'snapshot' form in the use of project slides and information by Defra and Environment Agency team members at, for example the CWEM-CMS conference Catchment Delivery: towards more effective Environmental and Societal Benefits held on November 23rd 2011:

- The Environment Agency Catchment Pilot programme (Damian Crilly & David Baxter, Environment Agency)
- What do we understand the key points / principles of the Government's catchment approach to include? Key lessons of catchment management from the work of the last 6 years (Bob Harris, Defra & Sheffield University).

Additionally, project material and slides have been used by other bodies such as the Rivers Trust.

Indeed, as an example of Enduring Connectivity, Laurence Smith was invited to participate in Defra's Strategic Evidence and Partnership Project that reported and was presented on 28th November 2011.' The SEPP project also used Tobias Krueger's model and was carried out by Alex Inman – both of whom Claire McCamphill first became engaged with through the Relu work. The team was also invited to join the NERC/CEH, Water Security Knowledge Exchange Programme, Upstream Methods Workshop – the Research Agenda, 30th November 2011.

Additionally, Claire McCamphill invited Laurence Smith and Alex Inman to become part of "an informal advisory board for the Catchment Management Pilot Projects, to ensure that real-time learning is absorbed and implemented during the roll-out."

2) The Report Card

A related instrumental impact from this project is the development of an Ecosystem Health Report card as a simple model and communications tool to aid data communication and

catchment analysis with stakeholders. It is based on an approach by The Healthy Waterways Partnership¹⁰ in Australia, and involved innovative interdisciplinary data collection, analysis and knowledge transfer. Consisting of a data table and map-based graphic, it has been adopted by the Environment Agency to involve stakeholders in catchment management.

The Report Card can be used to:

- Provide an easy-to-understand snapshot of the health of a catchment's freshwater and estuarine/marine environments in relation to environmental targets and standards
- Raise awareness of change in the condition of waterways over time
- Build understanding of the effectiveness of improvements in land and water management
- Focus management efforts and resource allocation to protect vulnerable areas and environmental values identified by the community
- Demonstrate possible future scenarios¹¹.

3) Use of model by a water company

The water company South West Water was a key stakeholder in the Tamar catchment case study. It was able to provide crucial data on sewerage treatment works for the development of a participatory Extended Export Coefficient model for a range of pollutants such as phosphates and the estimated populations served by its sewage works and by private septic tanks, to compare with farmed land derived loadings.

The project's twin track approach to water catchment management, combining robust science with comprehensive stakeholder engagement, has had a significant impact on South West Water and is instrumental in contributing to the company's evolving approach to its business. Martin Ross, South West Water's Environmental Manager, explains: "Previously there was no real connection between us and land managers, and the project gave us a way of guiding some initial engagement work in a much more comprehensive way ... now the whole of the company from the Chief Executive down is aware of our complete dependency on the way third parties treat land and water. We have begun to build a new business that is more outward focused and we are moving away from relying on expensive water treatment upgrading to sort out water quality."

As the model develops, South West Water is using it through the Westcountry Rivers Trust to compare the cost of specific investments and their effect on water quality. Research team member Tobias Krueger explains: "there are examples where it may be more economically efficient to collaborate with a farmer and provide financial support, for example by paying for fencing to contain cattle, than to treat water polluted by slumping river banks and cattle roaming into the water."

The model is also being used for the Wensum Demonstration Test Catchment project by research team member Dr Kevin Hiscock.

Other non-academic impacts

Conceptual

1) Input into Policy Approaches

As described above, the project's Conceptual Impacts helped to develop Instrumental Impacts visible in policymaking steps.

2) Seeing the business value of stakeholder engagement

The Water Catchment Management project has helped South West Water to see the business value of well managed stakeholder engagement backed by sound science. The company understands that the technical options for managing water quality are more and more costly, and as Martin Ross, Environmental Manager at South West Water explains, "to create a sustainable water company, we must learn to work with other people who influence the quality of water."

¹⁰ <http://www.healthywaterways.org/Home.aspx>

¹¹ Laurence Smith, Relu end of project report p 37

The model developed by the project team encouraged a more productive form of engagement, and encouraged shared responsibility for solutions. Martin Ross elaborates: “In the past, conversations have been intermittent, individual and face to face. With the model up on a screen, all the stakeholders are able to work out jointly owned solutions to water quality. When you change inputs and watch pollutant load estimates go up and down and see water quality move left or right, it’s an active thing. We can all share in the design of improvements, rather than criticising each other. This is completely new and not seen before.”

3) Changing views of catchment areas

The project’s interactive model has also changed the ways that other stakeholders view their catchment areas. For example, in the words of a leading Thurne farmer: “After living and farming in the area for so many years this diagram has brought home to me for the first time the importance of the pumps in the Thurne catchment and that otherwise surface inflows are relatively insignificant. It does provide a good means to capture local understanding of the catchment.”¹²

4) Feeding into international policymaking

The project team was asked to make a submission, *Evidence relating to catchment management and means for protection of water resources at source*, to the House of Lords Inquiry into EU Freshwater Policy. The House of Lords report on EU water policy was published on 2nd May 2012¹³. It cites the team’s evidence and reproduces Relu’s text on the water catchment management ‘template’ in appendix 8.

Capacity building

Dr Tobias Krueger, one of the researchers on the project with responsibility for developing the model, has been awarded a NERC Knowledge Exchange Fellowship. He is developing further innovative applications of the model in partnership with the Broads Authority, the West Country Rivers Trust and Defra. With a background in environmental science, Tobias explains that being part of the Relu funded project gave him additional skills essential for gaining the KE Fellowship: “I learned a lot about the social science aspects of the work in terms of skills like facilitating workshops, observing workshops and integrating social processes.”

Routes toward impacts

The project is characterised by an active use of various engagement and communications channels both during research and after. Some of the key routes toward impacts are described here.

Well facilitated, participatory stakeholder meetings were an inherent part of the project. All parties were encouraged to contribute in a no-blame environment, and this process led to the key stakeholder-related instrumental and conceptual impacts described above. The model, which responds in real-time to changes in inputs, provided the focus of the discussion, encouraging a jointly owned solutions-based approach.

The project found that formal meetings were not always the best way to engage stakeholders. For instance, according to Tobias Krueger, a meeting held with farmers in a bar facilitated by local project team member Alex Inman generated productive inputs to the model, where a more formal setting had failed. Factors contributing to success were the time available for model scrutiny, the comfortable environment, and the open attitude of the researcher. The project team found that large plenary meetings and small focus groups were both important at different stages of the project, and so were one-to-one conversations in person, by telephone or by email.

The project’s workshops held in London in June 2008 and November 2010 were well attended by international partners and a wide range of national level stakeholders including policy makers, and have been an important starting point for influencing emerging policy, as

¹² Dr Tobias Krueger and Mr Alex Inman, A Participatory Modelling Framework to Support Catchment Management, Relu Award application, 2011

¹³ <http://www.publications.parliament.uk/pa/ld201012/ldselect/ldcom/296/296.pdf> p31, 35

described above. The project's communications material has also been used in presentations by Defra and the Environment Agency as well as NGOs such as the Rivers Trust.

Generally, the PI and other researchers have continued to make themselves available to stakeholders wishing to explore the project's findings further, by participating in various meetings and conversations. Claire McCamphill explains why their support is appreciated: "This is highly valued by Defra policy teams, who are not experts on catchment management and need to draw on the expertise of those in research."

A website has been established to disseminate project outputs, and to provide a continuing information resource for the network established by the project and other researchers in the field.¹⁴ It continues to stimulate enquiries.

It is worth noting that sometimes there is an element of luck as to whether a project achieves many impacts, or not. The range of impacts achieved by the Water Catchment Management project came down both to the usefulness of the research, and its timeliness. According to Claire McCamphill, the research "happened at the right time" when "Defra was listening."

Key knowledge exchange lessons

For academic researchers:

"Non-academic/private sector/NGO inputs at the start are valuable ... to target real problems and develop innovative ways to tackle them"

"People skills and personal relations are important – sometimes the best discussions take place in informal environments"

"Identify at an early stage the processes you want to influence and work out systematic pathways to make an impact. If you have a good idea, then don't be too shy about it and try to engage with key people as soon as possible"

For ESRC:

"Look for proposals that are strongly rooted in real-world problem resolution of current/imminent challenges. There should be strong evidence of expected value and support from non-academic participants. If the proposals can show the probability of commercial application, that should increase the chances of funding success"

"Seed corn funding for capacity building, before the main project on catchment management got underway, was a good mechanism. The £50k funding helped to scope out the project and build the team."

¹⁴ <http://www.watervgov.org/index.html>

Project-level Case Study: Warm Water Fish Production

Project

Warm water fish production as a niche production and market diversification strategy for arable farmers with implications for sustainability and public health.

Project investigator

Professor David Little, Institute of Aquaculture, University of Stirling

Research team University of Stirling:

Professor David Little, Professor James A Young, Professor Andrew Watterson, Dr Francis Murray, Kathleen Grady, William Leschen, Professor Jimmy Turnbull, Dr Kim Jauncey

Commercial partners

Stirling: Pisces Aquaculture Ltd

Devon: Freshwater Fish Farms Ltd

Grant amount, phase, dates

RES-224-25-0066, £307,463.25 Phase 1 of Relu, 03/01/2005 - 31/01/2008.

Research summary

This research explored the technical and marketing considerations surrounding the development of a small scale, warm water production system for growing the tropical fish tilapia as a diversification strategy for UK livestock and arable farmers. The system utilises on-farm resources and simplified technology that can be readily adopted as a sustainable and practical approach for farmers unfamiliar with fish production. The project explored niche market opportunities for tilapia, along with public health and sustainability implications, giving a better understanding of the challenges that face UK farmers.¹⁵

Key findings

- Pilot commercial-scale trials applying biofloc technology (BFT – based on internal bacterial waste-nutrient recycling for water quality management and dietary protein sparing) clearly demonstrated that this approach is not an economically feasible option for intensive tank-based production of tilapia in temperate climates.
- Modelling of a conventional recirculation aquaculture system (RAS) indicated that management of two operational costs; feed and energy, are key to profitability. This makes energy recycling options (from water and air) particularly important for the economic viability of small-scale producers
- In examining the marketing considerations surrounding the development of a small scale warm water production system for growing the tropical fish tilapia as a diversification strategy for UK livestock and arable farmers, the research found that farmers should target high value niche markets (e.g. premium quality fresh or live products for ethnic, green and health conscious consumers). Time has shown that most of the start-up producers have different backgrounds than arable or livestock farming.
- Data generated by the study have led to new insights in developing novel diversification strategies and provided a basis for developing environmental health and wider public health impact assessment tools.¹⁶

Users and stakeholders

Collaboration with private sector partners and engineers was built in from the start or early on in the project. Stakeholders included: livestock and arable farmers, retailers, foodservice businesses, a tilapia farmer, fish wholesalers, fish processors, an aquaculture engineering company, a fry producer in Thailand, Organic Food Federation, Soil Association, WWF, consumers and the media.

Key types of impact

Instrumental Impact

¹⁵ Anne Liddon, Warm Water Fish Production as a Diversification Strategy for Arable Farmers RELU Briefing Paper No 8, March 2008, p2.

¹⁶ Little impact statement

Highlighted non-academic impact: instrumental

The project made important contributions to shifting the business of East Anglian Tilapia, previously an importer of tilapia, into a hatchery. According to James Stretton, proprietor of the company: "If we hadn't got to know Dave and his team, we probably would not have done it at all".

James Stretton says the project team provided "general advice and guidance on the right books to read – there was so much information out there but not much of it relevant to a temperate climate; they saved us hours of work."

The hatchery gives East Anglian Tilapia the flexibility to adapt to different market situations. Recently, due to low prices offered for high volume sales of fry, the business is working alongside the largest aquaponics companies in the UK to supply small numbers of fish to the growing hobby market, at a higher margin. According to Stretton, this has "made the business easier to run and taken the pressure off having to produce high volumes for next to nothing." Although the decision to move to low volume sales was not directly influenced by David Little's research project, it is an example of enduring connectivity, as it came about after a discussion with Charlie Price - a Stirling University Institute of Aquaculture graduate (see Aquaponics UK entry below) and a collaborator in David Little's work.

Other non-academic impacts

Conceptual

Prior to the project, some farmers had been misled by exaggerated reports of the commercial benefits of tilapia production, and there were cases where unwise investments had been made. The project made a contribution to countering misinformation and supporting farmers who had experienced mis-selling. David Little explains: "It promoted a realistic view of tilapia as a potential route for diversifying farmers' businesses to deliver a modest rather than a major income stream".

The project developed a farmer information pack incorporating an 'appropriate' RAS design concept for small-scale adopters, combined with cost-benefit analysis, cash-flow projections, husbandry, marketing and legal advice that has been a major output of the project, and, according to the research team, highly valued by those deciding upon diversification. Their view is supported by James Stretton: "I can't emphasise enough how little information there was out there for someone wanting to set up in the UK. For those people the information pack is ideal, it gives an all-round view rather than a pitch from a salesman".

The work on marketing helped focus prospective adopters on the need to target specific market niches rather than attempt to compete with more commoditised frozen markets which are dominated by cheaper imports. Options for diversification into near-market urban locations were also identified not least for live products targeting ethnic groups.

The work on assessing health impact assessments was used by the Scottish Government Food and Drink Division Review of International Research to inform policy on the links between health and environmental impacts (Scottish Government International Review 2011).

Capacity building

Support for implementation

According to the project team, "The project provided support for three farmers to progress to implementation stage – including provision of support for European Fisheries Fund (EFF) grant applications - and provided training and advice to over 270 businesses."¹⁷

Charlie Price, Aquaponics UK

While a PhD student with the Stirling University Institute of Aquaculture, Charlie Price ran a tilapia trial for the Relu project in Thailand, assessing biofloc technology versus recirculating systems. Charlie now runs Aquaponics UK, a social enterprise based at Stirling University.

¹⁷ Little impact statement and personal communication

The company provides support for the growing aquaponics industry and aims to excite and to engage people through food production, urban agriculture and ecological approaches to meeting food and energy challenges.

“The Relu project contributed to what we do at Aquaponics UK and how we do it. Some of the trials we did, such as low tech, energy efficient solids treatment, carry through into our work as a constant theme today.” Charlie also emphasises the importance and impact of Relu’s knowledge exchange focus: “being engaged in the wider sphere of knowledge exchange, and knowing that it was being taken seriously by the Government and in Europe inspired me when I set up Aquaponics UK – collaborative science is the way to go.”

Aquaponics UK is in high demand, and has recently been involved in the BBC’s ‘Future of Food’ series and Channel 4’s ‘Homes of the Future’.

International capacity building

The project had impacts on capacity among non-UK nationals including: an Italian intern based at the private sector partner who developed management and technical skills; a number of Africans (particularly Nigerians and Ghanaians) living in the UK aiming to develop tilapia businesses in their home countries; MSc students involved in project-related activities worked with French, US, Greek and Lebanese nationals and have all produced research dissertations contributing to the project.

The project also made contributions to the research partner in Thailand through improved communication, data handling and research skills, with Thai nationals experiencing career progression as a result.¹⁸

Routes toward impacts

Tilapia Scotland website

With funding from Scottish Enterprise, the project team set up Tilapia Scotland, an informative website¹⁹ and mentoring service for potential adopters of warm water fish production. The home page of the website states that “The project builds on previous research work (RELU) which demonstrated potential for this novel type of enterprise as a diversification strategy for UK farmers.”

The Scottish Government and the EU had intended to provide start-up grants for aquaculture and seafood processing, but this was withdrawn. Had the funding remained in place, it might have been possible to trace connections between the Relu project and commercial impacts via the Tilapia Scotland website. Despite the setback, the website continues to host the farmer information pack and links to other resources, and still generates regular enquiries from would-be small-scale adopters.

Stakeholder engagement

Researchers pro-actively sought input from stakeholders, helping to frame the research and its presentations in useful ways. Researchers participated in events including: Edinburgh Mela (to gain primary consumer insights with the ‘Fish as Food’ questionnaire); Tilapia tasting and model system display at Perth and Stirling livestock auction marts in order to engage and disseminate project findings with prospective producers/adopters. At a Farmer’s workshop the team engaged with farmers interested in tilapia as a diversification option in Scotland.

A variety of routes were taken to seek input from and convey findings to various stakeholders, especially farmers and in some cases those developing policy about them. In particular, the research project was able to help to set up, advise and develop the UK’s first commercial warm water tilapia hatchery. This specific impact was achieved initially by close and prolonged communication and visits to the hatchery’s site, and by the business owners to Stirling. The project also opened up other overseas tilapia contacts and networks to help the hatchery develop its initial business.

¹⁸ Little impact statement

¹⁹ <http://www.tilapiascotland.org/>

Presentations were made to stakeholders at 11 different events with audiences including: Scottish Collaboration Innovation Programme Technical Transfer Executives; businesses, social enterprises, public sector, food networks and communities with an interest in local or ethical food; SEERAD Farm Business Officers; representatives of Defra, Scottish Executive, Sustainable Development Commission and North West Food Alliance; and aquaculture professionals from industry and academia. The project team gave presentations to various farmers and rural entrepreneurs interested in adopting tilapia as a diversification strategy. Presentations were also made to a variety of academic conferences including the International Institute of Fisheries Economics and Trade, World Aquaculture Society and the European Aquaculture Society. Feedback was given to both the EFF regarding funding eligibility, criteria and scope. The team also met with the Agricultural Advisory Service re entrepreneurial characteristics of potential adopters and with Scottish Enterprise to discuss the formulation of follow-on for Tilapia Scotland project.

Key knowledge exchange lesson

For academic researchers: Prioritise quality interaction with selected stakeholders over minimal engagement with a long list.

“For our team probably the most important lesson was not to waste too much time and resources in trying to engage with a long list of stakeholders if they were not particularly responsive or interested from the start. The best and most effective stakeholder exchange and interaction was actually with individuals and organisations who came to us”

For Research Councils/Funders:

“If commercial application is the aim of the project, ensure that the necessary mechanisms and focussed data are in place to illustrate viability before involving commercial stakeholders and collaborators”

PROGRAMME CASE STUDY

Programme-level Case Study: Land Use

Programme initiative

This case study looks at the impact of Relu's programme-level activities on thinking and policy making about land use. It could not be comprehensive analysis because land use comprised such a large proportion of Relu's overall efforts; instead it seeks to provide an analytical illustration of selected dimensions of programme-level impacts in this area.

Programme directorate

Professor Philip Lowe, Director; Jeremy Phillipson, Assistant Director; Anne Liddon, Science Communications Manager.

Relu and land use research

Relu was designed and funded to be a programme of integrated, interdisciplinary research because the complexity of rural and land use policies and practices cannot be understood or analysed adequately by single disciplines, isolated approaches or unilateral interests.

According to Relu, "Land use often plays a part in creating problems, but may also be part of the solution. It has, therefore, loomed large within the Relu programme ... Securing integrated land management based on an ecosystem services approach to optimise the delivery of all the services society seeks from land will require significant change in policies and processes. A holistic approach is required,"²⁰ including collaboration between the social and natural sciences. (The joint funding of Relu by ESRC, BBSRC and NERC illustrates this, and the Directorate itself includes a science policy specialist, a human geographer and a science communications specialist.)

Key findings on land use

A recurring finding by Relu projects is that land use policies must become more integrated across physical, administrative and conceptual boundaries and must be scoped and targeted more accurately in order to be effective, avoid wasting money and effort, and to prevent the policies themselves creating adverse outcomes. Several methods, tools and approaches for developing and implementing land use policies have been investigated in Relu projects. Nearly all the projects across Relu's four research themes (Land and water, Sustainable food chains, Animal and plant disease, Adapting to environmental change) involved working with people who manage land. Relu research shows that these professionals are diverse, with many different motivations, and that so-called 'non-professional' local knowledge contributes equally valid experience and motivations to deliberations about land use policies. In seeking to explore the distinctive impacts of the Relu programme at that meta level, it is essential to look beyond the achievements of its component projects and initiatives, rich though each of those may be. The programme Directorate has been in a position to have influence that is broad, pervasive and subtle. These are inherently large and multi-layered effects. This case study seeks to identify just a few selected examples of evidence showing that the Directorate has added value which enhanced the impact of the research projects.

Directorate-level stakeholders

Public sector: including UK central government ministers and officials; central and local government agencies, services and programmes; regulators; parliamentarians; research councils; academic institutions and researchers; European bodies.

Private sector: including farmers; landowners; commercial companies; trade associations; professional bodies, consultants; media.

Voluntary sector: including charities and NGOs; campaigning organisations; community and local organisations and interest groups.

Key types of impact

Instrumental; conceptual.

²⁰ Anne Liddon, Landmarks for policy, Relu Briefing no 9, Nov 2009.

Non-academic impact: instrumental

Relu achieved instrumental impact through its programme-level work by influencing government policy for land use, during the tenure of the Labour government in 2005-10 and with the Coalition government thereafter.

A distinctive initiative that brought about that impact was Relu's Great Land Use Debate and the connections that the Directorate created to the government's Foresight project on Land Use Futures. Relu's Directorate proactively mobilised research evidence and pertinent expertise across multiple Relu projects, recognising the strategic opportunity to influence government thinking and emerging policy on land use through that Foresight project.

Great Land Use Debate

According to Relu's Assistant Director, Jeremy Phillipson, David Miliband, Secretary of State at Defra, called for a public debate on land use, and Relu's Directorate responded by providing the context for that debate. "A reason for doing this was to further position the programme centrally." The online debate aimed to inform and stimulate public interest. To achieve this influence, Relu hosted the Great Land Use Debate online from 7 to 17 March 2008, as part of ESRC's Festival of Social Science and the British Association of Science's National Science and Engineering Week. The debate topic was articulated through three questions:

- Have we got the balance right between protecting the environment and food production?
- Is rural land management the problem or the solution to flooding in our towns and cities?
- What is rural land for?

Relu sought to engage three groups in the debate: land management professionals and other special interest groups, Relu stakeholders, and the wider public. Relu commissioned headline pieces to inform the debate and got Hilary Benn, Secretary of State, to launch it. The site attracted over 4,500 hits and about 100 comments as well as media coverage in print, on radio and online (see below). Following the debate, Relu posted the comments on its own website. It also commissioned an evaluation of the debate and posted that report online.²¹ The Debate achieved its aim of highlighting for the public and the media a focus on land use issues and choices that was central to the Programme's mission.

Foresight Land Use Futures project

Shortly before Relu's Great Land Use Debate took place, another investigation of land use issues was initiated, this one by the government through its Foresight office within BIS, which reports to the Government Chief Scientific Adviser and the Cabinet Office.²²

Foresight's Land Use Futures project sought to produce an evidence base to help policy makers understand whether existing land use patterns and practices are fit for the future. It was sponsored by Defra and DCLG, commenced in December 2007 and reported in February 2010.²³ Its impact up to May 2011 was reviewed by the Foresight office.²⁴ The project's focus was conveyed in three questions:

- What land use challenges could the UK face over the next 50 years?
- Will existing structures and mechanisms help us to meet those challenges?
- What opportunities are there to use and manage land differently now so that UK society continues to enjoy a good quality of life in the future?

Connections between Relu and the Foresight project

The following connections existed between Relu and the Foresight project:

- Relu and Foresight overlapped in time (Relu 2004-11, Foresight 2008-10), and somewhat in scope (although Foresight also included urban land issues).

²¹ Relu Annual Report 2008, pp 9, 22. <http://www.Relu.ac.uk/events/Majorprogrammeevents.htm>.

²² Foresight's role is "to help government think systematically about the future...Foresight projects are in-depth studies looking at major issues 20-80 years in the future." <http://www.bis.gov.uk/foresight/our-work>.

²³ http://www.bis.gov.uk/assets/bispartners/foresight/docs/land-use/luf_report/8507-bis-land_use_futures-web.pdf.

²⁴ Foresight report, 2012 (forthcoming).

- Relu's Director, Philip Lowe, was involved in discussions preparatory to setting up the Foresight project, and provided names of strong Relu researchers when asked to make recommendations for the Foresight Lead Expert Group.
- Before the Foresight project was set up, Lowe had been part of a small group advising the then Secretary of State at Defra, David Miliband, on a speech on land use. Lowe suggested including the term 'ecosystem services' as the concept²⁵ was gaining traction among researchers, including Relu PI Ian Bateman (see below). Miliband made the first Ministerial speech to include that phrase. The Foresight project embraced the concept.
- Two of the Foresight project's seven-member Lead Expert Group were Relu project PIs: Joe Morris (Cranfield) and Louise Heathwaite (Lancaster).
- The Lead Expert Group actively sought papers from Relu PIs, among others, and held workshops that drew on research by Relu and others.
- Foresight team members took part in some events organised by Relu.
- Early in the Foresight project the officer team asked the Lead Expert Group to suggest names of additional experts and peer reviewers – as such they were acting as knowledge brokers and intermediaries between Relu's community and the Foresight process.
- Researchers from eleven Relu project research teams contributed to a joint Foresight/Relu workshop on valuation and governance in relation to rural land use on 22 July 2009.²⁶
- Three Relu research project teams are identified in the main report of the Foresight project as having contributed to Foresight's evidence base: those led by Ian Bateman (UEA), Mark Reed (Leeds, now Aberdeen) and Paul Selman (Sheffield).
- Relu Director Philip Lowe was a peer reviewer for the Foresight final report.
- Relu reported to the Foresight officer team on the early inputs to the Great Land Use Debate, the summaries of views on each debate question, the comments posted during the debate and stakeholders' responses to those comments.
- A report commissioned by Relu from an independent land use policy analyst identified 33 early findings from 20 Relu projects that were contributing to ongoing discussions within the Foresight project in 2009.²⁷ These covered land use governance, scale and spatial issues, the motivations of land managers, and tackling land use challenges at source.

Relu's efforts to promote the programme's research to Foresight were to some extent pushing at an open door, since Foresight was always committed to engaging with the scientific community, and several Relu researchers were prominent land use experts before their association with Relu. However, Relu's influence did require proactive planning and actions by the Directorate. According to Phillipson, "Foresight was one example where the Relu programme saw a window of opportunity to have influence, even though most of the Relu projects were still at an early stage. Foresight was one way for us to channel emerging research knowledge and evidence into the policy realm."

The Foresight project leader told the Directorate that "the Relu Programme had a significant influence over the approach to Foresight's Land Use Futures Project. Their multidisciplinary approach to exploring the impact of land use and management change is crucial to helping to create a more sustainable land system. This type of research is highlighted in the Land

²⁵ The processes by which the environment produces resources used by humans such as clean air, water, food and materials. <http://www.ecosystemservices.org.uk/ecoserv.htm>.

²⁶ Posthumus, H., Morris, J., Angus, A., and Graves, A. (2009). Land Valuation and Decision Making. Report of Proceedings of Foresight Land Use Futures and RELU Workshop, London, 22 July 2009.

²⁷ Alan Woods, Findings from the Rural Economy and Land Use (Relu) projects contributing to the Land Use Futures project, July 2009. The idea of commissioning the report was suggested by Philip Lowe.

Use Report as being central to building a more integrated evidence-base and creating institutional capacity and "boundary-spanning" skills amongst the land use research community. Relu's work was also influential in showcasing the importance of working with communities and drawing on local knowledge, understanding the diversity of motivations amongst land managers when trying to influence change, and bringing ecosystems thinking more systematically into analysis on the value of land and decision-making. Whilst the final report could not cover the content of each [Relu research] paper in detail, they are there in the report and very much influenced the discussions with the Project's lead expert group."²⁸ As the Foresight project report was published near the end of the last Labour government in 2010, and had to be picked up by Coalition ministers who had not commissioned it, this may account for the somewhat qualified influence of the Foresight report's findings, in contrast to, for example, the consequences of an earlier Foresight project, on policy for flood risk (2004), commissioned and responded to by Labour government ministers mid-term, which "...provided an evidence base that went straight into government policy." Nonetheless, according to Foresight's Jon Parke, the Coalition government's White Paper *Natural Choice*, published in June 2011, certainly has been informed by Foresight's key findings. Overall, the weight and scale of the Relu programme and the efforts of the Directorate created a demand for Relu research knowledge and expertise which had some instrumental impact on land use policies. This was partly achieved through actively connecting Relu to the Foresight project, to bring the research and the expertise of Relu researchers a step closer to the policy making processes.

Non-academic impact: conceptual

Relu's underlying premise that rural and land use issues demand research that crosses boundaries between social and natural sciences is matched by its conviction that rural and land use policies must be holistic and integrated rather than fragmented and sectional. Have the actions of Relu's Directorate achieved wider appreciation and acceptance of these attitudes?

Statements by Sir John Beddington, Government Chief Scientific Adviser since 2008, suggest that such a shift in attitudes is underway. He spoke at the launch of a book, *What is land for? The food, fuel and climate change debate*, edited by Relu researchers Michael Winter and Matt Lobley, which includes contributions from several Relu projects. Beddington said, "We are going to face a number of major global problems in the next two decades ... We can't address any of these issues without addressing all of them ... We need a coherent national policy for energy, land, food, water and climate change ... The changes we need to make are not just technical or scientific, they are to do with behavioural change, social change and economic change."²⁹

In 2010 Beddington said to the Directorate, in discussing the lessons learned from Relu: "I do want to emphasise ... how impressed I was with the work that you and your team have been doing. You have been able to address what hitherto has been something to which more lip service than content has been addressed. ... I really think this is an extremely impressive programme of which you and your colleagues should be proud."³⁰

Joe Morris, member of the Lead Expert Group of the Foresight project, recalled that Relu's collective accomplishments made a strong impression on that Group including those from the urban sector, who repeatedly commented on the need for a Relu-type programme for the urban space.

Further evidence of the spread of such attitudes came in 2011 when Defra appointed Jeremy Phillipson and Michael Winter to the advisory panel for its Rural Economy Growth Review, and appointed to its Science Advisory Council two Relu PIs who were closely involved in the Foresight project (see above), Ian Bateman and Louise Heathwaite.

A further insight into the lasting effects that the conceptual impacts of Relu research can have is illustrated by Adam Bedford, a policy adviser to NFU and a Farmers' Weekly

²⁸ Nicola O'Connor, Project Leader, Foresight Land Use Futures project, Government Office for Science, to Relu Directorate, 2010.

²⁹ Relu Annual Report 2009, pp 23-4.

³⁰ Relu Annual Report 2010, p 6.

freelance journalist, who was one of Relu's Visiting Fellows in 2010/11 (the scheme enables "policy makers and practitioners from the commercial, voluntary or public sector to visit a RELU research team or cluster of teams with a view to exploring the implications of the research for their work and to raising awareness of their interests among the researchers").³¹ This gave Bedford the opportunity to communicate examples of current research to farmers, discuss the research, take on views and try to feed it back in. Relu has enabled him to provide in his journalism a different research perspective on farming and rural issues.³²

Routes toward impacts

The Directorate has employed a battery of approaches to promote Relu research, engage relevant stakeholders, and influence attitudes and understanding on land use issues. From the outset the Directorate scoped the research calls to ensure that land use issues would be studied from several disciplinary, sectoral and locational angles. It created cross-programme initiatives and events, such as the Great Land Use Debate, to raise more widespread public awareness of land use problems and choices, and to strive to present the research in timely and relevant formats.

The Directorate made concerted efforts to target awareness of and communications about the Great Land Use Debate before, during and after the Debate went live online. The extensive media coverage included articles and links on NFU's online news, Farmers' Weekly Interactive, an interview on BBC Radio 4 Farming Today, articles with links on the Guardian interactive website, an article in The Times and on The Times website.³³ Phillipson explains that Relu's programme-level actions associated with the Great Land Use Debate illustrated how "the programme could harness a body of evidence and expertise behind the scenes and influence the policy context." He argues that "the Directorate attempted to configure and sensitise policy customers for emerging Relu findings, preparing the ground and setting the scene such that individual projects would find a favourable reception for their work and results."

The Directorate's energetic and confident approach to programme-level communications is demonstrated in having a Science Communications Manager in the Directorate and through the series of publications it has created, including Newsletters, Briefing Papers, Policy and Practice Notes, journal special issues and books, and responses to consultations. Publications are a very important dimension of the programme's outreach, but alone they would not be sufficient to achieve the impacts Relu seeks. When complemented by appropriate efforts, adapted from the approaches associated with political lobbying and community activism, to reach government and opinion formers, the Directorate demonstrably helped to position Relu researchers and channel Relu expertise.³⁴

People exchange was another route towards impact, pursued through Relu's work shadowing and visiting fellowship schemes. Relu's Directorate also employed independent knowledge brokers to help synthesize its research for policy makers, in relation to such topics as implementing the Water Framework Directive, reforming the Common Agricultural Policy, 'Big Society' thinking, and local government's role in managing disease risk in rural communities.³⁵ In relation to land use it commissioned these policy analysts "to draw out relevant findings from across Relu's range of research projects, backed by an expert advisory group during 2008."³⁶ Alan Woods, one of the knowledge brokers, observed that policy makers can feel overwhelmed by the sheer volume of research evidence; and researchers are not always tuned in to what interests policy-makers. He believes knowledge brokers have a huge role to play at the interface between research and policy: "...they can

³¹ <http://www.Relu.ac.uk/gettinginvolved/WorkShadowsVisitingFellows/> Visiting%20Fellowshipnew.html

³² Relu Annual Report 2010, p 32.

³³ Relu Annual Report 2008, p 22.

³⁴ Phillipson adds that the Directorate fed Relu research evidence and expertise into the Scottish Government's Rural Land Use Study, Natural England's 'Vital Uplands' Uplands Vision, and 'Mapping Values', the Commission for Rural Communities' Inquiry into the Future for England's Upland Communities, Defra's Upland Inquiry and LWEC (National Ecosystem Assessment).

³⁵ See Relu Briefing Papers 11 and 12 and Policy and Practice Notes 24 and 29 respectively.

³⁶ Relu Land Use Policy Initiative; www.Relu.ac.uk/research/Land%20use%20pol%20initiative.htm. In Phillipson's view, a meeting to launch this initiative "...helped set the agenda for the initiative and for the analysts, involving leaders of 17 Relu projects, land use policy staff from Defra, Scottish Government and Welsh Assembly Government, and the Foresight project team."

review and synthesize research and put it into context for policy people who lack the time to do so themselves, pointing out lessons on stakeholder engagement, tools, policy issues and evidence. Brokers can slot the evidence into the policy framework, make sense of complexity and ensure that it is digestible for policy makers.”

Key knowledge exchange lesson

For researchers:

Consider developing a portfolio of multiple approaches promoting key concepts and approaches, particularly if the ideas you want to spread are complex.

Be willing to make extra efforts, such as orchestrating joint seminars between key stakeholders and researchers, to provide opportunities for close deliberation that could increase commitment of stakeholders such as civil servants to messages arising from research.

For Research Councils/Funders:

Recognise the utility of multiple efforts made by programme leadership to spread the impact of researchers, research findings and ideas.

To complement knowledge broking efforts by individual research programmes and projects, Research Councils could consider having a team of knowledge brokers constantly scanning policy issues and research topics who make pro-active links between the two. This might facilitate, for example, researchers making timely contributions to government consultations. Providing focused syntheses of research findings from multiple projects relevant to current policy challenges would also be valuable service for policy makers.

ANALYSIS, PROGRAMME-LEVEL COMMUNICATIONS

Introduction

The following pages analyse Relu's programme-level communications activities and its contributions toward impacts. Relu has generated both a large volume and a great variety of communications, and here the approach is to make a selective rather than a comprehensive assessment.

Programme directorate

Professor Philip Lowe, Director; Jeremy Phillipson, Assistant Director; Anne Liddon, Science Communications Manager.

Relu and communications

In addition to generating integrated, interdisciplinary research, Relu was set up with the intention to embed communications with stakeholders at all levels, led by the Director who has had long experience in knowledge exchange. Following negotiations with the Research Councils, a dedicated Communications Manager was employed and a budget made available for programme and project level communications.

Like most organisations intent on comprehensive communications activities, Relu devised a communications plan. The first was completed in 2004 and has been updated regularly since that time to reflect the needs and extend the reach of the developing research programme. Its stated aims with regard to communicating with external stakeholders were to:

- Maximise users' interest
- Contribute to policy and public debate
- Influence other research programmes
- Establish the Relu brand³⁷.

Relu's influence on other research programmes is dealt with elsewhere in this report. This analysis shows ways in which Relu has addressed the aims of maximising users' interest, contributing to policy and public debate and establishing the Relu brand – and describes illustrative connections to some of the resulting impacts.

Approach to analysing communications

An emphasis on the cardinal importance of communications is unusual in the academic research sphere. Yet, the evaluation's survey and interview responses show a very high regard by both researchers and stakeholders for the contributions made by Relu's communications to its influences and impacts. For instance, 77.1% of researcher survey respondents and 80.9% of Programme stakeholder respondents are of the opinion that "Relu's portfolio of communications and print/electronic outputs has heightened the likelihood of non-academic impacts".

In the view of Relu's Communications Manager, without the directorate-level remit, Relu's communications outputs would have been "much more fragmented, and opportunities would have been lost. For instance it is unlikely that the Policy and Practice notes would have developed, or that media opportunities would have been taken up ... we would not have built a community of researchers or stakeholders, and there would have been no brand or interconnectedness of themes across the programme". [Anne Liddon]

Although no direct benchmark of Relu's performance is possible due to its unique set-up, an evaluation will be made of how Relu has addressed its stated aims according to three key communications themes that would be recognisable to corporate communications specialists:

1. Media channels and segmentation

Relu employs a variety of channels to reach its stakeholders – from printed reports, policy briefings and conferences to press releases, blogs and social media such as twitter. Relu's Policy and Practice notes in particular appear to have been influential

³⁷ Relu, Communication Plan, Version 6.9.04, Annexe 1

and are certainly well regarded in its sphere. In line with standard practice in communications, Relu segments its audiences and material is disseminated to targeted interest groups.

2. Branding, creativity and interaction

Relu has developed a strong brand, giving the programme instant user recognition and recall of the type aspired to by commercial brands. In addition to paper and electronic outputs sharing a distinctive look, the programme engages with stakeholders at conferences, workshops and other gatherings, attempting to do so in a consistently creative way.

3. Flexibility and responsiveness to change

Any communications programme must regularly realign its efforts as new challenges arise, and Relu is no exception. Its flexible approach has enabled Relu to develop its communications and interactions in anticipation of emerging policy, for instance on Nature Improvement Areas.

Directorate-level stakeholders

Public sector: including UK central government ministers and officials; central and local government agencies, services and programmes; regulators; parliamentarians; research councils; academic institutions and researchers; European bodies.

Private sector: including farmers; landowners; commercial companies; trade associations; professional bodies, consultants; media.

Voluntary sector: including charities and NGOs; campaigning organisations; community and local organisations and interest groups.

Key communications themes, their outputs and indications of impacts

1. Media Channels and Segmentation

Measuring outputs

When a range of communications activities takes place simultaneously, identifying the impacts achieved by one specific channel is difficult. This challenge also applies to private sector evaluation of communications programmes. Often, as in Relu's case, a combination of concurrent activities - press releases, papers, reports, conferences - achieves a 'ripple effect' and results in awareness raising and new interactions between stakeholders that are hard to pin down.

Outputs, however, can be measured, and in order to do this Relu has developed a broad set of KPIs for its user engagement and knowledge transfer activities – and has reported against these in the Annual Report every year. Many KPIs combine qualitative and quantitative elements. Where the KPIs include targets, successive Annual Reports show that in the majority of cases, they have been met or exceeded every year.

The KPIs are:

- Meetings or events involving stakeholders
- Links created between award holders and stakeholders
- Work shadowing and visiting fellowships
- Informing public policy (number of responses to public reviews/consultations)
- Project communications and data management plans
- Media coverage of research and outputs (press releases issues, and coverage)
- Reports or briefings produced for stakeholders
- Relu website (maintenance)
- Relu newsletter (4 issues per year).

Since 2003, Relu has diversified and intensified its communications efforts in order to maximise users' interest and become involved in policy and public debate. A sample of specific communications activities since 2003 provided by the Communications Manager³⁸ includes:

- 36 Policy and Practice notes, including those for Local Authorities
- 16 Briefing papers (plus 2 published by Relu DSS)
- 28 Newsletters
- 5 Special interdisciplinary issues of monodisciplinary journals
- 3 Books and one in preparation
- 25 Conferences and major events
- 16 "Dining club" style stakeholder forum meetings
- 29 Other stakeholder events stimulated or sponsored
- 39 Specific cross-programme activities stimulated, involving different projects (other than the major programme events)
- 114 Presentations given by director's office to high level stakeholders
- 113 Bilateral meetings with stakeholders
- About 680 items of media coverage 2007 since Anne Liddon joined the programme

Examples of routes towards impacts

The examples highlighted below - Policy and Practice notes, Newsletters and Conferences - give a 'snapshot' of some specific illustrative impacts resulting from Relu communications efforts, but in reality, the conceptual communications impact of the Relu programme as a whole seems likely to be greater than the sum of its parts ---due to the ripple effect and cumulative impact of using multiple communications channels.

Policy and Practice notes: potential conceptual impact: raising expectations for communications from research initiatives and contributing to policy makers' decision making
Policy and Practice notes were first introduced in 2007 as a way of drawing out the main highlights of each project and their policy and practice implications. Just as Apple's iPod – or competitors' copies - has become almost ubiquitous for consumers who initially had no idea they wanted it, Policy and Practice notes might now be seen as a natural, desirable outcome of a research project, but were not previously available to the extent generated by Relu, with its archive of 36. In the eyes of the Directorate, they have been very successful and sought after: "Everyone knows Relu, and it's often through the Policy and Practice notes at the time they were regarded as radical as this had never been done by the Research Councils before" [Jeremy Phillipson].

With each developed by the Directorate's Communications Officer working with researchers from one or more projects addressing a topic, Policy and Practice Notes are deliberately aimed at stakeholders, who appear to appreciate their content and style. A stakeholder interviewee with an overview of Relu said "the area where I've picked up the strongest feedback is the policy notes... Policymakers say again and again that they want clear messages expressed in as short a space as possible". Their usefulness is confirmed by Richard Benyon, Minister for Environment and Fisheries who, in 2010, said that Relu's Policy and Practice notes are "particularly relevant to the work we are doing at Defra."³⁹

Newsletters: enduring connectivity and capacity building

Relu's electronic newsletters are distributed quarterly to over 2000 researchers and stakeholders. Their succinct format and links to research and publications make them an

³⁸ Anne Liddon, personal communication, 26.3.12

³⁹ Relu Annual Report 2010 p 6, quoted from letter to Jeremy Phillipson

accessible and useful way of making individuals (including stakeholders) feel involved and keeping them up to date.

Through their content, newsletters can provide “leads” which may even lead to matchmaking and/or capacity-building. For instance, the newsletter has played a role in the development of an interactive teaching aid about stakeholders. The June 2007 issue referenced a ‘Stakeholder Analysis Tool’ that attempted to quantify stakeholder interest, influence and interaction. The news item resulted in 15 requests for information from research and consultancy organisations. This interest helped stimulate the development of a user guide and the tool was used both by PhD and MSc students at Cranfield University and as a teaching aid.⁴⁰

Conferences and major events: stimuli toward enduring connectivity

One of the aims of Relu’s conferences is to encourage new and lasting relationships between researchers and other stakeholders. While achievement of this goal is difficult to prove, Relu’s feedback data from a 2008 conference to show that following up contacts made was important to delegates, while feedback from a conference in 2010 indicates that the majority of delegates particularly enjoyed the networking sessions.

Management of Animal and Plant Disease, May 2008, London

50 delegates attended this workshop, of which 57% were stakeholders. 66% of respondents to the exit survey said they would actively follow up contacts they had made during the day.⁴¹

Adapting Rural Living and Land Use to Environmental Change, July 2010, Manchester

Of the 84 delegates at this conference, 74% were stakeholders. Not only did 97% say the quality and value of the conference was ‘good’ or ‘excellent’, but many mentioned the networking session as the highlight.⁴²

The creative nature of Relu’s conferences is discussed with specific reference to a resulting growth in awareness, in a sense either a conceptual impact or a conduit for possible conceptual impacts, in the section “Branding, creativity and interaction” below.

Media coverage: awareness raising and possible conceptual impacts

Relu coverage in the media averaged at over 100 articles 2007 and 2008, 150 in 2009, 130 in 2010 and 200 in 2011. Articles appear in a range of media, from local papers, journals and the trade press to the national media in print, on-line and on air. Although, as is to be expected, coverage of Relu in the national media does not lend itself to definitive identification of subsequent impacts, in the commercial sector this kind of PR is treated as very valuable. By way of illustration, a quarter page of advertising space in The Guardian costs £3,836⁴³, while a spot on Radio 4’s flagship Today Programme, with 7.18 million listeners per week in 2011⁴⁴, is considered “gold dust”.

A brief overview of UK wide mainstream media coverage between 2007 and 2011 shows that Relu has consistently enjoyed success in raising awareness at the broadest level:

2007 *The Times*; *Financial Times*; *Daily Telegraph*; *The Guardian*; *Times Higher Education Supplement*; BBC Radio 4 *The Investigation*, *Costing the Earth*; BBC News, BBC News 24; Channel 4

2008 *The Guardian*; *Daily Telegraph*; *The Times*; *Observer*; BBC Radio 4 *Farming Today*, *Today Programme*, *Living Memory*; *The Guardian* website; BBC News website

2009 *Observer*, *The Guardian*; BBC Radio 4 *Today Programme*, *Farming Today*, *You and Yours*; BBC Radio 2 News bulletins; BBC1 *The One Show*; BBC News website

2010 *Daily Telegraph*; *Sunday Times*; *The Times*, *Daily Mail*; Radio 4 *Costing the Earth*, *You and Yours*, *Farming Today*; BBC 1 *Countryfile*; BBC TV News; FT.com

⁴⁰ Relu Annual Report 2007 p 58

⁴¹ Relu Annual Report 2008 p23

⁴² Relu Annual Report 2010 p 22

⁴³ <http://www.guardian.co.uk/advertising/advertising-rates>

⁴⁴ http://www.bbc.co.uk/pressoffice/pressreleases/stories/2011/08_august/04/rajar.shtml

2011 *The Guardian*; *Observer*; *Times Higher Education Supplement*; BBC Radio 4 Today Programme; BBC 1 *Countryfile*.

Also, articles are placed regularly in journals targeted at stakeholders with specific interest in Relu's work. For instance the Communication Manager has published four articles in the *Farmers Weekly*, in the section called *Talking Point*, and has found the *Farmers Weekly's* on-line comments board to be fertile territory for discussions about, for example, Relu conferences. Now a few readers of *Farmers' Weekly* are following Relu on twitter [Anne Liddon].

2. Branding, creativity and interaction

The Relu brand: awareness raising

Only a decade or so ago, many people thought of brands and logos as more or less interchangeable. Today, most are aware that a brand's reach and power goes well beyond the graphic design behind it. It encapsulates the personality and quality of a service, approach or product and communicates a 'brand promise' to the consumer or stakeholder. Powerful brands are highly valued because they can communicate a great deal very efficiently, and if successful, command loyalty. With a goal more like that of the private sector than most academic initiatives, one of Relu's early communications aims was to establish the Relu brand.

Wolff Olins, a leading branding agency, dubs today's most successful companies – and the brands associated with them - as Game Changers. Their key characteristics are:

- Purposeful for the world
- Useful for customers
- Experimental with products and business models
- Boundaryless in working with internal and external collaborators
- Value-creative in changing the competitive landscape.⁴⁵

Relu's fresh graphic design, its creative approach to events and communication and its commitment to interdisciplinarity and stakeholder engagement towards the "public good" show that it shares some characteristics with companies dubbed by Wolff Olins as Game Changing. These include Grameen Bank, Zipcar, Zopa and PayPal.

Relu, with its aims of contributing integrated understanding of important rural and land use issues that is **useful** for a variety of stakeholders/customers, is inherently striving to be **boundaryless** and **purposeful for the world**.

More specifically, the bold graphic design and clear layout developed for Relu's reports, Policy and Practice notes and on-line outputs since 2007 can be described as both **useful** and **experimental**. Relu's branding is certainly visually experimental compared to typical scientific research outputs, and is almost universally liked: the Communications Manager has only ever received one negative comment on the design [Anne Liddon]. But good design and layout is not just a matter of pleasant aesthetics, it should also make material more accessible – reflecting the **useful** characteristic of a Game Changing brand. Relu as a programme has explicit objectives in terms of acting as a conduit to a variety of stakeholders, many of whom are appreciative. For example, feedback was received from a recipient, Seamus Kennedy from the Agri-Food Biosciences Institute: "Thank you for sending me copies of Relu Briefing Notes 5 and 6. They are both highly readable documents and excellent examples of good communications in science."⁴⁶

Apart from being associated with accessible and clear science communication, Relu's overall brand is also strong. During commercial market research, powerful brands are characterised by unprompted consumer or stakeholder recognition and recall. The directorate team has discovered that Relu's brand fits into this category, and capture their

⁴⁵ <http://gamechangers.wolffolins.com/>

⁴⁶ Relu Annual Report 2007, p 16

sense of this with an anecdotal example of a meeting on rural economy at the House of Lords where as soon as Jeremy Phillipson produced a series of Policy and Practice notes, the Lords he was talking to said they already knew about the programme. Interviewees seem to readily recall the “stripes” as the look of Relu materials.

Creativity and interaction: conceptual impact

Great Land Use Debate: conceptual impact

The Great Land Use Debate is a good example of Relu’s **experimental** and ‘**boundaryless**’ approach to brand and communications, and could be considered Game Changing. One aim of the Great Land Use Debate was to generate new types of interaction with stakeholders, and this also appeared to stimulate conceptual impacts. The debate took place on-line during National Science Week - a first in the Research Council sphere - attracting 4,500 hits to the site and over 100 comments. It was identified as a high impact event at the formal evaluation of Science Week⁴⁷ and as a result of its success a new on-line category was created for Science Week the following year – a narrow example of an instrumental effect on research and science policy institutions. A broader array of long-term impacts is explored in the Land Use Case Study in this report.

Management of Animal and Plant Disease workshop: conceptual impact

The aim of this workshop was to rethink the strategic management of animal and plant disease from first principles. With 50 participants, the audience was small, and in the spirit of Relu’s Game Changing **purposeful, boundaryless and experimental** approach, brought policymakers across plant and animal diseases from Defra, Fera and the Scottish and Welsh Governments together with the private sector and academics. One of the goals of the day was to use imaginative networking to cross the divide between the way animal and plant diseases are researched and managed and ensure informative interdisciplinary discussions. To spark new approaches, the Relu team devised an experimental workshop format encouraging individuals to share their experiences. Each of 6 research projects hosted discussions around a carefully selected policy-focused question relevant to that project, and delegates moved from one table to another – half in a clockwise direction and half anti-clockwise, carefully choreographed to ensure that everyone at the workshop had the opportunity to meet [Anne Liddon].

General feedback on the workshop is noted above. When asked to note aspects of the session that participants found particularly useful or interesting, 18 participants contributed. Five noted the benefits of interacting with stakeholders, of whom one said they appreciated: “Communicating/exchanging common interests with stakeholders and other Relu colleagues.” Six respondents enjoyed the cross-over between scientific disciplines and policy, saying, for example “Useful for increasing awareness of projects and improving communication/perceptions between policy and academia.”⁴⁸

Indeed, Relu’s experience with running carefully designed events that communicate effectively the results of interdisciplinary science can be a useful exemplar or source of guidance for others wishing to do something similar. For example, Fera (Food and Environment Research Agency) hosted a *Workshop on social science in food and environment research (18 April, 2012)*. Glyn Jones, responsible for the workshop, approached the directorate at Relu for support “to design the shape of the day, develop the programme and identify speakers” because Relu is “known for its interdisciplinary working.” All those asked to speak at the event accepted, and Glyn Jones thinks that the joint Fera/Relu invitation may have helped.

3. Flexibility and responsiveness

Workshops and Policy and Practice Notes for Local Government: conceptual impact

Relu’s strong focus on personal communications through stakeholder engagement and networking between and across research projects gives the programme a springboard from which to anticipate and respond to emerging policy, and can make it a natural meeting point for those who are affected.

⁴⁷ Relu Annual Report 2008 p 6

⁴⁸ Relu communications with animal and plant disease stakeholders, analysis and feedback, 2008

As an example of how conceptual impacts may arise from Relu's flexible approach to communications and stakeholder engagement, Relu played a part in the lead-up to, and early development of, the UK's newly announced Nature Improvement Areas (NIAs). A number of organisations applying to become NIAs invited Relu to be an informal partner, including the South Downs Way Ahead Partnership, one of the 12 successful applicants for NIA status.

Emily Brennan, Biodiversity Strategy Lead at South Downs Way Ahead NIA, attended a Relu workshop on biodiversity and ecosystem services and saw the opportunity to invite Relu as an academic partner. "We are keen to draw on national expertise like Relu's and want to make South Downs Way Ahead a good example of delivering ecosystem services at the national level." she said.

Policy and Practice notes, briefing papers and workshops were also a useful tool for involvement of Relu in the NIAs in their early stages of development. In 2010, managing sustainability at the landscape level was highlighted in Relu's December briefing paper *Shaping the Nature of England, policy pointers from the Rural Economy and Land Use Programme*. As policy discussions at Government level evolved, Relu sought out and invited an expert on protected rural areas, Terry Carroll, to work with the programme and write a 6 page Policy and Practice note for Local Government: *Can protected landscapes have a leading role to play in the sustainable management of natural resources?*

The timely, targeted policy note was discussed at a meeting of the Association of National Parks Authorities, where Terry Carroll had been invited to make a presentation. Feedback on the notes was received from Areas of Outstanding Natural Beauty and National Parks and some of the organisations applying to become Nature Improvement Areas (NIAs). Following that meeting, Terry Carroll received an invitation to represent Relu at a recent workshop for the successful NIAs on evaluation and monitoring, which they all attended. He will shortly develop a new Policy and Practice note focusing on their emerging needs. Relu's proactive and nimble approach to communications interwoven with engagement – and in this instance its Policy and Practice notes in particular - have helped the programme become influential as the Nature Improvement Areas evolve, although the final impacts of Relu's engagement work will take some time to emerge.

Conclusion

In short, Relu's programme-level communications effort has addressed, at least in part, three key themes important to communications in private and other sectors: Media channels and segmentation; Branding, creativity and interaction; and Flexibility and responsiveness to change. Research initiatives of the future may wish to use themes such as these to form a conceptual framework for their own communications strategies; without slavishly adopting Relu or any other particular model, they could learn from examination of Relu's pro-active, tactical efforts.

VIGNETTE: MULTI-FACETED LEADERSHIP

Vignette: A View from the inside -- Multi-faceted leadership for a multi-dimensional Programme

It was clear both from interviewing the Relu Director, Duke of Northumberland Professor of Rural Economy; Philip Lowe, and from the way in which other interviewees spoke of him, that he has taken a deliberately pro-active, one might say 'entrepreneurial', approach to leadership of the Programme. His view of the role is multi-faceted. It includes thinking about the big picture of Knowledge Exchange, and both sides of the KE equation, even to the extent of helping to stimulate policymaker/practitioner "demand" for Relu work by fostering receptive niches among stakeholders. The following comments taken from his quite open interview (italics and subtitles inserted by the evaluator to highlight different roles) are not meant to be comprehensive—they will not necessarily cover all the roles he played—but they should illustrate the multi-dimensionality of the role as he himself defined and undertook it.

(On self-definition of novel leadership role)

"To some extent the Relu Programme defied any sort of (conventional) academic leadership. There was *an opportunity within that to define what the Director's role was*. Most of the time you have an established research community that will own the programme and an established policy community that will own the results. You had neither with Relu because of its interdisciplinary nature."

"It was not traditional academic leadership that I was expected to give, at all, but *novel ways of altering the culture.*"

"*Some of it was me extemporising as I went along. ... a prolific amateur in the right place at the right time. ... (drawing on an unconventional career which had included a diverse range of experiences, including policy-oriented journalism, writing books on politics and green policies, advising Ministers of Agriculture, Board membership on Countryside Agency, etc. and) ... 'a string of policy positions and policy advisory positions which stood me in good stead -- I needed to present myself as an 'instrument of influence for the Relu programme'.*"

"The critical thing was for the Director's Office to be '*an instrument for influencing*', catalysing new policy communities and new scientific communities."

(Role in relation to commissioning of projects)

"We were '*coordinators*' rather than directors – we didn't direct the Programme; we were consulted on things and devised calls, but when it came to allocating finances, a group of officers of Research Councils kept an eye on and controlled budgetary matters for a £20M+ programme."

"We advised each of the groups of academics and assessors that came together to peer review research applications... it was an independent activity that allocated the funding." ... "To select good projects, that rose to the Relu challenge, addressed very strong topical problems, were strategic in terms of research funded and would promise good, well-integrated, strongly interdisciplinary science... *we advised on those criteria and also on what mix of projects would give more than the sum of the parts.*"

"We had to work really hard so that project selection wasn't 'captured' by one Research Council or degenerate into the lowest common denominator tussle between disciplinary advocates. And it was always difficult to make sure that not only did we get top projects, but that they added up to something more than a collection of good but bizarre projects."

(Responsibilities of the Directorate)

"Then it was Jeremy's and Anne's and my turn *to make something of the group of projects funded.*"

"It was important to have as dedicated colleagues a science communications manager and an assistant director who could concentrate on Knowledge Exchange."

"It will be interesting to see if we have built up a conscious Relu community committed to interacting strongly with stakeholders and across disciplines."

"There was a functional difference between that (advising on project selection) and once projects

were selected, having a team where *we could play strongly to the novelty of the science*. The more testing the interdisciplinarity, the more novel the methodology. And then *finding the 'marketplace', largely in the policy system, where we could create new niches* for this pioneering work.”

(Building 'both sides' of Knowledge Exchange)

“The way we conceptualised the Relu work (was that) good science and radically different kinds of science had to be done. It had to be strategically influential science. But in many cases there was not a ready-made audience for the research. ... *We had to find partners for that Knowledge Exchange -- sometimes they were already established, sometimes I would have to help create from scratch novel policy communities to engage with the novel scientific communities*. The Relu office was an *instrument for positioning the science with sometimes pre-existing or sometimes novel policy communities*. ... That independent role of the Director's position was really important.”

“Of course Knowledge Exchange has to be a two-way system, but you have to have people to engage with if you are going to have Knowledge Exchange. Sometimes you have to *create the niches for Knowledge Exchange, places where novelty can flourish and be appreciated*. ... *There is no sort of formula for it --- you just have to be opportunistic, really*.”

(Social science and animal health within DEFRA as an example of developing policy networks for KE with Relu)

“Social science was completely foreign to the way policy issues and research at DEFRA was conducted. When Relu (moved) in the third phase to animal disease management—I had to wade into the whole animal disease area which I knew nothing about since social science did nothing on it. I needed a structure like DEFRA's Science Advisory Council (SAC) around which (we) could construct the policy system to be receptive to the novel research problems that the Relu programme was investigating. I was trying to carve out a terrain in which DEFRA civil servants would see worthwhile problems involving social scientists collaborating with animal scientists. Rather presumptively, I had to barge into DEFRA SAC's work in that area so that I could become the instrument... we (also) used fellowships, workshadowing (and so on) to begin to get some social science into the DEFRA policy system By the end of the process, DEFRA did see a role for social science. Now Relu people are regularly consulted by the Chief Veterinary Officer – through these *critical beachheads we developed into the policy system*.”

(Pro-active positioning)

“(It was about) understanding those great tectonic shifts after Foot and Mouth (for example, recognition of need for social as well as natural science), and (emphasis on) science- and evidence-based policymaking and *trying to constantly position Relu* – projects, interdisciplinary style, problems it was addressing, results it was coming up with ... Instruments of selling Relu could be radically different problems, results, methods.”

“Each time there was a new Minister relevant to DEFRA, I bee-lined to him or her.”

“We had to *think of all our project people as the team we had to promote*. ... Either getting myself into being asked to recommend people to referee, review, serve on this, provide this that or the other --- or just me barging in and saying ‘you haven't got any Relu researchers on this committee’ I quickly got myself into the position that if BBSRC or NERC wanted social scientists, they would contact me or if ESRC needed non-social scientists.”

“I had been on earlier, *behind the scenes*, as with Foresight, saying ‘this is who you should be appointing to a committee’ ... (or) making sure some top Relu researchers got onto the Foresight Steering Group.”

“At a number of levels, typically behind the scenes, we were able to *influence those sorts of decisions*. ... One quickly understood who among project teams would cooperate with or reject that sort of call on their time. So then it was easy to *push people into those positions*.”

“(In some sense) I was appointed on the strength of my address book, including non-academics. I have had to expand that address book to *extend the influence of Relu*.”

(Overview of multi-faceted role)

"Sometimes it is a case of *seeing the opportunities*. Sometimes, *seeing the messages*. ... Sometimes *pushing the messenger* rather than the message".

"We needed to do this at all levels in Relu – making sure there were communities of scientists interested in interdisciplinary results and with Knowledge Exchange partners all the time."

(On the leveraging power of the Directorate's centralised budget)

"We needed a significant budget for coordination and communication activities. It is quite interesting—other programmes have tried to do what we've done, but did not have the money to commission people to collaborate, or to do policy-related activities. ... We were given a significant budget to dangle in front of project leaders --to collaborate or speak to policymakers or (pursue) good communication ideas, we can fund those. Having this additional budget for extra networking, coordination, producing non-academic products... that allowed us considerable leverage over what the projects would do; it provided the icing for the cake. (It's amazing that if people have half a million pound projects, they will do something extra for a few extra thousand, but if it was folded in, they probably wouldn't.)"

"We thought of Relu as a brand and *promoted it as a brand*."

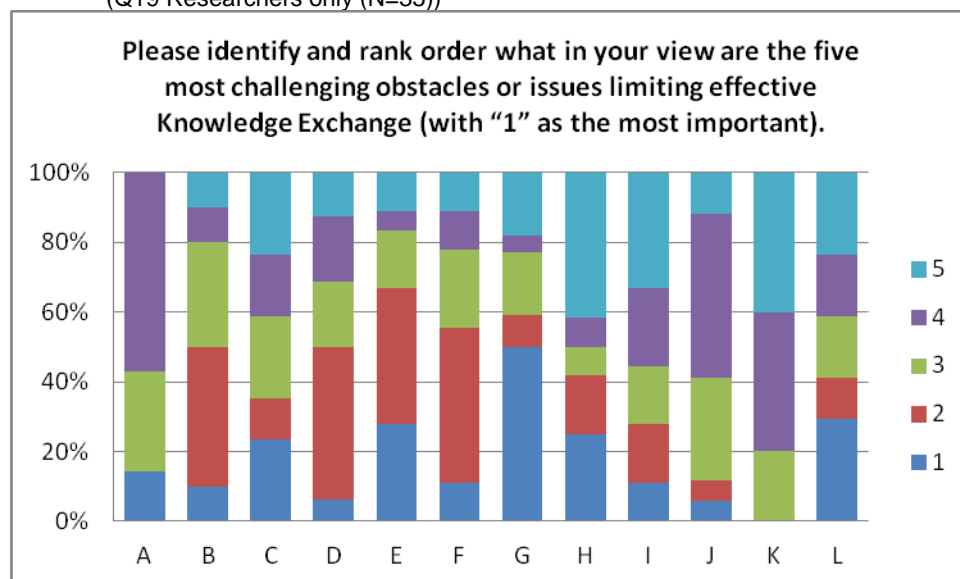
KE OBSTACLES

Obstacles and issues limiting effective Knowledge Exchange

Researcher respondents (only) were asked to consider a list of twelve possible obstacles or issues potentially limiting Knowledge Exchange (or add Other issues) and select and rank order the five they perceived as most challenging. “Attracting busy stakeholders to participate in mechanisms/activities” is clearly an important obstacle, as it was selected among the “top five” by the most individuals (22), half of whom ranked it as most important (ranking it 1 out of a scale of 1-5); this 50% ranking (11 individuals) was higher by far than that given to the “1” ranking for any other issue. (An additional 2 individuals ranked this as 2.) Six other issues were selected as among the top five by 18, 17 or 16 individuals each:

- -Framing research problems that contribute both to academic literature and to real-world questions (12/18 individuals ranked this as either 1 or 2)
- -handling frequent changes/turnover in posts or responsibilities held by stakeholder partners (5/18 individuals ranked this as either 1 or 2)
- -generating impacts/uptake or effects of research findings among stakeholders (7/17 individuals ranked this as 1 or 2)
- -finding a common “language” for both academics and stakeholders (6/17 individuals ranked this as 1 or 2)
- -maintaining interactive relationships between academics and stakeholders that last (2/17 individuals ranked this as 1 or 2)
- -building trust and mutual respect (8/16 ranked this as 1 or 2).

Figure 16 Obstacles/Issues limiting effective Knowledge Exchange
(Q19 Researchers only (N=35))



Survey category key

A	identifying/finding stakeholder partners/champions
B	persuading stakeholders to become involved early in research (e.g. at the design phase)
C	finding a common “language” for both academics and stakeholders
D	building trust and mutual respect
E	framing research problems that contribute both to academic literature and to real-world questions
F	designing/delivering knowledge exchange mechanisms/activities that effectively engage both academics and stakeholders
G	attracting busy stakeholders to participate in mechanisms/activities
H	achieving integration across disciplines to achieve insights useful to stakeholders
I	handling frequent changes/turnover in posts or responsibilities held by stakeholder partners

J	maintaining interactive relationships between academics and stakeholders that last
K	putting findings into forms accessible and useful to stakeholders
L	generating impacts/uptake or effects of research findings among stakeholders

Clearly there are practical issues involved in Knowledge Exchange, including attracting busy stakeholders and handling frequent “churn” in responsibilities held by stakeholder partners. Some issues arise early, framing mutually important research problems and finding a common language; addressing these issues could help with the fundamental process of building trust and mutual respect, which in turn is likely to underlie ability to maintain lasting interactive relationships. And the issue of generation of impacts is a compelling one.

LESSONS LEARNED BY PARTICIPANTS: ENHANCING IMPACTS

Prior to stating our own Evaluator's Conclusions and Recommendations below, we provide here highlights of lessons learned and messages commended by Relu Researchers, Programme Stakeholders and Project Stakeholders. Although framed primarily as messages to funders hoping to promote interdisciplinarity and impacts, the recommendations' content should also be useful to leaders of complex initiatives of the future. Lessons learned for enhancing the practical impact of future research initiatives include:

- the practical challenges facing complex initiatives;
- the importance of interdisciplinarity and of requiring early engagement of stakeholders;
- the critical importance of leadership;
- the importance of a central pot of 'discretionary money' and
- the importance of collaboration across *funders* in the future.

Some researcher respondents voiced a fervent plea that funders *broaden definitions of impact*.

-First, take a more creative understanding of the concept of 'Impact'. Social science impact cannot be measured or assessed or enumerated in the same way as the take up of patent or the adoption of a new technology. Knowledge can be perfectly well exchanged without it being taken-up. The impact of knowledge is not easily observable.

-Clarify what is meant by 'impact' - this term means different things to different audiences. To impress upon RC committees that the wider impacts of research projects and KE processes are true metrics of project success, and not just academic outputs. Knowledge exchange implies a level of engagement with either academic or non-academics audiences, or both. Some forms of funding are more conducive to one or other audiences - it's a tricky balance to be able to face both directions through one project. However, I believe that the Relu programme facilitated and encouraged projects where a really good mix of mono-disciplinary research (and outcomes) and true interdisciplinary research was possible and indeed was needed to address a societal issue requiring this holistic package within the one project. As such, outputs and processes were mixed - meeting both RC and other funders' wider metrics for impact and KE. The Relu programme project model, in my mind, fills the void between true RC and policy facing Defra-style funding - and as such was a much needed, albeit temporary, bridge in UK research funding.

This is not unrelated to what is clearly seen as a potentially critical obstacle (for knowledge exchange and/or interdisciplinarity), *peer review*. Researcher respondents commented:

-KE needs to play a more central role in the research peer review process. No matter how good the science might be, unless effective KE mechanisms and a clear impact pathway are in place, the return on investment will not reach its full potential.

-Throw out normal approaches to peer review and avoid trying to straitjacket interdisciplinary research into 'normal approaches'.

-That it should be integral to every research proposal and valued by every discipline.

Even stakeholders are aware of the *assessment pitfalls* that interdisciplinary research can encounter, and encourage funders to manage these processes if effective interdisciplinary, knowledge exchange work is to be conducted:

-Whatever the Research Council's remit, KE in the area of environmental management requires a considerable amount of interdisciplinary effort - i.e. social science that often falls out of the equation as 'not fitting' the RC's focus. To achieve breakthroughs/insights in environmental management natural scientists and engineers must always consider the 'people' issues. RCs must therefore be more flexible in their assessment processes of proposals and revise their peer review processes accordingly. Too many good project proposals have been regarded as unsuitable or made less useful by the rejection of the social science, or heavy KE, element of the submission.

-Put more emphasis on inter-disciplinary (I.e. linking natural and social science) research projects and programmes. Despite Relu, these still remain in the domain of specialists. Also, take care in not approaching narrower focussed individuals in project reviewing.

Research funder's *structuring of funding, with related expectations*, can make a difference in viability of projects aiming for knowledge exchange and/or interdisciplinarity. One researcher respondent poses this provocatively:

-Create more flexible vehicles / mechanisms for funding a diversity of type of scientific research project through standard responsive mode / blue skies calls. Lots of interdisciplinary projects don't fit thematic program specs like Relu and have no home under existing research council structures. Lots of projects combining knowledge exchange and primary research have no home and have to be pitched as pure knowledge exchange. The bolt-on attempted by NERC of requiring a small knowledge exchange component of all blue skies research is a cheap compromise and fig leaf. It will not come close to doing the job (a lot of expensive, bad websites coming). Thought experiment: what would NERC proposals look like if a really good pure blue skies proposal was rated as an alpha-4 but a really good blue skies proposal that also offered a meaningful public or private good impact was an alpha-5?

Since generating impact may require novel approaches, funders are urged to *take risks and invest in innovation and indeed interdisciplinarity*. Researcher respondents suggested:

-License and support experienced researchers to take risks - to experiment with new working practices in terms of interdisciplinarity and public engagement not all of which will be 'successful'. (There is) Too much emphasis on knowing what research is going to find out before it starts.

-Have the courage to try ... have to have an element of risk.

-Take risks and support innovative experimental research. This project fell into this category and I am really grateful for the chance to test and learn from going outside comfort zone. a similar proposal to ESRC recently was rejected as it was seen as too high risk which I think fails to recognise the importance of doing something new even when I have the backing of all the devolved countryside agencies wanting this research to be done.

-Support multi-disciplinary work more!

-The key thing that Relu generated was interdisciplinary perspectives by combining social and natural sciences. This is a far more effective process in answering the types of questions addressed than a single discipline approach and is more successful in generating impact. The upshot for the Research Councils would be to have more cross council programmes.

Stakeholder respondents also encourage funders to *support interdisciplinarity*, for example:

-Much more strongly sign up to the interdisciplinary agenda and be much more prepared to collaborate in cross-agency funding initiatives (eg with other Research Councils, key Departments and private funders).

-Include social, economic and environmental skill sets in projects and ensure end users are involved

-Maintain cross-disciplinary focus.

-Projects need to be interdisciplinary and bring together groups that might not otherwise have opportunities to work together or be exposed to each others disciplines/ways of working. Relu counters researchers 'cosiness' and brings new groupings together with positive effect.

-Continue to support integrated ecosystem approach to sustainable environmental solutions particularly engaging on social, environmental and economic aspects.

-There is a need for greater engagement of social science in scientific methods and interactions with the more biological sciences. There is a continuing need for inputs from research scientists into policy making.

An interviewee expressed concern over *the fate of academic interdisciplinarity*.

-Keep a really strong science (research) quality focus—innovative research using new methods, exploratory rather than simply applied research which interdisciplinary research can drift into. That's the risk. Research Councils would be much more interested in interdisciplinarity if it meant new methods and exploratory rather than simply applying, problem-solving research. If that is all there is, it wouldn't be Research Council activity; there needs to be a strong emphasis on coming up with academic interdisciplinarity.

Funders are encouraged to *recognise heterogeneity and to promote effective knowledge exchange*. Comments from researcher respondents include:

- Identify different types of research products and what is required to turn these into research outcomes, appreciating that there is a range of different products appealing to a range of different stakeholders interests within the research, practitioner and policy communities. If commercial application is aim of project - then ensure there is /are necessary mechanisms and focussed data to illustrate commercial viability
- Not easy. It depends to whom you are trying to engage. If many, then a central programme administrative capacity is key to spreading the word through Media. If to few (Government or large organisation) then the project can do much itself using personal contacts, possibly introduced by the Programme centre.
- It would be helpful for policymakers to have a stake in the research that goes a little further than attendance at the advisory board.
- Challenge and help try and overcome the limitations faced by government agencies to effectively accommodate and respond to bottom-up initiatives and issues through governance structure reforms.

Many stakeholder respondents encouraged funders to place an *emphasis on engagement and relevance*.

- Applied science should meet the needs of those applying it - develop funding procedures that really do support those researchers that are keen to meet the needs of policy makers and practitioners.
- It would be useful to assess what topics of research practitioners in the field ie non academics would like to see which would be helpful to fulfil management objectives
- Look for views from the potential impactees on how they think the research might best be designed to get findings which would be helpful to them.
- Target your spend where it matters economically as well as environmentally.
- Look for proposals that are strongly rooted in real-world problem resolution of current/imminent challenges. There should be strong evidence of expected value and support from non-academic participants. If the proposals can show the probability of commercial application, that should increase the chances of funding success.

Stakeholder respondents also saw a need for researchers to be *required –and if necessary helped to—become involved with stakeholders as early as possible*, and indeed to communicate progress throughout. Examples follow, led by a similar comment from a stakeholder interviewee:

- Include Knowledge Exchange at the start; it is absolutely crucial to force projects to come up with plan on how to interact with users. The most important part of Knowledge Exchange is to get researchers to understand the context in which their research would be applied.
- When it comes to environmental social research the communities/stakeholders must be engaged in the development and execution of the work
- Ensure that research projects have clearly thought out the details of knowledge exchange throughout the duration of the project - not just at the end.
- Encourage early contact with specific set of policy makers and provide funds for researchers to meet policy makers in those 1:1 mtgs rather than larger, more general workshops
- Make sure that proposals include stakeholders at all levels
- Be inclusive no jargon choose carefully your front line communicator and recognise your fallibility don't be elitist respect practitioners and avoid dishonest politics
- Continue to strengthen (and monitor performance of) Stakeholder Consultative Groups in design as well as dissemination of research findings
- Ensure the broadest possible stakeholder involvement, and foster mutual understanding of the constraints under which they operate.
- Everyone involved needs to have enough information so they have, from a very early stage, a complete understanding of the objectives and what is required of them.
- Raise intellectual awareness regarding the difference between interactive / shared / local management on the one hand, knowledge production on the other hand. The issue of democracy and WHO gets a role in the interaction

-Funders need to ensure that research projects include the requirement to have active communication with the funders and the policy-makers and other end-users of the research throughout the course of the project.

-Do not assume that this will happen naturally by 'osmosis'. Identify specific resources for knowledge exchange and put in place mechanisms and structures that support the activities and individuals involved. Ensure there is accountability - 'what gets measured gets done'.

A stakeholder interviewee articulated one view of why it is important for academics to have *early engagement with stakeholders*:

-Sometimes it is the way questions are posed by academics that may not be all that beneficial to everybody. Maybe naiveté or sometimes want to make a name for themselves and a big splash. Sometimes they just don't understand what would actually be a better question to ask. So having some sort of engagement with policymakers can make them more likely to ask the right questions—though I'm not suggesting they shouldn't be challenging questions. That is the best way to go about investigating difficult issues. A lesson learned is that it is a question of trying to reality-check the research question with policymakers who know how the policy operates in practice and will often know where the pinch points are in practice.

Indeed, stakeholder respondents are aware that not only does the *cost of engagement activity for researchers* need to be recognised by funders, but that also engagement can represent a *cost for stakeholders* and thus needs to be valued:

-Involving stakeholders needs time and this needs to be factored into funding and timing of projects by RCUK. It will be important to find funding means also for non-academic contributors, so that they can ensure their continued contribution within their organisations—even when other priorities come up. Small funds for hosting research events will be helpful to create engagement and ownership. This can then also ensure that not only few interested individuals of partner organisations get involved but that knowledge trickles through the organisations and the research collaboration is truly valued and not seen as a 'folly' of an interested member of staff. This funding might come with a requirement to report on KE within the organisation and with outside partners.

-Provide funding to all partners.

The idea of knowledge brokers or *knowledge intermediaries* was raised by stakeholder respondents, for example:

-Knowledge-brokers with an understanding of research AND policy are needed to do undertake this synthesis work. They can both help policy-makers understand what research is telling them and equally help researchers understand what is going to be of particular interest to policy-makers from their work.

-Translators, people between academics and stakeholders who have a broad view, understand the views and jargon from both sides and can draw outputs from different projects together are key to successful KE.

While one stakeholder interviewee recognised that finding and relating to Knowledge Intermediaries within stakeholder organisations can be useful, another stakeholder interviewee even recommended deliberate development of related *skills*:

-Have some sort of training and development programme to allow people (to develop) facilitative skillset.

And another interviewee would encourage Research Councils to be sure that lessons learned (e.g. from Relu) or other *mentoring* is available to future initiatives:

-You are essentially starting from scratch every time generally with a bunch of novices from academia. Someone needs to provide advice to new activities they set up—'these are the core sorts of things you should be aiming to do'.

Some recommendations were made for research funders related to quite *practical challenges*. Researcher respondents, for example, made suggestions such as:

-Provide programme level support/leadership like Relu. Don't expect too much of academics in projects.

-Allow more time for it.

- Recognise that this is a time-consuming and specialised area that requires funding.
- It would help to build a dissemination officer post into the main proposals - at say 40% time. You cannot rely on busy academics to carry out KE activities despite their willingness to engage.
- Loosen the restrictive criteria that prevent applied research institutes (such as public sector research establishments) from being funded/treated as equal partners as academics - on initiatives/projects where they seek to exchange knowledge and have real world impact.
- Applied researchers have extensive networks of stakeholder contacts, are familiar with policy contexts, can translate between academics and stakeholders - and can complement the skill sets of University academics in a productive and mutually beneficial way.

Stakeholder respondents also have *practical suggestions*, such as, for example:

- Decide which programmes are oriented towards fundamental research and design appropriate KE for them. Decide which programmes are applied research and place much more emphasis on KE. Ensure that programmes that should have strong KE dimensions are longer-term - building the relationships for effective KE takes time. In other words, spread the money out over a greater number of years.
- Ring fence a sizeable chunk of budget for Knowledge Exchange Activities
- Make sure there is enough resource (time, money and effort) to fund the update meetings and exchange of information / dissemination of knowledge gained from the research to get the knowledge out to the people who need it.

Interviewees, who tended to be positive about Relu's *leadership, structure, longevity and central budget*, made often related suggestions to funders, for example:

- The issue of reinforcement and continuing engagement – is what enduring connectivity is all about. A 5-6 year programme lends itself to making the connections more enduring.
- Relu does show the need for a phased development of a project like this, especially where capacity needs to be built. (An issue is) looking in the round at projects and thinking what, by spending a little more, could we produce and add value.
- Selection of leader is really difficult ... mode (could be) similar to Philip Lowe's – very proactive, stimulating,... very much out there moving the whole thing into an intellectually coherent whole. (Project leaders can't do that.)
- Key to look for: someone who could communicate with different communities, wouldn't push own disciplinary agenda, and could have a dialogue with some end users
- Go back to how you select the right sort of interdisciplinary people to lead these programmes ... work out what you need and then recruit it. Quite a few times the really good scientists are not really good team leaders. And I think it is the same with programme leadership, background but not necessarily the best in their field, but what they are good at is getting the best out of people who are good in their fields.
- It's rather like being a good chairman – who doesn't know everything about all that is covered, but can bring out the best in panel members.
- Ideally either a balance of natural and social scientists, or actually interdisciplinary individuals in leadership roles
- When it is a reasonably sized programme, you really ought to have teams leading them, with the size depending on the size of the programme.
- Interdisciplinary projects should have a support activity like the Relu secretariat. Because they're interdisciplinary, they need special skills involved. ... Relu also showed you really get people to work together when there is a common pot (of money).
- Relu had quite a useful combination—a dedicated budget and a dedicated programme director. Within Relu, projects were selected by commissioning panels. Philip's role was the champion of interdisciplinarity. He's done a really good job of working within the limitations of that process while still arguing for and managing to achieve the focus of the programme. And once projects were selected, engaging people so they know what expected of them ... And acting as champion for the programme, seeking out money and recognition and engagement of all sorts of people.

Co-investing and indeed collaboration is seen as a positive route, even for funders, as for example some interviewees express:

- That's why the pot that Relu had was so important --- where everyone puts in something to s central resource, so there is a sense of investment. The common pot was really important.

-A Directorate investment means different Research Councils coming together. (Relu) immediately brought people together who might not have mixed ... If that space was not there, presumably organisations would have carried on ploughing their particular furrows.

-As a policymaker, interdisciplinarity helps me solve the problems I have on my desk. I think increasingly we understand this is not just asking very narrow specialist questions but the broader socioeconomics is important too—I can only see this being done by broad interdisciplinary programmes. That needs to be a much bigger element than it is now. I would push for that. I think Research Councils need to respond to that need. I see increasingly the demand from government for that. The Research Councils need to think about the long-term in strategy. When money is so short, people jump back behind silo walls, 'this is what we do and do well'. But that is not what people need. Research Councils need to be much more open to a more collaborative approach.

Some interviewees expressed prioritisation of quality of science over knowledge exchange potential; some the opposite; probably many accept the realities of the need for funders to *balance*, depending on the aims of an initiative. Funders need to think of purposes and also non-academic colleagues:

-(Funders should ask themselves) How do we make this programme better as opposed to individual projects? Funders should make an effort into projects sitting together and provide resources to bring out messages from the whole programme, not just individual projects.

(Funders) expect projects to do this themselves, but it is not in the nature of academia; no one spends much time in synthesizing messages for society. The Research Council system doesn't do that very well. (With Relu) there was a resource at the centre that seemed to take this on board, put in a lot of time and had money available to do that joining up.

-Try and get the funders to see it from a multidisciplinary approach and be sure they define the outcomes of the project in that multidisciplinary way so that everyone can benefit.

-Use of seed corn is quite a valuable way of initiative building and getting teams together who wouldn't have dreamed of working together without it.

- Research Councils are trying to address big social questions, but not having the right people listening in policy and delivery...means there is not value for money.

G-ive enough airtime to end-users on panels.

Some messages had to do with *capturing of impacts*, covered elsewhere in this report. Just a few examples here include researcher respondents' suggestions below:

-Impacts take time to materialise, and early signs/indications may not be indicative of sustained effects. Sustained effort on developing and extending common understandings is vital.

-Ensure like Relu that Knowledge Exchange is seen as a core component - rather than an extra. Promote a better system for tracking and logging of interactions and impacts. My institute is investing in a monitoring and evaluation system for projects - specifically to track these activities.

And, as in some of the earlier points captured above, respondents often *commended Relu* to research funders. Researcher respondents said, for example:

-Have a very close look at the Relu programme!

-There is much of value for other Councils to learn from how Relu has operated. Some of Relu's innovations should become standard practice (e.g. being explicit about the rationale and objectives for interdisciplinary working on the application form - this was very important).

-Follow the Relu example, a lot of hard work goes into it; make sure it's adequately financed.

-Make sure that the lead of the programme is absolutely committed to this in the way that Philip Lowe was

-When communities like Relu are created, thought ought to be given to building on this for future programmes even in seemingly unrelated areas.

-Provision of appropriate training drawing on lessons learned from Relu and other work.

Stakeholder respondent comments included, for example:

-(Realise) That knowledge and expertise is out there, but not always easy to find or harness. Don't keep trying to reinvent the wheel - use, refine and build on the experience already gained from work such as Relu

-Learn from Relu which I think has been exemplary in this field. High level of social scientists involved really helped the transfer from science to policy. Research funders must talk to government departments more and explain that having knowledgeable policymakers who remain in post for a period of time is critical to knowledge exchange and ensuring that research transfers into delivery.

Interviewees did express some concern that, with frequent changeover at all levels in Research Councils, learning from Relu might not be retained.

REFLECTIONS ON EVALUATION METHODOLOGY

Reflections on our own methods, positives and issues encountered

We have affirmed what we suspected –that a mixed portfolio of methods is appropriate to identification of non-academic impacts from a complex programme. Surveys: provided information that could be aggregated and quantified (even if about qualitative elements such as views); elicited free-text, attributable identification of impacts; and assisted in the selection of reflective interviewees and positive case studies. Semi-structured interviews were particularly useful in eliciting thoughtful comments digging into types of impacts and subtleties such as ways in which the overall Programme was viewed or added value. Case studies allowed us to tell rich stories connecting subjects with routes toward impacts with often multiple types of impacts; vignettes provided a useful complement as punchier illustrations. Similarly, as expected, we benefited from triangulation across perspectives including researchers, Directorate, project and programme stakeholders and “overview” individuals.

Some issues we faced were common to any evaluation of non-academic impacts, such as difficulty/impossibility of attributing causality (or financial return estimates) and the inevitably long-term, diffuse nature of most impacts, particularly those in policy or practice. However, this evaluation accentuated these challenges in a couple of ways, primarily because we “stretched” ourselves to try to tease out possible impacts of the Programme itself (including the Directorate) rather than just looking at an aggregate of projects’ impacts. This caught us up in issues of very widespread, “zeitgeist” sorts of changes –for instance toward increasing acceptance of the importance of social science in some seemingly natural science research foci (such as plant or animal diseases, or catchment) or indeed the shift which has occurred over recent years from “Knowledge Transfer” to “Knowledge Exchange”. We and many others suspect the Relu programme contributed to such changes, at the least affirming them, and we have tantalising bits of suggestive evidence; yet this would be impossible to *prove*. Even looking at Programme impacts through slightly more focused lenses – in our case study on Land Use and analysis of Communications – we had to work very hard to find threads of causality within large and diffuse areas of possible impact. We addressed these issues by: working very hard; complementing Programme-level studies with more conventional project-level case studies; and maintaining our constructive emphasis on learning as a valid objective along with impact identification.

Another issue accentuated by Relu was scope of coverage. Ironically, our job as evaluators was made more difficult by the broad portfolio of Relu activities promoting Knowledge Exchange, coupled with extensive information gathered by the Directorate and captured in numerous publications/documents. Commendable though these efforts were, our team had to work through and distil far more information than would have arisen in a programme with a less pro-active and analytical leadership team. We had to focus strictly on our examination of impacts, impacts-in-progress and routes thereto – we could not, nor should we, take on the role of creating a comprehensive list of all that Relu has done; that more promotional role is being handled thoroughly by the Relu directorate, as can be seen readily on its website.

This issue of course also has a positive side --- a great deal of information was available to us. In fact, at some points we had to choose tactically among possible foci to pursue. For example, we deliberately chose only one of the top four projects winning Relu’s impact/innovation awards, so that we could add value rather than simply re-treading old ground. (Yet, we would have found it helpful to have had similar impact statements from all projects.) We are pleased that we may have been able to contribute to understanding as to “flows of knowledge”, in particular how an initiative can either lead directly toward impacts and/or enhance the impacts of its constituent projects.

Another positive was the willingness to contribute to the evaluation shown by researchers, stakeholders and other external individuals involved with the programme. In fact, we are

particularly pleased by the significant number of stakeholders (99) from whom we received survey responses; in addition to speaking well for their commitment to the Relu programme, this level of response has allowed us to add an unusual dimension to our analyses. Some of this stakeholder input may even be a “first”; for example, we provide here an analysis of *stakeholder* views on impact identification, a challenge most often deliberated upon in research institutions and related government bodies.

It should perhaps be noted that from 2009 Relu’s Stakeholder Impact Analysis Matrix (SIAM) primarily gathered, annually, researchers’ input as to their projects’: number/type of stakeholders, types of engagement activity involving stakeholders, researchers’ ratings of impact of stakeholder interaction on their own research and researchers’ views/ratings of potential impacts on stakeholders. Thus, while SIAM was doubtless an excellent tool for identifying a stakeholder pool/“soft networks” and capturing information about Knowledge Exchange, it did not provide a convenient set of impact stories (although Relu publications such as Changing Landscapes did provide some stories), nor did it interrogate stakeholders themselves.

Reflections on Impact Evaluation

It is our long-standing contention that subtle exploration of impacts illuminates effective aspects of routes to impacts, and that, in turn, nuanced understanding of impact-generation processes provides insights into what sorts of impacts, impacts-in-progress or indicators of likely impacts lend themselves in what ways to identification. Close examination of value added at the level of an initiative (e.g. programme) has provided additional illumination over and above looking at impact-generating processes at the project level alone. Initiatives may attempt to generate impacts directly, through promoting key findings or concepts; they may also assist constituent projects in generating impacts, through capacity-building in Knowledge Exchange, matchmaking or assistance with targeted communications, for example. Considering interactions between initiative-level actions and prospective impacts highlights the importance of the concept of a “portfolio”. Rather than focussing too exclusively on hoped-for lines of attribution from any one research finding toward any one impact, it may be most useful to enter into impact evaluation expecting to find diversified portfolios at several levels:

- A range of Knowledge Exchange efforts, some more successful than others individually, but ideally as a group creating some level of an initiative “culture” among individuals oriented toward Knowledge Exchange
- A range of early steps toward impacts, more advanced impacts-in-progress and (fewer) fully-fledged impacts, along with constituent efforts leading to no discernible impacts whatsoever
- impacts or impacts-in-progress that fall into more than one of the five types of impacts explored here.

Some seeming paradoxes may need to be recognised in sensitive impact identification. For instance, “Conceptual Impacts” have been noted by ourselves and others to be at times very powerful, yet they are famously hard to pin down in terms of sharp definition or causality. If indeed, for example, as seems likely, the pro-active promotion of Relu’s emphasis on interdisciplinarity and Knowledge Exchange helped to affirm as received wisdom the validity of those two processes in leading toward impacts, then that alone could be seen as a significant conceptual impact on those funding and developing policies around research. Multiple individuals with an overview perspective believe that Relu played this role of accelerating or underpinning a change in zeitgeist, enough to convince us as evaluators that some such contribution was made by Relu. Yet, it may just have to be accepted that no quantification or neatly delineated attribution can be captured.

Two paradoxes facing evaluators involve “invisibility” of routes that enhance impacts by engendering a sense of ownership. This can be seen when teasing out impacts generated or enhanced by a programme’s directorate --- if the directorate succeeds in establishing a new

community culture such that capacity and enthusiasm for Knowledge Exchange become embedded in individual researchers, the directorate's role may become less visible relative to projects' roles. Yet, this is surely a success in terms of a widening ripple effect enhancing likelihood of impacts. Analogously, if researchers work so closely with stakeholders from question-framing onward that the stakeholders internalise insights as "their own", the "trail" to impacts may be particularly difficult to see (in contrast, for instance, to a researcher handing a 'package' of findings to a stakeholder who then subsequently utilises the findings). Yet, impacts of the research may have all the more chance of becoming embedded in stakeholder choices and actions.

A challenging focus for future exploration would be to build further upon the stakeholder insights into impact identification gathered in this evaluation. Formative evaluation encouraging reflection by all parties throughout the life of an initiative could help to engage stakeholders in illumination of routes toward impacts. (For a multi-project initiative (albeit only a year long) on Knowledge Exchange into policy and practice, we found that our conducting a Learning Review throughout the initiative helped researchers and stakeholders across projects to share issues and insights, for example.⁴⁹)

Even as it has become accepted that Knowledge Exchange should not be a "research push", but should instead be the result of a two-way interaction, so perhaps it is time to think more deeply about both sides of the impact-generation equation --- not only the roles of initiative and project level researchers, but also the possible roles of stakeholders. Following another impact evaluation, we have elsewhere, for example, developed with stakeholder colleagues a set of "Golden Rules" for embedding research into policy and practice, which explicitly includes responsibilities for stakeholders in that process.⁵⁰ Like nations whose economic development agencies seek to encourage companies to turn to research findings in order to become competitive through innovation (rather than simply telling university liaison offices to work harder), a possibility is that initiative leaders might need to work pro-actively with stakeholders to generate "market demand" for their initiative's research. (Relu's Director Lowe's comment is thought provoking in this regard: "sometimes I would have to help create novel policy communities to engage with the novel scientific communities".) In this context, it might be useful to consider an initiative's leader or directorate as an organisational Knowledge Intermediary, crossing boundaries, translating and helping both "sides" identify shared aims.

Evaluators' Recommended Points for Funders/Initiative Leaders to Consider in Future Impact Evaluation

- Communicate early and throughout that: 1) different types of impacts exist (such as Instrumental, Conceptual and Capacity-building Impacts, along with Enduring Connectivity and Attitude/Culture Change); 2) impacts-in-progress are valuable, not just full-fledged impacts, and 3) learning about routes toward impacts is a shared goal
- Monitor projects' KE activities/relationships with stakeholders early and throughout the initiative—without overburdening individuals.
- Provide incentives for participating in impact pathway/impact monitoring; employ a celebratory rather than a nagging style.
- Consider identifying a set of "likely" prospective impacts and building up story details about them, towards case studies. (At best, by initiative's end, this will provide one or more well-grounded case study of impact(s), along with routes through which it was/they were achieved. At worst, some detail on interactions and routes will have been gathered, along with possible learning as to what works and what doesn't).

⁴⁹ Meagher, L. & Kettle, A. (2009) *Briefing Note: Knowledge Exchange in Public Policy & Practice*.

http://www.sfc.ac.uk/web/FILES/Our_Priorities_Knowledge_Exchange/KE_Public_Policy_Practice_-_Briefing_Note.pdf

⁵⁰ Meagher, Laura, Jarron, Stevie, Kind, Vanessa, Staines, Andrew, Lyall, Catherine. 2010. *A Review of the Impact of SNIFFER and SEPA Projects*, Summary Report <http://www.sniffer.org.uk/news/4118/SNIFFER-and-SEPA-Review-the-Impact-of-our-Research.aspx>

- Attempt to engage some stakeholders as champions of impact identification, to help gather information throughout and even post-initiative, perhaps including those involved in the prospective case studies.
- If possible, obtain funding to enable both formative evaluation (as above) during an initiative and also post-initiative follow-up to capture later manifestation of impacts.

Relu Participants' Thoughts on Impact Identification (primarily those of stakeholders)

Overview

Throughout the evaluation, we sought views of individuals involved with Relu as to how, generally, non-academic impacts might be identified or tracked. Most often, in studies on impacts, thoughts on this challenge stem from the academic sector. Because we were so fortunate as to be able to gather stakeholder thoughts through both surveys (free text replies) and interviews (some 35 stakeholder individuals responded explicitly through at least one method to this issue), we are able to offer here suggestions and views from “the other side of the equation”. The fact that, while some offered fairly specific suggestions for approaches to impact identification, many commented on the difficulty of the challenge and the lengthy, diffuse nature of impact generation into policymaking or other stakeholder realms would seem to corroborate views put forward by academics. In other words, as important as non-academic impacts of research are, difficulties in tracking them are very real, rather than simply “excuses” or special pleading on the part of academics not trying hard enough. When looked at through any lens, challenges exist for those of us seeking to identify impacts.

Stakeholder Thoughts on Impact Identification

Lengthy Timeframe and Diffusion of Impacts

The *lengthy timeframe* over which impacts manifest themselves was often noted. For example, a private sector stakeholder respondent commented about impact identification:

“That is indeed difficult because it takes time and resource and the outcomes may only be apparent years later. Talking and planning is one thing, successfully implementing is another!”

Similarly, another stakeholder interviewee said, “Evaluation is really difficult (with) policy formulation as there is no direct line; (you’re) hammering away for five years and suddenly (something) happens.”

Using Relu as an example, an overview stakeholder interviewee mused on the issue of likely timeframes for impacts, even when, as he observed, various environmental and land use strategies are moving toward a wider landscape scale in an (Relu-like) interdisciplinary, multi-functional sort of way:

“The fact that Relu research has finished is even better — it is there to use. But if we’re talking (about) change to landscapes, it will take at least a decade to bring about, 3-4 years to write a new agricultural policy (and so on), let alone implement, so (if) we’re talking about rural land use — a change in appearance in the British landscape, even when we decide to do it, we won’t see (it) for at least a decade. A very slow process. I think we will still be seeing impacts from Relu, 20-30 years down the line (or impacts Relu had a part in). ... In 25 years we won’t be able to track down to Relu! It is difficult to get across but that doesn’t mean it isn’t true.”

Some stakeholder respondents noted what they saw as *a linkage between the diffuse nature of impacts with the length of time over which impact-generation frequently occurs*. A stakeholder respondent reflected:

“It’s difficult!!! The impacts will spread out exponentially from their point of origin and become so diffuse it may be impossible to track. Beware falling into the trap of ‘what did the Romans ever do for us’ type questions. The influence of outputs or ideas from their first emergence to

their full acceptance into society takes many years and requires translation across many boundaries. Very often the originator of the idea is not remembered and/or the origin has been lost in the translation. Also the influences are cumulative and the end result may not be because of any one initiative. However, without any one of the influences the resulting outcome may not have happened.”

In interview, this overview stakeholder expanded on the *difficulty of capturing impacts* (a challenge faced in their own stakeholder role, as well), suggesting that policymakers may even go out of their way *not* to be influenced by any one research project:

“(It’s) all indirect and there are other influences at stake. It is not any one project that changes the world, but a combination of different strands of evidence. This is particularly true for policies developed at government level; policymakers are always very cautious not to take just one strand of evidence, but several. So they will take a lot more notice if three academics say the same thing than if one does. ... So tell funders it doesn’t work that way. ... So synthesising and review projects are probably quite influential in the policy environment— (by) doing what policymakers should do anyway, gathering and evaluating strands of evidence”.

It might be worth noting that, typically, academics are given less credit (in terms of REF, promotion, etc.) for synthetic review articles than for focussed one-project research articles, an example of the tension existing between goals of academic careers and non-academic impacts.

Another stakeholder interviewee commented similarly on challenges inherent in *attribution* and in diverse timescales:

“Policymaking takes such a long time so cannot usually be attributed to one project. (It’s) very hard to judge a project on that or to say that this one project was really responsible for a change. Sometimes things just take their time (even if a project is successful) and sometimes policymaking needs to press ahead before evidence and then adapt to incoming (evidence). Or the evidence is there and (it) takes time before (use).”

Instrumental Impacts, Expectations and Factors beyond Researchers’ Control

Although the more “tangible” *Instrumental Impacts* are often viewed as particularly desirable when impact evaluations are conducted, an overview stakeholder interviewee emphasised the difficulty of identifying Instrumental Impacts, in particular:

“What Relu has tended to do is that it brought together quite a lot of information and a lot of thinking into specific projects, building on existing work, some funded by Defra or others. Because it was bringing together Rural Economy and land use, it has developed conceptual thinking and built capacity and led to culture change. But it is much more difficult to identify instrumental impacts as such; setting new policy dimensions would take more than a research project to change.... It is the same with our own research; it is really difficult to bottom out exactly what has led to change.”

This same interviewee also encouraged *proportionality of expectations*, pointing out that some stakeholder entities will have very large budgets indeed (including, sometimes, research budgets), so that, for instance, it would be “expecting too much to expect Relu to have a large instrumental impact, just due to the scale of things”.

Another overview stakeholder interviewee argued *against trends focussing on Instrumental Impacts*:

“Instrumental Impacts—regarding causality, in that sort of area I don’t like the concentration of funders on that, in relation to REF. (A person) can do a stunning bit of work and the government changes at the point of impact and it goes nowhere, or not so good and the government is open to it—the difference between those levels of impact is not attributable to the researchers. It is unfair as a way to measure the impact.”

A related point was made by a different stakeholder interviewee, using the example of Relu, as to factors beyond a researcher’s control, specifically in terms of *windows of opportunity* ---

whether or not the message conveyed in their findings would happen to be considered palatable or useful when they were made available:

“In some ways Relu was lucky, when it was producing outcomes, there was a change in the administration (toward) wanting a white paper on the environment. Those windows of opportunity are very precious for people with a message to sell. ... If you find people with blank sheets to write on, you're in! --- in a way you wouldn't be if a policy were already written. Timing is exceedingly important.”

Stakeholders noted the *unpredictability of impacts* and thus the need for tracking, for example a stakeholder respondent said:

“I think there is a need for surveys of awareness of major research programmes, and small projects to track research impacts. Often the impacts turn up in places that are unexpected and could never have been foreseen by the researchers themselves.”

Possible Approaches to Impact Identification

Some linked this appreciation of subtleties and time into suggestions for *approaches* to impact identification. For example, one stakeholder respondent suggested going to the lengths of establishing a *baseline*, checking at the end of a programme and again several years later.

“I'm not a behavioural scientist, but the key impacts sought will largely be in terms of understanding, perceptions, values and behaviours among policy makers and practitioners...changes in these will often be over timescales that extend well beyond what may already be lengthy projects/programmes and direct links will always be hard to pin down. Incorporating 2 strands of work into such programmes may help. Firstly ensure a baseline, both based on quantitative survey and qualitative review is in place at project/programme initiation, repeat it at project/programme close and again after 3-5 years. Secondly define 'change indicators' as success measures at project initiation...and again put in place funding to conduct qualitative policy/practice reviews not only at project close but 3- 5 years post implementation.”

A strong suggestion from stakeholder respondents was that *impact evaluation should include returning several years after the close* of a research effort.

“This survey and surveys every year for perhaps five years to see where the research has led.”

“I have valued highly the opportunity to interact with, and seek advice from academics since our project ended in Oct 2008. Perhaps an ongoing annual brief survey to academics would indicate the level, impact and longevity of contact.”

Looking at this practically, stakeholder respondents recommended *provision of support for post-project evaluation activity*:

“Make some funds available so that someone can visit the project teams, the stake-holders and the funders at, say, annual intervals for 5 or so years after the end of the programme to see what lasting impact has been made.”

And even support for follow-on interaction:

“Include in the funding, support for researcher to continue with the policy maker for some time after the work has ended, and for an evaluation with the policy maker a year or more later.”

Several fairly specific suggestions were made as to approaches to impact. For example, one stakeholder respondent referred to using “a logic model approach to tracking the impact of ... investment in science and demonstrating linkages to the higher level outcomes sought”. Another stakeholder respondent suggested three approaches, generalisable from Relu:

1. Examine the content of Government policy statements post publication of Relu inputs.
2. Examine uptake of practical ideas to improve delivery of policy in practice.
3. Measure the number of active links between policy-makers and researchers - i.e. the extent to which there is more dialogue between them.”

This last point in particular resonates with the “Enduring Connectivity” impact we have investigated in this and other impact evaluations. Similarly, an overview stakeholder interviewee said that one “might look for evidence that people brought together under Relu have continued”, agreeing that research understanding is more likely to be used if there is Enduring Connectivity. Another overview stakeholder interviewee, noting difficulties inherent in the fact that “there are some examples (of Enduring Connectivity) that one can identify, but quite where they come from is hard to say”, described multiple interactions with individuals over time, saying that the “issue of reinforcement and continuing engagement --- is what Enduring Connectivity is all about. A five to six year programme lends itself to making the connections more enduring”. Yet another stakeholder suggested that Enduring Connectivity be looked at more broadly than individual to individual, then agreeing that in a sense this approach is like looking for what we refer to as *Attitude Change* toward Knowledge Exchange:

“Have those stakeholders gone looking for other scientists they want to get to know rather than the ones they’ve worked with? Is there a bunch of stakeholders more aware of the potential of research to answer their questions? Often stakeholders have a much wider requirement for research than (could be met by) any one research group. So to me one of the impact things would be: did stakeholders then go look for some other research that would be of help to them. ... Enduring Connectivity with *research*, not the researchers specifically.”

One stakeholder respondent suggested measuring (somehow) the way in which stakeholders moved findings into their own work: “The impact should be measured how non-academic partners can take the results forward and incorporate (them) into mainstream.” Similarly, another stakeholder respondent said “Very difficult, but there has to be a relationship with government and legislative development”. A stakeholder interviewee emphasised financial impacts, including those of policies themselves:

“Moving ahead, I think it’s trying to evaluate what the impacts might be in financial terms. Doing the multidisciplinary approach, with a view to once having done it -- articulate the financial benefits. If policymakers are looking at options or actions that might deliver a policy—what are costs, ... financial benefits to society , and (that is) always difficult. A lesson learned — try to put economic value on delivery of social goods ... Whilst soft stuff needs to bet here, if you can put economic value, it makes a difference.”

On the other hand, a different stakeholder interviewee suggested that

“Relu provided opportunities for coming together, through interdisciplinarity. The danger is that opportunities really disappear or only excellence of science ‘counts’. Or that Knowledge Exchange impacts count only if (they are) economic”.

Citing the direct influence of Relu on the Water Framework Directive catchment approach, another stakeholder respondent suggested that for this, and presumably other cases,

“the best way to capture this is to ask policymakers and delivery bodies. Another more robust way is to track the input of researchers involved in these programmes, e.g. (a government body) have actively sought the input of (two Relu researchers) on a number of projects following their Relu work. Capturing this somehow shows the value that government places on the work they are doing.”

In interview, this stakeholder also suggested: “Have (project) people involved in Relu look at (a) white paper and say ‘what bit of your analysis went into that, what discussions did you have with policy teams, involvement in ... events?’”, but concedes that “it is very hard to track”.

A different stakeholder respondent suggested something similar:

“Ask for additional feedback 6 months or a year after project completion? Sometimes there are delayed impacts or issues begin to inter relate / clarify after a time gap Try to find practitioners who have sought to apply the research findings in the real world and get their feedback e.g. by tracking website hits / following up requests.”

Another stakeholder respondent posed questions to ask:

“For this project: have we seen a real change in policy which has survived changes in the structure of the regulatory authority involved, and have we seen an increase in product availability for end-users?”

Analogous to lessons learned about early engagement in Knowledge Exchange processes, one stakeholder respondent emphasised the importance of getting the stakeholders who will be tracked later on board from the very start:

“Ensure that the methods for tracking and realising benefits are established at the outset as part of the project in agreement with the stakeholders, this will soon dismiss projects that have no clear outcome.”

Some stakeholder respondents raised a corollary issue –the importance of keeping stakeholders informed, and feeling included, even after project end, if there are to be impacts, such as through

“Annual bulletin linking participants of any project past with invitation to contribute own follow-up work or interest that was stimulated by inclusion in the research project, even in a small way.”

Pragmatically, impact evaluation is sufficiently difficult that not everything can be traced, as one stakeholder respondent said:

“Focus on specific examples. Don't try to capture it all and accept that attribution to particular outputs may be difficult.”

In response to this question, one stakeholder respondent exemplified the challenge of “churn” among stakeholder partners by pointing out the reason for incomplete responses in areas of the survey: “Just wanted to add an explanatory comment for my blank responses- I was involved initially with RELU but the changes due to machinery of Government led to (my area) moving ... at which point my active involvement in the RELU work ended”. As another complication, when a long-lived programme is involved, relative “age” of component parts, as well as learning over time, might influence impact identification findings, as one overview stakeholder interviewee commented regarding Relu:

“The timing thing is going to be quite interesting, because there were waves of projects— some have had longer (since they have) finished and therefore their impact may be greater (and (yet) those that finished later will be fresher in people's minds) ... And because lessons were learned during Relu, it may be that later projects benefited.”

Focusing on the possibility of pervasive influences on research and science policy institutions (discussed elsewhere in this evaluation), as in the promotion of interdisciplinarity, one stakeholder respondent suggested:

“Look at how research calls and commissions are reflecting interdisciplinary approaches. There are indications that this type of approach is becoming embedded in some Departmental funding of research but less so in Research Councils. Look at key evidence organisations (e.g. research institutes, universities, Govt science agencies) to see if they are strengthening their interdisciplinary approaches and how (eg through collaboration, direct recruitment, sub-contracting). Go back to some of the non-academic stakeholders and ask them whether there have been changes in the way academics (and decision makers) have involved them subsequent to RELU.”

To tackle the difficulty of finding impacts of a broad programme like Relu, one stakeholder respondent even suggested development of an international baseline as a sort of control:

“Examine progress of policy development outside the UK in countries where there has been no such large -scale multidisciplinary projects like RELU and compare and contrast.”

Researcher thoughts on impact identification

While we have emphasised here stakeholders' reflections on impact identification as a relatively unusual contribution to consideration of the issue, we did also ask researchers' their thoughts, primarily through free text survey replies as captured here. A dozen respondents replied when encouraged "If you would like to share any insights as to practical methods for identifying/tracking research impacts arising from large-scale research investments such as Relu, please do so!" One captured the overall challenge: "It's very difficult as it may be a small tremor in time which has far-reaching effects into the future." Similarly aware of the 'time' dimension, another suggested a way to consolidate and extend the impact of Relu:

"I feel it was a shame that the legacy could not have continued with a 'batch' of RELU PhD sponsored studentships - to a) maintain the glue between research groups, b) continue the outputs badged by RELU (keeping RELU in the public eye), and c) training the next generation of researchers with the capacity to integrate natural and social science."

Another respondent offered a conceptual approach:

"(It) would be useful to develop a logic framework to track research activities, outputs, outcomes, impacts as part of an evaluation process, assessing the linkages between programmes and projects. The kind of approach recommended in the HMT Magenta Book for example applied to research programmes."

Others noted issues posed by the context within which researchers attempt to generate impacts: "You might persuade the REF to value them!" and "Tricky, because impact was not as high on the agenda when RELU was conceived as it is now. RELU was ahead of the game here but that leaves a bit of a vacuum for the community created". (Only) one individual commented specifically and negatively about the current system, saying "It is cumbersome and impossible for me to complete. All my activities seem rejected so I have given up."

Several comments related to the importance –and inherent difficulty – of tracking impacts on policymakers and practitioners. "I think the most important thing is to see how the projects informed policy and practice for stakeholders. I am unclear how this can be done beyond asking the individuals/departments etc about this." Similarly, "Follow the researchers". One respondent offered a suggestion for overcoming the contradiction posed by the imperative for researchers to move on in the face of impacts building up over time.

"Maybe a specific centralised activity to continue to track and promote the findings from individual projects with key stakeholders post project funding completion. For researchers - once the funding is over we have to move onto the next project rather than promoting and tracking impact in a 'completed' activity. Impacts may occur and build after the research is over - a central part of a future programme could track and promote these post research post funding impacts."

Some comments were oriented toward stakeholders: "Regular contact with stakeholders is a useful first step" and "There is a need to obtain more specific 'recordable endorsements' from research users, policymakers, etc." This last is an intriguing suggestion that would doubtless be valued by researchers, units making submissions to REF and indeed research funders; to date, certainly, stakeholders do not tend to prioritise their time to do this.

Highlights from Focus Group on Impact Evaluation

At the culmination of the Relu evaluation, a day-long Focus Group was held on “Critical Reflection on Impact Generation and Evaluation” (20/4/12, Edinburgh). The goal of the Focus Group was not to examine Relu, but rather to explore a set of key questions in impact evaluation (and correlated processes of impact generation) more generally, often drawing upon the Relu evaluation for stimulating examples and challenges. Participants included: the Evaluation’s two Senior Advisors, Sandra Nutley and Alan Werrity; three experts on impact evaluation, Roger Pielke Jr (US), Huw Davies and Catherine Lyall; a Relu stakeholder with a long history as a knowledge intermediary, Stephen Hunter; a Research Council impact evaluator, Faye Auty; and two members of the Evaluation team, Ruth Levitt as rapporteur and Laura Meagher as facilitator. While the deliberations are being written up in some detail, here we provide a brief account of subjects covered. Generally, participants were encouraged to think about the “big picture” of flows of knowledge as well as ways of considering what may be natural limits to impacts that can be found at end/near-end evaluations.

“Infiltration” -- Participants considered and offered approaches to the challenges posed to impact evaluation by successful “infiltration” of research processes or findings into concurrent emergence of policies or practices, especially if something so intangible as a “way of seeing” seems to coincide with a concurrent emergence of a zeitgeist.

“Impacts and Time” – Participants explored the relevance of the dimension of time to impact evaluation and related challenges including feasibility of gathering perfectly complete monitoring information, loss of institutional (or individual) memory over time and the practical balance between allowing impacts to unfold over time and capturing impacts before they “disappear”. Legacy of an effort also relates to this time dimension.

“Stakeholders’ Views of (and roles in) Impact Evaluation” – Participants heard that Relu stakeholders offered views on the sheer difficulty of impact evaluation and moved on to discuss engagement of stakeholders in evaluation more generally, such as through formative evaluation reflection, while managing issues that might arise.

“Approaches” – Participants briefly discussed a portfolio approach but spent more time considering what could be learned about generation and evaluation of impacts from examining parallels (and/or interactions) between interdisciplinarity and Knowledge Exchange.

“Roles and Flows of Knowledge/Influence” – Participants tried to capture both graphically and in discussion the “added-value” roles that an overarching initiative could play in impact generation, with implications for impact evaluation. The importance of design to the quality of impact generation was discussed, along with a portfolio approach and the idea of an initiative itself acting as a Knowledge Intermediary.

“Recommendations and Lessons Learned” – Participants offered thoughts on key design features, such as selection of leaders, including evaluation from the agenda-setting start of an initiative and balancing demands on researchers.

All the participants engaged with the questions, coming up with relevant points and related issues in a lively discussion, and offering rich input.

CRITICAL REFLECTION ON IMPACT GENERATION AND EVALUATION

Summary of Highlights, Focus Group ESRC-funded Non-Academic Impact Evaluation of The Rural Economy and Land Use programme Edinburgh 20/4/12 Laura R. Meagher, PhD

Introduction

The ESRC-funded Evaluation of Non-Academic Impacts of the Rural Economy and Land Use initiative led to an intensive investigation of impacts and impact-generation processes at both the constituent project and also the overarching Initiative level. Stepping back from the particulars of Relu, the evaluation included reflection on methods and implications of findings for impact evaluation more generally. The culmination of this reflection was a small, dedicated expert Focus Group on Critical Reflection on Impact Generation and Evaluation. (Agenda and Participants list attached.) Through high-level discussion of a set of posed questions, this Focus Group:

- acted as a sounding board for the evaluation's emerging findings-based insights into impact generation and evaluation, and conceptual framework
- explored general implications for evaluation of policy and practice impacts of research, and correlated insights into impact-generating processes
- offered reflections relevant to funders of and leaders /participants in future research initiatives intended to contribute to policy and practice, as well as impact generation literature.

Before particular questions were tackled, an underlying question was posed at the beginning of the Focus Group, to stimulate thinking throughout the day:

If Relu seems in some sense “the best case possible” for finding impacts—with Knowledge Exchange emphasised explicitly by pro-active leadership acting over multiple years both within a programme culture across 39 projects and externally, with stakeholders directly and yet it is still not a panacea providing long lists of “hard” impacts (not just outcomes) at near-end evaluation.... What does this allow us to say about what is reasonable to expect from what research base? Over what time period?

Many Relu stakeholders (as well as researchers) viewed impact identification as extremely difficult and often impossible. Thus the meeting began with several particularly challenging dimensions of impact evaluation:

- attribution of impacts in relation to concurrent zeitgeists;
- engagement of stakeholders even in evaluation;
- unfolding of impacts over time; and
- related approaches, such as interdisciplinarity.
- After working through these dimensions, the group explored bigger picture issues: implications for conceptual “flows of knowledge” frameworks and
- related recommendations to funders.

The lively, rich explorations of the day will be captured here as highlights of the discussion as to each question, often referencing Relu findings as examples.

Capturing “Infiltration” impacts, as in relation to a Zeitgeist

Questions

- *How should we attribute changes in policies and practices to research if:*
 - the research processes and/or findings seems to vaguely infiltrate ways of seeing particular policies or practices
 - such changes to ways of seeing seem to coincide with a concurrent emergences of a zeitgeist
 - a research initiative's leadership can deliberately ride as well as shape the infiltration and zeitgeist through entrepreneurial positioning and advocacy, to target and consolidation the initiative's influence, reputation, goals?
- *Is it important to differentiate analytically between these factors?*
- *If so, at what junctures is it important to make that differentiation?*

Relu example

Many Relu stakeholders (and others) felt that, within its arena, Relu had made a difference to the emergence or consolidation of key ways of looking at the world – in particular the increased value ascribed to interdisciplinarity and the shift from “Knowledge Transfer” to “Knowledge Exchange” as a multi-directional flow of knowledge. A particular example was the shift that has occurred during Relu's existence, with recognition that the very broad concept of ‘land use’ needs to be seen as multi-faceted, understanding people as well as the environment. This underscores the question of how to capture impacts in the form of large-scale conceptual changes, in particular if they are part of a concurrent ‘zeitgeist’.

Challenge

Attribution of impacts relative to broad conceptual changes or concurrent zeitgeists is important but can be difficult.

Approaches

Rather than trying to disaggregate contributing factors, provide an account of congruent and reinforcing factors, with a direction of travel. It is possible to identify elements of attribution, for instance by telling convincing stories with the help of a conceptual framework for analysis. Although you can never make a watertight claim for attribution, you can consider aspects such as:

- 1) Timing and dynamics – if a ‘wave’ is already cresting, an initiative can probably ride it whereas if the initiative is there at the beginning you can probably say it contributed the greater influence;
- 2) Evidence of engagement with key people – either face to face or via ideas, to show there is influence, looking at activities and relationship to a zeitgeist
- 3) What stakeholders themselves think – if there is a consensus that someone or some work is a source of influence, you probably have to rely on that.
- 4) Parallel contextual analysis is needed to validate effects of other external drivers
- 5) Use of an analytical framework – for instance, looking at context/evidence/facilitation, or at institutions/ideas/ideologies and interests in relation to use of research.

An underpinning question is: “What is the goal of impact?”—and of impact evaluation. There can be several sorts of impact, all of which should be captured. Different mechanisms of impact exist, which must be traced in different ways, including involvement of different groups of stakeholders. For example, Martin Rein writes about social science and policy, saying that going with the grain/fine-tuning of policy is very important, as is being pro-active, even when the zeitgeist is also important. Paradigm challenge is one sort of role or impact; another is keeping the system honest (e.g. are reported numbers adequate, how are they reported or perhaps misconstrued?).

Aspects to consider

Context and external drivers are important. [For example, while interdisciplinarity and engagement of stakeholders were built into Relu from the start, Relu has existed at a time](#)

when pressures have grown on academics to consider research impacts more seriously and even frame research accordingly. The sustainability agenda has grown too, which incorporates a need for wider engagement of stakeholders. Specifically, the Foot and Mouth epidemic threw into sharp relief the need to understand economics and social dimensions of the countryside, not simply the technical issues for farming.

Individual’s roles can be important – the role of a champion in the right place at the right time can be critical. (Relu’s Director Philip Lowe and Assistant Director Jeremy Phillipson were seen as examples of this.)

Key issue

Knowledge Exchange is a key issue. Terminology is evolving; the shift in terminology from “Knowledge Transfer” to “Knowledge Exchange” as common parlance varies; ESRC changed the name of their team 3-4 years ago. Although the shift is an improvement in terms of implying two-way interaction, the reality is far more complex, reflecting the idea of diffusion across all sorts of different ways, extents, weightings and directions of flows. Some stakeholders will need close involvement throughout, others just on one aspect. There is more than one way to have “influence”. Social scientists may consider “Knowledge Interaction” to generate novel entities that shift players’ perspectives.

Early engagement with stakeholders (as required by Relu at the framing stage of projects) can be a good place to start in affecting the agenda –and likelihood of impacts—so that productive conversations can lead to something unexpected. Even enabling further conversations by catalysing engagement can be important, as well as coming up with new questions. Some topics lend themselves more to stakeholder engagement than others. Sometimes there can be a cumulative effect of many activities. Sometimes a research initiative can be both riding and shaping a “wave”, but it is also important to capture context as new waves can be triggered by external societal pressures and interests.

Stakeholders and researchers may well have different priorities (for example, practitioners may simply want help with doing what they already do better in order to solve actual problems; researchers may want to find a novel technique). One research approach used in the States regarding climate change (missed opportunity matrix, Pielke), calling impact “use of knowledge”, may be helpful in systematically assessing differences in “demand” and “supply” to see if there are “missed opportunities” or ways of increasing impacts by reconciling demand with supply –seeing if the right questions are being asked about worthwhile issues.

Knowledge demanded and supplied	<i>Knowledge demanded, Not supplied</i>
<i>Knowledge supplied, not demanded</i>	Knowledge neither demanded nor supplied

Engaging with only particular stakeholders may be too narrow for reconciling demand and supply, and may miss larger public goals of values, needs and equity. There is a dynamic interrelationship between supply and demand; categories can shift, in ways dependent on who shapes the shifts and how. Ideally, researchers could anticipate potential “missed opportunity” categories. Indeed, the conversation has changed over time as to roles of research –the balance between “blue skies research” and problem-solving research -- and appropriate impact assessment approaches. For example, in 1998 the US National Science Foundation added ‘societal impact’ to the criteria for research quality; mission-oriented US agencies demand metrics of impact because that influences what research is funded.

Stakeholder Views and Roles relative to Impact Evaluation

Questions

- *What do/could stakeholders' views of impact identification tell us about the challenge?*
- *Would it be helpful to engage some stakeholders in reflection along the way?*
- *If "Knowledge Exchange" is to be a two-way process involving both researchers and stakeholders, is there an analogous step for the generation, embedding and/or tracking of impacts by stakeholders as well as researchers?*

Challenge

Engagement of stakeholders, even in the framing and analysis of impacts, might enhance our ability to understand impact-generation, but could also raise issues.

Approaches

We could ask stakeholders what impact questions we should frame; we could invite them to co-investigate and analyse impacts, or co-author impact evaluations.

It might also be worth looking at factors that facilitate or block embedding of research in stakeholder organisations, and to consider possible roles of some stakeholders in bringing about impacts – complementing roles of researchers.

It may be especially useful to identify a special category of stakeholders: entities who serve stakeholders. They might be referred to as organisational "Knowledge Intermediaries". These middlemen may serve the stakeholders better than researchers can; stakeholders may go to them for services informed by research. In some sense, for example, government regulators might be prime stakeholders as knowledge intermediaries affecting other stakeholders. As well as institutions, a variety of heterogeneous individuals can act as Knowledge Intermediaries. Engaging with one Knowledge Intermediary (or a few) can be more efficient for a researcher than engaging with numerous users; in addition, researchers may find it easier to work with Knowledge Intermediaries.

Key issues

It is important to remember that every player is a stakeholder and not to become overly dependent on a single subset of 'interlocutors'. A particular cadre of stakeholders might become ossified or disappear, or they could become too dominant in shaping a particular impact agenda.

While stakeholders' input into definition of impacts and assessment can be constructive, there is a risk that the research agenda could be co-opted for instrumentalist ends, squeezing out basic research. The Public Accounts Committee and other parliamentary committees need to understand this concern. (Even) where impact assessment is appropriate, and stakeholders help to co-define and co-produce, this can have a recursive effect on the research questions that are asked and promoted --- the instrumentalist agenda can become over-emphasised, as can impacts that are readily measurable. This can create a hierarchy of impacts that may not be desirable (for instance, there could be ramifications of REF desiderata for case studies). Such a situation can encourage gaming and/or lead to perverse consequences, for instance critical work by researchers that is contrary to the zeitgeist might not "count" or organisations might favour only downstream outcomes instead of valuing research that takes an analytical look at broader frameworks.

Impacts and Time

Questions

- *How are impacts and/or impacts-in-progress best tracked over time?*
- *How do time-related Initiative desiderata like “legacy” or “sustainability” pertain to impacts?*
- *Is it essential that research projects generate lasting impacts? How do different types of impact vary in relation to the longevity they “should” achieve?*
- *Where is the practical balance between allowing impacts to unfold over time, and capturing impacts before they “disappear”?*

Relu reflection

“...It's difficult!!! The impacts will spread out exponentially from their point of origin and become so diffuse it may be impossible to track. Beware falling into the trap of 'what did the Romans ever do for us' type questions. The influence of outputs or ideas from their first emergence to their full acceptance into society takes many years and requires translation across many boundaries. Very often the originator of the idea is not remembered and/or the origin has been lost in the translation. Also the influences are cumulative and the end result may not be because of any one initiative. However, without any one of the influences the resulting outcome may not have happened.” *[a Relu stakeholder]*

Challenge

Often impacts will not manifest themselves until some time after a particular research effort is concluded, yet by that time numerous other factors will have entered the picture and the original role of the research may have been forgotten and/or become invisible. This obscures a view of how “ripples” of impact can occur.

Approaches

We need to recognise why we are interested in impact evaluation, as that will affect both how and when we evaluate. One reason is accountability, the justification of future research investment. Learning is another reason; if research use has beneficial impacts, what does that teach us about doing impacts better in the future?

It might be useful generally to think in terms of a “portfolio” of impacts, a set of different types. Perhaps each type could be considered in terms of both reasons for evaluation: accountability and learning.

It could be appropriate to consider historical methods when seeking to chronicle impacts over time. Can a historical perspective inform our interrogation of the past in order to help our understanding of our questions? There is a difference between a “biography” of a research initiative and an account of an event, for example in considering whether to track forward from research or track backward, as in the influence of research in the development of Foot and Mouth Disease policy. Could backward tracking suit impacts that take longer to show up and forward tracking suit shorter term impacts?

Aspects to consider

An archive documenting the unfolding of impacts would certainly be useful. However, researchers have multiple demands placed upon them and need to move on to the next research effort; to avoid excessive opportunity costs, those pressures need to be balanced with an impact evaluator’s ideal of capturing substantial information over time. Researchers can feel beleaguered by the need to comply with administrative systems to capture activity and report on it. How long do they have to go on doing this and how strong is the case for doing so rather than using that time for research?

Key issues

With the passage of what may be considerable time, translation of research into impacts can change the research story, even beyond recognition. Multiple interactive factors make impact generation non-linear. Timescale for impacts will be constrained in various ways, such as by the timeframe in which decisions are taken which are relevant to the research. Presence or absence of a powerful champion can be important, as can the level of credibility associated with a research effort, or placement of researchers on key policymaking committees. Serendipity, such as open or closed windows of opportunity, may play a key role. Indeed, serendipity or intermediaries can be the causal agents for a particular impact.

One worry is that the current impact agenda lends a false sense of rationality to expectations. Influence often happens organically via interaction, not by a linear, rational impact conducive to metrics. For instance, creating a initiative that focuses attention, as Relu helped to do with the concept of land use, is an actual impact, even if it is not associated with a product or a policy change. (This might be seen as a conceptual or enlightenment impact.)

Different values may be placed on different types of impacts (for example, HMT and the REF may well weight Instrumental impacts most heavily) – yet the most desired impacts may well not manifest in the timeframe of an evaluation. Some policymakers do appreciate the need for qualitative evaluation that captures different sorts of impacts. For instance, we might seek to improve documentation of ‘softer processes’ like enduring connectivity or change in attitude toward knowledge exchange (especially since they might occur in the shorter-term). ESRC places importance on these and has changed its way of requiring outcomes of awards. Instead of end-of-award reports three months later, researchers can write a shorter report and then nine months later submit an Impact report to reflect on scientific and non-scientific impacts. They can do this as an impact web, recording all instances. This way an evaluation could pick up on awards with records of networking which should sow the seeds for more tangible impacts later.

When thinking about early seeds of possibilities, there can be a grey area between “outcomes” and “early” or “process-based” impacts. A Relu comment was “Without short-term impacts, you will never get long-term impacts”.

How can we tell how much time should elapse that will be long enough but not too long to capture impacts? That timescale could differ in various contexts and might be different for different types of impacts (Instrumental, Conceptual, Capacity-building, Enduring Connectivity, Attitude/Culture Change). The ability to measure impacts will change, for instance Enduring Connectivity can depend on the organisational landscape. Whereas some see Enduring Connectivity as important when/because it involves individual relationship-building and consequent dialogue that allows for new understanding, others suggest that researchers should move on -and policymakers often do - so that connectivity might occur between a researcher and different stakeholders, or stakeholders and different researchers, not necessarily one-to-one relationships.

Interdisciplinarity

Question

- *What can we learn about generation/tracking of impacts from consideration of parallels/interactions between interdisciplinarity and Knowledge Exchange? (Processes of communication with other perspectives? Integration of 'solutions'?)*

Relu example

Relu had interdisciplinarity as a goal from the start, in part because it had multiple funders and in part due to the nature of its research. Interdisciplinarity was an explicit theme central to the overall programme and individual projects had to be interdisciplinary. Most Relu survey respondents (including stakeholders) felt that interdisciplinarity enhanced the ability of Relu researchers to deliver usefully integrated understanding relevant to stakeholder problems and researchers also felt this helped them engage with stakeholders having different perspectives.

Challenge

Although both are complex and in some sense “invisible” processes, learning about similarities between processes generating interdisciplinarity and those generating impacts could inform impact evaluation.

Key issues

What mechanisms might be appropriate in seeking to enhance impacts? If interdisciplinarity is appropriate, it may lead to more holistic understanding by a policy maker. Another is that as researchers must talk to others outside their discipline, they may relate better to other users who are non-expert, i.e. it may help in translation.

There is a human dimension, for instance if researchers attracted to interdisciplinary research tend to be more open-minded and to look at the bigger picture, this might make them well-suited to impact generation. This capacity might be particularly important for Knowledge Intermediaries. Interlocutors between research and policy makers need to be interdisciplinary in their approach. [Relu may have helped to create such people or helped departments understand how to commission interlocutors to help to sustain these networks.](#)

Yet, the academic jury is still out on this type of person—there is a concern, for instance, that interdisciplinary research proposals will be unsuccessful in competition with mono-disciplinary research in times of constrained funding. Rather than Relu’s legacy being lost in what might be a “non-serendipitous” time, it is important to capture learning so that future interdisciplinary initiatives can leapfrog beyond Relu. For example, a NERC-funded study on interdisciplinarity by Lyall et al. led to a briefing note for large scale interdisciplinary research initiatives describing five success factors: seed corn work, level of interdisciplinary work, leadership, active day to day management of initiative, and capacity building. There might be parallels to learning about knowledge exchange.

Roles and Flows of Knowledge/Influence

Questions

- *Can we identify a “portfolio” of roles that a initiative (initiative) can play in stimulating impacts directly and/or enhancing impact-generation by constituent projects? Are there design features that can be built in?*
- *Can we develop a “flows of knowledge/influence conceptual framework” for these roles that is useful, both for implementation and evaluation?*
- *Can new light be shed on a more universal conceptual framework?*
- *Does it help to view a initiative itself as a Knowledge Intermediary?*

Relu example

The Relu programme (through its directorate) encouraged people at the project level to engage with stakeholders and also worked pro-actively at the programme level to create as well as connect to stakeholder communities with “demand” for research.

One specific example of the directorate’s innovative behaviour was its end-of-award conference for researchers and stakeholders, which had an experimental design that incorporated a deliberately fluid initiative of debates, discussions, an impact award ceremony, exhibitions/stalls for conversations with project researchers, and a non-fixed catering schedule, allowing individuals to dip in and out and seize opportunities for networking and interaction –making it a bespoke event for each participant.

Challenge

Large-scale initiatives (e.g. initiatives) may utilise a variety of mechanisms and approaches to support generation of impacts, with some of these efforts at the project-level and some at the initiative-level. Learning about these could illuminate understanding of impact generation and evaluation.

Approaches

It might be useful to think about an entire initiative as a “Knowledge Intermediary” between the realms of researchers and stakeholders. An initiative can open up and legitimise knowledge exchange activities, creating opportunities for communication and engagement. Initiatives can provide expertise and also an ethos, helping projects to frame their efforts. However, whether the term used is “Knowledge Intermediary” or “boundary organisation” or something else, the term can become overworked and needs unpicking or definition.

Aspects to consider

What is expected of initiatives? If an initiative doesn’t add value to the whole process of impact generation, why not just have numerous individual projects?

Key issues

Split in two, the group was asked to draw an image that captures how an initiative through flows of knowledge adds value to impact generation –assuming the best of all possible worlds, when the resources (as for Relu) were near to optimal.

Image A

A research initiative can be envisioned as a circle, with projects and stakeholders both within and outside, with linkages to stakeholders directly and between stakeholders and projects. Projects are networked within the circle, as are stakeholders. Some projects share stakeholders, some have a few –effectively, there is a matrix of projects and stakeholders. The initiative rings around projects that are within its portfolio and mediates between projects within its scope and wider external interests with which the initiative can broker relationships

as appropriate. The initiative can also make links with other relevant projects outside the initiative. The initiative's role is to: provide a supportive ethos, supporting themes and encouraging attention to interdisciplinarity and knowledge exchange; support individual projects and coordinate between them; provide access to data resources and infrastructure; have a framework for accountability and spending; capture impacts centrally across stakeholders within and without; provide communications about the projects and the clusters and the whole initiative; support linkage efforts such as fellowships work shadowing, or enduring connectivity of relationships; and leave a legacy of accomplishments, relationships and learning. To fully represent an initiative's role, the dimension of time needs to be incorporated.

Image B

Metaphors can help us ask questions about why and how we do what we do; a metaphor for an initiative could be a buffet table. A future role for an initiative would be to decide what sort of buffet to lay on and how to intermediate between those options and what diners might choose, what sort of experience to offer --fine dining? Fast food? Cook-your-own? Multiple players are involved: chefs, maitre d's, waiters, inspectors, suppliers, diners, advertisers, reviewers, rating agencies, systematic reviewers. There are various decisions to make, such as: recommended dishes versus free choice, bite-size tasters versus full meals. The outcome needs to be considered --is it healthy living? Overload of calories combined with undernourishment? Diners overwhelmed by choice so they end up not eating? The message is that one size does not fit all. An initiative has to define a range of roles. No one initiative could do everything possible, but it needs to construct a "plate" that is a meal leading to a good outcome. Another related metaphor is that the initiative could be a restaurant, for which the quality imprimatur is important, along with credibility of its knowledge and standards, and how it is marketed (McDonald's? haute cuisine? Greasy corner takeaway?).

However, people in the research world are not the equivalent of the restaurant business; instead research might be regarded more as the food science or food marketing institute that creates the new ideas for food and dishes that restaurants then operationalise and deliver to diners. Instead of thinking that academics know how to run restaurants, recognise another layer: restaurants are the intermediary between new ideas for food and the diner. An initiative might be thought of as an intermediary, a restaurant in this metaphor.

Researchers are often expected to run restaurants, but they may need to push back at that expectation. In the current context, universities may work competitively in a political process, such that their researchers may want to be out in front claiming impacts for their work. But if some demands for impact (e.g. from funders) may be inappropriate, researchers should step back. Sometimes research impact can be "large" but negative, for example, as in the consequences of a researcher incorrectly tying the MMR vaccine to autism. Researchers trying too slavishly to have or get credit for impact can impair credibility of the research enterprise.

Other opportunities and constraints for initiatives

Another role for an initiative is to offer spaces for deliberation. While some official bodies will have a political agenda, an initiative that is interdisciplinary can enable a better debate even if consensus does not occur. Not many initiatives have taken that role. Elevating the quality of democratic debate would itself be a political impact. Unfortunately, the research community is encouraged by impact assessments to become partisan instead of providing a safe space. Yet, fora for open discussions can enable stakeholders to understand better the range of complexity and differences of opinion surrounding issues.

The role of the media can be pivotal in furthering or obstructing the potential of research to have impacts. Policymakers' attention is often focused on what special advisors and press officers emphasise. Whether or not research has an impact may depend on political

serendipity, such that the timing may simply not be right for policymakers to hear the results of even excellent work. There is a danger of “policy-based evidence” out-shadowing “evidence-based policy”.

Rationale for impact evaluation

Why do we do impact evaluation? In large part, this is an accountability function, because taxpayers’ money supports research. Yet, there can be perverse outcomes from researchers or organisations trying to generate impacts. Are there ways to evaluate impacts that are “better” for accountability and also for learning? Or, in reality does the post-research evaluation phase come too late? The design phase is critical, and this can be shaped by expectations. Yet, in order to articulate expectations at the beginning of research projects, funders need to know what is possible. Evaluations can contribute to learning about what is possible, for instance identifying policy areas where more or fewer impacts might be expected, or useful ways to lay out agendas for a research initiative. Informed by impact evaluations, expectations could be articulated for a portfolio of different types of impacts (including qualitative impacts).

Questions of scale

Evaluations need to take place at an appropriate scale. For instance, in a large initiative promoting new technologies or new drugs, most elements are expected to fail; that is one kind of portfolio. Considering an even wider portfolio, looking at evaluation at a much higher level, such as UK-wide research, might that enable us to assess impact, value for money and lessons from a much more holistic standpoint. It might enable us to come to a view about research performance and accountability to taxpayers that suits that level. And from there to reconsider what the appropriate impact assessments are at the lower levels (initiatives and projects). Research evaluation at that higher level would be a separate research task in itself, asking broader, integrated questions at the meta level which in turn may help to articulate better questions when evaluating lower level research activities. As an example of change in impact evaluations, the next wave of ESRC evaluations will be ventures that are co-funded; their comparability can be helpful in developing standards.

Recommendations and Lessons Learned

Questions

- *What lessons learned would be particularly useful for initiative leaders of the future who want to not only generate but also capture impacts? And/or*
- *What lessons learned would be particularly useful for funders involved in collaborative support for large-scale, multi-project initiatives that seek to foster impact-generation and impact-identification?*

Design features

Design features should be considered early in the development of initiatives hoping to promote impacts. These could include:

- effective leadership –choice of leader and appropriate skills will be critical – the leader may well not be a “conventional” academic; there might even be shared leadership
- a robust secretariat so that a full set of skills is present at the centre, with mutual respect and others’ skills complementing the leader’s skills –for instance, in initiative management and communications
- an initiative budget
- an entrepreneurial approach
- ways of energising and sustaining relationships among project PIs and between them and the initiative’s directorate, throughout the initiative (in the face of many competing interests for academics)
- an appropriate interaction between commissioning panels and the vision of the initiative’s leadership
- formative evaluation built into the initiative from the start.

The above list should be interpreted not as a cookie cutter but as a set of factors that can be considered and calibrated on the basis of a robust underlying ethos in the design of an initiative.

Evaluation

The nature of expected impacts should be negotiated at the outset of an initiative. Agenda-setting should include evaluation from the start, so that some formative evaluation capacity is built in to the initiative to test the expectations all the way through. Initiatives and objectives may evolve, with new issues identified, and formative evaluation can take account of this if the changes occur in self-aware ways. [For example, Relu – which had different waves of funding over many years - was able to experiment with interdisciplinarity and knowledge exchange mechanisms and evaluate as they went along.](#) The evaluation should have an external perspective and some independence from the initiative, even if those conducting it do serve as “critical friends”. It can also be useful to involve stakeholders not only in activities but also in reflection on activities and processes, for example through strategic advisory committees and/or wider stakeholder fora related to particular research themes.

Impact evaluation highlights the importance of balancing demands placed on researchers, as there are painful tradeoffs to be made. The current situation is confusing, with the Research Excellence Framework “legitimising” impacts but emphasising types of impacts that are uncommon. Funders’ monitoring requirements have changed over time, creating shifting burdens on researchers, so setting consistent guidelines at the outset that are light-touch and feasible will be important. There is still an issue of determining the right balance for impact – 0% emphasis is not right, but neither would be too great an emphasis. Also, impacts need to be monitored over the long-term.

Final thoughts

Relational and dialogue issues are central to impact, but we also have to pay attention to persuasiveness, how to shift mental models and develop buy-in. We over-emphasise information-telling rather than active knowledge construction by audiences and discovery. We are over-focused on rationality and logic rather than narrative and stories as ways of telling things. Yet the latter are the approaches that actually shift our attitudes. There is scope for tapping into these to develop new ways of evaluating. People know how to do this in marketing, advertising, and creative arts. Accountability typically has to do with numbers, but, especially for end users, other more creative methods may be useful.

Think about impact and evaluation early on and don't be afraid to ask stakeholders what they think the impacts should be. Their thoughts will be qualitative and useful. Also, give your initiative management room for manoeuvre.

Impact assessment is important and it has to be done, but it has consequences for how we fund and do research which are not all positive. Funding agencies should think through what this means and if they want to do it well, they will have to set aside resources for it.

Funding agencies need to be more wary of phoney metrics and premature judgements. Impacts operate on diverse dimensions so funders should be more willing to assess in different ways. (Also, ensure the Relu banner is picked up by other initiatives.)

While ESRC already has an impact toolkit, it may now be useful to develop the idea of an "impact menu". This would allow different initiatives to think about all their actors and the roles played in creating impacts.

**CRITICAL REFLECTION ON IMPACT GENERATION AND EVALUATION
20/4/12**

AGENDA

9am Coffee

9:30 Welcome, Overview, Introductions

10:00 Tracking Entrepreneurial Shaping of a Zeitgeist

10:30 Tackling the Time Dimension

11:00 Coffee

11:15 Stakeholders and Impact Evaluation

11:45 Possible Approaches

12:30 Lunch

1:30 Initiative-level Roles and Flows of Knowledge

3:00 Recommendations to Future Funders & Future Leaders

3:45 Wrap-up

4:00 Adjourn

Tea

Participants:

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Stephen Hunter, ex-Defra/FERA, Relu Visiting Fellow

Catherine Lyall, University of Edinburgh

Sandra Nutley, University of St Andrews

Roger Pielke, Jr, University of Colorado

Alan Werritty, Emeritus, University of Dundee

(apologies, Jack Spaapen)

Facilitator: Laura Meagher, Technology Development Group

Rapporteur: Ruth Levitt