Sustainable Places Research Institute

Exploring Innovative Solutions and Connections for a More Sustainable Future

www.cardiff.ac.uk/research/sustainableplaces
Welcome from Professor Terry Marsden, Director The Sustainable Places Research Institute

“The mission is to provide a new basis for sustainability science, to push the boundaries of traditional sustainability research and find solutions to the challenges of diminishing resources and a changing climate.”

The irreversible consequences of climate change and resource depletion are being felt across the world, and in very different ways in different places. Yet we have been slow to come up with innovative responses and solutions that take account of the unique relationships between economic, ecological and social processes at local levels.

The Sustainable Places Research Institute is about making new connections in sustainability research and progressing sustainability science. Working with a range of key stakeholders it is finding pragmatic, policy-led, local and place-based solutions for individual cities, regional landscapes and nations.

Founded in 2010, the Institute operates across all three Colleges of Cardiff University developing interdisciplinary research to take a wholly place based approach. Bringing together over 100 researchers the Institute is developing place-based solutions rather than simply tackling existing problems, this is being done on the specific requirements of individual places.

Links have been built both here in the UK and further afield, research is progressing in a range of locations around the world including: Canada, China, Brazil, Borneo, Finland and Germany to name but a few.

Key developments at the Institute include:

- Theoretical and conceptual research linking different disciplines, including work on the emerging bio economy and place based social and ecological systems.
- Integrated methodologies for assessing impacts of policy, market and civic actions; and the development of more integrated and multidimensional approaches for assessing sustainable pathways of development.
- Development of a series of longitudinal place-based laboratories, like Cardiff City Region, in which to conduct multilayered applications of sustainability research.
- International and local collaborations and partnerships with academic institutions, including Bath, Bristol and Exeter Universities and place based organisations such as the Brecon Beacons National Park authority, and the Canal and River Trust.
- The extension grant to take forward the ESRC funded Centre for Business Relationships, Accountability, Sustainability and Society (BRASS) agenda in the areas of: mobilities, food security, sustainable communities and ecosystem services.

This document sets out the key areas of activity around the Institute’s research themes.

Please get in touch with the team to discuss ideas and opportunities:
sustainableplaces@cardiff.ac.uk
The Sustainable Places Research Institute (SPRI) was founded in 2010 with the mission of developing sustainable solutions to the challenges posed by a changing climate. The Institute operates across all three Colleges of Cardiff University, bringing together over 100 researchers to take a wholly place-based approach. By focusing on place-based solutions rather than simply addressing problems at a broader scale, the Institute aims to develop pragmatic, innovative responses and solutions that can be implemented effectively in different ways in different places.

The Institute’s work is guided by three key objectives:

1. **Empowering stakeholders**: The Institute works closely with a wide range of stakeholders, including local communities, businesses, and academic partners, to ensure that research is relevant and actionable.
2. **Advancing knowledge**: Through theoretical and conceptual research, the Institute seeks to build a robust understanding of the complex interactions between economic, ecological, and social systems.
3. **Fostering partnerships**: The Institute is committed to building partnerships with academic and non-academic organizations both locally and internationally, to ensure that research is disseminated and implemented effectively.

**Timeline of Achievements**

- **January 2011**: Griffith Rhys Jones is announced as Patron of the newly founded Sustainable Places Research Institute.
- **February 2011**: Cardiff University’s sustainable Places Research Institute becomes a supporting member of the State of Wales project. The project is a unique international scheme that is helping to protect and sustain an area of rainforest the size of Wales.
- **March 2011**: Professor Mike Bradshaw is announced as a winner of a prestigious Royal Society Wolfson Research Merit Award for his work on the genomics of endangered species such as pandas and orangutans.
- **April 2011**: The Institute launches a new annual Sustainability Science Summer School, a joint venture with the University Graduate College, to provide a unique and high-quality research training forum for postdoctoral researchers in the field of sustainability science.
- **May 2011**: The Sustainable Place Research Institute team hosts the event ‘working together: urban communities as sustainable places’.
- **June 2011**: The first Landscape Observatory to foster socio-ecological research on whole river catchments is created. With 5-year support from The Ernest Hindle Foundation, the Lyn Briaree Observatory in the Welsh uplands, will be the first to assemble more than 3 decades of social and ecological data on 14 catchments to study the role of biodiversity and natural resources in sustaining livelihoods in upland areas.
- **July 2011**: Breakthroughs on the geo-environmental engineering processes have won Professor Hywel Thomas one of the highest honours in world science. Fellow of the Royal Society, widely regarded in the UK as second only to a Nobel Prize in prestige. Professor Thomas’ research interests cover a wide range of environmental issues, from waste disposal and land regeneration to sustainability issues more generally.
- **August 2011**: The Sustainable Places Research Institute draws around 100 researchers to take a wholly place-based approach. Bringing together leading international scholars and active researchers, it is focused on the problem of sustainable place-making, and how integrated thinking can be developed and applied in different places and spaces to address systems of production and consumption.
- **September 2011**: The Institute hosts the first Cardiff International Conference on Sustainable Place-making. Bringing together leading international scholars and active researchers, it is focused on the problem of sustainable place-making, and how integrated thinking can be developed and applied in different places and spaces to address systems of production and consumption.
- **October 2011**: Professor Susan Baker organizes a meeting of the Wales Coast National Park team, which contributes towards the development of a series of posters, which were drawn up to assess the impact of one of the most important natural landscapes in the country.
- **November 2011**: A panel of experts discuss ideas and opportunities for progress in a range of locations in the UK and further afield, research is progressing in a range of locations in the UK and further afield.
- **December 2011**: The links between economic, ecological and social wellbeing are key components of coastal and marine environments. The award will fund a project, led by Professor Susan Baker and Dr Lesley Cullen-Unsworth from the Institute, which will focus on seagrasses and their role in sustaining marine environments.
- **January 2012**: The Institute launches a new annual Sustainability Science Summer School, a joint venture with the University Graduate College, to provide a unique and high-quality research training forum for postdoctoral researchers in the field of sustainability science.
- **February 2012**: Professor Terry Marsden is appointed to the Policy and Advisory Panel of Rural Alliances, an exciting new commission for EU regions. Helping to promote food security, sustainable land research and partnerships with academic and local government, the Institute is continuing to take a wholly place-based approach.
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- **April 2012**: The Sustainable Food City Conference brings together speakers from across the UK and Europe to discuss ideas and opportunities: how can we implement a Food Charter that works for everyone, promoting a vibrant, diverse and sustainable food culture which fits with the broader aim of Cardiff being a One Planet City?
- **May 2012**: Professor Mike Bradshaw is awarded a prestigious £1.3 million Natural Environment Research Council (NERC) Biodiversity and Ecosystem Services Sustainability (BESS) initiative.
- **June 2012**: The Institute launches a new annual Sustainability Science Summer School, a joint venture with the University Graduate College, to provide a unique and high-quality research training forum for postdoctoral researchers in the field of sustainability science.
- **July 2012**: Professor Terry Marsden highlights some of the lessons Wales could learn from countries, as she delivers a briefing on governance for sustainable development, to Assembly Members and researchers at the National Assembly for Wales.
- **August 2012**: The Sustainable Places Research Institute team hosts the event ‘working together: urban communities as sustainable places’.
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**Highlights of Achievements Since the Institute Was Founded**

- **Ecosystem service conference in Cardiff** highlights Welsh expertise in this field. The interdisciplinary nature of the Institute team is vital in making the links between biodiversity, ecosystem services and social wellbeing.
- **The first Landscape Observatory** to foster socio-ecological research on whole river catchments is created. With 5-year support from The Ernest Hindle Foundation, the Lyn Briaree Observatory in the Welsh uplands, will be the first to assemble more than 3 decades of social and ecological data on 14 catchments to study the role of biodiversity and natural resources in sustaining livelihoods in upland areas.
- **Breakthroughs on the geo-environmental engineering processes** have won Professor Hywel Thomas one of the highest honours in world science. Fellow of the Royal Society, widely regarded in the UK as second only to a Nobel Prize in prestige. Professor Thomas’ research interests cover a wide range of environmental issues, from waste disposal and land regeneration through to sustainability issues more generally.
- **The Sustainable Places Research Institute team** hosts the event ‘working together: urban communities as sustainable places’. The conference brings together a range of practitioners, policy makers and academics in order to share their experience, views, and ideas on what the opportunities and challenges are for achieving a more joined-up approach to improving the social, economic and environmental wellbeing of urban communities in Wales.
Governance of sustainable places

Governance is a cross-cutting research theme that connects the Institute’s research and engages with practitioners, policy makers and the public.

The Governance of sustainable places goes beyond promoting environmentally responsible practices to more reflexive approaches, taking into account the complex interactions between social, economic and ecological aspects. It refers to such practices that are anticipatory, oriented towards the long-term, multi-level change and open to learning, more inclusive deliberation, and innovation and adaptation.

The focus of the research is to understand the relationships between government, other public bodies, private sector, and those in the civil society addressing public policy issues. It aims to move away from traditional forms of governance that require certainty and set goals, and to overcome problems of policy integration across sectors and spaces.

Looking at social innovation as an instrument for governance of sustainable places, the research also covers such issues as climate change adaptation, community resilience, and sustainable lifestyles. The objective is to identify new ways to produce and support change and foster understanding of the conditions that produce solutions to complex social, economic and ecological problems.

Socially innovative initiatives at the community level can be scaled upwards through the co-ordinating role of the state, while at the same time act as a support mechanism for more participatory forms of governance.

The Institute has developed strong international academic and research links. Dr Abid Mehmood collaborated with Prof Frank Moulaert (KU Leuven, Belgium), Dr Diana MacCallum (Curtin University, Australia) and Prof Abdelillah Hamdouch (University of Tours, France) to publish the International Handbook on Social Innovation (Edward Elgar, 2013).


Sustainable Urban Regeneration in Ankara

Dr Abid Mehmood with a group of postgraduate students from the College of Arts, Humanities and Social Sciences, participated in an international multidisciplinary programme of education, research and knowledge exchange at Middle East Technical University Ankara, Turkey. The Cardiff team was among a cohort of around 60 staff and students from across Europe, which worked to develop policy and planning strategies for sustainable urban living.
Ecological restoration

Drawing upon her research on the governance of sustainable places, Professor Susan Baker is developing a social science engagement with ecological restoration.

Ecological restoration has taken on new policy significance in the face of climate change and biodiversity loss. Despite its growing policy salience the social sciences have paid limited attention to the study of ecological restoration policy and practice.

To address this, new research will draw upon the study of participatory democracy, and investigates how and under what governance arrangements and institutional contexts community-led ecological restoration initiatives can promote ecological citizenship. This is being used to build new criteria for evaluating the success of ecological restoration, ones that combine both process and product driven considerations.

Through the use of a governance focus, the Institute’s work on ecological restoration is contributing to the rich tapestry of analysis that has already been produced by other disciplines on ecological restoration. Case studies draw from soil restoration practices in Iceland and the Aran Islands, Ireland, from community led forest restoration projects in Borneo, Malaysia and from the EU Life funded Vindel river restoration in Northern Sweden.

International engagement has been developed through participation in the Swedish led four year research project RESTORE, funded by the Swedish research council, MISTRA. A collaborative workshop has been held at the Stockholm Resilience Centre (SRC) with members of the RESTORE team. Here, colleagues from Stockholm, Umea and Cardiff Universities explored links and common themes for further investigation between SRC’s nationally focused database on ecological restoration, and Cardiff’s database to look at trends in funding for ecological restoration under the EU LIFE programme.

Scottish Forestry Trust Award PhD Studentship

Capacity in the field of ecological restoration has recently been increased by the award of a PhD studentship from the Scottish Forestry Trust to research restoration of community forests in Britain, working with Professor Karen Henwood, School of Social Sciences.

The submission of a major funding grant is also planned for the coming academic year, and an application for post doctorate funding that will take forward research on the institutional analysis of ecological restoration practices.
Seagrass Meadows, Ecosystem Services and Sustainability

The Seagrass Research Team:
Dr Leanne Cullen-Unsworth, (Cardiff University), Dr Richard Unsworth (Swansea University),
Professor Susan Baker (Cardiff University), Dr Jessica Paddock (Cardiff University), Dr Alastair Smith (Cardiff University),
Dr Leanne Cullen-Unsworth, (Cardiff University), Dr Richard Unsworth (Swansea University),
Dr Heidi Hentler (SFS CMRS, Turks and Caicos), Dr Eilidh Hard (SFS CMRS),
Dr Lina Nordlund (WIO CARE, Tanzania), Dr Len McKenzie (James Cook University, Australia) and Pak Beloro (FORKANI, Indonesia).

www.seagrass.org.uk

Recent Seagrass Publications:

An interdisciplinary team from the Institute, in collaboration with scientists from Swansea University, Sweden, the US and Australia, is working on a project to evidence the link between seagrass meadows and food security though the fisheries that these habitats support. This lesser known star of the marine environment has received a boost following support from the DEFRA Darwin Initiative and the Waterloo Foundation.

Research has revealed how managing marine biodiversity needs to recognise people as part of that marine system and not external to it. A study of seven seagrass meadows from around the world has demonstrated that threatened marine habitats need to be understood as coupled social-ecological systems for their successful management and future resilience to be promoted.

Seagrass meadows are globally in rapid decline at rates equal to or faster than coral reefs and rainforests and to halt this decline requires novel thinking about their management. They are not immediately charismatic in the same way as coral reefs, and so seagrass meadows are often overlooked and neglected within conservation and management planning. This is the first study to make a link across global scales about the social value of seagrass meadows.

Seagrasses are a group of around 60 species of flowering plants that live submerged in shallow marine and estuarine environments. Found across the globe, they are key components of coastal and marine environments and support charismatic species including turtles and seahorses. Important in their own right, seagrasses also play a significant role in the productivity of other fisheries that support local communities, such as spiny lobster and Atlantic cod. Seagrasses also provide other essential ecosystem services such as coastal protection, water filtration, and carbon sequestration. Subject to pressures from economic development, seagrasses are currently being lost globally at a rate of up to two football fields per hour; this loss is roughly equal to the current rates of loss of coral reefs or tropical rainforests.

In Indonesia Dr Leanne Cullen-Unsworth (Cardiff University) and Dr Richard Unsworth (Swansea University) have been working in collaboration with FORKANI (NGO), the Wildlife Conservation Society, The Nature Conservancy and local National Parks, in addition to other local stakeholder groups, to evidence the food security potential and conservation needs of seagrass meadows.

In the Turks and Caicos the Cardiff team have been working in collaboration with the Department of Environment and Maritime Affairs and the School of Field Studies Centre for Marine Resource Management as well as other stakeholders. The Turks and Caicos Islands contain some of the best quality marine habitats in the Caribbean Overseas Territories. However, knowledge of seagrass meadows, recognition of their social and ecological importance and how to manage them are lacking. This project highlights their ecological and social importance to help secure them on the conservation agenda. The team is working closely with local scientists, stakeholders and regulators to provide evidence of the ecosystem service value of seagrass meadows, highlight seagrass meadows as conservation priorities for marine biodiversity protection and maintenance of food security, and develop cross-sectoral, collaborative management strategies.

The case studies will improve understanding of how best to promote sustainable practices in the context of local social, cultural, and economic conditions. Research will identify how and in what ways different stakeholder interests can be brought together for more effective management of seagrass meadows.
Sustainable mobilities and flows

In social science, the mobility ‘turn’ has emerged in recent years as a response to the increasing realisation of the historic and contemporary importance of movement on individuals and society. Life is not experienced statically, but as the result of flows.

The mobilities research team is aiming to understand the sustainability implications of these dynamic flows, and their associated interactions, which occur within and between places and types of place. The scope of the theme is extremely broad, and includes the mobility of people, goods, services, and knowledge as well as the infrastructure that enables these flows and mobilities.

The mobilities theme acts at the intersection of existing research strands within Cardiff University, coordinated by Dr Daniel Newman, recently appointed as Research Assistant in the BRASS Research Unit. Daniel previously worked on the ENEVATE project, a transnational scheme investigating market drivers for sustainable mobility – with particular focus on the move from cars powered by internal combustion engines to electric vehicles. Research at the Institute will build on previous work undertaken, utilising the networks of academic, business, charity and public sector contacts that have been developed. In particular, it will seek to challenge the received wisdom evident in many previous debates on the subject.

An important strand of the transport theme involves addressing the value of electric vehicles in rural contexts. The other main thrust of the transport thread challenges the idea that electric vehicles in and of themselves can offer a sustainable mobility option at all. In advocating the substitution of electric vehicles for internal combustion engine cars there is a danger of simply promoting increased consumption. While theory and practice tends toward accepting the prevailing capitalist culture of consumerism, this research will consider the values of a double shift to sustainability – involving both the adoption of electric vehicles and their application in alternative models of vehicle ownership.

In order to explore these issues, this research will consider a range of pilots and case studies using our partners in the UK and EU. In particular, we will focus upon the Welsh context, with a number of exciting yet little known community and local authority schemes putting this theory into practice on our doorstep. This enables a place-based approach on even a dynamic topic such as mobility.

The transport research team:
Dr Daniel Newman (PLACE), Dr Leanne Cullen-Unsworth (PLACE), Dr Paul Nieuwenhuis (Cardiff Business School), Dr Peter Wells (Cardiff Business School), Dr Lorraine Whitmarsh (Cardiff School of Psychology), Dr Dimitrios Xenias (Cardiff School of Psychology), Dr Huw Davies (Cardiff School of Engineering), Ceri Donovan (Cardiff School of Engineering).

Recent transport publications:

A key component of the mobilities theme is transport, building upon the established expertise that exists in Cardiff Business School and Cardiff School of Psychology, as well as the cross-disciplinary Cardiff University Electric Vehicle Centre of Excellence.
The historical connection between public health and urban planning can be dated back to the sanitary movement to prevent outbreaks of infectious disease, such as cholera and tuberculosis, in the 19th and early 20th centuries.

Through much of the 20th century, the two areas of public health and planning have drifted apart, with different outlooks and goals. Public health focused on biological mechanisms of illness and disease, while planning focused on economic development.

In the 21st century we are beginning to realise that this separation had negative consequences for our health, for example, contributing to modern public health crises such as obesity, depression and asthma. How places are designed and built is one of the major determinants of the health of individuals and whole populations, and of health inequalities. Walking and cycling can be seen in places that are well designed and connected, which is directly related to higher levels of physical activity, and less traffic, air and noise pollution. Although this conclusion can seem self-evident, our understanding of the detail is still limited.

This research is trying to understand the relationships between place, behaviour and health. The puzzle is how to maximise health benefits when areas of trade off need to be considered. For example, having shops and green space within walking distance is one way to tackle the obesity epidemic. However, while sprawling suburban cul-de-sacs do not always provide this access, this design protects the neighbourhood residents from traffic and can also encourage social interactions and strengthen the sense of belonging, which will positively influence mental health and wellbeing.

The second dilemma is that the design of a place may have health benefits for some people, but not everyone. Living in a greener neighbourhood was found to be related to more frequent participation in physical activities among older adults in Caerphilly, but only among those with limited physical ability in walking or mobility. Assuming that this relationship was due to the fact people are more likely to walk, exercise and do gardening in a greener environment, neighbourhood green space provision here may have an important role in supporting and maintaining active ageing for those with limited mobility.

The goal here is to then be able to produce robust research evidence that informs planners how best to maximise health benefits when designing and modifying the environment. To achieve this, public health and planning need to be reconnected. Putting health at the centre of planning strategies and policy means that the modification of the place we are living in is not at the cost of our health.

The re-convergence between urban planning and public health is at an early stage and much more needs to be done.
Developing the Cardiff University South East Wales Valleys Partnership

Wales faces huge public health challenges from an industrial legacy leaving large areas with significant socio-economic deprivation and a widening health and wellbeing inequalities gap.

The public health community has an important role in addressing these challenges by developing evidence based policies and interventions. Cohort studies have proven to be key in developing public health evidence, providing understanding of the impact of exposures (physical, social and economic environments) lifestyles and behaviours, services and policies on the health and wellbeing of communities, families and individuals. However, we now need new affordable approaches to achieve the large population numbers (tens of thousands) necessary to measure complex multiple causal pathways and the impact of bundles of interventions within realistic timescales for service planning and delivery.

This project could be called a ‘citizen’s cohort’ (CC) where the scientific agenda is developed in partnership with cohort members as well as sensitive to local, and national priorities. The CC core themes will use an assets based approach, emphasising what populations have rather than what they do not have, and will collect data on healthy behaviours, cognitive abilities, mental health, dementia, vascular disease and metabolic disease. It will also collect data on patient based health care outcomes and experiences. The cohort will then provide a framework for the co-production of health gain, including the design, delivery and evaluation of targeted interventions such as the use of social networks e.g. mobile phone apps, web resources, sign posting, on-line self testing, and game based interventions.

Understanding the complex interplay of social, economic, physical and biological factors in relation to health, at different spatial and temporal scales.

This is a key strand of research, which includes:

- A systematic review of the relationship between the built environment and common mental disorders that has been undertaken by Professor David Fone, Professor Stephen Palmer and Dr John Gallagher.

- An exploration of the interactions between ageing bodies, behaviour and places, with a particular focus on the association between neighbourhood green space and the participation in physical activities among elderly people with different levels of lower extremity physical function in the Caerphilly cohort perspective study.

And:

- Linking the Caerphilly Health and Social Needs Electronic Cohort Study (E-CATALYST) study data with environmental data to explore the associations between individual health, land use, and community cohesion in the Caerphilly area in order to understand how to improve social cohesion and health through changes in the built environment.

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Professor Stephen Palmer PalmerSR@cardiff.ac.uk
Dr John Gallagher Gallagher@cardiff.ac.uk
Places for ecosystems and people

Sustaining biodiversity and our natural capital are key to the livelihoods of people around the world. At the Institute, natural and social scientists are working together on a place based approach to the links between people and the ecosystems they live in.

The key idea behind this work is that healthy functioning ecosystems can deliver a range of goods and services on which we depend for prosperity and well-being: resources for basic survival (like clean water or food), but also social, cultural and educational benefits such as that which stems from our interaction with nature. Lack of understanding of the ecological processes that underpin these services has often led to mismanagement of our landscapes with clear dis-benefits. This research aims to better understand how we can foster sustainable landscapes that will, despite the pressures of global changes, continue to generate goods and services while also reducing risks and costs associated with failing or degraded natural systems.

The Institute researchers are leading the way in this novel research: both at the international level, where Dr Isabelle Durance co-leads the ‘Biodiversity and Ecosystem Service’ theme of the International Ecosystem Service Partnership; and at national level where a team of fourteen staff and early career researchers from Cardiff University, are working on DURESS, the £3 million NERC funded project on the role of biodiversity in sustaining river ecosystem services. One of the aims of these projects is to build a community of young researchers that can work at the interface between natural and social sciences, and implement an ecosystem approach to solving the key sustainability issues of a changing world.

Building on the unique Llyn Brianne Observatory, and 33 years of socio-ecological data on 14 river catchments in upland Wales, researchers are investigating new methodologies and concepts to explore the nature of the relationships between land management, natural resources and ecosystem services. The Observatory is now networked with other freshwater landscape centers across the UK (Defra funded BICCONet project) to further large scale understanding of the resilience of these ecosystems to climate change, and is involved in the €9million EU MARS project that aims to understand the pressures that current land management practices impose on a key natural asset of Wales: water. Developing innovative methods to assess trade-offs involved in sustaining ecosystem services is a key aspect of our work, and the uniqueness of our approach lies in bringing together ecologists, earth scientists, engineers, economists, social scientists and stakeholders to work together on the same catchment, to address a complex problem.

The DURESS Project, a Focus on River Ecosystems

With the UK’s water infrastructure valued at over £200 billion and worth over £10 billion per year, Britain’s 389,000 km of river ecosystems are among our most important natural assets. As well as providing water supplies, they regulate flooding and water quality, support adjacent ecosystems by supplying energy and nutrients, and provide cultural value by supporting charismatic organisms, recreation and education. However, the ways in which organisms and ecosystem functions maintain these services in rivers are poorly understood. In addition, many of these services are also at risk from climate and land-use changes.

A team of 30 researchers across 9 institutions have been focused on four examples of river ecosystem services: the regulation of water quality, the regulation of decomposition, fisheries and recreational fishing and river birds as culturally valued biodiversity. Using a range of spatial and temporal scales, the project tests the overarching hypothesis that ‘biodiversity is central to the sustainable delivery of upland river ecosystem services under changing land-use and climate’. It will aim to address many of questions needed to tackle this hypothesis including: What are the links between biodiversity and service delivery? How does river biodiversity affect ecosystem service delivery through time? How should river biodiversity be managed to sustain ecosystem services?
Science into policy making

This research theme explores how science informs policy making, looking at environmental and public health issues like swine flu and nuclear power regulation.

There have been a range of different ways of looking at this issue, the old school approach emphasises the scientific method. Here, science is seen as governed by generally agreed upon rules for designing experiments, analysing data, and evaluating hypotheses. By following these principles, scientists get hold of facts about the state of the world and how it works. These facts are then available to the public and policy makers, who apply them in a fairly neutral fashion to develop and implement policies to protect health and the environment. It’s now reasonably clear that science can’t be reduced to formal logic or algorithms, that value-commitments are unavoidable even in pure research, and that science can only guide rather than determine policy. A still more radical position sees evidence-based policy as a charade, science as a mere social construct, and power and politics (rather than research) as the drivers of policy outcomes. But taken to the extreme, this sort of deconstruction can be a little nihilistic, and doesn’t offer much of a way forward in terms of developing frameworks for more robust, evidence-based policy making.

This is particularly important because tensions and misuses of scientific evidence in policy contexts can happen quite regularly. Part of this work has tried to explain this in ways that account for politics and value judgments, without falling into the trap of relativism. It has focussed on the systematically different beliefs that various policy regimes hold about what constitutes valid evidence, how evidence should be used, and about what is the proper ethical framework for decision-making. These systematic differences mean that a particular piece of scientific evidence may be viewed within one regime as providing legitimate evidence for action, be down-weighted elsewhere for reflecting a flawed ontology (e.g. privileging universal over contextual knowledge), and be rejected outright in another jurisdiction on the grounds that it doesn’t cohere with their preferred ethical framework (e.g. “Obamacare” forbids the use of Quality-Adjusted Life Years for evaluating healthcare interventions, on the grounds that it discounts the value of life based on disability). The basic claim is that by taking explicit account of these dynamics may help to counteract the not uncommon neglect, misunderstandings, and under-utilisation of models in policy contexts, as well as reduce the risks of poor choices and wasted resources in applied research.

The Understanding Risk Group

Research on public understanding of sustainability issues focuses on individuals’ understandings and their beliefs in relation to sustainability and risk issues, and is largely driven by Professor Nick Pidgeon and the Understanding Risk Group. Brian collaborates with Nick in exploring public perceptions of agency and responsibility in relation to environmental crises, and how these are linked to media and expert discourses.

http://www.understanding-risk.org/
Sustainable communities and place-making

Involving people in what really matters to them in the development of their local area is vital for communities to become stronger and more sustainable.

Since its conception Fellows and Affiliates of the Institute have been involved in a range of research projects, the findings of which contribute to our understanding of community-led and local level sustainable place-making. This includes research undertaken within Wales and internationally. In September 2012 the Institute was commissioned by Welsh Government to review the learning outcomes of an innovative two-year ‘Pathfinder programme’ aimed at enhancing understanding of how best to support community groups engaged with taking action against climate change. The programme, which involved six Pathfinder Development Officers working alongside a total of 17 community groups from across Wales, was informed by an innovative action research methodology. Accordingly, much of the work undertaken by the Pathfinder Officers was determined by the actions, interests and existing capacity of each case study community group and undertaken in direct collaboration with them. This included working with group members to identify additional resource opportunities, assisting them with data gathering for grant funding applications and encouraging them to give increased priority to evaluating impacts and outcomes of their projects as well as critically reflecting on the experience of managing the project. The findings from the review will be made available by the Welsh Government.

Closer to home in Cardiff

During November 2012 an ESRC Festival of Social Science event was held in Ely-Caerau, as part of on-going development of a programme of community based research, working together with local people and groups to find out how we can create a more sustainable community. This work is being undertaken in partnership with development officers from the Ely-Caerau Communities First office. Additional background information has been gathered in support of this collaboration with the help of a University student through the Cardiff Undergraduate Research Opportunities Programme (CUROP).

From October 2013 an additional strand of research has been added in the form of a Doctoral Training Centre studentship: ‘Building Community Resilience: The Role for Community Energy Projects in Sustainable Place Making’. The studentship focuses jointly on community energy and action research methodology, and is match funded by the Welsh Government (People and Environment Division).

Researchers involved include: Alex Franklin, Leanne Cullen-Unsworth, Karen Parkhill and Richard Cowell.

Brazil & Colombia

During April 2013 Alex spent time visiting and working with staff in the Universidade Federal Rural de Pernambuco, Recife, Brazil (principally, Prof. Barros) and Universidad Javeriana, Bogotá, Colombia (principally, Prof. Castillo). The purpose of the visit was to identify case study initiatives and further develop the international component of an RCUK funding application on Sustainable Place Making and ‘Community Land Use’. In addition to this activity whilst in Bogota, Alex also gave a series of lectures on community land use and grass roots sustainability practice to University students studying for a Masters degree in Rural and Regional Development.
Designing and building better cities
Spatial Design Network Analysis (sDNA)

With the sDNA Project, the Sustainable Places Research Institute has led development of a state-of-the-art tool to help measure the impact of urban design on environmental, social and economic systems. sDNA stands for Spatial Design Network Analysis, helping to capture the wealth of information embedded in spatial networks.

Currently, there is a shortage of evidence-based analysis of urban planning decisions, particularly in the vital areas of both public and private investment. The aim of sDNA is to help produce better cities across the world by expanding the number of spatial designers and analysts with the tools and knowledge to evaluate urban networks. sDNA will help planners, designers and analysts study network and land use design options in terms of impact on the environment, public transport use, traffic congestion, land value, social and public health outcomes.

The software is part of a bigger strategy to promote evidence-based urban planning and design and to re-unite urban planning and spatial design with its public health and spatial-economic roots. The team hope that placing such a powerful explanatory modelling tool in the public domain will help transform the expectations of public policy makers, research funders and researchers in terms of quantitative and mixed-methods urban policy studies.

sDNA has already been used to uncover links between network layout and traffic flows, house prices, air pollution, community health, social cohesion and the success and failure of local high streets and public transport systems.

“In providing a way for both analysts and designers to use our tools, we aim to bring together these diverse fields. It’s been interesting pulling apart spatial network analysis and starting again; reformulating it into a more logical and coherent framework.”

Dr Crispin Cooper.

“Improving infrastructure could save around $1 trillion a year to 2030, according to some studies and 60% of those savings could be achieved by improving project selection and making the most out of existing infrastructure.”

Mr Alain Chiaradia.

The software is free and available to all and can be accessed at: www.cardiff.ac.uk/sdna
The Research Centre for Sustainable Urban & Regional Food (SURF)

The centre aims to be an international reference point for academic research on (and positive political/practical action for) food and urban and regional development.

Integrating and generating new research on governance, planning and policy strategies relating to food sustainability, security and justice in both developed and developing countries. Specifically, current work focuses on:

- the opportunities for (and barriers to) food security and sustainability;
- the implications of food policies on the spatial and socio-economic relationships between different actors in the food system and between rural and urban areas;
- the development effects of strategies that address the welfare and health needs of the human and animal population.

New for 2014, the MSc Food, Space and Society specifically targets those people wishing to gain expertise in the contemporary geography and politics of food. Modules are designed and taught by staff from the SURF centre, who have a long-standing and world-renowned expertise on conventional and alternative food networks, food consumption practices, the interplay between global and local food systems, community food growing, public food procurement, food justice, animal geographies, and the community food sector.

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http://www.cardiff.ac.uk/cplan/study/postgraduate/food-space-and-society-ms

Making Sense of Sustainability

Can Social Scientists, arts scholars and artists work together to develop creative and imaginative strategies to address some of the major environmental challenges we face in the 21st century?

Cardiff University and Aberystwyth University are working collaboratively to build a social science – arts network within and beyond Wales to examine this and other questions.

To find out more please contact:
Dr Ria Dunkley DunkleyRA@cardiff.ac.uk

http://www.cardiff.ac.uk/socsi/environmental-futures

Energy Biographies, Telling the Energy Story

Climate Change, rising fuel bills, renewable energy, we’ve all heard the headlines, but what’s the effect on you?

Have you made changes in your energy use? Do you walk to the shops? Turn down the thermostat? Buy seasonal, local food? Do you remember how you used energy in the past? Or imagine how you’ll use energy in 10, 20, or 30 years’ time?

The Energy Biographies project is looking at how people think about energy use and brings together individual energy stories in ways which we hope will inform the policy decisions which affect us all. So we’d like to know your energy story! Share your views, memories, hints and tips on energy saving.

http://energybiographies.org/
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For full details on the research team please visit our website

Research team

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