An EU FP6 Project

Closing the Gaps

The MICRDIS European Symposium on Integration Strategies for Extreme Events

Project Deliverable 6.2.8 – Proceedings
Introduction

The MICRODIS European Symposium on Integration Strategies for Extreme Events took place in Newcastle (UK) on 9th and 10th September 2010. The meeting was held at Northumbria University, where a group comprising a mix of MICRODIS European partners and other invited delegates, took the opportunity to deliberate the current state of integration in extreme-event research and practice and to make suggestions for its future development.

With ‘Integration’ being a current buzzword in both academic and policy contexts, this symposium sought to provide a useful forum, wherein the participants could take part in structured discussions and networking, from which opportunities for collaborative working might emerge.

The symposium was structured around four sessions, which allowed the participants to: (1) discuss their personal experience of interdisciplinary (ID) research; (2) to discuss in break-out groups some fundamental challenges and opportunities inherent in ID work; (3) to propose extreme-event scenarios, which were considered to lend themselves to ID investigation and discuss the potential methods and considerations that could be used to underpin such an investigation; (4) to propose specific projects that could be taken forward using knowledge and connections gained from the symposium itself.

Whilst little ‘new’ knowledge may have emerged from these deliberations, it was the general consensus that everyone involved had been exposed to new perspectives and learned from the experience.

MICRODIS

MICRODIS is an integrated project with the overall goal of strengthening preparedness, mitigation and prevention strategies in order to reduce the health, social and economic impacts of extreme events on communities. Since it started, the project has looked at the MICRO level of DISasters in both Asia and Europe.

The project objectives, which are inherently inter-disciplinary in character, include:

- Developing an integrated impact methodology; and
- Establishing an evidence-base of primary field research through quantitative surveys and qualitative methods

The international team consists of 23 Institutional partners from 7 countries in Europe and Asia. With the partnership drawn from a range of backgrounds; from the academic disciplines (e.g. Sociology, Epidemiology, Anthropology, Psychology, Geography, Environmental Management, Development Studies) and practice (e.g. development and health practitioners).
Aim
The aim in arranging the symposium was to create a space, where a mix of academics and professionals could come together to deliberate the current state of ‘integration’ in respect to research focussed on extreme hazard events and disasters in Europe. The event was to form the European contribution to MICRODIS Work Package 6 (Promotion, Training and Dissemination) and followed on from the MICRODIS Asian Symposium, which took place in Vietnam 25-27th August 20101.

Prior to the symposium each invited delegate was sent a concept note [Appendix 1], which laid out some common thinking related to multi / inter / trans-disciplinary issues. The idea being that each individual would have the opportunity to consider, from their own perspective, how they might contribute to the discussions in Newcastle.

The concept note highlighted four key challenges for transdisciplinary and integrated research: 1) methodological challenges; 2) language issues; 3) practical and organisational issues; and; 4) issues relating to outcomes, outputs and evaluation. It was, however, expected that further issues, challenges and opportunities would be identified and discussed during the symposium.

Participants
A select number of delegates were invited to join the Northumbria University MICRODIS team for the event. These included representatives of several relevant and related academic disciplines (e.g. hazard and risk analysis; disaster risk reduction; vulnerability and development studies). Delegates also came from the environmental-consultancy sector, the Environment Agency (of England and Wales) and the UK Cabinet Office. Three of the MICRODIS project’s European partners also attended.

A full list of delegates can be found in Appendix 2.

Structure
Although a provisional programme was created for the event, it was always expected that the eminence and mix of delegates was likely to create a need for an element of fluidity to be included in the symposium’s session schedule. This was indeed the case, with the first day being taken up completely with the delegates’ short presentations and the discussions and deliberations these triggered.

The final structure of the event, which emerged through consensus during the course of the two days, appears in Appendix 3.

1 http://www.microdis-eu.be/content/asian-symposium
Précis of sessions

Session 1: Presentations

To start the event off, the invited delegates were asked to spend 5 minutes speaking about an aspect of interdisciplinarity that interested them. This was followed by an equal amount of time, during which questions could be asked.

These short presentations covered many hazard and disaster-related topics, which ranged across Europe and the wider world. Whilst the focus of the symposium remained on European extreme events, allowing these wider geographical perspectives to be introduced undoubtedly added to the forum’s deliberations, for example, by elucidating sometimes surprising synergies and opportunities being revealed within the very different contexts of research being conducted in the ‘north’ compared to that in the ‘south’. At one point in this respect, detailed insights from participatory flood-risk research in Yorkshire were preceded by the discussion of how farming and pastoralist communities in Tanzania where providing NGOs with important perspectives and
potentially useful approaches to dealing with climate change-related risks at a local scale.

**Session 2 (Breakout Groups): The Fundamentals**
Following the initial presentations the forum split into sub-groups in order to deliberate a number of different aspects of interdisciplinarity.

The three guiding topics were:

1. Conceptual fundamentals
2. Science without/beyond disciplines
3. Inside and outside the academy

Each group was asked to prepare a bullet-pointed flip-chart and to nominate a representative to present these to the wider group. Below are bullet points for each group, which have been further annotated with clarifications made during the plenary presentations.

1. **The Fundamentals**

   **Philosophical**
   - Epistemology: what kind of knowledge?
   - Ethical: consequences of action vs. inaction
     - “Do no harm”
     - Iterative process

   **Building Blocks / Basics**
   - Strategic change: there is a need to generate understandings of what interdisciplinary research can provide within Higher Education and amongst funders and users.
   - Tactical: it is important to include a full range of natural and social science disciplines in order to gain new knowledge in breadth and depth
     - Risk-perception assessments (for example) can add important new perspectives and insights to a range of more traditional risk assessment processes
   - There is a need for Full & Fair consultation and participation
   - However, there should be an awareness of the power relations that may be present within this "participation”.
     - NB. Power relations are not only problematic if they are disproportionate. Equality of input too can create challenges. To illustrate this, Figure 1 shows four perspectives of knowledge creation within two hypothetical projects. From a research-consortium perspective, situation (1) could be regarded as an ‘ideal’ example of integration (i.e. all partners in the team maintain close and reflexive collaboration through the course of the
In situation (2), however, partners concentrate their efforts on working within the bounds of their own discipline/sector/area-of-expertise, with any attempts at collaboration being strained through potentially divisive epistemological lenses (e.g. meetings are attended but, no cross-boundary reflection is allowed to influence individual partners’ perspectives). Situation (2) could be regarded, therefore, as illustrating a multi-disciplinary project in its most literal sense. However, whilst situation 1 and 2 could be regarded as equally valuable to the project teams themselves, situations 3 and 4 cast light from a knowledge user’s perspective. From this perspective (3) illustrates that, given the integrated approach adopted, any output produced could be regarded as potentially the ‘best available’ knowledge. On the other hand (4) reminds us that the three partners in (2) are producing distinct and largely discrete knowledges. Therefore, the question that should be raised by anyone intending to use any output from (2) becomes: how can the user of any of the three knowledges produced justify their perception of the ‘power’ supporting that particular knowledge over that supporting the others, given that all three are presented as bearing equal relative value/validity?

- Required for creating partnership:
  - Time
  - Trust
  - Resources

Figure 1: Two hypothetical projects viewed from the perspective of the research-consortium partners (1a and 2a) and the users of the resulting outputs/knowledges (1b and 2b)
Definitions / Meanings

- It was agreed that there was value in the concept note definitions of Multi, Inter and Trans-disciplinarity (see Appendix 1)
  - However, different contexts can lead to different weighting of the relative value of individual contributions
- Translation issues mean that there is often a need to find a common language, both for intra-project communication and in communicating to multiple audiences
- There is often a need to define concepts such as:
  - “Stakeholder”
  - “Application”
  - “Risk”, “Disaster” ...etc.

Innovative

- Projects should advocate Participatory Action Research (PAR) and Problem Driven Research, which can help identify multiple perspectives, needs, applications
- There is a need to find working methods that recognise & transcend tensions, including:
  - Historical & Future
  - Political
  - Cultural
- Increased Policy relevance and uptake should be aspirational in all inter-disciplinary projects

2. Science without/beyond disciplines

This group spent their time deliberating the barriers and opportunities faced by those trying to conduct science, with the discussion raising a number of key issues related to how projects should be conceived:

- What is Science/science?
- Who is the audience, user, funder...?
- Methodology: make sense of your analyses before communicating them
- Consider cultural perspectives (e.g. audiences, knowledges)
- You should aim to “Meet people where they are at”
- Is a trans-audience approach achievable, given inherent restrictions (e.g. cost, access, time)?
- The audience can actually be project driven rather than problem driven (a vicious circle that can sideline actual local issues behind a ‘problem’ that is only perceived as such by outsiders – i.e. including the academics)
- Communication mechanisms (e.g. formal/informal; known/unknown)
  - Is it about educating beyond the project confines? If so, which material and how (Newspapers, speeches, booklets, etc.)?
- Information reception (be sensitive to what the audience can/does take away)
3. Inside and outside the academy

- Consider project as a collaboration of different specialists (i.e. not just academic; non-academic)
- Outside is more about sectors whereas academy is more about disciplines and the two do not necessarily match
- Language needs to be modified or adapted
- There can be a credibility gap between academics and the `others`, who question what legitimacy is there in the study of abstract concepts that won’t change anything in terms of what they perceive to be the `real world` problems. There is a need to better communicate the value of (e.g.) ‘blue skies’ research.
- Academics want to explain phenomena in the world, whereas politicians/sectors want to use knowledge to underpin their decisions with evidence
- Need for commitment from different stakeholders in order to be efficiently integrative
- Integrated funding is an incentive for interdisciplinary work but it doesn’t necessarily work that way.
- There is also the ‘intelligible vs. palatable’ issue of interdisciplinary communication; do people necessarily want to hear what they are being told?

Ben Wisner lays out (at least) one perspective during a breakout session
(© Ilan Kelman)
Session 3 (Activity): What would make it right? What does an integrated approach require? Typical scenarios?

In this session, delegates were asked to suggest scenarios related to extreme events or other DRR-related ‘problems’ that might be amenable to research using an interdisciplinary approach. As the list below shows, these suggested scenarios ranged from a wish to define a method to carry out effective and encompassing ‘all-vulnerabilities’ assessments, to those much more focused on specific or complex ‘extreme events’.

Suggested scenarios

- Vulnerabilities of a specific sub-population
- Vulnerability of a place (e.g. an island) – all-vulnerabilities approach
- Earthquake risk in: Lisbon; Basel; Vienna; Istanbul; Bonn
- Addressing root causes of vulnerability
- Heatwaves as a multiplier of a range of rural risks
- 100m meteorite strike
- North Sea tsunami
- Mass salmonella outbreak in French primary schools
- European Super-storm
- Katla/Hekla prolonged eruption with long closure of Euro airspace
- Thames Barrier failure [failure to open/close] or terror attack during a 5m surge
- CBRN contamination of Hospital A&Es

Once the scenarios had been proposed, delegates were then invited to form groups to focus attention on identifying the particular needs, challenges, barriers and opportunities that a chosen scenario would place on or expose to the organisers of such an interdisciplinary investigation. For this session the group split into two in order to focus on two scenarios (Plate 2): (1) Addressing root causes of island vulnerability, and (2) Contingency planning for a volcanic eruption in Europe. A representative from each group then presented the respective findings and suggestions to the other delegates.

Ongoing debate and discussion via the writing wall
Session 4: Brainstorming of a truly integrated / transdisciplinary initiative re: strategy for extreme events in Europe

Whereas Session 3 had concentrated on particular DRR-related scenarios, the final session was conceived to give the delegates the opportunity to work collectively to assimilate all the networking and discussions from the previous two days together in order to generate ideas for a truly interdisciplinary research project for which funding could be sought in the future.

This session produced the following ideas for further assessment:

- **An integrated / inter-disciplinary reader for disaster studies**: Built around a set of disciplinary ‘components’ this publication would be based on the idea of identifying “Why do people involved with hazards need to know about … ?”. It could include a disaster lexicon and perhaps short vignettes, written by acknowledged ‘giants’ in the DRR literature, who could explain what it was that initially hooked them into the subject.
  - **Issues identified**:
    - The need for a publisher
    - The fact that the publication could be launched at the Humanitarian Studies Association Conference
    - The lexicon could build on data already collected by Ilan Kelman

- **An England & Wales Flood Archive**: The creation of a narrative-led archive of historical / contemporary flood events to include social as well as natural-science perspectives and data.
  - **Issues identified**:
    - Threads/sections could focus on specific hazards/issues (e.g. flash floods; evacuation)
    - Narrative to encompass before, during and after perspectives
    - Who would ‘own’ the archive (e.g. editorial board)?
    - Environment Agency’s FCRM evidence base + strategy widening could be key sources to be developed but would need gap analysis
    - This could be a PhD project

- **Provention II**: This would be a web-based forum, to be used to encourage collaboration (i.e. a safe thinking space) for sectors, disciplines (etc.) working in European disaster risk reduction and development.
  - **Issues identified**:
    - The sensitivity of the ‘Provention’ name (care would need to be taken in avoiding the perception that this was ‘better’ than Provention, particularly as it would have a reduced European, rather than global focus.
    - The EU policy area seen as relevant but also to consider (e.g.) Turkey, the Balkans, Iceland
    - Possible difficulty in finding donors and/or energising start-up networks
    - Difficulty in influencing funding round (could be written up and then made to ‘fit’ into call)
- **Volcanic Ash Emergency**: This would be a project set up to identify / explore the potential consequences of a major European volcanic eruption
  - **Issues Identified**
    - What would be the aim (e.g. transport focus; health focus)?
    - What expertise would be required?
    - Wide geographical area-of-interest (Moscow to Rome / Reykjavik)
    - Could include a decision analysis of the Eyjafjall eruption, although many decisions could be ‘classified’ (e.g. COBR) or commercially sensitive
    - An important focus would be on the wider aviation sector, as opposed to being constrained to purely mechanics
    - Again a narrative approach could help with giving the outputs a wider appeal
    - Cabinet Office / HPA may be interested
    - Potential for collaborative funding arrangements through EPSRC, NERC, ESRC.

- **Long-term health effects**: Rather than a project per-se, this part of the discussion was used to highlight the importance of considering whether L-T health effects could be quantified as part of other projects.
  - **Issues identified**
    - Particular methods are especially valuable (e.g. longitudinal and cohort studies)
    - Targeted methods can identify primary, secondary and tertiary effects
    - Good data/analysis provides the evidence needed to identify effective intervention points
    - Health research identifies important aspects of the lived experience

**Discussion**

Although very specific and apparently discrete topics and studies were discussed throughout the day, it was interesting to note that a number of themes began to emerge from early in the first session. It is important to note that, in most cases, these themes are already well established in the literature; although this may not necessarily be in contexts where the medium used (e.g. type of journal) naturally facilitates the spanning of inter-disciplinary gaps. Therefore, it is considered important to briefly highlight some of these themes as a form of synopsis of an event that provided a very engaging experience whose outcomes would otherwise be extremely hard to communicate and justify to ‘outsiders’.
In providing this synopsis, it is not being suggested that answers to the various conundrums have been provided. However, their simple elucidation amongst such a mixed symposium undoubtedly influenced the thinking of those present; as was evidenced by the vibrancy of the discussions during breaks and post-event communications.

**Identified Symposium themes and supporting ideas**

**Disaster is a social construction.**
From this well-defined perspective\(^2\):

- All disasters are slow-onset, with identifiable root causes
- All disasters are potentially Natural/Technological (NaTech) or hybrid in character
- Employing the concept of the ‘disaster cycle’ could be said to presuppose that a disaster will happen\(^3\).
- Not all extreme events lead to disaster, but the experience of repetitive minor events can lead to the chronic and equally perilous degradation of the sustainability of a ‘system’, be it (e.g.) a household, a community, or a schedule of agricultural cultivation.
- Hazards and risks can be relative concepts (e.g. a 39°C ambient air temperature in Dubai would be regarded very differently to 39°C in Paris)
- ‘Climate Change’ should be regarded as only one risk driver amongst many, in order that other root causes, dynamic pressures and equally formative conditions of vulnerability are not side-lined into obscurity\(^4\)

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\(^3\) Consider ‘Soldiers Grove’, a settlement in the US where, in response to chronic flood risk, all hazard-exposed buildings were relocated from the floodplain. This population will not be so seriously impacted by flooding again, i.e. that ‘disaster cycle’ has been broken (see: FEMA (2007) Mitigation in Wisconsin: Soldiers Grove Reflects on Moving. *FEMA: Best Practices*, Fall, 2007). However, such examples tend to be the exception, rather than the rule.

How does the involvement of ‘Dark Forces’ and/or ‘People of Good Faith’ within governance structures effect the process of Disaster Risk Reduction (DRR)?

- The corrupt practices and vested interests of a ‘powerful’ few [i.e. the ‘Dark Forces’] can lead to significant negative impacts for all (e.g. money wasted prior to Aquila earthquake could have provided more effective risk mitigation)
- Land-grabbing is perceived to be increasing as nationally/locally ‘powerful’ interests see the benefits inherent in taking over land whose ‘ownership’ could be used to attract funding for (e.g.) climate-change mitigation projects, agricultural production\(^5\) or gentrification. Land-grabbing bears significant potential for impacting upon already marginalised and vulnerable populations
- Risk needs to be prioritised at the local level (bottom-up) because it is only at this level that the nuances inherent in local perspectives can be identified
  - Outsiders (e.g. researchers/consultants) tend to be acting ‘in good faith’, but their influence is more likely to be positive if they take sufficient time to focus and analyse how local systems operate before suggesting/implementing ‘better’ alternatives

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Historical perspectives can provide a means to help identify ...

- … ‘windows of opportunity’ – where historical events have caused shifts in (e.g.) risk management policy and the lessons from which could be transferred into contemporary risk management approaches.
- … where – in terms of the creation of contemporary vulnerabilities – points at which path dependence and lock-in were germinated. An understanding of these moments can help reveal alternative approaches.
- … an account of natural variability in terms of extreme events\(^6\) (i.e. records are often short, meaning extreme-event data are usually interpolated)
- … where cultural equivalences might be exploited in order to identify potentially transferrable DRR measures (e.g. Eastern England’s similarity to North Frisia)

Using research to facilitate the mitigation of long-term health effects

- To be effective, evidence-based Public Health (PH) practice benefits from the support of integrated analyses.
- For research to be effective in a PH context, at a minimum, variables and categorisations need to be consistent across studies (e.g. age classifications).
- Innovation is also encouraged on the part of researchers to explore ways in which data can be generated for analysis/reanalysis within other ‘outside’ PH relevant longitudinal studies.

There is a need to identify and understand the opportunity costs of resilience:

- Physical costs (e.g. replacing like-for-like can be ‘cheaper’ [for whom?] than the more resilient post-disaster reinstatement approaches. However, like-for-like’s

principal consequence is that it recreates the same vulnerabilities as before the event). What are the alternatives?

- Health and welfare costs: Opportunity costs are often invisible and yet they can produce significant effects on social and individual vulnerability (e.g. ‘I know s/he is sick but with all this upheaval, I can’t afford the time to take my child to see the doctor?’). How do we quantify/qualify these costs in a way that is amenable to risk assessment?

The importance of partnership working / co-production of knowledge

- The need for democratic accountability at the local scale should be appreciated (i.e. who should say this is a problem needing to be dealt with?)

  - Risk assessment (RA) at the local level shifts focus from the disciplines to the nature of the problem itself
  - At this scale it becomes important to privilege hazard experience (gained through exposure to minor events), as well as to account the wider spectrum of risky livelihood-related conditions (e.g. having access to good local healthcare and employment opportunities), over classical risk analysis processes, which aggregate 'net-effects' across larger scales.

- What creates resilience is not the act of knowledge creation, but the process of knowing

  - Classic RA could be said to deal with 'matters of fact' (i.e. the study of 'objects' e.g. the physics of hydrology), whereas at a local level DRR more often represents a complex 'matter of concern' (i.e. an amalgamation of multiple 'things'). Assessing the latter almost inevitably requires a participatory solution.

- Therefore, the co-production of knowledge can challenge existing ‘expert’ vs. ‘lay’ risk interpretations

- Therefore, the co-production of knowledge takes time

- Knowledge controversies need to be dealt with through the development of axioms of agreement

It was the general consensus that Social Science (SocSci) should be privileged in hazard and DRR research, because ...

- SocSci can stimulate the re-thinking of issues and priorities

- In cases where techno-centric approaches have been historically indulged, SocSci can provide important perspectives, (for example) as to why people do not respond “effectively” to warnings.

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‘Success’ in hazard warning should be measured in more encompassing terms than just “We know that ‘n’ number of households received a recorded message”.

- SocSci can help to identify the multiple facets of the ‘thing’ (see above)
- SocSci can ‘smooth the way’ in terms of translating risk knowledge between ‘stakeholders’

There is a major problem with language (e.g. contested terms and indiscriminate usage)

- The ‘Glossary’ has almost inevitably been one of the first deliverables to be created in past multi-disciplinary projects, even though it always contains an “array” of definitions and conceptual tensions
  - This does little to quell intra-partner conflicts

- As regards knowledge dissemination, there is usually a need to employ a spectrum of tactics to engage different audiences.
- Outputs are subject to competing priorities, with information needing to be repackaged (several times) in order to satisfy funders and other stakeholders

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Accessed 06/10/10
Conclusion

The MICRODIS European Symposium created an important space within which invited delegates could deliberate the role of interdisciplinarity in the context of extreme-event research in Europe. Focussed by a concept note, the mix of delegates present allowed for considerable free-flowing debate to be held within a trusting environment. Whilst little ‘new’ knowledge may have emerged from these deliberations, it was the general consensus that everyone involved had been exposed to new perspectives and learned from the experience.

In specific relation to adding value in the context of disasters research, the symposium participants generated ideas for several innovative projects. During this first-stage development propositions were subjected to considerable peer-review as the ideas were opened to both, challenges to their veracity and suggestions to improve their focus, as they were deliberated amongst the group. Several participants left the meeting intent on following up the development and further structuring of these ideas.

In the European context, the multi-disciplinarity of the participants was particularly valuable, as many who were predominantly UK or European-based were exposed to important developing world perspectives. In effect, the forum provided the opportunity for those who had witnessed Development and DRR being conducted in the wider world to provide, often counter-intuitive, insight into how apparently entrenched perceptions – that the developed world can only teach others – can be inappropriate and can effectively act to suppress important lessons that have been learned at various scales within many developing nations and which could be very effectively transferred into a developed world context.

In relation to MICRODIS, the symposium provided an opportunity for several of the project’s European partners to meet and to present findings to a new audience of specifically-invited academics and practitioners. The diversity of this audience’s foundations, in both academia and practice meant that the new knowledge created as a result of MICRODIS has been subjected to the back-and-forth of clearly favourable and receptive discussion and, as a result, directly passed into important networks through which further dissemination will occur.
Appendix 1: Symposium Concept note

Closing the Gaps:
MICRODIS European Symposium on Integration Strategies for Extreme Events

Concept Note

‘Integration’ is a current buzzword in both academic and policy contexts. It is also a contested, slippery and ambivalent term, which has, thus far, eschewed uniform definition. Different disciplines and individuals often draw upon divergent understandings of ‘integration’ and such diversity can pose considerable challenges – especially where a range of partners, institutions or organisations are involved in research, policy and social action initiatives. Integration is a term almost wholly considered in positive terms.

In many respects, the recent interest in integration has emerged from the past decades’ increasing trends towards ‘interdisciplinary’, ‘multidisciplinary’ and ‘transdisciplinary’ work. Whilst these terms have often been used interchangeably to refer to work which straddles more than one discipline or approach, they do have distinct meanings and associations. In discussing work on the European Rural Economy and Land Use (RELU) programme, Buller notes:

“One of the particular challenges for the RELU projects, and particularly those that have an interest in how the ‘knowledge’ they produce is constructed, lies in the progression from multidisciplinarity to interdisciplinarity; going beyond a disciplinary parallelism that, rarely – if ever – strays beyond fairly conventional boundaries, yet avoiding the unifying grand project of transdisciplinarity” (Buller, 2008:2).

This comment also, indirectly, points at key differences between ‘multidisciplinary’, ‘interdisciplinary’ and ‘transdisciplinary’ work – although, as Robinson (2007) notes, there is a lack of consensus about what ‘interdisciplinary work’ means in practice. Thus, the boundaries are fuzzy and sometimes fluid but the individual terms are almost always regarded normatively.

‘Extreme events’ is another term to be considered closely. It is used here in much the same loose way, as a starting point for discussion. For many, the focus on extreme events is too narrowly time bound; missing the underlying socio-political processes and root causes which turn a hazard ‘event’ into a socially constructed disaster. The focus on extreme events is intended to be inclusive of – to integrate - hazards, disasters and climate change.

This meeting aims to critically evaluate ‘interdisciplinary’ ideas and approaches. It will take as its starting point the work undertaken by the MICRODIS project (see below), primarily in Europe but also considering the research undertaken in Asia. It will invite
further elaboration of interdisciplinarity (using the term loosely and inclusively) by members of other European projects, and others with relevant European experience and knowledge.

The Symposium will be a thinking space to struggle with complex problems related to extreme events, aiming to produce a collaborative outcome document which communicates across the science-policy-society interface. The Symposium members are invited to bring to the meeting a short presentation (in any form) on some aspect of complexity/interdisciplinarity in which extreme (or not so extreme) events in a European context are addressed directly or illuminated in some more theoretical way. We welcome contributions that focus on one or more of the social, health and economic impacts and processes which we have been considering.

Beyond producing an outcome document we are considering a further proposal on European resilience building to which Symposium members are invited to contribute.

Background to the MICRODIS project: 2007-2011

MICRODIS - Integrated Health Social and Economic Impacts of Extreme Events: Evidence, Methods and Tools - is funded by the European Commission under the SIXTH FRAMEWORK PROGRAMME, Sub-Priority 1.1.6.3: Global Change & Ecosystems. It is an Integrated Project. MICRODIS focuses on the micro level of disasters through a multidisciplinary consortium dedicated to a common goal:

- To strengthen preparedness, mitigation and prevention strategies in order to reduce the social, health and economic impacts of extreme events on communities.

Its broad objectives are to:

- Improve human resources and coping capacity in Asia and Europe through training and knowledge sharing;
- Develop and integrate knowledge, concepts, methods, tools and databases towards a common global approach; and
- Strengthen the scientific and empirical foundation of the relationship between extreme events and their health, social and economic impacts.

Thus, our aspirations are considerable and we hope to draw on Symposium members’ knowledge to seek ways to approach our goal.

Background Concepts

Multidisciplinarity

For the purposes of this document, ‘multidisciplinary’ work is that which involves a number of separate disciplines and/or practices operating together whilst remaining
discrete. However, it should be noted that this term is sometimes used to refer to research which draws upon multiple methods (see for example Kessel et al., 2009; Yue et al., 2010). Moreover, in health contexts the term ‘multidisciplinary’ is often used to refer to work or projects involving different types of clinical staff (e.g. doctors, nurses and physiotherapists) or multiple organisations or agencies.

It has been suggested that multidisciplinary work can facilitate understanding of complex phenomena, such as human-environment interactions, due to the increased predictive or explanatory power offered (see, for example, An et al., 2005). For example, with a heightened recognition of the complexity of social, cultural, economic and environmental phenomena, alongside an increased awareness of global interconnectivity, there is a growing consensus among the disaster and development community for the need to embrace an integrated approach for policy-relevant and action-based research in order to address the socio-economic and environmental problems faced by societies. Such problems are the result of interactions between human, cultural, social and economic drivers and the environment in which they are located. While single disciplines can provide an understanding of certain aspects, an approach which involves multiple disciplines should provide a more thorough understanding of all drivers and their interactions forming the root causes of the problems faced (Marin, 2001; White et al., 2008).

In relation to health, and chronic disease in particular, de-Graft Aikins et al. (2010:7) argue that there is a “…need for multidisciplinary models of research, bringing together a range of perspectives, including cultural, psychological, epidemiological, clinical and economic, to properly inform the design of interventions that address the needs of communities and individuals at risk…”

Yet, despite the advantages of collaborative research and knowledge generation, multidisciplinary research is problematic. For example, in relation to multidisciplinary work on urban ecologies, Baker (2006:46) notes “Within our disciplinary niches, we argue nuances of theory or methodology but rarely step back to look at the big picture. In multidisciplinary research, exposed to the light of broad enquiry, the weakness of these cherished paradigms often becomes exposed.”

Interdisciplinarity

While, as noted, multidisciplinary research involves multiple disciplines working discretely, interdisciplinarity involves “…occupying the spaces between disciplines’, and a synthesis of knowledge, in which understandings change in response to the perspectives of others.” (Petts et al., 2008:596). In practice, this implies a number of different disciplines and methodological approaches working together in an integrative endeavour. Although interdisciplinary work has often been regarded as a key to understanding ‘real world problems’ it does not need to be applied research (Petts et al., 2008) and can thus include conceptual or theoretical developments.
Transdisciplinarity

Transdisciplinarity has been described as “...a practice that might literally transcend traditional disciplinary boundaries, challenging and renegotiating them, and in some cases re-drawing the disciplinary map.” (Petts et al., 2008:597). The notion of transdisciplinary work is further expanded by Ramadier (2004:424):

“Transdisciplinarity essentially concerns the articulation between disciplines, rather than their relations...the specificity of transdisciplinarity is that it simultaneously integrates two contradictory movements of disciplinary thinking: on the one hand, the compartmentalization of knowledge; on the other hand, the existence of relationships between the disciplines – the aim being to determine how the different forms of knowledge thus produced can be articulated together.”

For both interdisciplinarity and transdisciplinarity a key aim is the integration of knowledges, ideas and practices. The interaction between disciplines crosses traditional research boundaries and, in working together towards solving a problem, creates integrated knowledge and theory, thereby creating integrative research (Tress et al., 2003; 2005a; 2005b). Through this process it is possible to understand a problem more completely by taking into account a greater number of diverse drivers and variables to produce new knowledge and perspectives for problem solving.

For the purposes of this concept note, ‘transdisciplinary’ work means a number of different disciplines and practices working together in an integrative undertaking for ‘social good’, often with application to a ‘real’ problem. There is also an implied hierarchy here with transdisciplinarity at the pinnacle of endeavour.

MICRODIS

As an example of a project seeking to take an integrated approach to problem-solving research, the ongoing MICRODIS project draws on a range of disciplinary backgrounds (including sociology, epidemiology, anthropology, psychology, geography, environmental management, and development studies) and on the expertise of development and health practitioners, across eleven countries in Europe and Asia10. The project focuses on the micro (individual/community) level of disaster impacts but in the wider social and political context. The project’s overall goal is to strengthen preparedness, mitigation and prevention strategies in order to reduce the health, social and economic impacts of extreme events (floods, storms & earthquakes). The aims of the project include developing an integrated impact methodology and establishing an evidence-base of primary field research through quantitative surveys, various qualitative methods and community engagement activities.

10 Belgium, England, Finland, France, Germany, India, Indonesia, Italy, Netherlands, Philippines and Vietnam.
However, despite the commendable and innovative application and the advantages of an integrated approach, there are still many theoretical, methodological and practical difficulties. It has been suggested that it is rare for work to be genuinely interdisciplinary (Petts et al., 2008). This concept note suggests four key challenges for transdisciplinary and integrated research: 1) methodological challenges; 2) language issues; 3) practical and organisational issues; and; 4) issues relating to outcomes, outputs and evaluation. It is, however, expected that further issues, challenges and opportunities will be identified and discussed during the symposium.

**Challenges For Transdisciplinary And Integrated Research**

**Methodological challenges and opportunities**

A key methodological challenge to the concept of integrated research is reconciling the perceived differences between quantitative and qualitative research methods and epistemologies. For example with regard to the MICRODIS project, while many health and economic impacts may be placed in a quantitative framework, social impacts are much more difficult to define in a manner that promotes quantification. Aspects of conceptualising the MICRODIS research are also challenging due to differing perspectives between multiple disciplines and practices. There are ongoing debates across the social sciences about the value of both quantitative and qualitative research methods and their combination. These debates are, in many ways, ontological and epistemological debates about the nature of reality, ways in which social phenomena can be investigated or explained and how cause(s) and meaning(s) are constructed and understood (Bryman, 1988), including the dualism drawn between science and creativity (which Bailey et al. (1999) regard as false).

Methodological challenges can even encompass agreement on project aims when each discipline brings to the table its own ideas about what the outcomes and purposes of a project are; such differing opinions can be difficult to reconcile. One of the stumbling blocks in this process is cultural differences between the disciplines or organisations involved (Petts et al., 2008). However, multidisciplinary research can enable methodological advances which might not otherwise have been possible (Dunn et al., 2007).

**Language and terminology**

Additional problems are language and terminology, since scientific and everyday language can differ greatly between disciplines and:

“Disciplinary isolation produces different languages, to the point where there can be difficulty in communicating what would seem to be rather ordinary thoughts amongst a multidisciplinary group. The word ‘model’ for example, means very different things to different disciplines and the first use of this
term in a multidisciplinary group discussion will likely lead to disagreement.” (Baker, 2006:46).

Familiarity with the terms and language used within other disciplines involved in a project is essential for co-ordination, planning and true integration of research. It should also be kept in mind that the use of acronyms can be problematic (White et al., 2008). Furthermore, careful attention should also be given to language in work which straddles multiple contexts or settings (Beale, 2008). On the other hand, it should be noted that differences in language can also be enriching (Petts et al., 2008).

Many of the key terms of interest to the MICRODIS project are cross-disciplinary and contested: including vulnerability, resilience and sustainability to name just three.

**Practical and organizational issues**

There are many practical and organisational issues that can affect the efficiency and quality of integrated research. A history of reliance on single discipline approaches to environmental problems has left a legacy of structural and bureaucratic barriers to progress in integrative research (Tress et al., 2007). Management information systems often remain segregated by department adding additional barriers to the pursuit of interdisciplinary understanding. Additionally, personal expectations, forged during training and experience within traditional disciplinary boundaries, can colour ideas about what are feasible and legitimate research and policy goals to pursue (Tress et al., 2007). Other practical challenges may emanate from more personal issues, for example a consideration of how engaging in integrated research may affect a person’s career progression within their own discipline, or how pressured each member feels in compromising their own academic viewpoint. Issues relating to disciplinary and departmental or institutional research structures can impact on integration (Petts et al., 2008), and work which draws on multiple methods and involves multiple disciplines can pose problems or encounter difficulties with ethics and ethics review (Alderson and Morrow, 2006). A further point to keep in mind is that partnerships between Global North and Global South researchers or organisations can be fruitful but also present challenges (Bradley, 2008).

**Outcomes, outputs and evaluation**

As promotion of the benefits of integrated research grows, an expectation is placed on projects with regard to, for example, the research timeframe and publication outputs. To conduct integrated research, members of the various disciplines must work together in close partnership and be committed to continuous and open communication. However, if time commitments, long distances and other barriers prevent this, members may find themselves working discretely from each other, thus losing the integrated approach. For publication outputs two main issues arise. Firstly, there is pressure to publish results immediately to meet project deliverable deadlines, which can conflict with a traditional scientific approach of repeating ‘experiments’ or theoretical substantiation to ensure accuracy and truthfulness. Secondly, there is the problem of the type and
perceived quality of journal in which to publish research findings (see Baker, 2006, for discussion). With regard to outcomes and evaluation, many of these tensions are summed up in Klein’s suggestion:

“Interdisciplinarity has become a widespread mantra for research, accompanied by a growing body of publications. Evaluation, however, remains one of the least-understood aspects. In the past, discussions of interdisciplinary and transdisciplinary evaluation did not constitute an identifiable literature. They were scattered across multiple forums, and they were longer on anecdotal, intuitive, and normative perspectives than on empirical, longitudinal and large-scale studies.” (Klein 2008:S116).

One of the major challenges in integrated research is the issue of trust when bringing together actors and institutions with disparate backgrounds, knowledge bases and work practices. Genuine integration takes time. There is a need to develop trust and respect over a period of time (White et al., 2008) in terms of team members’ ability to deliver work and take a full and active part in the research, and concerns over whether any partner may try to ‘hog the limelight’. Knowledge integration requires value judgements to be made and the outcomes are emergent (Wesselink, 2009). It is important to set aside time for reflexivity (Robinson, 2007) and discussion.

Despite the challenges and obstacles, we suggest integrated research is central to investigating, answering and understanding many of the problems we face in considering strategies for reducing and dealing with extreme events. With this in mind, we would like you to share your ideas and experiences of integrated research, the challenges faced and solutions provided to help communicate lessons learned and develop new frameworks for future research.

References


Robinson, J. (2008), 'Being undisciplined: Transgressions and intersections in academic and beyond', Futures, 40 (1), 70-86.


--- (2007), 'Analysis of the barriers to integration in landscape research projects', Land Use Policy, 24 (2), 374-85.


# Appendix 2: Symposium Delegates

## Invited Delegates

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Ben Wisner</td>
<td>Aon-Benfield Hazard Research Centre, UCL</td>
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<tr>
<td>Clare Twigger-Ross</td>
<td>Collingwood Environmental Planning, UK</td>
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<tr>
<td>Fiona Tweed</td>
<td>Staffordshire University</td>
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<tr>
<td>Gordon Walker</td>
<td>Lancaster University</td>
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<tr>
<td>Greg Bankoff</td>
<td>University of Hull</td>
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<tr>
<td>Ian Christoplos</td>
<td>Swedish Uni of Agricultural Sciences (SLU)</td>
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<tr>
<td>Ilan Kelman</td>
<td>CICERO, Norway</td>
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<tr>
<td>Ishani Kar-Purkayastha</td>
<td>Health Protection Agency</td>
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<tr>
<td>Mike Nye</td>
<td>Environment Agency</td>
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<tr>
<td>Rob MacFarlane</td>
<td>Cabinet Office</td>
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<tr>
<td>Stuart Lane</td>
<td>University of Durham</td>
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## MICRODIS European Partners

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<tr>
<th>Name</th>
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<tr>
<td>David Alexander</td>
<td>University of Florence</td>
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<tr>
<td>Laura Irvine</td>
<td>UCL, Louvain</td>
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<tr>
<td>Tim Wind</td>
<td>HealthnetTPO, Netherlands</td>
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## Northumbria University

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<th>Name</th>
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<tr>
<td>Maureen Fordham</td>
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<td>Hugh Deeming</td>
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<td>Supriya Akerkar</td>
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<td>Natalie Beale</td>
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<td>Manuela Scharf</td>
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<td>Krishnan Nair</td>
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<td>Virginie Le Masson</td>
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<tr>
<td>Simon Taylor</td>
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Appendix 3: Event programme

Closing the Gaps

The MICRODIS European Symposium on Integration Strategies for Extreme Events

Thursday 9th and Friday 10th September 2010

Northumbria University, Newcastle upon Tyne

Organised by

School of Applied Sciences, Northumbria University

Purpose

This meeting is intended as a creative thinking space to grapple with complex problems related to extreme events. The symposium will seek to draw out lessons learned from previous events and research, and consider appropriate ways to further European resilience building. We aim to produce a collaborative outcome document which communicates across the science-policy-society interface and which will be an important product of the MICRODIS European partners’ research.

Structure of Workshop

Following an introduction to the MICRODIS project, the symposium is organised into five sessions. Each session is intended to illuminate and/or investigate a particular aspect of integration, which has been found to have relevance to design and evaluation of research and/or policymaking related to the mitigation of/adaptation to/action on extreme event risks.

Rapporteurs and Outputs

Each session group will elect a rapporteur to report back to the whole on their behalf. In addition, we will ensure one of the MICRODIS team will take notes and prepare a written summary of the session, the discussion and its conclusions. These summaries will be used to develop the symposium summary document, including a statement of key conclusions, which will be produced by the Northumbria team in collaboration with participants, shortly after the workshop.
Programme (as amended during event through consensus)

Thursday 9th September

08:30 – 09:00 Registration (Room A218 Ellison Building)

09:00 – 09:30 Introduction to the Symposium (including housekeeping and agreed values for the meeting) and to the MICRODIS Project in general (Maureen Fordham, Hugh Deeming, Laura Irvine (CRED))

09:30 – 10:00 Setting the Scene: Integration and disciplinarities terminology. MICRODIS integration challenges (Maureen Fordham, Hugh Deeming, Supriya Akerkar, Manuela Scharf, Natalie Beale)

10:00 – 11:00 **Session One: Presentations:** 5-minute intros/presentations by visiting delegates, on integration/interdisciplinary item of personal choice, followed by 5-minute Q&A

11:00 – 11:30 Refreshments

11:30 – 12:30 Presentations (cont’d)

12:30 – 13:30 Lunch (in room)

13:30 – 15:00 Presentations (cont’d)

15:00 – 15:30 Refreshments

15:30 – 16:30 Presentations (cont’d)

16:30 – 17:00 **So What?**

Summary (Hugh Deeming) and plenary discussion of the first day

17:00 – 18:30 Free time for one-to-one and group meetings and informal meetings with Northumbria Staff and students (Meeting Room will be available) (MICRODIS UK staff meeting for part of this time)

18:30 for 19:00 **Evening Meal** for all Participants: CCE1 (see delegate pack for map and directions).
Friday 10th September

09:00 – 09:15  Introduction and any comments from the previous day

09:15 – 10:00  **Session Two (Breakout Groups): The Fundamentals**

  **Chair:** Gordon Walker

  **Rapporteur:** elected within the group for report back

  4. Red Group: Conceptual fundamentals
  5. Blue Group: "Science without/beyond disciplines" Audiences
  6. Green Group: Inside and outside the academy

10:00 – 10:30 Rapporteurs’ reports

  **Notetaker:** Simon Taylor

  1. Red Group
  2. Blue Group
  3. Green Group

10:30 – 11:00  **Refreshments** (delegates give suggestions for Session 4 on writing wall)

11:00 – 11:30  **Session Three: (Activity): What would make it right?**

  **What does an integrated approach require? Typical scenarios?**

  **Rapporteur:** elected within the group for report back

  Open – plenary or writing wall and then select 3 or 4 to be worked up for real in breakout groups

11:30 – 12:00  Three European extreme event scenarios (Choices to be confirmed by group)

  1. Heat wave
  2. Floods
  3. Other: Geophys/NaTech? (symposium choice)

12:00 – 13:00  Rapporteurs reports

  **Notetaker:** Virginie Le Masson

  1. Heat wave
2. Floods

3. Other

13:00 – 14:00 Lunch (in room)

14:00 – 14:45 **Session Four: Brainstorming of a truly integrated/transdisciplinary initiative re: strategy for extreme events in Europe**

Plenary Discussion and “Where to go from ‘Here’?” outputs and possible activities

**Chair:** TBC

*Notetaker: Simon Taylor*

14:45 – 15:15 Breakout groups on selected initiatives

15:15 – 15:45 Report back and plenary discussion

15:45 – 16:00 Concluding comments and close
Appendix 3: Soundbites from the personal introductions

- The historical approach – you can’t understand vulnerability until you understand how it got like that...
- The events which don’t count as disasters – e.g. land grabbing...
- Land grabbing as a consequence of disaster...
- Versions of land grabbing – investment, concessions, purchases, contract farming...
- Research is often viewed poorly...
- Bring humanitarian relief experience into developed countries...
- Governance is the problem...emergent groups – direct democracy...
- Long-term development processes are exactly what is causing the disaster...
- Subcontracting of risk...
- Lock-in – can be broken when we choose to do so...
- Looting – the mayor of New Orleans broke into Radio Shack and 'looted' what was needed. ‘Survival appropriation’ not looting...
- Why some bad ideas stick...
- Evidence, not eminence...
- Whose knowledge counts?
- What happens when you re-frame risk at the micro level?
- Creating sanitized landscapes where risk is not allowed to exist...
- Flood risk research – what role does social science play – additive or transformative?
- Why is it necessary to translate local language into agency discourse? Local languages have a much more nuanced way of talking about climate change...
- Contested terms between disciplines and within disciplines...
- How do we communicate uncertain knowledge?
- Can you take the risk of interdisciplinarity?
  - ...non disciplinary...
  - ...all disciplinary...
  - ...between disciplines...
- Science – we didn’t like this word...
- Planning from the bottom up...