NERC Flooding From Intense Rainfall

Communication, Engagement & Knowledge Exchange Strategy 2015-2019

Reducing the risks of flash flooding through characterisation, identification and prediction of the interacting processes involved in high intensity rainfall events.

Executive Summary:

The Natural Environment Research Council (NERC) Flooding from Intense Rainfall (FFIR) programme has the strategic aim to reduce the risks of flooding from intense rainfall through characterisation, identification and prediction of the interacting processes involved in high intensity rainfall events.

This strategy sets out methods to ensure communication to various audiences of the important science preformed within the programme, and in conjunction with NERC strategic goals to deliver world leading research at the frontiers of science, suggesting routes to engage with the science community, policymakers, and the general public - about the science generated during the programme.

Purpose:

This communication, engagement and knowledge exchange strategy document aims to provide a framework enabling Flooding From Intense Rainfall Programme participants to promote, explain and engage with stakeholders in relevant science to benefit society in the UK and wider world. The strategy will consider five key audiences, the scientific community, politicians and other policy makers, businesses directly involved in defences/susceptibility, members of the public (of all ages) and the media. The strategy is operational until 2019. This has the following desired outcomes:

- Enhanced understanding of flash flood processes and their interactions via collaborations within the diverse UK science communities involved in meteorology and hydrology.
- Improved engagement with policy makers to facilitate evidence based decision making when determining future policy.
- Enhanced engagement with the public to further understanding of the risks, dangers and science of flash flooding.
- Enable communication between media and scientists in regards to flooding from intense rainfall events.

Strategic Objectives:

The objectives for communications and knowledge exchange within the Flooding from Intense Rainfall programme are aligned with those of NERC, and within the linked NERC business plans of innovation and public engagement with research.

The objectives for communications, engagement and knowledge exchange are:

- Provide a basis for effective collaboration in UK flooding from intense rainfall, adding value to the science goals of the programme.
- Enabling two-way dialogue between programme participants and stakeholders.
- Engage with policy makers to communicate relevant science messages to inform public policy decisions and enable better knowledge transfer between policy makers and the scientific community involved in flash flood research.
- Explain how research into flooding from intense rainfall will help to protect people and reduce the impacts from the devastating effects of flash flooding.
- Promote and support activities to engage the public in sciences relevant to flooding from intense rainfall, to facilitate public dialogue and informed debate on the subject of flash flooding.

Approach:

Fulfilling the strategy will take the form of a number of activities, each aimed at a different audience, recognising that with diverse audience profiles, activities necessarily cannot target all audiences at once. The activities in communication and knowledge exchange will necessarily change during the programme as the key results are reached and phases of the programme are completed, certain activities would serve minimal benefit early in the programme, yet others would be more beneficial during the initial phases

Activity Type	Target Audience	Desired Outcome	Evaluation	Relevant to													
				FRANC						SINATRA							
				WT1	WT2	WT3	WT4	WT5	WT6	ST1.1	ST1.2	ST1.3	ST2.1	ST2.2	ST2.3	ST3.1	ST3.2
Science workshops – presentation at workshops and conferences. Special sessions at others. *(not eligible for knowledge exchange budget)*	Science community (UK and international)	Exchange of ideas, data, knowledge and best practice to advance understanding	Invited/keynote talks, recording instances of collaboration resulting from workshops, meetings, networks etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
				All programme researchers													
Specific sessions at major conferences and meeting series, e.g. - EGU - RMS/BHS	Science community (UK and international)	Exchange of ideas to advance understanding, and enhance the visibility of FFIR	Attendance at such events	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
				Meetings organised by PCT / PIs Presentations by programme researchers													
Science networking events to foster collaboration e.g. - FCERM-net - Environment Agency - UNESCO FRIEND Water: Extreme Rainfall and Flooding theme - EPSRC LWEC Maths Foresees - NCAS, NCEO, XLCatlin	Science community Business users Policy makers	Contribute understanding and knowledge and foster potential collaborations	Record the number of collaborations arising from meetings, workshops and networks. Especially those aimed at fostering exchange of scientific knowledge and data.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
				PIs / Science leaders Certain programme members already belong to relevant groups													
Peer reviewed publishing *(not eligible for communication and knowledge exchange budget)*	Science community (UK and international)	Exchange of knowledge through traditional science medium.	Numbers of papers produced and citation indexes.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
				All programme researchers													

Programme web-presence - Website - Blog - Twitter - Videos	Science community, policy makers, general public and media	Exchanging knowledge and enabling potential integration with other scientists. Distribution of key findings to policy makers and the public. Providing an expert contact for media enquiries	Counts of readers, followers and comments evaluate the reach of such activity, but can be further reaching than these numbers suggest. Interactions with scientists and media through this source can be recorded.	Communications and KE coordinator, working with the PIs / Science leaders
Plain English summaries of key research findings to policy makers - Briefings - Discussions - Access to experts	Policy makers	Inform policy makers of the important science facts. The ability for policy makers to access an expert to provide the required information	Policy decisions referencing the FFIR project. Reaction form parliamentary events. Visits to relevant website areas.	Project Wide Programme Wide PIs / Science leaders working with communications and KE coordinator
School visits / science fayres - STEM (Science, Technology, Engineering and Matchematics) ambassadors scheme participation	General Public – in particular children	Enthusing school children to the sciences of meteorology and hydrology, creating future environmental scientists. Understanding science for pupils and teachers, but also the needs of such for scientists.	Activities logged by communications and KE coordinator, who should be informed of all such events.	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ Integration of various work tasks at this point should be encouraged – realising the science of flooding is not a very focused science area is an important outcome. Programme scientists working with their affiliation's PR/outreach programmes
Public lectures - shared rescources to be created to avoid repetition throughout the programme.	General Public	Improved understanding of the sciences of meteorology and hydrology, in particular on the subject of flooding from intense rainfall.	Activities logged by communications and KE coordinator, who should be informed of all such events.	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ As with the above, the sharing of resources will enable a more wide ranging engagement activity with broader context for the audience. Interested programme members working with communications and KE coordinator

Software, including routes to improved software. - Operational models (e.g. MO) - Radarnet	Science community Business users	Many outputs of FFIR research will lead to the creation or updates of operational systems	Uptake of knowledge from FFIR programme in operational systems.	✓ ✓ ✓ ✓ ✓ ✓ All programme researchers
Exchange of datasets (many FFIR created datasets will become open source data – but also FFIR programme research uses datasets obtained from stakeholders, e.g. EA)	Science community Business users	Many tasks of the FFIR programme require datasets from external partners, such as raingauge data from EA. But also much data created in FFIR will become open source.	Successful transfer and use of data from and by users outside FFIR	✓ ✓ ✓ ✓ All programme researchers, with particular attention from data managers
Internships and Secondments	Science community Business users	Successful knowledge transfer can be obtained by staff time spent with/by stakeholders.	Record any internships and secondments occurring through FFIR	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ Potentially programme researchers to become interns, but more focused to students. Science leaders to oversee secondments.
KE Funded Projects - K.E. funding is available to the programme to allow new routes to knowledge exchange	Variable, but to be stated in proposals	Each project would have stated aims, e.g. development of materials for science festivals and outreach.	Recorded by individual projects	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ Applications to K.E. fund can be from any programme member
FLoAT team - The FLoAT team interact with people affected by the floods they observe.	General Public Potentially Media	Amongst the goals of the FLoAT team are to record the impacts on the community of floods	Counts of positive interactions and shared information of flood events from those affected by them.	✓ FLoAT team members
Media relations - press releases - media features - reactive media	Media -all other audiences less directly	International coverage of UK work on flooding from intense rainfall. That research into flash flooding is	Instances and experiences to be logged by the communications and KE coordinator , who should be informed of all such activities.	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ The wide range of tasks involved would have different styles of media engagement, some tasks are more likely to be involved with reactive news type events.

		ongoing, relevant and important to everyone		Communications and KE coordinator to liaise and facilitate discussion between journalists and programme participants

Key Messages:

The success of any knowledge exchange is dependent on the audience, and the importance of the science of flooding from intense rainfall to them. Successful knowledge exchange requires the exchange to be two-way with the end-user, a science audience with a potential collaborator would be very different from that to a school classroom, so it must be clear that any communication know the end-user.

To get the key massages across to the stakeholders, it must be clear who the likely beneficiaries are of each research project within the overarching Flooding from Intense Rainfall programme, and each project will have its own specific key messages, but the programme as a whole has the following key aims:

- To provide a multi disciplinary UK research effort into flooding from intense rainfall, drawing on the expertise in meteorology and multiple branches of hydrology to perform significant science on the subject of flooding from intense rainfall.
- Improve the length and accuracy of forecasts of the occurrence and intensity of rainfall associated with convective storms, which result in the most intense rainfall.
- Identify the susceptibility to high-intensity rainfall of different catchment types from the hydrological and hydro-morphological processes which affect flood risks.
- Enhance flood risk-management and real-time forecasts of floods associated with high-intensity rainfall, by integration of meteorological and hydro-morphological science.

Delivering this strategy:

This strategy aims to build on existing networks and contacts in the programme to strengthen and enhance communication and collaboration within varied communities involved in floods from intense rainfall, but given the diverse communities, new links and relationships must be generated and this strategy provides a route to these. Any knowledge exchange in the Flooding from Intense Rainfall programme should align to the aims of this document (and hence that of NERC knowledge exchange). To ensure a consistent message is given the project has a communications and knowledge exchange officer (Dr. Rob Thompson).

How to measure and report impact:

The impact of any knowledge exchange activity may be hard to assess, but there is no benefit to spending more time assessing the impact of an activity than the activity itself. As a result the communications and knowledge exchange officer should assess the benefit of activities in general, considering the benefit to all defined key audiences.

Costs/Rescources:

The coordination of communications, engagement and knowledge exchange for the Flooding From Intense Rainfall programme is the responsibility of the “communications and

knowledge exchange officer" Dr Rob Thompson (University of Reading). This role will have responsibility for the day to day communication and knowledge exchange requirements of the programme and ongoing engagement activities.

Approximately £120,000 is available to communication and knowledge exchange for implemention of new routes to further this strategy.

Risks:

This programme retains the risk of the diverse communities of meteorology and hydrology maintaining a fragmented set, despite shared interests. This risk is liable to arise as a result of insufficient resource (financial and time) invested by the participants. As the programme covers scientists from diverse fields and institutions, proper coordination is required to ensure communication and knowledge exchange is seen as integrated throughout the project. It is therefore important for all those involved in the programme to understand the importance of engagement with each other and stakeholders from outside the programme and to ensure meaningful plans to impact. The Programme Coordination Team and communications and knowledge exchange officer aim to minimise this risk by supporting the communication within the programme and outwardly facing.