

Introduction

International Workshop on « Flood Impacts Observation »

Frédéric Grelot, Olivier Barreteau, Pierre Balzergue

November 5, 2019



Outline of the presentation

MUSE / KIM – WATERS

Objectives of the seminar

Presentation of speakers

Practical questions

The MUSE Project

The “Montpellier UniverSity of Excellence” (MUSE) project gathers the forces of 19 institutions towards a common ambition: create in Montpellier a thematic research-intensive university that will be internationally recognized for its impact in the fields of agriculture, environment and health.

With significant scientific concentration in the Montpellier area in the fields of Agriculture, Environment and Health, MUSE brings together a scientific, institutional and economic community to address three major intertwined challenges that are consistent with the U.N. 2030 Agenda for Sustainable Development and the Paris Agreement on climate change: Feed, Protect, Care.



Water community in Montpellier

Scientific community structured within the IM2E Scientific Interest Group and to forge closer links with all water stakeholders in the region (Aqua-Valley Cluster, local authorities, Water Agencies, etc.):

- ▶ 16 research laboratories,
- ▶ with more than 340 permanent scientific executives,
- ▶ a rich and inter-institutional training offer,
- ▶ the presence of the headquarters of the Aqua-Valley competitiveness cluster, the leader of the 3 French water clusters.



From MUSE to KIM – WATERS

Water sciences are closely connected to the three MUSE challenges: Feed, Protect, Care

- ▶ Thus MUSE is supporting and funding the Water Sciences community (IM2E) and its projects through a “Key Initiative”: KIM WATERS
- ▶ KIM – WATERS: Key Initiative MUSE - WAter, Environment, Resources and Societies
- ▶ KIM – WATERS: a large programme of activities including Scientific Workshops, International Summer Schools, International Field Schools, Hackathon, etc.
- ▶ KIM – WATERS: Establishment of a “Zone Atelier” on Mediterranean small rivers : a Workshop Zone that is a Long Term Environmental Research Observatory
- ▶ KIM – WATERS: Establishment of a UNESCO Category 2 Center on Water Sciences

→ <https://muse.edu.umontpellier.fr/key-initiatives-muse/waters>



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Objectives of the seminar

Share of international experiences

This workshop aims to share experience between scientists on flood impacts observation with a specific focus on:

- ▶ the different impacts such as damage but also different adaptation dynamics, recovery processes, etc.
- ▶ an overview of different flood hazard contexts (river overflow, water run-off, marine submersion, etc.)
- ▶ continuous or intermittent observation methods,
- ▶ a short to long-term post-disaster observation,
- ▶ scientific data capitalisation and thereafter which analysis this allows.

→ **Scientific presentations / public audience, up to 16:30**

Objectives of the seminar

Contribute to build an international community on this topic

- ▶ existing initiatives on the topic (annual conferences, international networks, long-term observations, etc.)
- ▶ what is lacking?
- ▶ opportunity for summer schools
- ▶ opportunity for international projects
- ▶ opportunity for international network of observations, implications on what is observed, how it is.

→ **Evening discussions / limited audience, after 16:45**

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Program of the seminar

At the origin of the workshop

Pauline Brémond



Dr. Pauline Brémond is currently (almost) an environmental economist at the National Research Institute of Science and Technology for Environment and Agriculture. Her research focuses on appraisal of flood management policies (Cost-Benefit Analysis), with a special focus on damage and vulnerability modeling of economic activities and agricultural sector. She contributes to the development of the French methodology for economic appraisal of flood risk management in France.

Joe Morris *Observing and measuring flood impact on agriculture*



Joe Morris is Professor Emeritus in Resource Economics at Cranfield University, England. He has developed and used methods to assess the economic impact of agricultural and rural flood risk and land drainage, working for UK, European and International Agencies. This includes the assessment of agricultural and environmental damage costs of major flood events, guidance for the economic assessment of agricultural flood risk investments, the design of incentives for land managers to provide flood management services, and the appraisal of FRM options within wider strategic assessments of land, water and environmental management, applied at the regional and national scales.

Program of the seminar

Flood & Environment

Emily Garner *Environmental and Public Health Impacts Resulting from Extreme Flooding Events*



Dr. Emily Garner is an assistant professor of Civil and Environmental Engineering at West Virginia University. Garner's research is at the interface of environmental engineering, applied environmental microbiology, and public health. Her research emphasizes use of advanced molecular methods such as next generation sequencing to characterize complex microbial communities in natural, agricultural, and engineered systems.

Program of the seminar

Flood & Environment

Sara Romano-Bertrand *Flooding events and antimicrobial resistance: is the Mediterranean area a hotspot?*



Sara is PharmD, PhD, specialized in microbiology. She is part of the research team PHySE within Hydrosociences, and her research is focused on opportunistic premise plumbing pathogens, especially colonizing hospital water networks, and responsible of healthcare-associated infections. She is not directly working onto antimicrobial resistance within natural waters and its links with flooding events, but much more within hospital plumbing systems. She will present the research works of her research team and headed by Patricia Licznar-Fajardo who wasn't able to join the seminar.

Program of the seminar

Flood & Property market

Okmyung Bin *Flood Hazards and Housing Markets in the U.S.*



Dr. Okmyung Bin is currently Professor of Economics at the Center for Natural Hazards Research, East Carolina University. His research focuses on natural resource and environmental economics especially as it relates to natural hazards. His research in this area was recognized by the prestigious American Risk and Insurance Association (ARIA) Mehr Award for Best Article in 2018. His work has been supported by National Science Foundation, Alfred Sloan Foundation, National Commission on Energy Policy, National Wildlife Federation, and the State of North Carolina.

Program of the seminar

Flood & Property market

Allan Beltran *Flood Impacts, Protection & Near-Misses: Evidence from the UK housing market*



Dr. Allan Beltran is an Environmental Economist with experience investigating the economic valuation of flood risk in housing markets. He is currently Lecturer in Environmental Economics at the University of Birmingham. Allan's research interests are in the area of environmental economics and the economics of climate change. His current research focuses on the economic valuation of flooding, risk perception and climate change adaptation. He has also served as a consultant for the United Nations (ECLAC) working on topics related to the economics of climate change in Latin America.

Program of the seminar

Flood & Dynamic aspects of damage

Sally Priest *The impacts of flooding on the wellbeing of professional responders*



Dr. Sally Priest is an Associate Professor and Head of the Flood Hazard Research Centre at Middlesex University, London. Her research has focused on analysing flood risk governance arrangements, insurance and recovery mechanisms, public understanding and response to flood warning systems. Sally also has worked on updating and creating new methodologies for the 'Multi-coloured Manual', the current reference of economic appraisal of flood and coastal risk management in the UK. More recently Sally has been involved in a project identifying approaches for estimating the health losses avoided by managing flooding and another exploring the impacts of flooding on the well-being of professional responders.

Program of the seminar

Flood & Adaptation (business)

Lindsey McEwen *Increasing small business resilience to flood risks: the role of flood memories, different knowledges and networks in adaptation*



Lindsey McEwen is Professor of Environmental Management and Director of the Centre for Water, Communities and Resilience, within University of the West of England, Bristol. Her research interests include: flood histories / archives, water risk management (flood-drought continuum), integration of specialist and lay knowledge to support local risk decision-making; water science communication / education and community-based research and learning. She has successfully led several 'engaged' interdisciplinary, UK Research and Innovation-funded projects in water risk management, working at intersections of the natural and social sciences, and the arts and humanities.

Program of the seminar

Flood & Adaptation (individual)

Philip Bubeck *Using panel data to understand differences in individual recovery from flood impacts*



Dr. Philip Bubeck is a research associate at the Institute of Earth and Environmental Science at the University of Potsdam. He works with adelphi as a Senior Associate on the topics of climate change adaptation, vulnerability, and natural hazard reduction.

Program of the seminar

Flood & Adaptation (individual)

Daniel Osberghaus *Flood Risk and Income in a Highly Developed Country: How Flood Exposure, Vulnerability and Coping Capacity Relate to Household Income in Germany*



Dr. Daniel is an economist at ZEW's Research Department "Environmental and Resource Economics, Environmental Management". His research focuses on the economics of adaptation to climate change. Daniel's research in the context of flooding focusses on adaptation to flood hazards at the household level and the effects of flooding on economic behavior, with a focus on the determinants of flood adaptation measures, the effects of flood events on household adaptation, the willingness-to-pay for index-based flood insurance, and the effects of flood relief expectation on private precaution. For this purpose, Daniel administers a representative panel survey amongst more than 6,000 household heads in Germany.

Program of the seminar

Flood & Adaptation (individual)

Katrin Erdlenbruch *Individual adaptation to floods in France*



Katrin is an environmental economist at the National Research Institute of Science and Technology for Environment and Agriculture. Her research deal with natural resource economics and the study of natural risks. She is particularly interested in the modelisation of resource harvesting behaviour (by means of optimal control models) and in the use of cost benefit analysis in order to study water related risks (flood risk, drought risk. She contributes to the development of the French methodology for economic appraisal of flood risk management in France.

Daniela Molinari *Challenges and gains of post-event data collection*



Flood risk analysts, Mrs. Daniela Molinari (Politecnico di Milano) is an expert in flood risk assessment and management, with particular expertise in flood damage evaluation. She has been involved in several European and national research project dealing with flood risk and damage assessment. She is presently lecturer at the master of science program of Politecnico di Milano CERM (Civil Engineering for Risk Mitigation). She collaborates with several national and local authorities dealing with flood risk management in Italy, among them the Regional Civil Protection of the Umbria Region and the Po River District Authority.

Program of the seminar

Data collection, feedbacks on uses

Heidi Kreibich *Surveys with flood affected households – what can we learn about damage processes*



Heidi Kreibich is Head of working group “Flood risk and climate adaptation” at the German Research Centre for Geosciences. Her research interests comprise Flood risk modelling, Flood vulnerability analysis and loss modelling as well as Climate adaptation and flood risk management. She is Panta Rhei Target Leader for the International Association of Hydrological Sciences, Science officer for Natural Hazards and Society of the EGU Division on Natural Hazards and Executive Editor of the journal “Natural Hazards and Earth System Sciences”.

Program of the seminar

Data collection

Frédéric Grelot *so-ii* - *Flood Impacts Observation System*



That's me (with hair). Dr. Frédéric Grelot is an environmental economist at the National Research Institute of Science and Technology for Environment and Agriculture. His research focuses on appraisal of flood management policies (Cost-Benefit Analysis), with links to vulnerability modeling, sensitivity Analysis, uncertainty Analysis, perception, dynamics, adaptation. He contributes to the development of the French methodology for economic appraisal of flood risk management in France.

Program of the seminar

Flood fatalities, Data collection

Olga Petrucci *From regional to international databases: EUFF, the European Flood Fatalities Database*



Olga Petrucci is a geologist, working as Researcher at the Research Institute for Geo-Hydrological Protection in Italy. She works on Natural Disasters, particularly on the triggering conditions and effects caused by damaging hydrogeological phenomena as landslides and floods.

Program of the seminar

Flood fatalities, Data collection

Katerina Papagiannaki *Spatial analysis of high-impact flood events based on the number of fire- service operations and the methodology for identifying flood triggering rainfall thresholds*



Katerina is currently a research scientist at IERSD / National Observatory of Athens, Greece. Her research focuses on monitoring, recording and analysis of high-impact weather events, with focus on societal and economic impact analysis and social vulnerability. She is also interested on the identification and assessment of weather-related hazard and impact indicators for the prediction of flash flood risk, the design and analysis of behavioral surveys to examine human related drivers of the social vulnerability and to identify behavioral characteristics related to flash flood risk awareness and preparedness.

Program of the seminar

Flood fatalities, Data collection

Maria Carmen Llasat *Flood impacts evaluation in a scenario of climate change. The citizen science: a tool to improve flood impacts observation and adaptation*



Dr María del Carmen Llasat Botija is full professor at the Department of Applied Physics of the University of Barcelona (UB). PhD in Physical Sciences by the UB, her research focuses on the study of natural risks of meteorological origin and the impact of climate change on them, as well as the improvement of citizen awareness and resilience in face of extreme events. She directs the Group of Analysis of Adverse Weather Situations, GAMA with which she also carries out a relevant dissemination activity, forming part of the UB's Dissemination Commission. She coordinates the Meteorology Research Group of the University of Barcelona and she is the academic secretary of the Department of Applied Physics.

Program of the seminar

Flood fatalities

Freddy Vinet *Flood related fatalities across the mediterranean basin*



Freddy VINET is a professor at the Paul Valéry University in Montpellier. He is co-founder and co-director of the mater "disaster and natural risk management". He has participated in numerous research programs and has directed a dozen theses, including one on flood victims in the south of France and one on 20th century floods in France. His current research focuses on the epidemiology and health impact of disasters.

Program of the seminar

Data collection

Cécile Hérivaux *NAIAD (Nature Insurance Value: Assessment & Demonstration) project*



Cécile Hérivaux is an environmental economist at the BRGM (the French Geological survey). Her research focuses on the valuation of economic services, with a main focus on groundwater resources. She is currently working on the EU fund Project "NAIAD - NAture Insurance value: Assessment and Demonstration", which explores how nature-based solution may contributes to flood management projects.

Program of the seminar

Post-Flood Recovery

Annabelle Moatty *Post-Flood recovery: an opportunity for Disaster Risk Reduction?*



Dr. Annabelle Moatty is currently a researcher within La Rochelle Université. Her research focuses on post-flood recovery in different context (slow floods, flash floods, cyclonical floods, lahar). She is particularly interested on the possible links between post-flood recovery processess and preventive risk management, for instance how preparation to recovery may lead to long-term adaptation.

Program of the seminar

Flood and legal aspects

Reimund Schwarze *Sequential Disaster Forensics: A case study on direct and socio-economic impacts*



Prof. Dr. Reimund Schwarze is one of Germany's leading environmental economists, text book author, expert hearings at EU and national level on risk management of natural hazards, climate change adaptation and urban transformations. He is Topic Speaker to the Helmholtz Climate Initiative REK-LIM (Regional climate change) for TP7 "Socioeconomics of Climate Risk Management" - European Environmental Agency ETC/CCA (European Topic Center on Climate Change, Impacts, Vulnerability and Adaptation) and Head of UFZ's Research Group on "Climate Change".

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General overview



Location: Maison des Sciences de l'Homme, Université Montpellier Paul Valéry, Campus Saint Charles
Access: Tramway line 3 - stop 'Albert 1er'

	8h45	Tuesday 5th November Room: Kourou	Wednesday 6th November Room: Kourou	Thursday 7th November Room: colloque 1
WELCOMING COFFEE	9h			
	9h15	Frédéric Grelot - Opening presentation	Lindsay McEwen - Flood and adaptation (business) Increasing small business resilience to flood risks: the role of flood memories, different knowledges and networks in adaptation	Olga Petrucci - Flood and fatalities and Data collection procedure "From regional to international databases: EUFP, the European Flood Fatalities Database"
	9h45			
	10h		Philip Subeck - Flood and adaptation (individual) "Using panel data to understand differences in individual recovery from flood impacts"	Katerina Papaglanaki - Flood and fatalities and Data collection procedure "Spatial analysis of high-impact flood events based on the number of fire service operations and the methodology for identifying flood triggering rainfall thresholds"
	10h15		Joe Morris - Flood and agriculture "Observing and measuring flood impact on agriculture"	
	10h30			
BREAK	10h45			
	11h	Emily Garner - Flood and environment "Environmental and Public Health Impacts Resulting from Extreme Flooding Events"	Daniel Osbergheus - Flood and adaptation (individual) "Flood Risk and Income in a Highly Developed Country: How Flood Exposure, Vulnerability and Coping Capacity Relate to Household Income in Germany"	Maria Carmen Lisnat - Flood and fatalities and Data collection procedure "Flood impacts evaluation in a scenario of climate change. The citizen science: a tool to improve flood impacts observation and adaptation"
	11h15			
	11h30			
	11h45	Sara Romano-Bertrand - Flood and environment "Flooding events and antimicrobial resistance: is the mediterranean area a hot spot?"	Katrin Erdlenbruch - Flood and adaptation "Individual adaptation to floods in France"	Freddy Vinet - Flood fatalities "Flood related fatalities across the mediterranean basin"
	12h			
	12h15			
LUNCH	14h			
	14h15	Okmyung Sin - Flood and property market "Flood Hazards, Insurance and Risk Perceptions in the U.S. Housing Market"	Daniela Molinari - Data collection procedure "Challenges and gains of post-event data collection"	Cécile Héruvau - Data collection "NAIAD (Nature Insurance Value - Assessment & Demonstration) project"
	14h30			
	14h45			
	15h	Allan Beltzin - Flood and property market "Flood impacts, protection & repair-misuse: Evidence from the UK housing market"	Heidi Kreibich - Data collection procedure, feedbacks on uses "Surveys with flood affected households - what can we learn about damage processes?"	Annabelle Moatty - Post-Flood Recovery "Post-Flood recovery: an opportunity for DRR?"
	15h15			
	15h30			
BREAK	15h45			
	16h	Sally Priest - Dynamic aspects of damage "The impacts of flooding on the wellbeing of professional responders"	Frédéric Grelot - Data collection "IQ-II (Flood Impacts Observation System) project"	Reinhold Schwarze - Flood and legal aspects "Sequential disaster forensics: A case study on direct and socio-economic impacts"
	16h15			
	16h30			
PRESENTATION END	16h45			End of the Workshop
	18h15	FOR SPEAKERS ONLY Collective discussion - Observation networks / Country comparison / Summer schools / Common projects	FOR SPEAKERS ONLY Collective discussion - Observation networks / Country comparison / Summer schools / Common projects	

Dinner

Dinner



Many thanks to



Pierre



Sandie



Sandra



Claire