



Niall Ó Brolcháin

Presentation  
8<sup>th</sup> June 2017

# DOWNSTREAM



Insight Research  
Centre  
National Centre for Data  
Analytics



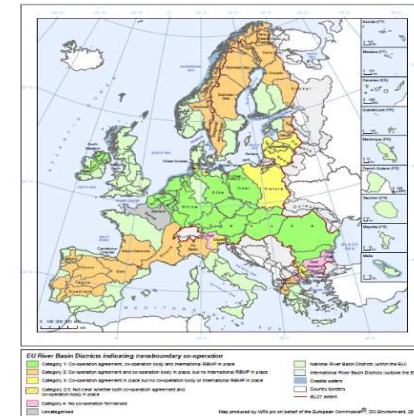
Northern & Western  
Regional Assembly



# INTERREG proposal DOWNSTREAM

Smart Governance of Water Resources  
with a focus on Risk Management

Map of EU River Basin Districts indicating transboundary co-operation  
Version 08 October 2012



(Detailed Organisational Water Network for Smart  
Tech Regional Environmental Asset Management)





## Concept

Building Smart Specialised Ecosystems using Open Data, IoT, Machine Learning, Predictive Analysis and Smart Governance to develop policies, implementation plans and tools for EU Structural Funding in relation to international water resource risk management while seeking to align through policy all the relevant agencies, stakeholders and governance structures.





## Structure of the DOWNSTREAM Consortium

1. Flooding – Ireland – NWRA – NUIG – WDC
2. Drought – Country 2 – (RA2) – (U2) – (DA2)
3. Pollution – Country 3 – (RA3) – (U3) – (DA3)

Risk Management Experts – (EX1) – (EX2) – (EX3)

RA = Regional Authority

U = University

DA = Development Agency

Ex = Expert





## **Downstream Ecosystem – Ireland – Flooding**

### **WDC - Enterprise**

SME 1, SME 2, SME 3

### **NWRA - Policy**

Clare, Galway, Mayo, Sligo, Leitrim, Roscommon,  
Donegal, Cavan, Monaghan

### **NUIG - Research**

OPW, EPA, Irish Water, IFI, HSE.





## Partner Responsibilities

- Regional Authorities - Develop Policies
- Research Centres - Research Policies
- Development Agencies – Build Ecosystems
- Experts – Provide Domain Expertise and Develop Replicable Tools





## Smart Data Management

- Early warning system for risk management using IoT sensors
- Open data and easily accessible real time data
- Public dashboards using up to date visualisation techniques
- Predictive modelling using machine learning techniques



## A Smart Governance Approach

- Interagency
- Multi-stakeholder
- Interregional
- International







## Implementing European Directives

- Water Framework Directive (2000/60/EC)
- Floods Directive (Directive 2007/60/EC)
- Dangerous Substances Directive 2006/11/EC





## Meeting European Commission Priorities

### 1. Jobs, growth and investment

Developing a water risk management ecosystem and moving towards a circular economy

### 2. Digital single market

Designing rules which match the pace of technology and support infrastructure development

### 3. Energy union and climate

Monitoring the effects of climate change on water levels

### 4. Internal market and Democratic change

Developing policies and agreements that apply across international boundaries





## Expected Results

1. A well run project managed by the National University of Ireland, Galway supported by world class partners with 3 or more successful pilots.
2. Informed regional authorities, relevant stakeholders and general public.
3. A coherent, sustainable policy driven monitoring and management platform.
4. International partners with increased capacity through exchange of experience.
5. A proven policy framework agreeable and implementable at local and regional authority level.
6. Contribution to the implementation of the Water Framework Directive, the Floods Directive, Dangerous Substances Directive etc.
7. A framework for the application of Structural funds.

