



JBA
consulting

Working with Natural Processes

Core to delivering on EU
Directives and climate change

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Consultants
of the Year 2010



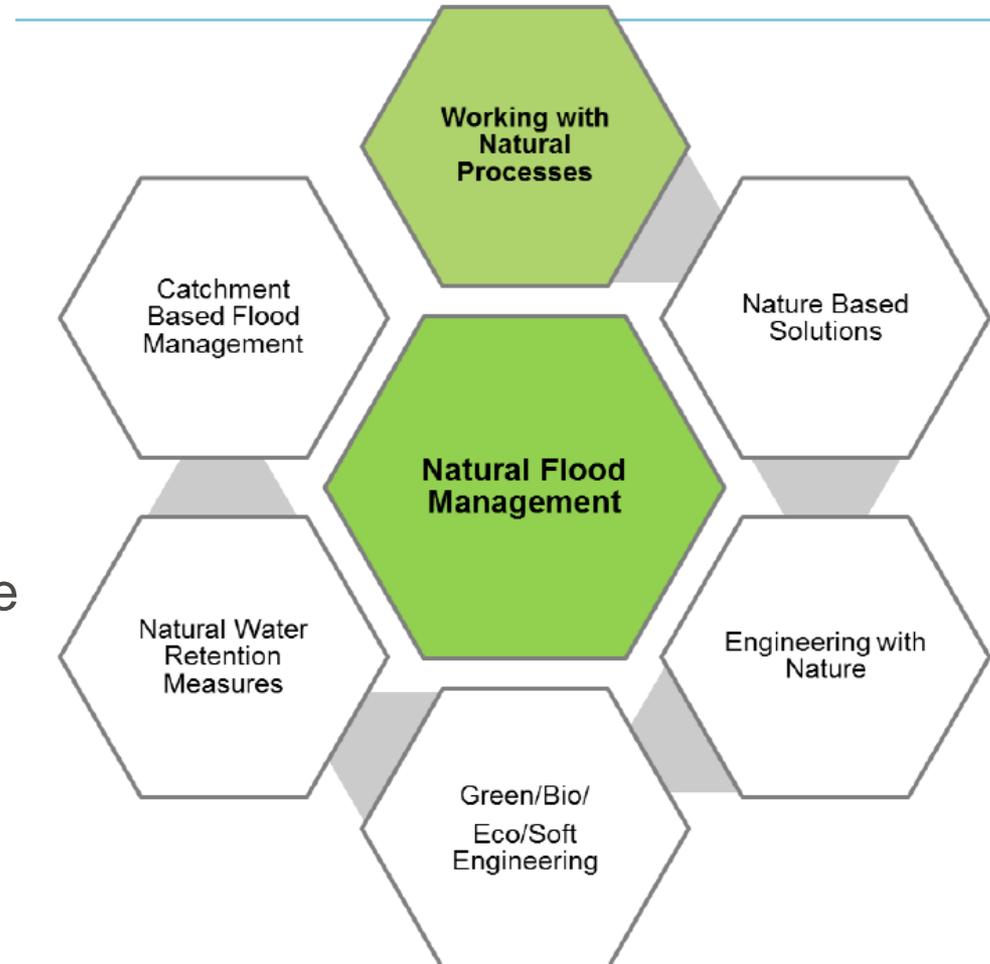
Winner

Non structural measures?

Natural flood management?

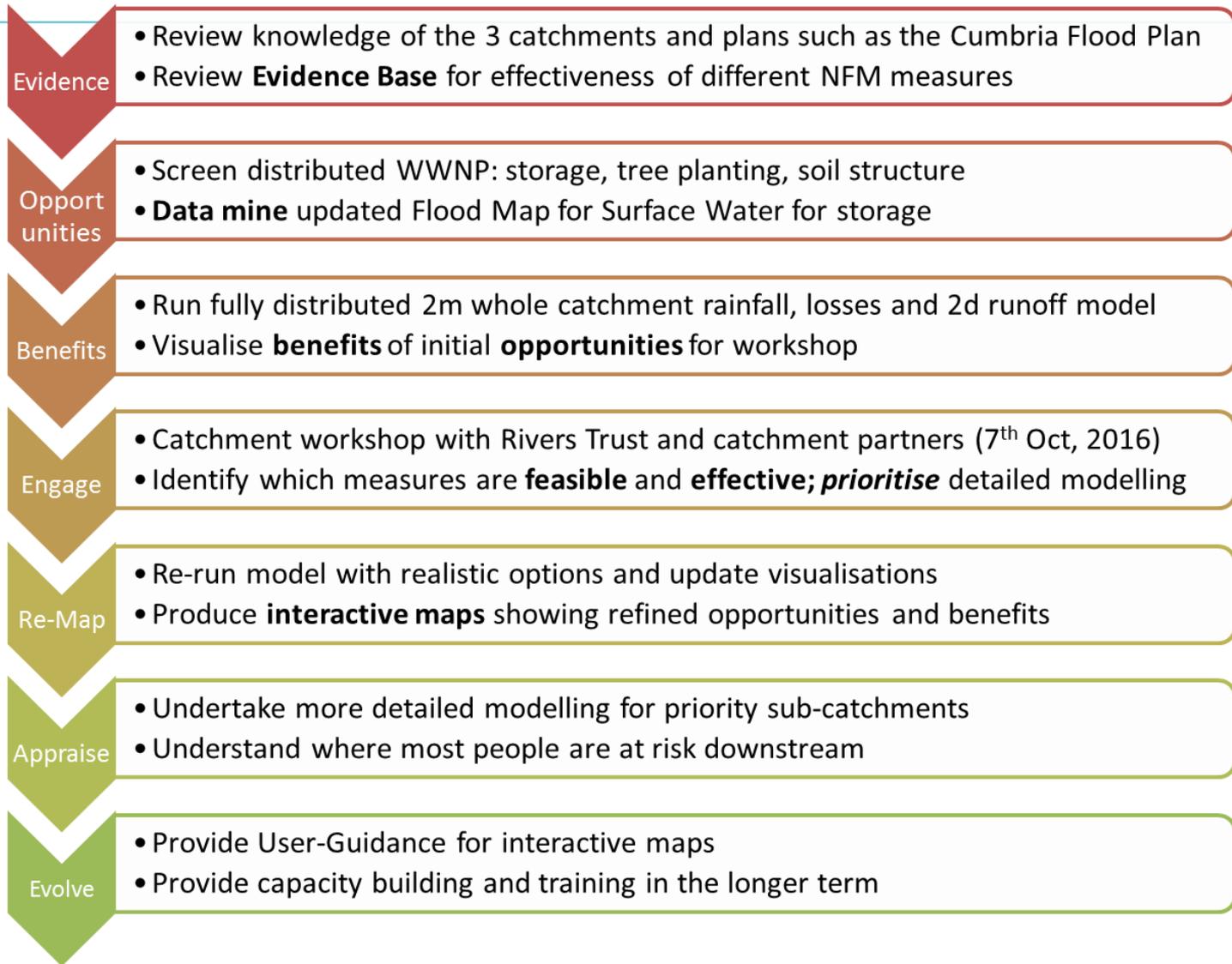
Green Infrastructure?

Adopt **Working with Natural Processes (WwNP)** it widens the scope to include management of WQ/Sediment and Runoff



- **Triple benefits in flood risk management**
 - Protection of fluvial and coastal eco systems
 - Mitigation of climate change and carbon sequestration
 - Cost effective flood risk reduction measure
- **WwNP critical core to both WFD and FD**
 - Sediments
 - Water quality
 - Climate change resilience
 - Part of an environmental best option

Broad-scale modelling, mapping, engagement, re-modelling, visualisation (UK and Ireland approach)



From concept to the reality ...

Proposed NS measures at Romanian level in FRMPs

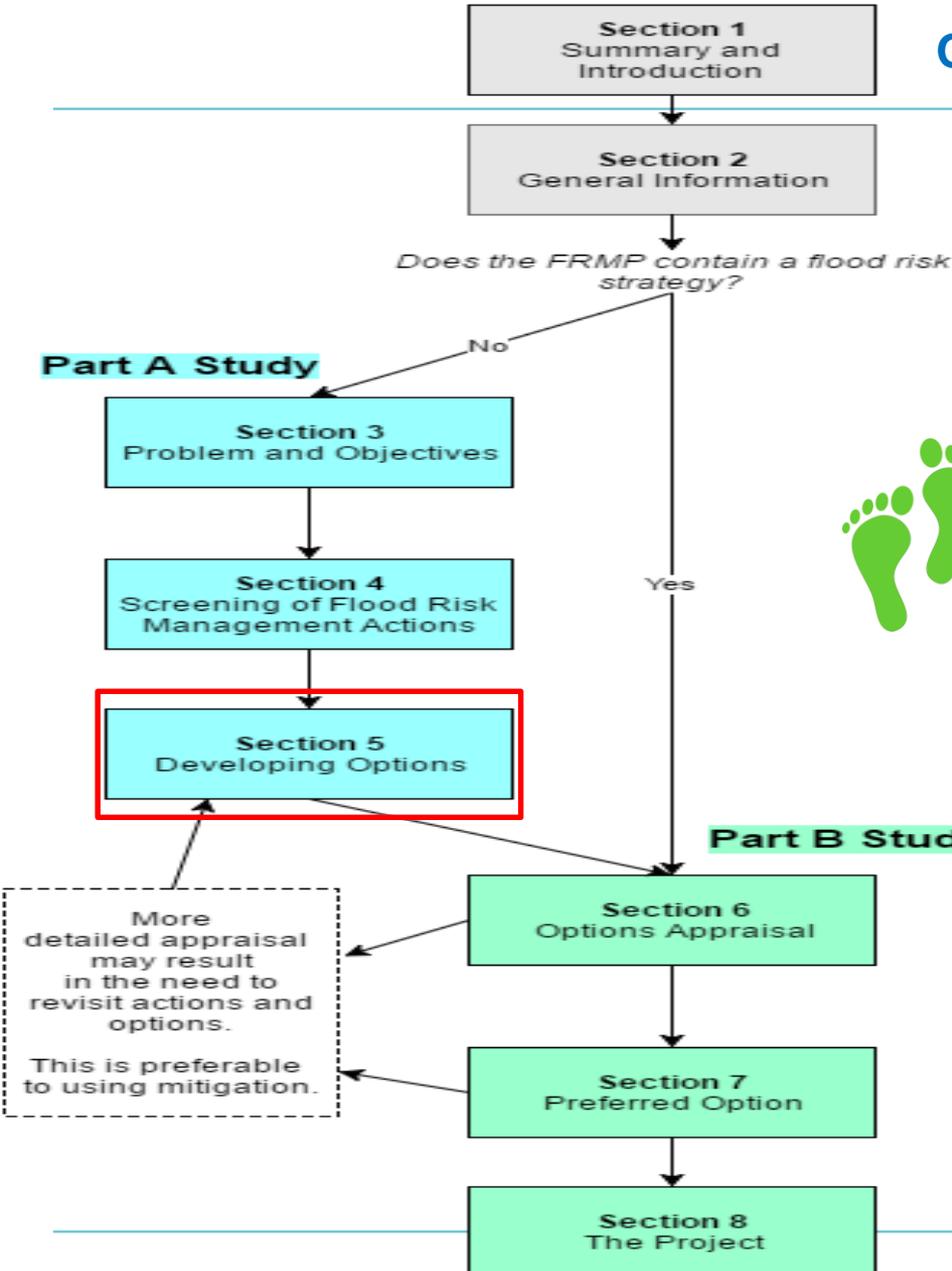
- Nonstructural measures - Flood probability reduction measures
 - **NWRM associated to watercourses and wetlands – 93** (less than 4 % of the total of proposed measures in all APSFR in Romania)
 - **Natural water retention measures in urban areas - 2** (less than 0,1 %)
 - Natural water retention measures by changing or adapting land use practices in agriculture and forest management - 684
 - Other water retention measures - incl. polders and small retention areas for flood control - 488
- Nonstructural measures - Flood resilience measures
 - **Measures for increasing resilience of population (protection measures for buildings, constructions) - 4** (about 0,15 %)
 - Adapting of the existing defense infrastructure - 118
 - Measures for flood forecasting and flood warning - 15

Need to demonstrate that **green infrastructure and non structural measures are taken forward**, through :

- Increasing the institutional capacity of the authorities
- Training
- Available study-cases, as successful stories

Guidelines for Feasibility Studies for FRM Projects

Options Development Flowchart



1. Understand the problem
2. Understand existing flood defence assets and flood risk management
3. Consider non-structural flood prevention actions - if the benefits insufficient, proceed to step 4, but retain this action if it has the potential to act in combination with another action
4. Consider non-structural flood resilience and prevention actions - if the effect is insufficient, proceed to step 5, but retain this action if it has the potential to act in combination with another action / alternative
5. Consider structural flood prevention actions at the catchment scale - if the effect is insufficient, proceed to step 6, but retain these actions if they have the potential to act in combination with other actions
6. Consider structural flood prevention actions at the local (APSFR) scale
7. Combine actions to test and develop options

- Can contribute to **reducing flood risk for smaller**, more prevalent **events**
- **Cannot** by themselves protect communities during **extreme flood events**
- Can act as **complementary** flood risk reduction **measures to traditional FRM schemes**
- Can help to **reduce the need for raising existing flood defences due to climate change effects**
- Can **increase the resilience of communities and businesses** to withstand more extreme events
- Can **provide a wide range of additional benefits to the environment and society**

How to achieve this culture change?

- **Model** the change – **hydrological, sediment, economic benefits**
- Demonstrate the benefits through **case studies and pilots**
- **Align government policies** and objectives
- **Engage the community and business** in the process
- **Training and dissemination**
- Investment in **monitoring of outcomes**
- Adopt an integrated catchment based approach using **multiple funding sources** to deliver **multiple benefits**