

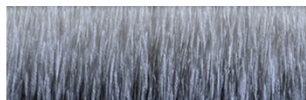
# Water2Adapt: Resilience enhancement and water demand management for climate change adaptation



Isola di San Giorgio, Venezia, 26 settembre 2012

Jaroslav Mysiak,

Fondazione Eni Enrico Mattei



## Project background

---

The Water2Adapt project was born from the frustration about the poor understanding of the full effects of droughts and water scarcity on social welfare and the recognition of an immense role of water for climate adaptation.

Small in size and exploratory in nature, the project has been ideally suited for exploration the web of interconnected impacts triggered by WS&D.

Complemented by the PREEMPT projects, the project collected evidence and contributed to filling the knowledge gaps, setting the stage for an evidence-based drought management approach.



## European Policy on Drought and Water Scarcity

---

### European Drought Policy – A Cinderella among the European environmental legislation

It is widely held belief that the EU Water Framework Directive (2000/60/EC) is not fully equipped to adequately confront the issue of water scarcity and droughts

Growing frustration with the slow and uneven rate of implementation across Member States; the Review of the River Basin Management Plans indicates that a significant number of EU water bodies ‘will not reach ‘good status’ by 2015 due to both long-standing and emerging challenges’ (EP Resolution A7-0192/2012)

EP called several times upon the Commission to submit legislation, ‘similar to the directive on floods, which encourages the adoption of an EU policy on water shortages, droughts and adapting to climate change’.

## European Policy on Drought and Water Scarcity (cont.)

---

Communication - Addressing the challenge of water scarcity and droughts in the European Union (COM/2007/0414 final)

- Putting the right price tag on water
- Allocating water and water-related funding more efficiently
- Improving drought risk management
- Considering additional water supply infrastructures
- Fostering water efficient technologies and practices
- Fostering the emergence of a water-saving culture in Europe
- Improve knowledge and data collection

Water pricing is slowly being implemented in MS. It seems that neither the objectives of full implementation of the WFD in terms of water cost recovery or the implementation of the 'users pay' principle have been reached so far (Strosser et al., 2012)

## Retrospective – opportunities and limitation

---

Focus on economic and social – urban and rural communities – vulnerability, and the prospects of water demand management is centrally placed in the contemporary policy discourses.

The limited size of the project has not permitted to address environmental issues to a greater extent: ecological flows vs minimum environmental flow; ecosystem services and their preservation, and green infrastructure high on the European policy agenda but not addressed in depth by the project (partly compensated by ESAWADE).

The analysis set out by the project is one that underlies the WFD economic analysis; while at the same time set the stage for an climate adaptation strategy. The opportunity to provide guidance for climate adaptation strategies at RBD.

## Retrospective (2) Drought economics

---

Economic costs of drought are quantifiable and should be assessed for the most important drought events. The reason for doing so is not so much an accounting perspective – how much has been lost – but to reveal a pattern of unproductive water use and vicious subsidies, and in order to inform the RBD policies.

Economic losses triggered by deficient precipitation are not fully attributable to drought. It has been shown through the case studies that losses to energy sector – in particular hydropower – are high but at least to some extent driven by ill-designed incentives for renewable energy sources (see the green energy certificates in Italy). In agriculture, the production losses are partly covered by the food price increases where the drought influence regional market prices. The agricultural sector is undergoing transformation only moderately influenced by droughts.

The sum of analysed losses should not be equalled to the costs of drought. Overall the costs of droughts tend to be underestimated.

## Retrospective (3) Social effects of drought

---

The rural- urban typology necessitates a radical rethinking. The EU and OECD design criteria are not suitable for the RBD scale. A more useful scheme should be based on classification of municipalities according to income and added value generated, sources of water provision and water tariffs, and dependency on primary sectors, notably agriculture.

In urban context, droughts are one among many issues related to reliability of service provision. Domestic water consumption is small compared to the water uses in energy and agriculture, but the water conservation efforts are valuable in terms of energy saved both for water supply and sanitation services. A holistic management of all waters in the urban context is a valuable principle beyond the WS&D issues. Water tariffs committed to raise for other reasons than water conservation and in some places their effects on incentivising reduction of consumption has already been exploited. Further increase in water price may gradually turn into (informal) water restriction.

## Final outputs of the project

---

- 1) Policy briefs similar to the Xerochore PBs for each of the three river basins and for the project as a whole
- 2) Guidance document summarising the key insights and recommendation from the case studies
- 3) International workshop – this afternoon and tomorrow – an opportunity to liaise with international – although predominately Mediterranean audience
- 4) The concept of resilience: building blocks
  - given or created ability to moderate climate variability: retention and re-distribution of water resources (lakes, irrigation networks, farm ponds, wells)
  - allocation mechanisms helping to shift water from low to high value/priority uses as the water resources become scarcer, temporarily or permanently (through negotiation or coercive or voluntary actions)
  - ability to cushion the losses

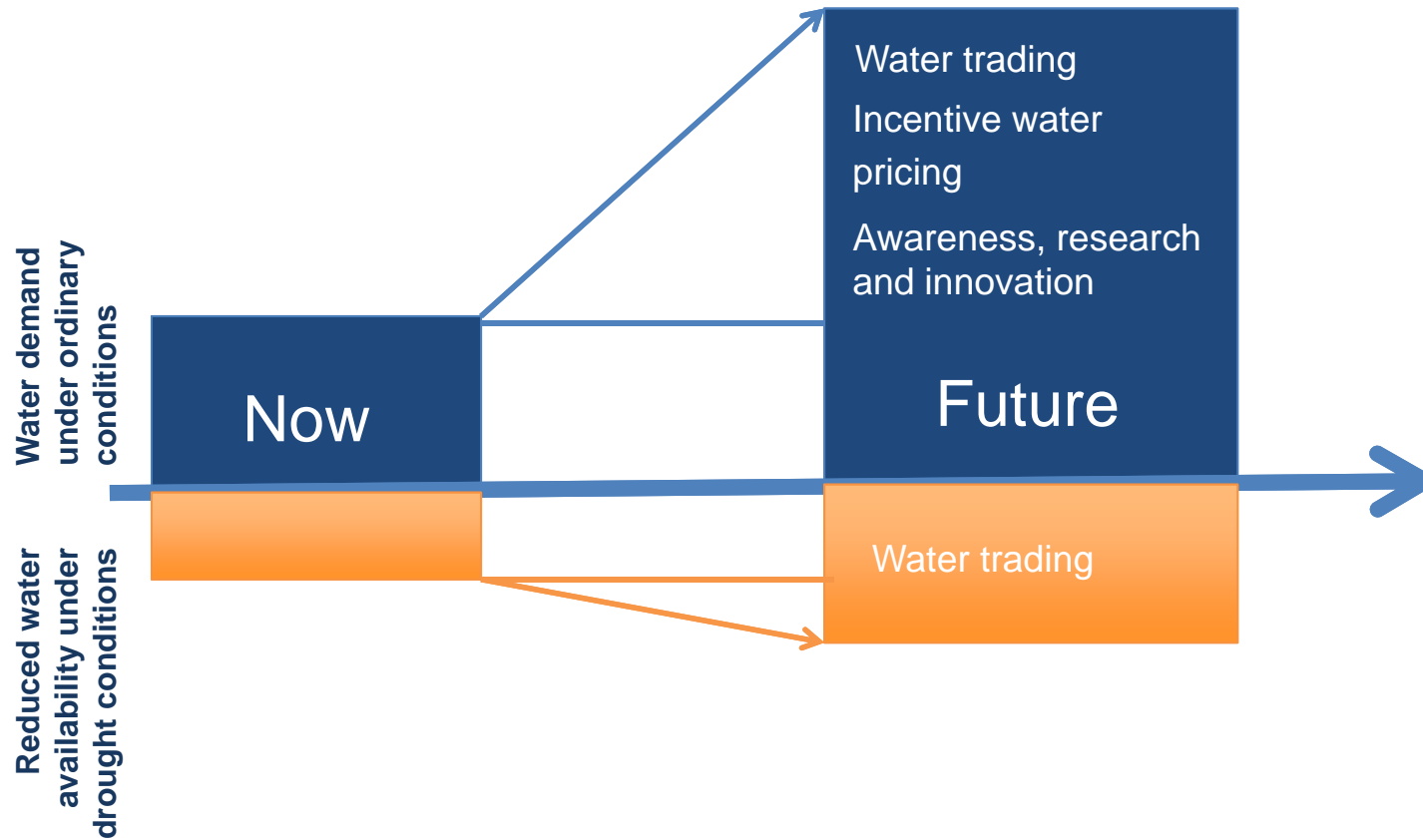


## Cornerstones of the resilience framework

---

**Enabling environment**, the first step up the ladder, comprises activities related to knowledge management, legislation and organisation of water resource management. Knowledge management includes an in-depth understanding of a river basin from a multidisciplinary perspective including climate, hydrology, ecology, economics, engineering and sociology. Second step up the ladder is the **preservation of healthy river ecosystem and ecosystem services**. Communities draw many benefits from ecosystems, including resources (e.g. water, food, medicines, etc.), a healthy environment (e.g. air purification by forests, purification of water by wetlands, pollination of crops by wildlife, etc.) and the so-called “cultural services” (i.e. the non-material benefits such as aesthetic enjoyment, opportunities for recreation and inspiration for culture and art). Ecosystems act as both a buffer and physical barrier for reducing the magnitude of hazardous events (i.e. floods and shallow landslides), while providing essential livelihoods’ supporting goods, in addition to human well-being through cultural, recreational and aesthetic services. Next step up the ladder is a (more) **efficient use and application of water**. The final step includes actions meant to shift water from low to higher value uses, contributing so to higher community welfare and wellbeing.

# Adaptation wedges



## Other opportunities

---

### Conferences and workshops:

- Catalyst regional workshop – DRR in the Mediterranean region, Bari (now)
- 1st pan –EU Drought Dialogue Forum which will be held on 30-31 October in Cyprus (DROUGHT-R&SPI)
- PREEMPT final conference, 29-30 November, 2012 (Venice)
- EPI-WATER workshop (February 2013, close to Madrid) and final conference (December 2013, Venice)
- UNCCD 2nd Scientific Conference February 2013, Fortaleza, Brazil (submission closing this Sunday, 30 September 2012 at 12 pm).

### Follow - up projects

- (i) European Innovation Partnership on water
- (ii) Join Programming Initiative Water (and Climate)



**Grazie per la vostra attenzione**

**w2a@feem.it**