Evaluating Economic Policy Instruments for Sustainable Water Management in Europe

Assessment of economic policy instruments

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0. Outline

- Background
- Project in brief
- Project Structure
- Aims and Objectives
- Key deliverables
- Case studies
- Policy ties
- Overseas experiences
- Dissemination
- Project Partners

1. Background

In a world of ever increasing water demand and decline in water availability and/or reliability, where water-related hazards are on rise, where climate change threatens to undo decades of development efforts, the only way to sustainability is a right mix of mutually strengthening policy instruments.

In this policy mix, **Economic Policy Instruments** (EPIs) are best suited to foster an efficient allocation and use of water, reduce harmful exposure and impacts on the communities and environment, and protect natural capital.

2. Project in brief

Project type: Collaborative project (small or medium size)

Funding scheme: 7th Framework Programme, Topic ENV.2010.2.1.2-1 (Evaluation of effectiveness of economic instruments in integrated water policy)

Start/End date: Jan. 1st, 2011 – Dec. 31st, 2013

Coordination: Fondazione Eni Enrico Mattei, Italy (www.feem.it);

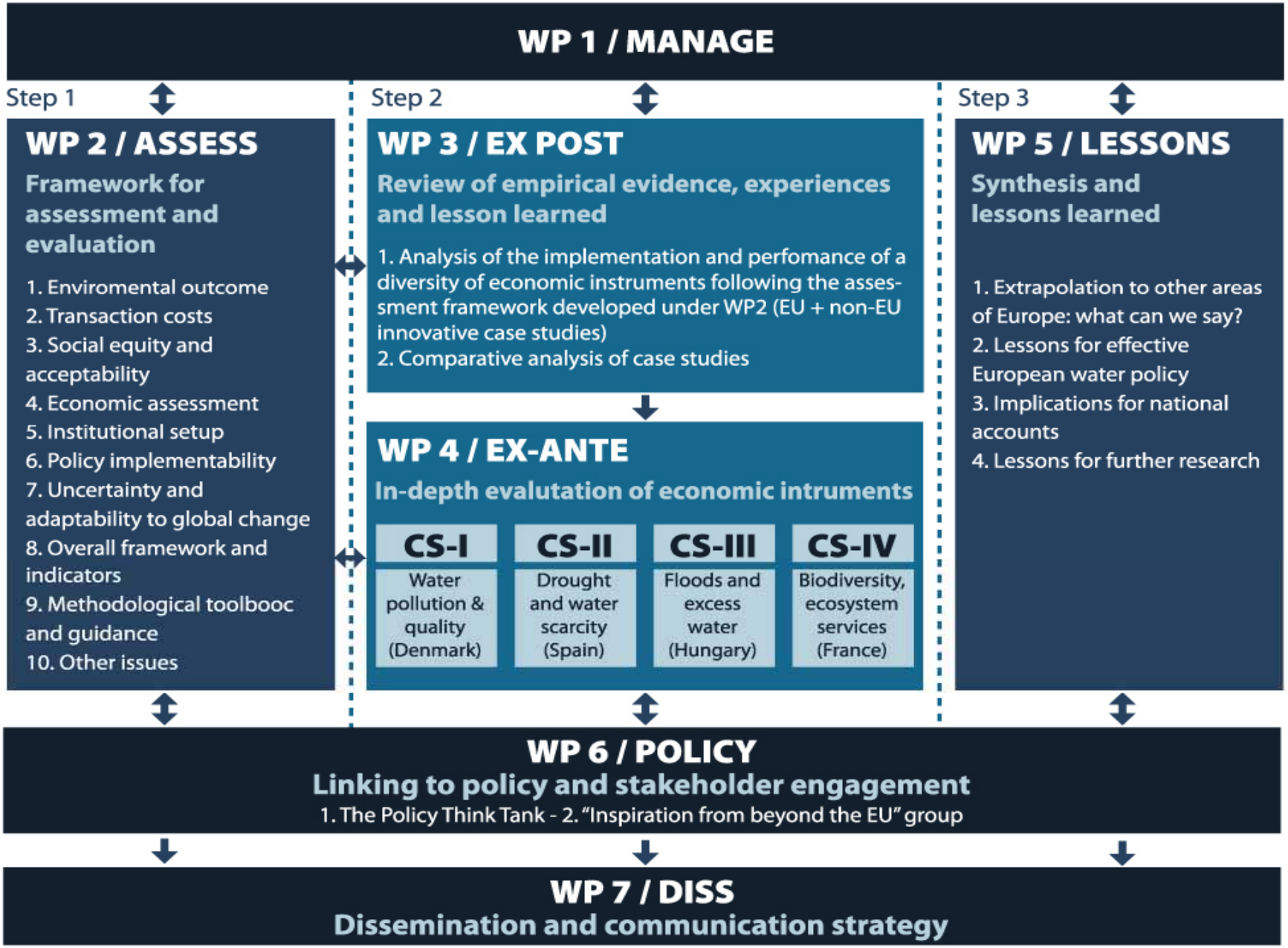
Scientific coordinator: Jaroslav Mysiak, PhD

Project Manager: Martina Gambaro

Grant Agreement N.: 265213 **EU contribution:** € 3,472,438.00

Website/contact: http://www.epi-water.eu, epiwater@feem.it

3 Project structure



4. Aims & Objectives

- **Assess** the **effectiveness** and **efficiency** of Economic Policy Instruments in achieving Water Policy Goals,
- Identify the **preconditions** under which economic policy instruments **deliver** sustainable use resources and achieve efficient and equitable water supply,
- **Compare** the performance of single economic instruments or their combinations with the performance of alternative, regulatory interventions, persuasive instruments or voluntary commitments.

5. Key Deliverables

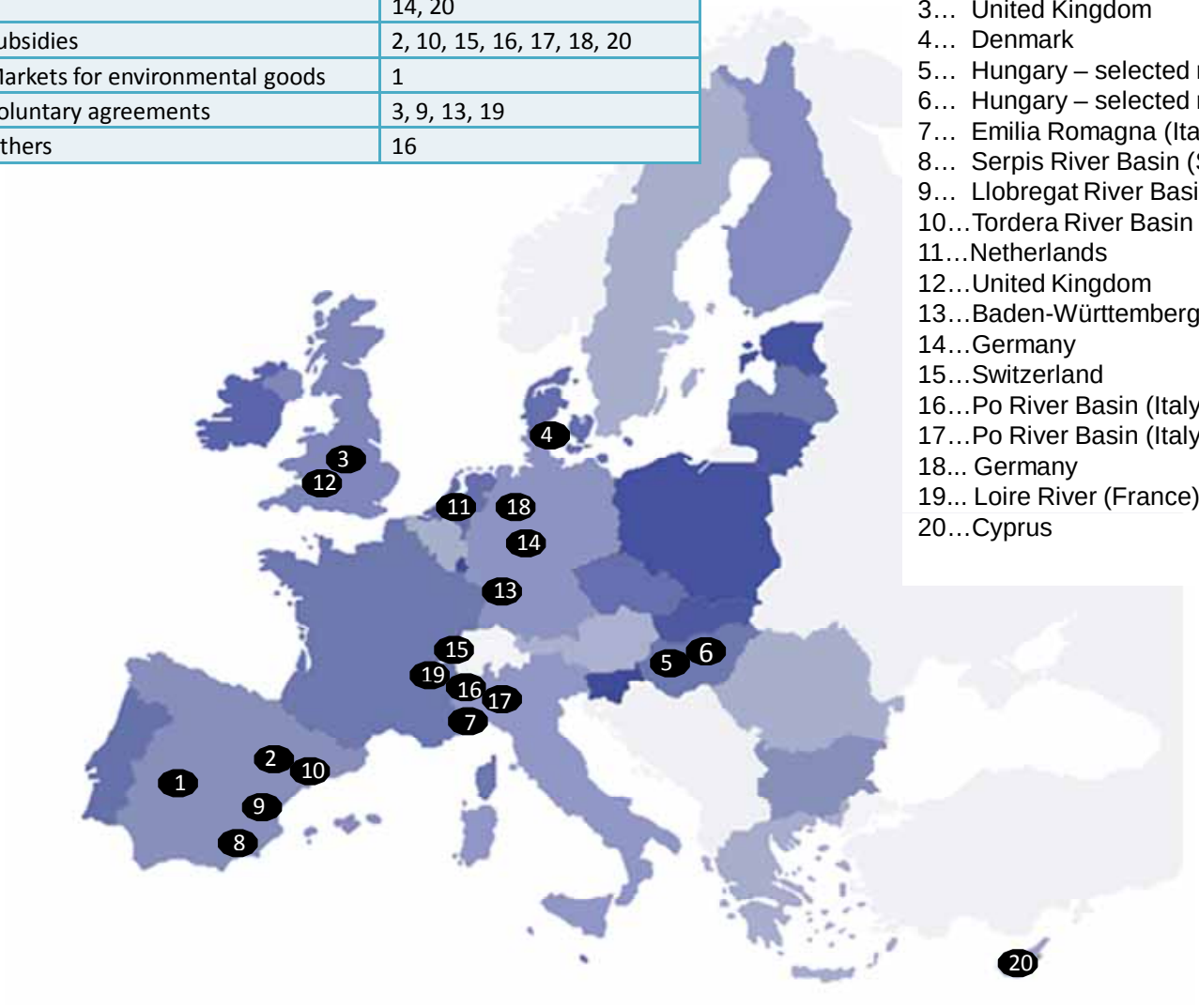
- Comprehensive **assessment framework** for a systematic and in-depth assessment of economic policy instruments
  – draft due by June 2011, Final version by January 2012
- Ex-post **review assessment** of some 30 applications of EPIs in case studies across Europe and beyond
  – due by January 2012
- **Ex-ante assessment** of novel and most promising EPIs in in selected river basins: Tisza (Hungary), Segura and Tagus (Spain), Seine-Normandie (France), and Odense (Denmark) river basin
  – due by June 2013

6. Examples of Economic Policy instruments

Type of instrument			Function/main purpose
Market using existing markets	Taxes and charges	Water tariffs (pricing)	To collect financial resources for the functioning of a given water service. Efficiency in the use of water
		Environmental tax	To internalise negative environmental impacts and influence behaviour, to collect financial resources for the central budget
		Environmental charge	To internalise negative environmental impacts and influence behaviour, to collect financial resources that are allocated to support environmental friendly practices and projects
		Fee on Products	To increase the attractiveness of "green" products and production techniques that have limited negative environmental impact/footprint
		Fee on practices	To promote the application of practices and production processes that limit negative impacts on water resources or produce positive environmental externalities
Market-based instruments creating new markets	Markets for environmental goods	Pollution	...e an optimum allocation of pollution amongst
		Tradable permit for water	...mum allocation of water quantity among ...g the natural environment)
		Compensation mechanisms	To establish mechanisms where environmental degradation leads to financial payment that is allocated to alternative actions to compensate for the degradation
Market and non-market-based instruments	Voluntary agreements		To establish a contractual agreement between two parties (public/private or private/private) to promote good practices that reduce pressures on water resources. These are increasingly referred to as Payments for environmental services. Unilateral commitments and public voluntary schemes

7. Ex-post review assessments

Type of economic instrument	Case study number
Taxes and charges:	4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 20
Subsidies	2, 10, 15, 16, 17, 18, 20
Markets for environmental goods	1
Voluntary agreements	3, 9, 13, 19
Others	16



1… Tagus River Basin (Spain)
2… Lower Ebro River Basin (Spain)
3… United Kingdom
4… Denmark
5… Hungary – selected regions
6… Hungary – selected regions
7… Emilia Romagna (Italy)
8… Serpis River Basin (Spain)
9… Llobregat River Basin (Spain)
10…Tordera River Basin (Spain)
11…Netherlands
12…United Kingdom
13…Baden-Württemberg (Germany)
14…Germany
15…Switzerland
16…Po River Basin (Italy)
17…Po River Basin (Italy)
18... Germany
19... Loire River (France)
20…Cyprus

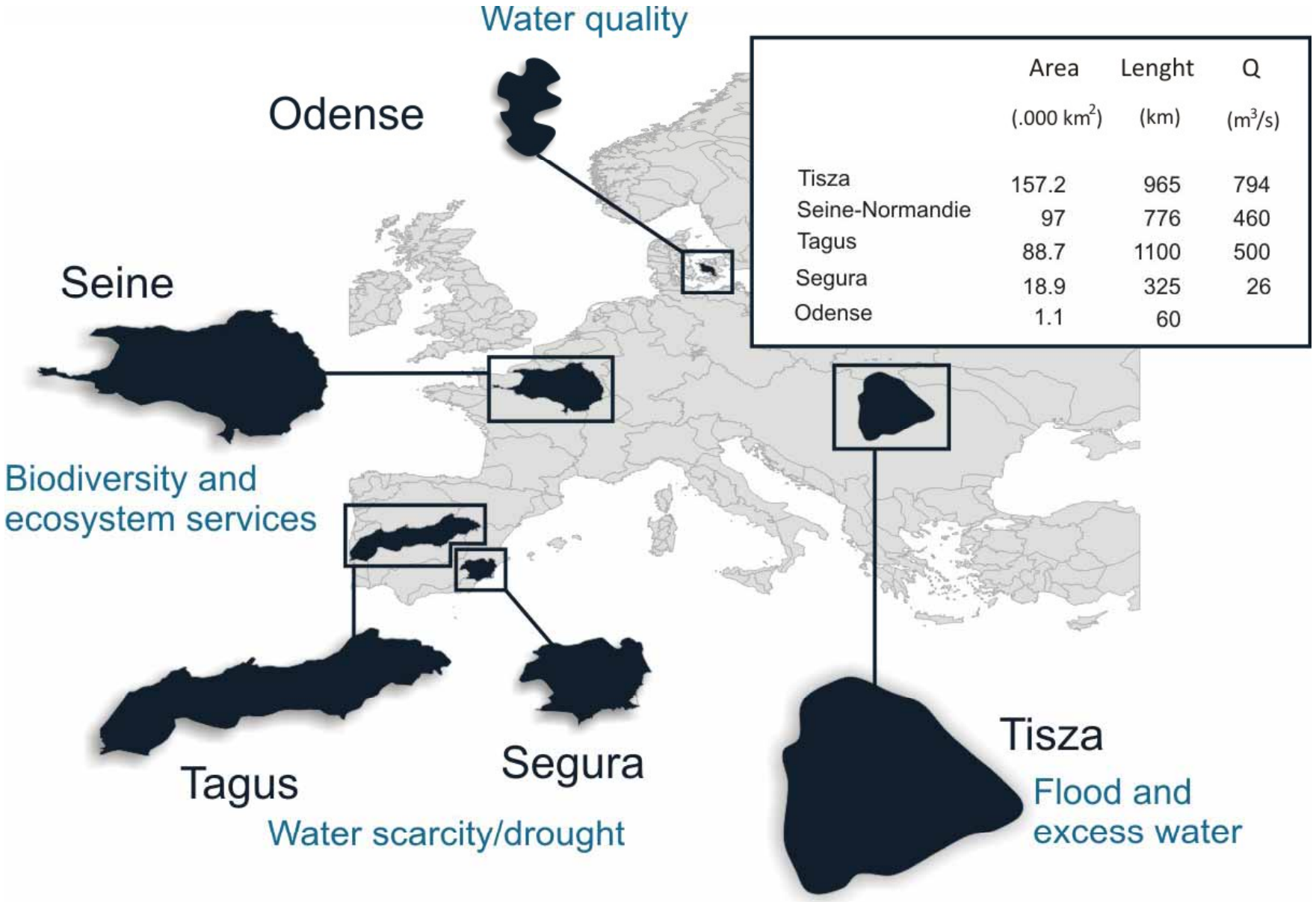
Review of some 30 EPIs applied throughout Europe and beyond.

#	Name of EPI	Location	Country code	Partner
1	Voluntary water right transfers from agricultural uses to the urban sector	Tagus Basin, Spain	ES	IMDEA
2	Payment for river regime restoration services	Lower Ebro Basin, Spain	ES	IMDEA
3	Cooperative agreements between water supply companies and farmers in Dorset	The United Kingdom	UK	MU
4	Pesticide tax	Denmark	DK	NERI
5	Water resource fee	Hungary	HU	REKK
6	Environmental load fee and discharge fine	Hungary	HU	REKK
7	Water tariffs in agriculture	Emilia Romagna, Italy	IT	UNIBO
8	Water tax and increasing tariffs	Serpis Basin, Spain	ES	UVEG
9	Voluntary inter-sectoral water transfer	Llobregat Basin, Spain	ES	UVEG
10	Negotiation and monetary incentives to promote the use of reclaimed water	Tordera Basin, Spain	ES	UVEG
11	Groundwater tax	The Netherlands	NL	WU
12	Volumetric pricing	The United Kingdom	UK	WU
13	Abstraction Tax, subsidy and voluntary compensation agreements	Baden-Württemberg, Germany	DE	Ecologic
14	Wastewater charges	Germany	DE	Ecologic
15	Green hydropower system	Switzerland	CH	Ecologic
16	Water service privatisation and funding	Po Basin, Italy	IT	FEEM
17	Incentives for hydropower	Po Basin, Italy	IT	FEEM
18	Support to ecologically friendly hydropower plants through favourable electricity tariffs	Germany	DE	ACTeon
19	Financial compensation for environmental services	Evian, Haute Savoie, France	FR	ACTeon
20	Water pricing, Environmental taxes; Subsidies and incentives	Cyprus	CY	NTUA

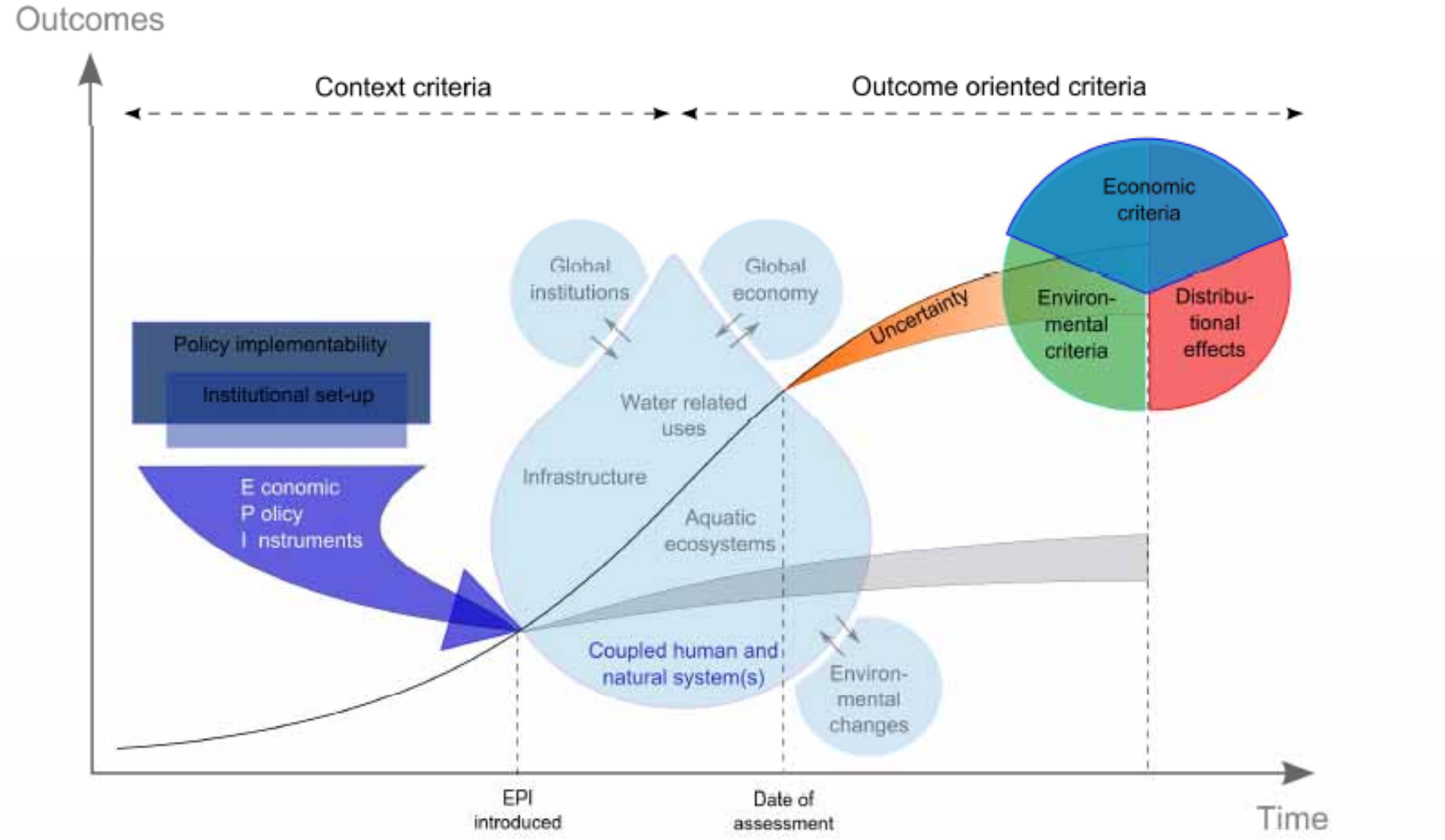
Case	Title	Name	Surname	Organisation
New York City Watershed Protection Case	Dr	Carolyn	Kousky	Resources for the Future
Salinity offsets in Australia	Dr	Tihomir	Ancev	University of Sidney
Unbundling water rights in Australia's MDB	Prof	Michel	Young	University of Adelaide
Price setting of urban water under centralized management in Israel	Dr	Iddo	Kan	University of Jerusalem
Urban Water Budget Rate Structure (UWBRS): Innovative water pricing in times of climate change, USA.	Prof	Ariel	Dinar	University of California - Riverside
Northern Colorado Water Conservancy District (NCWCD): Colorado, USA.	Prof	Charles	Howe	University of Colorado
Great Miami River Watershed Water Quality Credit Trading Program, USA.	Dr	Mark	Kieser	Kieser & Associates, LLC
Nitrogen Permit Trading in North Carolina's Neuse River, USA.	Dr	Andrew	Yates	University of Richmond
The Chilean Water Allocation Mechanism, established in its Water Code of 1981.	Dr	Guillermo	Donoso Harris	Universidad Católica de Chile
Assessment of the Economic Policy Instruments for Water Management in China	Prof	Xiaoliu	Yang	Peking University

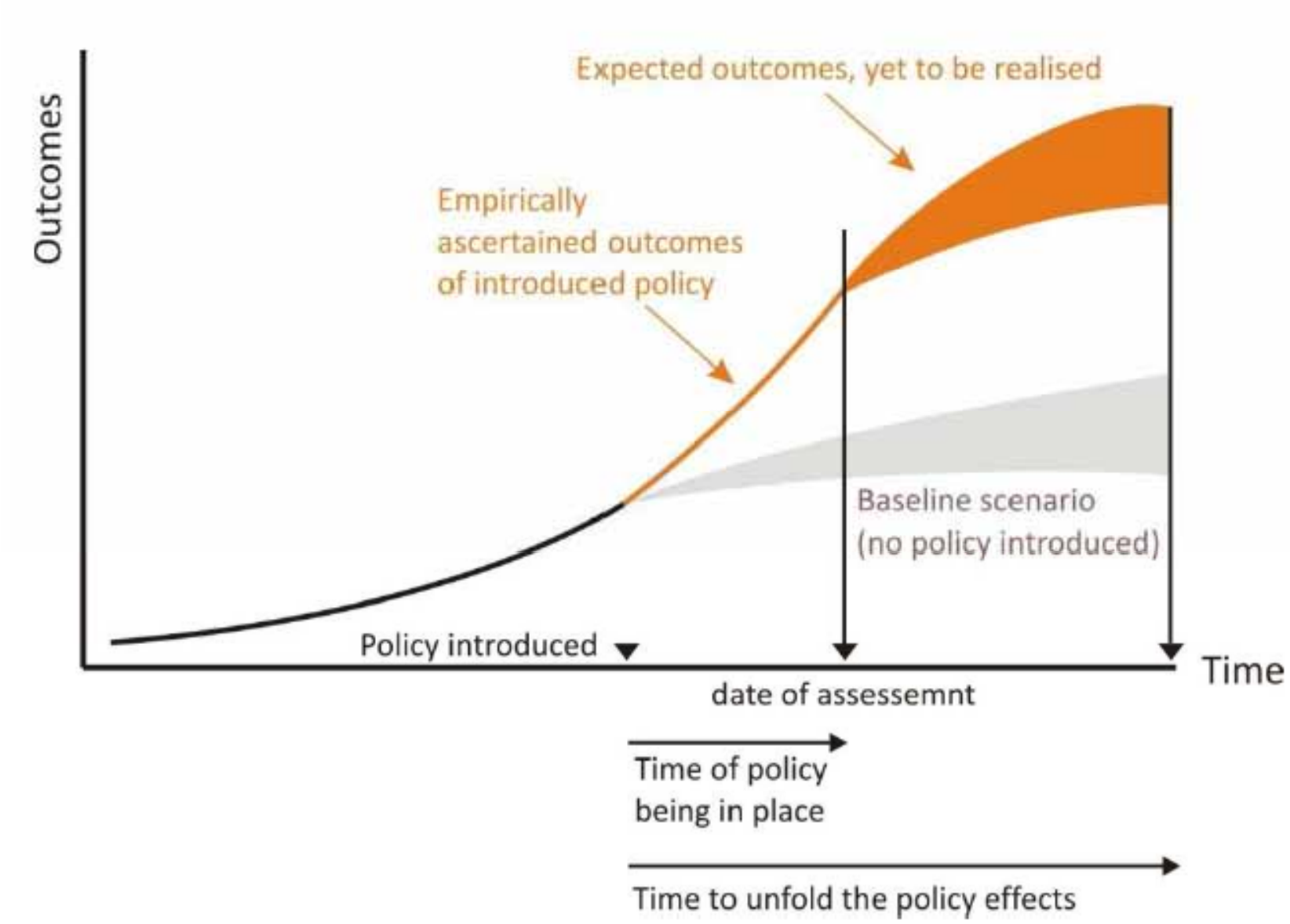
Sector	Proposed Case Studies
Agriculture	4, 7
Agriculture and urban	1, 19
Agriculture and wastewater/ water supply	3, 8
Agriculture, municipality and industry	9, 10
Agriculture, municipality and tourism	20
Agriculture, industry and environment	11
Urban/ Municipal	12
Industry and Waterworks	6
Waterworks (incl. WWT)	16,
Hydropower	2, 15, 18
Energy	17
All sectors	5, 13, 14

8. Ex-ante in-depth assessments



	Area (.000 km^2)	Lenght (km)	Q (m^3/s)
Tisza	157.2	965	794
Seine-Normandie	97	776	460
Tagus	88.7	1100	500
Segura	18.9	325	26
Odense	1.1	60	


Outcomes
Context criteria
Outcome oriented criteria
Economic criteria
Environ-mental criteria
Distribu-tional effects
Uncertainty
Global institutions
Global economy
Policy implementability
Institutional set-up
Water related uses
Infrastructure
E conomic
P olicy
I nstruments
Aquatic ecosystems
Coupled human and natural system(s)
Environ-mental changes
EPI introduced
Date of assessment
Time


Expected outcomes, yet to be realised
Empirically
ascertained outcomes
of introduced policy
Outcomes
Baseline scenario
(no policy introduced)
Policy introduced
Time
date of assessemnt
Time of policy
being in place
Time to unfold the policy effects

9. Policy ties

Policy Think Tank

High-level policy experts

Help to identify the policy instruments to be assessed (both for the ex-post and ex-ante assessments);

Help to make the assessment framework responsive to policy needs;

Review of the intermediate results.

Stakeholder advisory group

Actors in the case river basins

Help to set up the analysis, regularly advise the research in progress,

Provide constant feedback on research results,

Help to translate the outputs into river basin water policies and management.

10. Overseas experience and insights

"**Inspiration beyond the EU**" group comprised by academic experts from the USA, Canada, Chile, Australia and other countries with advanced water policies will contribute to the achieving the project objectives by

- Conducting a review of existing economic policy instruments in own countries
- Providing feedback and advice on the project work in progress, by conducting the in-depth ex-ante case studies,
- Helping to synthesise and disseminate the project outputs

11. Dissemination

- Results and lessons learned from the analysis will be transferred to water managers and policy makers
- Using members of local advisory committees in the case study areas providing direct input to local policy issues
- Addressing water managers and policy makers at European level in relation to lessons learned
- Addressing the research community and policy makers in relation to knowledge gaps identified.

12. Project Partners (team leaders)

Jaroslav Mysiak, Fondazione Eni Enrico Mattei, Italy

Pierre Strosser, ACTeon, France

Manuel Lago, Ecologic, Germany

Hans-Peter Weikard, Wageningen University, The Netherlands

Maria Mimikou, National Technical University of Athens, Greece

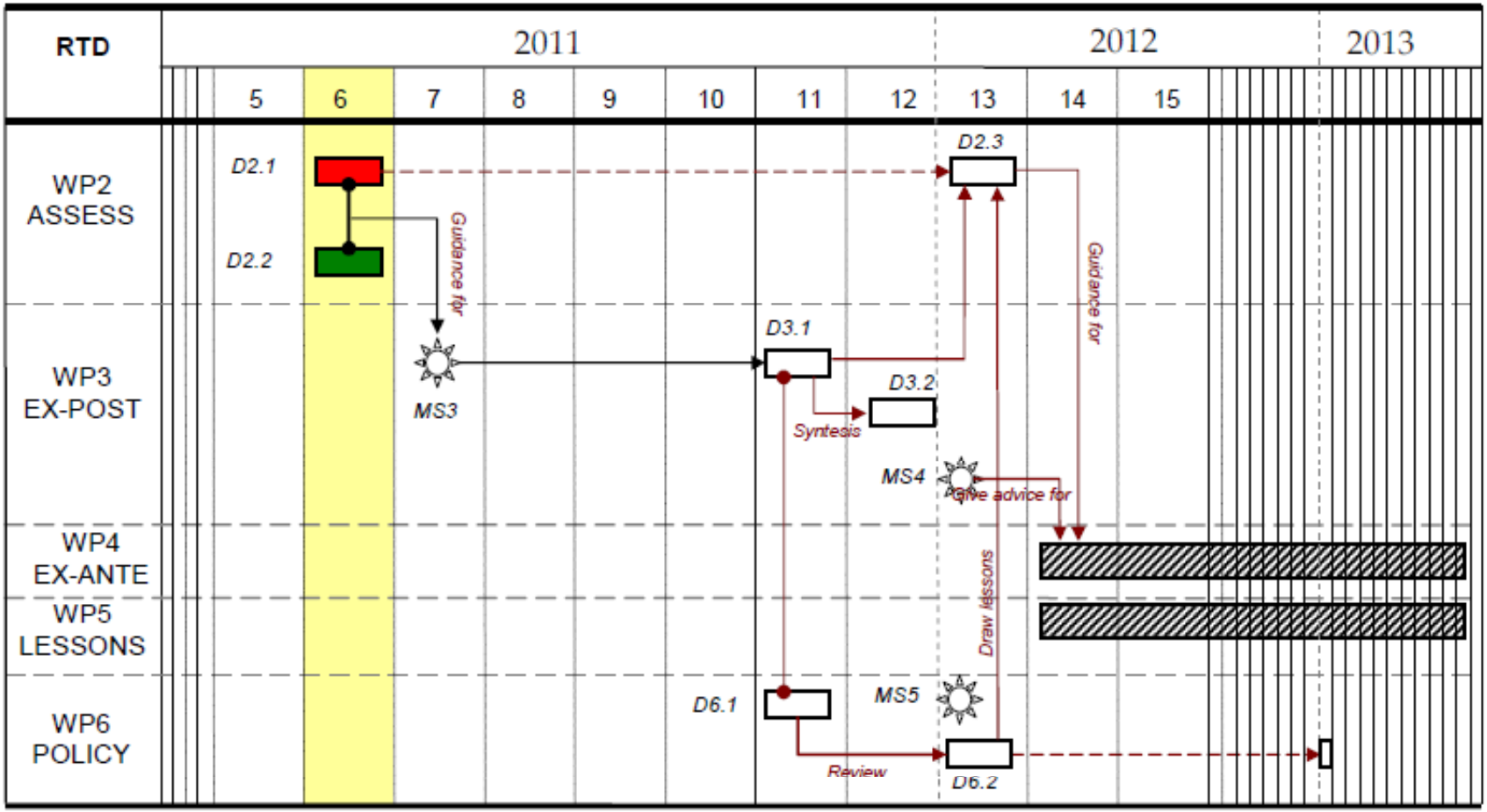
Carlos M. Gómez, Instituto Madrileño de Estudios Avanzados, Spain

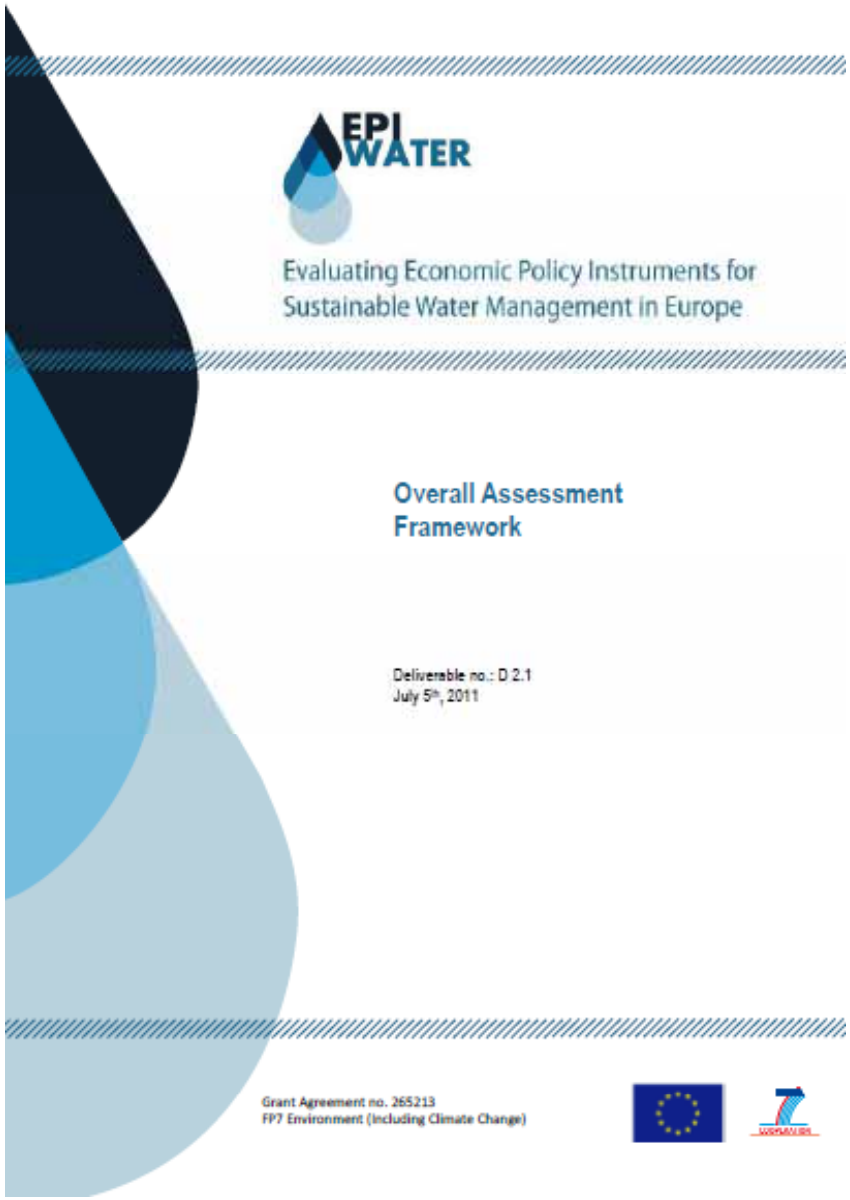
Francesc Hernandez-Sancho, University of Valencia, Spain

Colin Green, Middlesex University, Flood Hazard Research Centre, UK

Mikael Schou Andersen, Aarhus Universitet - National Environmental Research Institute, Denmark

Gabor Ungvari, Corvinus University of Budapest, Regional Centre for Energy Policy Research, Hungary


RTD
2011
2012
2013
5
6
7
8
9
10
11
12
13
14
15
WP2 ASSESS
WP3 EX-POST
WP4 EX-ANTE
WP5 LESSONS
WP6 POLICY
D2.1
D2.2
D2.3
Guidance for
MS3
D3.1
D3.2
Syntesis
MS4
Give advice for
Guidance for
Draw lessons
D6.1
MS5
Review
D6.2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Overall Assessment Framework
Deliverable no.: D 2.1
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EPI WATER

Thank you!

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