

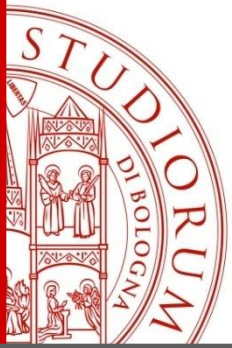
“The economic value of smart resource management and implications for policy design: the case of water”

Davide Viaggi, University of Bologna, Department of Agricultural Sciences

davide.viaggi@unibo.it

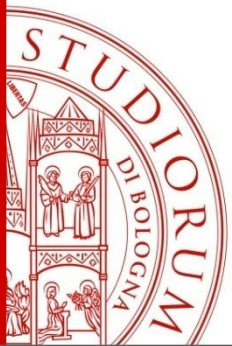
Convegno «Uso efficiente delle risorse naturali:
priorità dello sviluppo rurale, sfida per i PSR»

Bologna,
3 Maggio 2017



Outline

- Public good production & soil and water
 - PROVIDE (H2020)
- Economic issues in water management
 - Wadi (FP5)
 - FIGARO (FP7)
 - MOSES (H2020)
 - Local valuation of benefits from irrigation
- Some policy implications



PROViding smart DELivery of public goods by EU agriculture and forestry

Program: Horizon 2020, SC2 Call: H2020-ISIB-2014-2

Topic: ISIB-01-2014

Budget: 3 Million Euro

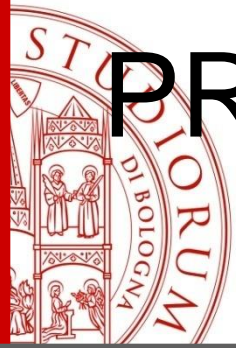
14 partners

Duration: 1/9/2015 - 31/8/2018

Contact (project coordinator): Davide Viaggi
(davide.viaggi@unibo.it)



Horizon 2020
European Union funding
for Research & Innovation



PROVIDE: figures and activities

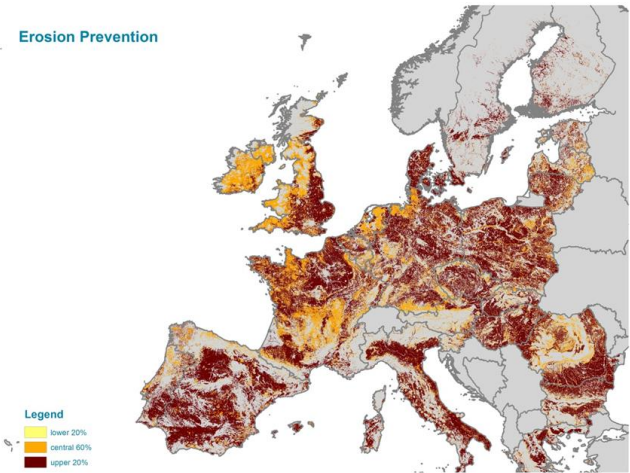
- 13 case study regions
- Network of about 200 stakeholders
- 28 stakeholder workshops
- EU and regional mapping of PGs
- Monetary valuation of public goods
 - 8 demand-side and 7 supply-side studies
 - 3300 total questionnaires to farmers and households
- Evaluation of alternative governance mechanism
- Framework and toolbox

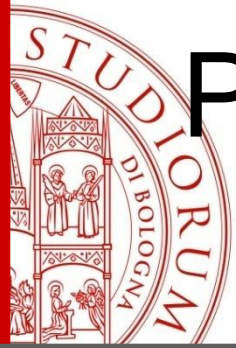


Horizon 2020
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Preliminary results: Public goods

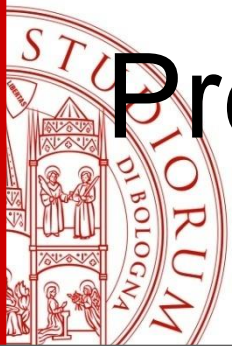
- Complex notion
- Soil and water (resources) high in priority
- Typologies of issues:
 - a) intensive agricultural areas (resources vs. intensification)
 - b) areas at risk of abandonment
 - c) areas with strong connection with urban areas
 - d) low intensity-low income areas
 - e) forestry areas (public goods, timber, ES)





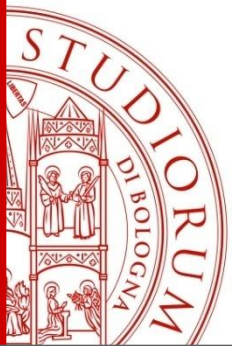
Preliminary results: valuation

- General WTP for higher production of public goods by agriculture & forestry
 - E.g. ER: 40 euro/year/household for reducing soil erosion
- Current CAP expenditure on PG acceptable by a majority of people (60-80%)
- But....
- ...very differentiated values across areas and groups
- ...little technical understanding (legitimate)

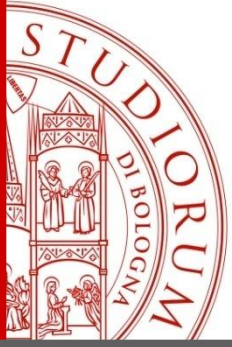


Preliminary results: governance mechanism

- Mix of instruments needed
- Highest priority instruments
 - Improved AEP and PES
 - Fostered regulation
 - Information & awareness
 - Public-private collaboration

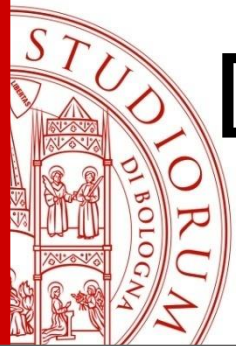


MORE ON WATER....

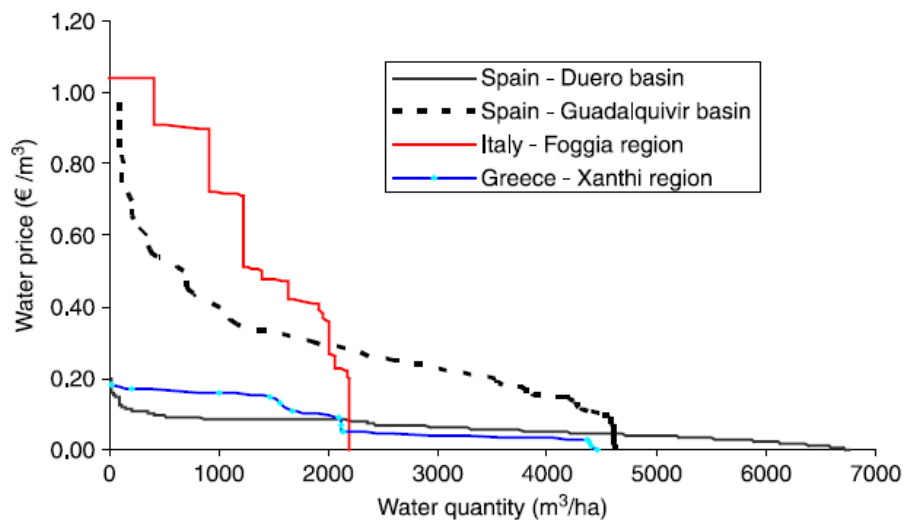


Benefits and costs of water use

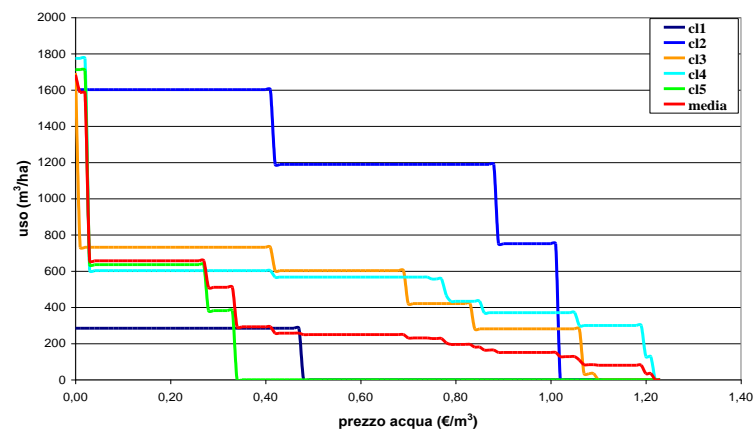
- Benefits
 - Private utility
 - Profits->income->growth
- Costs
 - Financial
 - Resource
 - Environmental



Demand and value of water

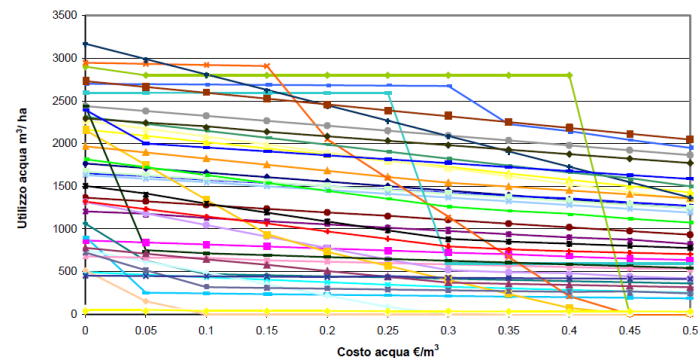


Funzioni domanda – CB Romagna occidentale



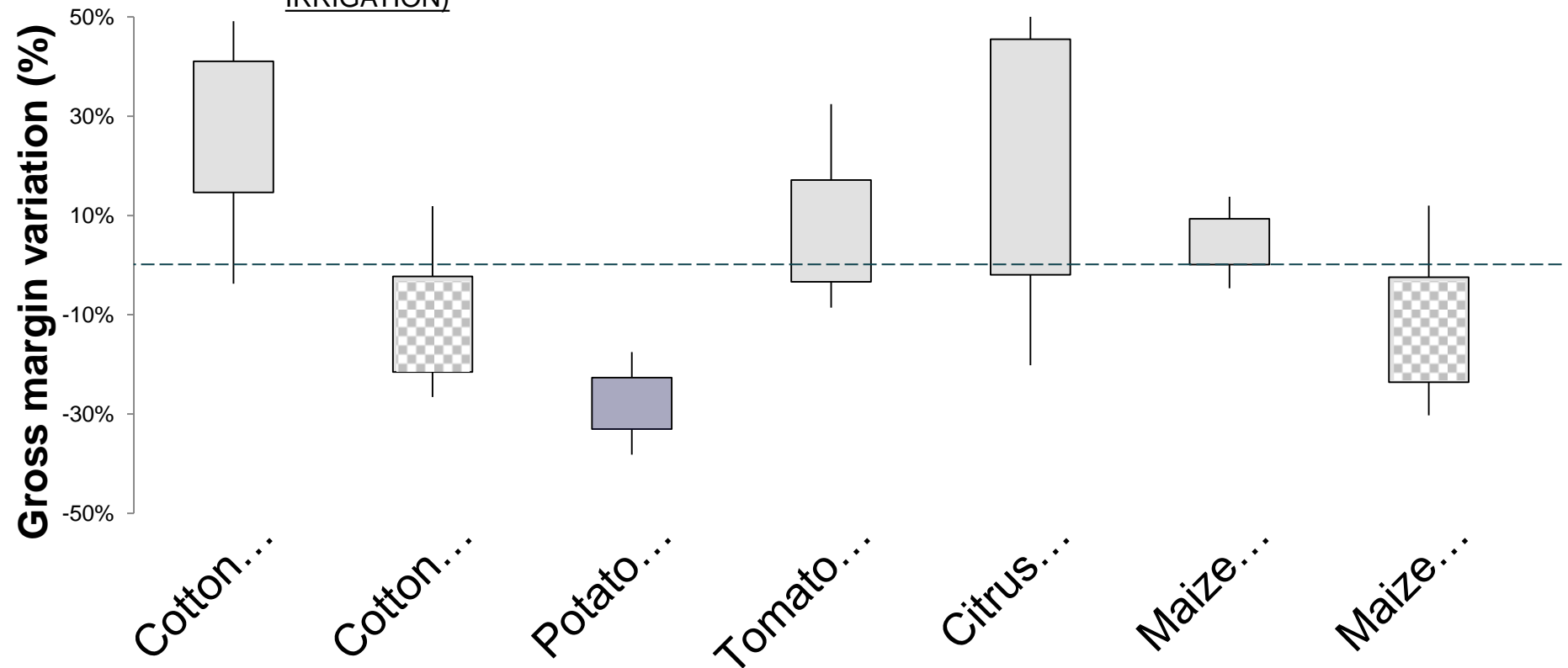
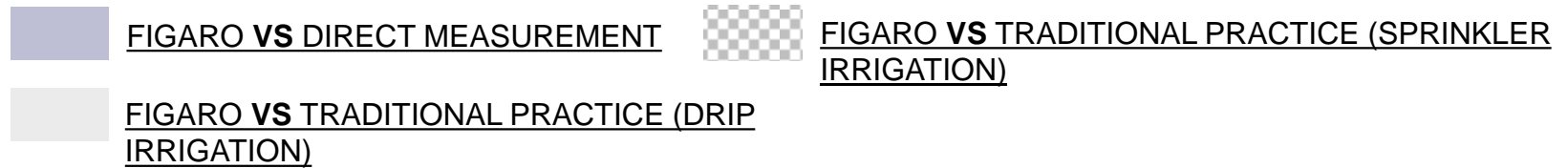
Funzioni domanda – CB Reno Palata

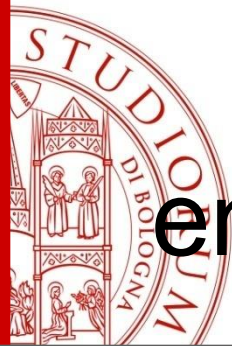
Figura 1 – Funzione di domanda dell'acqua nelle singole aziende modellizzate (ax=codice aziendale)




Fonte: Berbel et al., 2009

Relative performances of the FIGARO approach compared with other practices to schedule irrigation during the period 2013-2015 –
Gross margin variation (%)





Monetary valuation of environmental benefits of actions

- Study in the Consorzio della Bonifica Renana
 - CVM+hedonic price
 - 0,3-1,2 milion euro/year of benefits to residents due to irrigation water in canals
- ReQpro 
 - Purely private analysis: NPV=-7,9 Meuro
 - ACB: NPV=from 2 to 7 Meuro



Trends and scenarios

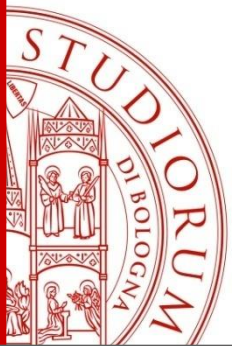
- Climate change
- Agricultural prices: increase (?) and volatility
- New technologies: ICT, data
- Global+regional economic relationships
- Increasing consumers awareness



Some policy implications

- Role of innovation to solve trade-offs
 - Technical
 - Institutional
- Need of a (consistent) integration of different policy areas (CAP-WFD) (beyond cross compliance)
- Acknowledge limitations in measurement
- Accounting for heterogeneity of farms/areas and variability over time (e.g. auction types, flexibility in time, results-based...)
- Collective measures
- «Chain+territory» instruments
- Role of beneficiaries of public goods (residents, consumers, citizens)

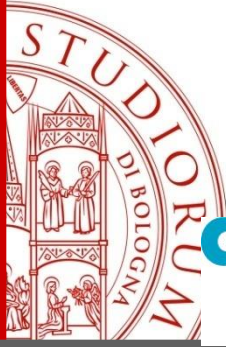
- With «transaction costs nightmare» in mind!!!



FIGARO - Flexible and Precise Irrigation Platform to Improve Farm Scale Water Productivity, 7th Framework Programme (contract n. 311903), 2012-2016.

MOSES - Managing crop water Saving with Enterprise Services, H2020, 2015-2018





WADI – “Sustainability of European Irrigated Agriculture under Water Directive and Agenda 2000”, V framework programme, Unione Europea (STREP) (2001-2003), (EVKa-2000-00057)

aqua money

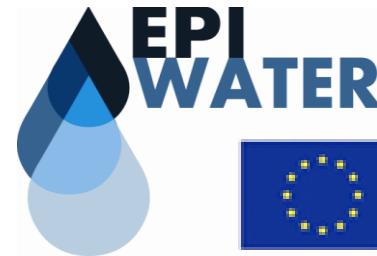
AQUAMONEY - "Development and Testing of Practical Guidelines for the Assessment of Environmental and Resource Costs and Benefits in the WFD ", Proposal No. 022723, European Union 6fp (STREP)

<http://www.aquamoney.org/>



EPI-WATER - Evaluating Economic Policy Instruments for Sustainable Water Management in Europe, 7th Framework Programme, Grant agreement n. 265213

<http://www.epi-water.eu>



Water Cap trade - Water markets scenarios for Southern Europe: new solutions for coping with water scarcity and drought risk, 2nd IWRM-NET Funding Initiative, ISPRA

<http://www.capandtrade.acteon-environment.eu/>

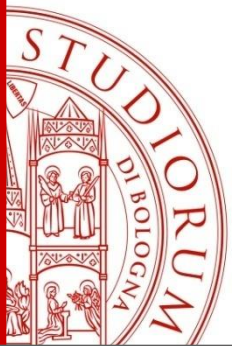


DQA – Analisi Economica sull’Utilizzo Idrico:

verifica dell’esistenza di Costi di adeguamento Sproporzionati a giustificazione di eventuali deroghe alla normativa

<http://ambiente.regione.emilia-romagna.it/acque/notizie/notizia-2014/raggiungimento-del-buono-stato-delle-acque-analisi-dei-costi-economico-sociali>





Thank you!

Davide Viaggi

Department of Agricultural Sciences

davide.viaggi@unibo.it