

Scuola Estiva per i Dottori e  
Dottorandi di Ricerca  
Piacenza, 4-5 giugno 2013



# “Targeting and economic evaluation of Agri-environmental measures”

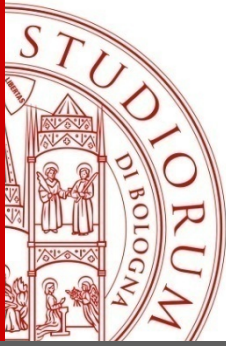
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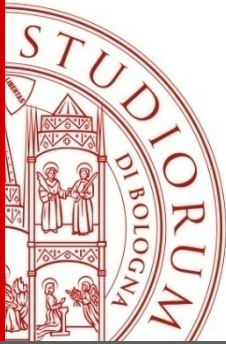
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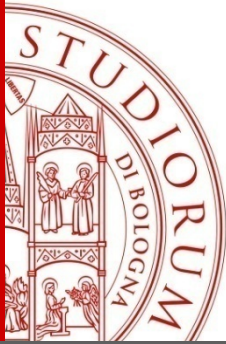
# Outline

- Background
- Objectives
- Methodology
- Time-Line
- Open questions



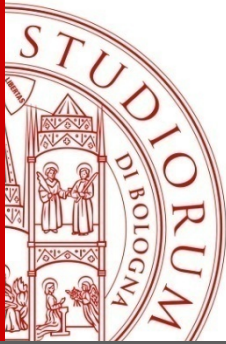
# Background (1)

- **Greening** of the CAP :
  - Encourage sustainable resource use
  - Develop environmentally-friendly farming practices
  - **Sustainable** and integrated rural development
  
- Agri-environmental measures (AEMs)
  - provide environmental goods and eco-system services across the European Union (EU)



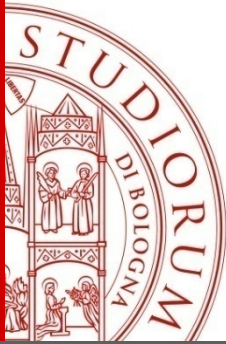
## Background (2)

- Measure 214/Agri-environmental payments:
  - management oriented, voluntary schemes, incentive nature
  - reduce environmental risk, preserve cultivated landscapes
- Various inefficiency:
  - **Economic inefficiency**: benefits vs costs [Engel et al. (2008)]
  - **Poor spatial targeting** [Uthes et al. (2010)]
  - **Participation** problems (difficulties to model farmers' behaviour)
  - **Asymmetry** information conditions (high transaction costs)
  - Uniform **payments** vs spatially heterogeneous compensation payments [Wätzold and Drechsler, 2005]



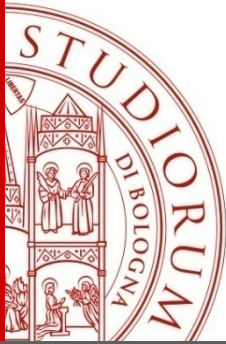
# Objectives

- Supporting the targeting and evaluation of agri-environmental schemes
- Providing a **methodology** that allows the integration of the information coming from **spatial analysis** of participation to AMEs into a **mathematical programming** model at regional level
  - model farmers' characteristics and compliance costs in their spatial dimension
  - spatially differentiated payment mechanism
  - Increase the effectiveness of AEMs

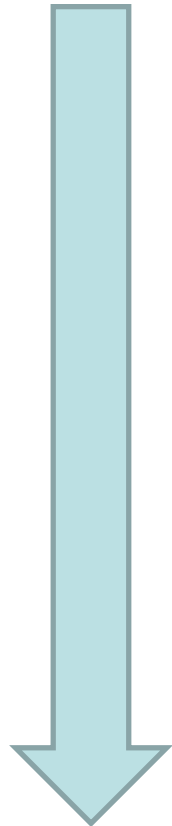


# Methodology

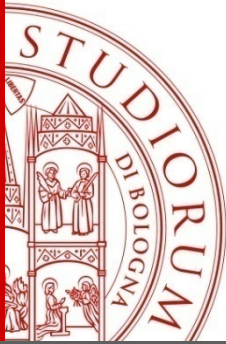
- **Spatial allocation model** of participation to AEMs focus on resource and incentive compatibility at regional level
- The model uses information coming from **spatial analysis** into **mathematical optimization**:
  - modeling farmers' behaviour and characteristics
  - differentiate payment mechanism
  - compliance costs
  - regional level
- Case studies (RDP Emilia Romagna 2007-2013)



# Time Line



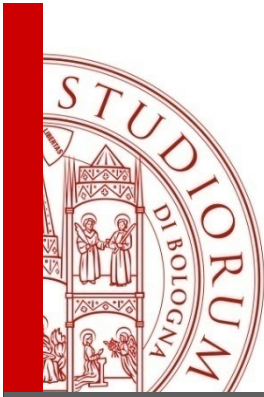
- **First year:**
  - ✓ Study of literature, building of the theoretical model and implementation
- **Second year:**
  - ✓ Building the model in GAMS environment and calibration (CSA ER)
- **Third year:**
  - ✓ Ex-ante analysis of impacts and scenarios implementation on CAP changes



# Open questions

- Use of econometric information
- Compliance costs (empirical functional form)
- Model hidden transaction cost
- Environmental benefits





# Grazie!

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