The role of agri-environmental measures in achieving WFD compliance

D. Psaltopoulos and D. Skuras
Department of Economics, University of Patras

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The Context

- European rural areas facing environmental challenges:
  - Key role of agriculture and forestry in land use & the production of environmental public goods.
  - Significant policy efforts in past decades have led to progress, but, still problems for several ecosystems (biodiversity, water quality & quantity, soil)
  - External factors to aggravate: Climate Change ("consensus" that is occurring)
  - In SE, direct impact on water resources, irrigation requirements, crop growth and productivity, etc.
  - Impacts on land use / economy-wide effects.

Policy Response

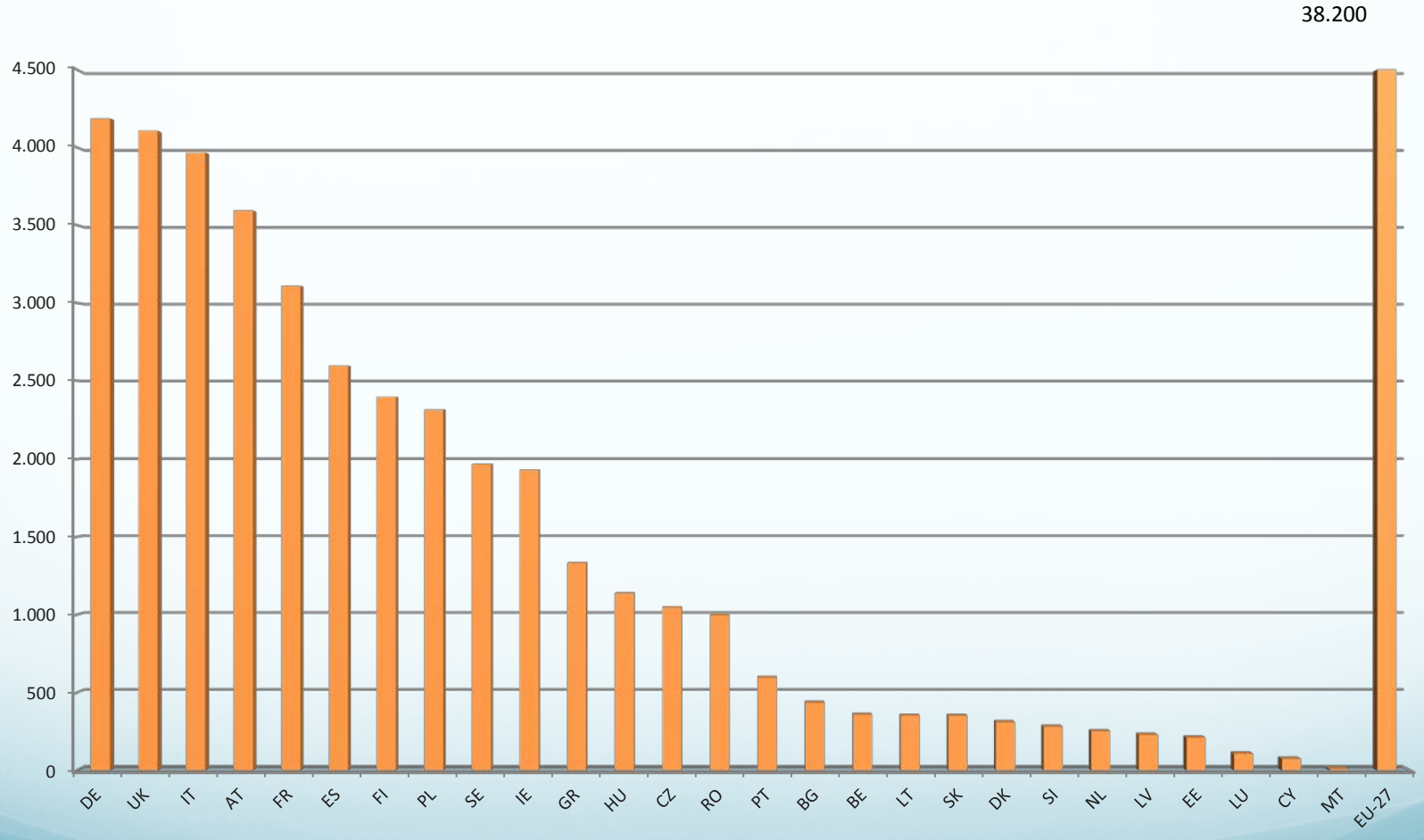
- Policy response: new initiatives + efforts to integrate
  - Environmental objectives gradually integrated into the CAP through both Pillar 1 (e.g. cross compliance) and 2.
  - Pillar 2: compulsory AEM (MacSharry reform); Good Farming Practice (Agenda 2000); Axis 2 at least 25% of RDP budget also introduced Natura 2000 and WFD Measures (2003/4 reform)
  - CAP 2014-2020 decisions:
    - Sustainable management of natural resources and climate action: one of three core objectives;
    - Pillar 1 'greening': 30% of direct income support granted if farmers observe practices which are beneficial for environment/climate (at least 3 different crops; minimum area of permanent grassland, Ecological Focus Areas);
    - Pillar 2: at least 30% for measures related to environment & climate change.

Policy Response

- Directive 2000/60/EC (WFD), the framework for action in water policy
- Thresholds set to achieve desirable ecological status – critical point as first target is 2015 with 6-year cycles following
- Management plans for catchments; but rather marginal financial backing if one excludes the CAP….
- So, as P and N is the problem, AEM have constituted the main policy tool for pursuing compliance.

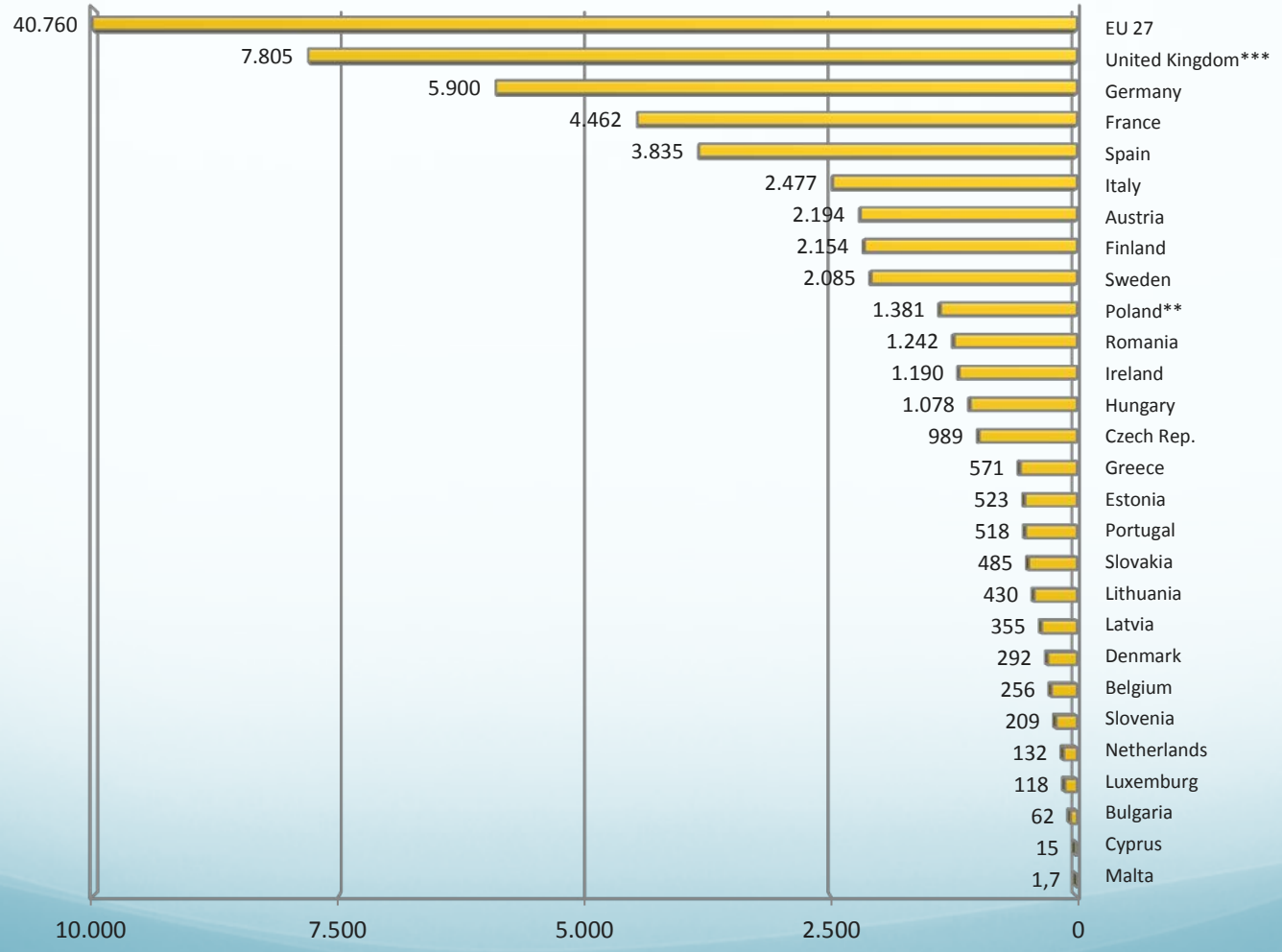
Policy Response

Figure 1: Programmed total public expenditure on measure 214 per MS for 2007-2013 (in million EURO)



Policy Response

Figure 2: Area under agri-environment management (in thousand hectares), EU-27, 2012



REFRESH

- The above context indicates two needs:
  - Integrated approach is required to assess complex environmental issues related with case-specific physical ecosystems and at the same time assess the efficacy of policy measures (especially if there is a potential for synergies) associated with substantial financial backing
  - If policy tools lead to longer-term commitments, then monitoring should also consider climate change.
- The pathway of Nutrients:
  - Highly influenced by physical environment, climate, soil, activities contributing nutrients directly to the soil or into the watercourse.
  - Nutrients undergo transformations during transport making each agri-environment case rather unique.
  - Complex interactions specific to nutrient transport must be captured by integrated models – invaluable tool for assessing AEM related to nutrient transport.
  - Simple leaching functions are naïve as areas with high disposition of fertilizers may not show extreme water pollution due to absorption mechanisms….

REFRESH

- In the case of costly measures:
  - Cost-effectiveness analysis of different (but “appropriate”) options must follow
  - Benefits should though include non-uses such as biodiversity.
  - Especially for most watersheds which end up to Habitat areas where non-use values are very important.
  - If this is fulfilled, benefits often are found to exceed (even) high costs.
  - AEM imply longer-term engagement, and climate change may bring spectacular overturns.
  - AEM should incorporate projected climate change.

Policy Implications

- AEM face two risks:
  - Type I: True effect of farm activity on water quality is zero, but an AE policy is adopted (other polluting activities and/or increased absorption)
  - Type II: True effect of farm activity is significant, but we do not adopt a policy (bad monitoring or failure to incorporate forecasted climate change in our pollution generating activities)

Policy Implications

- Express policy targets in the same units as the targeted environmental standard
  - Ex-ante assessment of proposed policy with science based nutrient transport models
- Climate change proof the policy
  - Allow for transition to stricter/looser abatement levels if changes are unfavourable/favourable, always with the lowest cost.
- Unravel and flag all wider and associated benefits (especially when WFD and Habitats co-exist)
- Take account of disproportionality and affordability effects.