Policy and landscape change relations

the Rural Development example

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EU rural landscapes

- EU25 rural areas: 92% of landscape, 45% of the Gross Value Added, 53% of the employment
- EU25 agricultural and forestry sectors: 77% of the land use, 12-13% as Natura 2000 and 10-30% as High Nature Value Farming System

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Overview: the European development model

- The Göteborg strategy is the complementary act to the Lisbon strategy in order to create a new "European model" of development
- The "*European model*" tries to promote *solutions for the social needs based on the best knowledge shared as strategic choices*

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The European model of agriculture

- a modern and competitive farming sector, capable of occupying a leading position on the world market, while safeguarding domestic producers' living standards and income
- a sustainable, efficient farming sector that uses hygienic, environmentally friendly production methods and gives consumers the quality products they desire
- a farming sector that serves rural communities, reflecting their rich tradition and diversity, and whose role is not only to produce food but also to guarantee the survival of the countryside as a place to live and work, and as an environment in itself
- a simplified agricultural policy, where the lines are clearly drawn between what is decided at Community level and what is the responsibility of the Member States

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Overview: the Rural Development (RD) approach

- The European Fund for Rural Development (EAFRD) states the will of the *transversal integration of the environmental dimension in a sectorial policy* (Common Agricultural Policy), one fundamental criteria of sustainability
- *natural and environmental resources as a key factor of the social and economic growth, and not as a bridle to them*

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Rural development policy: cause

- To maintain the rural system at a *socially sustainable level*, it has been necessary to *sustain* it with direct and mediate *subsides*
- Today this system is *uneconomic* if considered in terms of the GDP or employment %: it *costs to the EU taxpayers more than the benefit perceived*
- But traditional economic approach do not take into account the "externalities", and underestimates the multiple social environmental and ecological services produced by rural systems

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Rural development policy: response

- new CAP programming (2007-2013) for RD
  - *market oriented* polices (decoupled direct payment principle)
  - *Rural Development* (RD) to *boost the competitiveness* of the agricultural sector and *re-launch* the *role of the environmental and social dimension in rural landscapes*

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Rural development policy: response

- explicit consideration of the *environmental services* ("externalities") offered by the rural activities
  - prime resources management (water, soil, biodiversity)
  - control of risks (quality and health of the products, hydrogeological risk control)
  - socio cultural shared needs (animal welfare and the landscape maintenance)

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Linking landscape change to strategies

- Measures o the RD Fund to improve landscape resources
  - Measures for the sustainable use of agricultural landscapes
  - Measures targeting the sustainable use of forestry landscapes

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Linking landscape change to strategies

- Measures applied *inside* the *cross compliance*
- The single farm payment given if *respected* the *Statutory Management Requirements* (SMR) and the Good *Agricultural And Environmental Condition* (GAEC)
- SMR linked to the environmental directives (water, waste, fertiliser) and wellness directive (human and animal)

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Linking landscape change to strategies

- reinforced measure to maintain habitat and landscape structures linked to biodiversity (particularly in LFA)
- reinforced measures to link LFA to ***landscape***, agronomic and climatic conditions
- direct payments to Natura 2000 site farmers

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What to do 1: programming vs spatial planing

- Current RD policy trend
  - more bottom-up and territorial processes
- This trend is reinforced by scientific learning (best knowledge):
  - *to be ecologically (environmentally) effective, programming has to be linked to spatial planning in a participative way (creation of sound scenario to involve local people in policy realisation)*

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What to do 1: programming vs spatial planning

- Policy actions programs decoupled with landscape spatial planning are not necessarily correspondent to the pursued effects (Forman, 1995; Franco, 2002; Jongman, 2002; Madsen, 2002)
- case study:
  - Iowa rural landscape transformations scenarios under different policy strategy

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Iowa (USA) case study

- Integrated interdisciplinary project
- definition of future scenarios of Iowa rural landscapes GIS supported as maps and simulated images evaluated from several viewpoints
  - scenarios: plausible outcome on landscape of different human priorities for agricultural lands
  - evaluation tools: CVM, numerical and statistical models

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Iowa case study: scenarios

- production scenario (business as usual)
  - public support for high level production
  - compulsory Best Management Practices
  - Results
    - depopulation; increment in farm size; confined livestock

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Iowa case study: scenarios

- biodiversity scenario
  - public support to create bioreserves connected by corridors
  - enhanced BMP (perennial strip intercropping, agroforestry networks)
  - production focused on highly suitable soils
  - strong animal sewage treatments
  - public investment to support landscape enjoyment
  - Results
    - farm size increase, farm number decrease, but remained farmstead are used by non farmers

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Iowa case study: scenarios

- water scenario
  - public support to reduce soil erosion and fertiliser outputs (riparian stream and buffer systems, woodlots retained)
  - higher standards for surface and groundwater quality
  - rotation grazing and standard BMP (rotation, minimum tillage, strip cropping, continuous cover)
  - Results
    - stop depopulation and farm vacation use (multi functionality increased)

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Iowa case study: evaluation tools

- water quality (discharge, TSS export, Nox)
  - Soil & Water Assessment Tool
- estimated economic return
  - Erosion Productive Index Calculator for crop yelds
  - official estimates of production costs
  - official estimates for average prices
  - combined estimates for revenues, that estimates farmer profit if subtracted of cost

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Iowa case study: evaluation tools

- farmers preference
  - by means of a contingent valuation stratified by geographic and farm type criteria
- impacts on native plants, butterfly and vertebrate
  - statistical models of habitat quality
  - spatially explicit population model (SEPM) for mammals

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Iowa case study: final results

- general agreement for a landscape degradation under business as usual
- general agreement for a landscape quality improvements by means of landscape management changes if policy priorities shift to water and biodiversity concern (community support from focus groups)
- profitably has to be designed comparable
- these change are culturally acceptable by farmers and preferred to current trends
- biodiversity scenario gave the higher agreed score

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Conclusions

- *Policies have to be coupled with landscape spatial planning to account for spatial dimension, that is needed to pursue the sustainable development goals defined by the shared strategies*

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cross compliance

- The attachment of specific environmental conditions to the granting of direct payments
- The application of sanctions which consist of the reduction (withdrawal) of direct payments in case of non-respect
- A (quasi) market-based instrument, different from the usual regulatory instruments
- Its objective is to improve the respect of legal standards
- One essential element in the strategy of environmental integration in the CAP