



The Concept of Public Goods Provided Through Agriculture in the EU

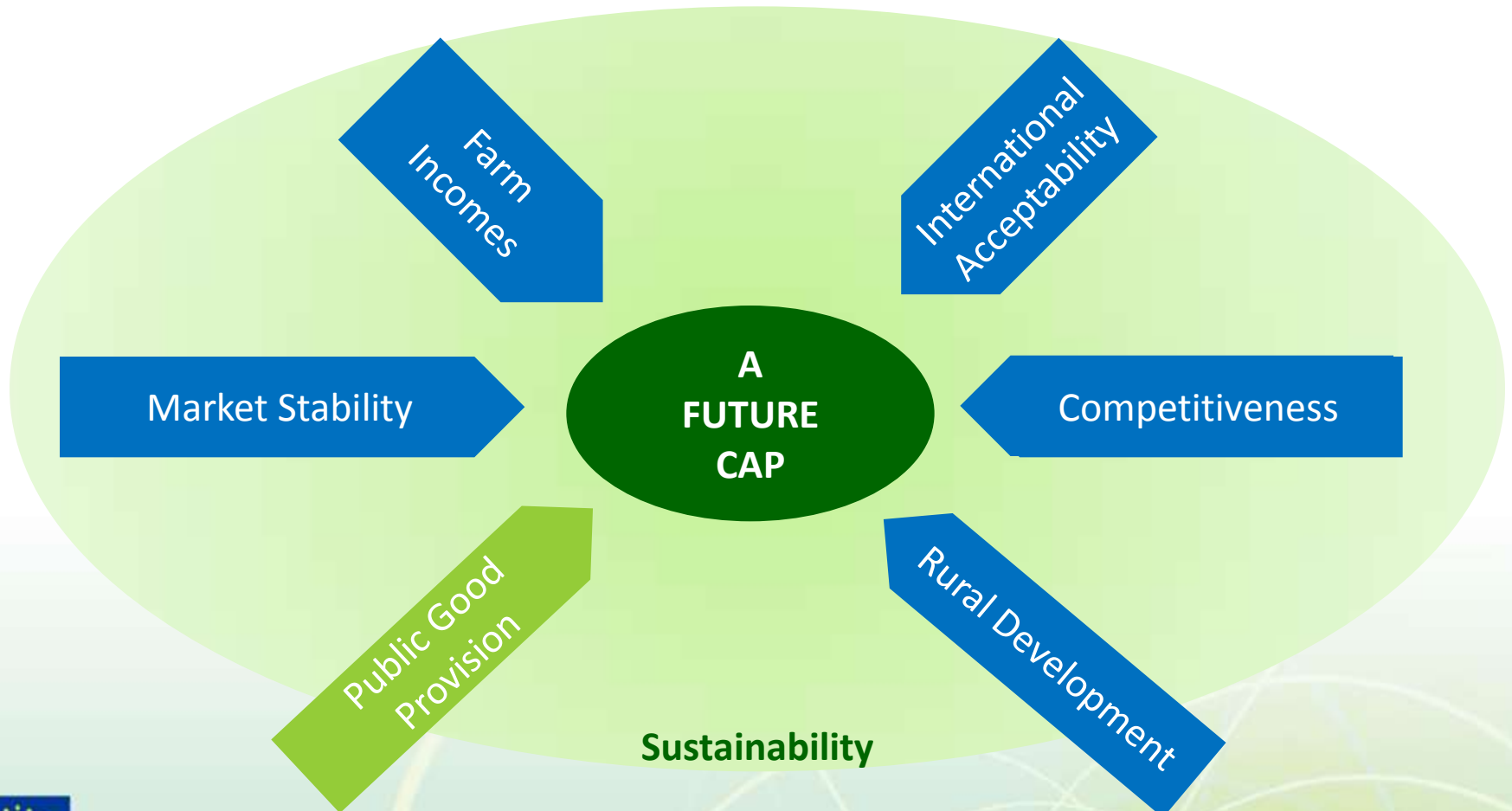
“Public Goods and Public Intervention in Agriculture”
10 December 2010, Brussels

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What do we want from an agricultural policy?





Key Questions: Agriculture and the supply of Public Goods

- How do we define Public Goods in this context?
- How is supply and demand to be coordinated?
- What is the rationale for public intervention?
- How are public goods provided through agriculture in Europe?
- How do we apply the approach to agricultural policy?



Defining Public Goods (1 of 2)

Pure public goods display the following characteristics:

- **Non-excludable** – if the good is provided to one person, others cannot be excluded from the benefits that it confers.
- **Non-rival** – if the good is consumed by one person, it does not prevent it from being consumed by others, nor reduce the amount available to others.

Defining Public Goods (2 of 2)

- In practice, pure public goods are extremely rare.
- For any given good, the characteristics of non-rivalry and non-excludability are not either 'present' or 'not present'.
- They may be present to almost any degree which means that goods can be placed along a "**spectrum of public-ness**".



A Private Good





A Public Good



Coordinating Supply and Demand - Markets

- The 'degree of publicness' of a good determines the most appropriate allocation mechanism to coordinate supply and demand.
- Private goods are secured through the market, with supply and demand coordinated via pricing mechanisms.
- The efficient functioning of this mechanism is based on the ability of consumers to articulate demand, and for farmers to organise their factors of production in a way which allows them to respond.



Market mechanisms do not function for the provision of pure public goods

- A market cannot function as an allocation mechanism where:
 - consumers cannot be easily identified; and
 - consumers cannot be excluded from consuming the good, irrespective of whether they have articulated a preference for it or paid to ensure its supply.
- This leads to free-rider behaviour.
- On the supply side, farmers have little incentive to provide public goods because they are not being paid to do so.

The Role of Public Intervention

- For public goods characterised by a high degree of public-ness, the level of demand for these goods can only be defined through a process of negotiation between the interested parties to achieve a joint articulation of demand.
- This is then translated into a request to economic actors to ensure their supply:
 - This occurs through the political process between the State – acting on behalf of society – and potentially numerous land owners and managers.
 - Following a political decision about the desirable quantity of a public good (set through political targets), the mechanisms stimulating supply can be modelled after market mechanisms (e.g. procurement procedures, auctions etc).

Identifying the Rationale for Public Intervention

- The universe of public benefits provided through agriculture in Europe is large – they are the by-products of different types of agricultural production.
- These benefits may be physical **entities** – e.g. habitats - or **services** – e.g. water regulation.
- Some of these are produced incidentally or ‘for free’.
- Changes in frame conditions, for example as a result of policy changes or changes in commodity prices, can lead to an increase in the opportunity costs of providing these benefits, which in turn lead to a contraction in supply and the potential for increased scarcity in the future

When is Public Intervention Needed?

- In the context of limited public finances, it is not necessary to intervene to secure the provision of public benefits that are provided incidentally.
- Intervention is needed where public demand is greater than the current or prospective level of provision, where it is in decline/scarce, or required in a particular place, quantity or condition.
- The attributes of 'public-ness' and undersupply trigger the need for action to ensure the supply of **public goods**.
- This underlines the need for an allocation mechanism that allows an economic transaction to ensure their supply, and which typically involves an economic incentive to farmers.

Environmental Public Goods from Agriculture



- Farmland biodiversity
- Agricultural landscapes
- High quality water, air and soils
- Climate stability – carbon sequestration and greenhouse gas emissions
- Resilience to fire and flooding

Other Public Goods Associated with Agriculture



- Rural vitality
 - Viability of rural populations and communities
- Farm animal welfare
- Food security
 - Retaining the capacity of the land, other resources and skills to produce food into the future.

Scale of the Environmental Challenge

- Pan-EU indicators and state of the environment assessments measure the quality of environmental media and agriculture's impact.
- Widespread evidence of deterioration in environmental state over time, although some improvements in air quality, regional improvements in soil quality and reductions in GHG emissions.
- The scale of this challenge is likely to be exacerbated by climate change.
- The losses to global welfare from the loss of biodiversity from terrestrial ecosystems are estimated to be:
 - Approximately €50 billion per year - just under 1% of global GDP

Drivers of Undersupply

Changes in agricultural land use and management alter the pattern of public good provision.

For example:

- **Intensification** – driven by market forces and commodity prices, new technologies etc.
- **Larger scale** – larger fields, heavier machinery, concentrated buildings.
- **Land use conversions** (biomass)
- **Marginalisation / Abandonment**
 - Economic viability of extensive systems and those in naturally disadvantaged areas is in decline.
 - Support for these systems will be a critical part of the new policy setting.



Agriculture has a central role to play in responding to the environmental challenge...

- The degree and range of environmental public goods provided varies according to farming systems and practices, and is influenced by locational factors, farm structures etc.
- The most beneficial farming systems for environmental public goods are:
 - Extensive livestock and mixed systems
 - More traditional permanent crops
 - Organic systems
- Potential for highly productive farming systems to adopt environmentally beneficial production methods / practices driven in part by new technologies.



... which in turn contributes to rural vitality

- Increased opportunities for **tourism** to the local area/region
- Changes in **employment** opportunities both on and off the farm
- Opportunities for **adding value to food/other products**
- The maintenance of traditional agricultural skills or the development of new **skills**
- **Investment** being attracted to the local area, providing increased employment opportunities for local people;
- **Impacts on population levels** in rural areas - slowing down outmigration
- Benefits for **cultural heritage**



Extensive Livestock – Moieciu de Sus, Romania

Clean, Sustainable Water Supply

- No use of irrigation
- No pesticides or herbicides used
- Manure dressing on meadows and pastures is light.

Flood Control, Erosion Control

- Permanent pasture on slopes – soil not exposed to erosion agents
- Livestock housed in winter avoiding danger of poaching.

Cultural Landscape

- Walls, hedges, farm buildings
- Historic field patterns, over 450 fields in one valley.



Biodiversity

- Vegetation mostly permanent grassland managed as meadows and pastures, including 3 habitats of Community Interest and supporting at least 46 species of butterfly, 3 on the Romanian Red List and a further 5 on the European Red List
- No herbicides used.

GHG Emissions

- Dung applied mostly by hand as farmyard manure; de-nitrification unlikely to be an issue
- Very efficient in terms of energy use – little or no use of fuel, nitrates or concentrates.

Extensive Unirrigated Olives – Sierra de Gata, Spain

Fire Control

- Provide low fuels element in landscape which can act as fire break.

Clean, Sustainable Water Supply

- No use of irrigation
- No fertilisers applied
- No pesticides or herbicides used.

Cultural Landscape

- Walls and terraces
- Historic land use mosaic.



Biodiversity

- Small patches with long ecotones with surrounding SNV
- Semi-natural ground layer; no herbicides
- Terraces provide habitat for invertebrates and reptiles
- Old trees themselves an important habitat
- No pesticides or herbicides used.

Erosion Control

- No interference with natural watercourses
- Ground layer and terraces minimise slope erosion
- Ground layer prevents wind erosion.

Intensive Arable – Kraichgau, Baden-Württemberg, Germany

Biodiversity

Hedgerows and lines of trees provide habitats for:

- Birds [Lanius collurio – Red-backed shrike], [Emberiza citrinella - Yellowhammer] ,
- Insects,
- Mammals (hedgehogs),
- Toads

Water Quality

-Improvements in groundwater quality can be achieved through lower inputs

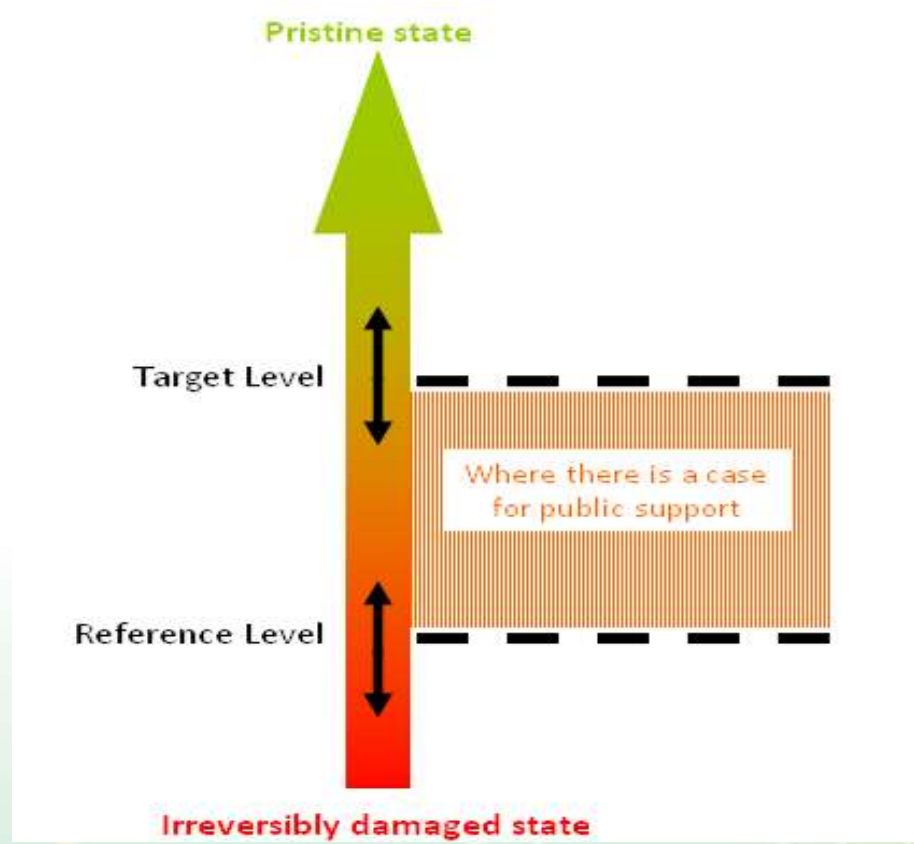
Cultural Landscape

- Open Structure
- Hedgerows
- Single trees





The Case for Public Support



Measures pursuing the provision of Public Goods through agriculture in Europe

- Direct payments in combination with cross-compliance contribute to the provision of basic public goods
- Targeted rural development measures incentivise farmers to provide specific public goods
- Investments (mainly non-remunerative) are often needed to underpin the provision of specific public goods
- Training, knowledge transfer, and capacity building represent the very basis for rural viability.

Six Challenges for a Future CAP

- Consistent policy framework - integration of environmental objectives at heart of future policy.
- Establishing SMART targets.
- Enhancing the effectiveness and efficiency of measures.
- Improving implementation.
- Effective monitoring and evaluation.
- Securing sufficient budgetary resources.





Thank you for your attention

