

MODULE 1  
SUSTAINABLE AGRO-LIVESTOCK FARM AND ANIMAL WELFARE:  
METHOD, TECHNIQUE, AND EXPERIENCES

UNIT 1  
Agricultural multifunctionality and sustainable farm

# MULTIFUNCTIONALITY

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## Introduction

Although agriculture remains today for many rural areas an important economic activity and essential factor for creating wealth and employment (both directly and indirectly), its dominant role in the rural economy is declining. At the same time, however, there are signs that society formulates some new expectations on agriculture. Besides an economic contribution from food production, society increasingly expects agriculture to contribute to environmental and landscape services, water management and flood control, social care and cohesion, and so on. The reason is, on the one hand, that agriculture continues to be the far largest user of land (more than 50% of total EU area) and that rural areas are increasingly shifting from a productive area to what can be called a consumptive area that needs to deliver social, recreational or maintenance functions.

Multifunctionality is therefore argued to be the new unifying paradigm to bring post-modern agriculture in accordance with the new societal demands. It emphasizes that in addition to producing food and fiber, agriculture also produces a wide range of non-commodity goods and services, shapes the environment, affects social and cultural systems, and contributes to economic growth.

Agriculture has three functions: the economic function, the social function, and the environmental function.

*The economic function:* agriculture remains a principal force in sustaining the operation and growth of the whole economy, even in highly industrialized countries. Valuation of the various economic functions requires assessing short, medium, and long-term benefits. Important determinants of the economic function include the complexity and maturity of market development and the level of institutional development.

*The social function:* the maintenance and dynamism of rural communities are essential to sustaining agro-ecology and improving the quality of life (and assuring the very survival) of rural residents, particularly of the young. On another level, the capitalization of local knowledge and the forging of relationships between local and external sources of expertise, information, and advice are fundamental to the future of existing rural communities. Social viability includes the maintenance of the cultural heritage. Societies still identify intensely with their historical origins in agricultural communities and rural lifestyles.

*The environmental function:* agriculture and related land use can have beneficial or harmful effects on the environment. The multifunctional approach can help identify opportunities to optimize the linkages between agriculture and the biological and physical properties of the natural environment. It is relevant to several critical global environmental problems, including biodiversity, climate change, desertification, water quality and availability, and pollution.

## Slide 2

### Concepts of Multifunctionality

Multifunctionality refers to the fact that an economic activity may have multiple outputs and, by this, may contribute to several societal objectives at once. Multifunctionality is thus an activity-oriented concept that refers to specific properties of the production process and its multiple outputs (this view can be termed the “positive” concept of multifunctionality).

The concept of multifunctional agriculture emphasizes that in addition to producing commodity output (e.g., food and fiber), agriculture also produces a wide range of non-commodity goods and services, shapes the environment, affects social and cultural systems, and contributes to economic growth. In this case, the multifunctionality is interpreted as multiple roles assigned to agriculture. Consequently, multifunctionality is not a merely a characteristic of the production process; it takes on a value in itself. Maintaining a multifunctional activity or making an activity “more” multifunctional can become a policy objective (this view can be termed the “normative” concept of multifunctionality)



#### Concepts of Multifunctionality



##### “Positive” concept of multifunctionality

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##### “Normative” concept of multifunctionality

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### Multifunctionality and Sustainability

Sustainability refers to the use of the resources, human, natural, and man-made, in ways that allow current generations to satisfy their needs without jeopardizing the capacity of future generations to meet theirs. As such, sustainability is a resource-oriented, long-term and global concept. The sustainability work examines why some current agriculture practices are not sustainable and explores the possibilities for corrective action.

Multifunctionality is a characteristic of the production process that can achieve multiple societal goals. The work on multifunctionality emphasizes the joint production and (both positive and negative) externality and public good aspects of the various outputs of agriculture and their implications for policy formation.



#### Multifunctionality and Sustainability



- **Sustainability** refers to the use of the resources, human, natural, and man-made, in ways that allow current generations to satisfy their needs without jeopardizing the capacity of future generations to meet theirs.

- ❖ resource-oriented,
- ❖ long-term concept
- ❖ global concept.

- **Multifunctionality** is a characteristic of the production process that can affect achieving multiple societal goals.

- ❖ joint production
- ❖ externality (both positive and negative)
- ❖ public good

## Slide 4

### How is the term multifunctionality born?

Multifunctionality was first recognized at the international level in the Rio Declaration on sustainable development in 1992 and later by the FAO at its world Summit in 1996. Born as a political concept, it has been a much debated and researched topic since then. Defining multifunctionality in scientific terms is a challenging task, however. Literature is dispersed, and an influential international organization (OECD) influenced the discussion by giving its own understanding.



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### The working definition of Multifunctionality (OECD)

The Organisation for Economic Co-operation and Development (OECD) has provided a working definition of multifunctionality (OECD 2001).

“Beyond its primary function of producing food and fiber, agricultural activity can also shape the landscape, provide environmental benefits such as land conservation, the sustainable management of renewable natural resources, and the preservation of biodiversity, and contribute to the socio-economic viability of many rural areas. Agriculture is multifunctional when it has one or several functions in addition to its primary role of producing food and fiber.” (Organization for Economic Co-operation and Development OECD, 2001)



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OECD (2001), “*Multifunctionality: Towards an analytical framework*”, Paris.

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### Key elements of Multifunctionality (1)

The key elements of multifunctionality are:

- a) the existence of multiple commodity outputs (CO) (e.g., food and fiber) and non-commodity outputs (NCO) (e.g., environmental and social products and services) that are jointly produced by agriculture ('Jointness' of production means that the production of one good or service is interrelated with another), and
- b) the fact that some non-commodity outputs (NCO) exhibit the characteristics of positive externalities or public goods, with the result that markets do not exist or function poorly for these goods.



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b) the fact that some non-commodity outputs (NCO) exhibit the characteristics of positive externalities or public goods, with the result that markets do not exist or function poorly for these goods.

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### Key elements of Multifunctionality (2)

Externalities, market failure, public goods, private goods, free-rider problem

**Externalities'** means that the one who produces the outputs is not remunerated for it (in case of positive externalities) or does not pay for it (in case of negative externalities). The concept of externality refers to **market failure**.

The indivisible goods, whose benefits cannot be priced, therefore, the principle of exclusion does not apply, are called **public goods**. One individual's use of such goods does not reduce their availability to other individuals (e.g., rural landscape).

'Public goods' refers to the fact that there is no or low excludability (meaning that the property holder (if any) can not exclude other people from the benefits) and no or insufficient rivalry (meaning that the good is not destroyed when others use it and is thus available for more than one beneficiary).

**Private goods** refer to all those goods and services purchased and consumed by private individuals to satisfy their wants (e.g., food, clothing)

**Free-rider problem:** people can enjoy the benefits of public goods whether they pay for them or not; they are usually unwilling to pay for public goods. This act is the so-called free-rider problem.



### Key elements of Multifunctionality (2)

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- **Private goods** refer to all those goods and services purchased and consumed by private individuals to satisfy their wants (e.g., food, clothing)
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## Slide 8

### Key elements of Multifunctionality (3)

#### Features of Private goods

**Excludable:** the supplies of private goods can very well exclude those who are unwilling to pay

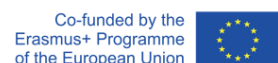
**Rival in consumption:** one person's consumption reduces the amount available to others. That is, the amount consumed by one person is unavailable for others to consume.

For private goods, the consumers reveal their preferences (revealed preferences) through effective demand and market price. These revealed preferences are the signals for the producers to produce the goods the individuals want.

#### Features of Public goods

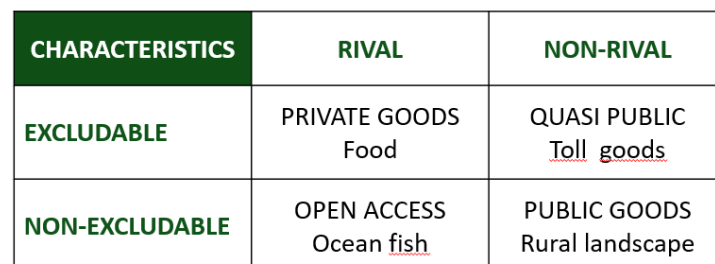
**Non-excludable:** once a public good is produced, the suppliers cannot easily deny it to those who fail to pay. That is, those who cannot (or do not agree to) pay its market price are not debarred or excluded from its use.

**Non-rival in consumption:** one person's consumption does not diminish the amount available to others. One produces, public goods are available to all in equal amount. The marginal cost of providing the public goods to additional consumers is zero.



### Key elements of Multifunctionality (3)

Features of public and private goods

A 2x2 matrix with a dark green header row and a white body. The header row has 'CHARACTERISTICS' in the first column, 'RIVAL' in the second, and 'NON-RIVAL' in the third. The first row has 'EXCLUDABLE' in the first column, 'PRIVATE GOODS Food' in the second, and 'QUASI PUBLIC Toll goods' in the third. The second row has 'NON-EXCLUDABLE' in the first column, 'OPEN ACCESS Ocean fish' in the second, and 'PUBLIC GOODS Rural landscape' in the third. A horizontal arrow points from the right towards the left above the matrix. A vertical arrow points from the bottom towards the top to the left of the matrix.

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### Multifunctionality as a process of agricultural policy reform

Multifunctionality policies have to correct for missing markets and stimulate rural entrepreneur companies either individually or in groups (territories) to find unique selling and delivery positions and income combinations. Where necessary, multifunctionality policies should organize public markets for non-tradable goods and facilitate new rural coalitions or networks based on new arrangements between the private and public sectors. In such a way, multifunctionality policies stimulate the most efficient providers and not only provide income support systems to non-efficient farms. A multifunctionality policy is, in other words, not equivalent to an income support policy to less competitive farms that otherwise can not survive but stimulates efficient provision of local public goods.


Multifunctionality became a policy issue because it is clear that agriculture deserves support mainly when NCOs are public goods, and hence externalities are not internalized through individual or collective action (e.g., premium price for environmental food quality).

Multifunctionality is not a European invention, but the European Union has essentially promoted the idea in the context of trade negotiations. It has then been considered as a device, a smokescreen, manipulated in the service of continuing to subsidize agriculture and protect it from international competition.

The debate on multifunctionality as a process of agricultural policy reform started in the mid-1980s when Multifunctionality was considered the new unifying paradigm to bring post-modern agriculture following the new societal demands.

The concept of multifunctionality has been affirmed in Europe since the **Mcsharry reform** of 1992 and **Agenda 2000** reform of the Common Agricultural Policy (CAP) focused on enhancing the multifunctional role of a sustainable and competitive EU agriculture.


**Agenda 2000** reform of the Common Agricultural Policy (CAP) focused on enhancing the multifunctional role of a sustainable and competitive EU agriculture (in particular, the environmental and rural function of agriculture) by shifting away (though only gradually) from generic market support (first pillar) to more targeted agri-environmental and rural development measures (second pillar).



Multifunctionality became a **policy** issue because it is clear that agriculture deserves support mainly **when NCO are public goods**, and hence externalities are not internalized through individual or collective action (e.g., premium price for environmental food quality)

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### The European Model of Agriculture (EMA) (1)

The concept of multifunctionality has been affirmed in Europe since the Mcsharry reform of 1992, in which the European Commission acknowledges that: “Sufficient numbers of farmers must be kept on the land. There is no other way to preserve the natural environment, traditional landscape, and the model of agriculture based on the family farm as favored by society generally. (...) It implies a recognition that the farmer fulfills, or at least could and should fulfill, two functions, namely those of producing and of protecting the environment in the context of rural development (...) Concern for the environment means that we should support the farmer also an environmental manager through the use of less intensive techniques and the implementation of environmentally friendly measures”. (European Commission 1991)



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### The European Model of Agriculture (EMA) (2)

From a political point of view, multifunctionality has been recognized by **Agenda 2000**, when the heads of state and government confirmed that multifunctionality together with sustainability was the objective of the reforms:

“The fundamental difference between the European model and that of our main competitors lies in the multifunctional nature of agriculture in Europe and in the role it plays in the economy and the environment, in society, and in the conservation of the countryside; hence the need for maintaining agriculture all over Europe and protecting farmers’ income.” (Agenda 2000, 1998)

“The content of reform of the Common Agricultural Policy (Agenda 2000) will ensure that agriculture is multifunctional, sustainable, competitive and spread throughout Europe, including regions with specific problems, that it is capable of maintaining the countryside, conserving nature and making a key contribution to the vitality of rural life, and that it responds to consumer concerns and demands as regards food quality and safety, environmental protection and the safeguarding of animal welfare” (Europe Council 1999)



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From a political point of view, multifunctionality has been recognized by **Agenda 2000**, when the heads of state and government confirmed that multifunctionality together with sustainability was the objective of the reforms, to achieve the following objectives :

- maintaining agriculture all over Europe
- protecting farmers’ income
  
- maintaining the countryside and the vitality of rural life
- ensuring the food quality and safety,
- ensuring environmental protection
- safeguarding of animal welfare

## Slide 12

### The European Model of Agriculture (EMA) (3)

The European Model of Agriculture (EMA) is inextricably related to the diversity of countrysides and rural life. It is an important asset, which was described by the European Commission (2003) as 1) a modern and competitive farming sector, capable of occupying a leading position on the world market while safeguarding domestic producers' living standards and income; 2) a sustainable, efficient farming sector that uses hygienic, environmentally friendly production methods and gives consumers the quality products they desire; 3) 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.



#### The European Model of Agriculture (EMA) (3)



The European Model of Agriculture (EMA) is inextricably related to the diversity of countryside and rural life. It is an important asset because:

- Is capable of occupying a leading position on the world market
- It uses hygienic, environmentally friendly production methods
- It serves rural communities, reflecting their rich tradition and diversity

## Slide 13

### Approaches to the study of Multifunctionality (from 1992)

The socio-economic literature on multifunctionality provides several definitions for this concept and uses different terms to describe the same phenomenon.

#### *Positive approach (supply vision)*

In the supply vision, multifunctionality is merely a characteristic of the agricultural production process rather than a societal objective. Multifunctionality is thus understood as the production of more than one output through the use of inputs.

#### *Normative approach (demand vision)*

Demand vision looks at the demand side concerning the multiple functions agriculture can provide and departures from the social expectations on agriculture. This vision is more territorially embedded and is linked to the concept of rural areas as consumptive space.

#### *Holist interpretation (supply and demand vision)*

Besides positive and normative approaches (analytical approaches), there is also a third more holistic interpretation of the concept of multifunctionality, rooted mainly in rural sociology and rural geography, referring to multifunctionality as a new kind of locally embedded model of agriculture. It describes a different farming system that is more territorially embedded, using local resources and building a new link between consumers and producers. Multifunctionality reflects a further transition after shifting from productivism to post-productivism in agriculture.



### Approaches to the study of Multifunctionality (from 1992)

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#### Normative approach (demand vision)

Demand vision looks at the demand side concerning the multiple functions agriculture can provide and departures from the social expectations on agriculture.

#### Holist interpretation (supply and demand vision)

Describe a different farming system that is more territorially embedded, making use of local resources and trying to build a new link between consumers and producers

## Slide 14

### Bibliography for further reading

OECD (2001). Multifunctionality. Towards an analytical framework. OECD Publications, Paris Cedex 16, France.

Knickel, K., Renting, H., & Van der Ploeg, J. D. (2004). Multifunctionality in European agriculture. *Sustaining agriculture and the rural economy: Governance, policy, and Multifunctionality*. Edward Elgar Publishing Inc, 81-103.



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