

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

UNIT 1  
Agricultural multifunctionality and sustainable farm

VALUE CHAINS

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## **Introduction**

The future CAP aims at strengthening farmers' position in value chains by improving cooperation among farmers, enhancing synergies within value chains, supporting the development of market-driven production models, fostering research and innovation, increasing market transparency, and ensuring effective mechanisms against Unfair Trading Practices (UTPs). All this is to rebalance the power of farmers within the agro-food value chains.

New innovative dynamics emerge in the supply chain. They concern both product and process and organizational innovation along the chain, triggered by new emerging technologies and evolving consumer demands.

It is, therefore, essential to know the issues related to value chains and competitive strategies related to them.

## Slide2

### What is the food system?

The food system is a set of activities involving production, processing, transport, and consumption. Issues concerning the food system include the governance and economics of food production, its sustainability, the degree to which we waste food, how food production affects the natural environment, and food's impact on individual and population health.

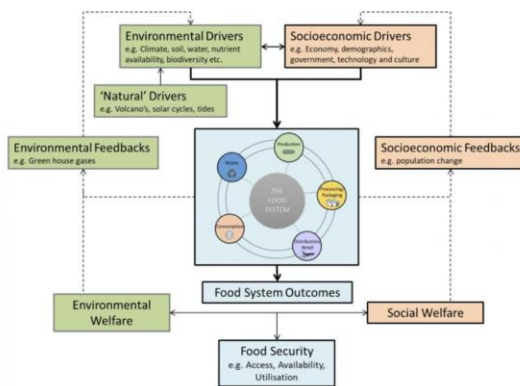
The food system includes the essential elements of getting our food from farm to fork and all the processes and infrastructure involved in feeding a population. Systems can also exist within systems, such as farming systems, agricultural ecosystems, economic systems, and social systems. Within those are further subsets of water systems, energy systems, financing systems, marketing systems, policy systems, culinary systems, etc.

Population health is also a key factor in addressing food systems challenges, especially nutrition-related chronic diseases such as obesity and diabetes.



### What is the food system?

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*The food system and its drivers. Adapted from Ericksen 2008*

<https://www.futureoffood.ox.ac.uk/what-food-system>



<https://www.discoverfoodsys.cornell.edu/>

### Slide3

#### What are the Value Chain (VC) and the Supply Chain (SC)?

Value chain and supply chain help provide quality products to the customer at a reasonable price. Most of the time supply chain is juxtaposed with the value chain.

In detail, the Value Chain (VC) is a set of activities that focuses on creating or adding value to the product. At the farm level, the value chain represents the internal activities that it engages in when transforming inputs into outputs.

The value chain concept has been used under many different approaches (input/output analysis, Agribusiness, Industrial organization, French “Filiere”, Porter’s value chain, Supply chain management, Agrifood chains, Global commodity chains, Transaction cost theory applied to vertical coordination analysis in agrifood systems, Policy Analysis matrix), has evolved through time across varied disciplinary backgrounds (Economics, Business Management, Engineering/Management Science & Operations Research), areas of application and levels of analytical aggregation (Macro, Meso, Micro). Despite the different notions associated with the concept, there is a clear unifying feature in the theory of value chain analysis: the systems approach.

The original introduction of the idea of a ‘value chain’, is attributed to Michael Porter. In the mid-1980s, this author published a book where he proposed the chain paradigm as a construct to relate the activities performed by one organization with its competitive position. Firms, according to Porter, can be organized into primary activities that include inbound and outbound logistics, operations, marketing and sales, and service. Firms also perform support activities, including procurement, technology development, human resource management, and infrastructure. The systematic arrangement of these activities creates value and influences the firm’s competitive position.

Porter’s ideas significantly impacted managers and other professionals interested in competitiveness. Since competitiveness is a key performance dimension for a firm and their aggregation into sectors, regions or entire economies, the value chain terminology was soon found in the area of sector-wide evaluations.

The Supply Chain (SC) interconnects all the functions that start from manufacturing raw material into the finished product and end when the product reaches the final customer.

The Supply Chain is based on the fundamental principles of systems science. The systems approach considers properties such as interdependence, propagation,

feedback, and synergy, which are particularly relevant for the analysis of agrifood chains.

Interdependence refers to the fact that the activities performed in a chain (production, processing, distribution, etc.) are related.

Propagation exists because there is interdependence among a chain's components. Any action causing an impact in a particular element in the chain will have effects that propagate backward and forwards.

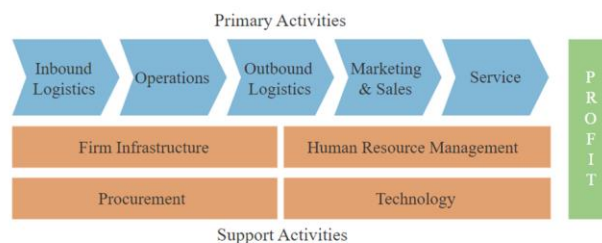
Feedback is a property associated with interdependency and propagation: the actions impacting a chain component will propagate throughout its links; chain actors adjust to these changes; the propagation principle causes a new round of adjustments, in a process that continuously occurs until some form of equilibrium is reached.

Synergy is a system characteristic that tells us that the whole is greater than the sum of the parts. In agrifood chains, there are frequently opportunities for gains that can not be realized unless all actors work together for mutual benefit (for example, the case of product traceability)



### What are the Value Chain (VC) and the Supply Chain (SC)?

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Porter's value chain model



Supply chain

- System approach:
- ✓ interdependency
  - ✓ propagation
  - ✓ feedback
  - ✓ synergy

## Slide 4

### What is the Food Value Chain (FVC)? (1)

The Food Value Chain (FVC) stretches from the producers of necessary inputs (e.g., seeds, fertilizers) to the consumers. It consists of all the stakeholders who participate in the joint production and value-adding activities needed to make food products.

To better understand, let's look at some data related to the actors of the FVC in the EU.

The number of actors in the food chain varies significantly at each level. In the EU, around 11 million farms produce agricultural products for processing by about 300,000 enterprises in the food and drink industry. The food processors sell their products through the 2.8 million enterprises within the food distribution and foodservice industry, which deliver food to the EU's 500 million consumers.

Primary agriculture still provides roughly 22 million people (both full-time and part-time) work. Furthermore, with food processing, food retail, and food services, agriculture offers nearly 44 million jobs in the EU.

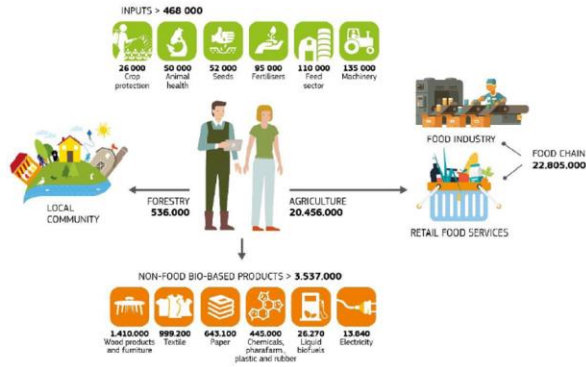
The majority of the over 15 million holdings/enterprises in the food chain are small or medium-sized. For agriculture, 70% of all farms in the EU-28 were smaller than 5 ha, and only 2.7% were over 100 ha in 2010.

But if small businesses or enterprises characterize all stages of the food chain, concentration in the food processing industry and retail sectors is much higher than in the agricultural sector. The market share of the top five firms in the EU food industry was at an average of 56% in 2012 in 14 of the EU's Member States. At the same time, in 13 Member States, the share of the top five retailers exceeded 60%.

As a land-based activity, agriculture faces physical, logistical, economic, and regulatory limits to concentration. At the EU level, the share of the top five firms in agriculture in 2010 accounted for 0.19%. This ratio ranged from 0.4% in Germany to around 9% in Estonia.

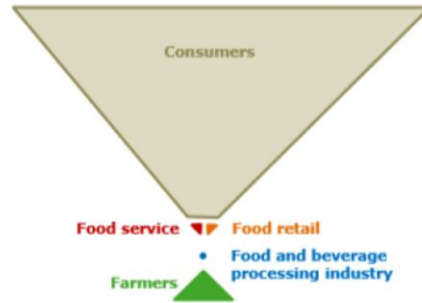
Concentration helps achieve economies of scale and reduces the number of players downstream in the food chain, endowing them with higher bargaining power when negotiating with their counterparts. Higher bargaining power is not problematic in itself, but its abuse is on the basis of unfair trading practices in the food chain.

Stakeholders involved in the food chain (43 million Jobs)



Figures provided indicate the number of jobs in the corresponding sector  
Source: DG AGRI calculation based on Eurostat data - Biorefinery, European Commission / AGRI Research Centre IPRA and meta studies

Synthetic and approximate representation of the food chain in the EU by actors involved



*Source: DG Agriculture and Rural development based on Eurostat; the number of holdings/enterprises per food chain stage and number of consumers are represented by the size of each shape.*

## Slide 5

### What is the Food Value Chain (FVC)? (2)

#### Distribution of Value Added

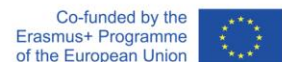
While the most significant number of businesses is involved in agriculture, the share of value-added belonging to agriculture in the whole food chain remains at about 25%, except the crisis year 2009.

Value added in agriculture has decreased from 2014 onwards (in 2016, 4% lower).

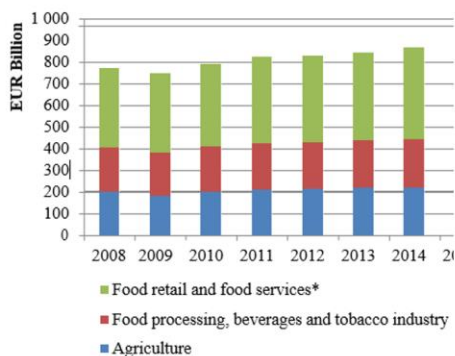
Following the increasing consumer demand for convenience products, the processing and the retail stages have added additional features and services to the basic agricultural product, thus expanding their total value added in the food chain. The value-added of agriculture has not increased to the same extent as other food chain actors, especially in the retail sector. Factors explaining this evolution are linked to rising input costs due to competition for scarce resources and the limited possibilities for farmers to add value to the basic product or get remunerated for it.



### What is the Food Value Chain (FVC)? (2) Distribution of value-added in the food chain in European Union



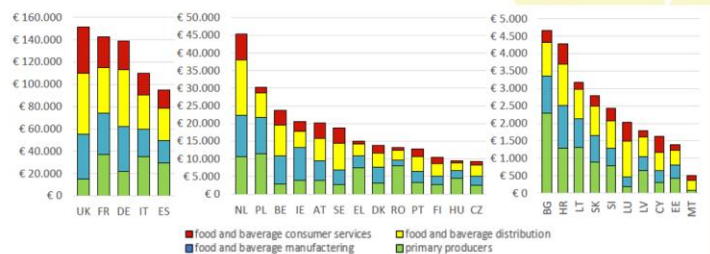
Distribution of gross value added per food supply stage in the EU



Source: Eurostat

Gross value added is the value generated by any unit engaged in the production of goods and services.

Value added in the food chain in million EUR – EU Member States



Source: DG Agri based on Eurostat

## Slide 6



## Value Chain Analysis (VCA)

Texts are taken from the site <https://strategicmanagementinsight.com/tools/value-chain-analysis/>.

Value chain analysis is a strategy tool used to analyze internal firm activities. Its goal is to recognize which activities are the most valuable (the source of cost or differentiation advantage) to the firm and which could be improved to provide a competitive advantage.

In other words, by looking into internal activities, the analysis reveals where a firm's competitive advantages or disadvantages are. A firm that competes through differentiation advantage will perform its activities better than competitors. If it competes through cost advantage, it will try to perform internal activities at lower costs than competitors.

Although primary activities directly add value to the production process, they are not necessarily more important than support activities. Nowadays, competitive advantage mainly derives from technological improvements, business models, or processes innovations. Therefore, such support activities as 'information systems', 'R&D' or 'general management' are usually the most important source of differentiation advantage. On the other hand, primary activities are usually the source of cost advantage, where costs can be easily identified for each activity and adequately managed.

There are two different approaches to performing the analysis, depending on what type of competitive advantage a company wants to create: cost or differentiation advantage.

To gain a cost advantage, a firm must go through 5 analysis steps.

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Step 1. Identify the firm's primary and support activities.

All the activities (from receiving and storing materials to marketing, selling, and after-sales support) undertaken to produce goods or services have to be identified and separated from each other. This requires adequate knowledge of the company's operations because value chain activities are not organized in the same way as the company itself. The managers who identify value chain activities have to look into how work is done to deliver customer value.

Step 2. Establish the relative importance of each activity in the total cost of the product.

The total costs of producing a product or service must be broken down and assigned to each activity. Activity-based costing is used to calculate costs for each process. Activities that are the primary cost sources or are done inefficiently (when benchmarked against competitors) must be addressed first.

Step 3. Identify cost drivers for each activity.

Only by understanding what factors drive the costs managers can focus on improving them. Costs for labor-intensive activities will be driven by work hours, work speed, wage rate, etc. Different activities will have different cost drivers.

Step 4. Identify links between activities.

Reducing costs in one activity may lead to further cost reductions in subsequent activities. For example, fewer components in the product design may lead to less faulty parts and lower service costs. Therefore identifying the links between activities will better understand how cost improvements would affect the whole value chain. Sometimes, cost reductions in one activity lead to higher costs for other activities.

Step 5. Identify opportunities for reducing costs.

When the company knows its inefficient activities and cost drivers, it can improve them. Too high wage rates can be dealt with by increasing production speed, outsourcing jobs to low-wage countries, or installing more automated processes.

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VCA is done differently when a firm competes on differentiation rather than costs. This is because the source of differentiation advantage comes from creating superior products, adding more features, and satisfying varying customer needs, which results in a higher cost structure.

To gain a differentiation advantage, a firm has to go through 3 analysis steps.

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Step 1. Identify the customers' value-creating activities.

After identifying all value chain activities, managers must focus on those activities that contribute the most to creating customer value.

Step 2. Evaluate the differentiation strategies for improving customer value.

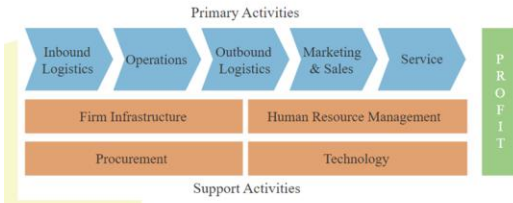
Managers can use the following strategies to increase product differentiation and customer value: a) Add more product features; b) Focus on customer service and responsiveness; c) Increase customization; d) Offer complementary products.

Step 3. Identify the best sustainable differentiation.

Usually, superior differentiation and customer value result from many interrelated activities and strategies.

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Porter's value chain model



Two different approaches for two types of competitive advantage

Cost advantage	Differentiation advantage
<p>This approach is used when organizations try to compete on costs and want to understand the sources of their cost advantage or disadvantage and what factors drive those costs. (good examples: Amazon.com, Wal-Mart, McDonald's, Ford, Toyota)</p>	<p>The firms that strive to create superior products or services use differentiation advantage approach. (good examples: Apple, Google, Samsung Electronics, Starbucks)</p>
<p><b>Step 1.</b> Identify the firm's primary and support activities.  <b>Step 2.</b> Establish the relative importance of each activity in the total cost of the product.  <b>Step 3.</b> Identify cost drivers for each activity.  <b>Step 4.</b> Identify links between activities.  <b>Step 5.</b> Identify opportunities for reducing costs.</p>	<p><b>Step 1.</b> Identify the customers' value-creating activities.  <b>Step 2.</b> Evaluate the differentiation strategies for improving customer value.  <b>Step 3.</b> Identify the best sustainable differentiation.</p>

<https://strategicmanagementinsight.com/tools/value-chain-analysis/>

## Slide 7

### Competitive strategy

The competitive strategy consists of the business approaches and initiatives undertaken by a company to attract customers and deliver superior value to them through fulfilling their expectations as well as strengthening its market position (Thompson and Strickland, 2003).

The objective of competitive strategy is to win the customers' hearts by satisfying their needs and finally attaining competitive advantage and out-compete the competitors.

Michael Porter has identified four types of competitive strategies that can be applied in any business organization irrespective of the size and nature of products. They are labeled as generic strategies because of their susceptibility to common use by all business enterprises. These are, in fact, basic types of competitive strategy.

In addition to these, there are also other strategies that a company can employ when deemed necessary, such as strategic alliance, collaborative partnerships, merger, acquisition, vertical integration, outsourcing strategies, etc.



### Competitive strategy

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Four Types of Competitive Strategy: Michael Porter's  
Four Generic Strategies

Specific Strategies



- Strategic alliance
- Collaborative partnerships
- Merger
- Acquisition
- Vertical integration
- Outsourcing strategies
- etc.

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## Slide 8

## Bibliography for further reading



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1. Da Silva, C. A., & de Souza Filho, H. M. (2007). *Guidelines for rapid appraisals of agrifood chain performance in developing countries*. Rome: Food and Agriculture Organization of the United Nations.
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