

INTERNATIONAL AGRIFOOD MARKETS AND POLICY

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Lesson 05.03.2018 - Prof. Marta Cosmina

Lesson 07.03.2018 – Prof. Gianluigi Gallenti

1. Agri-food markets

1.1 Demand and supply of agri-food products

1.2 Market models in agri-food sectors

1.3 Instability and uncertainty in agriculture

1.4 Agricultural sector in the developed and in developing countries

1.1 - Demand and supply of agri-food products

1.2 - Market models in agri-food sectors

The main question is:

- How does the supply of food become available to those who demand it? (Coordination and process of exchange)

Both suppliers and consumers are part of markets, so it is necessary to study demand and supply and their relationship in the markets (Understanding market models)

Three aspects of market transactions:

- Spatial: transactions occur across space
- Temporal: transactions occur across time
- Form: transactions occur in a certain form

1.1 - Demand and supply of agri-food products

1.2 - Market models in agri-food sectors

Specific discussion Topics are:

- ✓ The role of agriculture in modern societies
- ✓ The relationship between agriculture and other economic sectors
- ✓ Link between agricultural production and food consumption.
- ✓ Characteristics of agri-food demand
- ✓ Characteristics of agri-food supply
- ✓ The theoretical market models in agri-food sectors

Agri-food sector in modern societies

The role of agriculture and agri-food sector change with:

- Industrialization, post-industrialization
- Economic growth
- Technological progress and innovation
- Society modernization/transformation
- other socio-economic, technological and cultural transformation process

Agri-food sector in modern societies

In this way change the characteristics of demand and supply of agri-food products and the characteristics of agri-food products themselves.

Many drivers and governors influence, over time, the changes of demand and supply characteristics.

Agri-food sector in modern societies

Main drivers and governors of change on the **demand** side...

Demographics: growth rate; age distribution; ethnicity; race; geographic distribution; extent of travel; exposure to food-related information and retailer promotion

Consumer preferences: price vs. quality/condition; convenience; year-round availability; variety; nutritional content; safety; greenness; fair trade; luxury goods

Buyer specifications: volumes; presentation; labeling; private standards; certification; price point; service

Agri-food sector in modern societies

Main drivers and governors of change on the **demand** side...

Technology: marketing information systems; category management methods; progress in supply chain management; transport and handling advances

Regulatory change: official standards and associated certification; labeling (nutrition, COOL, allergens); market access; environmental protection; OSHA; labor rights; animal rights

Market access: tariffs; quarantine restrictions; other non-tariff trade barriers (NTBs)

Agri-food sector in modern societies

Main drivers and governors of change on the **demand** side...

Factor costs in distribution and retailing: energy; transport; labor

Economic growth trends: GDP; disposable income; levels and use of consumer credit; inequality of wealth

Agri-food sector in modern societies

Main drivers and governors of change on the **supply** side...

Product/market conditions: effective demand; prices; competition

Procurement practices: value chain integration; compliance with private standards; preferred supplier arrangements; new terms of sale

Factor prices and availability for production and shipping: land; capital; labor; energy; transport

Producer preferences: overall investment per crop area; price levels and their variability; production risk

Agri-food sector in modern societies

Main drivers and governors of change on the **supply** side...

Technology: marketing information systems; supply chain management; quality assurance regimes; transport and handling technologies; post-harvest and production technologies

Regulatory change: capacity to deal with market access requirements and standards; dealing with local and national restrictions on land use, inputs, labor contracting and treatment

Agri-food sector in modern societies

Main drivers and governors of change on the **supply** side...

Demographics: availability of seasonal labor; existence of a local market for seconds and an urban market for export-quality product

Agri-food sector in modern societies

Nowadays, agri-food sector, in EU and Italy, shows the following trends:

Decline of the economic role of agriculture in terms of contribution to GNP and employment ratio

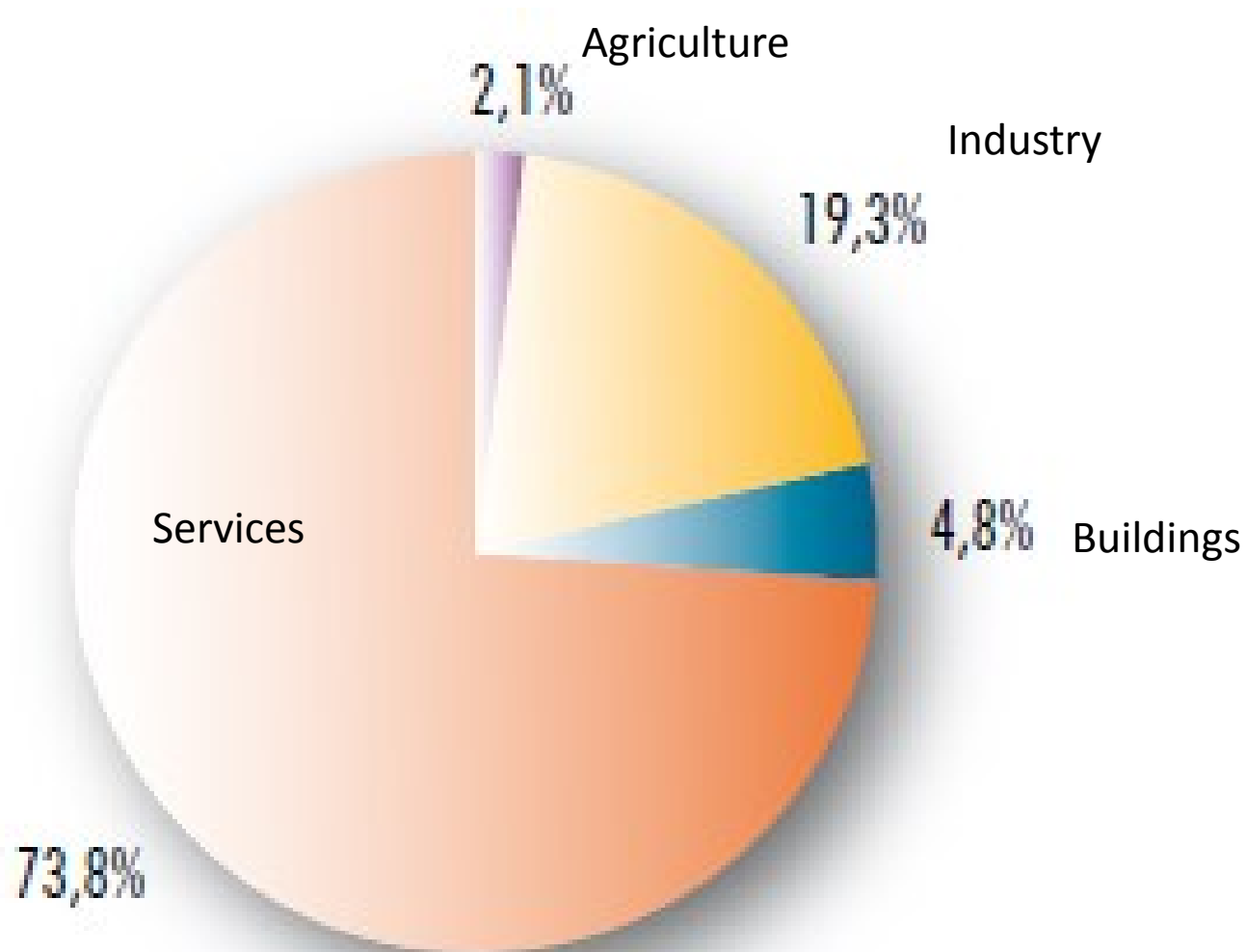
The economic growth is driven by industrial sectors and by services sectors, that mainly produce the GNP

Industrial sectors and by services sectors have the main number of employees

Agriculture provide labor force to other sectors

Agri-food sector in modern societies

GNP in Italy, 2016



Agri-food sector in modern societies

% of agricultural value on the total GNP in EU countries, 2016

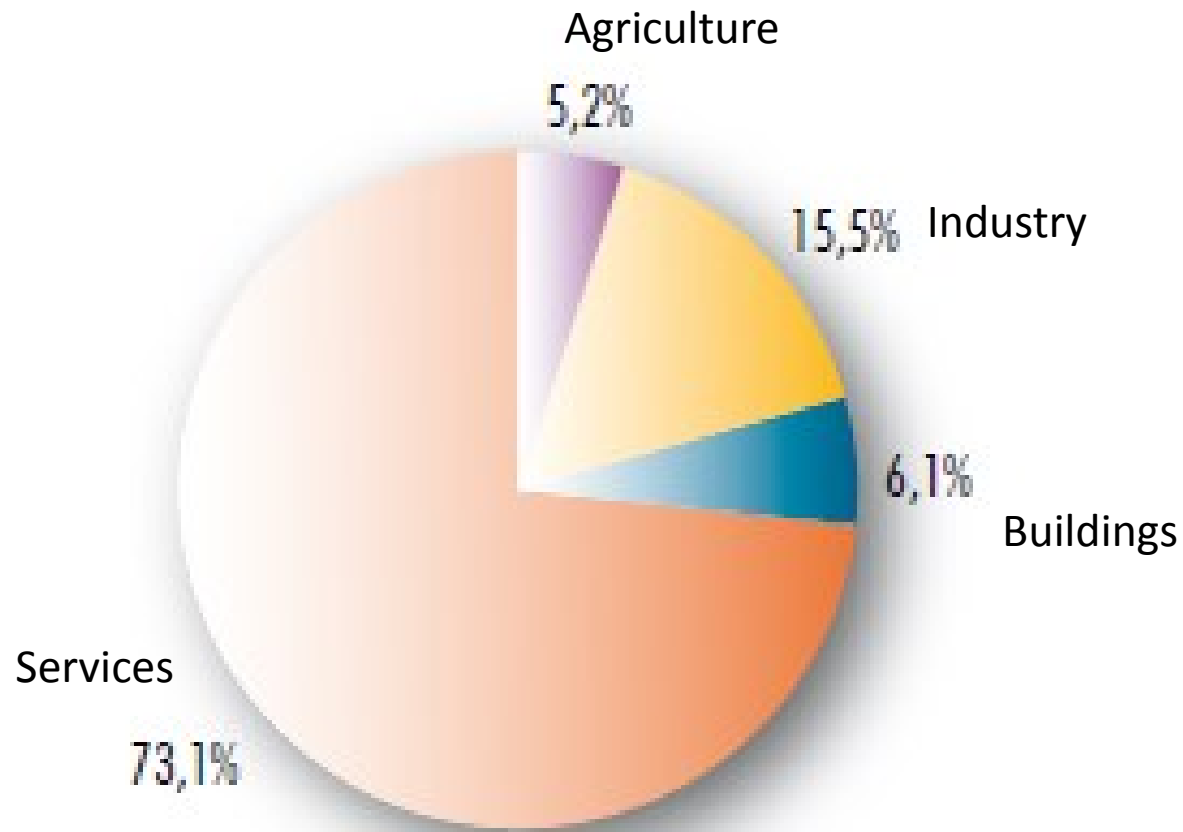
| Paesi | % | Paesi | % |
|-------------|-----|---------------------|------------|
| Lussemburgo | 0,2 | Polonia | 2,4 |
| Germania | 0,6 | Repubblica Ceca | 2,5 |
| Regno Unito | 0,6 | Estonia | 2,6 |
| Belgio | 0,7 | Finlandia | 2,7 |
| Irlanda | 1,0 | Spagna | 2,8 |
| Danimarca | 1,1 | Lettonia | 3,2 |
| Austria | 1,3 | Lituania | 3,3 |
| Svezia | 1,3 | Slovacchia | 3,8 |
| Malta | 1,4 | Grecia | 4,0 |
| Francia | 1,6 | Croazia | 4,1 |
| Paesi bassi | 1,8 | Romania | 4,3 |
| Italia | 2,1 | Bulgaria | 4,4 |
| Portogallo | 2,2 | Ungheria | 4,5 |
| Slovenia | 2,2 | Euro zona 19 | 1,5 |
| Cipro | 2,3 | UE-28 | 1,5 |

*Valore aggiunto ai prezzi di base - valori correnti in milioni di euro

Fonte: Eurostat.

Agri-food sector in modern societies

Employment in Italy, 2016



Agri-food sector in modern societies

% of agricultural employees on the total in EU countries, 2016

| | Occupati in agric. / occ. totali | Incidenza donne ¹ |
|-----------|-------------------------------------|---------------------------------|
| Austria | 4,3 | 42,5 |
| Belgio | 1,3 | 27,9 |
| Bulgaria | 6,8 | 29,4 |
| Cipro | 3,6 | 22,0 |
| Croazia | 7,6 | 33,5 |
| Danimarca | 2,5 | 19,2 |
| Estonia | 3,9 | 25,2 |
| Finlandia | 3,9 | 26,1 |
| Francia | 2,8 | 27,7 |
| Germania | 1,3 | 31,7 |
| Grecia | 12,4 | 40,0 |
| Irlanda | 5,6 | 11,3 |
| Italia | 3,9 | 27,2 |
| Lettonia | 7,7 | 33,5 |
| Lituania | 8,0 | 35,6 |

| | Occupati in agric. / occ. totali | Incidenza donne ¹ |
|------------------|-------------------------------------|---------------------------------|
| Lussemburgo | 0,9 | 25,0 |
| Malta | 1,4 | - |
| Paesi Bassi | 2,1 | 28,1 |
| Polonia | 10,5 | 39,8 |
| Portogallo | 6,9 | 33,7 |
| Regno Unito | 1,1 | 26,1 |
| Rep. Ceca | 2,9 | 26,1 |
| Romania | 23,1 | 42,2 |
| Slovacchia | 2,9 | 21,8 |
| Slovenia | 5,0 | 38,6 |
| Spagna | 4,2 | 23,1 |
| Svezia | 1,9 | 25,4 |
| Ungheria | 5,0 | 25,8 |
| UE-28 | 4,3 | 33,5 |
| Euro zona | 3,2 | 29,3 |

Agri-food sector in modern societies

Increase of agricultural productivity

In the industrialization and post-industrialization process there is:

- a labor force exodus from agriculture and rural areas
- an increase in income, in particular in no-agricultural income (industrial income and services income)
- a demographic growth
- an increase in agri-food demand

Agricultural sector, with less labor force, can provide more food to satisfy a increasing demand only with a increase of productivity

Agri-food sector in modern societies

More complex relationship of agriculture with other economic sectors/activities (industry, logistic, retail,...):
filierre / supply chain of agri-food

Farms increase the purchase of input and the sell of output

Change the relationship of agriculture with input industry and with food transformation industry

Technological progress and innovations change the characteristics of agri-food products

The links of agriculture with other sectors become more and more important

Agri-food sector in modern societies

Increase of (geographical) distance between producers and consumers

Several factors influence this trend:

Reduction of transportation costs

Innovation in storage and conservation food techniques

Increase in domestic and international trade

Globalization of consumption behavior

Agri-food sector in modern societies

Increase of (geographical) distance between producers and consumers

Consequences:

No direct relationship between consumers and producers

The links of agriculture with other sectors become more and more important

Asymmetric information – risk of market failure

New markets for firms and increasing differentiation process

Agri-food sector in modern societies

Importance of quality of food (multidimensional concept) and the differentiation of the agri-food products

Diversification of food products:

- Commodities: grain, meat, milk,..
- “Specialties” (differentiation of agri-food products): wine, olive-oil, geographical indication products, organic products, food with brand,...
- Commodities (perfect competition market)
- “Specialties” (imperfect completion market)

Agri-food sector in modern societies

Importance of quality of food (multidimensional concept) and the differentiation of the agri-food products

The agri-food product from no-differentiated goods became ad differentiated goods.

Commodities vs Specialties

Commodities: perfect completion model

Specialties: imperfect completion model with product differentiation

Global market vs Local market

Agri-food sector in modern societies

Environmental concern

Negative externalities (soil and water pollution, CO2 emissions,..)

Positive externalities (landscape, biodiversity conservation,..)

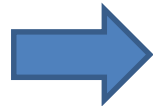
Risk of market failure

Socio-environmental role of agriculture in modern societies

Multifunctional agriculture (Rural development)

Sustainability

Economic growth



sustainable development

Green economy, circular economy

Agri-food sector in modern societies

Importance of government regulation and public intervention

Food security

Food safety

Avoid market failure (asymmetric information and externalities)

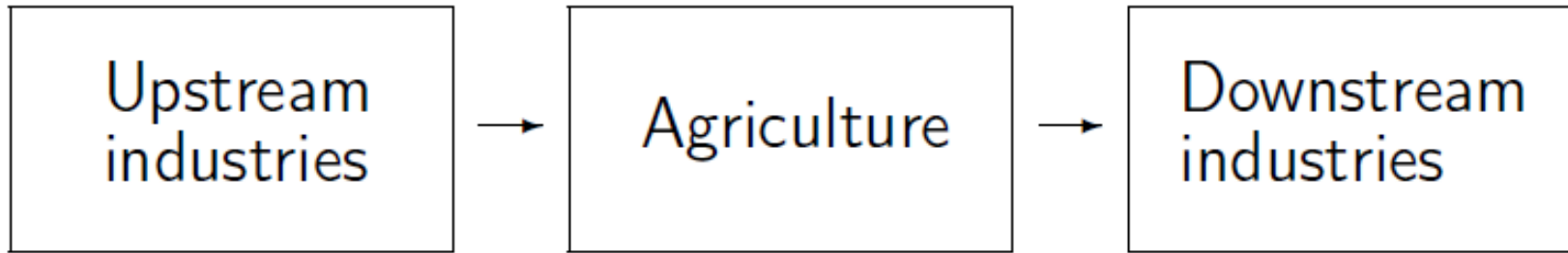
Environmental goals

Social goals

Economic goals

Agri-food sector in modern societies

The agri-food sector



Examples:

- Feed
- Agricultural machinery
- Fertilizer
- Plant protection
- Seed
- Energy

Other markets:

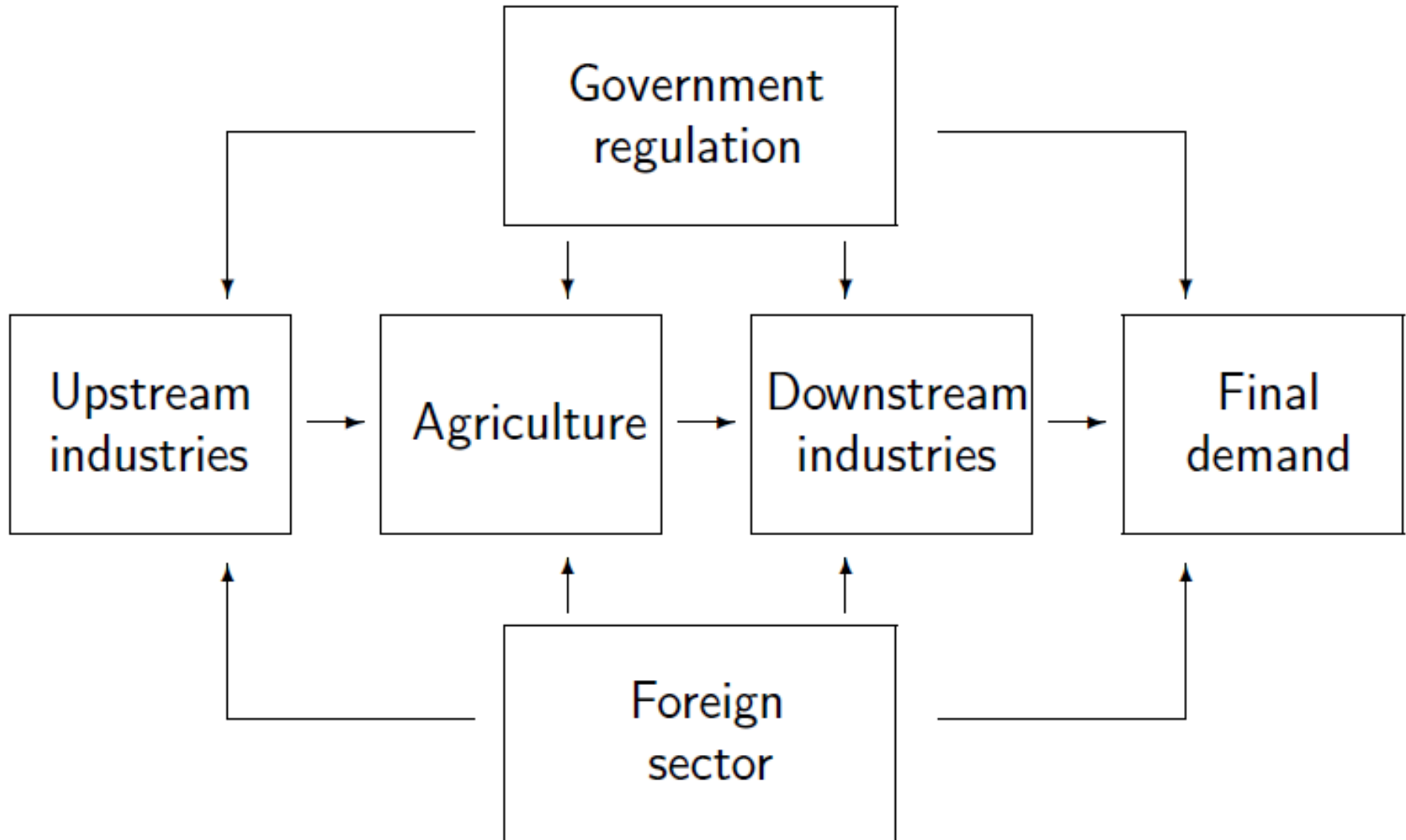
- Labour market
- Land market

Examples:

- Procurement of raw products
- Semiprocessed foods (e.g. flour mills)
- Consumer food products (e.g. food processing, bakeries)
- Grocery wholesalers and retailers

Agri-food sector in modern societies

The agri-food sector in a broader context



Agriculture and other economic sectors

it becomes important not so much the macroeconomic relationship between agriculture and other sectors, but the **supply chain** relationships (**agri-food filière**).

A supply chain is a system of organizations, people, activities, information, and resources involved in moving a product or service from supplier to customer.

Supply chain activities involve the transformation of natural resources, raw materials, and components into a finished product that is delivered to the end customer.

In sophisticated supply chain systems, used products may re-enter the supply chain at any point where residual value is recyclable. (Circular economy)

Agriculture and other economic sectors

Many agribusinesses and food processors source raw materials from smallholder farmers.

This is particularly true in certain sectors, such as coffee, cocoa and sugar.

Over the past 20 years, there has been a shift towards more traceable supply chains.

Rather than purchasing crops that have passed through several layers of collectors, firms are now sourcing directly from farmers or trusted aggregators.

The drivers for this change include concerns about food safety, child labor and environmental sustainability as well as a desire to increase productivity and improve crop quality (sustainability)

Agriculture and other economic sectors

Supply chains link value chains

A value chain is a set of activities that a firm operating in a specific industry performs in order to deliver a valuable product or service for the market. The concept comes through business management and was first described by Michael Porter in his 1985 best-seller, *Competitive Advantage: Creating and Sustaining Superior Performance*.

The idea of the value chain is based on the process view of organizations, the idea of seeing a manufacturing (or service) organization as a system, made up of subsystems each with inputs, transformation processes and outputs. Inputs, transformation processes, and outputs involve the acquisition and consumption of resources – money, labour, materials, equipment, buildings, land, administration and management. How value chain activities are carried out determines costs and affects profits.

Agriculture and other economic sectors

In Porter's value chains, Inbound Logistics, Operations, Outbound Logistics, Marketing and Sales, and Service are categorized as primary activities.

Secondary activities include Procurement, Human Resource management, Technological Development and Infrastructure

Agriculture and other economic sectors

What exactly is an agri-food supply chain?

Entire set of processes and activities required to produce a product then deliver it to a target market

- The term “produce” encompasses growing, transforming, or manufacturing
- The entire chain goes from “farm to fork,” but development projects are usually concerned with a subset of links within the chain
- For the chain to work, factors of production and technology are not enough; efficient transport, information systems and management are crucial

Agriculture and other economic sectors

The agri-food filière:

- The upstream pole which includes farming and fisheries activities, agricultural machinery and animal feed producers.
- The downstream pole which comprises catering services, and distribution of finished products.
- The core consists of the food processing industry.

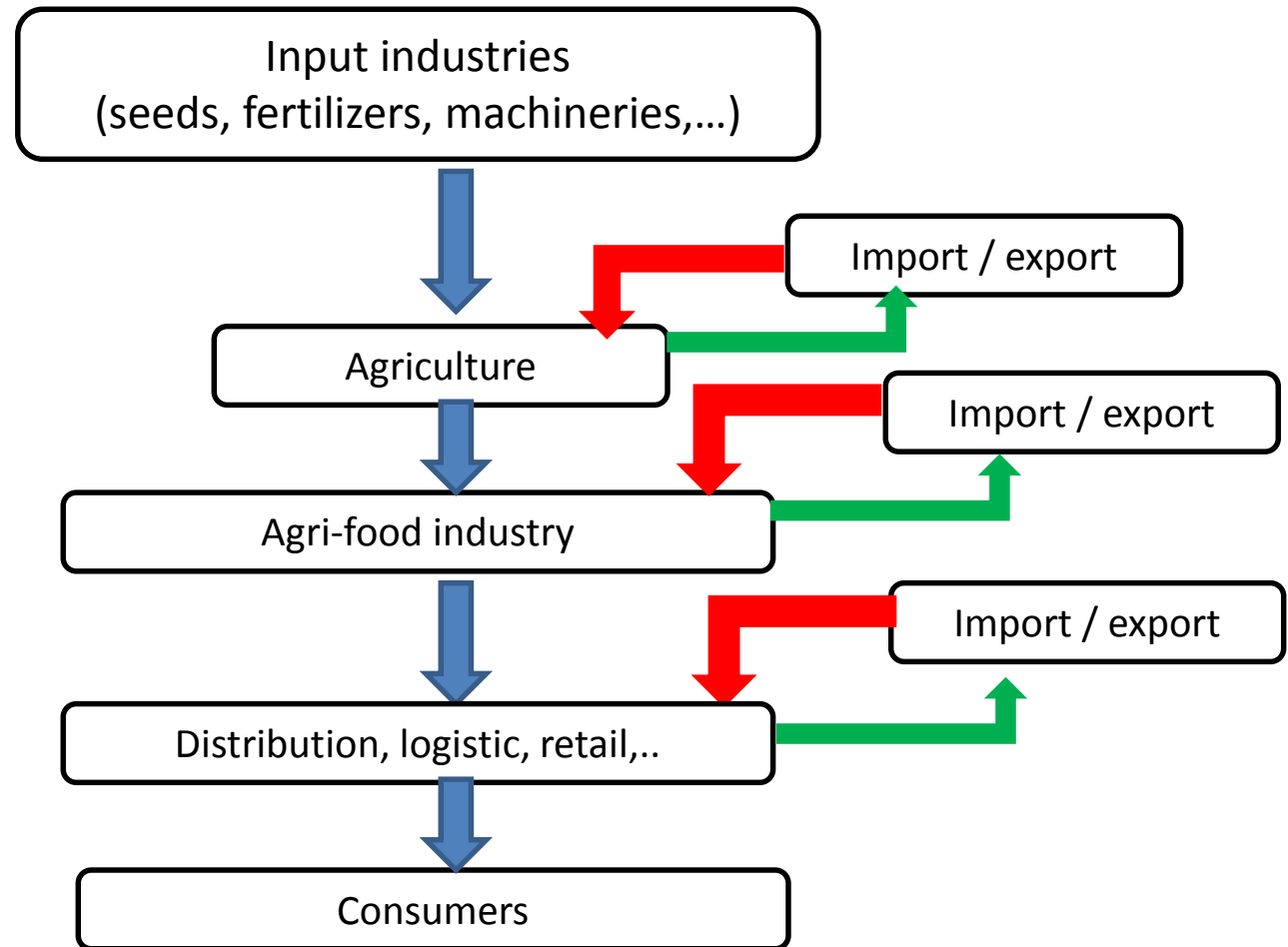
The upstream pole is a set of industries supplying to the core industries of the filière.

The downstream pole consists of the industries that buy from the core industries.

The core comprises all the industries involved in the transformation of inputs such as raw materials and primary products into finished goods.

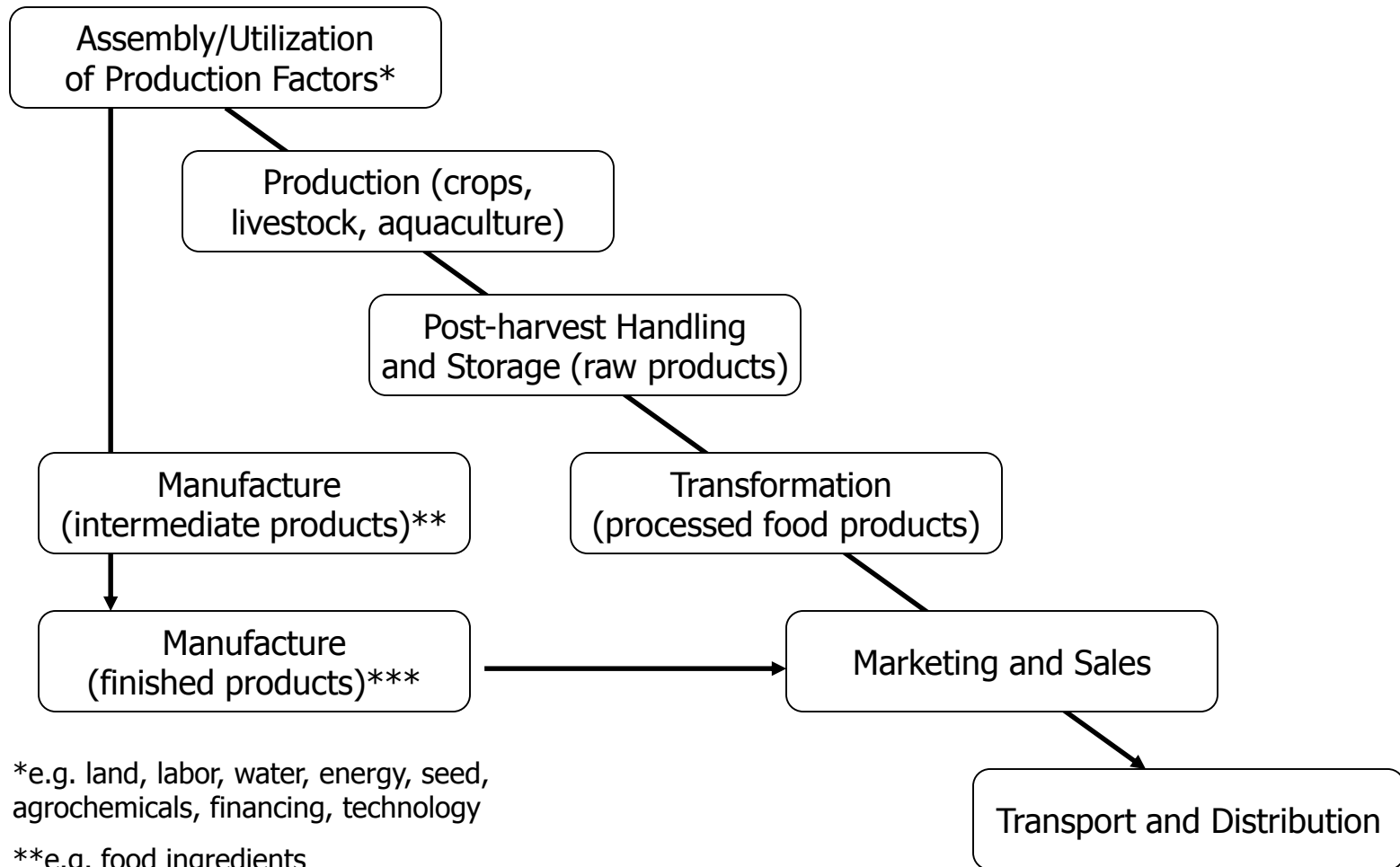
Agriculture and other economic sectors

A scheme to represent a Agri-food supply chain



Agriculture and other economic sectors

A scheme to represent a Agri-food supply chain



*e.g. land, labor, water, energy, seed, agrochemicals, financing, technology

**e.g. food ingredients

***e.g. packaged foods

Agriculture and other economic sectors

