

# Evolving the Common Agricultural Policy for Tomorrow's Challenges

Cécile Détang-Dessendre, Hervé Guyomard, editors





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#### **To cite the book:**

Détang-Dessendre C., Guyomard H. (eds.), 2023. *Evolving the Common Agricultural Policy for Tomorrow's Challenges*. Versailles, éditions Quæ, 310 p.

The book is an updated English translation of Détang-Dessendre C., Guyomard H. (eds.), 2020. *Quelle politique agricole commune demain ?* Versailles, éditions Quæ, 306 p.

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This publication has been financed by INRAE.



© éditions Quæ, 2022

ISBN (ePub): 978-2-7592-3495-0

© éditions Quæ, 2023

ISBN (print): 978-2-7592-3715-9

ISBN (PDF): 978-2-7592-3716-6

ISSN: 2115-1229

Éditions Quæ

RD 10

78026 Versailles Cedex, France

[www.quae.com](http://www.quae.com)

[www.quae-open.com](http://www.quae-open.com)

# Foreword

Since its creation, the evolution of the Common Agricultural Policy (CAP) has entailed continuous adaptation to the challenges of agriculture and food. This is why throughout its history the CAP has attempted above all to respond to the threat of scarcity by pooling the risks between Member States (MS), and then to respond to the conditions of abundance. Other challenges have been subsequently added; for example, the volatility of agricultural prices, which, as they rise, penalise the most modest populations and, as they decline, penalise the incomes of farmers.

Indeed, it has remained essential to ensure the sustainability of this abundance above all other considerations. New questions were therefore addressed to European decision-makers: How do we adapt agriculture to climate change and enable it to cope with the growing world population? How do we reduce the environmental impacts of agriculture and livestock farming? How do we consume less energy and water, alongside a reduced loss of raw materials? How do we encourage the improvement of nutritional, taste, and health quality of the food supply? These questions became all the more relevant as new "consumer-citizens" have emerged, urging the agricultural and agri-food sectors to take their expectations into account in terms of quality, transparency, greenhouse gas emissions, and damage to biodiversity.

By placing the fight against climate change at the heart of the new European Commission's action through the implementation of the European Green Deal, President of the European Commission, Ursula von der Leyen, seeks to breathe new life into the European project. This ambition is separated into eight major objectives, one of which explicitly targets agricultural and food issues within the framework of both the Farm to Fork Strategy and the European Biodiversity Strategy by 2030. European decision-makers have a powerful tool at their disposal for this strategy: the CAP. Thus, it will be necessary to once again consider how to adapt the CAP to meet the challenges of the transition in agriculture and food without overlooking the question of its financing, which has become increasingly problematic with public budgets stretched over several competing priorities. Both the COVID-19 crisis and the war in Ukraine reinforce to us the strategic nature of food sovereignty for Europe and for all countries around the world.

Within this context, this book is the result of a cycle of seminars that I initiated, in agreement with the French Ministry of Agriculture and Food, and led by Cécile Detang-Dessendre and Hervé Guyomard in 2017-2018. The seminars brought together many scientists from the French National Institute for Agriculture, Food and Environment (INRAE), but also academic partners who provided useful input into the discussions, and ministerial stakeholders who made it possible to include the scientists' work in the ongoing debates on the shape of the future CAP.

Special thanks are due to the representatives of Trinity College from Dublin University, *Notre Europe-Institut Jacques Delors*, the *Centre d'Etudes Prospectives et d'Informations* (CEPII), the

European Commission, *France Stratégie* and the services of the French Ministry of Agriculture and Food, in particular its Directorate General of Economic and Environmental Performance of Enterprises (DGPE) and its Directorate General of Education and Research (DGER).

The following pages are not primarily concerned with the post-2020 CAP reform, although the proposals are presented and commented on in the Conclusion, and with the Green Deal, although the Conclusion discusses the compatibility of policy recommendations formulated in this book with the latter. In the same way, the book is not primarily concerned with the impacts of the COVID-19 crisis and the war in Ukraine on European agriculture. On the basis of an analysis of the main challenges facing European agriculture and the public policies that govern it, the purpose of this book is to provide a framework for assessing the strengths and weaknesses of the current measures, and to propose public economy measures for implementation.

Based on research from several disciplines, notably economics, agronomy, zootechnics, and ecology, conducted within INRAE and its scientific partners, this book presents the challenges facing agriculture, agri-food, food and rural territories, proposes a critical analysis of how they are taken into account by the CAP and other public policies, and deduces normative recommendations for public actors as well as the need for new research. It thus aims to provide support for the development of public policies based on a range of scientific productions and expertise.

I hope you enjoy your reading.

Philippe Mauguin, President and CEO, INRAE May 17th, 2022

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# Introductory Remarks

Cécile Détang-Dessendre, Hervé Guyomard

This book was conceived of and written before both the COVID-19 pandemic and the war in Ukraine impact the world. A global health crisis such as the COVID-19 requires first and foremost a response to the emergency by guaranteeing the health of the population and ensuring their vital needs, particularly for food. Food needs can be affected *via* a direct impact on food availability (supply shock), the demand for food products (demand shock) and, as a result, prices. In the longer term, the economic consequences of such a crisis can also impact both supply by reducing food production, processing and distribution capacities, and demand by reducing purchasing power and income and therefore access to food. Naturally, the most disadvantaged populations are those most exposed to these risks, both at the country level and at the level of households and individuals within a given country. In a context where the global state of food security was already of concern before the COVID-19 crisis, the 2021 edition of the State of Food Security and Nutrition in the world (FAO *et al.*, 2021) points out that in 2020 hunger dramatically increased in both absolute and proportional terms: “some 9.9 percent of all people are estimated to have been undernourished last year, up from 8.4 percent in 2019”.<sup>1</sup> It is feared that this state will -worsen under the direct effect of the pandemic and its induced effects, and, probably even more importantly in this regard, as a result of the economic recession that it has generated (CSA-HPLE, 2020). These issues are today exacerbated by the war in Ukraine and its consequences on world and regional food security in a context where agricultural prices were already on the rise following the post COVID-19 economic recovery (Glauber and Laborde, 2022; Berkhout *et al.*, 2022).

Within this context, many people are calling for greater food sovereignty for nations, though without specifying precisely what this defines, and for less constraint on agricultural supply. However, there are also many voices warning of the danger of turning inwards and closing borders in a context where the security of food supplies in many countries of the world crucially depends on the import of agri-food products and where it is illusory, particularly given their demographics and natural constraints, such as climate, arable land, water availability, etc., to significantly reduce dependence on agri-food imports.<sup>2</sup> Finding the right balance between these two concerns is both complicated and delicate. As far as the European Union (EU) is concerned, it should be remembered that it is both the first world importer of agri-food products and the first world exporter. In the same way, the climate and environmental urgency

1. <https://www.who.int/news/item/12-07-2021-un-report-pandemic-year-marked-by-spike-in-world-hunger>.

2. This can be illustrated by the situation in North African and Middle Eastern countries (Le Mouél and Schmitt, 2017).

does not allow the necessary transition of agricultural and food systems to be delayed while recognizing potential trade-offs with other sustainability dimensions. Do the COVID-19 crisis and the Russia's invasion of Ukraine call into question the analysis developed throughout this book of what the CAP should be? We will naturally leave this for the reader to judge. From our point of view, the recommendations remain valid, and are even strengthened. In particular, the proposed orientations aim to reduce the ecological footprint of European agriculture and to promote safer and more balanced food systems, while ensuring that sustainability and competitiveness are not compromised. Beyond their intrinsic benefits in terms of the environment, health, and nutrition, the proposed reorientations of the CAP could indeed have a triple additional benefit: first, by reducing the risks of global health shocks, in particular by improving the state of biodiversity (the decline of which is a recognized factor in the increase in the occurrence of epidemics); second, by reducing the consequences of these shocks when they occur by improving the health of populations through less reliance on chemical inputs, and less calorific and more diversified diets (Détang-Dessendre *et al.*, 2020); and third, by diminishing the dependence of European agriculture to imported fossil fuels (directly and indirectly through mineral fertilizers needs).

## **Bibliographical references**

- Berkhout P., Bergevoet R., van Berkum S., 2022. A brief analysis of the impact of the war in Ukraine on food security. Wageningen University & Research (WUR), Wageningen Economic Research, 26 p.
- CSA-HPLE, 2020. Implications of the COVID-19 pandemic for Food Security and Nutrition (FNS). Committee on Food Security (CFS), High Level Panel on Food Security and Nutrition (HPLE), version of 24 March 2020, 9 p.
- Détang-Dessendre C., Guyomard H., Réquillart V., Soler L.-G., 2020. Changing agricultural systems and food diets to prevent and mitigate global health shocks. *Sustainability*, 12 (16), 6462.
- Glauber J., Laborde D., 2022. How will Russia's invasion of Ukraine affect global food security? Washington, International Food Policy Research Institute (IFPRI), IFPRI Blog.
- Le Mouél C., Schmitt B. (coord.), 2017. *Food Dependency in North Africa and the Middle East to 2050*. éditions Quæ, Versailles, 144 p.
- FAO, IFAD, UNICEF, WFP and WHO, 2021. The state of food security and nutrition in the world 2021. Transforming food systems for food security, improved nutrition and affordable healthy diets for all. Rome, Italy, 240 p.

# Acknowledgements

This book is partly the result of a series of seminars on the Common Agricultural Policy (CAP) and its future organized from September 2017 to December 2018 at INRA, which then became INRAE in January 2020. The two coordinators of the book and the authors of the different chapters warmly thank the participants in this series of seminars for their presentations, suggestions, and involvement, all of which have greatly improved the content quality. More specifically, they would like to thank the staff of the French Ministry of Agriculture and Food for their introductory and concluding remarks at each seminar. These remarks allowed the analytical, prospective, and normative work of the scientists to be included in the ongoing debates on this date on the future of the CAP. They also thank Pierre Bascou of the European Commission who took his time to explain with great skill and patience the rationality and content of the legislative proposals of June 2018 for the future CAP; Marjorie Jaouen of *Notre Europe - Institut Jacques Delors* who was able to simplify the history of the European Cohesion Policy, and Philippe Faverdin of INRAE who greatly improved the content of Chapter 10 on "The CAP, animal production and consumption of animal products". They would like to thank their many colleagues, French and foreign, and public and private partners for their research works and the many informal exchanges that have fed into the debate, sometimes over several decades. These colleagues and partners are too numerous to list, at the risk of forgetting some. The coordinators and authors of the chapters nevertheless remain solely responsible for the contents. Our thanks are also extended to INRAE for its ongoing support, without which it would not have been possible to produce this book, and to éditions Quæ for their professionalism and patience. Finally, many thanks to Sara Crompton-Meade for her careful proofreading of the English and Maëva Guyomard for her help on the conclusion.



# General Introduction

## Cécile Détang-Dessendre, Hervé Guyomard

The Common Agricultural Policy (CAP) was created in 1962, five years after the signing of the Treaty on the Functioning of the European Union (TFEU) on 25 March 1957.<sup>3</sup> In the aftermath of the Second World War, the main objective of the CAP was to increase agricultural production and modernize agricultural structures in a European Community composed of six Member States (MS) and with a large deficit in agricultural and agri-food products. Agriculture is the largest single expenditure item in the European Union (EU), which now has 27 MS, after the United Kingdom's (UK) exit from the EU and is the area in which European integration has advanced the most.

Having remained largely unaltered for three decades, the CAP was comprehensively reformed in 1992 with the so-called MacSharry reform (named after Ray MacSharry who was the European Commissioner for Agriculture in office at the time). Since then, the CAP has undergone permanent reforms at a rate of (at least) every seven years, which is in line with revisions of the EU's multi-annual financial frameworks and changes in the European Commission (EC) and the European Commissioner for Agriculture. The pace has also been accelerated with the so-called mid-term reviews.

The process of CAP reform has therefore been ongoing for more than 25 years. To date, it has followed clear guidelines, which can be summarized as follows:

- A gradual reduction in direct producer price support measures for agriculture (public purchases from agricultural producers at guaranteed prices above world prices; export subsidies to bridge the gap between domestic and international prices; and, conversely, the imposition of tariffs to bring prices on entry into the EU to levels equal to or even higher than domestic prices); and
- Compensation for induced income losses through direct aid to agricultural producers; direct aid in the course of reforms increasingly disconnected from product choices and levels (decoupling process); and direct aid increasingly conditional on compliance with increasing requirements for the protection of natural resources and the environment (cross-compliance and the greening process of the current CAP).

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3. The TFEU is often referred to as the Treaty of Rome, after the city in which it was signed. In practice, the Treaty of Rome corresponds to two treaties: the Treaty establishing the European Economic Community (EEC) and the Treaty establishing the European Atomic Energy Community (EAEC, also known as Euratom). Within the framework of the EEC, the six founding countries (Belgium, France, Italy, Luxembourg, the Netherlands, and the Federal Republic of Germany) undertook to create a customs union but without envisaging a monetary union at that time.

Measures that are more specific complete the picture targeting specific support for certain products, production methods, or specific local conditions. Among others, some target Organic Farming (OF), young farmers, or specific investments. Other measures provide aid to farmers in less-favoured areas or aid to compensate for the additional costs of adopting more environmentally friendly practices.

## **The CAP and the economy**

The 1992 reform of the CAP was initially a response to an external constraint to allow the successful conclusion of the multilateral agricultural negotiations of the 1994 Uruguay Round of the General Agreement on Tariffs and Trade, also known as GATT, and the compatibility of the future CAP with this agreement (Guyomard *et al.*, 1992). The path taken at that time (that is, the decoupling of the agricultural income support policy) is the same that is followed today, even though the global context has changed markedly, with the rise of new agricultural export (Argentina, Brazil) and import (China) players; the failure of the multilateral negotiations of the Doha Round at the World Trade Organization (WTO);<sup>4</sup> the multiplication of bilateral trade agreements; and more recently, the unilateral setting of customs duties by certain countries in a climate of (at least latent) trade warfare. For completeness, it should also be noted that the European agricultural sector is facing new and significant economic challenges that it is struggling to meet: first, fluctuations in agricultural prices and incomes in an EU that is less protected by customs duties today than it was previously (even if these remain significant for several products and non-tariff protection still exists); and second, difficulties in creating value in the context of a saturated domestic food market and in distributing the value created in a balanced way between the different actors of the production, processing, and distribution chains.

The economic aspects of the CAP and European agriculture are the subject of the first part of this book. Following a brief history of the CAP from its origins to the present day in Chapter 1, Chapter 2 deals with the question of the dependence of farm incomes on CAP support, and Chapter 3 examines agricultural employment dynamics. Chapter 4 covers trade aspects and the competitiveness of European agriculture on the international scene. Chapter 5 examines the distribution of value, and Chapter 6 discusses the crisis and risk management instruments.

## **The CAP, environment and health**

Following the MacSharry reform of 1992, the reforms made in 1999, 2003, 2008, and 2013 responded to a twofold internal logic; first, of a more balanced distribution of CAP aid between MS and between farms within the same country; and second, of a reduction in the adverse effects of agriculture on natural resources and the environment. Despite the increased inclusion of environmental objectives and instruments in the CAP since 1992,

4. The WTO succeeded the GATT in 1996, and the Doha Round succeeded the Uruguay Round. Officially launched in November 2001, the Doha Round was supposed to last only three years and was therefore supposed to be completed by the end of 2004.



and despite the efforts made by the actors involved, it must be said that progress is not in evidence and that the environmental quality of European agro-systems continues to deteriorate (Hart and Bas-Defosse, 2018; Dupraz and Guyomard, 2019). This regrettable statement is partly linked to the progress of knowledge and the resulting upward assessment of environmental nuisances. However, the failure of the environmental component of the CAP is primarily due to the modest budgetary resources allocated, the insufficient effectiveness of the implemented instruments, and/or the contrary incentives induced by other CAP measures.

The environmental aspects of the CAP and European agriculture are addressed in the first two chapters of the second part of this book. Chapter 7 focuses more specifically on global environmental goods, such as climate change mitigation and biodiversity preservation. Chapter 8 focuses on support for the transition to more environmentally sustainable agricultural systems and practices.

The environmental issue is twinned with a human health issue. The latter includes two dimensions. The agricultural and agri-food sectors and the policies that influence them have a potential impact on health in terms of both the production of agricultural goods, more specifically production methods, and the consumption of food products, more specifically consumer choices (EPA, 2016). A first transmission channel encompasses several dimensions related to the use of chemical inputs that can directly impact the health of users and their living environments, the development of antibiotic resistance in connection with the use of antibiotics in livestock farming, and environmental pollution associated with the excessive use of mineral and/or organic fertilizers, the insufficiently controlled use of pesticides, or the excessive emission of harmful pollutants. This first channel of transmission also includes the contribution of agricultural systems to climate change and the degradation of biodiversity, insofar as these two public bads also have negative effects on human health. This first channel clearly corresponds to a double penalty, as the negative effects on health and the environment accumulate. The public policy measures to be implemented follow the same logic found in both Chapters 7 and 8 under the heading of increased environmental protection coupled with an additional health benefit.

The second transmission channel is on the food consumption side. It includes the three dimensions of food safety, nutritional quality, and food security as assessed from the two perspectives of undernutrition and overnutrition, at the level of the population as a whole as well as at the level of individuals and households. In the EU today, the issues of overnutrition, overweight and obesity rates and their negative effects on health are among the most hotly debated, and raise a necessary query as to the possible responsibility of the CAP. The question of extending the CAP to nutritional aspects as part of a move towards a Common Agricultural and Food Policy, which some have called for (see, for example, Fresco and Pope, 2016), is discussed in Chapter 9. This issue requires specific treatment, not least because corrective instruments must first act on demand. They are therefore distinct from those acting on supply, as described in Chapters 7 and 8.

The last chapter of this second part of the book deals with breeding. Animal production and the consumption of animal products are under increasing criticisms of various kinds related

to environmental protection, public health, and farm animal welfare (see, for example, FAO, 2006; Godfray *et al.*, 2018). However, livestock and animal products can also provide positive benefits and services. These include maintaining agricultural activity in areas not suitable for crops; storing carbon, preserving biodiversity, and improving water quality in and through grasslands (especially when grasslands are long-lived and grazed); maintaining and nurturing open and diverse landscapes; and providing quality protein (see, for example, Rosner *et al.*, 2016). In this dual context, Chapter 10 questions the legitimacy and effectiveness of the CAP measures targeting livestock farms and animal sectors.

## **The CAP, rural development and innovation**

In addition to the economic, environmental, and health dimensions, the CAP also aims to promote the development of rural areas, especially since the 1999 reform, which introduced the two-pillar structure of this policy. Pillar 1, which is entirely financed by European resources, groups together measures to support agricultural markets and incomes, and represents the bulk of the CAP budget (around 75%). Pillar 2, co-financed by MS and occasionally by regional authorities, is officially referred to as "rural development". This term is considered to be inappropriate insofar as its primary target is agriculture as part of a wide range of measures covering areas as varied as farm investments, farmer training, environmental protection in agricultural ecosystems, and support for OF. The second pillar's bias in favour of agriculture raises questions as to the place of agriculture in the development of rural territories, the role of agricultural policy in this development, and more generally, the coherence of the different public policies at work in rural territories, including the questions of appropriate spatial levels of intervention and governance. These aspects are the subject of the first chapter of the third part of the book (Chapter 11).

The second chapter of this third part deals with innovation; a cross-cutting theme that is not an objective in itself but which should be mobilized in service of the other objectives of the CAP. Chapter 12 therefore focuses on research and innovation as essential factors in the necessary transition of European agriculture towards greater economic, environmental, social, and health sustainability. In particular, we examine the role that the CAP should play in a context where agricultural knowledge and innovation systems (AKIS) remain largely the prerogative of MS, even if these systems are supported by the CAP or other European policies.

## **Concluding chapter**

As a synthesis of the lessons learned from the various thematic chapters, the Conclusion more specifically addresses three aspects: first, an analysis of the global coherence of our recommendations, including in terms of their links with other policies than the CAP; second, a reading of our recommendations in the light of the ambition and objectives of the European Green Deal for agriculture and food; and third, a critical reading of the June 2021 agreement for the 2023-2027 CAP.

## Typical structure of a chapter

With the exception of Chapter 1, which provides a brief history of the CAP, and the concluding chapter, the various chapters are therefore thematic. As far as possible, they are organized according to the same structure. They begin with a description of the issue in the form of an inventory, and continue with a presentation of how the issue has been taken into account within the CAP to date and, if relevant, in other public policies. Then, they propose a critical analysis of this consideration on the basis of state-of-the-art of research. This positive analysis enables public policy recommendations to be formulated from a normative perspective. Where appropriate, the discussion is extended beyond the issue of compatibility (or conversely, incompatibility) between instruments addressing distinct issues that are easy (or more difficult) to reconcile. The chapters are consistent in their structure and development but are nevertheless autonomous and can therefore be read independently.

## An analysis of public economics

Even if the disciplines and skills mobilized in this book cover a broad spectrum, including the different sub-disciplines of economics, other human and social sciences, agronomy, zootechnics, and ecology, the general framework of analysis is that of public economics (Laffont, 1988; Varian, 1992).<sup>5</sup> This economic sub-discipline studies the rationale for public intervention and the effects, whether intentional or not, of this intervention. Its scope is both positive (to explain) and normative (to recommend).

Under certain conditions, the competitive market for private property is a Pareto efficient organization for the allocation of goods and resources;<sup>6</sup> that is, an allocation between agents such that it is not possible to improve the satisfaction of one individual without at least deteriorating that of another. Still, under certain conditions (though not necessarily the same ones), any Pareto efficient allocation can be achieved by a competitive equilibrium of private property; in other words, it is possible to decentralize the Pareto optimum through prices. These two propositions are the two fundamental theorems of welfare economics underlying the "liberal ideology" (Laffont, 1988). Extended to several trading economies, they also form the basis for trade liberalization that improves the welfare of countries participating in trade by exploiting (relative to an autarkic regime) the arbitrage gains that can be achieved through the mobility of goods and/or factors of production (see, for example, De Melo and Grether, 1997). Nevertheless, within a country, some industries and/or types of consumers benefit from trade, while others lose out.

At this point, it is appropriate to examine the conditions of validity of these two theorems, in other words to make explicit what is behind the expression "under certain conditions",

5. As part of the work known as «fiscal federalism», it also analyses the optimal geographic levels of public intervention (Oates, 1972).

6. Of Italian origin, Vilfredo Pareto (1848-1923) was a sociologist and an economist. He wrote several major contributions in economics, including a course on political economy (1896) and a textbook on political economy (1909).

because failure to comply with these conditions legitimizes the intervention of the public authorities. The two theorems assume, first, that competition is pure and perfect and that no agent, producer and/or consumer is in a position to exercise market power and dictate all or part of the formation of prices. The theorems also assume that there is a complete set of markets, which is a particularly strong assumption when inter-temporal and uncertainty are taken into account, making it difficult to rely on a complete set of futures<sup>7</sup> and contingent markets.<sup>8</sup> This is likely to be impossible in the case of information asymmetries<sup>9</sup> and transaction costs (Salanié, 2000). They also make the strong assumption that there are neither externalities nor public goods.<sup>10</sup> Finally, the conditions of validity of the second theorem particularly prohibit any form of increasing returns in production.<sup>11</sup>

When the conditions for validation of the two welfare theorems are not satisfied, which is the case for agriculture, it is highly unlikely that the competitive equilibrium of private property is Pareto optimal. This non-optimality paves the way for public intervention to restore the said optimality. In other words, the existence of market failures (uncompetitive markets, market incompleteness, non-convexity of consumption and/or production patterns, externalities, and public goods) legitimizes public intervention. The question then arises as to how such intervention should be designed to be effective, or at least how to be as effective as possible. This analytical grid is used throughout this book both to justify the objectives of the CAP and to define the instruments to be implemented in order to achieve these objectives at the lowest possible cost.

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7. A futures market allows an individual to buy or sell an asset at a given period of time at a predefined price. Applied to agriculture, futures markets allow farmers to hedge against price fluctuations and sell their production at a predetermined price.

8. Suppose there are only two states of nature defined by good *versus* bad weather. If there are two contingent markets, one for good weather and one for bad weather, the competitive equilibrium of private property is optimal in the Pareto sense. If this is not the case, this balance is generally sub-optimal.

9. Information asymmetry corresponds to a situation in which the different agents, sellers and/or buyers operating on the same market do not have the same information. Adverse selection is an *ex ante* information asymmetry that occurs when, for example, sellers of a good overestimate the quality of the good sold because buyers only imperfectly observe this quality. Moral hazard is a situation of *ex post* information asymmetry when, for example, it is difficult to anticipate the behaviour of buyers after the purchase (e.g., in the case of the insurance market, where the insured may take fewer precautions after taking out an insurance policy).

10. An external effect corresponds to an indirect effect of a consumer's consumption activity or a producer's production activity on other agents: the effect is created by an agent other than the one who is affected and does not pass through the price system. Public goods are an example of a consumption externality of a particular type corresponding to the case where all individuals must consume the same quantity of the good. Specifically, a good is said to be public if its use by one agent does not prevent its use by other agents. A public good is global (respectively, local) if the externality concerns a geographically extended population (respectively, limited to a circumscribed territory).

11. Production returns are increasing if the average cost of production decreases when the quantity produced increases.