

# JRC CONFERENCE AND WORKSHOP REPORT

## Benefits and costs of EU marketing standards for agri-food products

*Workshop Report*

Editor: Carlo Russo

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## **Editor**

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## **Abstract**

This Report summarizes the findings emerging from the online workshop on 'Marketing Standards: Benefits and costs of EU marketing standards for agri-food products' which was organized by the Directorate-General for Agriculture and Rural Development (DG-AGRI) and Joint Research Centre (JRC) on September 9<sup>th</sup> 2021.

The discussion revolves around three main issues regarding the EU marketing standards: i) Do the benefits from current regulation exceed the costs? ii) What are the implications of EU regulations for international trade and producers? and iii) What are the possible effects of a change in regulation, updating EU marketing standards to promote a sustainable agri-food system and adjust to changes in consumer preferences and technology?

The benefits and costs of EU marketing standards are difficult to measure since they may vary with many factors including product characteristics, quality of local institutions and organization of the supply chain. In general, the benefits are considered to exceed the costs, but general assessments are difficult. The main benefits are: granting market access, lowering transaction costs, ensuring a minimum level of food quality and safety, preventing misleading claims, favouring quality-based marketing strategies (product differentiation).

The key issues for international trade concern the cost of adopting EU regulations and the heterogeneity of existing standards. The impact of the former issue appears to be limited, especially if strict private standards are in place. Heterogeneity of standards can discourage trade, but national and international institutions can take actions to alleviate the problem.

Updating marketing standards to better represent consumer preferences may increase the efficiency of agri-food markets. However, the regulation and adoption costs suggest that this action is undertaken only if the change in preference is appreciable, lasting and involves a large number of consumers. EU marketing standards can be updated to facilitate achievement of sustainability targets. Nevertheless, this strategy may result in unintended consequences if consumers are not willing to pay for sustainability attributes, and could lead to an increase in international trade litigations.

## Executive summary

This document reports the main findings emerging from the workshop “Benefits and costs of EU marketing standards for agri-food products” which was hosted by the Joint Research Centre and the DG Agri of the European Commission on September 9, 2021. Ten speakers from academia, research institutes, consulting companies, associations, private firms and institutions (including OECD) and several stakeholders in the audience contributed to the discussion. The organization of the workshop and the discussion agenda are described in Chapter 1.

For schematic presentation of the material, the discussion is summarized in four main topics:

- **Benefits and costs of EU marketing standards for EU firms and consumers** (Chapter 2)
- **Effects of EU marketing standards on international trade and producers in the least developed and developing countries** (Chapter 3)
- **Policy issues** (Chapter 4), including: updating EU marketing standards to consider changes in technology and consumer preferences, simplification of regulation, use of EU marketing standards to promote a sustainable agri-food system.
- **Conclusions and needs for future research** (Chapter 5)

### Benefits and costs of EU marketing standards for EU firms and consumers

**In general, marketing standards are welcomed by EU firms:** over 80% of respondents in a sample survey of 123 business associations deemed that EU marketing standards are reasonable and provide added value *with respect to international marketing standards and private standards*.

The main **benefits of EU marketing standards for EU firms include** (Section 2.1):

- reducing transaction costs and information asymmetries, increasing transparency
- facilitating trade, granting market access and levelling playing field
- supporting product-differentiation strategies, favouring the supply of high-quality products.

**The certification and control costs for EU firms appear modest in comparison with the total production costs.** In the case of the hops industry, they have been estimated to account for less than 0.5% of the final product price. Also, it is worth noting that such **costs are not specific investments** and can be used to support transactions with a large number of trade partners.

**EU marketing standards provide benefits for consumers** as well (Section 2.2), including in particular:

- Ensuring that food achieves at least a minimum level of quality and safety, increasing the average level of food quality in the market.
- Facilitating consumer assessment of food quality, reducing consumers’ uncertainty over quality, limiting the number of misleading quality claims, protecting consumers from safety risk and food frauds.

The workshop participants agreed that **the benefits of marketing standards outweigh the costs**. However, this observation must be considered carefully because “benefits cannot be quantified” and the assessment is based on industry-specific analyses that cannot be generalized.

It is to be noted that the benefits of EU marketing standards for firms and consumers greatly depend on how effective the standards are in representing consumer preferences. By definition, marketing standards establish quality, and quality can be defined as the set of attributes that provide utility to consumers and that consumers are willing to pay for. Thus, **efficient standards must identify and measure the attributes consumers’ desire**.

Evaluation of the benefits of a given standard depends on several factors and may vary across firms and consumers and can differ between firms and consumers (Section 2.3). **The different perceptions of costs and benefits imply that regulators have to reconcile heterogeneous instances on the part of stakeholders**. Also, divergence in perception may necessitate careful communication to consumers and firms of any change in marketing standards.

## Effects of EU marketing standards on international trade and producers in least developed and developing countries

**There is no consensus in the academic literature on the trade effects of marketing standards.** Reduction of transaction costs has a positive effect on trade, but increased costs for investments and monitoring may discourage trade. The net result of the two opposite forces is an empirical question (Section 3.2).

**Harmonization of standards at the international level may promote trade.** Currently trade is regulated by a multiplicity of standards. Harmonization involves not only reducing the heterogeneity of the regulations, but also promoting homogeneous interpretation and enforcement. An empirical OECD study suggested that the benefits for trade by engaging in harmonization could prove considerable (Section 3.3).

Heterogeneity of marketing standards may result in litigations at the multilateral organization (such as the WTO) level, especially when the scientific evidence is controversial and provisions are perceived as arbitrary. **When revising marketing standards, it may well prove worthwhile to consider the possible effects on future trade litigations, especially if promotion of sustainability is pursued.** (Section 3.3.2)

**The effect of EU marketing standards on producers in least developed countries depends on several factors,** including product characteristics, local institutions and regulations, logistic infrastructures and the organization of the supply chain. In general, EU marketing standards facilitate market access but may result in higher production costs. The net effect depends on the relative magnitude of these two factors. However, it should be noted that many importers impose private standards on international suppliers regardless of the current regulations. In this case, the cost increment due to EU marketing standards may prove modest. Finally, it was noted that EU marketing standards promote vertical coordination in global value chains.

### Policy issues

In theory, updating marketing standards to take into account changes in preferences may increase market efficiency. However, in practice, in the presence of high adjustment costs (including costs of the regulatory process, technical implementation and communication) **it may be advisable to update the marketing standards only if the changes in preferences are homogeneous (involving a large number of consumers), appreciable and lasting** (Section 4.2.1).

**Similar results hold for changes in technology.** In this case, difference in assessment of the value of the standards between firms and consumers may call for careful balancing of conflicting interests (Section 4.2.2).

**The outcome of simplifying regulations depends on the possible information loss.** If the simplified marketing standards exclude only attributes that are not desired by consumers, market efficiency may increase. Otherwise, simplification may harm consumers (Section 4.2.3).

Adding sustainability requirements to the EU marketing standards may contribute to meeting sustainability objectives (Section 4.2.4). However, two key issues need to be considered:

- **If consumers show low willingness to pay for sustainability, unintended consequences may arise.** In fact, in this case, voluntary standards may emerge offering consumers products with a low degree of sustainability but high-quality attributes otherwise.
- **Any such revision may affect the profitability of current sustainability certifications.** In this case, although the marketing standards can ensure a minimum level of sustainability for all production, it could prove less profitable to pursue highly sustainable food production.

Finally, it emerges that a strategic interaction between EU marketing standards and private standards may occur. The outcome of regulation reforms may be affected by such interactions (Section 4.2.5).

### Conclusions and needs for future research.

Section 5.1 sets out a brief discussion of five policy options regarding a possible reform of EU marketing standards. **The analysis is simply a summary of the debate and is not intended as comprehensive policy assessment.** The following key conclusions were arrived at:



- There was little support for complete removal of EU marketing standards, because in general the benefits are considered greater than the costs.
- A conservative approach preserving the current regulations with minor adjustments may discourage innovation and fail to capture important new trends in consumer demand. Also, it fails to comply with the recommendations in the Farm to Fork strategy.
- Updating current marketing standards may enhance market efficiency and contribute to a more sustainable agri-food system. However, it may prove difficult to identify new demand trends and the technology to be considered, balancing the stakeholders' conflicting interests and preventing trade issues, calling for careful policy design.
- Extending EU marketing standards regulations to new products calls for careful evaluation of costs and benefits in each sector. It could result in overregulation of supply chains that have no clear use for such standards.

The workshop showed that the corpus of knowledge on marketing standards is still incomplete. The main limitations include (Section 5.2):

- Evaluations of benefits and costs are based mostly on **qualitative or anecdotal information**.
- **The impact of radical technological innovations on marketing standards is still unclear** (including blockchain, artificial intelligence, protein manufacturing, etc.).
- **Lack of consensus on trade issues.**

These limitations suggest that more information is required to guide the regulatory process. In particular, more extensive studies are required to achieve cross-sector comparison of the costs of adopting marketing standards and the impact of sustainability criteria.

# 1 Introduction

Carlo Russo and Edward Kyei Twum

## 1.1 Organization of the workshop

This Report summarizes the main findings emerging from the workshop on marketing standards “Benefits and costs of EU marketing standards for agri-food products” which was held by the Joint Research Centre and the DG AGRI of the European Commission on September 9, 2021. The workshop saw presentations by ten speakers from academia, research institutes, consulting companies, associations, private firms and institutions. Lively debate followed each presentation. The list of speakers and the title of their presentations are provided in Table 1-1.

**Table 1-1:** Workshop Agenda

Ref.	Speaker	Institution	Title of the presentation
[1]	Carlo Russo	University of Cassino and Lazio Meridionale	What are the costs and benefits of EU marketing standards for operators in the agri-food supply chain? A theoretical explanation.
[2]	Alberico Loi	Areté srl	What is the added value of EU marketing standards for the functioning of agri-food supply chains?
[3]	Maria Christodoulou	IHS Markit	Case study on costs and benefits of EU marketing standards in the hop sector.
[4]	Marie Guyot	ERPA	How can the revision of EU marketing standards enhance sustainable production in the egg and poultry sectors?
[5]	Paul-Henry Lava	AVEC	What are the opportunities and challenges for operators in the poultry sector in implementing EU marketing standards?
[6]	José Brambila	OECD	Cost-effectiveness of marketing standards for business operators and international trade.
[7]	Purity Naisho	Interveg Exports EPZ ltd	Possible impacts of EU marketing standards for SMEs
[8]	Annalisa Zezza	CREA	How can changes in EU marketing standards affect the rest of the world?
[9]	Jill McCluskey	Washington State University	How marketing standards affect and are seen by consumers.
[10]	Viera Baričičová	MPRV SR	Possible impacts of EU marketing standards on meeting the Sustainable Development Goals.

The Report combines a summary of the speakers’ presentations with the rapporteur’s analysis in a consistent document. For this reason, the Report does not summarize presentations separately. It provides a general discussion based on systematic collection of the ideas and contributions of all the speakers on each topic. The individual contribution of each speaker to the general discussion is clearly indicated in the text using the reference numbers from Table 1-1 (numbers in square brackets). For ease of reference, a synopsis of the presentations is provided in the appendix to this introduction.

## 1.2 Background: Definitions and policy issues

### 1.2.1 Definition of marketing standards

Marketing standards are long-standing institutions in the EU Common Agricultural Policy. They were first introduced by Council Regulation No 158/66/EEC dated 25 October 1966, establishing “Common quality

standards” in the fruit and vegetables sector.<sup>1</sup> Currently, marketing standards are disciplined by several regulatory sources. The main source is EU Regulation 1308/2013 (single OCM), establishing standards, definitions, designations and sales descriptions for a set of products. Optional terms reserved for poultry meat, eggs and olive oil are also considered in the Directive. Other Regulations (“secondary CMO legislation”) address specific products and a number of directives (the so-called “breakfast directives”), providing descriptions, definitions and rules on characteristics and labelling concerning specific sets of products.

Marketing standards are “a set of obligatory rules or optional reserved terms establishing the quality of a food product marketed to consumers” that are enforced by public regulation (EU Commission 2021, p.1). They define uniform trade characteristics through technical specifications of products and processes. The current EU marketing standards framework is defined by obligatory rules for specific sectors or products and optional reserved terms on a sectoral or product basis.<sup>2</sup> The framework relies particularly on “technical definitions, classification, presentation, marking and labelling, packaging, production method, conservation, storage, transport, related administrative documents, certification and time limits, restrictions of use and disposal” to ensure that the Single Market is supplied with standardized and satisfactory quality.<sup>3</sup>

The objective of marketing standards is to facilitate the functioning of agri-food markets, reducing information asymmetries and transaction costs, favouring transparency and competition and ensuring that the food delivered to consumers meets minimum quality levels. In general, marketing standards may increase the level of trust and confidence that firms and consumer have in the EU agri-food system [1].

### **1.2.2 Policy issues and motivation for the workshop**

The current policy debate on revision of EU marketing standards originated from two key documents. First, the European Commission completed evaluation of marketing standards, finding that the measures are effective, beneficial, value-adding and coherent, but also that “there is some room for improving the relevance of EU marketing standards” (EU Commission 2020 (a), p. 43). Secondly, the Farm to Fork strategy stated that “the Commission will revise marketing standards to provide for the uptake and supply of sustainable agricultural, fisheries and aquaculture products and to reinforce the role of sustainability criteria taking into account the possible impact of these standards on food loss and waste.” (EU Commission 2020 (b), p. 13).

The EU Commission concluded that “legislation on EU marketing standards has been effective in establishing a standardised and satisfactory quality of agricultural products, while also being useful for stakeholders. However, there is some room for improvement in terms of addressing new needs of stakeholders in the food supply chain.” (EU Commission 2021). Although current regulation proved to be effective, revision may be considered for three reasons in particular (EU Commission 2021):

- Changes in societal needs, consumer preferences and technology might call for updating of the production requirements of marketing standards.
- The legislation on marketing standards is scattered through various Regulations and Directives (Section 1.2.1). A more compact and simpler set of rules would be clearer for supply chain operators and administrations.
- Appropriate design of marketing standards can support food consumption and production models that are better for the environment and the climate, resulting also in healthier diets and promotion of animal welfare.

Chapter 4 of this Report provides a detailed discussion of the three policy issues.

In order to tackle these issues, The EU Commission identified the following five possible policy options (EU Commission 2021):

1. Removing all marketing standards and therefore relying on international, national or private standards only.
2. Retaining the current organization of marketing standards with minor adjustments.

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<sup>1</sup> See Gentile et al. (2020) for a summary of the historical evolution of the EU marketing standards.

<sup>2</sup> Regulation (EU) No 1308/2013, recital 67

<sup>3</sup> Regulation (EU) No 1308/2013, recital 71

3. Updating current standards to take into account changes in preferences and technology, simplify existing legislation and promote sustainability in the agri-food system.
4. Updating marketing standards (as in the previous bullet point) and introducing new ones when needed.
5. Updating marketing standards and extending them to all agricultural products.

With all the options the legislation must be aligned with the procedural requirements of the Lisbon Treaty. The future regulations on marketing standards will reflect the choice among these policy options.

The Workshop on marketing standards “Benefits and costs of EU marketing standards for agri-food products” was organized to support policy design with scientific knowledge and empirical evidence. The speakers were selected based on experience and expertise and were asked to provide their contributions on three key questions:

- What are the most important benefits and costs of marketing standards? How can regulation reform increase benefits and reduce costs?
- What are the possible implications of reforming marketing standards for intra-EU trade and international trade?
- What are the possible implications of integrating sustainability criteria into current marketing standards?

The discussion of these questions is summarized in this Report.

### **1.3 Organization of the Report**

In order to provide a consistent presentation of the results of the Workshop, this Report has been organized in four key areas. Section 2 summarizes the contributions regarding the costs and benefits of marketing standards for EU firms and consumers. Most of the material was derived from the presentations by speakers [2, 3, 4, 5, 9]. Section 3 focuses on the effects of EU marketing standards on international trade. The discussion was derived mostly from considerations by speakers [6, 7, 8 and 10]. Section 4 debates policy issues arising from a possible review of marketing standards, including simplification, updating to take into account changes in preferences and technology, and promotion of sustainability. The discussion draws on presentations by speakers [1, 2, 3 and 10] mainly. Finally, Section 5 concludes the Report and identifies topics for future research.

### **1.4 Appendix: Synopsis of Presentations**

#### **[1] Carlo Russo** – University of Cassino and Lazio Meridionale (Rapporteur)

Professor Carlo Russo addressed the issue of the benefits and costs of EU marketing standards for operators in the agri-food supply chain from a theoretical perspective. The speaker used information theory to explain marketing standards and derive policy implications. The presentation focused on three main issues: adapting marketing standards to changes in consumer preferences, simplifying marketing standards, and incorporating sustainability into marketing standards. According to the speaker, marketing standards have to be consistent with consumer preferences to be efficient. The presentation material offered the basis for the discussion in chapters 2 and 4 of this Report.

#### **[2] Alberico Loi** – Areté srl

The speaker addressed the issue of the added value of EU marketing standards for the functioning of agri-food supply chains. The findings of extensive research work were illustrated to the audience and the results of surveys of business representatives and institutions were presented. Dr. Loi concluded that EU marketing standards provide added value with respect to international marketing standards and the applicable private standards and that the regulations therefore proved effective. The speaker attributed this to the mandatory nature of the standards and the tailoring of the standards to the specific needs of the Single Market. The speaker further remarked that EU marketing standards ensure adequate consumer protection and average quality improvement. The speaker’s contributions provided the basis for the considerations set out in chapters 2 and 3 of this Report.

**[3] Maria Christodoulou** – IHS Markit

Dr. Maria Christodoulou presented a case study on EU marketing standards in the hop sector. The speaker remarked that the cost incurred by operators for certification is minimal/negligible and that there are no unnecessary costs involved in the certification process. The speaker indicated that marketing standards and certification create transparency, trustworthiness, and traceability and contribute to establishing a premium brand and high quality. According to the speaker, the benefits and costs of EU marketing standards are sector specific, which means that the hop sector analysis cannot be generalized. A more detailed discussion of the findings emerging from this presentation can be found in chapters 2 and 4 of this Report.

**[4] Marie Guyot** – ERPA, European Rural Policy Association

The speaker addressed the effects of a possible revision of EU marketing standards on sustainable production in the egg and poultry sectors. According to the speaker, rural poultry production applies a sustainable technique, and the current EU marketing standards on farming methods and types of farming in the poultry sector are helping product differentiation and the drive towards sustainability. The speaker pointed out some provisions in current marketing standards that might be revised to the benefit of producers. The speaker's contributions were included in the discussion in chapters 2 and 4 of this Report.

**[5] Paul-Henry Lava** – AVEC- Association de l'Aviculture, de l'Industrie et du Commerce de Volailles dans les Pays de l'Union Europeenne

The speaker illustrated the opportunities and challenges faced by operators in the poultry sector in complying with EU marketing standards. According to Mr. Lava, current EU marketing standards have contributed positively to poultry production and marketing, and need to be maintained, with some modification. Contributions by the speaker were included in chapters 2 and 4 of this Report.

**[6] José Brambila** – OECD, Organization for Economic Co-operation and Development

The speaker presented a discussion of the cost-effectiveness of marketing standards for business operators and international trade based on the case of the OECD fruit and vegetable scheme. The speaker illustrated the main activities involved in the OECD fruit and vegetable scheme and the preliminary results of a study on the economic benefits of standards and a common inspection system. According to the speaker, heterogeneous controls and enforcement of marketing standards are detrimental for trade, whilst harmonized inspection methods and regulations promote trade. The main points in the speaker's presentation are included in chapters 2 and 3 of this Report.

**[7] Purity Naisho** – Interveg Exports EPZ Ltd

The speaker addressed the impact of EU marketing standards on SMEs from the point of view of third-country producers. The presentation was based on discussion of the case of fresh produce in Kenya. According to the speaker, the current EU marketing standards are feasible, but possible modifications should take into consideration the ability of supplies from the least developed countries to meet them. The speaker's contributions were included in chapters 2, 3 and 4 of this Report.

**[8] Annalisa Zezza** – CREA Consiglio per la ricerca in agricoltura e per l'analisi dell'economia agraria, Italy

Dr. Annalisa Zezza addressed the topic of how changes in EU marketing standards can affect third countries from an international trade perspective. The speaker's extensive presentation covered many relevant issues including: World Trade Organization (WTO) standards, key research findings on agri-food standards and trade, international regulatory cooperation, and preferential trade agreements. The presentation provided key contributions to chapter 3 of this Report.

**[9] Jill McCluskey** – Washington State University

Professor Jill McCluskey addressed the topic on how marketing standards affect and are seen by consumers. The speaker's presentation mainly concerned quality standards, consumer preferences, and asymmetric information. According to the speaker, too many standards can confuse consumers, but a minimum of quality standards can reduce their uncertainty over quality. Insights from the presentation contributed to the contents of chapters 2 and 4 of this report.

**[10] Viera Baričičová** – Slovak Republic, Ministry of Agriculture and Rural Development

The speaker addressed possible impacts of EU marketing standards on meeting Sustainable Development Goals (SDGs). The presentation dealt with the implementation of quality standards in an international framework, the connection between agricultural quality standards and SDGs, and the importance of agricultural quality standards. The speaker's contributions were included in chapters 2,3 and 4 of this Report.

## 2 Benefits and Costs of Marketing Standards for EU Consumers and EU Agri-food Firms

Annarita Colamatteo, Maria Anna Pagnanelli, Marcello Sansone

In this chapter, we report the discussion on the main advantages and disadvantages of the current regulations on marketing standards for firms and consumers. The main objective of the discussion is to assess how marketing standards benefit consumers and firms, and whether the benefits outweigh costs.

The analysis is of particular importance to assess whether the policy option of removing all marketing standards (option 1 in Section 1.2.2) can be considered. In the workshop, a consensus emerged that marketing standards are socially efficient.

Although quantitative evaluation was not possible due to the lack of sufficient data, the speakers agreed that the benefits deriving from marketing standards outweigh the costs.

This chapter consists of three sections. In Section 2.1, the discussion of benefits and costs for EU firms is reported. Section 2.2 considers the point of view of EU consumers and 2.4 elaborates on the different perceptions of costs and benefits of marketing standards among stakeholders.

### 2.1 Benefits and costs of EU marketing standards for firms

#### 2.1.1 General evaluation

**In general, EU marketing standards meet with the approval of EU Agri-food firms** [2, 4, 5]. They are consistent with the general EU regulatory framework (internal consistence) and with the current organization of international trade (external consistence) [2].

A recent evaluation of EU marketing standards (Gentile et al. 2020) found that the EU marketing standards have been effective in achieving their objectives [2]. In particular, 83% of respondents in a sample survey of 123 business associations deemed that EU marketing standards are justified and **provide added value with respect to international marketing standards** [2]. A similar share (80%) agreed that EU marketing standards provide added value **with respect to private standards** [2]. The overall conclusion on the efficiency of EU marketing standards emerging from the survey is positive. Representatives of the poultry industry also confirmed a favourable evaluation [4, 5].

From a business perspective in particular the survey reveals that the mandatory nature of **EU marketing standards guarantees a standardized level of consumer protection, fair trading practices and a level playing field** for operators within the EU. Again, the objectives and requirements of EU marketing standards are designed to the specific needs of the EU market [2]. Furthermore, public marketing standards are perceived as “fair” insofar as they are established in the general interest, unlike private standards [2]. However, in cases where marketing standards have not yet been established (e.g., for potatoes, fruit spreads or processed fruits), stakeholders do not perceive a possible benefit from introducing new regulation [2].

#### 2.1.2 Benefits: Levelling the playing field, reducing information asymmetries, and promoting transparency

By providing clear, testable and unambiguous reference, marketing standards ensure that all operators in the market share the same set of information and reduce information asymmetries [1]. In this way, marketing standards “level the playing field” because all operators have similar information and must comply with the same rules [2, 5]. Marketing standards may support efficient coordination (e.g., easier orders, easier testing, production planning) and, if they are clear and common knowledge, they also result in more transparent industries [1].

#### 2.1.3 Benefits: Facilitating trade

According to the speakers, marketing standards are beneficial because they facilitate trade both within the Single Market [2, 10] and with extra-EU countries [6, 10]. Marketing standards may remove technical barriers and improve market access [2]. A firm complying with the marketing standards gains access to the entire Single Market, without further barriers. Also, the mandatory nature of marketing standards is a perceived benefit because it has two important consequences for producers. Firstly, marketing standards promote

transparency [2, 3] (because the rules are clear and known to all stakeholders) and facilitate public monitoring and control [3]. Secondly, they level the playing field for all competitors in the industry by setting a common set of rules that all must comply with [2].

#### **2.1.4 Benefits: Supporting firms' differentiation strategies**

Marketing standards guarantee consumers a minimum quality level and lead to improvement in the average quality level of food [2]. Also, they favour the establishment of top quality productions, as in the case of the hops industry or traditional free-range chickens [3, 4].

In the case of the hops sector, they contribute to enhancing the benefits associated with certification (contribute to improving product quality/establishing a premium brand, create a level playing field, improve market access/competitiveness and improve control by enforcement authorities). Marketing standards have facilitated the establishment of protected designations in EU hop growing regions and played a major role in establishing the status of EU hops as a highly reputed product worldwide. They helped ensure rising trends for Europe's share of the world hop market (until the arrival of new market trends: US 'fruity' varieties). Overall, they have had positive impact on the breweries' financial performance [3]. However, such benefits are difficult to measure.

Marketing standards also support sustainable production of traditional free-range chickens [4]. The main contribution lies in clear definition of product characteristics and farming methods, essential for the very survival of the industry [4]. Marketing standards (in this case, optional reserved terms) may facilitate quality testing and control – allowing for the production of goods of consistent quality [4] and can protect from unfair imitation based on false or misleading labelling [5].

**Marketing standards may support business strategies based on product differentiation.** This feature is highly beneficial for firms and consumers as well, because it contributes to the global reputation of the EU agri-food system for safety and quality [1]. Furthermore, Marketing standards contribute to the development of firm and collective reputation [9].

#### **2.1.5 Costs of marketing standards for agri-food firms**

From a general perspective, the costs of marketing standards can be divided into two groups [1, 3]:

- Implementation costs that are necessary to produce goods complying with the product and process specifications of the marketing standards. They may include investments in machinery or equipment, training of human resources, organization costs, etc.
- Private monitoring costs that firms incur to prove or verify that the goods are in fact in compliance with the marketing standards. They may include certification and documentation costs, inspection, sample testing, etc.<sup>4</sup>

Correct evaluation of marketing standards requires that only the **cost increase** be considered, i.e., the additional costs that the firms would not pay if marketing standards were not in place [1, 3].

An investigation into the EU hops sector found that the cost increase for operators for the certification of hops is minimal/negligible [3]. In fact, it accounts for less than 0.5% of the final product price; furthermore, there are no unnecessary repetitions/overlaps in the control and reporting requirements identified in this sector [3].<sup>5</sup> In Germany, in particular, the average total costs are estimated at €0.03/kg to €0.04/kg on a product that would sell for ±€10.00/kg; in the first stage (producer level) the cost comes to about €0.01/kg to €0.015/kg, in the second stage (processing) about €0.015/kg to €0.025/kg [3].

The investigation into the hops industry concluded that the benefits of marketing standards outweigh the costs [3]. In fact, while the certification system creates high marketing benefits, the cost associated with application of the certification system is extremely low/negligible in relation to the product price [3]. However, this observation calls for careful consideration because “benefits cannot be quantified” and because the result is industry-specific and cannot be extended to other sectors.

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<sup>4</sup> A third group of costs, public monitoring costs, are borne by the public authorities to ensure correct implementation of the regulation and are not considered in this section.

<sup>5</sup> The estimate was based on surveys and in-depth interviews of German, Polish and Czech producers, as reported by speaker [3].



Private monitoring costs appear to be fairly modest compared to the total production costs [3, 4]. Speaker [4] reported that, in the case of “traditional free range” chickens, the estimate was €0.015 per kg over a production cost exceeding 1.5 €/kg.

These data suggest that cost increases due to marketing standards are relatively small in the hops and traditional free-range chicken supply chains, implying that the risk that marketing standards drive firms away from the market due to higher costs should be modest in the two cases.

However, these findings are not general and cannot be extended to other sectors. A key point is that the costs of marketing standards are highly heterogeneous [1, 3]. The differences may be quite considerable across sectors and even across different forms of organization of the value chain. For example, a firm adopting a very restrictive private quality standard may find a small (if any) increase in implementation costs due to marketing standards [1]. The heterogeneity has two important implications [3]:

- **It could be misleading to use data from specific studies to infer general conclusions about an entire sector;**
- **It could be misleading to use estimates from one sector to draw conclusions about the entire agri-food system.**

Finally, an important difference can be noted between marketing standards and private standards. Because the provisions of marketing standards are general in nature, the related **costs are not specific investments** and can be used to support transactions with a large number of trade partners [1]. As a consequence, marketing standards are not expected to cause a lock-in effect.

## 2.2 Benefits and costs of EU marketing standards for consumers

EU mandatory marketing standards provide the consumer with various benefits [2]. Being mandatory and legally enforced, they ensure protection for all consumers and can contribute to improving the average quality level of agricultural and food products marketed in the EU. Similar results may not be achieved through international marketing standards, “mainly because their uptake is voluntary” [2].

Marketing standards facilitate consumer assessment of food quality, especially when unobservable characteristics are involved [1, 9]. For example, specialty, regional, authentic, and local food products have gained in importance thanks to new trends arising from the consumers’ predilection for higher quality attributes, their support for local products/rural development and preservation of traditional agricultural systems, and their interest in food safety and social issues [9]. Thus, **marketing standards can reduce consumers’ uncertainty over quality** [9], assuming that the standards are consistent with consumer preferences [1]. In this case, they are effective in reducing purchase distortions due to the misleading quality claims consumers could be exposed to [5].

Yet, meeting this condition is not easy because marketing standards are by definition simple and general, while consumer preferences are heterogeneous and complex [1] (see Section 4.1 for detailed discussion of this point). Marketing standards can at best only imperfectly reflect the variety of preferences in a market. They may fail to provide information that is important for groups of consumers or, on the contrary, may provide, excessive, unwanted or even misleading information to other consumers [1]. From the consumer’s point of view, therefore, the costs - in the sense of disadvantages - of marketing standards are essentially linked to the concept of information: if the marketing standards are not consistent with consumer preferences, there is a risk of distortions in consumption decisions [1]. Also, complexity (such as too many standards/certifications or too many provisions) can confuse the consumer [9].

In conclusion, the benefits of marketing standards for consumers stem from the concept of limited rationality.

A key benefit of Marketing standards is the reduction of information asymmetries between consumers and suppliers [9].
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However, the benefits for consumers are difficult to measure and generalize, and may vary across sectors [5]. Their magnitude depends on many factors: just how much consumers care about quality; the type of asymmetric information (in cases where quality is known at the time of purchase, standards are unnecessary (Saitone and Sexton, 2009); the industry structure in terms of number and the concentration of firms [9]. The

complex evolution of the process of purchasing food products, and at the same time of consumer preferences, has led to the emergence of the need for new standards over time [9].

### 2.3 Heterogeneity in perception of benefits and costs

Stakeholders' perceptions of the costs and benefits of marketing standards may be heterogeneous [1]. This issue is of particular importance in policy design because it implies that regulation must balance heterogeneous and possibly conflicting interests.

The firms' perception of marketing standards' benefits and costs may vary according to their strategy, competitive advantage, market coverage and product positioning. Quality-based business models call for marketing standards that facilitate and protect differentiation, for example by defending their competitive advantage against imitations or false claims [4, 5]. Instead, commodity-producing firms that do not place emphasis on the distinctive characteristics of the product highlight the importance of improving market access [2, 6, 7] and reduction of barriers to entry [5, 7].

**Perception of marketing standards may differ between firms and consumers** as well. To take an example, the poultry industry offers helpful evidence in understanding this point. A representative of the poultry industry advocated relaxing the provisions on the water content in poultry meat, arguing that the new technologies - greatly increasing the efficiency of poultry production and reducing environmental impact - naturally result in heavier water content, beyond the intentions of the producers. Because the current limitations were designed to prevent producers from intentionally adding water to the meat under the obsolete technology, they should be revised to facilitate the adoption of the more efficient production process [5]. During the discussion, a consumer representative answered that increasing water content was not acceptable for consumers because the standards define what consumers buy regardless of what technology is used. The different perspectives on the issue can be summarized in two conflicting interpretations of the rationale behind the standards. Producers consider the marketing standards as a prohibition to add water, whilst consumers consider them as a guarantee of low water content. The different positions regarding updating of the poultry marketing standards can be accounted for with these conflicting perceptions. In general, it is expected that consumers evaluating marketing standards will not give the same weight to production costs as firms do [4].

These examples suggest that heterogeneity in evaluation may lead to conflicting stakeholder positions in the public debate about reform of marketing standards. Such differences may be driven by the different stakeholder objectives (e.g., consumer utility maximization vs. profit maximization) or even by different perceptions of the reasons why marketing standards are implemented. The public nature of the regulations calls for careful balancing of heterogeneous interests. Furthermore, this divergence in perceptions may necessitate careful communication of any changes in marketing standards to consumers and businesses, to prevent misunderstanding from arising in public opinion.

### 2.4 Policy implications of benefit and cost analysis

The discussion of benefits and costs of marketing standards for firms and consumers provides insights into the five policy options that inform the current debate on reform of marketing standards (Section 1.2.2). The main results are summarized in the following bullet points.

- **There is a general perception that the benefits of marketing standards outweigh the costs.** This conclusion suggests that the option of removing EU marketing standards may not be socially efficient.
- **The benefits of marketing standards largely depend on their ability to establish quality and reflect consumer preferences.** This finding evidences the need to update marketing standards to take changes in consumer preferences into account. However, because of regulatory costs (for regulators) and implementation costs (for firms), updating may prove efficient only if the changes in preferences are homogeneous (i.e., they concern a large segment of consumers), lasting and appreciable.
- **There is little evidence of interest in extension of marketing standards to new sectors/products.** Thus, extending the regulations may require careful consideration. **Stakeholders may have heterogeneous and even conflicting interests vis-à-vis marketing standards.** If applied, updating the regulation is expected to balance such conflicts.

### 3 International trade and effects on the least developed and developing countries

Edward Kyei Twum

#### 3.1 Introduction

The discussion in this chapter addresses the possible consequences of reform of the EU marketing standards on international trade. In particular, there is an interest in assessing whether the five policy options described in Chapter 1 may facilitate or harm international trade and what the implications might be for multilateral trade agreements.

In fact, marketing standards have a prominent role in regulating international trade and have been the object of intense debate and trade negotiations over the years [8]. EU marketing standards are part of a complex regulatory system of international trade, where several institutions concur in the organization of trade, each with their own rules and objectives. Reform of EU regulations is expected to have consequences for the system.

In particular, three dimensions of international trade impact are explored in this chapter: i) trade barriers for extra-EU producers, ii) heterogeneity of standards and compliance with multilateral trade agreements, and iii) promotion of sustainable marketing standards. The following sections summarize the discussion.

#### 3.2 Marketing standards as trade barrier

**There is no consensus in the academic literature on the trade effects of marketing standards** (Santeramo & Lamonaca 2019, [8]). Marketing standards can have a beneficial effect because they reduce transaction costs and information asymmetries, increasing market efficiency [8]. They may help to reduce search costs and the costs of retrieving information on the quality and safety attributes required by consumers and regulators in distant markets. In fact, marketing standards are able to codify the information to the benefit of international producers who have no interaction with the final consumers [7, 8]. By referring to marketing standards, international producers may learn how to supply goods that are marketable internationally. As long as the standards do not discriminate international suppliers, a level playing field can be created, because it reduces the informative advantage of domestic producers. Also, marketing standards may act as a guarantee that foreign products comply with minimum quality and safety requirements, reducing consumer wariness [9]. For these reasons, marketing standards play an important role in granting farmers in the least developed countries access to the EU market [7].<sup>6</sup>

**Marketing standards can shape global value chains** as well [8]. Compliance with increasingly complex and stringent food standards and monitoring of this compliance throughout the supply chain call for tighter **vertical coordination** [8]. As a consequence, strict marketing standards provide incentives for contract farming and vertical integration [8]. The trend is of particular importance in least developed countries, where the implicit norms regarding food quality in the local markets greatly differ from international standards [8]. It may contribute to boosting income and rural development in these countries.

The negative trade effects lie mainly in implementation and monitoring costs. If international producers suffer from competitive disadvantages compared to the producers in the importing countries, costly marketing standards may act as a trade barrier [8]. This issue is of particular concern in the least developed countries where the relative disadvantage of farmers and small-medium enterprises may be severe [7]. Such disadvantages may originate from factors such as [8]:

- Lack of knowledge of sanitary or phytosanitary requirements and regulations
- Absence of quality control laboratories
- High cost of the necessary infrastructure
- Absence of modern packaging and classification facilities

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<sup>6</sup> The hypothesis of marketing standards creating a level playing field was borne out by an EU certification scheme in the hop sector by [3]. Speaker [2] asserted as much with regard to EU marketing standards. In the case of the least developed and developing countries, EU marketing standards are readily available for suppliers/exporters and do not discriminate among the countries [7].

- Lack of inspection systems and skilled workers
- Non-existence of responsible legal bodies.

The intensity of such factors, and ultimately of the competitive disadvantages of the producers in least developed countries, depends on several variables including market size and/or type of products (commodities vs. value-added goods) [8]. Local institutions play an important role as well. For example, Kenya Plant Health Inspectorate Service (KEPHIS) carry out inspections on fresh produce at the airport, making sure it conforms to EU marketing standards before being allowed to be exported [7]. Finally, the existence of private standards affects the evaluation. **In frequent cases of highly restrictive private standards, EU marketing standards do not entail significant incremental costs** [7].

Summarizing, **the net trade effect of marketing standards is an empirical question**. As noted in Chapter 2, given the remarkable heterogeneity of cost and benefit drivers, it would be misleading to draw general conclusions from case studies or local examples.

Quantitative assessment of the impact of marketing standards on trade calls for extensive studies. Still, general trade-offs can be identified. For example, consider a policy reform eliminating or greatly simplifying marketing standards (policy option 1 in Section 1.2.2). This approach may lower implementation and monitoring costs, removing trade barriers for producers. But at the same time, with simpler or even no EU standards, EU consumers might show less willingness to buy imported products because the guarantee of minimum quality is slackened (see Sections 2.2 and 4.2.1 for discussion of this point). Also, market access might prove more difficult because of the absence of clear rules. As a consequence, the impact of simplification of marketing standards depends on the relative magnitude of positive and negative effects. Similarly, using marketing standards to promote sustainability may result in additional costs for international producers, but at the same time may increase the value of the products for EU consumers.

### **3.3 Heterogeneity of standards and compliance with multilateral trade agreements**

Currently a multiplicity of standards is shaping international trade, and regulations are implemented at many levels including [8]:

- Standards adopted by multilateral bodies such as those on the Sanitary and Phytosanitary Measures (SPS agreement) and Technical Barriers to Trade (TBT agreement) under the World Trade Organization (WTO), the Codex Alimentarius Commission of the Food and Agriculture Organization (FAO), and others.
- Public standards adopted by regional or national authorities that are designed to protect citizens of a specific country or regional block from unsafe food by ensuring that market access is granted only to business operators meeting minimum safety and quality requirements.<sup>7</sup> The EU marketing standards fall into this category.
- Voluntary standards adopted by private entities.

**The multiplicity of standards in international markets creates a complex regulatory environment for business operators** [8]. Two issues emerge from this complexity: i) how to reduce the heterogeneity of standards and save costs for entrepreneurs [6] and ii) how to prevent litigations and trade issues in multilateral settings such as the World Trade Organization [8]. In the next two sub-section the two issues are addressed separately.

#### **3.3.1 Harmonization of international marketing standards**

If the marketing standards set by different authorities entail inconsistent requirements, firms' costs to obtain international market access may increase [2, 6, 7]. Thus, heterogeneity of standards may act as a trade barrier, whilst harmonization of standards is key to promoting international trade [6,7 during discussion].

However, it must be noted that harmonization of marketing standards is difficult to achieve, because it involves not only common regulations, but also uniform interpretation and enforcement of the rules [6]. In

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<sup>7</sup> For example, current EU marketing standards are tailored to the specific needs of the EU market and have ensured adequate consumer protection [2].

practice, harmonization requires convergence in regulations (adoption of same standards) and in the implementation of regulations (training and homogeneous interpretation of rules) [6]. As noted by speaker [6], the objective of marketing standard harmonization is to provide equal enforcement, comprehension and interpretation of regulations, as well as mutual recognition of inspection procedures on the part of all the stakeholders.

**Harmonization reduces transaction costs and is expected to promote trade** [6, 7, 8]. The OECD Fruit and Vegetable Scheme was proposed as a successful example of public intervention in this regard [6]. The main objective of the scheme “is to facilitate international trade through the harmonization of implementation and interpretation of marketing standards. A further objective is to facilitate mutual recognition of inspections by participating countries” (OECD 2018). The initiative provides explanatory brochures on standards, supports the defining of common inspection procedures, and sponsors training courses. The scheme also organizes peer reviews to help the participating countries improve their quality-inspection systems. The scheme is designed to benefit not only governments but also farmers and consumers. Speaker [6] illustrated an empirical study providing provisional estimate of trade increase ranging from 34% to 70% if countries engage in harmonization (figures to be confirmed in the final study) [6]. However, the same empirical study suggests that the gain from even simple measures toward homogeneous implementation (e.g., explanatory brochures) may have a non-negligible effect on trade. The provisional estimates (to be confirmed in the final study) range from 7% to 12% [6]. Speaker [7], presenting the case of Kenyan fruit and vegetable producers, confirmed that standard harmonization opens market opportunities, facilitates compliance with the regulations and lowers costs for farmers and SMEs in less developed countries. According to Speaker [10], a harmonized system of international marketing standards may benefit consumers by ensuring a consistent minimum quality level.

The discussion identifies a possible conflict between the benefits of having marketing standards that are explicitly tailored to the EU market ([2], see Chapter 2 of this Report) and the benefits from internationally harmonized standards. Reform of EU marketing standards must balance these two opposite factors. The issue is of particular importance when reform considers new characteristics of marketing standards that are not currently implemented by other countries or trade blocks, such as the promotion of sustainable agriculture.

### 3.3.2 Implications for multilateral trade relationships

Despite the benefits of harmonization and the efforts of multilateral institutions, domestic and import regulations continue to differ from country to country. In fact, speaker [8] noted “while encouraging governments to orientate their import requirements towards internationally agreed standards, WTO rules maintain the right of countries to impose their own standards – as long as they are non-arbitrary, non-discriminatory and least trade-restricting”. This right lays the responsibility on individual countries and the EU as the main authorities regulating food standards, including safety standards [8]. It is worth mentioning that the WTO rules also require individual countries or regional blocks to notify other member countries of changes or the introduction of new standards. Presenting data on the total number of notifications by objective submitted to the TBT Committee of the WTO, speaker [8] remarked that “the three product groups with the highest number of Non-Tariff Measures (NTMs) belong to the agri-food sector”, indicating the importance of notification at the international level.

An increasing number of notifications (+11% annually) and of Specific Trade Concerns (STCs) (+26%) are being submitted to the TBT committee of the WTO [8]. The developing and less developed countries are taking on an active role in this process [8]. In fact, the geographic distribution of new notifications shows an increase in Africa, specifically from Tanzania, Kenya, Uganda, and Rwanda [8]. In particular, these notifications have mainly concerned food and beverages. In fact, growth has been shown in both notifications and STCs [8]. Avoiding possible litigations is a key concern, because some trade issues may take years to be settled, especially if the scientific evidence is controversial [8]. **Regulators addressing changes in marketing standards might want to consider the possible effects on future trade litigation.**

In order to reduce regulatory heterogeneity and the risk of litigations, three main options are available to regulators [8]:

1. Countries can unilaterally accept the regulatory settings or standards of another country. For instance, suppliers in a foreign country willing to access the EU market must adapt to EU marketing standards.
2. Countries can pursue regulatory co-operation at a bilateral or plurilateral level (mostly used in preferential trade agreements).

3. International organizations, in particular those setting standards, can promote regulatory co-operation at a multilateral level.

The EU has the resources to act on the three levels by giving incentives to third countries to adopt EU standards and by working at the bilateral and multilateral level [8]. Suppliers from least developing countries may prefer regulatory harmonization and/or a mutual agreement recognizing specific production procedures/processes. Speaker [7], suggested during discussion that in formulating marketing standards, bilateral negotiations might be useful to address country-specific issues. Nevertheless, these trade costs reduction options “take time to become effective” and their “trade impacts are visible only after a phasing-in period” [8].

### **3.4 Sustainability and Trade**

EU strategies such as the Farm to Fork strategy, Green Deal and Biodiversity Strategy hold implications for trade [8]. The revision of marketing standards to promote sustainability may be a controversial issue. In fact, while a strategy in this direction is expected to help in achieving a set of Sustainable Development Goals (see Section 4.2.4), international business operators might oppose any such initiative [10].

International producers and traders may face comparative cost disadvantage in complying with strict sustainability requirements [7]. If such requirements are perceived as arbitrary trade barriers, trade issues may begin to burgeon [8].

To prevent such an outcome, it is advisable that a reform of marketing standards including sustainability requirements be accompanied by consultations with trade partners. In this regard, Preferred Trade Agreements (PTAs) can offer an important setting to promote international acceptance. In fact, PTAs can act as “laboratories where negotiators can experiment and promote new provisions that can be transferred at the multilateral level when a consensus is globally reached” [8].

The new PTAs are more ambitious and comprehensive in scope than those formulated in the past and currently already include sustainability (Trade and Sustainable Development chapters) [8]. Nevertheless, **progress in the implementation of these chapters is slow** [8].

### **3.5 Summary remarks on international trade**

EU marketing standards contribute to shaping the international food trade. They can play a twofold role as trade facilitator (by codifying information and ensuring quality) and trade barrier (due to implementation and monitoring costs). The net result of these opposite factors is an empirical question depending on the type of product, market structure, technical efficiency of suppliers, local institutions, and existing trade agreements. Nevertheless, some general key points can be made about the trade implications of a simplification of EU marketing standards.

Simpler marketing standards in importing countries may reduce implementation and monitoring costs for producers in exporting countries and, in principle, they could reduce the risk of litigation in multilateral settings. In this regard, it is important to note that the benefits of simplification may be attenuated by two factors. Firstly, the consumers’ willingness to pay for imported goods may decrease if the simplification is perceived as a reduction in the quality of international products. Secondly, if third-country producers are required to comply with strict private standards that are imposed by traders, the financial benefits of simplifying marketing standard may prove limited.

Using marketing standards to promote sustainability may also hold implications. The policy may give rise to litigations if it is perceived as an arbitrary trade barrier. Also, producers in least developed countries may well face a competitive disadvantage if they fail to be cost efficient in adopting sustainability standards. Whether sustainable standards are able to grant these producers higher prices for their product or not is yet to be determined.

## 4 Policy issues

Carlo Russo

Marketing standards are a set of obligatory rules and optional reserved terms establishing the quality of a food product that is marketed to consumers (Chapter 1 of this report). They generate a system of definitions, grading schemes or reserved terms that is intended to support economic agents (firms and consumers) in assessing and delivering quality. Following the Lancaster (1966) approach, we can define quality as the set of product characteristics (attributes) that provide utility to consumers. Thus, **marketing standards aiming at establishing quality, must be able to identify and measure utility-providing attributes**. The point is that food quality is a complex issue. It involves several attributes including the definition of products, their production processes, and their final characteristics, origin and use.

### 4.1 An information-economics perspective on marketing standards

From an information-economics perspective, marketing standards emerge because of a bilateral incomplete information problem. On the one hand, consumers (or buyers) may be unable to survey the entire set of attributes that a product actually holds. In this case, the consumer is not able to develop complete expectations regarding the utility of consumption. For example, the discipline of optional reserved terms guarantees consumers the actual presence of the desired attributes. On the other hand, producers may have incomplete information on consumer preferences. In this case, the marketing standards may offer reference for producers, providing a description of quality attributes. For example, a farmer may know that consumers on average prefer extra-grade to second-grade products and the standard provides the information needed to supply a product of the desired grade.

Definition box:

Marketing standards establish quality, i.e., the set of attributes providing utility to consumers (and that consumers are willing to pay for).

The information conveyed by the marketing standard (e.g., a definition or a grade or an optional term) summarizes the complex set of observable and unobservable quality attributes into a simple signal to consumers and firms. In this regard, marketing standards have desirable properties, being:

- *Concise and simple*, without unnecessary requirements.
- *Unambiguous*, with provisions that are clearly understood by all economic agents in the same way.
- *Common knowledge*, meaning that all agents are aware of the standards and are aware that the other agents are aware.
- *Testable and verifiable* so that all agents may observe compliance with the standard.
- *Vertical*, enabling a quality ranking of products that is agreed upon by all (or the majority of) economic agents.

These properties allow marketing standards to lower transaction costs in two ways.<sup>8</sup> Firstly, they simplify trade and production planning by providing concise, unambiguous and verifiable information. In this way communication between economic agents is more efficient, information asymmetries are reduced and there is less incentive for opportunism.<sup>9</sup> Secondly, they help economic agents to overcome limited rationality issues when assessing the value of their product. Economic agents may be unable to process complex, multi-dimensional definitions of quality. A simple signal can provide a useful assessment of product quality and ultimately consumer value.

In order to reduce transaction costs, marketing standards must be able to represent consumer preferences, so that assessment of product quality is as accurate as possible. This condition is difficult to meet in practice, because consumer preferences are complex, specific and heterogeneous, while marketing standards – by

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<sup>8</sup> For discussion of the possible role of marketing standards in increasing transaction costs see Swinnen and Vandemoortele 2011.

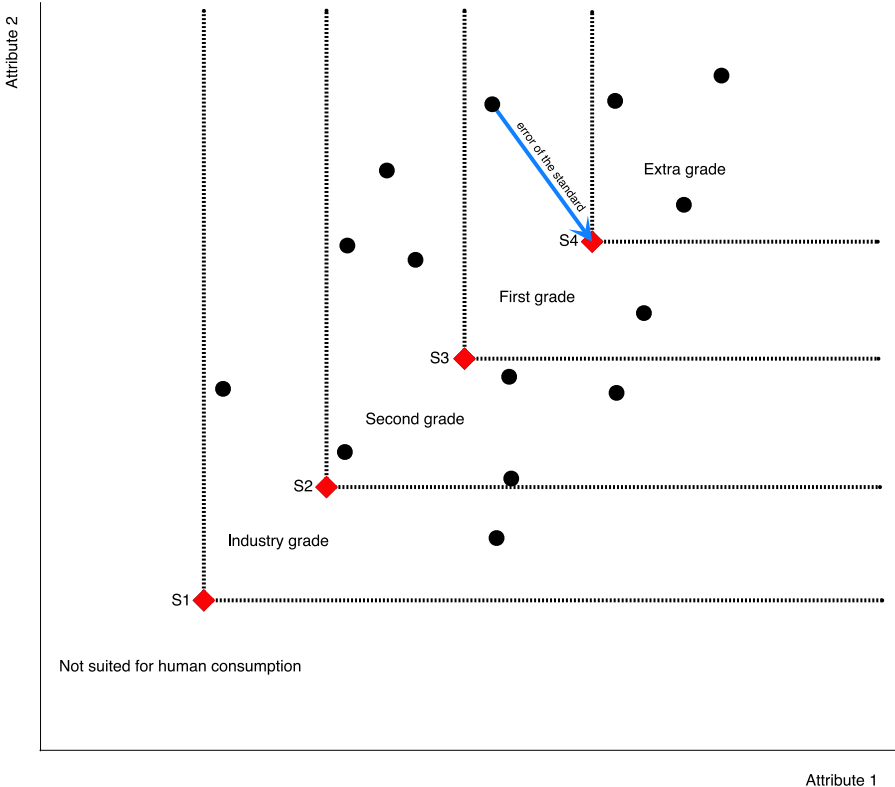
<sup>9</sup> For discussion of the role of verifiable information when trading goods or services with unobservable characteristics, see Milgrom and Roberts 1986.

definition – must be simple and general. As a consequence, marketing standards can only approximate quality and their use is expected to suffer from some information loss. The approximation can be measured as the difference between the combination of attributes that maximizes consumer i's utility and the provisions of the marketing standard (error of the standard).

Definition box:  
 The **error of the standard** is the difference between consumer i's desired attribute combination and the provisions of the marketing standard.  
 An **efficient marketing standard** minimizes the error, for a given cost of implementation.

Figure 4-1 illustrates the information framework describing marketing standards. Following Lancaster's (1966) approach, the axes of the graph represent the attributes of the product, i.e., the characteristics providing utility to consumers. For the sake of feasible representation, we assume that only two attributes are relevant to consumers (the conclusions still hold for any arbitrary number of attributes). The axes define the *attribute space*, i.e., the set of all possible combinations of attributes. The black dots in Figure 4-1 represent individual consumers' preferences for the attributes. Each consumer has an ideal combination of attributes given income, preference, prices and the cost of producing goods and attributes (see appendix for discussion of this point). The ideal combination represents the product quality that the consumers would like to find in the market. Preferences are heterogeneous so that each consumer has a different ideal combination. A marketing standard identifies a small number of attribute combinations in the attribute space (the red diamonds S1 to S4 in Figure 4-1). These reference combinations are used to divide the entire attribute space into five regions or grades (from not suitable for human consumption to extra grade, in the example).

**Figure 4-1:** Information efficiency of marketing standards



The information advantage of the marketing standard lies in the reduction in the number of data that are necessary to organize the transaction. Instead of a data vector defining the intensity of each attribute (two dimensions in this example), it is sufficient to transmit a single piece of information (the grade), reducing the cost of communication among the parties. Also, firms and consumers can confine their attention to the five grades, instead of considering the infinite combinations in attribute space. If the threshold levels S1 to S4 are verifiable and common knowledge, the marketing standard can lower transaction costs.



The benefits of marketing standards come at the cost of simplification. To begin with, all the products within the grade are considered homogeneous regardless of the actual attribute content. For example, a product close to reference combination S4 but still falling in the first grade is considered homogeneous with a product close to reference combination S3. The use of marketing standards can reduce economic agents' perception of quality. Secondly, marketing standards might give suppliers the incentive to produce goods that are just close to reference combinations in order to minimize costs. In this case, consumers might fail to find their ideal combinations in the market. Figure 4-1 illustrates the error of the standard as the distance from the desired ideal combination (the black dot) and the reference combination S4 (blue arrow in the figure). In this example, the consumer buying an extra grade product receives more attribute 1 and less attribute 2 than desired.

Definition box:  
 A consumer's **ideal combination of attributes** is the set of attributes (and their levels) that a given consumers would like to purchase given product prices, cost of production of attributes and available budget.  
 The consumer's willingness to pay for a product complying with marketing standards deviating from the ideal combination declines with error of the standard.

A key point in this analysis is that, under general conditions, **as the error of the standard increases, the consumer's demand for the good may decrease.**<sup>10</sup> If the reference combination of the standard differs from the consumer's ideal combination, the marginal utility of consumption decreases and, prices remaining constant, the consumer maximizes utility reducing the quantity purchased in favour of alternative goods (see the appendix for discussion of this point).

An efficient marketing standard maximizes social welfare by minimizing the aggregate error for any given cost of implementation. In this way consumer demand and total trade increase. Thus, the socially optimal marketing standard balances two opposites. On the one hand, the standard must be complex enough to provide a sufficient representation of consumer preferences (minimize the error). On the other hand, it must be simple enough to reduce transaction costs and implementation costs. The trade-off between these two opposites defines the standard.

**4.1.1 Substitution and complementarity between marketing standards and private standards**

The theoretical model suggests that strategic interaction may be at work between EU marketing standards and private standards [1]. In fact, the outcome of a reform of marketing standards may depend on this possible interaction.

Both marketing standards and private standards are sets of rules and instructions regarding product characteristics and the production process aiming at reducing transaction costs by providing information to firms and consumers. Yet, they differ in four dimensions: source, scope, objective, and nature (Table 4-1).

**Table 4-1:** Differences between Marketing Standards and private standards

Differences	EU Marketing Standards	Private Standards
Source	Legislation	Contractual arrangements
Nature	Mandatory, although they may include voluntary optional terms	Voluntary, although they may be imposed on suppliers
Scope	General (all firms and consumers)	Limited to contractual parties
Objectives	Maximizing social welfare	Maximizing profits of one or more contractual parties

Marketing standards are established by national governments (country-specific standards), public institutions (Henson 2008), regional blocks (e.g., EU marketing standards) or international institutions, hence they are

<sup>10</sup> The magnitude of the decrease depends on several factors including the functional form of the utility function.

public (regulatory) standards (Hobbs 2010). They are legally mandatory and/or voluntary, defined by commodity and sector (Gentile et al. 2020), often set to resolve a perceived market failure (e.g., asymmetric information) (Hobbs 2010) and to maximize social welfare. They may be enforced through legislation and inspections by the competent state authorities and/or a court of law (Hobbs 2010, Henson 2008). Private standards, on the other hand, are established by private firms, independent bodies and non-governmental organizations (third-party standards), or an industry (Hobbs 2010, Henson 2008). They are voluntary but can be *de facto* mandatory if a substantial section of the market adheres to them and takes them as a market access requirement (Hobbs 2010, Henson & Reardon 2005). Private standards are adopted as means to protect a firm's or industry's reputation, reduce the possibility of liability, increase competitiveness (Hobbs 2010) and complement mandatory standards. They are enforced through contractual arrangements (Hammoudi et al. 2009), under private law. Usually, provisions in private standards are more stringent than in marketing standards (Hammoudi et al. 2009).

The first question to be considered is whether marketing standards and private standards are complements or substitutes. The issue concerns the value of marketing standards in the presence of efficient and widely used private standards. If, in fact, the two types of standards were perfect substitutes, having both of them in place would be an unnecessary duplication and the policy options of removing or greatly simplifying the system of EU marketing standards could be considered.

The discussion in Chapter 2 concluded that the EU marketing standards provide added value with respect to the applicable private standards [2], and that the two tools are not perfect substitutes [1].

The theoretical analysis suggests that voluntary standards (including private standards) may emerge if the marketing standards are relatively inefficient in approximating consumer preferences [1]. This may happen when marketing standards are ill-designed or when they fail to capture new and changing consumer preferences. Another possible source of relative inefficiency of marketing standards with respect to private standards may arise from differences in scope. Marketing standards have a general scope: all the rules must apply to all the firms and all the consumers observe the same grading system. Instead, limited scope allows private standards to focus on specific segments of consumers whose preferences are not well-approximated by the existing marketing standards [1].

**Figure 4-2:** Private standards and marketing standards

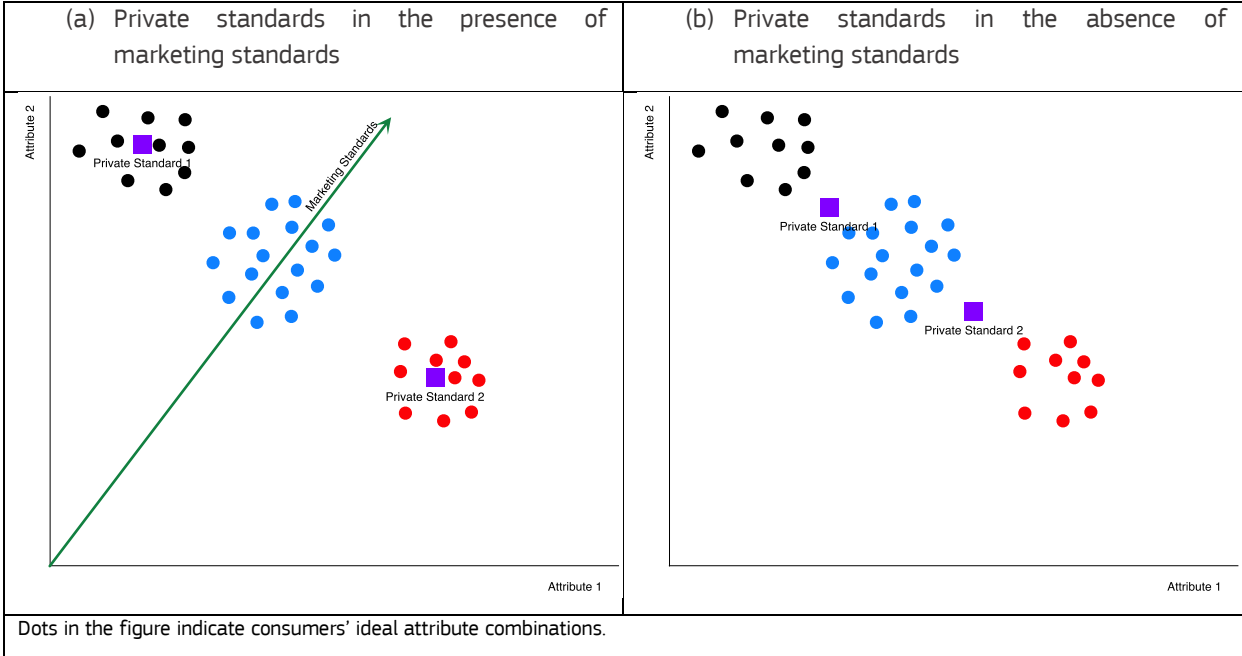


Figure 4-2 provides an example of this interaction, showing three groups of consumers with heterogeneous preferences regarding the attribute combinations (black, blue and red dots in the figure). Because of their general scope, public marketing standards must consider all the consumers in the market, and they must provide a grading system that minimizes the combined information loss for the three groups (the green line in Figure 4-2). In this example, the general marketing standards are not efficient in representing the preferences

of black and red consumers. As a consequence, private standards (the purple squares in the figure) may emerge. Because of their limited scope, private standards can focus on a single market segment and so prove more efficient in representing the preferences of a group of consumers.

Notably in this example, marketing standards enhance the efficiency of private standards. Figure 4-2, panel (b) illustrates the optimal design of the two sets of private standards in the absence of a set of public marketing standards. In this case, the private standards must consider the group of blue consumers as well, losing efficiency with respect to the other groups.

Figure 4-2 provides an example of the complementarity between public marketing standards and private standards. The co-existence of the two types increases the overall information efficiency of the market. This example bears out the conclusion that **it is not necessarily true that the mere existence of a developed system of private standards implies that marketing standards are redundant or unnecessary.**

Private standards may emerge when consumers' preferences are heterogeneous or when marketing standards are ill-designed (i.e., they do not represent preferences correctly). Thus, it is possible to conclude that **the existence of private standards is not a sufficient condition for arguing that marketing standards are ill-designed. Still, in general, voluntary standards may emerge when marketing standards are ill-designed.**

## 4.2 Updating marketing standards

Several policy options that are considered in the current debate involve updating marketing standards (options 3 to 5 in Section 1.2.2), as stakeholders and regulators are considering whether the existing standards are still efficient. Four possible reasons for an update have been considered:

1. Changes in consumer preferences
2. Technological innovation
3. Simplification and reduction of compliance costs
4. Promoting sustainability

The workshop explored the implications of these drivers of change.

### 4.2.1 Changes in consumer preferences

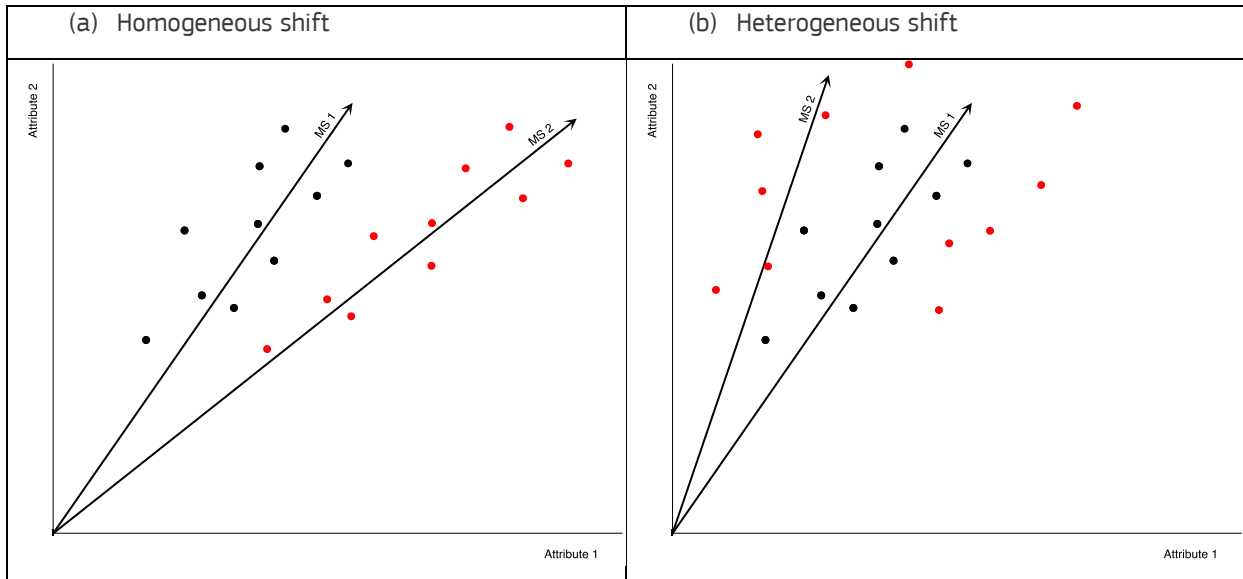
As consumer preferences regarding quality evolve over time ([9]), attributes defining quality change as well. In the information economics framework, the change in preferences can be represented by a shift in the consumers' ideal combinations in the attribute space (see the appendix for more detailed discussion of this point).

Figure 4-3 illustrates the effects of a generalized shift in consumer preferences. Panel (a) represents a homogeneous shift, a situation such that the preferences of all the consumers change in the same way. In Panel (a) after the change all the consumers appreciate attribute 1 more than before (all the dots move horizontally in the figure). Examples of homogeneous shocks may include a generalized increase in consumers' health concerns or in environmental responsibility.

After the shock, marketing standard MS1 is inefficient. In fact, an updated standard (MS2) can reduce the aggregate error with respect to MS1. In the case of homogeneous shifts in consumer preferences, updating marketing standards may be advisable if the benefits from the increased efficiency outweigh the costs for firms to adapt to the new provisions (Sections 2.1 and 2.4 of this report). In particular, updating marketing standards after a homogeneous shift in preferences requires that:

- The shift be large enough to justify imposing implementation costs on firms.
- The shift be long-run and preferences will see no further shifts in the near future.

**Figure 4-3:** Changes in consumer preferences and update of marketing standards



Black dots indicate consumers' ideal combinations before the change in preferences, red dots are ideal combinations after the change in preferences.

Marketing standards are general and rigid by nature. It would be difficult to adjust them to follow the volatility of consumer preferences in a rapidly evolving agri-food system. Updating standards may be motivated only by long-run, significant and homogeneous changes in preferences.

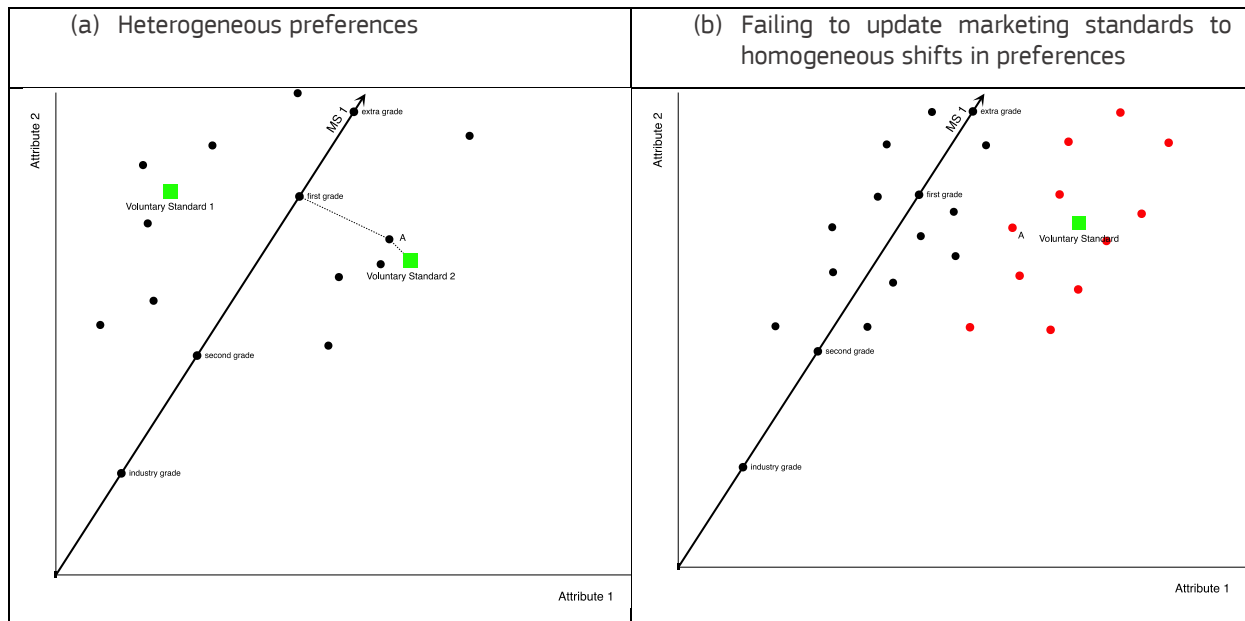
Panel (b), on the other hand, represents a heterogeneous shift. In this situation, consumers' ideal combinations shift in different directions. Over time the differences among consumers increase, and the relative appreciation of attributes shows divergence. In Panel (b), after the shock some consumers appreciate attribute 1 more, others less. In this case, updating marketing standards may not increase efficiency. In fact, a new standard (for example MS2 in Panel (b)) reducing the error for some consumers would increase it for others.

In the case of heterogeneous preferences, the efficiency of any marketing standard is low. As a consequence, consumers perceiving a considerable error of the standard may exhibit a relative reluctance to pay for products complying with the marketing standard. As shown in Section 4.1.1, in this case firms may be willing to adopt voluntary standards (such as optional voluntary terms, private standards, certifications etc.). Such standards can be represented as observable combinations of attributes that deviate from the provisions of the marketing standards (the green squares in Figure 4-4, panel (a)).

The attribute combination in the voluntary standard may be closer to the ideal combinations of groups of consumers. For example, consumer A may prefer a product complying with Voluntary Standard 2 rather than buying a first-grade product. A firm adopting voluntary standard 2 may profit from consumer A's increased willingness to pay for products that are closer to the ideal combination.

Note that voluntary standards may also emerge even in the case of homogeneous preferences. Panel (b) in Figure 4-4 illustrates the possible emergence of a voluntary standard if the marketing standard MS1 is not updated after a homogeneous shift in preferences. In this case, the voluntary standard can offer consumers a product closer to the new ideal combinations.

**Figure 4-4:** Inefficient marketing standards and voluntary standards



Black dots indicate consumers' ideal combinations before the change in preferences, red dots are ideal combinations after the change in preferences.

#### 4.2.2 Technical innovation

In theory, new technologies can affect consumers' ideal combinations in two ways:

1. They can change the cost of production of existing attributes.
2. They may enable the production of new attributes.

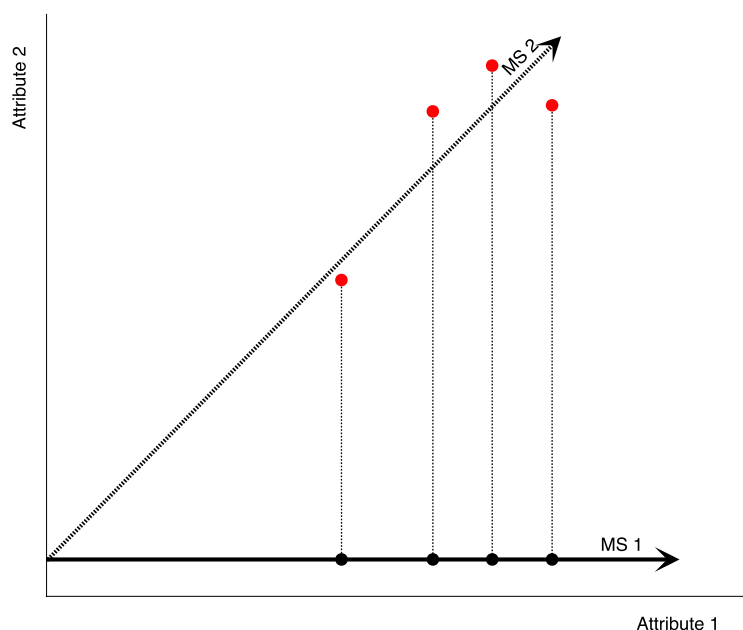
In a competitive market, a change in the cost of production of attributes may affect the consumers' ideal combination (see the Appendix for discussion of this point). The key point is that the ideal combination is chosen for a given level of consumer expenditure. If a new technology reduces the cost of production of a given attribute and if the market is perfectly competitive, the consumer is able to obtain more attributes for the same price.<sup>11</sup> The demand for attribute 2 is undetermined, because it depends on the net result of income and substitution effects, according to standard demand theory (e.g., Varian 2014).

For example, consider an innovation reducing the cost of producing vitamin-rich fruit juices in a competitive fruit-juice industry. This innovation leads to lower consumer prices and higher demand for such goods. In the information theory framework, this is represented with a shift of the consumers' ideal combination towards a higher level of the attribute including vitamin content (Figure 4-9 Panel (b) in the appendix). In theory, if all consumers are exposed to the same change in relative prices, a homogeneous shift of ideal combinations is possible. If the shift is lasting and significant, it may call for updating of the standard.

Changes in technology can enable the production of new attributes. For example, new health benefits can be provided to consumers through new technologies improving functional foods. In this case, the dimensions of the attribute space increase. Figure 4-5 provides an example of a technology advancement allowing firms to add attribute 2 to a product previously holding attribute 1. Before innovation, attribute space was one-dimensional, being defined by attribute 1 only. Consumers' ideal combinations were aligned on MS1 which summarized the attribute space. After innovation, attribute 2 is added to the product and attribute space is now defined in two dimensions. The consumers' ideal combinations are now distributed over the plane (red dots in Figure 4-5) and the error of the original marketing standard MS1 increases. By providing new attributes that were not considered in MS1, the new technology undermines the efficiency of the marketing standard. Figure 4-5 illustrates one example of an update of marketing standards to MS2 that may restore the efficiency of the regulation. Note that a voluntary standard may emerge to account for the new attribute, if the current regulation remains unchanged.

<sup>11</sup> In a perfectly competitive market, price is equal to marginal cost.

**Figure 4-5:** Effects of a technology advancement adding new attributes to a product



Black dots indicate consumers' ideal combinations before the change in technology, red dots are ideal combinations after the change in technology.

### 4.2.3 Simplification and reduction of compliance costs

Speakers [3, 4] suggested that the cost of complying with marketing standards may not be high compared to production costs. Nevertheless, policymakers may consider simplification of marketing standards as a measure to reduce costs and trade barriers, especially for producers in the least developed countries ([7]). Speaker [1] considered two forms of simplifications:

1. Reducing the number of attributes considered in the marketing standards. For example, this could include removing “cosmetic aspects” from the marketing standards (Oosterkamp et al. 2019).<sup>12</sup>
2. Reducing the number of standards in the market, for example covering multiple products with a single standard. An example of this approach was Reg. 1580/2007 introducing the general marketing standards for fruit and vegetables.

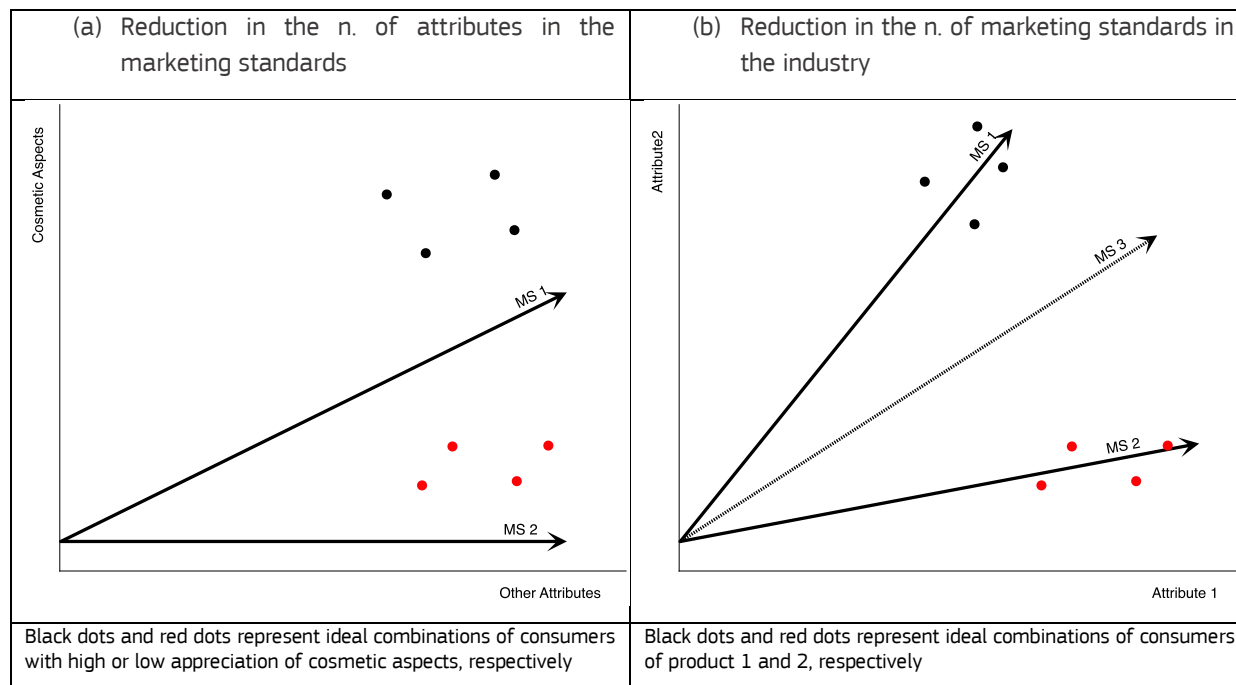
Figure 4-6 illustrates the effects of simplification. Panel (a) explains the effects of expunging cosmetic aspects. The marketing standards change from MS1 to MS2. In the figure, MS 2 is a horizontal line since grading of the product is determined without considering the cosmetic aspects. The simplification reduces the efficiency of the marketing standards for those consumers who value cosmetic aspects (black dots in Panel (a)). On the contrary, for consumers who do not value cosmetic aspects (red dots in Panel (a)) the simplification might even increase efficiency. This example suggests that the effect of a reduction of the number of attributes in marketing standards depends on consumer preferences. If the simplification concerns attributes that consumers value, a loss of efficiency is possible. In this case, voluntary standards may emerge to complement the simplified standards and capture consumers' willingness to pay for the attributes.

Panel (b) in Figure 4-6 considers the effects of reducing the number of marketing standards. Two marketing standards (MS1 and MS2) regulating one product each are replaced with a third (MS3) regulating both products. In the example, it is assumed that MS3 is designed as a combination of MS1 and MS2. The loss of efficiency due to simplification depends on the heterogeneity in the optimal combinations demanded by the consumers of the two products. In Figure 4-6, Panel (b) consumers of product 1 (red dots) and consumers of product 2 (black dots) demand different ideal combinations of attributes. In this example, the general marketing standards MS3 might determine a loss of efficiency.

<sup>12</sup> Oosterkamp et al. (2019, p 5) define cosmetic aspects “as aspects that serve no additional purpose” other than improving the visual appearance of the product.

In both cases of simplification, a loss in efficiency can favour the emergence of voluntary standards, as observed in Section 4.1.1. In this circumstance, the reduction of compliance costs may prove an empirical question. In fact, if firms adopt the voluntary standards to elicit consumers' willingness to pay for quality, the net effect on costs depends on the relative magnitude of the compliance costs under the former marketing standards and the new voluntary standards.

**Figure 4-6:** Simplification of marketing standards



#### 4.2.4 Sustainability and marketing standards

The Farm To Fork strategy considers a revision of marketing standards “to provide for the uptake and supply of sustainable agricultural, fisheries and aquaculture products and to reinforce the role of sustainability criteria taking into account the possible impact of these standards on food loss and waste” (EU Commission 2020, p. 14). The issue is of particular importance because marketing standards can play an important role in promoting sustainable development and meeting the Sustainable Development Goals (SDGs) [10]. In particular, marketing standards can contribute to [10]:

- Supporting high quality production – SDG 3
- Increasing profitability for producers – SDG 8
- Building trust and creating trade opportunities in the market – SDG 8
- Preventing placement and sale of low-quality products on a market – SDG 3
- Protecting customer interests – SDG 3
- Defining a common trading/transaction language for all the parties participating in a value chain – SDG 8
- Facilitating domestic and international transactions through similar quality requirements – SDG 8
- Market development, market access – SDG 8
- Reducing food loss and waste – SDG 12

Speaker [1] considered three possible options to reinforce sustainability criteria in marketing standards:

1. Minimum sustainability requirements. Products that do not comply with minimum standards in terms of environmental impact are not allowed in the market.

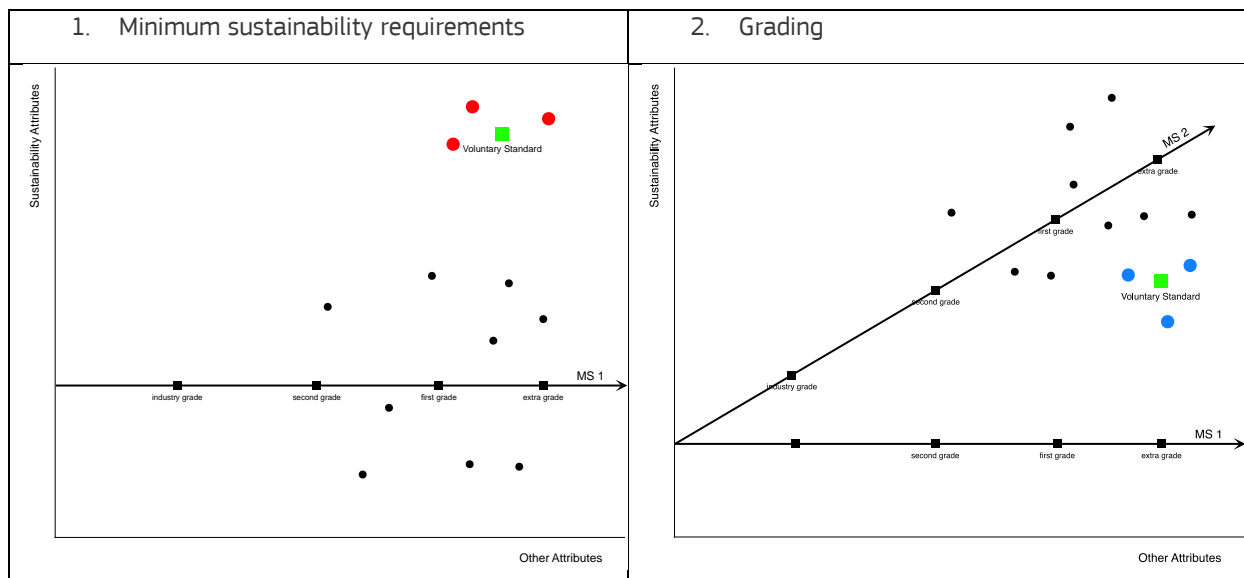
2. Grading. High quality grades (for example, extra grade or first grade) can be achieved only if the products meet sustainability criteria (in addition to the current ones).
3. Optional reserved terms, granted to products meeting specific sustainability targets.

The consequences of the three approaches may differ and depend on the consumers' willingness to pay for the environmental attributes [1].

If minimum sustainability requirements are imposed, unsustainable products cannot be traded in the Single Market. Panel (a) in Figure 4-7 considers the effects of this regulation. In the figure, the attribute combinations in the grey area are not available in the market because their sustainability attributes are below the minimum requirements. Consumers whose ideal combinations are below the threshold are forced to buy sustainable products. In the example, the marketing standards (MS1) do not provide information about sustainability attributes, so that responsible consumers (red dots in the figure) still have to rely on voluntary standards to identify sustainable products. According to the theoretical framework, minimum sustainability requirements are effective in preventing trade in the least sustainable products, but do not benefit consumers with strong sustainability preferences.

In a grading system, high quality grades can be obtained only if products meet increasing sustainability requirements. In Panel (b) in Figure 4-7 the grading regulation is represented with a change in marketing standards from MS1 to MS2. In MS1 high quality grades such as first grade or extra grade are achieved even if the sustainability attributes are low. If MS2 is in place, high quality grades are possible only if products have high degrees of sustainability. The grading approach can be problematic if consumers show scant awareness and little willingness to pay for sustainability (blue dots in panel (b) of Figure 4-7). In fact, in this case, voluntary standards may emerge offering consumers products with a low degree of sustainability but high-quality attributes otherwise. In the example, the voluntary standard (green square in the Figure) can provide consumers with the same level of "other attributes" as MS2 extra grade, but fewer sustainability attributes. In theory, the voluntary standards can offer blue consumers the option to buy a product close to their ideal combination, but at a cheaper price than MS2 extra grade (assuming that sustainability attributes are costly).

**Figure 4-7:** Reinforcing sustainability criteria in marketing standards



Optional reserved terms can be used to signal sustainable products to consumers. According to the theory, this regulation is beneficial if at least some groups of consumers exhibit high willingness to pay for sustainable attributes [9, 1].

Marketing standards can promote sustainability in food production. A key benefit is that marketing standards are general regulations, affecting the decisions of all food producers. In the case of grading or minimum sustainability requirements, the incentive concerns firms in general, and not only those targeting responsible consumers with a strong propensity to pay for sustainability.



In this regard, it is worth considering a key conclusion from industrial organization theory. According to the standard Gabszewicz-Thisse (1979,1980) vertical quality model, price premiums for high quality products depend on their relative quality with respect to lower quality alternatives. In particular, the price premium increases with the quality differential, i.e., the difference in the level of attributes between the high-quality and low-quality products (see Tirole 2003, p.296).

This principle can be applied to the case of sustainable standards. Consider a food industry where a relatively small number of certified sustainable producers (for example, organic, rainforest alliance, ISO14001 certification) compete with a large number of conventional producers. For the sake of simplicity, we refer to the former as high-quality producers and to the latter as low-quality producers. A change in regulation imposing minimum sustainability requirements can be modelled as an exogenously-driven quality increase in the low-quality products. All else remaining constant, the increase reduces the quality differential with the certified high-quality products and the equilibrium price premium for the certified product is expected to drop.<sup>13</sup> In general, the vertical quality model predicts a possible loss in the profits of certified sustainable producers due to a revision of marketing standards imposing sustainable practices on firms in general.

#### **4.2.5 Effects of private standards on policy outcomes**

The possible use of private standards may affect the outcome of a reform of marketing standards. In this chapter, two examples have been provided. First, in section 4.2.3 it was shown that voluntary standards may be useful to limit the information loss from a simplification of the marketing standards. In fact, firms can still use private standards to serve those consumers well-disposed to pay for the attributes that are not covered by the simplified standards. Yet, at the same time, the financial benefits of simplification for producers may be lower than expected if firms are required to comply with private standards replacing the simplified marketing standards.

Our second example concerns the use of marketing standards to promote sustainability. In this case, two unintended consequences may emerge. Let us suppose that new marketing standards give a low quality-grade to products that do not comply with sustainable production practices, even if they have high contents of other attributes (e.g., no defects, good nutritional values etc.). Firms may then use private standards to signal to consumers with scant propensity to pay for sustainability the characteristics of the products and position the goods as “cheaper even if not sustainable” alternatives to high-grade competitors. In essence, the strategic use of private standards may undermine the ability of marketing standards to support transition toward sustainable agriculture if consumers are not willing to pay for green attributes.

Regulators wishing to reform marketing standards may need to consider the strategic reaction of firms adopting private standards to avoid unintended consequences.

### **4.3 Concluding remarks and policy challenges**

In this chapter we have applied an information theory framework to address issues in revising the current EU marketing standards system. Several conclusions may be drawn from our analysis.

Our discussion starts from the point that marketing standards are a signal of product quality. Drawing on Lancaster’s theory, this means that marketing standards must approximate the set of attributes that offer consumer satisfaction (and that consumers are willing to pay for). Grading systems have to provide a quality ranking consistent with such preferences, given the production costs of attributes and the consumer budget constraint. If preference approximation is close enough, the marketing standards are beneficial for consumers and firms alike. Consumers are able to identify high-quality products even if the attributes are not fully observable, while firms have a clear indication of what the most sought-after products are.

A revision of marketing standards can be considered for several reasons. The most immediate is change in consumer preferences. Because the marketing standards must approximate consumer demand for attributes, a shift in preferences could call for adjustment. However, two limitations must be considered. First, shifts may be heterogeneous, meaning that individual consumers may diverge in their new ideal combination of attributes. In this case, it would be difficult to update the marketing standards without harming a subset of consumers. Secondly, updating marketing standards may be costly for firms. The decision to update the

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<sup>13</sup> In principle, certified producers might react to the change in regulation by enhancing their quality (sustainability attributes) even further. However, this strategy is expected to raise their costs and requires that consumers be willing to pay for such a high level of sustainability.

standards must then balance the expected benefits with the costs of compliance. **Note that heterogeneity of firms and consumers may result in heterogeneous cost-benefit evaluations regarding the update of marketing standard, with groups of stakeholders supporting the new regulation and others opposing it.**

The Farm to Fork strategy is a driver for updating of marketing standards. Enhancing the sustainability criteria of marketing standards may be an effective measure to promote green transition for the agri-food system. Yet, two possible unintended consequences may be considered. First, **adding sustainable attributes to marketing standards may reduce the efficiency for consumers who exhibit low propensity to pay for such attributes.** As a consequence, voluntary standards with low levels of sustainability may emerge to let consumers choose (and pay for) only the attributes they want. Secondly, **the adoption of sustainability criteria in general marketing standards may affect the ability of sustainable certifications to elicit price premia.**

The theoretical analysis suggests that reform of marketing standards calls for careful composition of divergent stakeholder interests. New regulations may harm the interests of specific groups of consumers or firms even if designed in the general interest.

#### 4.4 Appendix: deriving ideal combinations of attributes

Figure 4-1 can be derived from simple utility maximization of a consumer facing a perfectly competitive industry. Let us consider a consumer allocating a budget  $W$  among a set  $X$  of  $n$  alternative products. For the sake of simplicity, we assume that the entire budget can be spent on one and only one product, so that the consumer spends exactly  $W$  on the good providing the highest utility. The consumer's utility function  $U$  is separable, homothetic and has two arguments  $z_1$  and  $z_2$  representing the attributes of interest, of the form:

$$U = \sum_j^n d_j u_j(z_1^j, z_2^j) \quad (a1)$$

where  $d_j$  is a binary variable equal to 1 if product  $j$  is purchased and 0 otherwise,  $u_j$  is the utility that the consumer derives from consumption of the attributes in product  $j$ . In order to maximize utility, the consumer chooses the product with the highest  $u_j$  given  $W$ , prices and the combination of attributes in each product. So, a product  $j$  is bought if:

$$u_j \geq \max(u_n) \quad \forall h \in X \quad (a2)$$

The firm's cost function is  $C(z_1, z_2)$  so that production costs are a function of the attributes provided. A perfectly competitive firm supplies the product for a price equal to the marginal cost  $C'(z_1, z_2)$ . Note that the firm can increase the quantity of attributes provided to consumers for a given expenditure level by increasing the number of attributes in a unit of product (quality improvement) or by reducing the unit price (price discount).

**Figure 4-8:** Optimal combination of attributes

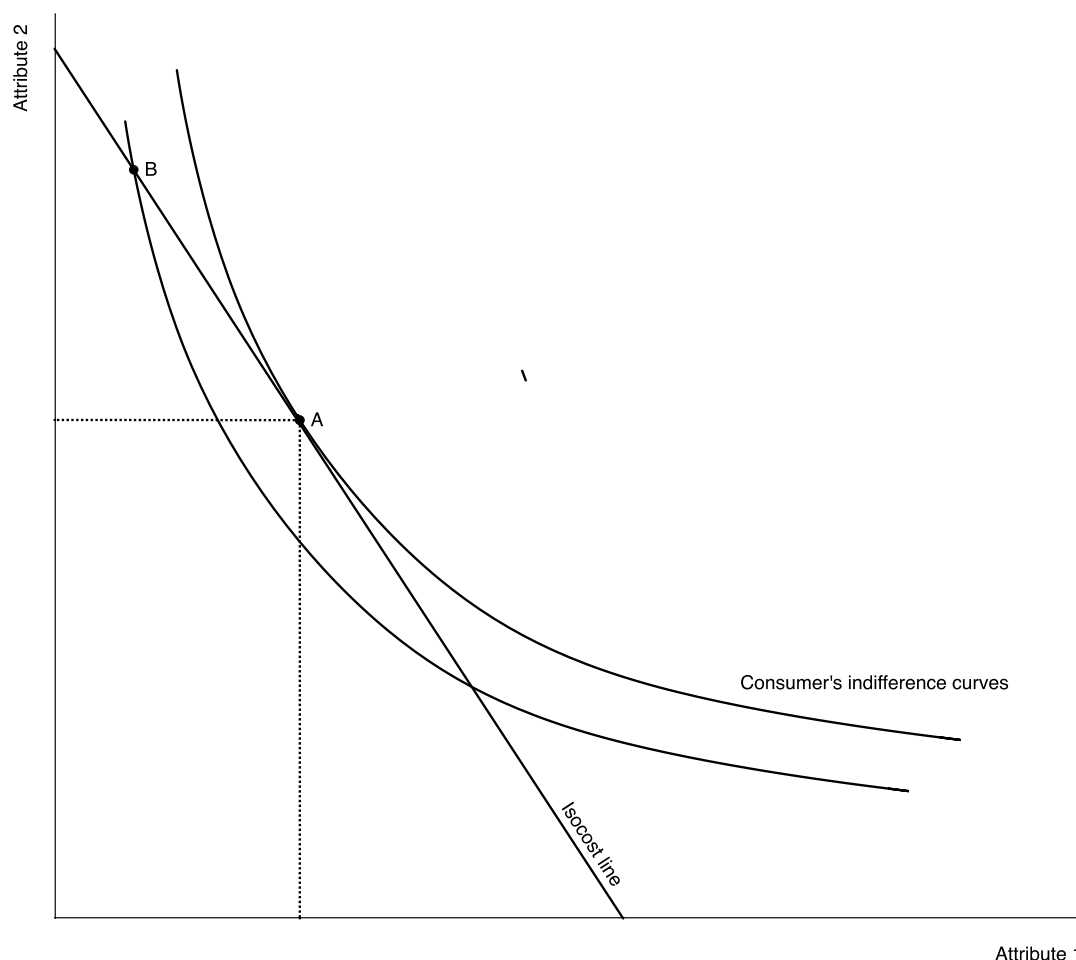


Figure 4-8 illustrates the consumer problem. The graph represents the consumer's indifference curves, the set of combinations of attributes yielding the same level of utility, in the attribute space. The isocost line is the set of combinations of attributes that a firm can supply for the same cost. For the sake of simplicity, we assume constant returns to scale technology and an additive cost function of the form:

$$C(z_1, z_2) = w_1 z_1 + w_2 z_2$$

where  $w_1$  and  $w_2$  are the constant marginal cost of producing a unit of  $z_1$  and  $z_2$ , respectively. In this simple model, the consumer wishes to maximize utility given the constraint

$$C(z_1, z_2) = W.$$

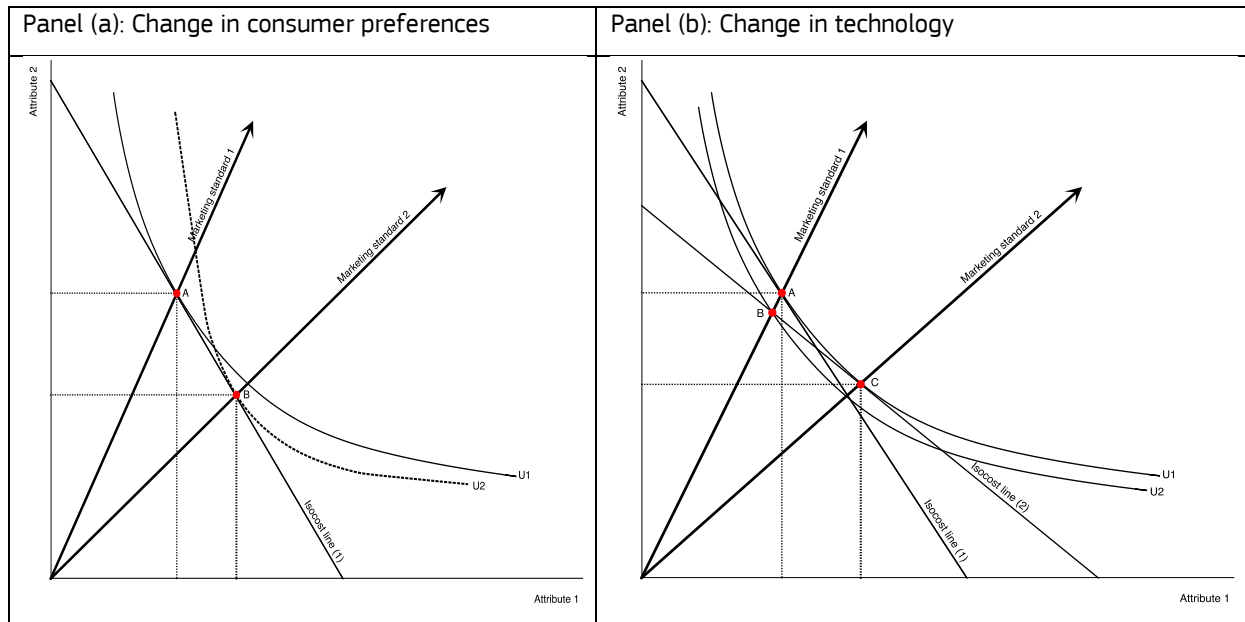
The solution to the problem is at the tangency point of consumer indifference curve and the isocost (Point A in Figure 4-8). Point A is the consumer's ideal combination, as defined in Figure 4-1. It also defines the efficient marketing standard. This combination of attributes ensures that  $u_j$  is maximized to the benefit of consumers and firms alike. In fact, by maximizing  $u_j$  for a given cost the firm may be able to meet condition (a2).

An inefficient standard, such as the one in Point B in Figure 4-8, results in lower utility for the consumer, given the expenditure level. The utility loss may result in a lower demand for good  $j$  if the reduction is such that condition (a2) is not satisfied. Note that the utility loss from the adoption of inefficient standards increases with the distance from the optimal combination. This result illustrates the observation in section 4.1 on the effects of error in the standard on demand.

#### 4.4.1 Efficient standards and changes in consumer preferences and technology

The model can be used to illustrate the effects of a change in the parameters on the efficient standard. For the sake of simplicity, the grades of the standards are represented by a line going through the origin. This approach is, for example, consistent with the grading system in the fruit and vegetable marketing standards, where second-grade products may have some limited defects in both skin and colours, first-grade have minor defects and extra-grade have no defects at all.

**Figure 4-9:** Efficient standards and changes in consumer preferences and technology



Panel (a) of Figure 4-9 shows that a change in consumer preferences determines a shift in the ideal combination. As the indifference curve shifts from U1 to U2 in Figure 4-9, the marketing standard maximizing consumer's utility changes from MS1 to MS2 and the ideal combination changes from A to B.

Panel (2) in Figure 4-9 illustrates the effects of a change in technology. In the example, the new technology reduces the cost of delivering attribute 1 and increases the cost of attribute 2. This is consistent with the example of water content in poultry meat in section 2.3. In this case, the improved environmental and production features (attribute 1) are obtained at the cost of more expensive procedures to ensure low water content in the meat (attribute 2). The change in technology is represented as a change in the isocost line (from 1 to 2). If the marketing standard is not updated, the consumer's choice moves to point B because of the increased costs. Instead, updating the marketing standard to MS2 in the figure, the consumer may choose the new ideal combination C.

These simple examples suggest that adapting the provisions of marketing standards to changes in consumer preferences or technology can improve efficiency.

## 5 Conclusions and needs for future research

### 5.1 Remarks on reform of marketing standards

The debate among the workshop participants allowed us to identify selected advantages and disadvantages of the five policy options that are currently considered for reform of the regulations on marketing standards (Section 1.2.2 of this Report). The results are summarized in Table 5-1. **The analysis is merely a summary of the debate and is not intended as comprehensive policy assessment.**

The first policy option that was defined in the EU Commission inception assessment is **complete liberalization**. In this scenario, the EU regulations on marketing standards are completely removed, relying only on international, national and private standards. A possible benefit from this approach lies in the expected reduction in litigations in multilateral institutions (such as the WTO). Also, firms and national authorities may save implementation and monitoring costs. Yet, the discussion in Chapters 2 and 3 showed that the current regulations support correct information and protection for consumers, facilitate market access for firms, and favour quality-based product differentiation strategies. Under complete liberalization, the benefits of the current regime would be lost. Finally, the actual magnitude of the cost savings for firms is an open question. If the EU marketing standards were replaced by national or private standards, the net benefit may well prove limited.

**Retaining the current regulations (with minor adjustments)** is the second policy option. The approach preserves a system that is well-received by firms and consumers, ensures food quality and safety and is compatible with international trade rules. However, conservative strategies of the sort may have disadvantages, too. In particular, they may fail to support consumers in the demand for new food credence attributes (such as sustainability) and may discourage the adoption of new technologies, if not compatible with current requirements. Finally, it would mean missing the opportunity to contribute to the EU Farm to Fork strategy.

The third option focuses on an **update of current marketing standards** along three directions: simplification of regulations, consideration of changes in preferences and technology, promotion of sustainable agriculture. This approach is expected to provide several benefits, including more efficient markets (where consumers are better informed and technological innovation is promoted), an effective contribution to the EU Farm to Fork strategy through the promotion of sustainable agriculture, and a more highly organized and consistent regulatory system. Yet, regulators updating marketing standards may face critical challenges. Identifying the new set of consumer preferences to be included in the updated standards is not easy. The analysis in Chapter 4 suggested that incorrect representation of consumers' preferences may undermine the effectiveness of marketing standards. For example, including attributes that are not demanded may reduce the benefits for consumers and may favour the emergence of alternative voluntary standards. From this perspective, the consumers' willingness to pay for sustainability is a critical variable for the success of this strategy. Furthermore, the issue of selecting the updates is particularly difficult because EU stakeholders may have conflicting opinions in this regard and the final decision must balance heterogeneous positions. Finally, if the updates are perceived internationally as arbitrary trade barriers, the approach could result in more frequent trade litigations, especially with the less developed countries where producers may have relative cost disadvantages.

**Table 5-1:** Summary of advantages and disadvantages of selected policy options for the reform of the regulations on marketing standards

Policy Option	Pros	Cons	Open issues
1. Removing all marketing standards and therefore relying on international, national or private standards only.	Expected reduction in WTO litigations. Lower implementation and monitoring costs (limited).	Information loss for consumers. Lower consumer protection from misleading claims. Reduced support for product differentiation strategies. Difficulties in market access. Possible loss in food quality and safety.	Unpredictable effect on firms' costs due to the possible emergence of new voluntary standards.
2. Retaining the current organization of marketing standards with minor adjustments.	Easy to implement. Current legislation is well-considered by firms and consumers. Ensures quality and safety in the EU market. Known by international partners.	May be a barrier to adoption of new technologies /innovation. May be unable to support consumer demand for new attributes. Missing opportunity to contribute to Farm to Fork Strategy.	Contribution of MS to achieve sustainability targets. Interaction with private standards.
3. Updating current standards to allow for changes in preferences and technology, simplify existing legislation and promote the sustainability in the agri-food system.	May increase efficiency. Effective in promoting sustainable agriculture. Contributing to F2F strategy. Simpler and more organized regulation.	Difficulty in identifying new preferences, relevant technologies. Conflicting interests of stakeholders. Possible increase in litigations. Costly for EU/international firms.	Interaction with private standards. Effects on the value of current sustainability certifications.
4. Updating marketing standards and introducing new ones when needed.	Same as option 3. May increase efficiency, quality and safety in newly regulated markets.	Same as option 3. The choice of the new standards may be controversial.	Same as option 3.
5. Updating marketing standards and extending them to all agricultural products.	Same as option 4.	Same as option 3. Risk of overregulation. High cost of drafting regulation.	Same as option 3.

Options 4 and 5 consider the extension of updated marketing standards for subsets of products or to all products, respectively. Advantages and disadvantages that were discussed in option 3 apply to these ones as well. In addition, it must be noted that the extension of marketing standards requires a careful selection of the new products of interest (option 4) and may result in an overregulation if the standards are applied when not necessary (option 5). These concerns are of particular importance given little evidence for a demand for regulation regarding products that actually are not covered by marketing standards [2].

## 5.2 Needs for future research

The considerations in this section are not sufficient to identify the most efficient policy option. However, they can provide useful insights to inform the debate ahead. In this regard, the Workshop showed that the corpus of knowledge on marketing standards is still incomplete. In particular, the limitations include three main areas:

- **Qualitative or anecdotal information.** Most of the empirical analysis in the workshop was based on investigation of specific cases, with conclusions that can be hardly generalized. As a consequence, it is difficult to estimate the quantitative impact of regulation on the entire agri-food system. In particular, it was not possible to measure the impact for consumers and firms (small-medium enterprises especially) and assess the general cost-effectiveness of marketing standards. Also, the contribution of marketing standards to the Sustainable Development Goals could be addressed only qualitatively.
- **Unclear impact of technological innovation on the design of marketing standards.** The issue of digitalization, including blockchain technology or use of big data or artificial intelligence could not be explored. Likewise, the impact of other radical innovations (for example, protein manufacturing or smart materials) was not addressed. This kind of assessment requires a careful consideration of the new technology under scrutiny and could not be included in the workshop.
- **Lack of consensus on trade issues.** Despite the extensive literature, there is still no unanimous consensus on the impact of marketing standards on trade. Although the idea that harmonization or regulation may improve trade flows is widely accepted, the analysis of the overall impact of standards is still controversial. More information is needed regarding the possible trade litigations that may emerge from changes in marketing standards, especially if the EU is expected to take decisive actions toward the introduction of sustainability criteria. Also, the benefits and costs of EU-level intervention with respect to a multilateral, international approach could not be estimated.

These limitations suggest that more information is required to guide the regulatory process. In particular, more extensive studies are required to achieve a cross-sector comparison of adoption costs of marketing standards and the impact of sustainability criteria.

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## **List of abbreviations and definitions**

AVEC	Association de l'Aviculture, de l'Industrie et du Commerce de Volailles dans les Pays de l'Union Européenne
CMO	Common Market Organization
CREA	Consiglio per la ricerca in agricoltura e per l'analisi dell'economia agraria
DG-AGRI	Directorate-General for Agriculture and Rural Development
ERPA	European Rural Policy Association
FAO	Food and Agriculture Organization
JRC	Joint Research Centre of the European Commission
NTMs	Non-Tariff Measures
STCs	Specific Trade Concerns
TBT	Technical Barriers to Trade
WTO	World Trade Organization

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