Quality control in cross-border agro-based supply chains
Modes of regulation in coffee, cocoa, bananas, palm oil, timber and aquaculture

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This report describes the regulation and control of quality of product and process in a selection of cross-border agro-based supply chains. The factual presentation reveals the specific nature of regulation in a product group. It also provides a basis for comparing the modes of regulation and informs a discussion on horizontal policy and strategy issues. The review of the presented material identifies a number of issues helping to identify cross-product dimensions of regulation and the epilogue elaborates on the continuum between regulation based in public interests and regulation based in particular private interests.

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Preface

The World Summit on Sustainable Development (WSSD) in Johannesburg, 2002 has resulted in a number of initiatives linking sustainable development to market-led growth. The Netherlands government has committed itself to assist in improving market access for producers in selected Asian and African countries in order to enhance sustainable development and generate extra income for smallholders. To understand the conditions for market access, this research project addressed the issues of regulation and governance, i.e. through quality control, in cross-border supply chains. The report also examines the institutional conditions for monitoring and establishing quality at the level of production and processing.

The report aims to contribute to a policy discussion on public and private roles in the development of cross-border agro based supply chains and sub-sectors. This relates to the question 'who cares for what', which was discussed by the informal council of European ministers of Agriculture during the Dutch presidency of the European Union in the second half of 2004. The report combines an overview of factual information with a discussion on what lessons can be learned from the study of different product groups for policy makers, both in the public and in the private sector.

We thank a number of experts for their valuable comments on the inventory of quality control in a selection of products: Aldin Hilbrands (SGS Netherlands), Marieke Leegwater (Product Board for Margarine, Fats and Oils, MVO), Marcel van Nijnatten and Flip van Helden (ministry of Agriculture, Nature and Food Quality), Jeroen Kroezon (AgroFair), and Jos Smit (LEI).

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Managing Director LEI B.V.
Summary

This report presents an inventory of different modes of regulating the quality of both agricultural products and of the production methods deployed. The matrix, presented in Appendix 1, table A.2, specifies the involvement of the public sector, the private sector and civil society in controlling and monitoring quality in agro-based supply chains. The matrix also describes aspects of agenda setting, trade-related agreements, governance and organisation in the respective supply chains. The selected commodities are coffee, cocoa, bananas, palm oil, timber and aquaculture (fish and shrimp).

The factual descriptions allow the reader to make horizontal comparisons between the selected product groups or to search for the specific nature of quality regulation in a single product group. A review of the presented material identifies a number of issues helping to identify cross-product dimensions of regulation. In the epilogue, the authors introduce three issues related to the observed continuum between regulation anchored in public interests and regulation grounded in private interests. The discussion aims to inform and inspire a strategy and policy discussion among public officials, corporate managers, and actors in civil society on the timely issue of 'who is responsible for what' in cross-border trade.
1. Introduction

Quality, in the widest sense, has become a key element in commercial transactions and public regulation in agro-based supply chains, in particular where products and materials are crossing national borders. This report investigates how trade related quality control of the product as well as the production process is arranged in international supply chains of selected product groups: coffee, cocoa, bananas, palm oil, timber and aquaculture (fish and shrimp). These product groups represent commodities with a considerable scale and volume in international trade, which enables a systematic approach to cross-product policy and strategy making.

The information displayed in this report invites the reader to compare regulation and control mechanisms between product groups. Such a comparison may lend a hand to identify critical points where to intervene most effectively to achieve common goals, such as sustainability or healthy food that require substantial investments or joint efforts. This endeavour exceeds the boundaries of specific supply chains or sectors, around which many stakeholders are organised, and, thus, emphasises the relevance of discussing policy and strategy horizontally or generically.

Chapter 2 characterises the nature of quality control in each individual product group and summarises the findings presented in the extensive table A.2 in Appendix 1.

The 'matrix', presented in Appendix 1, describes in detail the mode of regulation that affects the 'quality of the product' and/or the 'quality of the production process'.

Chapter 4 reviews the modes of quality control by making a horizontal comparison from the perspective of understanding the division of responsibilities between public and private actors.

Chapter 5, the epilogue, further examines some key issues linked to the continuum between regulation anchored in public interests and regulation grounded in private interests.
2. Overview: The nature of quality control in selected cross-border agro-based supply chains

Table A.1 summarises the detailed descriptions of the modes of quality control and regulation in coffee, cocoa, bananas, palm oil, timber and aquaculture as presented in table A.2 (Appendix 1). This chapter tries to briefly characterise the nature of regulating quality in a specific product group, with the risk of simplifying reality.

2.1 Coffee

Quality of the green coffee bean matters in the trade. Quality is reflected in price setting in international stock exchanges. Also the International Coffee Organisation has a definition of quality that can be used in the trade of green beans. The quality of the coffee bean is also related to the origin and management of the production process. The coffee sector seems to play a vanguard role in efforts to include the quality of the production process into commercial transactions, involving a number of issues such as fair trade, forest protection or labour conditions. The economic prospect of smallholder producers receives strong attention in the sector. A variety of standards and certificates are operational in the coffee sector. And the practice of certification and verification is expanding to mainstream trade.

2.2 Cocoa

In contrast to coffee, the product quality of cocoa is usually hidden in manufactured products, i.e. chocolate. Nevertheless, the quality of the product matters in international trade. The issue of child labour has been dominating the discussion on the quality of the production process in the sector, which is related to unacceptable practices as defined by conventions of the International Labour Organisation (ILO). The quality of the production process is also embedded in efforts to enhance the sustainability of tree crop production. How to include smallholders into transformation processes towards more sustainable production systems is a prominent issue in numerous policy frameworks.

2.3 Bananas

In the banana trade, quality of the product has more or less been harmonised between the public and the private sector. Pressure from civil society, encourages the establishment of a broader quality concept, including the production process. The effect of agro-chemicals on labourers in banana plantations has importantly directed transformations. The introduction
of fair trade bananas raised public awareness of the fate of smallholders. A long-standing trade dispute in WTO is a continuing story in media coverage on the banana sector.

2.4 Palm oil

Like cocoa, palm oil is an interchangeable ingredient of manufactured food products. Recently, public discussion and media coverage relates its product quality to the presumed positive health effect of vegetable fats. The major production locations of palm oil are concentrated in a limited number of Southeast Asian countries. A number of contrasting views on the quality of the production process of palm oil can be observed. The effect on rainforest features prominently in the media and in information provided by environmental organisations. Civil society and the private sector have assembled in a round table discussion to address these concerns.

2.5 Timber

The trade in tropical timber has experienced a long and continuous involvement of the public sector in defining and regulating quality of the production process, in particular related to conservation of tropical forests. Also single-issue organisations from civil society have been pressing for legislation in this field. The European Union collaborates closely with producing countries, on installing a legal framework of certification and control in order to ban illegally produced timber. In comparison with export of tropical timber to Western countries, the Asian market is a much larger consumer of tropical timber.

2.6 Aquaculture

The quality of product and production process in aquaculture is primarily considered in terms of food safety, i.e. risky ingredients or contamination. The quality is subject to control through organisational and administrative procedures, e.g. HACCP (Hazard Analysis Critical Control Points). Consumer organisations bring forward the possible health risks of aquacultural products, e.g. the accumulation of toxic ingredients through fish/based feed, while, on the other hand, the consumption of fatty fish, with 3/omega fatty acids, is also considered part of a healthy diet. In terms of regulation of the production process, aquaculture has been part of legislation for fisheries. Due to the fast growth of the aquacultural sector, new regulation needs to be tailored to the specific dynamics of the sector. Already, sector organisations take a lot of responsibility by composing codes of conduct and stimulating new and safe practices. Environmental organisations have criticised aquaculture for its impact on, for example, mangrove forests or for its pollution.
3. Matrix: quality control in coffee, cocoa, bananas, palm oil, timber and aquaculture

3.1 How to read the matrix

The 'matrix' (table A.2) presents an inventory of different modes of regulating the quality of both agricultural products and of the production methods employed. The matrix is a way of bringing together a wide variety of information into an accessible format. Hopefully, the matrix invites the reader to browse through the table and discover product specific aspects or come across horizontal policy issues.

The matrix specifies the perspectives and involvement of the public sector, private sector and civil society in controlling and monitoring quality in agro-based supply chains. The matrix also describes aspects of agenda setting, trade-related agreements, as well as governance and organisational issues in the respective supply chains. The selected products are coffee, cocoa, bananas, palm oil, timber and aquaculture (fish and shrimp).

The material included in the matrix aims to identify product specific requirements rather than generic requirements, such as those included in the Codex Alimentarius, the General Food Law of the European Union, or the sanitary and phytosanitary or SPS measures agreed in the World Trade Organisation (WTO), the International Plant Protection Convention (IPPC) or the World Organisation for Animal Health (OIE). The Codex Alimentarius, for example, largely covers generic product quality requirements, which sets generic guidelines for 'legal requirements-product' and covers all the main processed, semi-processed and raw foods. The overall aim of the Codex is to ensure consumers of healthy and safe food (Understanding the Codex Alimentarius 2005 Y7867/E). Codex provisions concern the hygienic and nutritional quality of food, including microbiological norms, food additives, pesticide and veterinary drug residues, contaminants, labelling and presentation, and methods of sampling and risk analysis. Where possible, the investigation tried to trace specific requirements for one of the selected products within these generic regulations. Similarly, the matrix does not make a systematic or technical comparison of the different private standards applied in a product group. Neither does the matrix include specific national requirements and regulations with respect to quality control, such as SPS (Sanitary and Phytosanitary Standards) or environmental legislation. The matrix rather generalises the scope of these standards in order to make a comparison with public or civil society regulation or with other product groups.

The 'matrix' contains 4 sections, focusing on, respectively, product quality, quality of the production process, governance and organisation.

Quality of the product

Section 1 of the matrix describes the 'regulations for the quality of the product', which specifies rules and regulations affecting the physical standard of the product itself like product safety, appearance, packaging, residues in the product, etc. Hygiene during processing is also described in these boxes. It is described under 'product' and not under 'pro-
duction process’ because the aim of the hygienic processing is to ensure product quality and safety. The modes of regulating product quality are categorised in legal requirements, private regulation, and civil society regulation.

Quality of the production process
Section 2 describes 'regulations for the quality of the production process'. This refers to rules and regulations that apply to the way the product is produced, such as the impact on the environment, safety of working place, hygiene, worker rights, community development, etc.. Similar to the 'regulations for the quality of the product', the modes of regulating quality of the production process are categorised in legal requirements, private regulation, and civil society regulation.

Governance
Section 3 contextualises quality control by specifying a number of issues constituting governance in the selected supply chains. The matrix describes which actor(s) have an initiating role in policy making and strategy formation for the sector. And, it identifies what kinds of means are used, such as industry platforms, stakeholder dialogue, protest and campaigns, or media attention. Existing 'codes of conduct' or private standards are identified. The functioning of sector or product specific 'international trade agreements' is explained and WTO disputes are introduced.

Organisation
Section 4 gives an indication of the level of concentration in an industry or sector, suggesting that a sector with a limited number of major buyers or processors has different conditions for reaching an agreement of good performance as compared with a sector with multiple and fragmented buyers and sellers.

A selection of sources of information and relevant websites for further reading are listed at the end of table A.2.
4. Review: The balance between legal anchoring and self-regulation in quality control

The leading question in this research was 'who cares for what' in controlling the quality of product and production process. The inventory made in this report reveals that the actual involvement of public and private actors in quality control varies substantially in different product groups. The task of this chapter is to review horizontal, cross-product dimensions of regulating quality in international agro-based supply chains. Generally speaking, public legislation is mandatory and sets a baseline from the perspective of protecting public interests. A typical code of conduct or standard, as a form of private self regulation, covers complementary aspects not anchored in laws, which can be the outcome of negotiations with civil society organisations or other representative groups. All examined product groups reveal a combination of these modes of quality control.

The modes of regulation described above balance between legal anchoring of quality requirements and independent, self regulation of quality requirements, which differs significantly for product (section 4.1) and for production process quality (section 4.2). The differences in the mode of regulation largely depend on what you can control and correct and what not, which also affects the scope of regulation (section 4.3).

4.1 Product quality

In controlling safety of food products, usually national governments are the ones taking action when the health or well being of their citizens is at stake. In general, regulations on safety and risk aspects of a product apply within the territorial boundaries of the respective government, including the European Union. Public organisations set and control acceptable limits for specific ingredients and define general rules of practice, such as traceability, within the boundaries of a specific constituency.

The anchoring of food safety in legislation implies the question of liability. Private actors have to comply with national laws and companies often request clear rules from governments and collectively strive for international harmonisation. Companies do not consider compliance with national law as an asset for pro-active business strategies: it is a prerequisite. Compliance is, however, a complex issue because many business to business transactions cross national boundaries and national laws can differ widely.

The definition and control of other product related qualities can be a combined responsibility of different actors. For some companies, product quality can be part of a competitive strategy based on market differentiation. For producers, a certificate of origin can represent a certain quality in the market and result in premium prices. The quality of bananas desired by trade companies is also reflected in EU regulation. And, in the case of commodities such as coffee and cocoa, international commodity boards also play a role setting quality criteria.
4.2 Product process quality

The quality of the production process is typically located outside the jurisdiction of the national governments of importing countries. A number of issues are addressed by internationally agreed conventions, such as worst forms of child labour or protection of primary forests. In the case of timber, governments cooperate to introduce an internationally accepted norm for legal wood, while respecting the autonomy of national states.

National legislation in producing countries importantly sets the judicial conditions for the production process, which may be related to labour laws, e.g. minimum wages, or environmental laws, e.g. management of water sheds. Environmental concerns are increasingly incorporated into forms of legislation, sometimes supported by collaboration between different actors and countries. Social concerns, especially those related to smallholder production, are more difficult to anchor in legislation, due to multiple agendas and complex negotiations.

The quality of the production process has increasingly become an asset for the private sector and become part and parcel of competitive strategies. The social and environmental impact of the production process has become a labelled attribute of consumer goods, which enables companies to differentiate themselves from others. Likewise, companies can use credible monitoring and control systems in their interactions with civil society, which enhances their public accountability and protects their reputation. Alliances between companies and civil society organisations frequently result in a strongly focused process of labelling the quality of the production process, e.g. bird-friendly coffee. The role of public involvement is often to catalyse or stimulate certain transformation processes by providing resources or knowledge.

4.3 The scope of regulation

The factual description of the modes of regulation in a selection of product groups indicates that the distribution of responsibilities in the field of quality control, in particular between public and private actors, is organised differently for each product group. The observed diversity in quality control and regulation has become even more apparent since, in addition to safety and quality requirements, quality also applies to production and processing methods. This introduced non-product related aspects, such as sustainability or social welfare, to the terrain of quality control. Obviously, these aspects hardly affect the physical characteristics of the final product and, consequently, they are not yet addressed. It does, however, bring about new strategic questions and policy issues on the institutional architecture of quality control (see chapter 5).

Integration of multiple dimensions of quality, both product and production process related, into a single form of regulation requires negotiations between various stakeholders. In the case of coffee, different actors assembled to draft a common code for sustainable coffee, which was initiated and directed by an alliance between a public institute and an industrial federation. A possible outcome of such a multi-actor negotiation process is the inclusion of different quality aspects into a single framework.
The selection of quality requirements, for product and production process, is usually embedded in negotiations between selected actors. In setting standards, civil society organisations coordinate strongly with private actors. The involvement of single-issue civil society organisation in the construction of self-regulation may result in one-dimensional quality requirements. Lobby or advocacy organisations usually represent a particular issue, for which they negotiate with other actors. For example, trade unions strive for the right to organise and for proper working conditions, for example, stipulated in a code of conduct of a company or sector. One-dimensional regulation may reveal a rather rigid nature, referring to the most desired situation of the negotiating actor. Rigid standards on a single issue in one product group can have a strong influence on negotiations in another sector. The constant factor can be a specific group of actors, e.g. the US senators who worked on abolishing child labour in the cocoa sector.

This review also leads to a discussion on what can be most effectively regulated by the public sector and what can be left to the private sector or public-private alliances. Most likely, the outcomes of this discussion will vary per country or product group and it will be difficult to give a blue print for institutionalising effective quality control. Standards and codes of conducts, as examples of forms of self-regulation, reveal little legal anchoring of quality requirements, especially in the field of production process. The lack of legal anchoring makes the establishment of sustainability highly dependent on market dynamics. However, quality requirements in private sector regulation can be combined with public policies. Particularly in the field of environmental impact of production, the management of common goods may require more than individual compliance with standards because it crosses the boundaries of the individual domains of private actors. In this sense, linking policy and regulation might also be an important step in up scaling quality requirements. Also in the field of food safety and quality, regulatory requirements can be linked to the policy terrain of public health. Linking private regulation and public policy concerns the existing critique on safety or quality standards: that the rigidity and prescriptive nature of quality requirements leads to a uniform and exclusive food provision system. Linking quality requirements to development policy can lead to an integrative mode of operation, allowing for an open mind when selecting the right practices while maintaining the primary goal, namely healthy food.
5. Epilogue

The previous chapter reflects on the balance between legal anchoring and self regulation of quality control in cross-border supply chains. This epilogue tries to further unravel the overall balance between, on the one hand, regulation embedded in public interests and collective action and, on the other hand, regulation embedded in a particular, individual interest and dependent on the actions of a selected group of actors. Its aim is to extend this discussion to the issues of acceptance, scale, and viability of regulation. Three hypothetical and non-exclusive continuums make up the proposed frame of reference for further discussion. The suggested challenge when discussing these continuums is to enhance coherency and to correct unbalances within a continuum.

5.1 The acceptance of regulation

This continuum focuses on the way different interests and possible conflicts are dealt with. The assumption is that a mode of regulation is acceptable to different stakeholders when clear and transparent procedures are installed to handle differences.

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<th>Procedural justice</th>
<th>Conflict</th>
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The institutionalisation of quality control is positively assessed by different stakeholders. Smallholders experience the regulatory system as supportive to the creation of a level playing field. Actors find their way to the installed forms of arbitrage and agree with proposed settlements. Procedures are transparent and self-control is an accepted form of monitoring performance.

Coherency and synergy leads to enhanced capacity to cope with unexpected events and unanticipated risks, based on the active involvement of multiple stakeholders. A clear distribution of functions leads to socially robust organisations. Uncertainty intrinsic to complex food provision systems does not lead to public distrust.

The mode of regulation suffers from a low sense of credibility by external stakeholders and motivates public action. Inside and outside actors primarily consider the mode of regulation as a consolidation of existing power relations in the chain, especially concentration at the level of trade and processing.

Conflicts are settled through negotiations. Disagreements on the distribution of responsibilities results in vulnerable organisations.

Businesses and corporations spend much time and energy on dealing with public unrest and media pressure. Risks are primarily considered in terms of liabilities, which hampers constructing a level playing field.
5.2 The scale of regulation

This continuum introduces the level or scale of intervention. In particular, the inclusion of the sustainability performance in the production process lifted quality control to other scales than the individual product. Consequently, establishing quality might also entail collaboration between different actors and is no longer the single responsibility of an individual actor. This raises the question what the leverage points are for achieving quality and sustainability. A leverage point is that particular 'step' that has disproportionate effect on the 'steps' afterwards in the process. It also suggests more attention to systemic change.

The complexity and ambition of a transition towards sustainability imply that change takes place in different locations and at different levels. An individual action or intervention might not be the most effective endeavour. Joint and coordinated efforts might be necessary to turn the lever, so that an action or intervention has an effect on different aspects at different levels in the transition. This may entail linking distributed capacities into a single organisational framework.

The above can be illustrated by referring to the protection of biodiversity, which is typically an issue that exceeds the capacities of individual actors. Accordingly, biodiversity may best be addressed at a regional level. The size and scale of the production locations of timber and palm oil suggest a similar approach to the management of common goods.

Codes, standards or regulations assess performance exclusively at the level of an individual actor. Also good performance is illustrated by referring to a single farm or factory. Standards are tailored to specific, local situations or products.

Compliance with standards may result into an exclusive group of actors, e.g. preferred suppliers. This may hinder the inclusion of distributed smallholders in cross-border supply chains. In the case of coffee and cocoa, trade industry acknowledge the difficulty to reach each individual farm.

One organisational alternative may be the option of group certification, which relies on a system of self control managed by an independent organisation. This moves away from performance assessment at the individual level, but requires identifying the right levels of aggregation acceptable to other actors in the chain.
5.3 The viability of regulation

This continuum embeds regulation into the wider process of economic development. It suggest that an exclusive focus on controlling quality and improving performance in export-oriented markets or supply chains may hamper social and economic development in the production locations. The levels of connectedness between international trade, national purchasing power, and local industriousness, may give an indication of the possible impact of the institutionalisation of quality control on development.

The economic activity is well connected to and receives continuous feedback from the local economic environment. National public legislation and locally owned private standards regulate the provision of healthy, sustainable produced food to domestic and international markets. Local purchasing power encourages innovation by active entrepreneurs in the agricultural sector and food industries, resulting in value adding activities. Local customers recognise the value of the established quality.

The economic activity is largely disconnected from its local economic environment and resembles an enclave. High performance in export oriented economic domains is isolated from other enterprises in the local economy. The public involvement in management of food-related risks and environmental management is weak. Mainly preferred suppliers are allowed to enter strictly regulated international markets. Two-tier market exists: for high quality and for second-class food products.
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Appendix 1  Tables

Table A1: Summary: Quality control in cross-border agro-based supply chain
Table A2: Matrix: Quality control and regulation in coffee, cocoa, bananas, palm oil, timber and aquaculture
### Table A.1 Summary: Quality control in cross-border agro-based supply chains

<table>
<thead>
<tr>
<th>Issue</th>
<th>Coffee</th>
<th>Cocoa</th>
<th>Bananas</th>
<th>Palm Oil</th>
<th>Tropical Timber</th>
<th>Aquaculture (excl. shell-fish)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Legal requirements-product</strong></td>
<td>Public regulation to guarantee safe provision of food in European Markets i.e. General Food Law (GFL).</td>
<td>Specific article in GFL on presence of mycotoxin.</td>
<td>No specific stipulations for cocoa in GFL; focus on manufactured products such as chocolate. EU directive on vegetable fat in chocolate.</td>
<td>EC regulation on quality standards, i.e. Size and appearance.</td>
<td>GFL requirements for specific uses of palm oil: food, feed and non-food/energy.</td>
<td>EC regulation on dangerous preservation substances.</td>
</tr>
<tr>
<td><strong>Private regulation-product</strong></td>
<td>Quality standards for taste, aroma and appearance.</td>
<td>Quality measured by defects.</td>
<td>Quality standards vary for different markets.</td>
<td>Refining close to production to avoid quality decrease.</td>
<td>Palmoil is trans-fat free.</td>
<td>GFL refers to FATCA, SQF and labeling systems.</td>
</tr>
<tr>
<td><strong>Civil society regulation-product</strong></td>
<td>Specialty coffees, i.e. origin labeling.</td>
<td>Health aspects of coffee.</td>
<td>Positive effects of selecting by appearance on sustainability.</td>
<td>Positive health aspects of vegetables.</td>
<td>Durability of wood products.</td>
<td>Food safety received highest priority: including residues, toxins and contaminants.</td>
</tr>
<tr>
<td><strong>Private regulation-production process</strong></td>
<td>Private-public initiatives to include sustainability in quality concept.</td>
<td>Quality largely established in production process.</td>
<td>Industry traceability guideline.</td>
<td>Codes of conduct for integrated operations.</td>
<td>Forest management certification organised by industry.</td>
<td>Producers associations and retail initiated codes of conduct.</td>
</tr>
<tr>
<td><strong>Setting the agenda</strong></td>
<td>NGOs put Fair trade and coffee crises on the agenda.</td>
<td>Media and NGO’s placed child labor on the agenda: national governments and industry responded.</td>
<td>Trade unions and NGOs pressed for improved working and living conditions.</td>
<td>Nature conservation organisations initiated dialogue.</td>
<td>Intergovernmental initiatives to balance trade and conservation.</td>
<td>Environmental impact of shrimp-farming and open water fish farming.</td>
</tr>
<tr>
<td><strong>Concentration in the supply chain</strong></td>
<td>Few roaster and manufacturers control half of trade.</td>
<td>Two large producers and distributors control 50% trade.</td>
<td>Production concentrated in two countries.</td>
<td>Trade concentrated in Asia.</td>
<td>Trade concentrated in salmon.</td>
<td>Large growth in aquaculture.</td>
</tr>
<tr>
<td><strong>WTO cases</strong></td>
<td>Tariffs on soluble coffee</td>
<td>EU preferential trade agreements</td>
<td>Elimination of import tariffs</td>
<td>Quarantine regulation</td>
<td>Tariff quota system.</td>
<td>Naming of product.</td>
</tr>
</tbody>
</table>

**Product**

- Coffee
- Cocoa
- Bananas
- Palm Oil
- Tropical Timber
- Aquaculture (excl. shell-fish)
The prevention of human diseases is the most explicit issue in food safety regulation. With regard to aquaculture products the GFL is not relevant. However, produced directly influence the food quality and safety of fish. Therefore codes of conduct like HACCP and a voluntary code like Safety Quality guideline for their legislation for fish. However in feed. Around 80% of palm oil and palm kernel oil are used for animal feed and non-food applications like soaps. The GFL has general requirements for all these products. EC regulation No 2257/94 lays down quality standards for bananas (not including plantains, bananas for processing of fig bananas). Regulation refers to bananas and banana hands/clusters, to size and appearance, and classification. In size and appearance, the product must be green and unripe, firm, practically free from pests, bruises, malformation, and external moisture, among others. It must be free of small and/or taste. Bananas are classified into three classes: ‘extra class’, class I, class II. For each class minimum criteria are given for length, size, shape, and presentation (uniformity, packaging, and marking). The EU has also formulated a list of products that are specifically modified by specific criteria. However in May 2004. The program is designed to improve the balance between supply and demand of coffee by stimulating demand through the provision of a better offer. For timber the GFL is not relevant. However, the International Coffee Council adopted Resolution number 407 in February 2002 to implement the Coffee Quality Improvement Program (CQP) and introduced a voluntary system for classification and grading. There are hundreds of different types of wood, all with their own specific qualities. How- ever, many types of timber are now threatened by illegal logging, caused by demand for timber. There are dozens of different types of fish, all with their own specific qualities. How- ever, many types of fish are now threatened by illegal fishing, caused by demand for fish.

Product Quality is of highest importance for chocolate manufacturers. By measuring the number of defects (most important are smoky aroma, mould, unbalanced beans, and significant insect infestation) quality can be measured. For a long time the marketing boards were responsible for safeguarding the quality, but with the end of the marketing boards in some countries like Indonesia and Nigeria, the marketing boards have taken over that task. In industry a diversity is made between fine- quality and bulk cocoa. For chocolate, an extra high quality (fine-flavour) is sometimes required.

In industry the quality of bananas is of high importance. Importers usually determine the port size (length of fingers and thickness), even defects for monitoring. The quality of bananas varies. In general quality standards differ from country to country. Bananas are classified into three classes: ‘extra class’, class I, class II. For each class minimum criteria are given for length, size, shape, and presentation (uniformity, packaging, and marking). The EU has also formulated a list of products that are specifically modified by specific criteria. However in May 2004. The program is designed to improve the balance between supply and demand of coffee by stimulating demand through the provision of a better offer.

Palm oil processing (crude oil, palm kernel oil) needs to take place as soon after harvest as possible to prevent a decrease in quality. What happens in the mills is that the oil is separated from the oil is refined. Triggered by health issues around trans-fats, food producers are trying to reduce the number of products contain-ing trans-fats significantly. Since palm oil is trans-fat free it might prove a good replacement for animal fats. By measuring the number of defects (most important are smoky aroma, mould, unbalanced beans, and significant insect infestation) quality can be measured. For a long time the marketing boards were responsible for safeguarding the quality, but with the end of the marketing boards in some countries like Indonesia and Nigeria, the marketing boards have taken over that task. In industry a diversity is made between fine-quality and bulk cocoa. For chocolate, an extra high quality (fine-flavour) is sometimes required.

Cocoa is a valuable crop that provides income for farmers in many countries. It is also a popular food ingredient and is used in a wide variety of products, including chocolate, coffee, and as a flavoring agent in drinks and desserts.

Globally, cocoa is grown in over 70 countries, but the majority of the world’s cocoa is produced in West Africa, particularly in Côte d’Ivoire and Ghana. These two countries account for about 40% of the world’s cocoa production. Other leading cocoa producers include Brazil, Indonesia, and PNG.

Cocoa beans contain a high concentration of bioactive compounds, including flavanols, which may have health benefits. Some of these benefits include antioxidant activity, anti-inflammatory effects, and potential cardiovascular health benefits. However, the precise benefits and mechanisms of these bioactive compounds are still being studied.

There are several types of cocoa, including cocoa butter, cocoa solids, and cocoa powder. Cocoa butter is a yellowish-white solid that has a strong chocolate flavor and is used in the production of chocolate. Cocoa solids are a mixture of cocoa butter and cocoa powder and are used in the production of cocoa products such as chocolate bars and cocoa powder. Cocoa powder is a dehydrated powder that is made from cocoa beans and is used in baking and confectionery products.

The cocoa bean is the fruit of the cacao tree (Theobroma cacao). The bean contains several sections, each containing one or two round, oblong seeds or cocoa beans. When the beans are ripe, they are usually harvested by hand and dried in the sun. The beans are then fermented, washed, and dried again before being sold to chocolate manufacturers.

Several factors influence the quality of cocoa beans, including climate, soil conditions, and farming practices. In general, cocoa beans from countries with a tropical climate and nutrient-rich soils tend to produce higher-quality beans. However, even within a specific region, the quality of cocoa beans can vary depending on factors such as the variety of cocoa grown, the altitude of the farm, and the farming practices used.

Cocoa beans are often categorized into different classes based on factors such as bean size, bean color, and bean flavor. These classes, such as cocoa beans, are used to determine the price of the beans. For example, larger beans tend to command a higher price than smaller beans.

The quality of cocoa beans also plays a role in the flavor profile of the final chocolate product. Beans with high acid and bitterness may produce a chocolate with a more intense flavor, while beans with low acidity may produce a chocolate with a smoother, more mellow flavor.

Cocoa beans are harvested from the cacao tree. The beans are then fermented, washed, and dried before being sold to chocolate manufacturers. The quality of cocoa beans can vary depending on factors such as climate, soil conditions, and farming practices. The beans are often categorized into different classes based on factors such as bean size, bean color, and bean flavor. The quality of cocoa beans plays a role in the flavor profile of the final chocolate product. Beans with high acid and bitterness may produce a chocolate with a more intense flavor, while beans with low acidity may produce a chocolate with a smoother, more mellow flavor.

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A number of NGOs have criticized the cocoa industry over abusive child labour and it was hot news in the media. Companies in the cocoa sector faced both to take position and many of the private initiatives have expressed concern about what was discovered in the cocoa sector.

NGOs have criticized banana companies for not complying with basic labour standards and for the use of large amounts of pesticides used even whilst workers were in the field. Attention was drawn to the low remuneration and low guarantees for small-scale banana growers. As a result, fair trade Certification schemes are now being expanded in the banana sector. Friendly and fair-trade bananas have emerged. Certification according to some environmental standards is done by Social Accountability International (SAI) with SA8000, FLO Conservation Agriculture Programme and certification with Better Banana Project label. NGOs of organic coffee, Fairtrade, FAFO and Rainforest Alliance with Sustainability Agriculture Network.

Legal requirements are mostly of a phytosanitary characteristic and include measures to avoid the extension of pests (coffee borer) and fungus. For organic coffee, certification is a crucial element of market access, whereas for NGOs of the EU countries can be sold as organic only when it has been demonstrated that they are from a country whose organic farms are regulated. Certification schemes for coffee, cocoa and bananas include Bonsma, Barista, Fairtrade and Rainforest Alliance.

Coffee, Cocoa, Bananas (Fruits), Palm Oil, Tropical Timber

The EU regulations for organic coffee, cocoa and bananas include Bonsma, Barista, Fairtrade and Rainforest Alliance with Sustainability Agriculture Network.

A number of NGOs have criticized the cocoa sector because it largely deteriorates the quality of the cocoa. Since loss is cocoa high due to pests and plagues, various initiatives like the so-called Common Fund for Commodities focus on reducing pests. However, several NGOs have criticized these initiatives. They argue thatiscriminate certification schemes for organic products may lead to a reduction in the quality of organic products. There are a number of these initiatives, such as the European Union’s Code of Conduct for Organic Products (EUCOOP), the Sustainable Tree Crop Program (STCP), the International Cocoa Initiative (ICI) that includes the European Union’s Code of Conduct for Organic Products and the Organic Trade and Certification Scheme (OTCS). However, there are concerns about the impact of the initiatives on the quality of organic products. Since a number of these initiatives were accused of abusive child labour. Private companies, e.g. CarigaliMAD and Neles, have formalized individual codes of conduct. The banana industry developed Banana Supply Chain Traceability Guidelines for compliance with the Circular Economy (2016) and the Sustainable Trade in Commodities (2018). The International Cocoa Initiative (ICI) that includes the European Union’s Code of Conduct for Organic Products and the Organic Trade and Certification Scheme (OTCS) provides a traceability related to the production process. The main goal of the initiative is to ensure that cocoa is produced in accordance with the laws and regulations applicable to the production process because it largely deteriorates the quality of the cocoa. Since loss is cocoa high due to pests and plagues, various initiatives like the so-called Common Fund for Commodities focus on reducing pests. However, several NGOs have criticized these initiatives. They argue that the regulation of certification schemes for organic products may lead to a reduction in the quality of organic products. There are a number of these initiatives, such as the European Union’s Code of Conduct for Organic Products (EUCOOP), the Sustainable Tree Crop Program (STCP), the International Cocoa Initiative (ICI) that includes the European Union’s Code of Conduct for Organic Products and the Organic Trade and Certification Scheme (OTCS). However, there are concerns about the impact of the initiatives on the quality of organic products. Since a number of these initiatives were accused of abusive child labour. Private companies, e.g. CarigaliMAD and Neles, have formalized individual codes of conduct. The banana industry developed Banana Supply Chain Traceability Guidelines for compliance with the Circular Economy (2016) and the Sustainable Trade in Commodities (2018). The International Cocoa Initiative (ICI) that includes the European Union’s Code of Conduct for Organic Products and the Organic Trade and Certification Scheme (OTCS) provides a traceability related to the production process. The main goal of the initiative is to ensure that cocoa is produced in accordance with the laws and regulations applicable to the production process. The banana industry developed Banana Supply Chain Traceability Guidelines for compliance with the Circular Economy (2016) and the Sustainable Trade in Commodities (2018). The International Cocoa Initiative (ICI) that includes the European Union’s Code of Conduct for Organic Products and the Organic Trade and Certification Scheme (OTCS) provides a traceability related to the production process. The main goal of the initiative is to ensure that cocoa is produced in accordance with the laws and regulations applicable to the production process.

Palm oil production is concentrated in Malaysia (47% of world production) and Indonesia (35%). From 1982-2002 palm oil production has increased enormously in both countries: 3x in Malaysia and 10x in Indonesia. Almost all palm oil is produced in plantations. New plantations impact on the environment and local communities. The Malaysian Palm Oil Board mentions a whole set of issues related to the development of forests, such as fragmentation of forests, quality of the product, not to the quality of the environment. The Malaysian Palm Oil Council refers to the good performance in the production process. The Malaysian Palm Oil Council refers to the good performance in the production process. The Malaysian Palm Oil Council refers to the good performance in the production process. The Malaysian Palm Oil Council refers to the good performance in the production process. The Malaysian Palm Oil Council refers to the good performance in the production process. The Malaysian Palm Oil Council refers to the good performance in the production process. The Malaysian Palm Oil Council refers to the good performance in the production process. The Malaysian Palm Oil Council refers to the good performance in the production process. The Malaysian Palm Oil Council refers to the good performance in the production process. The Malaysian Palm Oil Council refers to the good performance in the production process. The Malaysian Palm Oil Council refers to the good performance in the production process. The Malaysian Palm Oil Council refers to the good performance in the production process.
Aquaculture appeared in media for a number of reasons. Pollution of the environment, escapes, gered by environmental groups. Notably, this critique on aquaculture is largely di-

to the public that in contrary to other sectors

is a problem of deforestation and unsustainable

traders, producers, retailers and investors in Ma-

In April 2004, the ‘Roundtable on Sustainable

European Union is active with the FLEGT: Forest

Market. . The powers of the PO’s vary within the different member states.

In 1999 ICO installed the Private Sector Consul-
tation costs (half to one third), preferential access

have duty-free access.

In 2001, the USA complained to the WTO, the USA complained twice to GATT (General Agreement on Tariffs and Trade) about agricultural policies on import of bananas. GATT judged it as incompatible with its rules, but was not able to enforce a reform of EU policy. In 1995 the USA, Honduras, Guatemala, Ec-

In 1999 the WTO ruled in favour of the USA (Lob-

EurepGAP

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ACC (shrimp)

EurepGAP

with further investigation. An US senator, Tom Harkin, and a US represen-
tentative. Tom Harkin, played a large role in addressing

institutions. The attention for child labour led to explicit v

Fair trade

Bird Friendly coffee

Trade

Organic (salmon, trout)

Organic

Body & Mind

Fair trade

Rainforest Alliance

trade agreements are made here, two fora:  IPF

trade agreements are made here, two fora:  IPF

Over 40 delegates, from 16 countries, representing industry and interest

costs, together with cooperations and voluntary organizations. An appealing

country’s import quota. The other major exporters are China, Thailand, India, Brazil, and Malaysia. The USA, Brazil, and Thailand are the worlds' second largest palm oil importer and the largest importer of Malaysia, decided to elim-

WTO-cases

In 2001 Brazil threatened the EU of a thing a com-

With regard to fisheries there are agreements be-

The International Coffee Organisation (ICO) was

With regard to fisheries there are agreements be-

The international Agriculture Agreement (IAA) was

With regard to fisheries there are agreements be-

Rainforest Alliance

Shrimp

and small producer or-

Fair trade

Palm Oil (extra)

Palm Oil

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Four large coffee companies dominate almost half of the world coffee trade. Kraft, Procter & Gamble, Nestle and Sara Lee. In total China, Brazil and India are the largest producers. China accounts for about 20% of total world coffee production, Brazil for 50% and India for 20%. (IICTO, year 2006). Brazil grows about 60% of the coffee that is consumed in the USA.

Cocoa

Cocoa is produced in over 20 countries, with the largest producers being Brazil, Indonesia, Ivory Coast and Ghana. The production of cocoa has been volatile over the past few years, with prices fluctuating significantly.

Coffee

Coffee is produced in over 100 countries, with Brazil, Vietnam and Colombia being the largest producers. Coffee is a vital source of income for many small farmers in developing countries.

Cotton

Cotton is produced in over 100 countries, with China, India and Pakistan being the largest producers. The production of cotton has been increasing in recent years due to increased demand for cotton-based products.

Fruit

Fruit is produced in almost every country in the world. The largest producers of fruit are China, United States and Brazil. The production of fruit has been increasing in recent years due to increased demand for healthy and nutritious food.

Organisation (section 4)

Industry and supply chain organization

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