



Monitoring and estimating the consumption of certified sustainable cocoa and coffee in the Netherlands

Availability and application of data

Katja Logatcheva

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Er zijn verschillende instanties die (niet-)systematische informatie verzamelen over de Nederlandse koffie- en cacaosectoren die bruikbaar is om het behalen van de doelstellingen van de intentieverklaringen in de koffie in cacaosectoren¹² te meten: individuele bedrijven en sectororganisaties, publieke en private instellingen voor marktonderzoek. Volgens de Koninklijke Nederlandse Vereniging van Koffie en Thee (KNVKT) was het marktaandeel van duurzaam gecertificeerde koffie op de Nederlandse markt in 2012 40%. Dit gegeven zal systematisch en periodiek worden geactualiseerd op de website van de KNVKT. Andere informatie die de monitoring van de resultaten van de inspanningen van de sectoren in Nederland mogelijk zou kunnen maken, is echter beperkt door hoge kosten en complexiteit van de koffie- en cacao ketens. De sectoren worden gedomineerd door grote internationale bedrijven die in meerdere landen actief zijn. Voorts is er sprake van een grote differentiatie van soorten consumentenproducten, met name in de cacao sector. Ad-hocinformatie maakt slechts een enkele (grove) schatting voor een bepaalde periode mogelijk. Volgens deskundigen uit het cacaoverwerkingssegment was het aandeel gecertificeerde duurzame cacao in consumentenproducten die verkocht zijn op de Nederlandse markt in 2012 niet hoger dan 25%. Andere verzamelde (ad-hoc)informatie over de cacao markt geeft geen aanleiding om deze schatting te verwerpen. Het onderzoek naar koffiesector is verricht in 2012 met enkele relevante updates in 2013. Het onderzoek naar cacao sector is verricht in 2012 en 2013 met enkele relevante updates voor 2014.

Key words: cocoa letter of intent, coffee letter of intent, sustainable consumption in the Netherlands

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¹ See also:

http://www.oxfamnovib.nl/Redactie/Downloads/Rapporten/KNVKT%20Intentieverklaring_Naar%20drie%20kwart%20duurzame%20koffie%20in%202015.pdf

² See also: <https://zoek.officielebekendmakingen.nl/kst-32123-XIV-187.html>

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Preface

In 2010, the Dutch coffee industry initiated the Letter of Intent as a result of its wish to coordinate the efforts to find how the coffee value chain (from tree to cup) can be made more sustainable. The letter of intent was supported by the Dutch government, IDH, a number of certification organisations and other cooperating parties.

In the same year, the wish to address sustainability in the cocoa value chain resulted in the Letter of Intent 'Sustainable cocoa consumption and - cocoa production', an initiative of, and signed and/or supported by the Ministry of Agriculture, Nature and Food Quality and the main players in the Dutch cocoa sector including producers, retailers, NGOs and civil society.

The Letters stipulate clear targets for increasing the share of the certified sustainable cocoa and coffee in the Dutch consumer market. The Ministry of Economic Affairs partners with the IDH in a joint endeavour to monitor the achievements in increasing the share of consumed certified sustainable cocoa and coffee in the Netherlands and to support the Letters of Intent. For this reason, the Ministry commissioned LEI Wageningen UR to perform a study that will lead to a better impression of existing data supply and to point out data that enable the monitoring or estimation of the share of certified sustainable coffee, cocoa and cocoa products in the Dutch consumption. This report presents the research results of this study. The results of this study will lead to a search for the most cost efficient ways to monitor or estimate the share of sustainable consumption with respect to total consumption.

The study was conducted through desk research and interviews with some of the representatives of the Dutch coffee (2012) and cocoa (2012/13) supply chains and related organisations. We would like to thank them for providing information. We would also like to thank Sietze Vellema, Yuca Waarts, Verina Ingram and Marieke Meeusen (all LEI Wageningen UR) for their comments and review. And, finally, we would like to thank Lucie Wassink and Alex Bruijnis (Dutch Ministry of Economic Affairs) for their comments and discussion.

Ir. L.C. van Staalduinen
Director General LEI Wageningen UR

Abbreviations

CBL	Dutch Food Retail Association
CBS	Statistics Netherlands
EAN	European Article Number, now renamed International Article Number
FLO	FairTrade International
ICCO	International Cocoa Organization
ICO	International Coffee Organization
IDH	Sustainable Trade Initiative
IOAS/IFOAM	International Federation of Organic Agriculture Movements and International Organic Accreditation Service
KNVKT	Royal Dutch Coffee and Tea Association
LEI Wageningen UR	Dutch Agricultural Economics Institute, PART OF Wageningen University and Research
VBP/PBS	Organic Producers and Trade Association/Promotion Agency Organic Specialty Store
VBZ	Dutch Association for the Bakery and Confectionery Industry

Summary

S.1 Key findings

In the Netherlands there are multiple bodies that collect systematic and non-systematic quantitative information about the Dutch cocoa and coffee sectors that could be used to measure the sustainable consumption of sectors' products in the Netherlands. Usability and quality of the available data differs between both sectors. According to the Royal Dutch Coffee and Tea Association (KNVKT), the share of certified sustainable coffee in the Dutch market was 40% in 2012. This number has been verified by Statistics Netherlands (CBS) in 2013 and will be systematically and periodically³ updated on KNVKT's website. In the case of the cocoa chain, the information that enables the monitoring of the results of the stakeholders' efforts to increase sustainable consumption in the Netherlands is limited due to high costs of collection and the complexity of the supply chain. Based on professional expert judgements in the cocoa grinding segment, the share of certified sustainable cocoa processed in consumer products sold in the Dutch market was not above 25% in 2012. The research on the coffee sector was conducted in 2012 with some relevant updates in 2013, the research on the cocoa sector was conducted in 2012 and 2013 with some relevant updates to 2014.

- Among the organisations that collect information about coffee and cocoa sectors, there are individual companies, business alliances and associations and public and private market research organisations.
- Only collected quantitative information that is linked to repeatable longitudinal studies can be considered as operable for the monitoring. An estimate using ad-hoc data could be incomplete, uncertain, or unstable, but it useful for giving a rough indication of the share of certified sustainable cocoa and coffee for a chosen period (in this study, the reference year is 2012). Linking different data, including ad-hoc data, makes the estimate more robust. See > Sections 1.3.1 and 1.3.2.
- For most of the supply chain players and their representatives that collect information about sustainability in their supply chain segment, a high aggregation level of information is a sufficient condition for making their data public. At the same time, individual manufacturers' data, if available, are made public only if the information does not harm the competitive position of the company. See > Section 3.2.
- There is a possibility to monitor the shares of certified sustainable coffee, in volume, in the total volume of coffee sold in the Dutch market using the KNVKT data. According to the Royal Dutch Coffee and Tea Association (KNVKT), the share of certified sustainable coffee in the Dutch market was 40% in 2012.
- Based on professional expert judgements in the cocoa grinding segment, the share of certified sustainable cocoa processed in consumer products sold in the Dutch market was not above 25% in 2012. Other known facts about the cocoa market in 2012 support this estimate. However, this ad-hoc information, such as expert estimates based on explicit and implicit knowledge, is not sufficient for monitoring of the whole Dutch consumer market, because it is not systematic, but at the same time this information facilitates a single estimation in a certain period.

S.2 Complementary results

- Both coffee and cocoa sectors are dominated by large firms that operate internationally.

³ Annual monitoring

- There is a large differentiation of consumer products containing cocoa. Cocoa product manufacturers advise tracking 'flagship products', i.e. chocolate bars, pralines and other chocolate, as products that are the most related to the usage of cocoa in the industry and therefore most relevant for monitoring the trends. See > Section 3.2.5.
- Relevant information gathered for *monitoring* of sustainable certified coffee sold in the Dutch market is summarised in Table S.1. This concerns systematic information that will be (at least potentially) updated/monitored regularly. See also > Section 5.1.

Table S.1

Coffee chain: information on certified sustainable coffee

	Flow/ sales channel	Relevant gathered figures
<i>World</i>	<i>All export</i>	<ul style="list-style-type: none"> • In 2012, the total export of coffee with a global sustainability standard including 4C Association Standard and C.A.F.E. (this is a broader definition than referred to in Section 1.3.3). Practices from producing countries was 12% (adjusted for multiple certifications; not adjusted 2% organic, 3% UTZ, 2% Fair Trade and 2% Rainforest Alliance).
<i>Netherlands</i>	<i>Supermarkets</i>	<ul style="list-style-type: none"> • LEI Wageningen UR: the share of consumer spending on labelled coffee (on-pack) with reference to all coffee spending in the supermarkets was 26% in 2011.
	<i>Non-supermarkets</i>	-
	<i>All (total)</i>	<ul style="list-style-type: none"> • KNVKT: certified sustainable coffee sold in the Dutch market accounted for 40% in 2011 (see sustainability definition in Section 1.3.3.).

- Relevant information gathered for *estimation* of sustainable certified cocoa processed in consumer products sold in the Dutch market is summarised in Table S.2. See also > Section 5.2.

Table S.2

Cocoa chain: information on certified sustainable cocoa.

	Flow/ sales channel	Relevant gathered figures
<i>World</i>	<i>All export</i>	<ul style="list-style-type: none"> • In 2012, the export of cocoa with a global sustainability standard from producing countries was 10% (adjusted for multiple certifications).
<i>Netherlands</i>	<i>Supermarkets</i>	<ul style="list-style-type: none"> • In 2011, supermarkets accounted for 71% of sales market share of chocolate and sweets • In 2012, 16% of consumer spending within the chocolate category in the supermarkets in the Netherlands was for sustainable labelled products. • All supermarket private labels with exception of C1000 (figure unknown) sourced 100% sustainable certified cocoa for their chocolate products in 2012. Private labels account for 14% of the chocolate market.
	<i>Non-supermarkets</i>	<ul style="list-style-type: none"> • La Place sourced its chocolate assortment with 100% sustainable certified cocoa in 2012. HEMA sourced 80% sustainable certified cocoa for their private label chocolate products in 2012.
	<i>All (total)</i>	<ul style="list-style-type: none"> • In 2012, the total consumption volume of chocolate and chocolate products in the Netherlands was almost 84m kilos, or 5 kilos per person. • Two of the largest grinders, Cargill and ADM, with a major share in processing cocoa into liquor, butter and powder in Europe, estimated the share of sustainable certified cocoa processed in consumer products and sold on the Dutch consumer market not above 25% in 2012. • The manufacturers and some individual brands (market shares unknown) that were active on the Dutch market and who explicitly claimed to use certified sustainable cocoa input in their produce claimed to source between 11% and 100% of consumer cocoa products by certified cocoa. • 4.2% of the total chocolate consumption in the Netherlands is Fairtrade/Max Havelaar labelled. • The share in sales of organic chocolate with respect to total chocolate sales in all sales channels in the Netherlands was not above 2.3%.

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- Given the current quality and amount of information and, aiming for cost-effectiveness, it is questionable whether monitoring is a good method for indicating the achievements of sustainability targets in the Dutch cocoa and chocolate consumer market as agreed in the letter of intent. Other methods, like time-to-time estimation, could be considered as well.

S.3 Method

This study has been commissioned by the Dutch Ministry of Economic Affairs and is supported by the Dutch Top sector research initiative through the Policy Support programme International Cooperation. The study aims at giving an impression of existing data supply and currently available studies, and points out data that enable the monitoring and estimating the share of certified sustainable coffee, cocoa and cocoa products in the Dutch consumer market. The research questions addressed in this study are:

- Q1. What data are available, from which supply chain actors, and how do these enable the monitoring of the share of certified sustainable cocoa and coffee?
- Q2. What types of arrangements have to be made for available information to be shared with and to be used in the public domain?
- Q3. In what ways can the data be used for reporting on the share of certified sustainable cocoa and coffee?
- Q4. What was the share of certified sustainable cocoa and coffee in the Dutch consumer market in 2012? See > Chapter 1.

To answer these questions, in the run-up to this report, group and individual interviews have taken place with representatives of value chain stakeholders that possibly have information which is relevant to this study. Representatives from the supply chains have been asked their professional judgement on the situation the sectors. The information was collected in the most cost efficient way, thus without confronting parties involved with excessive additional administrative costs. The interview records will be used as input in this study. Additionally, relevant literature will be reviewed. Quantitative information that is linked to repeatable longitudinal studies will be considered as operable for the monitoring. Other available relevant quantitative information about the supply chains that is linked to the information required for the 2012 estimate will be explored. Information that gives the best picture about the share of certified sustainable cocoa and coffee in the Dutch consumer market will be considered as the main estimate. See > Section 1.3.2.

Samenvatting

S.1 Belangrijkste uitkomsten

In Nederland zijn er verschillende instanties die (niet-)systematische kwantitatieve informatie verzamelen over de Nederlandse cacao- en koffiesector die kan worden gebruikt om de duurzame consumptie van cacao- en koffieproducten in Nederland te meten. Bruikbaarheid en kwaliteit van data verschilt per sector. Volgens de Koninklijke Nederlandse Vereniging voor Koffie en thee (KNVKT) was het marktaandeel van gecertificeerde duurzame koffie op de Nederlandse markt in 2012 40%. Dit gegeven is geverifieerd door het Centraal bureau van de Statistiek in 2013 en zal systematisch en periodiek⁴ worden geactualiseerd op de website van de KNVKT. Voor de cacao keten geldt dat de informatie voor het monitoren van de resultaten van de inspanningen van de ketenpartijen om de duurzame consumptie te vergroten beperkt is door de hoge kosten van het verzamelen van informatie en de complexiteit van de complexiteit van de keten. Volgens professionele oordelen van deskundigen uit het cacaooverwerkingssegment was het aandeel gecertificeerde duurzame cacao in consumentenproducten die verkocht zijn op de Nederlandse markt in 2012 niet hoger dan 25%. Het onderzoek naar de koffiesector is verricht in 2012 met enkele relevante updates in 2013. Het onderzoek naar de cacaosector is verricht in 2012 en 2013 met enkele relevante updates voor 2014.

- De organisaties die informatie verzamelen over de koffie- en cacaosector, zijn onder andere individuele bedrijven, sectororganisaties en publieke en private instellingen voor marktonderzoek.
- Alleen verzamelde kwantitatieve informatie die verband houdt met reproduceerbare longitudinale studies kan worden beschouwd als bruikbaar voor de monitoring. Een schatting op basis van ad-hocgegevens kan onvolledig, onduidelijk of onstabiel zijn, maar kan desondanks nuttig zijn voor het geven van een ruwe indicatie van het aandeel gecertificeerde duurzame cacao en koffie in een bepaalde periode (in deze studie is het referentiejaar 2012). Door verschillende gegevens, waaronder ad-hocgegevens, te koppelen, wordt de schatting robuuster.
- Voor de meeste ketenpartijen die informatie over duurzaamheid in hun ketensegment verzamelen, is een hoog aggregatieniveau een voldoende voorwaarde om gegevens te laten publiceren. Tegelijkertijd worden gegevens van individuele bedrijven, indien beschikbaar, alleen publiek gemaakt wanneer deze de concurrentiepositie van het desbetreffende bedrijf niet kunnen schaden. Aan de hand van de gegevens van de KNVKT is het mogelijk om het volumeaandeel duurzaam gecertificeerde koffie die in de Nederlandse markt wordt verkocht te monitoren. Volgens de Koninklijke Nederlandse Vereniging voor Koffie en thee (KNVKT) was het marktaandeel van gecertificeerde duurzame koffie op de Nederlandse markt in 2012 40%.
- Volgens professionele oordelen van deskundigen uit het cacaooverwerkingssegment was het aandeel gecertificeerde duurzame cacao in consumentenproducten die verkocht zijn op de Nederlandse markt in 2012 niet hoger dan 25%. Andere feiten over de cacaomarkt in 2012 steunen deze schatting. Ad-hocinformatie, zoals deskundige schattingen op basis van expliciete en impliciete kennis, is niet voldoende is om de hele Nederlandse consumentenmarkt te monitoren, omdat deze informatie niet systematisch is. Toch maakt deze informatie het mogelijk om één schatting te maken voor een bepaalde periode.

S.2 Aanvullende resultaten

- De koffie- en cacaosectoren worden gedomineerd door grote bedrijven die internationaal opereren.

⁴ Jaarlijkse monitoring.

- Er is een grote differentiatie van consumentenproducten die cacao bevatten. Fabrikanten van cacao-producten adviseren 'flagship products', zoals chocoladerepen, bonbons en andere chocolade, te volgen. Deze producten zijn het meest gerelateerd aan het verbruik van cacao in de chocolade-industrie en zijn daarom relevant voor het monitoren van tendensen in deze industrie.
- Relevante informatie die is verzameld voor het *monitoren* van duurzame gecertificeerde koffie die verkocht is op de Nederlandse markt, is samengevat in Tabel S.1. Het betreft systematische informatie die (potentieel) periodiek zal worden geüpdatet.
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Tabel S.1

Koffieketen: informatie over gecertificeerde duurzame koffie.

	Stroom/verkoopkanaal	Relevante verzamelde gegevens
<i>Wereld</i>	<i>Alle export</i>	<ul style="list-style-type: none"> • In 2012 was de totale export van koffie met een wereldwijde standaard voor duurzaamheid, waaronder de 4C Association Standard en C.A.F.E. Practices, uit producerende landen 12% (aangepast voor meerdere keurmerken; niet aangepast: 2% biologisch, 3% UTZ, 2% Fairtrade en 2% Rainforest Alliance).
<i>Nederland</i>	<i>Supermarkten</i>	<ul style="list-style-type: none"> • LEI Wageningen UR: in 2011 ging 26% van de consumentenbestedingen voor koffie in supermarkten naar duurzame gelabelde koffie.
	<i>Niet-supermarkten</i>	-
	<i>Alle (totaal)</i>	<ul style="list-style-type: none"> • KNVKT: in 2011 was het aandeel gecertificeerde duurzame koffie op de Nederlandse consumentenmarkt 40%.

- Relevante informatie die is verzameld voor het *schatten* van duurzame gecertificeerde cacao die verwerkt is in op de Nederlandse markt verkochte consumentenproducten, is samengevat in Tabel S.2.

Tabel S.2

Cacaoketen: informatie over gecertificeerde duurzame cacao

	Stroom/verkoopkanaal	Relevante verzamelde gegevens
<i>Wereld</i>	<i>Alle export</i>	<ul style="list-style-type: none"> • In 2012 was de export van cacao met een wereldwijde standaard voor duurzaamheid uit producerende landen 10% (aangepast voor meerdere keurmerken).
<i>Nederland</i>	<i>Supermarkten</i>	<ul style="list-style-type: none"> • In 2011 waren de supermarkten goed voor 71% van alle verkopen van chocolade en snoep. • In 2012 ging 16% van de consumentenbestedingen binnen de categorie chocolade in Nederlandse supermarkten naar duurzame gelabelde producten. • Met uitzondering van C1000 (cijfer onbekend) gebruikten alle supermarkten in 2012 100% duurzame gecertificeerde cacao voor hun huismerken. Huismerken zijn goed voor 14% van de chocolademarkt.
	<i>Niet-supermarkten</i>	<ul style="list-style-type: none"> • La Place gebruikte in 2012 100% duurzame gecertificeerde cacao voor zijn chocoladeproducten. HEMA gebruikte in dat jaar 80% duurzame gecertificeerde cacao voor de huismerkchocolade.
	<i>Alle (totaal)</i>	<ul style="list-style-type: none"> • In 2012 was de totale consumptie van chocolade en chocoladeproducten in Nederland bijna 84 miljoen kilo, oftewel 5 kilo per persoon. • Cargill en ADM, twee van de grootste cacaooverwerkers met een groot aandeel in de verwerking van cacao tot cacaomassa, -boter en -poeder in Europa, schatten het aandeel duurzame gecertificeerde cacao verwerkt in consumentenproducten die verkocht worden op de Nederlandse consumentenmarkt in 2012 niet hoger dan 25%. • Fabrikanten en sommige individuele merken (marktaandeel onbekend) die actief zijn op de Nederlandse markt en die expliciet aangeven gecertificeerde duurzame cacao voor hun producten te gebruiken, beweren tussen 11% en 100% gecertificeerde cacao te gebruiken voor consumenten-chocolade. • 4,2% van alle chocoladeconsumptie in Nederland is gelabeld met een Fairtrade/Max Havelaar-keurmerk. • Het aandeel biologische chocolade in de verkoop van chocolade binnen alle verkoopkanalen in Nederland was niet hoger dan 2,3%.

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- Gegeven de huidige kwaliteit en de hoeveelheid informatie en gezien het streven naar kosteneffectiviteit is het betwistbaar of een monitor een goede methode is om te bepalen in hoeverre de duurzaamheidsdoelstellingen in de Nederlandse cacao- en chocoladeconsumentenmarkt zoals vastgelegd in de intentieverklaring zijn gerealiseerd. Andere methoden, zoals van tijd tot tijd schatten, kunnen ook worden overwogen.

S.3 Methode

Deze studie is uitgevoerd in opdracht van het ministerie van Economische Zaken en wordt gesteund door onderzoeksinitiatieven van de Nederlandse topsector via het programma ter ondersteuning van het beleid inzake internationale samenwerking. Het doel van deze studie is het geven van een impressie van de huidige gegevens en de studies die op dit moment beschikbaar zijn. Daarnaast biedt de studie informatie voor het monitoren en schatten van het aandeel gecertificeerde duurzame koffie, cacao en cacao-producten in de Nederlandse consumentenmarkt. De onderzoeksvragen voor deze studie zijn:

- V1. Welke gegevens van welke ketenspelers zijn beschikbaar en hoe maken deze gegevens het mogelijk het aandeel gecertificeerde duurzame cacao en koffie te monitoren?
- V2. Welke soorten regelingen moeten worden getroffen zodat de beschikbare informatie wordt gedeeld met en gebruikt in het publieke domein?
- V3. Op welke manieren kunnen de gegevens worden gebruikt voor rapportage over het aandeel gecertificeerd duurzame cacao en koffie?
- V4. Wat was het aandeel gecertificeerde duurzame cacao en koffie in de Nederlandse consumentenmarkt in 2012?

Om deze vragen te beantwoorden, zijn er in de aanloop naar deze rapportage individuele en groepsgesprekken gevoerd met vertegenwoordigers van ketenpartijen die mogelijk informatie hebben die relevant is voor deze studie. Vertegenwoordigers van ketenpartijen is gevraagd hun professionele oordeel over de stand van zaken in de sectoren te geven. De informatie is verzameld op de meest kostenefficiënte manier, dus zonder de geïnterviewden met buitensporige extra administratieve kosten te confronteren. De interviewverslagen worden gebruikt als input voor deze studie. Daarnaast wordt er een literatuuronderzoek gedaan. Kwantitatieve informatie die verband houdt met reproduceerbare longitudinale studies wordt beschouwd als bruikbaar voor de monitoring. Andere beschikbare relevante kwantitatieve informatie over de ketens die te maken heeft met informatie die nodig is voor een schatting voor het jaar 2012 wordt onderzocht. De informatie die het beste beeld geeft van het aandeel gecertificeerde duurzame cacao en koffie in de Nederlandse consumentenmarkt zal als de belangrijkste schatting worden beschouwd.

1 Introduction

1.1 Background

The Dutch Ministry of Economic Affairs (former Ministry of Economic Affairs, Agriculture and Innovation or Agriculture, Nature and Food Quality) partners with IDH the sustainable trade initiative (IDH)⁵ in a joint endeavour to monitor the achievements in increasing the share of consumed certified sustainable cocoa and coffee in the Netherlands.

This monitoring activity supports the letters of intent from the Dutch cocoa, chocolate and coffee sectors signed and/or supported in 2010 by different stakeholders.

The coffee industry wanted to have a point on the horizon to coordinate the efforts how the coffee value chain (from tree to cup) can be made more sustainable (including people, planet, and profit). This resulted in the sector letter of intent signed by the Royal Dutch Coffee and Tea Association (KNVKT) and supported by the Dutch government⁶, IDH, a number of certification organisations and other cooperating parties. An expert working group is involved in implementation and monitoring of the objectives under the supervision of KNVKT.

The wish to address sustainability in the cocoa value chain resulted in the Letter of Intent 'Sustainable cocoa consumption and - cocoa production', which is an initiative of, and signed and/or supported by the Ministry of Agriculture, Nature and Food Quality and the main players in the Dutch cocoa sector including producers, retailers, NGOs and civil society. The implementation and monitoring of the agreed activities is to be elaborated within a Chocolate Working Group facilitated by IDH and the Ministry.

The letters of intent stipulate clear targets for increasing the share of certified sustainable cocoa (in 2015 50%, in 2020 80% and in 2025 all cocoa used in cocoa and chocolate products that will be consumed in the Dutch market will be guaranteed to be certified as sustainable⁷), and coffee (in 2015 75% of all coffee consumed or bought in the Dutch markets is sustainable certified⁸). These targets are expressed in green cocoa respectively coffee bean equivalents.

A valid monitoring is needed to determine the results of the stakeholders' efforts in the Dutch coffee and cocoa markets with regard to the sustainability targets stipulated in the Letters of Intent.

In the coffee and cocoa sectors there are a number of parties that provide information about product volumes and value actively to other organisations or the public (see Section 3.2). These parties aim to support strategic and operational decisions of the governments and firms. There are studies that analysed both the coffee and cocoa markets. However, the scope of the studies deferred from measuring sustainability on the Dutch market in specific, Tropical Commodity Coalition for Coffee, Tea and Cocoa (TCC) published developments of significance in the sustainable coffee sector Coffee and Cocoa Barometers⁹. The TCC ended in 2012. A joint single initiative by the VOICE Network was launching Cocoa Barometer 2012. Recently, Hivos, UICN Nederland, Oxfam Novib, Solidaridad and WWF launched Coffee Barometer 2014¹⁰. In 2010, Dutch Sustainable Trade Initiative/CREM published projections of the expected supply of sustainable cocoa (UTZ Certified, Rainforest Alliance, Fairtrade and Organic) in 2010, 2015 and 2020.

⁵ IDH is an international multi-stakeholder consortium which aims to accelerate and up-scale sustainable trade by building impact oriented coalitions of front running companies, civil society organizations, governments and other stakeholders that will deliver impact on the Millennium Development Goals. IDH operates coffee and cocoa programs. See also: <http://www.idhsustainabletrade.com/>

⁶ Action plan support through Green Deal

⁷ More information: <https://zoek.officielebekendmakingen.nl/kst-32123-XIV-187.html>

⁸ More information: <http://www.knvkt.nl/media-center/publicaties/item/205-intentieverklaring-nederlandse-koffiesector>

⁹ More information: <http://www.teacoffeecocoa.org>

¹⁰ Outside the scope of this study.

1.2 Objectives and research questions

This study has been commissioned in 2012 by the Dutch Ministry of Economic Affairs and is supported by the Dutch Top sector research initiative through the Policy Support programme International Cooperation. The objective of the study is to contribute to a better use of information for monitoring and estimating the share of certified sustainable cocoa and coffee consumption in total cocoa and coffee consumption in the Netherlands. The study aims at giving an impression of existing data supply and currently available studies, and points out data that enable the monitoring and estimating the share of certified sustainable coffee, cocoa and cocoa products in the Dutch consumer market in the future. The research questions addressed in this study are:

- Q1. What data are available, from which supply chain actors, and how do these enable the monitoring of the share of certified sustainable cocoa and coffee?
- Q2. What types of arrangements have to be made for available information to be shared with and to be used in the public domain?
- Q3. In what ways can the data be used for reporting on the share of certified sustainable cocoa and coffee?
- Q4. What was the market share in 2012 (of the land in the sectors)?

1.3 Method and definitions

1.3.1 Monitor and estimation

A *monitor* gives a qualitative or quantitative picture of the state of affairs, and could be established to give an answer to the question how the share of certified sustainable coffee, cocoa and cocoa products in Dutch consumption develops through time. The two sectors will be dealt with as two separate case studies. There are two conditions for monitoring: 1) longitudinal study, the data are compared at different moments of time; 2) the same instruments are used each moment of measurement (study repeating), which increases reliability of study. Therefore data for monitoring must be collected for more than one period (years) in the same way.

Based on the outputs of such a monitor, the relevant stakeholders will be able to determine the degree of certified sustainable coffee and cocoa sold in the Dutch consumer market with added time dimension. Two things can be determined: 1) the share of certified sustainable cocoa and coffee consumed in the Netherlands relative to the benchmark, 2) an increase or decrease in the share of certified sustainable cocoa or coffee consumption over a period of time (a trend).

An *estimate* approximates a value and does not involve the time and study repeating dimensions and is usable for defining the share of certified sustainable cocoa and coffee if input data may be incomplete, uncertain, or unstable¹¹. The value that is monitored or estimated is related to a measured indicator, or a variable.

1.3.2 Methodology

In the study only the quantitative information that is linked to repeatable longitudinal studies will be considered as operable for the monitoring. In addition, other available relevant quantitative information about supply chains that is linked to the information required for the 2012 monitoring or will be explored. Information that gives the best picture about the share in certified sustainable cocoa and coffee in the Dutch consumer market will be considered as the main estimate. The data will include ad-hoc information such as professional judgements. Linking different data, including ad-hoc data, makes the estimate more robust.

- In this report an inventory of data records that are relevant, periodical and methodologically systematic and eventual publishing requirements will be drafted. The method of gathering data (e.g. survey) will be described. The information about continuity and frequency of data (every year, every

¹¹ See for example Payzan-LeNestour E, Bossaerts P (2011) Risk, Unexpected Uncertainty, and Estimation Uncertainty: Bayesian Learning in Unstable Settings. *PLoS Comput Biol* 7(1): e1001048. doi: 10.1371/journal.pcbi.1001048

month or otherwise) will be given. When applicable, types of arrangements, which have to be made for available data records to be shared with and to be used in the public domain will be described.

- Additionally all other relevant qualitative and quantitative information which is non-periodical and without a comparable method and incidental publishing requirements will be represented.

To perform what is described above, in the run-up to this report, group and individual interviews have taken place with representatives of sector organisations (trade associations) that possibly have relevant information for this study. Representatives from the industry have been asked their professional judgement on the lie of the land in the sectors. The information was collected in the most cost efficient way, thus without confronting parties involved with excessive additional administrative costs. Relevant parties are listed below in this chapter. The interview records will be used as input in this study. Additionally, relevant literature will be reviewed.

The research on coffee sector was conducted in 2012 with some relevant updates in 2013, the research on cocoa sector was conducted in 2012 and 2013 with some relevant updates to 2014.

1.3.3 Defining sustainable coffee and cocoa

'Sustainability means ensuring human rights, well-being and food security without depleting or diminishing the capacity of the earth's ecosystems to support life or at the expense of others' well-being' (Guttenstein et al., 2010, p.9) Coffee, cocoa and cocoa products are regarded as sustainable when they are produced and processed taking into account the environmental conservation, economic viability for farmers, social responsibility above legally required levels (Ministerie van Economische Zaken, Landbouw en Innovatie, 2011). For the purposes of detection of products with such claims for consumers, these efforts must be made visible by using a preferably on-pack logo, which is based on compliance with certain certification scheme requirements (Ministerie van Economische Zaken, Landbouw en Innovatie, 2011).

Certification is the procedure by which a certification body gives a written assurance that the quality and the production process of coffee, cocoa or cocoa products have been assessed, and that both conform to the specified certification requirements (Panhuysen and Van Reenen, 2012; Weiligmann, Panhuysen, Van Reenen and Zwart, 2009). For the purpose of this study, only certification schemes which are measurable, independently audited and monitored from producer to retailer are considered. Hence, all cocoa and coffee which is certified by a member of the International Social and Environmental Accreditation and Labelling Alliance (ISEAL)¹² is considered as sustainable in this report. This definition is consistent with the definition in the Letters of Intent mentioned in Section 1.1. Using this criterion, four global production standards are relevant to both the coffee and cocoa sectors:

- Fairtrade/ Max Havelaar
- Organic
- Rainforest Alliance
- UTZ Certified.

By applying this definition of sustainability, the authors acknowledge that not all the efforts of supply chain parties to contribute to sustainable production of coffee, cocoa and cocoa products are reflected.

Note that only for Organic a 100% physical link with certified coffee or cocoa ingredients within a specific product is guaranteed by EU law. The physical link is not guaranteed by law for other labels. In general, their requirements for labelling of (usually composite) consumer products differ. On-pack logo detection on consumer level will be taken into account when focusing on single chain level (consumer market). But sometimes, the correspondence of a certification logo with certified ingredient is only administrative (x-share of output is labelled when x-share of input is used)¹³.

¹² More information: <http://www.isealalliance.org/>

¹³ See for example UTZ Certified Chain of Custody for cocoa: http://www.utzcertified-trainingcenter.com/home/images/stories/library_files/EN+UTZ+Chain+of+Custody+Cocoa+v3.1.pdf

1.3.4 Units of measurement

For the purposes of, for example, a trend analysis, the indicators must be measurable, reproducible, easy to interpret, valid, relevant, reliable, complete and available (Cotteleer, Gardebroek, Vrolijk, & Dol, 2003).

The measurement used in this study is the share of certified sustainable product with respect to the total product, either in volume or monetary value. The monetary value refers to the value of the sales to consumers and gives an indication of consumer spending on certified sustainable products. The change in total monetary value can indicate total volume change at fixed prices. The monetary value can also be indicative of the total volumes at a given average price per unit of weight of product.

1.3.5 Chocolate products

- The Study Centre Snacks and Confectionery Benelux (Studiecentrum Snacks en Zoetwaren Benelux¹⁴) defines 5 main categories in the Dutch chocolate and confectionery market which are expressed in cocoa bean equivalents:
 - bars, tablets
 - candy bars
 - small chocolates and sweets
 - dragees and bitesizes
 - seasonal products.
- Also categories such as chocolate drink and Dutch chocolate custard (*chocoladevla*), toppings (sprinkles), biscuits, cakes and ice fall within that definition. The letter of intent for the cocoa sector mentioned in Section 1.1 focuses on the Dutch chocolate and confectionery market specifically and concerns cocoa bean equivalents of products within the above described groups.

1.3.6 Coffee

The consumption of coffee beans that are aimed to preparation of brewed beverage is considered, when we mention coffee consumption.

1.3.7 Organisations which could have useful data for monitoring

A number of organisations are known to maintain a public data source that could, at least potentially, enable the monitoring of certified sustainable cocoa and coffee in the Dutch cocoa and coffee sectors. There are also organisations that *may*, at least potentially, maintain a relevant data source for cocoa and coffee. The next organisations have been selected for further data source analysis.

- Official statistics:
 - Eurostat
 - Centraal Bureau voor de Statistiek, or Statistics Netherlands (CBS)
- Other statistics:
 - LEI Wageningen UR, socio-economic research institute;
 - International Coffee Organization (ICO);
 - International Cocoa Organization (ICCO);
 - Koninklijke Nederlandse Vereniging van Koffie en Thee, or Royal Dutch Coffee and Tea Association (KNVKT) (*);
 - Centraal Bureau Levensmiddelenhandel, or Dutch Food Retail Association (CBL) (**);
 - Vereniging Biologische Producenten en Handel, or Organic Producers and Trade Association/Promotiebureau biologische speciaalzaak, or Promotion Agency Organic Specialty Store (VBP/PBS) (**);
 - Vereniging voor de Bakkerij- en Zoetwarenindustrie, or the Dutch Association for the Bakery and Confectionery Industry (VBZ) (**);
- Certification organisations:

¹⁴ See: <http://www.ssz.nl/>

-
- UTZ Certified (*, **);
 - Fairtrade International (FLO)/Max Havelaar (*, **);
 - Rainforest Alliance (*, **);
 - International Federation of Organic Agriculture Movements and International Organic Accreditation Service (IOAS/IFOAM) (*).
 - Other (private) parties:
 - Innova market Insights.
 - Companies (*, **).

Supporting parties and/or signatories of the letters of intent for certified sustainable cocoa and coffee are marked with asterisk: *coffee and ** cocoa.

1.4 Structure of this report

Chapter 2 will give an overview of the coffee and cocoa chains. Chapter 3 will give an inventory of information on sustainability potentially relevant for the monitoring of the letters of intent by each value chain organisation listed in Section 1.3.7. Chapter 4 will give an overview of a monitoring database system and available systematic periodical data. Chapter 5 will give quantitative information about coffee and cocoa market with relevance to the sustainable coffee and cocoa consumption in 2012.

2 Coffee and cocoa supply chains

2.1 Introduction

Producers in both coffee and cocoa sectors are locked into value chains: the product reaches the final consumer having passed a number of intermediaries, each of whom adds value to the final product (Kaplinsky, 2004). A supply chain overview highlights market segments, supply chain actors, their functions and linkages and the set of input-output relationships. The basic structure of the coffee and cocoa supply chains represents the way the product flows from raw material to end markets. The supply chain framework provides a way to indicate where and what kind of data on certified sustainable cocoa and coffee is available in the supply chain. For this reason, this chapter will describe cocoa and coffee supply chains.

2.2 The coffee supply chain

All coffee, including certified sustainable coffee, is produced in the equatorial countries. Brazil is the biggest producer in the world, Vietnam the second largest producer. In the 2011/2012 season, the total world production was 7,836,960 tonnes, or 130,616,000 60-kilo bags (ICO, 2012). In 2010, the total production in Brazil was 2,906,320 tonnes and in Vietnam 1,105,700 tonnes (FAOSTAT, 2012). All coffee is harvested by hand. The primary processing (dry or wet) takes place at or close to the production location.

In 2012, the export of coffee with a global sustainability standard from producing countries was 12% including 4C Association Standard and C.A.F.E. Practices (this percentage is adjusted for multiple certifications; not adjusted 2% organic, 3% UTZ, 2% Fair Trade and 2% Rainforest Alliance) (SSI, 2014). Note, that this is a broader definition than referred to in section 1.3.3.) Green (unroasted) coffee beans, certified or not, are usually sold to companies that export green beans from producing countries and sell them to the processing companies (roasters), such as D.E MASTERBLENDERS 1753, Nestlé, Starbucks, and many others. Traders combine coffee supply from different sources on international market, which enables them to supply the coffee beans to their customers in the right quantities and qualities and at the right time. Within the roasting facilities the coffee beans are being roasted, mixed and grinded. Some beans are processed into instant coffee. Processing companies supply retail outlets for the at-home market and out-of home market. Some of the supply chains are vertically integrated, containing processing companies and out-of home channels. A number of coffee companies have integrated supply chains, including both roasters and out-of-home sales channels (outlets) (for example Starbucks, D.E Master Blenders 1753, Simon Levelt). Both traders and roasters can export coffee - whether or not processed - to other consuming countries.

Traditionally, the harbours of Antwerp and Hamburg play important roles in coffee entering Europe. All coffee that enters EU markets through the harbours of Antwerp and Hamburg, and which subsequently enters the Netherlands, is part of intra-EU trade flows from Belgium or Germany to the Netherlands.

The EU and the US are the biggest coffee consumers. Most consuming countries do not grow coffee themselves and rely on imports. Brazil is the only producing country with substantial coffee consumption. In the Netherlands, the total coffee consumption was 119m kg in 2012 (KNVKT, 2012). Twenty-nine percent of all coffee is consumed out-of-home (ibid.)

For the schematic overview of the coffee chain see Figure A1.1 in Appendix 1, with the production segment upstream in the value chain, the processing segment in the midstream and the consumer sales channels segment in the downstream.

2.3 The cocoa supply chain

Cocoa, whether certified or not, is mainly produced in African countries, Indonesia and some countries in Middle America. Ivory Coast is the biggest producer in the world, Indonesia the second biggest. For the 2011/2012 season, the total world production is estimated to be 3,962,000 tonnes (ICCO, 2012). In 2010, the total production in Ivory Coast was 1,242,290 tonnes (about one third of the total) (Faostat, 2012). Most cocoa producers are smallholder farmers.

Most raw cocoa beans (certified or not) are sold to the traders and grinders in the consuming countries. A part of raw cocoa is grinded in the production countries.

Amsterdam is traditionally the biggest cocoa harbour in the world. Around twenty five percent of all raw cocoa beans is imported by the Netherlands (FAOSTAT, 2014). Around eighty percent of Dutch imports, i.e. thirteen percent of the total volume of cocoa beans produced worldwide, is processed in the Netherlands, mainly in the Amsterdam region (ICCO estimates for 2012/13).

Grinders process mainly sustainable cocoa beans into intermediate products: cocoa powder, cocoa liquor, and cocoa butter. These are processed into consumer products. Four grinders dominate the world market: ADM, Cargill, Barry Callebaut and Blommer. Grinders supply processing industries which produce chocolate and confectionary products, food and cosmetics. In Europe, Cargill and ADM are the biggest players in grinding cocoa into liquor, butter and powder. Barry Callebaut is the biggest producer of industrial chocolate (Table 2.1).

Table 2.1

Grinders' market shares EEA-wide by volume in 2010

	Cocoa liquor ¹⁵	Cocoa butter	Cocoa powder	Industrial chocolate
Cargill	[30-40]%	[20-30]%	[20-30]%	[10-20]%
ADM	[10-20]%	[20-30]%	[20-30]%	[5-10]%
Theobroma	[5-10]%	[10-20]%		
Krueger Gruppe	[5-10]%			
Petra ¹⁶ Foods/Delfi	[0-5]%	[10-20]%		
Barry Callebaut ¹⁷	[0-5]%		[10-20]%	[50-60]%
Dutch Cocoa	[0-5]%			
Euromar	[0-5]%			
Natra	[0-5]%			
Cé moi				[5-10]%
Belcolade				[5-10]%

Source: EC (2011).

About two thirds of all cocoa is used to produce chocolate and chocolate products (in the chocolate and confectionery industries)¹⁸. 6 major chocolate manufacturers dominate the world chocolate market: Mars, Nestle, Mondelez International (Kraft foods before 2012), Hershey's, Cadbury and Ferrero. The first three companies have a combined share in sales of 46% in the Netherlands (Euromonitor International, 2014). One third of all cocoa is used for producing cosmetics, other food products than chocolate and confectionary products, or for products from other industries. A wide variety of non-food products contain cocoa as an ingredient. For example, suppositories, face cream and lip balm contain cocoa butter.

The biggest consumers of cocoa are the EU and the US (53% and 26% respectively (MVO Nederland, 2012)). The consuming countries do not grow cocoa themselves and thus rely on imports of cocoa beans or cocoa products.

¹⁵ Cocoa liquor, or cocoa mass, consists of cocoa solids (powder) and cocoa butter.

¹⁶ Barry Callebaut successfully closed acquisition of the Cocoa Ingredients Division from Petra Foods in 2013

¹⁷ See also: <http://www.confectionerynews.com/Ingredients/Barry-Callebaut-We-have-more-certified-products-than-the-market-wants-for-now>

¹⁸ Note that the letter of intent mentioned in Section 1.1 focuses on chocolate and confectionery market only.

Consuming countries can export or re-export (certified sustainable) cocoa and cocoa products to other consuming countries: grinders can export intermediate (semi-finished) products; manufacturers (chocolate and other industries) can export end products. Within a country, the chocolate industry sells (certified sustainable) chocolate and chocolate products to the at-home market (supermarkets and shops) and to out-of-home sales channels. In the Netherlands, supermarkets represented 71% of sales market share of chocolate and sweets within all sales channels to consumers in 2011 (Hoofdbedrijfschap Detailhandel, 2013). Other sales channels to consumers include specialised sweets and chocolate shops, drugstores, department stores, street trading and snack vending machines, gas stations and catering. Most sales channels, which sell branded chocolate as a side activity, like gas stations and drug stores, but also snack vending machine operators, offer relatively limited chocolate assortment. Contract procurement is common and mostly only one or a few brand chocolate suppliers, mostly the largest brands, are suppliers. The Dutch consume nearly 5 kilos of chocolate per year per person, which accounts in total for almost 85 thousand tonnes (see also the letter of intent for the cocoa sector).

For a schematic overview of the cocoa supply chain see Figure A1.2 in Appendix 1, with the production segment upstream in the supply chain, processing and manufacturing segments midstream in the supply chain and the consumer sales channels downstream in the supply chain.

2.4 Concluding remarks

Along the coffee supply chain we can distinguish the following supply chain segments relevant for a consuming country, like the Netherlands: importers, roasting facilities (processors) and at-home and out-of-home sales channels. Along the cocoa supply chain, we can distinguish the next supply chain actors: importers, processors (grinders), (chocolate) manufacturing industry and at-home and out-of-home sales channels. The Netherlands plays a major role in the world in cacao processing.

The coffee and cocoa supply chains have a number of specific characteristics:

- international trade flows at different levels of the chain
- vertical integration
- limited product differentiation at the consumption level in the coffee chain: roasted ground coffee, coffee drink, instant coffee
- large product differentiation at the consumption level: chocolate, various chocolate products, various products with cocoa based ingredients.

These characteristics affect the measurement of the sustainable certified coffee and cocoa within the supply chain on a single chain level with a certain geographical scope (Netherlands).

3 Monitoring and estimation information availability in the supply chains

3.1 Introduction

For the organisations listed in Section 1.3.7, information and data that is useful for determining the certified sustainable cocoa and coffee share will be described. We will also describe under which conditions the data sources will be prepared to provide the (potentially) available data to the public domain.

3.2 Data source inventory

3.2.1 Official statistical sources

*Eurostat*¹⁹

Eurostat is the statistical office of the European Union situated in Luxembourg. Its task is to provide the European Union with statistics at the European level that enable comparisons between countries and regions (EUROSTAT, 2012).

Eurostat publishes a wide variety of statistical data. Most of the data comes from official registers, administrative records, national accounts and censuses. Some statistics are also based on surveys, such as national health surveys and labour force surveys (NSD, 2012).

A number of relevant variables for the purposes of this report, according to classifications listed on the Eurostat site²⁰ are:

- Imports and exports in volume and value according HS²¹, CN²² and SITC²³ classifications: raw beans, processed beans and processed products;
- Processing of 'tea and coffee' and wholesale of 'tea, coffee and spices' according NACE²⁴ classification.

The HS, CN and SITC nomenclatures are operational. Periodical revisions are published. The data is available online.

*CBS*²⁵

Centraal Bureau voor de Statistiek, or Statistics Netherlands (CBS), is responsible for collecting and processing data in for the purposes of publishing statistics that are used in practice, by policymakers and for scientific research. In addition to its responsibility for official national statistics, Statistics Netherlands also has the task of producing European community statistics (CBS, 2012).

¹⁹ See: <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>

²⁰ See:

http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM&StrLanguageCode=EN&IntFamilyCode=&TxtSearch=&IntCurrentPage=1

²¹ Harmonized Commodity Description and Coding System (HS) of tariff nomenclature is an internationally standardised system of names and numbers for classifying traded products developed and maintained by the World Customs Organization (WCO) (formerly the Customs Co-operation Council).

²² HS classification based (6 digits) 8-digits nomenclature.

²³ Standard International Trade Classification (SITC) is a classification of goods used to classify the exports and imports of a country to enable comparing different countries and years. The classification system is maintained by the United Nations. The SITC classification, is currently at revision four, which was promulgated in 2006. The SITC is recommended only for analytical purposes - trade statistics are recommended to be collected and compiled in the Harmonized System instead.

²⁴ The Statistical Classification of Economic Activities in the European Community (NACE) is a European industry standard classification system consisting of a 6 digit code.

²⁵ See: <http://www.cbs.nl/nl-NL/menu/home/default.htm>

CBS uses customs data for calculating Extra-EU trade flows. Questionnaires are used for calculating Intra-EU trade flows. Furthermore, CBS possesses scanner data in the retail.

A number of relevant variables for the purposes of this report, according the classifications listed on the CBS site²⁶, are:

- imports and exports in volume and value according CN, HS and SITC classifications: raw beans, processed beans and processed products
- processing of 'tea and coffee' and wholesale of 'tea, coffee and spices' according NACE²⁷ classification
- consumption index according COICOP-HICP²⁸ codes.

Scanner data involves volume and monetary data for all supermarket chains with the exception of Aldi and Lidl. Aldi and Lidl are expected to provide scanner data in the future.

The information is organised by product level. Periodically, revisions are published. The data are available online with the exception of scanner data. Scanner data are used by CBS to calculate price indices only. The availability of scanner data in the public domain is a delicate issue, possibly requiring the permission of the individual retailers. At the time of the writing of this report, there is no possibility to disclose the scanner data for other purposes. Moreover, these data is not linked to certification aspects of a product.

3.2.2 Other statistical sources

*LEI Wageningen UR*²⁹

LEI Wageningen UR, socio-economic research institute, carries out economic and social research for governments, businesses and organisations. LEI supplies agricultural data and performs analyses on the basis of a sound knowledge of the sector and the policy environment. LEI measures the development in consumer spending on organic food. This is done by the Monitoring of Sustainable Food³⁰ which is published yearly. Since 2010, the measurement is broadened to 'sustainable', rather than 'organic' only. The analysis is based on data from final consumption sales channels: at-home (supermarket) and out-of-home³¹. LEI reports on the following groups: potatoes, vegetables and fruit; bread, confectionery and breakfast cereals; dairy; eggs; meat; meat products; meat substitutes; coffee; tea; cocoa; fish; other.

For reporting purposes the category 'coffee, tea and cocoa (drink)' are treated as an aggregate product group. Most other consumer cocoa and chocolate products, other than cocoa drink, are assumingly included in the product group 'bread, confectionery and breakfast cereals'. Data for the product groups 'coffee, tea and cocoa (drink)' and 'bread, confectionery and breakfast cereals' are provided from the organisations shown in Table 3.1.

²⁶ See: <http://www.cbs.nl/nl-NL/menu/methoden/classificaties/overzicht/default.htm>

²⁷ The **Statistical Classification of Economic Activities in the European Community (NACE)** is a European industry standard classification system consisting of a 6 digit code.

²⁸ **Classification of Individual Consumption according to Purpose (COICOP)** is a Reference Classification published by the United Nations Statistics Division that divides the purpose of individual **consumption expenditures** incurred by three institutional sectors, namely households, non-profit institutions serving households and general government.

²⁹ See: <http://www.wageningenur.nl/nl/Expertises-Dienstverlening/Onderzoeksinstituten/lei.htm>

³⁰ See: 'Monitor Duurzaam Voedsel 2010' <http://www.lei.dlo.nl/publicaties/PDF/2012/12-067.pdf>

³¹ Monitor Duurzaam Voedsel 2010 considers the groups catering in businesses and education, healthcare, restaurants, hotels, 'on the move' along highways and / or rail stations as out-of home sales channel (Ministerie van Economische Zaken, Landbouw en Innovatie, 2011).

Table 3.1

Sources used in Monitor of Sustainable Food for coffee, tea and cocoa categories

'Sustainable'			'Total'		
At-home		III.Out-of-home	At-home		III.Out-of-home
I.Supermarket	II.Specialty stores		I.Supermarket	II.Specialty Stores	
Symphony IRI ^a	VPB/PBS	Foodstep ^b	Symphony IRI	VPB/PBS	Foodstep

a) 1 <http://www.SymphonyIRI.nl/>; b) <http://test.foodstep.com/en/welcome.html>

I. Data on supermarket level

Symphony IRI is a market research company. Symphony IRI collects and delivers to LEI cash register data (Infoscan) for all supermarket chains with the exception of Aldi and Lidl. Data for Aldi and Lidl are undeliverable and therefore kept out of the analyses. Symphony IRI links information on the packaging to the barcodes through field auditing. This information includes certification logos. Symphony IRI's information database is quite extended. LEI requests turnovers of products of the same category with and without a certification logo. Symphony IRI charges a fee for the service. In the delivered database for the At-home (supermarket) subdivision '*Sustainable*' the following information is included according. Sorting the data on all these variables is possible.

- EAN code (number). Normally, the code for a location country of the last production facility in the chain segment is given
- Eko, organic (yes or no)
- Sustainable (yes (only!), no division between products with multiple or just one certification). Answer to the question whether there is any ISEAL member certification logo on the package. Information about the certification logo on the package is linked to the EAN code
- Product group (for example: 'coffee, tea and cocoa drink'; 'Other foods' (for chocolate products))
- Product segment (for example 'coffee'; 'sweets')
- Product (for example 'coffee roasted'; 'chocolate bar'; 'chocolates'; 'pralines')
- Supplier/manufacturer (Name of supplier or 'private label')
- Brand (Name of the brand or 'private label')
- Period (2012 '1st half'; '2nd half')
- Location ('NL total', regions)
- Total *turnover* in the Netherlands in the given period for all supermarkets for the given selection of products and product groups.

For the At-home Supermarket subdivision '*Total*', the following variables are included. Sorting on all these variables is possible:

- Product group (for example 'coffee, tea and cocoa drink'; 'Other foods');
- Product segment ('coffee'; 'sweets');
- Period (2012 '1st half'; '2nd half');
- Location ('NL total');
- Total *turnover* in the Netherlands in the given period for all supermarkets for the given selection of products or product groups.

From the database, LEI is able to isolate sale information for coffee (certified and conventional) in the supermarkets. For the purpose of this study, LEI succeeded to isolate information on sales value for category 'Chocolate' (certified and conventional), i.e. chocolates, candy bars, pralines, chocolate toffees, chocolate bars, other chocolate. Information about products like custard, toppings (sprinkles), biscuits, pastries and ice cream were not possible to extract.

No information on volumes is provided, however there are possibilities to obtain this information through Symphony IRI against costs. Therefore the results could reflect *monetary value* (turnover), but no *volume value* for the at-home sales channel.

The Monitor of Sustainable Food is commissioned by the Ministry of Economic Affairs within the framework of the policy support research programme³². Using the parts of the Monitor of Sustainable Food reports including data analyses is allowed when making a reference to it. Using raw data provided by Symphony IRI is at the moment of writing *only* authorised for studies on sustainable food *published on the request of the Ministry of Economic Affairs*. The database is not public.

II. Specialty Stores

VBP/PBS stands for the Organic Producers and Trade Association/The Promotion Agency Organic Specialty Store³³. Data are collected through an enquiry among the members of the VBP/PBS about the turnover on organically certified products. For the Special Stores segment '*Sustainable*' and '*Total*' the variable available now is:

- Aggregate turnover of coffee, tea and cocoa (drink).

No information on volumes is provided. The results could reflect *monetary value* (turnover) for Special Store segment. For further possibilities, see also below for the section on VBP/PBS under III Out of Home.

III. Out-of-home

Foodstep is a research agency. Foodstep estimates turnover data by sampling. The sample exists of selling data from major suppliers to the Out of home sector. For every sales channel a representative sample is available. The sales channels are: catering in businesses and education, healthcare, restaurants, hotels, 'on the move' shops/restaurants along highways and / or rail stations. For the Out-of-home segment '*Sustainable*' and '*Total*', the variable available is:

- Aggregate turnover of coffee, tea and cocoa (drink).

No information on volumes is provided. Only the monetary value is reflected in information for the out-of home sales channel.

ICO³⁴

The International Coffee Organization (ICO) is the main intergovernmental organisation for coffee, bringing together exporting and importing governments to tackle the challenges facing the world coffee sector through international cooperation. Its member governments represent 94% of world coffee production and over 75% of world consumption (ICO, 2012).

ICO data are derived from Certificates of Origin and returns submitted by producing member countries, as well as information from consuming countries. Information from other sources such as government institutions often contains estimates that are subject to revision (International Trade Center, 2012).

The following variables are included in ICO data:

- total exports, imports and re-exports per country
- total and per capita consumption per country
- total roastings per country
- other variables, see for the complete list: <http://dev.ico.org/documents/wpboard934e.pdf>

Regular publications comprise:

- daily Prices (ICO composite and group indicators – website only);
- monthly Trade Statistics on exports, imports and re-exports;
- monthly Prices (ICO composite and group indicators) on the New York, German and French markets;

³² Beleidsondersteunend onderzoek.

³³ See also VBP/PBS part below

³⁴ See: <http://www.ico.org/>

- coffee Statistics, published quarterly, providing information on production, exports, imports, re-exports, market prices, prices to growers and values of imports and exports;
- green Coffee Trade Statistics, published annually, providing information on exports, exports by type, imports and re-exports of green coffee by origin and destination;
- processed Coffee Trade Statistics, published annually, providing information on exports, imports and re-exports of roasted and soluble coffee by origin and destination (ICO, 2012).

Current data are published in the monthly/quarterly/yearly reports, and in daily online updates (prices). Most data are available online. Reports are downloadable against a fee.

Besides regular statistics, ICO commissions/ supports ad hoc (Dutch) market analyses for sustainable coffee markets³⁵.

*ICCO*³⁶

The International Cocoa Organization (ICCO) is a global organisation, composed of both cocoa producing and cocoa consuming member countries (ICCO, 2012). ICCO publishes data that are collected in numerous ways, primarily by sending questionnaires to member countries (ministries of agriculture, ministries of trade, cocoa organisations, etc.) (ICCO, 2012). The ICCO daily price for cocoa beans is the average of the quotations of the nearest three active futures trading months on NYSE Liffe Futures and Options and ICE Futures US at the time of London close (ICCO, 2012). The following variables are included in ICCO data:

- prices and price averages
- total production and grindings per country
- *total* consumption and *per capita* consumption by country
- total exports, re-exports and imports of cocoa beans, cocoa butter, cocoa powder and cake, cocoa paste/liquor, chocolate products by country
- other assessments, for example world cocoa bean stocks, supply and demand trends.

Data on average prices, production, consumption and trade are continuously published in the quarterly bulletins. Information on daily prices of cocoa beans is published via the website. Some assessment reports are published yearly.

Current data are published in the quarterly bulletins, yearly reports and daily online updates (prices). The data are available online. Besides of regular statistics, ICCO publishes ad hoc market studies for fair trade and organic cocoa³⁷.

*KNVKT*³⁸

The Koninklijke Nederlandse Vereniging van Koffie en Thee, or Royal Dutch Coffee and Tea Association (KNVKT) represents the collective interests of Dutch coffee and tea companies. The Association has 52 members that are active in the Dutch coffee and tea market. Among the members are companies from the industry sector: trading companies, coffee roasters and tea packers, and industry associate companies, such as banks and logistic companies³⁹

According the KNVKT, its members represent 98% of the Dutch coffee market.

The KNVKT collects sales figures (total volume) in order to calculate membership contribution.

Additionally, members also indicate their annual sales figures for sustainable certified coffee within the Dutch market⁴⁰. The KNVKT seeks to guarantee the completeness and accuracy of collected data.

³⁵ See for example: The State of Sustainable Coffee: A study of twelve major markets on http://www.iisd.org/pdf/2003/trade_state_sustainable_coffee.pdf

³⁶ See: <http://www.icco.org/>

³⁷ See: http://www.icco.org/about-us/international-cocoa-agreements/cat_view/30-related-documents/37-fair-trade-organic-cocoa.html

³⁸ See: <http://www.knvkt.nl/content/>

³⁹ For the full list of members see: <http://www.knvkt.nl/content/index.php/leden>

⁴⁰ Coffee which is certified by UTZ Certified, Fair Trade/Max Havelaar, Rainforest Alliance, Organic i.e. that is being produced under the requirements of ISEAL Alliance.

The membership of the KNVKT represents approximately 98% in terms of volume. According to the KNVKT, the lack of data on other 2% of the players in the Dutch coffee market will not lead to a bias in the representation of (the trend in) the volumes of coffee sold in the Dutch consumer market. Thus, the KNVKT data do not provide full certainty about the total Dutch coffee market, but they do represent the total market to a very high extent.

In 2010, the KNVKT compared their own data with the data of the Dutch Arable Products Marketing Board⁴¹ (Productschap Akkerbouw, PA) for the reporting purposes (see also report: 'KNVKT feiten en cijfers 2010' (2011)⁴²). According to KNVKT the deviation of data had not been proven significant. Following is concluded on the basis of information on the variables at KNVKT:

- The KNVKT has data recordings for the total share of sustainable certified coffee in the total market (in %, public).
- The KNVKT has data recordings for the total volumes (in kg, not public).

The KNVKT collects trade and processing data about volumes of coffee *sold in the Netherlands* among its members. The volumes are derived from the total purchased and processed volumes of coffee *diminished with the export* volumes. Therefore these data reflect volumes coffee delivered to the supply channels to the Dutch consumer market). In the end, according to the KNVKT, the data reflects the share in sustainable certified coffee sold on the Dutch market.

The KNVKT approximates that about 30% of the total coffee volumes are sold through out-of-home sales channels. At the same time, the KNVKT does not have a clear picture how this coffee flow is distributed among different sub-channels *within* the out-of-home market. The KNVKT notices that this picture could be interesting to determine the drivers of sustainability in the Dutch coffee market.

The members provide the data to the KNVKT on an annual basis. The KNVKT emphasises that the public provision and exchange of data about prices and volumes sold is restricted under Dutch Competition Law. This means that the KNVKT is only able to publish the aggregate data (data on all companies in total).

According to the KNVKT, its members are potentially willing to provide individual data in case there is no conflict of interest to an independent organisation. For example, such individual data was shared with the Tropical Commodity Coalition (TCC is an NGO consortium for coffee, tea and cocoa) in the past.

The KNVKT is open to discuss possible improvements in methodology and the future collection of data such as described above in order to make data more usable for the potential users, for example improving the accuracy. The KNVKT sustainable coffee percentage in the Dutch market has been verified by Statistics Netherlands (CBS) in 2013.

*CBL*⁴³

Centraal Bureau Levensmiddelenhandel, or Dutch Food Retail Association (CBL) is an organisation representing the interest of the Dutch retail companies. The Association has 27 member companies that are active in the Dutch retail and food service sectors. Among the members are supermarkets, railway station retail and convenience companies⁴⁴.

Members of the CBL operate in consumers' sales channels. The goods sold are delivered by the processing industry (factory). Among the goods sold in the sales channels represented by the CBL are both coffee and cocoa products groups.

⁴¹ PA estimated total volumes coffee (HS codes) basing on the questionnaires sent out to the companies in the Dutch Coffee market. PA is no longer operating (by 2014). According KNVKT, this is causing considerable impact on the availability of data.

⁴² Available on: http://vnkt.nl/content/images/stories2/KNVKT_feiten_en_cijfers_2010.pdf

⁴³ See: <http://www.cbl.nl/>

⁴⁴ For the full list of members see: <http://www.cbl.nl/het-cbl/cbl-leden/>

The CBL does not collect systematic data about volumes or turnover of coffee and cocoa product groups among its members. For other reporting information about the segment the CBL represents, data from public sources and data collected and processed by third (commercial) agencies are used. (See for example report 'Consumententrends 2011' (CBL & EFMI, 2011)). CBL considers these agencies as efficient in the provision of necessary data.

The CBL advises the services of Symphony IRI, which collects and processes the cash register data in the at-home segment. According to CBL, this kind of data could possibly help to expose the consumption of certified sustainable products as coffee and cocoa products in the Dutch market. CBL emphasises that commercial parties supply the data against payment.

The CBL asked its members to provide information about the share on sustainable chocolate products sold in the Dutch sales channels, in addition to scanner data from supermarkets that has been used in the study. The certified chocolate shares in value or volume sales unknown are not known for 'non-supermarkets' sales channels, except for HEMA, La Place, and Makro (own brand). For the latter the volume sales of certified own brand chocolate vary between 80% and 100%, but it is unknown which proportion of sales these chains account for.

VBP⁴⁵/PBS⁴⁶

The Organic Producers and Trade Association, or Vereniging Biologische Producenten en Handel (VBP) is an organisation represents the interests of 85 firms that are active in processing and trade of organic products and associate companies. The Association has 85 members. Among members are producers, trade companies, wholesale companies, retail (organic specialty stores) and a few associate consultancies and certification agencies.

According to the VPB, its members represent 65% of the Dutch market in trade and processing of organic products.

The Promotion Agency Organic Specialty Store, or Promotiebureau Biologische Speciaalzaak (PBS) is an initiative that is established by the VPB. PBS' goals are promotion and professionalisation of the organic specialty store segment in order to achieve sustained growth.

The VBP/PBS collects member data on turnover for the purpose of performance analyses. The VBP/PBS compares these data with the data collected at the wholesale for reference and taking into the account the expected gross margin.

Currently, the VBP/PBS has disposal over aggregate data on the turnover of sustainable products in the specialty retail for the aggregate product group 'coffee, tea and cocoa'. Yearly, analyses on these data are performed by LEI for the purpose of Monitor of Sustainable Food by LEI Wageningen UR.

VBZ⁴⁷

Vereniging voor de Bakkerij- en Zoetwarenindustrie, or the Dutch Association for the Bakery and Confectionery Industry (VBZ) is an industry association for manufacturers of biscuits, sweets and chocolate active in the Dutch market. Additionally, the VBZ represents manufacturers of savoury snacks. The Association has about 120 members, among which both small and large companies. Members consist of industrial bakeries, chocolate factories, sweets factories, snack factories and food ingredients factories (for the full list of members see: <http://www.vbz.nl/vbz/leden-lidmaatschap/>). According to the VBZ, its members represent 86% of the Dutch industrial bakery and confectionery market. Most members of the VBZ are processing companies. One subdivision of the members consists of the processors that process cocoa products from the grinders into the chocolate products intended for the at-home and out-of home-consumer market. Some of the multinational chocolate factories that are active in the Netherlands are a VBZ member as well, i.e. Mars, Nestle, Kraft Foods

⁴⁵ See: <http://www.vbpbologisch.nl/>

⁴⁶ See: <http://www.stichtingpbs.nl/>

⁴⁷ See: <http://www.vbz.nl/>

and Ferrero. Cargill, a grinding company that supplies the bakery and confectionery factories with ingredients based on cocoa is also a member.

The VBZ members do not provide more specific data on volumes and sales than the data which is available in the already existing public sources. Provision of data on volumes and sales seems to be a delicate issue due to considerations about individual business interests and being subject to the Dutch Competition Law. At the moment of this writing, the VBZ does not collect any data about volumes or turnover of product groups among its members. At the same time, the VBZ is in dialogue with its members about the provision of data about usage of sustainable certified cocoa in the future. For collecting the data about certified sustainable cocoa in the Dutch market, the VBZ suggests an independent agency/ to individually approach the companies (grinders) that supply the industrial bakery and confectionery industry: ADM, Barry Callebaut, Cargill en Belcolado/Puratos. The VBZ stresses that almost 70% of the production from the bakery and confectionery industry that VBZ represents is intended for exports.

3.2.3 Certification organisations

*UTZ Certified*⁴⁸

UTZ Certified is a standard setting body that launched their programme for sustainable farming in 2002. UTZ Certified is presented in a growing number of producing and consuming countries with an expanding range of programmes for agricultural products, like cocoa, tea, rooibos tea and traceability services for palm oil and cotton.

UTZ Certified claims that almost 50% of all certified sustainable coffee worldwide is now UTZ certified (UTZ Certified, 2012). UTZ certified coffee is sold in almost 50 consuming countries. UTZ Certified indicates that it works with companies like Mars, IKEA, D.E. Master Blenders 1753, Migros, Tschibo and Nestlé. 4% of exported cocoa from countries of origin is UTZ certified with Germany, the Netherlands and Switzerland as the biggest certified sales markets in Europe; 44% of UTZ certified cocoa is multiple certified (SSI, 2014).

*FLO /Max Havelaar*⁴⁹

Fairtrade International (FLO) is an association of 3 producer networks and 19 national labelling initiatives and three marketing organisations that promote and market the Fairtrade Certification Mark in their countries. Max Havelaar Foundation is the Dutch labelling initiative member of FLO International. FLO International partners with producers of coffee, cocoa, sugar, nuts, rice, tea, flowers, fruit and cotton. Sales of total products with the Max Havelaar trademark reached €147.3m or 27.5m kilos (excluding flowers and cotton) in the Netherlands in 2011 (Stichting Max Havelaar, 2011). Two percent of all cocoa globally exported from producing countries is Fair Trade certified (SSI, 2014). In year reports FLO/Max Havelaar publishes information about volumes in kilos sold in the Netherlands for coffee and cocoa consumer products. The information concerns only Fairtrade on-pack certified coffee and cocoa products sold on consumer market. FLO/Max Havelaar sees the sustainable cocoa and coffee share in the Dutch market as a sum of the volume market shares for all certifications, adjusting for multiple certifications.

*Rainforest Alliance*⁵⁰

Rainforest Alliance is an US-based non-governmental organisation which aims to conserve biodiversity and ensure sustainable livelihoods by transforming land-use practices, business practices and consumer behaviour. The Rainforest Alliance's sustainable agriculture programme oversees the certification of farms that produce tropical crops, including coffee, bananas, cocoa, oranges, cut flowers, ferns, and tea. Farms that meet the comprehensive criteria of the Sustainable Agriculture Network earn the right to use the Rainforest Alliance Certified™ seal. There are 250,000 certified farms worldwide (Rainforest Alliance, 2011). Five percent of globally exported cocoa is Rainforest

⁴⁸ See: <https://www.utzcertified.org/>

⁴⁹ See: <http://www.fairtrade.net/>

⁵⁰ See: <http://www.rainforest-alliance.org/>

Alliance certified (SSI, 2014). Consumers can identify Rainforest Alliance certified and verified goods and services through the Rainforest Alliance Certified™ seal and Rainforest Alliance Verified™ mark (ibid.). Rainforest Alliance is only active in sourcing Cote-d'Or brand (Mondelez International) in the Netherlands. Rainforest Alliance agrees that summing up the volume market shares in the Netherlands for all certifications is a good way to estimate the total market share for certified sustainable cocoa and coffee. Information about the Rainforest Alliance certified cocoa usage is not available. If it was, it still could be questionable whether Rainforest Alliance was permitted to provide this information into public, since the information is (one) firm specific.

IOAS⁵¹/IFOAM⁵²

The International Federation of Organic Agriculture Movements (IFOAM) is the worldwide umbrella organisation for the organic movement, uniting more than 750 member organisations in 116 countries (IFOAM, 2012). The International Organic Accreditation Service (IOAS) currently works as the sole provider of accreditation against IFOAM Norms and is heavily engaged in working in collaboration with regulators of the organic trade on international and national levels (ISEAL Alliance, 2012). 3% of all cocoa globally exported from producing countries is certified as Organic (SSI, 2014). The share in sales of organic chocolate in the Netherlands is below the average of the share in sales of all organic food, i.e. less than 2.3%. The share in sales of organic food in category 'other food', which includes chocolate, is 1.2%⁵³.

The Cocoa and Coffee Barometers⁵⁴

The Cocoa Barometer 2012 has published numbers for the worldwide production of cocoa and shares sold as certified by standard setting bodies in 2011 (See: Hutz-Adams & Fountain (2012)). The numbers do not show the volumes sold specifically in the Netherlands. Hutz-Adams & Fountain (2012) state that only 33% of all certified cocoa is sold with one certification logo at maximum. 30 % of all certified cocoa is sold under multiple certification logos; 37% of all certified cocoa is sold without a logo (alternative sales channels or inferior quality).

The Coffee Barometer 2012 has published the volumes of total available and purchased certified coffee in 2012 (See: Panhuysen & Van Reenen, 2012). Only 57% of all produced certified coffee is sold as such (Panhuysen & Van Reenen, 2012). For the Netherlands, the Coffee Barometer estimated the Dutch market demand of Fair Trade and UTZ Certified coffee in 2010. A part of certified coffee is under double or triple certifications (ibid.). The majority of coffee with double certifications sold on consumer market is under a combination of Fair Trade and Organic certifications.

Having multiple certifications on products does not allow to simply add up the volumes for every individual certification to get the total certified volume in the market. Data on 'certification overlap' is needed to calculate this total.

In 2010, cocoa-experts from the cocoa sector (Solidaridad, Cargill, IDH, UTZ Certified, Rainforest Alliance, Max Havelaar and Tradin) made estimations of projections of the expected supply of certified sustainable cocoa (UTZ Certified, Rainforest Alliance, Fairtrade and Organic) in the Netherlands in 2010, 2015 and 2020. The estimates were reported in the report 'Sustainable cocoa for the Dutch Market' (Dutch Sustainable Trade Initiative/CREM, 2010). This study did not take multiple certifications on the same product or no visible certification logo on certified products into the account.

3.2.4 Other (private) parties

Marketing research companies

⁵¹ See: <http://www.ioas.org/>

⁵² See: <http://www.ifoam.org/>

⁵³ See: <http://www.foodholland.nl/dossiers/biofood/home.html>

⁵⁴ More recently than discussed in this part new initiatives build efforts to continue Barometers. For example Coffee Barometer 2014 has been launched by Hivos, IUCN Netherlands, Oxfam Novib, Solidaridad and WWF. This barometer falls outside the scope of this research.

Next to SymphonyIRI, companies like GfK, AC Nielsen and Innova Market Insights perform information and measurement and provide insight and data on sales of products and their attributes, like sustainability marks. Using their services involves a fee.

3.2.5 Companies

Coffee market

The top 3 world's coffee processors are Nestlé, Mondelēz International and D.E MASTERBLENDERS 1753. One of the main players in the Dutch market is D.E MASTERBLENDERS 1753 N.V. (split off from Sara Lee Corporation in March 2012) with its well-known brand Douwe Egberts, which had a market share of over 50% in the Dutch market (Panhuysen & Van Reenen, 2012). In 2011 30% of the coffee that D.E. Master Blenders 1753 sold in the Netherlands in 2011 was sustainable certified (D.E. Master Blenders 1753, 2012)

The Coffee Barometer 2012 published the total world sustainable coffee volumes purchased by top ten coffee roasters in 2010 (see: Panhuysen & Van Reenen, 2012). But these numbers are not published specifically for the Dutch coffee market. D.E. Master Blenders 1753 claimed to have purchased 50,000 tons sustainably certified coffee in 2011.

Cocoa market

The Cocoa Barometer published the total worldwide production grinding and usage volumes of certified sustainable cocoa in 2011 including information on some major players in the cocoa market (see: Hutz-Adams & Fountain (2012)). But these numbers are not available specifically for the Dutch cocoa market. Some companies located in the Netherlands publish claims about the usage of sustainably certified raw materials, at least for some products, but this information is segmented. For example, the Dutch affiliate of Mars claims to use 100% UTZ certified cocoa only for the Mars ® chocolate bars (Mars, 2012).

5 Cocoa grinders dominate the world grinding market: ADM, Cargill, Barry Callebaut, Petra Foods and Blommer. The Netherlands has a large concentration of cocoa processors: United Biscuits (UK), Cargill and ADM are situated in the *Zaanstreek*, traditionally the region with a high concentration of cocoa processors in the Netherlands. Droste, Van Houten, Verkade, De Zaan, Bensdorp and Gerkens are examples of regional subsidiaries of foreign companies in the cocoa industry (United Biscuits (UK), Hosta Dulcinea (Spain), ADM and Cargill (US) respectively). As mentioned in chapter 2.3, Cargill and ADM are the biggest players on the European grinding of cocoa into liquor, butter and powder. For the benefit of this study, the representatives of grinding companies were asked to estimate the share of sustainable certified cocoa in the Dutch consumption market using their expert knowledge about their sales market. The respondents, ADM and Cargill, estimated the share of certified sustainable cocoa (green beans equivalents) on the total Dutch consumer market in 2012: between 20% and 25% (personal communication). Additionally, they agreed that the (certified) cocoa usage in the chocolate products such as chocolate bars, pralines and other chocolate is representative for the usage of chocolate in the whole chocolate and confectionery industry (flagship products⁵⁵).

Chocolate manufacturers Mars, Nestle and Mondelez International have a have a combined share in sales of 46 percent in the Netherlands (Euromonitor International, 2014) (see also chapter 2.3). The largest chocolate factory in the world (Mars) is based in Veghel, Netherlands. The chocolate manufacturers were asked to estimate the share of sustainable certified chocolate in manufacturing. None of the respondents said to be aware of this share for the whole manufacturing segment in the Netherlands. Individual information about branded chocolate volume sale shares of certified versus not certified in the Netherlands in 2012 is incomplete as well:

- Mars (manufacturer): all brands 20% certified in 2012 worldwide;
- Nestle (manufacturer): all brands 11% sustainable in 2012 via Nestle plan worldwide (UTZ Certified and Fair Trade cooperation, real share UTZ Certified and Fair Trade is not known);

⁵⁵ In this study: Flagship Products are manufactured products that are the most related to the usage of a raw product, since they contain the most of this product or since the most of this raw product supply goes into these products.

-
- Mondelez International (manufacturer): all brands not known;
 - Milka: not known;
 - Côte d'Or : sensations chocolate line 30% Rainforest Alliance sourced in 2012;
 - Toblerone: not known;
 - United Biscuits (manufacturer): not known;
 - Verkade: 100% Fair Trade in 2012;
 - Hosta (manufacturer): not known;
 - Droste: only chocolate letter assortment certified in 2012 (UTZ Certified);
 - Fair Trade Original (brand): 100% Fairtrade;
 - Tony's Chocolonely's (brand): 100% Fairtrade;
 - Swiss Noir (brand): Fairtrade;
 - Bio+ (brand): 100% Organic and partly Fairtrade (multiple certifications) (personal communication and firm reports).

The responding brand chocolate manufacturers said to operate internationally and focus on sustainability at company level. Revealing company specific market information is often due to restriction for competitive reasons. The responding brand chocolate manufacturers agreed as well on the fact that the chocolate category as it is the most representative for the usage of cocoa in the chocolate and confectionery industry (cocoa as main and most substantial ingredient in chocolate products).

Next to branded chocolate, supermarket private label chocolate has gained a market share. Market share in sales of supermarket private label chocolate in the Dutch chocolate market was 14% in 2012 (Euromonitor International, 2014). Most supermarket private label chocolate was labelled by a sustainability logo:

- Albert Heijn: 100% UTZ and Fairtrade
- Jumbo: 100% UTZ
- Plus, Coop, Hoogvliet, Nettorama, Emte, Boni, Deen, Dirk vd Broek, Bas v/d Heijden, Digros, Dekamarkt, Jan Linders, Poiesz, Vomar, Agrimarkt, Spar (all members of Superunie, a Dutch cooperative wholesale society): 100% Fairtrade.
- C1000: in 2015 will all supermarket private label products be labelled with a certification logo. In 2012 In 2012 this was for an unknown share.

4 Certified sustainable coffee and cocoa monitoring and estimation

4.1 Database system

Monitoring consumption means in the first place that the level of the supply chain where the measurement has to take place is the segment that supplies a product to consumers: out-of-home and at-home sales channels⁵⁶ (mentioned below as indicators COF1-2 and COC 1-2). Another way to measure this indicator is to measure the products that are delivered to the sales channels by the processing and manufacturing industry (see Box 4.1)⁵⁷ (mentioned below as indicators COF3 and COC3). The indicators and related available data are listed in Sections 4.2 and 4.3. A database contains a collection of values for these indicators. For composite consumer products, which are mainly cocoa products, the usage coefficient of raw beans indicates the green beans equivalent per product. Assuming that this usage coefficient is equal for the same end products sourced by both types of raw beans, i.e. certified and conventional, the share in certified with respect to conventional consumer products is equal to the share of certified versus conventional raw beans used for sourcing these products.

Box 4.1. Measuring the share of certified sustainable product in Dutch consumption (volumes): domestic delivery.

(COF3 and COC3):

% Certified ('Import consumer product Y' -/- 'Export consumer product Y' +/+ 'Domestic production consumer product Y') = % Certified ('Domestic delivery product Y')

'Domestic production product Y' can be calculated using 'Import product Y' -/- 'Export product Y' +/+ 'Domestic purchase' (usage) intermediate product multiplied by coefficient of usage intermediate product X per unit product Y'

4.2 Certified sustainable coffee monitoring and estimation: available data

*Indicator COF 1. The share of certified sustainable coffee volume with respect to the total **volume** of coffee sold to Dutch consumers in out-of-home and at-home sales channels.*

Periodical data about volume sales in total coffee sales and volume sales in certified sustainable coffee sold to consumers in various consumer sales channels enables the monitoring. The KNVKT collects and analyses systematic periodical data which, according to the KNVKT, reflects the share in sustainable certified coffee sold to consumers (Section 3.2.2). Fair Trade/Max Havelaar reports statistics for own on pack labeled coffee sales in the Netherlands in their annual reports. This systematic and periodical data is useful for monitoring as long as it will be collected in the future.

⁵⁶ See for example Monitor Duurzaam Voedsel, also described in Section 3.2.2.

⁵⁷ This method does not account for losses and stock in consumers' sales channels.

Table 4.1

Coffee chain: organisations with systematic periodical volume data (COF1)

	Volume share of certified sustainable coffee sold to consumers (COF1)
<i>Supermarkets</i>	Not available
<i>Specialty Stores</i>	Not available
<i>Out-of-home (care, transport, catering)</i>	Not available
<i>Total in and out of home</i>	KNVKT (all certifications); Fairtrade/Max Havelaar own certified sales only.

Other available information supporting the estimate for COF1 for 2012 are individual companies' claims about their sustainable coffee sales.

Indicator COF 2. The share of certified sustainable coffee in monetary value with respect to total coffee in monetary value sold to the consumers in out-of-home and at-home sales channels.

Periodical and systematic data about sales value of total coffee and sales value of certified sustainable coffee sold to consumers in various consumers sales channels enables the monitoring. LEI Wageningen UR has an access to a Symphony IRI database with systematic and periodical data about the coffee supermarket sales values (certified and conventional) in the Netherlands (Section 3.2.2). As long as it will be collected, this systematic and periodical data is useful for monitoring the supermarket channel in the future. Still, no such information is available for all consumers sales channels.

Table 4.2

Coffee chain: organisations with systematic periodical sales value data (COF2)

	Monetary value share of certified sustainable coffee sold to consumers (COF2)
<i>Supermarkets</i>	LEI Wageningen UR (acquired information)
<i>Specialty Stores</i>	Not available
<i>Out-of-home (care, transport, catering)</i>	Not available
<i>Total in and out of home</i>	Not available

Indicator COF 3. The volume share of certified sustainable coffee with respect to the totals in coffee in that is delivered to consumers sales channels.

Periodical data about volume sales in total coffee and volume sales in certified sustainable coffee delivered consumers sales channels by industry enables the monitoring. The KNVKT collects and analyses this kind of data (Section 3.2.2).

Table 4.3

Coffee chain: organisations with systematic periodical volume data (COF3)

	Certified sustainable volume share in coffee sold to consumer sales channels (COF3)
<i>Supermarkets</i>	Not available
<i>Specialty Stores</i>	Not available
<i>Out-of-home (care, transport, catering)</i>	Not available
<i>Total in and out of home</i>	KNVKT

4.3 Certified sustainable cocoa monitoring and estimation: available data

Indicator COC 1. The share of certified sustainable consumer cocoa products with respect to total consumer cocoa products in volume sold to Dutch consumers in out-of-home and at-home sales channels.

Periodical data about volume sales in total cocoa consumer products and volume sales in certified sustainable consumer products sold to consumers in various consumer sales channels enables the monitoring. None of the organisations in this study collects data about volume sales in certified sustainable cocoa products per consumer channel or all consumer channels in the Netherlands for all certifications. Fair Trade/Max Havelaar reports statistics for own cocoa consumer products sales in the annual reports (Section 3.2.2).

Table 4.5

Cocoa chain: organisations with systematic periodical volume data (COC1)

	Volume share of certified sustainable cocoa products sold to consumers (COC1)
<i>Supermarkets</i>	Not available
<i>Specialty Stores</i>	Not available
<i>Out-of-home (care, transport, catering)</i>	Not available
<i>All</i>	Fairtrade/Max Havelaar own certified sales only

Other available information supporting the estimate for 2012 concerns:

- the information on total volume of chocolate consumption in the Netherlands;
- the certified volume shares branded chocolate (brands sold in the Netherlands and manufacturers based in Netherlands);
- the certified volume share non-supermarket chains;
- the certified volume share supermarket private labels chocolate (Section 3.2.2).

Indicator COC 2. The share of certified sustainable consumer cocoa products in monetary value with respect to total consumer cocoa products in monetary value sold to Dutch consumers in out-of-home and at-home sales channels.

Periodical and systematic data about sales value of total cocoa consumer products and sales value of certified sustainable cocoa consumer products sold to consumers in various consumers sales channels enables the monitoring. LEI Wageningen UR has access to a Symphony IRI database with systematic and periodical data about the category 'Chocolate' supermarket sales value (certified and conventional) in the Netherlands (Section 3.2.2). This category contents chocolates, candy bars, pralines, chocolate toffees, chocolate bars and other chocolate. Products like custard, toppings (sprinkles), biscuits, pastries and ice cream are not included. As long as it will be collected, this systematic and periodical data is useful for monitoring the supermarket channel for these products in the future. Still, no such data is available for all consumers sales channels.

Table 4.6

Cocoa chain: organisations with systematic periodical sales value data (COC2)

	Monetary value share of certified sustainable cocoa products sold to consumers (COC 2)
<i>Supermarkets</i>	LEI Wageningen UR (acquired information)
<i>Specialty Stores</i>	Not available
<i>Out-of-home (care, transport, catering)</i>	Not available
<i>All</i>	Not available

Other available information supporting the estimation for 2012 concerns the organic chocolate sales estimate (Section 3.2.3).

Indicator COC 3. The volume share of certified sustainable consumer cocoa products with respect to the totals in consumer cocoa products that is delivered to the consumer sales channels.

Periodical data about volume sales in total coffee and volume sales in certified sustainable coffee delivered consumers sales channels by industry enables the monitoring. None of the organisations in this study collects and analyses this kind of data.

Table 4.7

Cocoa chain: organisations with systematic periodical volume data (COC3)

	Certified sustainable volume share in cocoa products sold to consumer sales channels (COC 3)
<i>Supermarkets</i>	Not available
<i>Specialty Stores</i>	Not available
<i>Out-of-home (care, transport, catering)</i>	Not available
<i>All</i>	Not available

Other available information that is relevant for the estimate for 2012 concerns the certified volume estimates based on grinders' professional judgement and the global certification agency's volume share's (Section 3.2.3).

4.4 Non-availability of information

In general, lack of information complicates setting up a monitor. As shown in Chapters 4.2 and 4.3 cost-efficient monitor information for individual sales channels or for the total consumers market is not always available. In the course of this study, a number of reasons for information non-availability have been emerged. Too high costs, supply chain complexity and safeguarding competitive advantages are the main causes of information intransparency. During this research number of underlying facts is revealed that are linked to current information intransparency in both the coffee and cocoa sectors in the Netherlands:

- Private data collectors owe their existence to the orders of the clients; therefore their future ability to provide information cannot be fully guaranteed. Moreover, the access to their data is costly.
- There is, to a certain extent, coverage in monetary value of certified products sold in the consumer sales channels. Still, not all supermarkets provide this information. For example, there is lack of data for Aldi and Lidl data in the information gathered in this study. Reason: these two supermarket formulas do not always collaborate with private and public market data collectors. At the same time, for the scope of this study, these retailers are highly relevant as well, so much the more since they claim to take up more certified sustainable products in their assortment than they did before⁵⁸.
- The official statistic do not provide in any distinction between certified sustainable and non-certified products.
- The complex labelling requirements (Section 1.3.3.) make it difficult to relate sustainability labels on consumer product to the inputs. Moreover, using partially certified inputs is often not exposed on the packaging by a logo or otherwise. For example, conventional and sustainable certified coffee is often mixed in blends. In this case, on-pack labelling cannot be done, which makes it more complicated to monitor certified quantity at point of sales (for example in supermarkets).
- Certification bodies operate independently. Adding together individual certified volumes gives a distorted picture of the total volume of certified products due to the fact that green beans and intermediate products for processing as well as finished products for consumption are sold under multiple certifications. Labelling organisation do put much effort in making corrections for multiple certifications on aggregated level i.e. production raw beans and input. Nevertheless, it is a difficult process when the cocoa or coffee flows are differentiated by processing stage, user, location and type of consumer product.

In addition, there are underlying facts linked to information intransparency which apply for the Dutch cocoa supply chain.

- While the opposite is expected, sector organisations do not possess information about usage, production and sales of the total and certified sustainable products for relevant supply chain segments at all. (Does not apply for the situation in the Dutch coffee chain).
- There are a large number of consumer products that contain cocoa. Measuring only flagship products offers a solution, but excludes other consumer products from measuring. (Applies to coffee in much lesser extent. In practice, most coffee in the market is a non-composed product).

⁵⁸ See for example Lidl: http://www.lidl.nl/cps/rde/xchg/lidl_nl/hs.xsl/5706.htm

- Individual companies do not publish individually systematic, coherent and coordinated information about the shares of certified sustainable coffee and cocoa in processing and (foreign) sales, mainly because this information is competitive. Some of the companies publish claims about the usage of certified sustainable raw materials, at least for some products, but this information is segmented. (In the coffee sector this is solved by the aggregated information published by the sector organisation)

4.5 Concluding remarks

Tables 4.8 and 4.9 below show existing longitudinal systematic data collections. In the coffee market this data involves sustainable certified volume sales in all consumers' sales channels, Fairtrade/Max Havelaar own certified volumes only and sales turnover data in the supermarkets .

In the cocoa market the collected data is not sufficient for the full monitoring of the sustainable certified cocoa share in the Dutch consumption market and includes only sales turnover data in the supermarkets and Fairtrade/Max Havelaar own sales in all sales channels. Professional judgements give an estimate for this share for 2012.

Table 4.8

Coffee chain: organisations with systematic periodical data.

	Volume share of certified sustainable coffee sold to consumers (COF1)	Monetary value share of certified sustainable coffee sold to consumers (COF2)	Certified sustainable volume share in coffee sold to consumer sales channels (COF3)
<i>Supermarkets</i>	Not available	LEI Wageningen UR (acquired information)	Not available
<i>Specialty Stores</i>	Not available	Not available	Not available
<i>Out-of-home (care, transport, catering)</i>	Not available	Not available	Not available
<i>Total in and out of home</i>	KNVKT (all certifications); Fairtrade/Max Havelaar own certified sales only.	Not available	KNVKT

Table 4.9

Cocoa chain: organisations with systematic periodical data.

	Volume share of certified sustainable cocoa products sold to consumers (COC1)	Monetary value share of certified sustainable cocoa products sold to consumers (COC 2)	Certified sustainable volume share in cocoa products sold to consumer sales channels (COC 3)
<i>Supermarkets</i>	Not available	LEI Wageningen UR (acquired information)	Not available
<i>Specialty Stores</i>	Not available	Not available	Not available
<i>Out-of-home (care, transport, catering)</i>	Not available	Not available	Not available
<i>All</i>	Fairtrade/Max Havelaar own certified sales only	Not available	Not available

5 Certified sustainable coffee and cocoa in the Netherlands

5.1 Elaboration: coffee market

In 2012, the total export of coffee with a global sustainability standard including 4C Association Standard and C.A.F.E. Practices from producing countries was 12% (this percentage is adjusted for multiple certifications; not adjusted 2% organic, 3% UTZ, 2% Fair Trade and 2% Rainforest Alliance) (SSI, 2014). For Dutch consumption, figures for the years 2010 and 2011 based on available KNVKT data are shown in Figure 5.1. In the year 2010, the total coffee volume sold in the Dutch consumer market was 120 thousand tonnes⁵⁹. Thirty percent of this volume was sustainable certified. In the year 2011, the total coffee volume sold in the Dutch consumer market was 119 thousand tonnes. Certified sustainable coffee sold in the Dutch consumer market counted for 40% of this volume. Basing on Fair Trade/Max Havelaar Annual Report, slightly over 3% of the total was Fair Trade on-pack (including multiple certifications). 30% of all D.E. MASTERBLENDEERS 1753 branded coffee (50% of the market share) was certified as sustainable.

For the means of comparing the data over the same period, the sustainable certified coffee share sold in the Dutch at-home sales channels (supermarkets⁶⁰) based on LEI Wageningen UR data for the years 2010 and 2011 is shown in Figure 5.2. The share of consumer spending on labelled (on-pack) coffee with reference to all coffee spending in the supermarkets was 21% in 2010. In 2011 this share increased to 26%.

Assuming the variation in price per kilo of certified sustainable coffee with respect to other coffee did not change substantially in the supermarkets in one year, one can conclude that the increase in the consumed volume of certified sustainable coffee was bigger in the out-of-home sales channel than in the at-home sales channel.

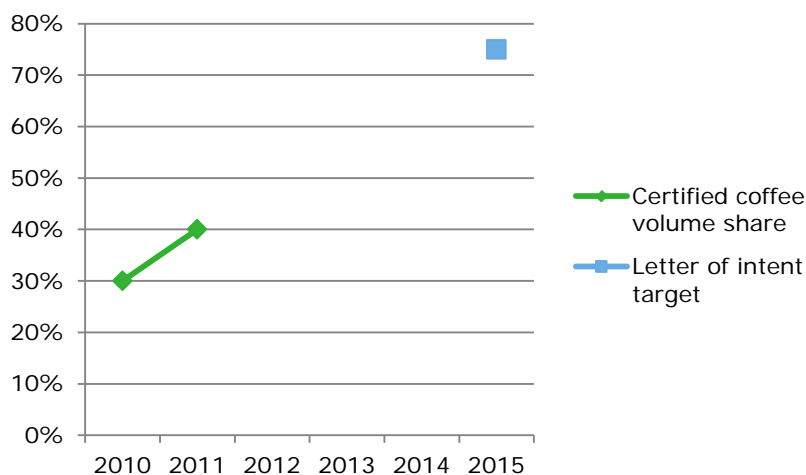


Figure 5.1 Certified sustainable coffee volumes in the Dutch consumer market, % of total. Source: KNVKT. Adapted by: LEI Wageningen UR

⁵⁹ http://vnkt.nl/content/images/stories2/KNVKT_feiten_en_cijfers_2010.pdf

⁶⁰ excluding Aldi, Lidl and Detailresult (Digros, Bas van der Heijden, Dirk van den Broek)



Figure 5.2 Coffee with a certification label turnover in the Dutch supermarkets, Excluding Aldi, Lidl and Detail result

Source: LEI Wageningen UR, Monitor Duurzaam Voedsel.

5.2 Elaboration: cocoa market

In 2012, the total export of cocoa with a global sustainability standard from producing countries was 10% (this percentage is adjusted for multiple certifications; not adjusted 3% organic, 4% UTZ, 2% Fair Trade and 5% Rainforest Alliance) (SSI, 2014). The total consumption volume of chocolate and chocolate products in the Netherlands was almost 84m kilos or 5 kilos per person (see chapter 2.3). Two of the largest grinders estimated between 20% and 25% of the total cocoa processed in consumer products and sold on the Dutch consumer market being sustainable certified (personal communication, see Section 3.2.5). This figure will be considered as the main estimate. The reason for it is the fact that at the grinders represent value chain segment where the cocoa flows are the most concentrated, or least differentiated by volume, location and type of consumer product. Additionally, grinders have implicit and explicit knowledge about their sales markets.

Of the total chocolate consumption 4.2% is labelled Fairtrade/Max Havelaar (personal communication and LEI calculation based on annual reports). Basing on the LEI Wageningen UR data the total supermarket sustainable certified chocolate share in sales in this category was 16% in 2012. The category included all 'Flagship products' mentioned in Section 3.2.5. The share in sales of organic chocolate in the Netherlands is below 2.3% (see Section 3.2.3). The manufacturers active on the Dutch market that explicitly claimed to use certified sustainable cocoa input in their produce and some individual brands claim to source between 11% and 100% of consumer cocoa products by certified cocoa (manufacturers like Mars, Nestlé and Mondelez International and brands Fair Trade Original, Tony Chocolonely, Swiss Noir and Bio+) (see Section 3.2.5), but the information about their market shares is unknown. All supermarket private labels (14% of the chocolate market) and La Place and with exception of C1000 (figure unknown) sourced 100% sustainable certified cocoa for their chocolate products in 2012. HEMA sourced 80% sustainable certified cocoa in 2012.

6 Conclusion

A valid monitor indicates the results of the stakeholders' efforts in the Dutch coffee and cocoa markets in achieving their sustainability targets stipulated in the Letters of Intent by giving full insights into the Dutch consumption of certified sustainable coffee and cocoa in time. For the provision of these insights, systematic, coherent and continuously collected data about the volumes and the monetary values of both certified and non-certified coffee and cocoa is necessary. Such data could potentially be collected from the organisations that have information about the activities in the mid- and downstream segments of the supply chain. Mid- and downstream segments in both the cocoa and coffee supply chains are usually located in cocoa and coffee consuming countries, like the Netherlands.

In the Netherlands there are multiple bodies that collect systematic and non-systematic quantitative information about the mid- and downstream segments of the coffee and cocoa supply chains and their sustainability efforts related to the letters of intent. On one hand these are supply chain players such as processors, manufacturers, the retail and their representatives, i.e. trade associations. On the other hand these are private market analysis companies that collect data as a paid service and public institutes and universities that collect data for public research (see research question Q1). For most supply chain players and their representatives that are collecting information about sustainability in their supply chain segment a high aggregation level of information is a sufficient condition for providing their data into public. At the same time, individual manufacturers' data, if available, is made public only in case it does not harm the competitive position of the company (see research question Q2). Parties within and outside the supply chains that do not possess the necessary wanted information about the coffee and cocoa sustainability on the consumer market say to experience high collecting costs due to the complexity of the supply chains. For the coffee and cocoa supply chains it means the following in concrete terms (see research question Q1):

- The trade association in the coffee sector, the KNVKT, provides information about the share of certified sustainable *coffee* that is relevant, systematic and available into public. This information represents the entire Dutch coffee market to a very high extent.
- No single firm, association or other organisation in the cocoa supply chain provides information that can complete the full systematic and continuous insights into the consumption of certified sustainable *cocoa*. Partial systematic and continuous insights, like turnovers of flagship chocolate products in the most Dutch supermarkets, can be included in a monitor.

There is a possibility to monitor the shares of certified sustainable coffee, in volume (expressed in %), in the total volume of coffee sold to the Dutch consumer market in green bean equivalents using the KNVKT data (see research question Q3). According KNVKT this share was 40% in 2012 (see research question Q4). There is also a possibility to monitor the monetary shares of certified sustainable coffee (according LEI Wageningen UR, 26% in 2011) and 'flagship chocolate products' (according LEI Wageningen UR, 16% in 2012) in the most Dutch supermarkets, but not the whole Dutch consumer market.

Ad-hoc information is not sufficient for monitoring of the whole Dutch consumer market, because it is not systematic, but at the same time this information facilitates a single estimation in a certain period (see research question Q3). In case of this study, the focus year of estimation was 2012. Based on professional expert judgements in the cocoa grinding segment the share of certified sustainable cocoa processed in consumer products sold in the Dutch market is not above 25% in 2012 (see research question Q4). Other information about the cocoa market gives no grounds for rejecting this estimate.

Given the current amount of information and aiming cost-effectiveness, it is questionable whether monitoring is a good method for indicating the achievements of sustainability targets in the Dutch cocoa and chocolate consumer market as agreed in the letter of intent. Other methods, like time-to-time estimation could rather be considered.

Afterword

The Letters of Intent for the coffee and cocoa sectors are considered by the signatories as an important step towards a 100% sustainable consumption in the Netherlands. The focus lies fully on the domestic consumption market. Broadening the scope with the industrial market places the defined sustainability goals in an international context⁶¹. Within both sectors, there are big industrial actors that operate globally. Especially in the cocoa sector, the Netherlands locates some of the biggest multinational companies. Only a smaller fraction of cocoa processed in the Netherlands, is actually consumed by the Dutch. Knowing what is processed and internationally traded individually by company could help to make the picture about sustainability in the Dutch, European and global markets complete. There is awareness among governments about lack of information about international trade in sustainable produce. During the debate on the International Workshop on Cocoa Certification in Douala, Cameroon, June 2013, the inability of governments and ICCO to accurately monitor certified sustainable cocoa coming into the market has been confirmed. The German GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH) and the German government are active and in contact with the Dutch and other European governments to see how this can be conducted on a global or at least European level. The choice for measuring sustainability on the industrial segment of the supply chain seems is less challenging: it involves less differentiation of products at grinders' level; cocoa flows are 'bundled' within a smaller number of manufacturing companies than within sales channels to consumers.

The Letters of Intent do not make explicit any additional individual efforts of the signatories in data collection and costless provision that are necessary in order to monitor sustainability at consumption level. The awareness of the need of additional individual efforts has been increasing among signatories during the period of this study. At the moment of this writing there is an ongoing process of exploring possibilities of collecting and analysing data within companies, certification organisations and sector organisations.

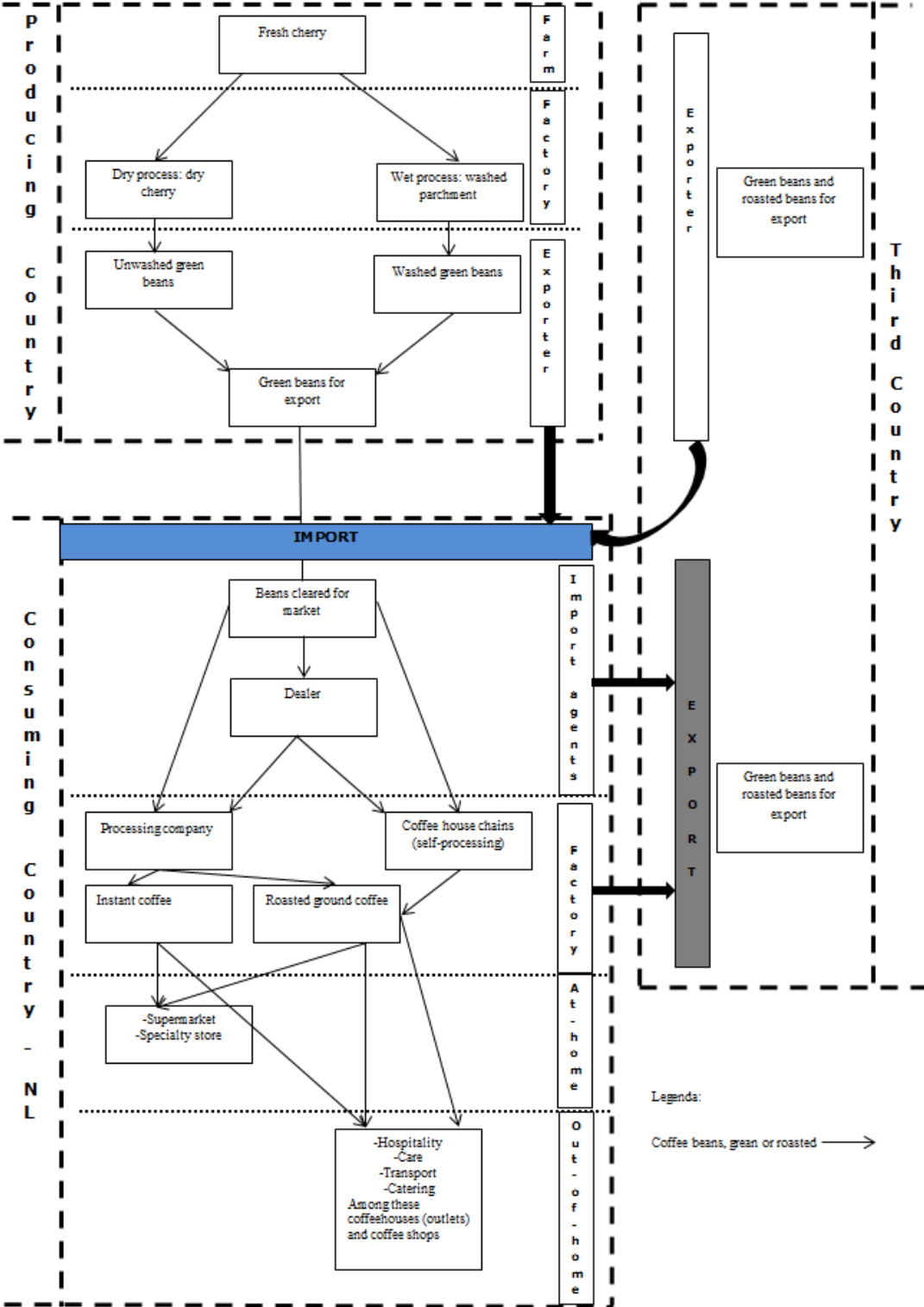
⁶¹ For example IDH Sustainable Coffee Program, in which a quantitative ambition with an international focus has been communicated.

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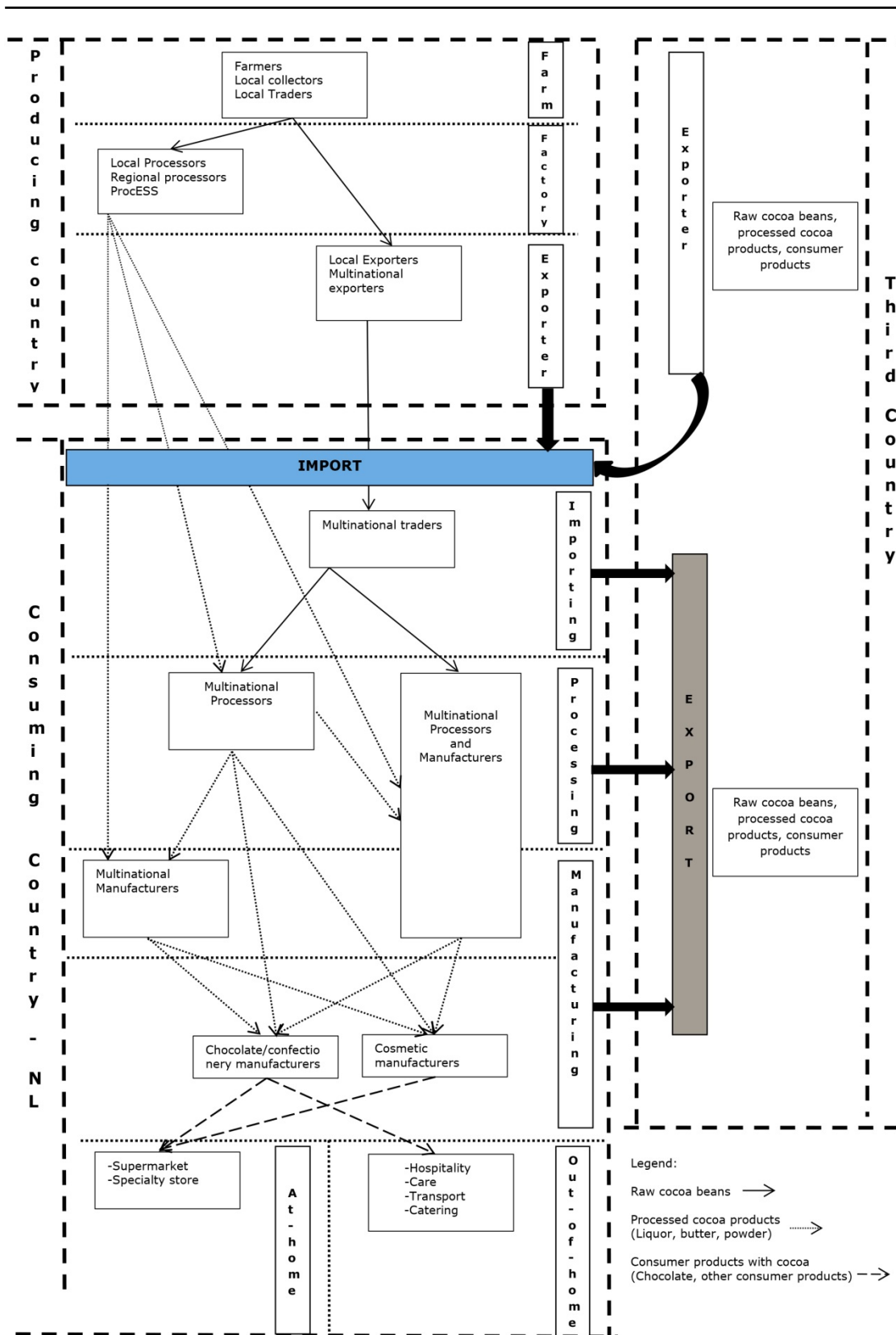
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Annex 1 Supply chains schematically



Figuur A 1.1 Coffee supply chain schematically. Based on Kaplinsky (2001), edited by LEI (2012).



Figur A 1.2 Cocoa supply chain schematically. Based on Kaplinsky (2001), edited by LEI (2012)

Annex 2 List of consulted parties

Statistics Netherlands (CBS)

The Royal Dutch Coffee and Tea Association (KNVKT)

Dutch Food Retail Association (CBL)

Organic Producers and Trade Association/ Promotion Agency Organic Specialty Store (VBP/PBS)

The Dutch Association for the Bakery and Confectionery Industry (VBZ)

Rainforest Alliance

UTZ Certified

Fair Trade/Max Havelaar

Cargill

ADM

Mars

HEMA

La Place

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LEI 14-055

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The mission of Wageningen UR (University & Research centre) is 'To explore the potential of nature to improve the quality of life'. Within Wageningen UR, nine specialised research institutes of the DLO Foundation have joined forces with Wageningen University to help answer the most important questions in the domain of healthy food and living environment. With approximately 30 locations, 6,000 members of staff and 9,000 students, Wageningen UR is one of the leading organisations in its domain worldwide. The integral approach to problems and the cooperation between the various disciplines are at the heart of the unique Wageningen Approach.

To explore
the potential
of nature to
improve the
quality of life



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