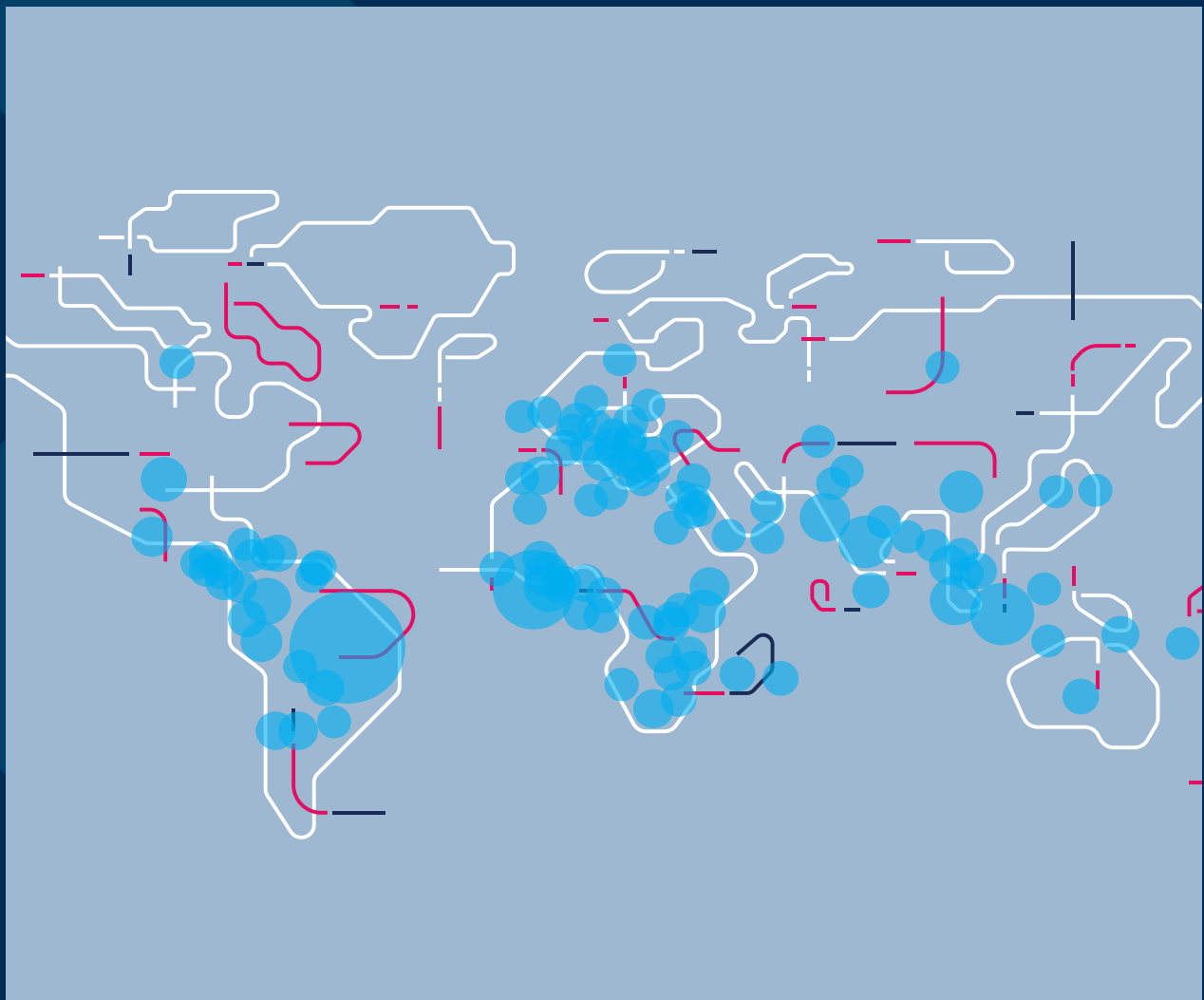


The State of Sustainable Markets 2020

STATISTICS AND EMERGING TRENDS



International
Trade
Centre

In collaboration with:

FiBL

IISD
International Institute for
Sustainable Development

Supported by:



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How much has agricultural land certified as sustainable grown since 2011?

This is the world's most comprehensive report on sustainable markets, with data from 14 major sustainability standards for eight agricultural products, plus forestry.

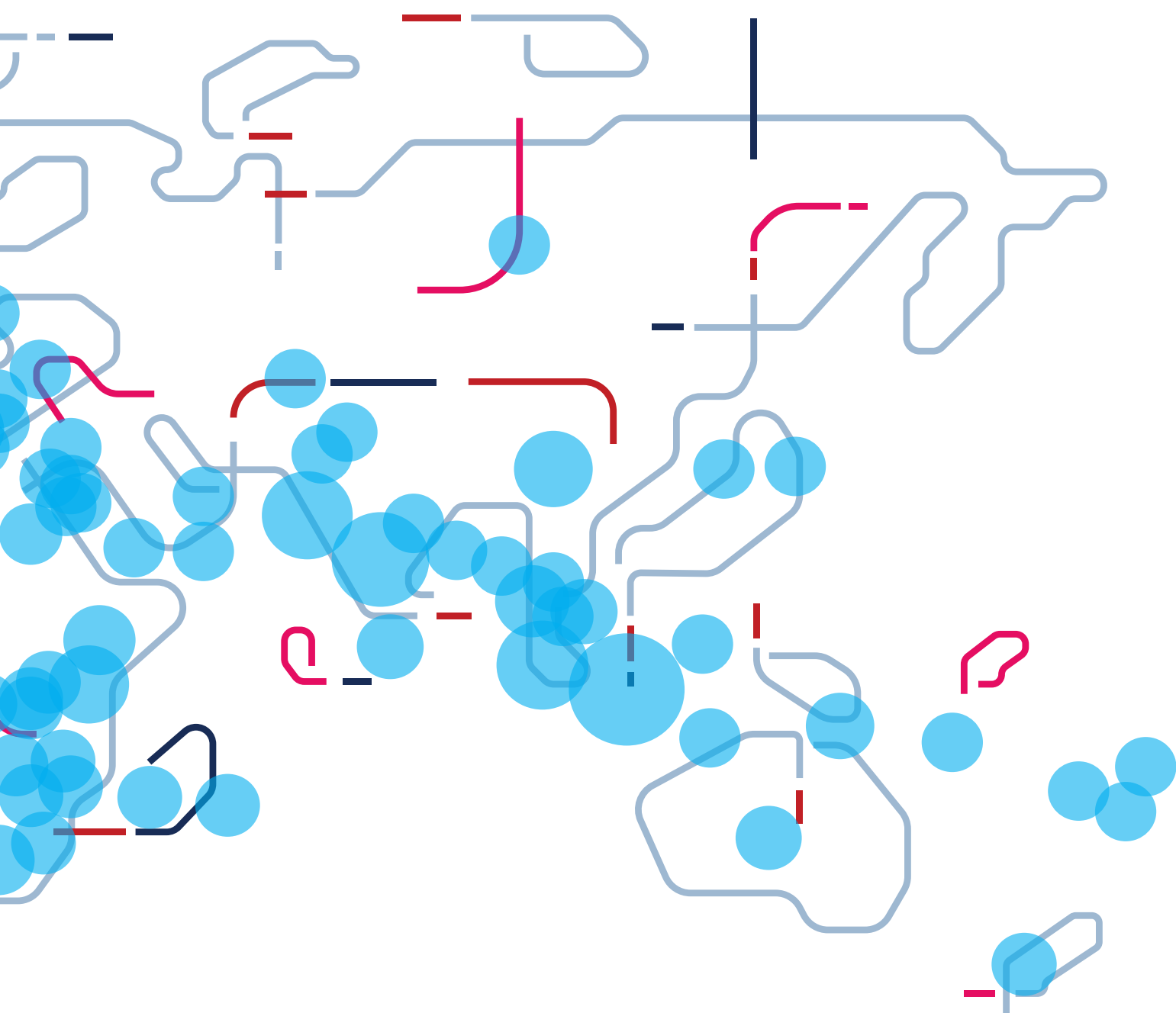
This chart gives a snapshot of sustainable land area certified by at least one standard in 2018. It covers eight agricultural products, highlighted in the report.

Note: This is a minimum as many producers have multiple certifications.



THE STATE OF SUSTAINABLE MARKETS 2020

STATISTICS AND EMERGING TRENDS



ABOUT THE REPORT

Sustainability standards continue their growth across the world. This fifth global report provides insights into certified agriculture and forestry, and shapes decisions of policymakers, producers and businesses working to address systemic labour and environmental challenges through certified sustainable production. The key to continued growth is to boost demand in new markets: emerging economies and producing countries.

The International Trade Centre has teamed up once again with the Research Institute of Organic Agriculture and the International Institute for Sustainable Development to provide data for 14 major sustainability standards for bananas, cocoa, coffee, cotton, oil palm, soybeans, sugarcane, tea and forestry products.

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For more information on sustainability standards, see www.sustainabilitymap.org/standards.

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FOREWORD

As I take up my mandate as Executive Director of the International Trade Centre, I am pleased to share with you the fifth edition of *The State of Sustainable Markets* report, published with our partners, the Research Institute of Organic Agriculture and the International Institute for Sustainable Development.

I am also pleased to learn that this report is consistently among the top five International Trade Centre publications by reader downloads annually.

This should not be a surprise. With 91% of low-income countries relying on commodity exports, voluntary sustainability standards play an important role in supporting agricultural supply chains towards greater environmental and social sustainability and economic resilience.

The COVID-19 pandemic has increased the stress on exporters of products examined in this report. This means that now, more than ever, voluntary sustainability standards can help small and medium-sized enterprises improve their competitiveness and differentiate their product offerings, while using more environmentally friendly and socially responsible practices.

The overall area of agricultural land that is certified by sustainability standards continues to grow. For example, at least 18.2% of land cultivated for cotton globally is now certified. The data also shows that single sector standards (soy, cotton, palm oil, etc.) make up a sizeable portion of this agricultural land under certification.

Growing consumer preferences to purchase healthier and more sustainably grown products have driven the uptake in voluntary sustainability standards for many years. However, we should not depend on consumer sentiment alone. We must bring multinational buyers and policymakers to the table to explore how they can work together to scale the uptake of sustainability standards across more goods and countries. Furthermore, public sector initiatives should be designed to promote consumption of sustainably produced goods, including those that comply with voluntary standards.

Buyers of most of the eight crops analysed in this report are making progress in establishing and disclosing sustainable sourcing commitments – which is laudable. Transparency and traceability of these products through the value chain is also important, and commensurate efforts must be made here as well.

These steps, taken together, can help to reduce the vulnerability of supply chains to shocks and stresses such as COVID-19, and help smooth the transition to environmental recovery.

During my tenure as Executive Director, I intend to focus on the key issues of environmental and social sustainability, which are core to fulfilling the 2030 Agenda. They are also essential to ensure export success and economic resilience at the level of micro, small and medium-sized enterprises.

Voluntary sustainability standards have a central role to play in all three areas. This report helps to put these standards into a global context and illustrate the opportunities ahead.



Pamela Coke-Hamilton
Executive Director
International Trade Centre

ACKNOWLEDGEMENTS

The Research Institute of Organic Agriculture (FiBL), the International Institute for Sustainable Development (IISD) and the International Trade Centre (ITC) are very grateful to the Swiss State Secretariat for Economic Affairs for its financial support of the global data collection on voluntary sustainability standards and the production of this publication.

Further acknowledgements are due to all the standard-setting organizations that collaborated on the report: 4C – Common Code for the Coffee Community, Better Cotton Initiative (BCI), Bonsucro, Cotton made in Africa (CmiA), Fairtrade International, Forest Stewardship Council (FSC), GLOBALG.A.P., IFOAM – Organics International, the Programme for the Endorsement of Forest Certification (PEFC), ProTerra Foundation, Rainforest Alliance, the Roundtable on Sustainable Palm Oil (RSPO), the Roundtable on Responsible Soy (RTRS), Textile Exchange and UTZ.¹

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We are also grateful to Natalie Domeisen and Anne Griffin, ITC, for editorial and production management; Jennifer Freedman, for editing this report; Iva Stastny Brosig, for design, and Serge Adeagbo, ITC, for printing.

1. Although UTZ merged with Rainforest Alliance in 2018, the 2018 data used for this report were provided for each standard individually.

PROJECT PARTNERS

The **International Trade Centre (ITC)**, founded in 1964, is the joint agency of the World Trade Organization and the United Nations. Its aim is for businesses in developing countries to become more competitive in global markets, to speed up economic development and to contribute to the achievement of the United Nations Sustainable Development Goals.

Trade for Sustainable Development is the partnership-based programme of ITC that helps businesses chart their paths to more sustainable trade. The programme offers access to wide-ranging information for trade-related sustainability initiatives and standards.

Building on well-established online tools, such as Standards Map which offers comprehensive, verified and transparent information on over 260 standards for environmental protection, worker and labour rights, economic development, quality and food safety, as well as business ethics.

The **Research Institute of Organic Agriculture (FiBL)**, founded in 1973, links interdisciplinary research to the rapid transfer of knowledge from research to agricultural practice, drawing on advisory work, training and conferences. FiBL has offices in Austria, France, Germany and Switzerland, as well as a representative office in Brussels. It also undertakes numerous projects and initiatives in Africa, Asia, Europe and Latin America.

FiBL has 20 years of experience in collecting and publishing data on organic agriculture. Since 2000, it has developed a network of some 200 experts from more than 180 countries, all of whom contribute to data collection. Every year, FiBL and IFOAM – Organics International jointly publish *The World of Organic Agriculture*, which documents recent developments in the field worldwide.

The Swiss State Secretariat for Economic Affairs (SECO), in collaboration with ITC, has financially supported this global data collection since 2008. NürnbergMesse (organizer of the BIOFACH organic fair), the Coop Sustainability Fund and IFOAM – Organics International also provide support. FiBL has been active since 2014 in the collection of data on sustainability standards. For more information, see <https://statistics.fibl.org>.

The **International Institute for Sustainable Development (IISD)** is an independent think tank with the mission to accelerate solutions for a stable climate, sustainable resources and fair economies. Through research, analysis and knowledge sharing, IISD identifies and champions sustainable solutions that support sound policymaking. Established in 1990, the institute has offices in Canada, Switzerland and the United States, and its work affects economies, communities, ecosystems and lives in nearly 100 countries. Numerous governments, United Nations agencies, foundations, the private sector and individuals fund its projects.

IISD has been assessing the characteristics, performance and market trends of voluntary sustainability standards via the State of Sustainability Initiatives (SSI) project since 2008. The SSI is an international transparency and capacity building project that aims to improve strategic planning and sustainable development outcomes related to voluntary sustainability standards (VSS). It does so by providing in-depth, credible and needs-based information on VSS characteristics, their market performance and potential contributions to addressing development challenges.

In addition to conducting strategic policy research and analysis on standards, IISD continues to make important contributions to sustainable consumption, production and trade through the initiatives implemented within the sustainability standards programme.

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ACRONYMS, UNITS AND MEASURES

Unless otherwise specified, all references to dollars (\$) are to United States dollars, and all references to tons are to metric tons.

4C	Common Code for the Coffee Community
BCI	Better Cotton Initiative
CmiA	Cotton made in Africa
CoC	Chain of custody
FAO	Food and Agriculture Organization of the United Nations
FiBL	Research Institute of Organic Agriculture
FSC	Forest Stewardship Council
GAP	Good Agricultural Practice
IFOAM	IFOAM – Organics International
IISD	International Institute for Sustainable Development
ISEAL	International Social and Environmental Accreditation and Labelling Alliance
ITC	International Trade Centre
PEFC	Programme for the Endorsement of Forest Certification
RA	Rainforest Alliance
RSPO	Roundtable on Sustainable Palm Oil
RTRS	Roundtable on Responsible Soy
SECO	Swiss State Secretariat for Economic Affairs
SSI	State of Sustainability Initiatives
VSS	Voluntary sustainability standard



EXECUTIVE SUMMARY

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International Institute for Sustainable Development (Cristina Larrea)

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EXECUTIVE SUMMARY

This report is the fifth in what is now an annual update on the state of sustainable markets. It shares the latest data on area, production volume and producers for 14 major standard-setting organizations¹ focusing on eight commodities and forestry.

Features of the current market context are continued growth, expanding coverage of agricultural land and dominance in some sectors of single-sector standards, as outlined below. Among the focal points of this year's report:²

Highlights

The big four: cotton, cocoa, oil palm and coffee

- In 2018, cotton continued to have the largest certified area, followed by cocoa, oil palm and coffee (Table 1).
- For cocoa, the certified area was at least 3.2 million hectares and reached a global share of the total cocoa area of at least 27%, with 25% of the global cocoa area UTZ-certified. In 2018, at least 5.9 million hectares or at least 18% of the global cotton area was certified, with 13% by BCI alone. Certified oil palm (2.9 million hectares) accounted for at least 15% of the global oil palm area, almost all of which was RSPO-certified. Certified coffee (2.2 million hectares) accounted for at least 21% of the global coffee area, with 13% certified by 4C alone (Table 1 and Table 8).

1. Sustainability standards are usually third party-assessed norms and standards relating to environmental, social, ethical and food safety issues, adopted by companies to show how their organizations or products perform in specific areas. There are more than 400 such standards across the globe. Organizations from the public and private sectors develop these standards at the local, national or international level. Businesses or not-for-profit non-governmental organizations develop private sustainability standards. In the agricultural sector, these standards promote sustainability along the value chain.

2. The commodity-specific data are based on the minimum possible values. For an explanation, see section on reporting challenges.

Certified area continues to grow and standard compliance gains ground

- In the five-year period from 2014–2018, the certified area of all agricultural commodities covered in this report grew by at least half (+52%). Cotton experienced the highest growth rate of its certified area, which almost tripled (+173%). This was followed by cocoa, which almost doubled in area (+90%), as well as a notable growth in sugarcane and tea area (+75% and +57%, respectively) (Table 1).
- The selected agricultural commodities experienced an accelerated one-year area growth in 2016–2017 (+18%) that then flattened in 2017–2018 (+6%). While cotton and oil palm expanded by more than 10% (cotton: +14%; oil palm: +13%), all other commodities experienced single-digit growth except for sugarcane and coffee, for which a decline was recorded (coffee -13% and sugarcane -2%) (Table 1).
- In 2018, the selected agricultural standards certified at least 8% of the global area of the selected agricultural commodities. Four standards certified at least 27% of the global cocoa area. The coffee sector also boasted a high compliance rate, with at least 21% of the global coffee area certified. At least 18% of the global cotton area and at least 16% of the global tea area were certified by a standard (Table 1).

Organic is the leading standard in terms of total area certified, but growth is faster for others

- Organic is the biggest sustainability standard in terms of both area and product variety. In 2018, 71.5 million hectares of agricultural land were certified as organic (including areas in the process of becoming organic-certified), representing 1.5% of agricultural land worldwide (Table 4).
- In 2018, after organic, five of the selected agricultural standards for the first time achieved a land coverage of around 4 million hectares each. Among these, Rainforest Alliance certified the largest area (4.5 million hectares), followed by BCI (4.2 million hectares), GLOBALG.A.P. (3.9 million hectares), UTZ (3.9 million hectares) and RSPO (3.7 million hectares) (Table 4).
- In 2014–2018, all of the standards covered in this report grew in their compliant areas, most of them double-digit, and some even triple-digit. CmiA saw the greatest jump, with its certified area tripling in size (+204%), followed by RTRS and BCI, whose certified area expanded by 172% and 160%, respectively (Table 4).
- In 2017–2018, five of the 12 agricultural standards experienced double-digit area growth, with Rainforest Alliance achieving the highest growth rate (+29.5%) (Table 4).

Why this report

This report intends to inform readers, encourage additional data collection and promote accountability in sustainable markets. It also serves as a resource for further analysis and informed decision-making by researchers, policymakers, industry actors and other stakeholders.

The report presents a summary of the key data. The full data are available in the online platform 'Market Trends', where users can access and analyse the data in a visual, more dynamic and more user-friendly way. Country, commodity, forestry and sustainability standard-specific interactive graphs are available at www.sustainabilitymap.org/trends.

Data from the latest survey (2018 data) demonstrate how certified agriculture and forestry continue to grow, in line with an expanding global population and increasing demand for sustainable products. The rising share of total area and production volume covered by voluntary sustainability standards (VSS) suggests there is significant potential for further growth.

The steady increase in certification over the past decade reflects demand among consumers, buyers and producers to address common environmental and social concerns. The agricultural commodities covered in this report are extremely important for food security, job creation and human development. Therefore, they must be produced in a sustainable way for these sectors to remain resilient. Although VSS are present in these sectors, major challenges remain, including low farm-gate prices, climate change, slave labour, poor working conditions and land-grabbing issues.

One of the main challenges for most of the VSS-compliant markets is that supply outpaces demand. In some cases, VSS-compliant products such as certified palm oil and soybeans are not even labelled as such. Europe and North America already are demanding more VSS-compliant products. The key to expanding VSS-compliant consumption is to increase demand in new markets: emerging economies and producing countries, particularly in Asia.

VSS continue to play an important role in enabling the shift of agricultural supply chains towards more sustainable and resilient ones. This will require more transparency and traceability of goods through the value chain, lowering the vulnerability of supply chains to shocks and stresses, and the transition towards environmental recovery and regeneration.

As in previous years, the Swiss State Secretariat for Economic Affairs (SECO) funded the global survey on sustainability standards. The Research Institute of Organic Agriculture (FiBL), the International Institute of Sustainable Development (IISD) and the International Trade Centre (ITC) jointly produced this report, building on their complementary and in-depth expertise on sustainability standards. The data presented here cover the year 2018, where available, as well as earlier years.

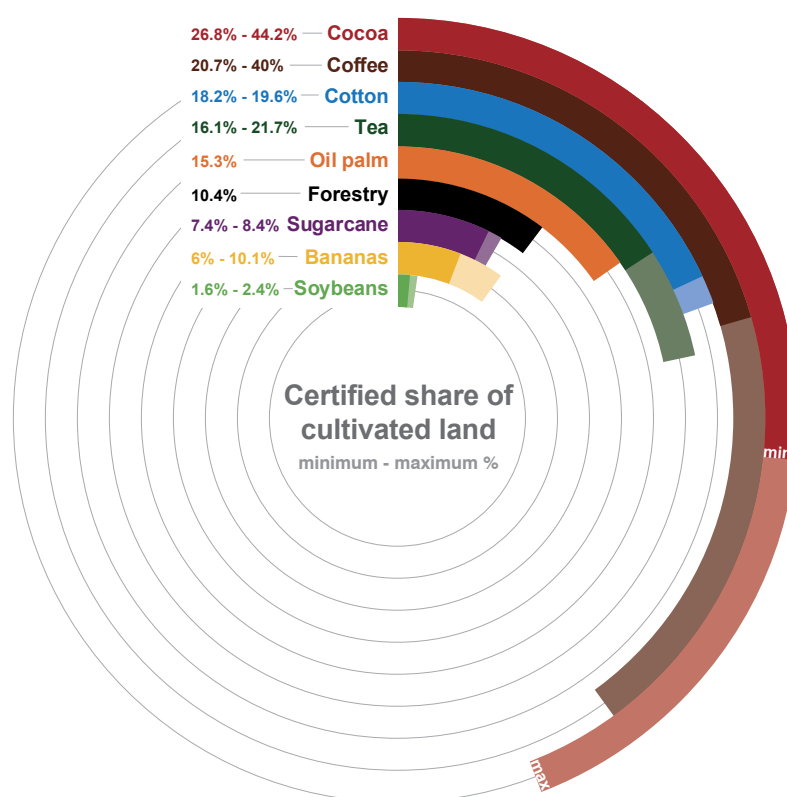
Featured crops and standards

This report offers a comprehensive snapshot of significant growth in the adoption of global sustainability standards across nine sectors: bananas, cocoa, coffee, cotton, palm oil, soybeans, cane sugar, tea and forestry. It presents market and statistical data on these sectors as well as at-a-glance tables on products and standards (Figure 1).

The report covers the following standards: 4C Services (4C), Better Cotton Initiative (BCI), Bonsucro, Cotton made in Africa (CmiA), Fairtrade International (Fairtrade), Forest Stewardship Council (FSC), GLOBALG.A.P., IFOAM – Organics International (organic), the Programme for the Endorsement of Forest Certification (PEFC), ProTerra Foundation (ProTerra), Rainforest Alliance (Rainforest), the Roundtable on Sustainable Palm Oil (RSPO), the Roundtable on Responsible Soy (RTRS) and UTZ.³

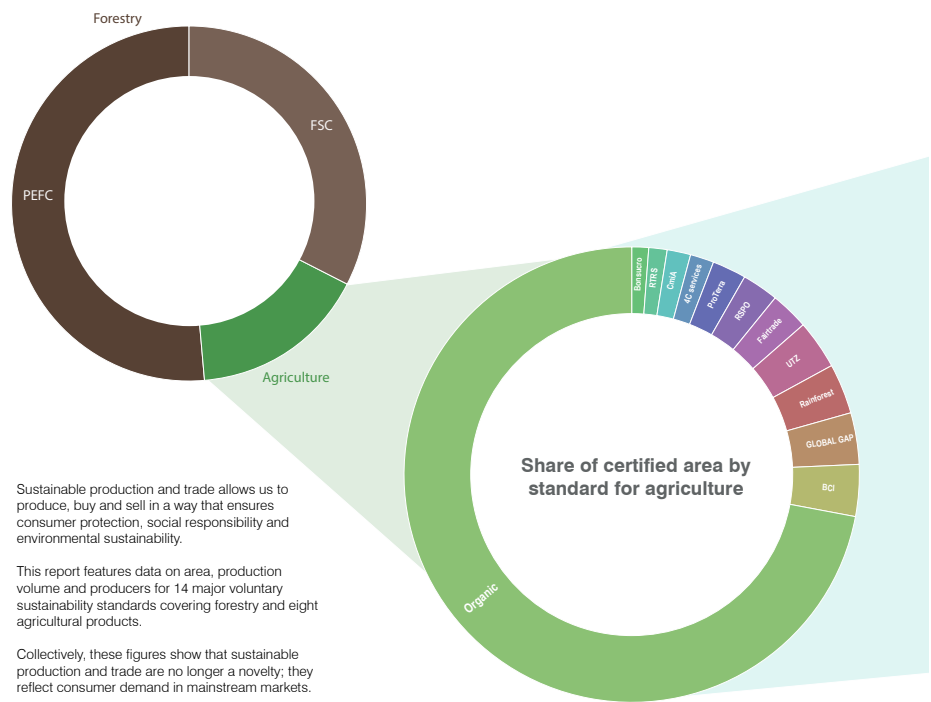
Figure 1: Coffee and cocoa cover most cultivated land

Source: FiBL-ITC-SSI survey, 2020.



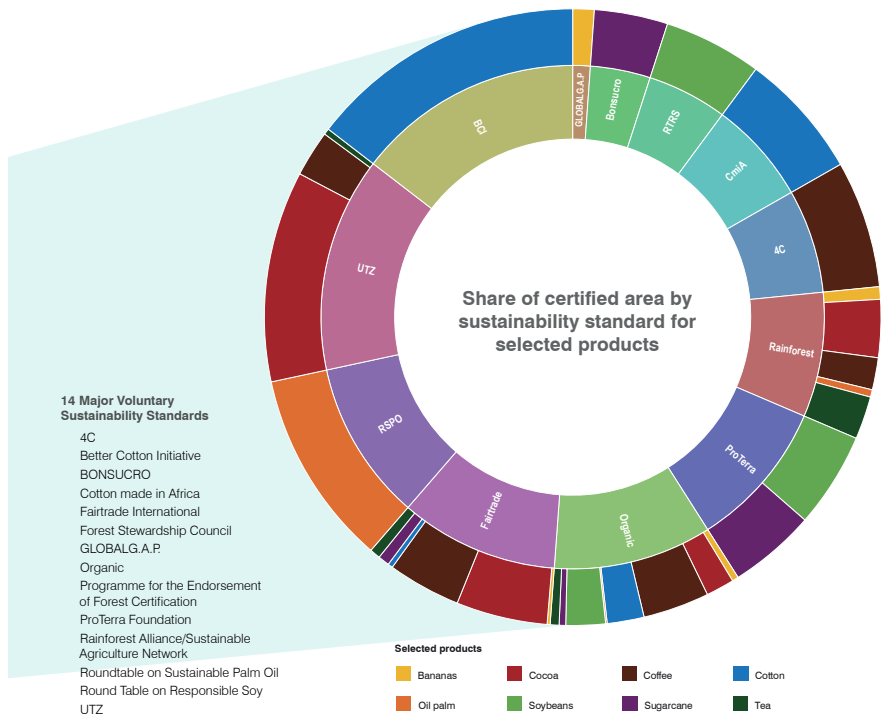
3. Although UTZ merged with Rainforest Alliance in 2018, the 2018 data used for this report were provided for each standard individually.

Figure 2: Almost 75% of agricultural certification is organic



Source: FiBL-ITC-SSI survey, 2020.

Figure 3: Fourteen standards and eight commodities analysed



Source: FiBL-ITC-SSI survey, 2020.

Reporting challenges: Lack of data, multiple certification

Policymakers, producers and businesses require better information for strategic planning. Higher-quality and more transparent data are not only vital on the supply side, but also on the demand side, as information on the prices of certified crops and on consumption patterns is needed. Data are also required on the international trade patterns of compliant products.

Furthermore, there is a need to expand reporting and transparency requirements for certified producers, broaden the Harmonized System coding system, and increase both corporate reporting and reporting on sustainable consumption at the national level.

Another challenge is that reporting a global total for individual sectors is difficult, because many producers are certified by more than one standard. There are not enough reliable data on the share of these multiple certifications.

For the purposes of this report, FiBL, IISD and ITC decided that the best approach was to work with the minimum as a reference, but to provide the maximum and average of the area or production volume as well. More information is available in the section on methodology.

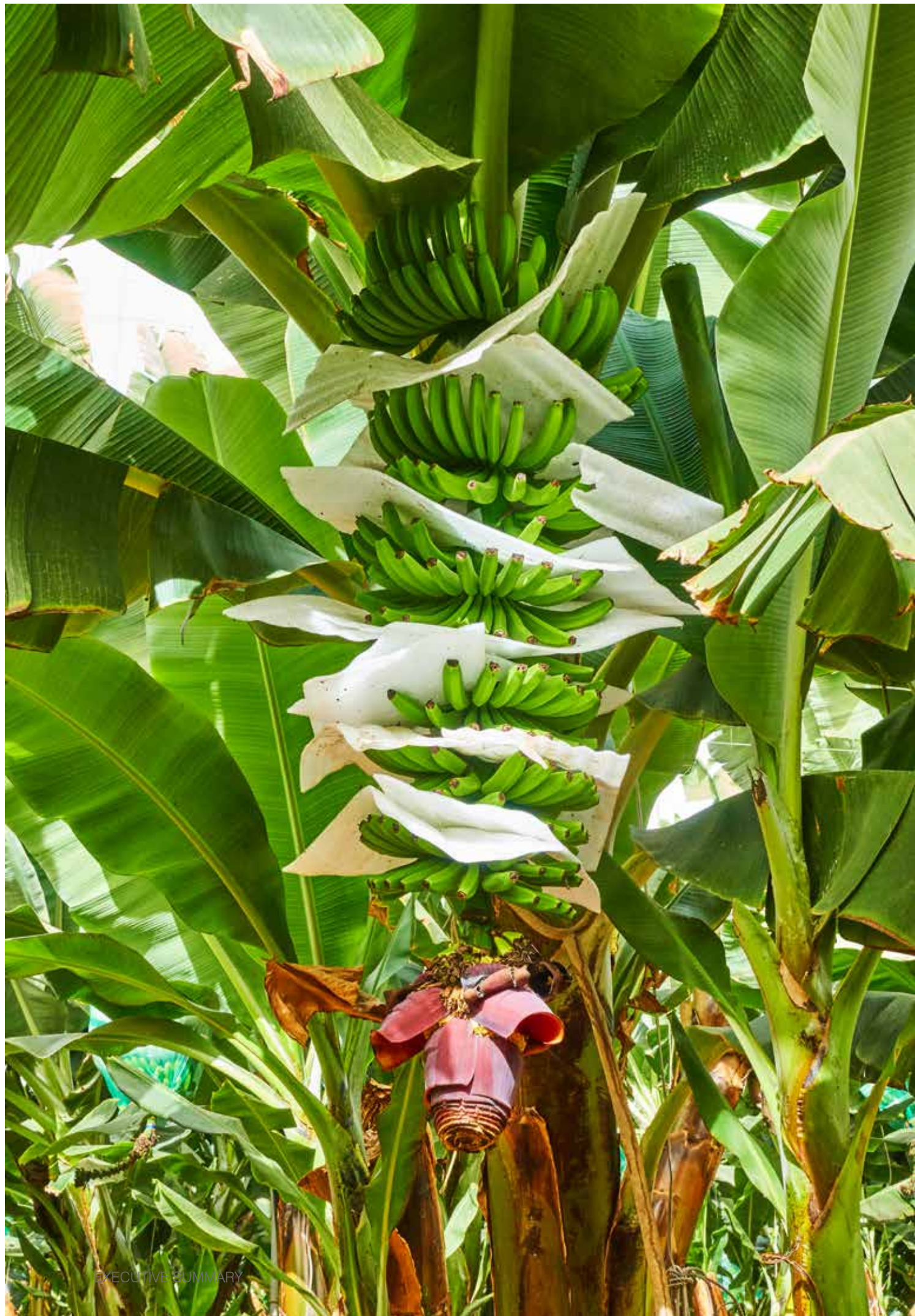
Box 1 Multiple certification and data on total area and production

Reporting a global total for certain commodities remains difficult, as many producers are certified by more than one sustainability standard, and there is little reliable data on the share of multiple certifications. Taking this into account, FiBL, IISD and ITC decided that the best approach was to provide a range that encompasses the minimum and the maximum amounts possible, along with the average of the two at the country level.

To calculate the maximum amount, the total area or production of all standards in the country was determined. For the minimum, the standard with the largest area or greatest production volume in the country was used as the reference. An average of the maximum and minimum was then calculated. However, these figures must be treated with caution as they are estimates that indicate a trend.

Unless otherwise stated, the data presented in the following sections show the minimum possible.





CHAPTER 1

AGRICULTURAL AND
FORESTRY PRODUCTS

Research Institute of Organic Agriculture
(Claudia Meier, Bernhard Schlatter and Helga Willer)

MORE THAN 8% OF AGRICULTURAL LAND IS CERTIFIED 3

FORESTRY CERTIFICATION HAS BEEN SLOWING 6

HIGHLIGHTS BY PRODUCT 6



AGRICULTURAL AND FORESTRY PRODUCTS

This chapter examines the area certified and the production volume of the selected commodities on an aggregate level. As multiple certification remains an issue for some commodities, global totals were computed by adding the country minimums⁴ (leading to a global minimum value for each commodity) the country maximums⁵ (leading to a global maximum value for each commodity) and the country minimum-maximum averages⁶ (leading to a global average value for each commodity).

Unless otherwise stated, the data presented in this section show the global minimum.

4. A country minimum corresponds to the area or production volume of the standard with the largest area or greatest production volume in that country.

5. A country maximum corresponds to the total area or production volume of all standards in that country.

6. A country average corresponds to the average of the country maximum and the country minimum.

More than 8% of agricultural land is certified

Minimum area certified

In 2018, the standards covered in this report certified a minimum of more than 19 million hectares⁷ of the eight agricultural commodities that were studied: bananas, cocoa, coffee, cotton, oil palm, soybeans, sugarcane and tea. This constituted at least 8.1% of the global area for these crops (Table 1).

For the fourth consecutive year, cotton had the largest certified area (four standards). With a minimum of almost 5.9 million hectares, at least 18.2% of the global cotton area was certified.

Cocoa was the commodity with the second-largest certified area, but the largest global share (four standards). With a minimum of almost 3.2 million hectares, at least 26.8% of the global cocoa area was certified.

The commodities with the third- and fourth-largest certified area were oil palm (three standards) and coffee (five standards). Certified oil palm covered at least 2.9 million hectares, representing 15.1% of the global oil palm area. Certified coffee covered a minimum of almost 2.2 million hectares, corresponding to at least 20.7% of the global coffee area (Table 1).

The commodities with the smallest certified area were soybeans (three standards), sugarcane (four standards), tea (four standards) and bananas (four standards). Except for tea, they also had the smallest global shares.

Certified soybeans and sugarcane each covered a minimum of almost 2 million hectares, representing at least 1.6% and 7.4% of the global soybean and sugarcane area, respectively. Certified tea covered a minimum of 673,763 hectares, representing at least 16.1% of the global tea area, and certified bananas covered a minimum of 343,128 hectares, corresponding to at least 6% of the global banana area (Table 1).

Table 1: Minimum area certified by agricultural commodity, 2018

Commodity	Minimum area certified [ha]	Share of global area	Area growth 2017–2018	Area growth 2014–2018
Bananas	343,128	6.0%	0.9%	22.8%
Cocoa	3,174,438	26.8%	9.1%	89.7%
Coffee	2,195,681	20.7%	-13.3%	-12.2%
Cotton	5,885,938	18.2%	14.2%	173.2%
Oil palm	2,864,161	15.1%	12.9%	7.1%
Soybeans	1,957,154	1.6%	8.7%	14.6%
Sugarcane	1,947,924	7.4%	-1.6%	75.2%
Tea	673,763	16.1%	0.7%	56.8%
<i>Total (based on minimum)</i>	<i>19,042,187</i>	<i>8.1%</i>	<i>6.2%</i>	<i>52.0%</i>
<i>Total based on maximum</i>	<i>25,406,211</i>	<i>10.8%</i>	<i>3.9%</i>	<i>52.9%</i>
<i>Total based on average</i>	<i>22,224,199</i>	<i>9.5%</i>	<i>4.9%</i>	<i>52.5%</i>

Note: The data in this table were not adjusted for multiple certifications, so the minimum possible is reported. The total VSS-compliant area corresponds to the standard with the largest compliant area operating within a given sector by country.

Sources: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Roundtable on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.

7. The maximum was more than 25.4 million hectares and the average more than 22.2 million hectares.

Growth of minimum area certified

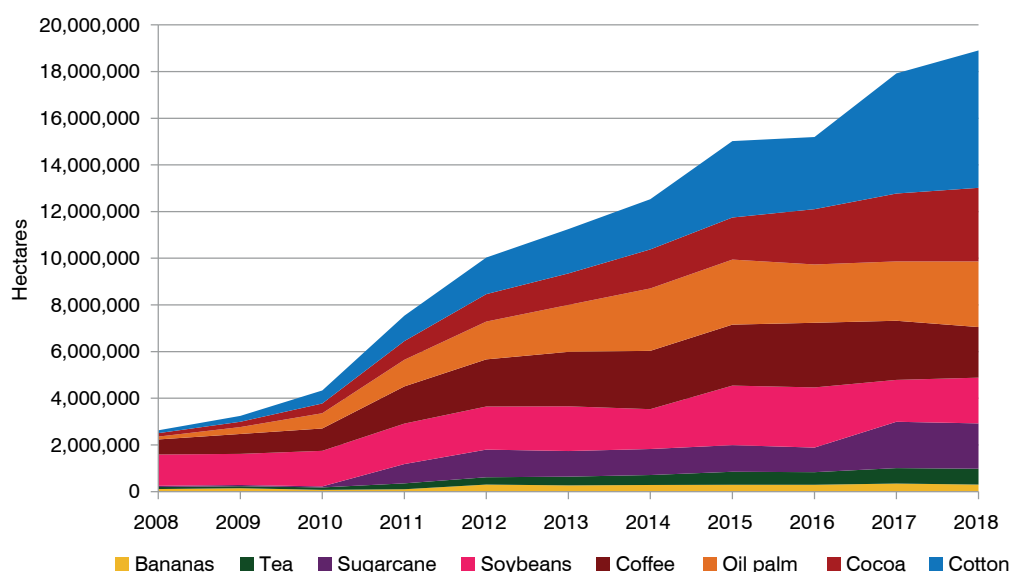
In 2014–2018, the minimum certified area of the selected crops expanded by half (+52%). The minimum certified cotton area grew the most, almost tripling in size (+173.2%).⁸ This was followed by cocoa, the minimum certified area of which almost doubled in size (+89.7%), and sugarcane and tea, the minimum certified area of which grew by 75.2% and 56.8%, respectively. The smallest growth rates were recorded for bananas, with 22.8%, soybeans, with 14.6%, and oil palm, with 7.1%. The minimum certified coffee area dropped by 12.2% (Table 1 and Figure 4).

The minimum certified area of most of the commodities stagnated or increased by less than 10% in 2015–2016, and expanded by just 1% overall (Lernoud et al., 2018). The growth rates were markedly higher for most crops in 2016–2017; in fact, for all selected commodities together, the second-highest one-year growth rate since 2013 was recorded (+18%) (Willer et al., 2019).

Growth flattened again in 2017–2018 (overall growth rate of 6.2%). Only the minimum certified area of cotton and oil palm grew by more than 10%, and a negative growth rate was recorded for two crops (coffee: -13.3%; sugarcane: -1.6%) (Table 1 and Figure 4).

Five of the standards covered in this report produce certified coffee: 4C, Fairtrade, organic, Rainforest and UTZ. In 2014–2018, 4C and Fairtrade reported a decrease in the certified coffee area (-19.9% and 13.4%, respectively). In 2017–2018, 4C (-12.9%) and organic (-17.4%) noted the biggest losses (Table 6).⁹ In the case of organic, it should be noted that while the coffee area increased in most countries, a drop in area was reported for Mexico, where the data collection system had changed.

Figure 4: Growth of minimum area certified by crop, 2008–2018



Note: For the purpose of the figure, it is assumed that a maximum amount of multiple certification is occurring within each commodity and the minimum possible VSS-compliant area is shown. This corresponds to the standards with the largest compliant area operating within a given sector.

Sources: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Roundtable on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.

For all statements made on agricultural commodities in this chapter, it should be noted that, for methodological reasons, we are referring to the minimum possible values. To calculate this, we assume that multiple sustainability standards certify all areas. The minimum corresponds to the standard with the largest compliant area operating within a given sector. Readers should bear in mind that the per crop areas, shares and growth rates might actually be considerably higher.

8. These growth rates are calculated by taking the minimum area possible as the reference.

9. The drop in the coffee area certified by 4C in 2017 was mainly due to stricter procedures for data collection and analysis during the various stages of the audit process implemented by 4C Services (4C, 2019).

Production volume

Production data are often incomplete¹⁰ and/or based on estimates. For organic, the production volumes presented in Table 2 were computed based on partly estimated data. Therefore, production shares, as well as growth rates, need to be interpreted with care, particularly if they differ from area shares and growth rates presented in Table 1.

Of the five commodities listed in Table 2, global shares in certified production were largest for cocoa (32.5%), coffee (25.8%) and tea (22.1%). The lowest production shares were recorded for certified bananas (8.2%) and soybeans (1.8%).

The production of certified soybeans grew the most in 2014–2018, almost doubling in size (+80.3%). This was followed by certified tea, the production of which rose by more than half (+61.4%). For certified bananas, production grew by almost half (+43%). The production of certified cocoa increased just +9.6% and the production of certified coffee dropped by 15.1% (Table 2).

The production volume of bananas, cocoa and tea increased by around 10% in 2017–2018. Certified soybeans rose by almost twice as much (+18.4%) and certified coffee fell by 8.9% (Table 2).

Although the global shares in certified production were similar to the global shares in certified area, this was not the case for growth rates. Particularly for certified cocoa and soybeans, there were some major differences. Whereas the four-year production growth of cocoa was substantially smaller (+9.6%) than the four-year area growth (+89.7%), the opposite was true for soybeans, with a four-year production growth of 80.3% and a four-year area growth of 14.6% (Table 1 and Table 2). This may be due to inconsistent reporting in some cases.

Table 2: Estimated minimum production volume by agricultural commodity, 2018

Agricultural product	Estimated minimum production [tons]	Share of global production	Production growth 2017–2018	Production growth 2014–2018
Bananas*	9,486,156	8.2%	10.7%	43.0%
Cocoa	1,707,722	32.5%	11.9%	9.6%
Coffee	2,660,178	25.8%	-8.9%	-15.1%
Soybeans	6,161,241	1.8%	18.4%	80.3%
Tea	1,397,545	22.1%	9.6%	61.4%

Note: The data in this table were not adjusted for multiple certification, so the minimum possible is reported. The total VSS-compliant production corresponds to the standard with the largest compliant production operating within a given sector by country.

* *Production volume of bananas is missing for GlobalG.A.P.*

Source: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Roundtable on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.

10. No minimum production values were estimated for cotton, oil palm and sugarcane due to a substantial amount of missing production data for these commodities.

Forestry certification has been slowing

PEFC and FSC certified more than 414 million¹¹ hectares of forest in 2018, representing 10.4% of the global forest area. Although the growth of the certified forest area was very strong (+959%) in 2000–2018, it has been slowing since 2010, with a 3.8% drop in 2017–2018 (Table 3).

For forestry, no production data are available.

Table 3: More than 10% of the forest area is certified

Product	FSC and PEFC certified area [ha]	Share of global forest area	Area growth 2017–2018	Area growth 2010–2018	Area growth 2000–2018
Forest	414,096,054	10.4%	-3.8%	23.1%	959.0%

Note: FSC and PEFC joined forces in 2016 and produced a common data set with multiple certification taken into account. The joint data set is available for 2000, 2005, 2010 and 2015–2018.

Source: FSC-PEFC, 2020.

Highlights by product

This section provides an overview of the area certified for each of the selected sectors (bananas, cocoa, coffee, cotton, palm oil, soy, sugarcane, tea and forestry) for the year 2018. Little information is available about the share of multiple certification. Therefore, the section below provides information on the area range, spanning from the minimum area possible (no multiple certification occurring) to the maximum area possible (100% multiple-certified).

Table 7 and Table 9 show area and production ranges by product. Table 8 and Table 10 show area and production by product and standard.

Data by country are available at www.sustainabilitymap.org/trends.

Bananas

Four of the 14 standards covered in this report certified the production of bananas, namely **Fairtrade International**, **GLOBALG.A.P.**, **organic** and **Rainforest Alliance**. Combined, they certified 343,128–580,856 hectares, representing 6%–10.1% of the global banana area (Table 7).

GLOBALG.A.P., with nearly 300,000 hectares, certified the largest banana area. Rainforest Alliance achieved the highest four-year growth; its certified area almost doubled in size since 2014 (+84.3%), reaching more than 166,000 hectares in 2018 (Table 8).

Cocoa

Four of the 14 standards covered in this report certified the production of cocoa, namely **Fairtrade International**, **organic**, **Rainforest Alliance** and **UTZ**. Combined, they certified between 3.2 million hectares and 5.2 million hectares, representing 26.8%–44.2% of the global cocoa area (Table 7).

UTZ certified the biggest cocoa area (more than 3 million hectares). Fairtrade International achieved the highest four-year growth was achieved; its certified area almost tripled in size since 2014 (+173.4%), reaching nearly 1.2 million hectares in 2018 (Table 8).

Coffee

Five of the 14 standards covered in this report certified the production of coffee, namely **4C**, **Fairtrade International**, **organic**, **Rainforest Alliance** and **UTZ**. Combined, they certified between 2.2 million hectares and 4.2 million hectares, representing 20.7%–40% of the global coffee area (Table 7).

4C certified the largest coffee area (more than 1.3 million hectares). UTZ achieved the highest four-year growth; its certified area expanded by more than half since 2014 (+62%), reaching almost 800,000 hectares in 2018 (Table 8).

11. FiBL computed the total area certified by FSC and PEFC based on data from FSC and PEFC with respect to certified area by standard and estimated double-certified area.

Cotton

Four of the 14 standards covered in this report certified the production of cotton, namely **BCI**, **CmiA**, **Fairtrade International** and **organic**. Combined, they certified between 5.9 million hectares and 6.4 million hectares, representing 18.2%–19.6% of the global cotton area (Table 7).

BCI, with almost 4.2 million hectares, certified the biggest cotton area. CmiA achieved the highest four-year growth; its certified area tripled in size since 2014 (+204%), reaching almost 1.8 million hectares in 2018 (Table 8).

Oil palm

Three of the 14 standards covered in this report certified the production of oil palm, namely **organic**, **Rainforest Alliance** and **RSPO**. Combined, they certified an average of 2.9 million hectares, representing 15.3% of the global oil palm area (Table 7). RSPO certified nearly all of this oil palm area (more than 2.8 million hectares).

Organic achieved the highest four-year growth; its certified area more than tripled in size since 2014 (+235.9%). However, with 8,600 hectares in 2018, its area remains relatively small (Table 8).

Soybeans

Three of the 14 standards covered in this report certified the production of soybeans, namely **organic**, **ProTerra Foundation** and **RTRS**. Combined, they certified between 2 million and 3 million hectares, representing 1.6%–2.4% of the global soybean area (Table 7).

RTRS, with 1.3 million hectares, certified the largest soybean area and achieved the highest four-year growth. Its certified area almost tripled in size since 2014 (+171.9%) (Table 8).

Sugarcane

Four of the 14 standards covered in this report certified the production of sugarcane, namely **Bonsucro**, **Fairtrade International**, **organic** and **ProTerra Foundation**. Combined, they certified between 1.9 million and 2.2 million hectares, representing 7.4%–8.4% of the global sugarcane area (Table 7).

ProTerra Foundation, with 1.1 million hectares, certified the largest sugarcane area. As ProTerra Foundation certified sugarcane for the first time in 2017, it also achieved the highest four-year growth (Table 8).

Tea

Four of the 14 standards covered in this report certified the production of tea, namely **Fairtrade International**, **organic**, **Rainforest Alliance** and **UTZ**. Combined, they certified 673,763–908,928 hectares, representing 16.1%–21.7% of the global tea area (Table 7).

Rainforest Alliance certified the largest tea area (593,471 hectares). UTZ achieved the highest four-year growth; its certified area almost doubled in size since 2014 (+93.1%), reaching 74,536 hectares in 2018 (Table 8).

Forestry

Two of the 14 standards covered in this report certified forestry, namely **PEFC** and **FSC**. Combined, they certified a forest area of 414 million hectares, representing 10.4% of the global forest area.

The growth of the combined PEFC- and FSC-certified forest area was very strong (+959%) in 2000–2018. However, it has been slowing since 2010, declining 3.8% in 2017–2018 (Table 3).

As in previous years, the PEFC-certified area exceeded the FSC-certified area in both size and growth in 2018. With more than 309 million hectares of forest, 7.7% of the global forest area was PEFC-certified, expanding by 17.6% since 2014. FSC reported more than 197 million hectares of certified forest, representing 4.9% of the global forest area and an increase of 5.4% since 2014 (Table 5).



CHAPTER 2

THE SELECTED SUSTAINABILITY STANDARDS

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THE SELECTED SUSTAINABILITY STANDARDS

This chapter examines the selected sustainability standards on an aggregate level, taking into account the full range of commodities each standard certified (and not only the selected nine commodities covered in this report).¹² For this purpose, this chapter focuses on variables for which an aggregation across commodities is meaningful, namely, a standard's certified area and some producers/certificate holders.

Please note: Due to multiple certification, it is impossible to determine the global certified area or the global number of producers for all sustainability standards together.

In agriculture, organic standards lead

Area certified

Organic is the sustainability standard with the largest variety of agricultural products and, by far, the largest area certified (Willer et al., 2020). More than 71 million hectares¹³ were organic certified in 2018, representing 1.5% of all agricultural land worldwide.

Of the remaining 11 standards, five for the first time covered land totalling around 4 million hectares each in 2018. Rainforest Alliance certified the largest area (4.5 million hectares), followed by BCI (4.2 million hectares), GLOBALG.A.P. (3.9 million hectares), UTZ (3.9 million hectares) and RSPO (3.7 million hectares), each representing a global share of 0.08% or 0.09% (Figure 5 and Table 4).

Growth in area certified

The area of all sustainability standards expanded by double digits in 2014–2018, except 4C, which recorded a decline of 19.9%.¹⁴ Single-sector standards reported the largest area growth: the certified area of CmiA tripled (+204.0%), and the area certified by RTRS and BCI more than doubled (+171.9% and +159.6%, respectively) (Table 4).

Area growth in 2017–2018 was greatest for Rainforest Alliance (+29.5%), followed by BCI (+17%), UTZ (+14.5%), RSPO (+13.3%) and Bonsucro (+10.2%). The area certified by two standards declined: 4C by 13.2% and ProTerra by 5.9% (Table 4).

Number of producers

As the standard with the biggest certified area, organic also has the most producers – almost 2.8 million in 2018. However, Fairtrade and Rainforest, which certified significantly smaller areas than organic, also had relatively high numbers of producers: Fairtrade reported 1.6 million producers and Rainforest 1.3 million (Table 4).

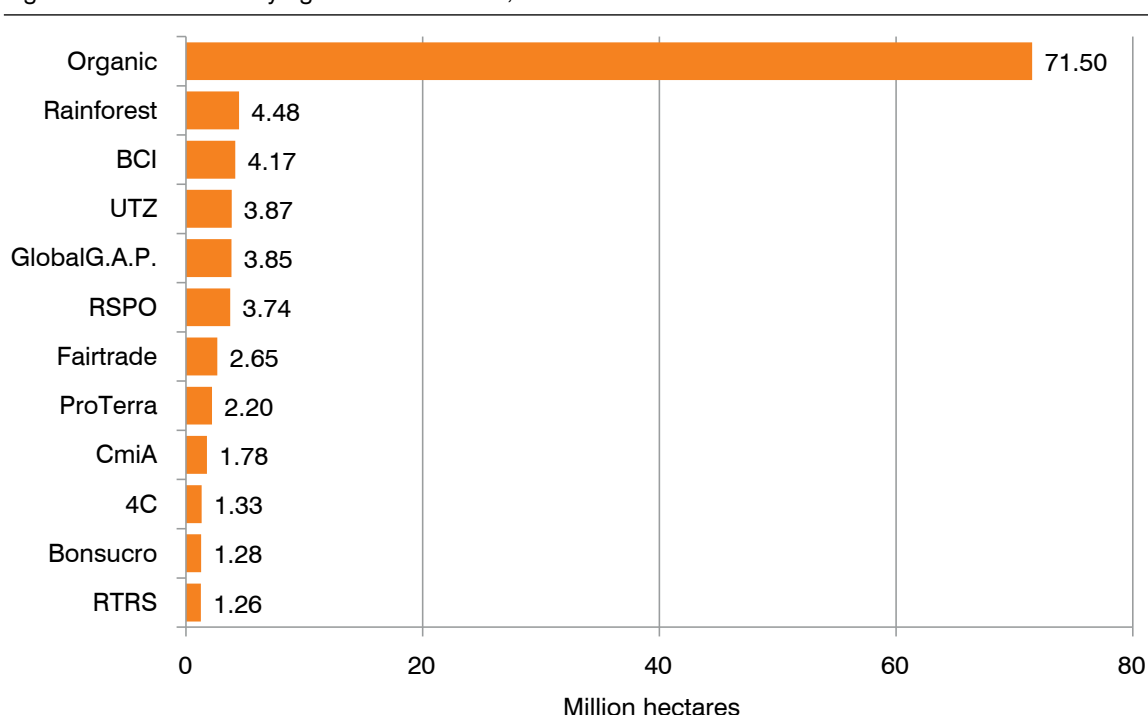
This apparent contradiction can be explained by the fact that most of the sustainability standards presented in this report focus on the Global South, where smallholders prevail. In contrast, organic is prominent globally, including in countries where large farms dominate, such as Australia and the United States. It should also be noted that the producer data for organic are incomplete for many countries.

12. For instance, organic certified 71.5 million hectares overall in 2018 (Table 4 and), but 2.3 million hectares if only the selected eight agricultural products are taken into account (Table 6 and Figure 4).

13. This includes land that is in the process of becoming certified as organic.

14. This can mainly be explained by the stricter procedures for data collection and analysis during the various stages of the audit process implemented by 4C Services (4C, 2019).

Figure 5: Area certified by agricultural standard, 2018



Note: For organic, a large part of the agricultural land is made up of permanent grazing areas (65%), much of which is extensive. This figure looks beyond the products examined in this report.

Sources: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Roundtable on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.

Table 4: Area certified and producers by agricultural standard, 2018

Standard	Area certi-fied [ha]	Producers [no.]	Share of global agricultural area	Area growth 2017–2018	Area growth 2014–2018
4C	1,328,504	437,456	0.03%	-13.2%	-19.9%
BCI	4,167,000	1,291,498	0.09%	17.0%	159.6%
Bonsucro	1,279,251	128	0.03%	10.2%	38.9%
CmiA	1,779,584	999,425	0.04%	9.9%	204.0%
Fairtrade	2,654,330	1,605,010	0.05%	0.7%	30.1%
GLOBALG.A.P.	3,853,612	199,045	0.08%	8.6%	24.9%
Organic	71,499,151	2,796,916	1.48%	2.4%	22.5%
ProTerra	2,202,076	837	0.05%	-5.9%	81.2%
Rainforest Alliance	4,478,091	1,339,146	0.09%	29.5%	28.2%
RSPO	3,740,611	113,248	0.08%	13.3%	18.4%
RTRS	1,263,254	7,099	0.03%	0.3%	171.9%
UTZ	3,867,688	1,115,361	0.08%	14.5%	91.8%

Sources: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Roundtable on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.

In forestry, two standards dominate

Area certified

As previously mentioned, the forest area certified by PEFC exceeded the forest area certified by FSC in 2018 as well as in preceding years. With more than 309 million hectares of forest, 7.7% of the global forest area was PEFC-certified. FSC reported more than 197 million hectares of certified forest, representing 4.9% of the global forest area (Table 5).

In 2014–2018, the certified forest area grew considerably more for PEFC (+17.6%) than for FSC (+5.4%). Both the PEFC- and the FSC-certified forest area declined in 2017–2018 (1.3% and 0.9%, respectively) (Table 5).

Number of chain-of-custody certificate holders

FSC counted more than 37,000 chain-of-custody (CoC) certificate holders in 2018, and PEFC more than 11,000 (Table 5).

Table 5: Certified forest area growth fell in 2017–2018

Standard	Area certified [ha]	CoC certificate holders [no.]	Share of global forest area	Area growth 2017–2018	Area growth 2014–2018
FSC	197,141,010	37,607	4.9%	-0.9%	5.4%
PEFC	309,473,277	11,466	7.7%	-1.3%	17.6%

Source: FSC and PEFC, 2020.

In agriculture, single sector standards dominate

Standards that directly target mainstream adoption within a specific sector largely drive growth and market uptake. In the sectors discussed, where single-commodity standards¹⁵ have been developed (coffee, cotton, forestry, oil palm, sugarcane and soy), these standards usually are the ones with the largest area for their specific crops.

In 2018, 4C had the largest certified coffee area (global share of 13%), BCI the biggest certified cotton area (global share of 13%), RSPO the largest certified oil palm area (global share of 15%) and RTRS the largest certified soybean area (global share of 1%). Only the sugarcane area certified by the single-product standard Bonsucro fell short of the sugarcane area certified by ProTerra, which has certified both sugarcane and soybeans since 2017 (Table 6 and Figure 6).

Multiple-product standards¹⁶ such as Fairtrade, GlobalG.A.P. organic, ProTerra, Rainforest Alliance and UTZ may have lower coverage of a specific product than single-commodity standards because of their wider scope. This is most notable for organic agriculture. In 2018, organic certified 2.3 million hectares for the eight agricultural crops analysed in this report, but 71.5 million hectares in total, covering more or less all agricultural products (Table 4 and Table 6).

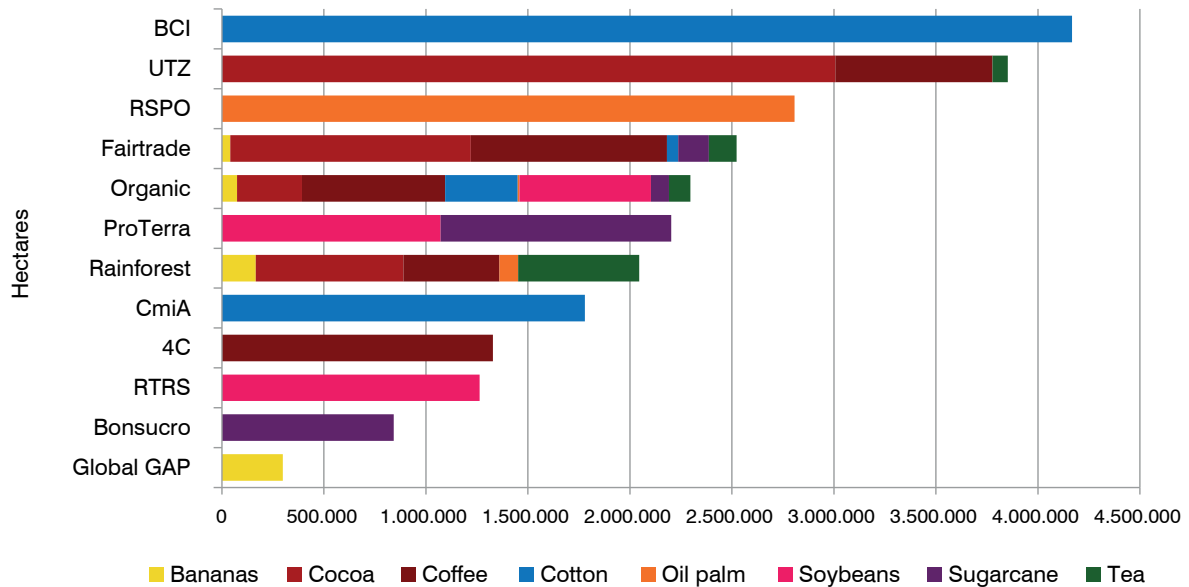
However, multiple-commodity standards are gaining importance – not only in the sugarcane sector, but also in the coffee and soybean sectors. Fairtrade, Rainforest Alliance, UTZ and organic all certified a substantial share of the global coffee area in 2018 (9%, 4%, 7% and 7%, respectively). ProTerra Foundation and organic both certified an important portion of the global soybean area (both reaching 1% of the global soybean area).

UTZ remained the most important certifier in the cocoa sector (global share of 25%) and Rainforest Alliance in the tea sector (global share of 14%), in which no single-commodity standards have been developed. As Rainforest Alliance and UTZ merged in 2018, they may dominate not only the cocoa and tea sectors, but also the coffee sector in the years to come (Table 6 and Figure 6).

15. Single-commodity standards are sustainability standards that certify only one product. An example is the Global Coffee Platform, which only certifies coffee.

16. Multiple-commodity standards are sustainability standards that certify multiple products. An example is Fairtrade International, which certifies a wide variety of products.

Figure 6: Area harvested by agricultural standard and commodity, 2018



Sources: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Roundtable on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.

Table 6: Area harvested by agricultural standard and commodity, 2018

Standard	Product	Area harvested [ha]	Share of global area harvested	Area growth 2017–2018	Area growth 2014–2018
4C	Coffee	1,328,504	12.55%	-12.85%	-19.86%
4C total		1,328,504	12.55%	-12.85%	-19.86%
BCI	Cotton	4,167,000	12.85%	17.02%	159.63%
BCI total		4,167,000	12.85%	17.02%	159.63%
Bonsucro	Sugarcane	842,529	3.21%	-10.64%	-8.53%
Bonsucro total selected crops		842,529	3.21%	-10.64%	-8.53%
CmiA	Cotton	1,779,584	5.49%	9.89%	204.03%
CmiA total selected crops		1,779,584	5.49%	9.89%	204.03%
Fairtrade	Bananas	41,143	0.72%	7.38%	15.44%
	Cocoa	1,178,644	9.96%	15.36%	173.38%
	Coffee	961,774	9.09%	2.52%	-13.39%
	Cotton	55,516	0.17%	-11.74%	-9.18%
	Sugarcane	149,738	0.57%	2.29%	-4.28%
	Tea	136,453	3.25%	0.96%	0.42%
Fairtrade total selected crops		2,523,268	2.77%	7.71%	30.69%
GLOBALG.A.P.	Bananas	299,071	5.22%	8.77%	18.88%
GLOBALG.A.P. total selected crops		299,071	5.22%	8.77%	18.88%

Standard	Product	Area harvested [ha]	Share of global area harvested	Area growth 2017–2018	Area growth 2014–2018
Organic	Bananas	74,236	1.30%	-0.16%	42.47%
	Cocoa	318,202	2.69%	-13.98%	38.60%
	Coffee	701,553	6.63%	-17.40%	13.06%
	Cotton	356,131	1.10%	-24.71%	61.32%
	Oil palm	8,600	0.05%	-57.11%	235.94%
	Soybeans	644,323	0.52%	21.72%	93.69%
	Sugarcane	88,615	0.34%	5.94%	11.82%
	Tea	104,467	2.49%	-18.05%	76.96%
Organic total selected crops		2,296,127	0.98%	-9.14%	43.83%
ProTerra	Soybeans	1,072,390	0.86%	-12.37%	-11.76%
	Sugarcane	1,129,686	4.30%	1.27%	NA
ProTerra total selected crops		2,202,076	1.46%	-5.86%	81.19%
Rainforest	Bananas	166,405	2.91%	3.30%	84.29%
	Cocoa	723,487	6.11%	-2.34%	-14.53%
	Coffee	470,827	4.45%	14.44%	29.07%
	Oil palm	91,147	0.48%	-3.41%	76.43%
	Tea	593,471	14.16%	7.78%	55.55%
Rainforest total selected crops		2,045,337	3.99%	4.44%	17.85%
RSPO	Oil palm	2,807,377	14.84%	11.69%	6.60%
RSPO total selected crops		2,807,377	14.84%	11.69%	6.60%
RTRS	Soybeans	1,263,254	1.01%	0.28%	171.90%
RTRS total selected crops		1,263,254	1.01%	0.28%	171.90%
UTZ	Cocoa	3,007,123	25.41%	11.10%	100.15%
	Coffee	770,423	7.28%	29.92%	62.00%
	Tea	74,536	1.78%	-3.57%	93.07%
UTZ total selected crops		3,852,082	14.48%	14.07%	91.02%

Sources: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Roundtable on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.





CHAPTER 3

PRODUCTION TRENDS FOR CERTIFIED PRODUCTS

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PRODUCTION TRENDS FOR CERTIFIED PRODUCTS

Demand for agricultural products that comply with a voluntary sustainability standard has increased, especially in traditional markets such as Europe and North America. Some initial signs of this growth trend in emerging economies have also been observed. The driving forces behind this growth include:

Consumer preferences for healthier and sustainably grown products. To meet this market demand, value chain actors, such as commodity traders, food processing companies and retailers, have defined sustainable-sourcing commitments, pledging that a certain percentage of their commodity purchases will come from sustainable sources by a target year. Some of these actors provide periodic updates on their progress in achieving these commitments, while others have yet to do so.

The implementation of risk management strategies by private companies that source commodities from developing countries. These strategies are motivated by either ensuring the volume of supply (supply risk) and the integrity of the products sourced (i.e. organic cotton) and/or by mitigating reputational risk (for example, environmental and social concerns involving soybean or palm oil production). There is also a growing trend towards creating corporate sustainability schemes, instead of relying on independent third-party schemes.

Regulatory frameworks in both producing and consuming countries that establish commodity sourcing conditions. Examples of regulatory frameworks for commodity sourcing include the Soybean Moratorium for deforestation-free soybean and the European Union Renewable Energy Directive for palm oil. To comply with these regulations, value chain actors source VSS-complaint commodities when feasible.

However, each agricultural product market is different and influenced by different factors. Some markets, including coffee and palm oil, are characterized by an estimated oversupply of VSS-compliant products. In others, such as the banana sector, have reached a supply and demand balance.

The effects of the COVID-19 pandemic on the consumption of VSS-compliant products remains to be seen and is the subject of ongoing research.

This chapter presents a brief overview of the consumption trends and preferences seen in eight agricultural product markets, building on IISD's Sustainable Commodity Marketplace Series 2019. The consumption trends presented do not factor in COVID-19 related considerations, it is still too early to make definitive conclusions on the impacts it will have on consumption. However, it does acknowledge some of the early signs of the impact of the pandemic on these markets, and what these might mean.

Bananas

Demand for VSS-compliant bananas has been growing, especially in traditional markets such as Europe and North America (Voora, V., Larrea, C., and Bermudez, S., 2020d). Consumer preferences for sustainably grown bananas are the main driving force behind this growth. Research suggests that the consumption of Fairtrade and organic bananas has grown considerably over the last two decades, capturing about 10% of the market in these two regions.

In Europe, the United Kingdom leads the way in consumption of Fairtrade bananas, where a third of bananas sold in the country are reported to be Fairtrade-certified (Fairtrade Foundation, 2018). Organic and Fairtrade banana sales have also risen in Belgium and the Netherlands (Voora et al., 2020d).

In the United States, evidence suggests that VSS-compliant bananas capture about 10% of the market, with retail sales volumes rising 17.5% in 2017 from 2016 (Voora et al., 2020d). More recently, in the first quarter of 2020, the sales volume of VSS-compliant bananas in this market climbed by 19.5% (Seeley, M., 2020).

To meet the growing demand for VSS-compliant bananas in Europe and North America, leading global banana-consuming companies, such as Chiquita, Fresh del Monte and Fyffe's, have defined sustainable-sourcing commitments. However, the target year and the progress towards their achievement are fairly unknown (Voora et al., 2020d). Other major banana-consuming firms, such as Dole Food Companies and Bonita Banana, have yet to define their sustainable-sourcing commitments.

Together, these five companies are responsible for trading close to half of the total volume of bananas traded in the world, which makes them critical actors to move the sector towards sustainability (Voora et al., 2020d).

VSS-compliant bananas tend to be sold as such in these traditional markets. This is different than in other sectors, such as coffee and tea, where mismatches between VSS-compliant production and retail sales are significant (Voora et al., 2020d).

However, important sustainability issues are affecting the banana sector. These may limit its potential to meet rising market demand and ensure its sustainability.

Although consumption of VSS-compliant bananas is concentrated mainly in Europe and North America, developing countries are the main consumers of bananas – and they are expected to drive its demand growth in the coming years (Voora et al., 2020d).

The Asia-Pacific is the major consuming region, accounting for 61% of global banana consumption, led by India, China and the Philippines. The consumption of local bananas in many African countries is also notable, particularly in Uganda, Rwanda and Cameroon.

Bananas play an important role in people's diets in developing countries, as they are an affordable source of energy. This highlights the need to boost demand for VSS-compliant bananas from importing countries, but largely from banana-growing countries that tend to be the top consumers. For this to happen, the production of VSS-compliant bananas in these countries, such as India and China, must be cost effective, and bananas need to be sold at a price that is affordable for the local populations (Voora et al., 2020d).

Other challenges in the sector might affect its potential to meet the estimated demand growth of VSS-compliant bananas. Farm-gate prices and workers' wages tend to be very low, putting significant pressure on banana farmers and plantation workers (Voora, et al., 2020d).

The banana sector also faces a race to the bottom as retail price is a main driver of consumer choices, and the leading banana-consuming companies and retailers serving the European and North American markets compete on price to increase their market share. The effect of climate change on yields, the excessive use of pesticides and the impact of the fungal *Fusarium* wilt disease on banana plantations are also critical concerns that need to be addressed.

Coordinated responses by industry stakeholders are necessary to make growing VSS-compliant bananas economically viable and profitable for farmers and workers, and resilient to diseases and to the effects of climate change. This will support the sustainable production of VSS-compliant bananas. Initiatives such as the World Banana Forum that convene a different range of public and private actors could contribute considerably to addressing these sustainability concerns.

Cocoa

Demand for VSS-compliant cocoa is rising, especially in traditional markets such as Western Europe and North America (CBI, 2020). The growth in demand is largely due to the desire of consumers to buy chocolate made from sustainably grown cocoa in both the premium (i.e. dark chocolate, single-origin) and bulk markets, along with buyers' own sustainable-sourcing requirements. These vary across the industry, with some cocoa traders and manufacturers more committed and advanced in sourcing sustainably grown cocoa than others (Voora, V., Bermudez, S., and Larrea, C., 2019b).

The World Cocoa Foundation estimates that 22% of cocoa traded is certified (CBI, 2020). Research suggests that chocolate confectionery from sustainable cocoa sources accounted for 8% of the total global [retail] market value in 2017 (Voora et al., 2019b). In the United States, retail sales of sustainable cocoa grew 16% in 2017–2018, outpacing sales of conventional cocoa, which grew 5% in the same period (UTZ, 2017; Nielsen, 2018).

In Europe, sales of VSS-compliant cocoa show signs of growth, with the main standards in this space including Rainforest Alliance (which merged with UTZ in 2018), Fairtrade and organic (CBI, 2020). Research suggests that this trend will probably continue. For instance, organic cocoa is expected to have a 9.5% compound annual growth rate in 2019–2025 and to reach \$620 million in retail value by 2025 (Voora et al., 2019b).

However, leading cocoa-consuming companies are increasingly stepping away from sourcing VSS-compliant cocoa in favour of cocoa sourced from their own corporate arrangements, such as the Cocoa Life Scheme from Mondelez International and Cocoa Horizons from Barry Callebaut (Voora et al., 2019b). This shift might affect the consumption of VSS-compliant cocoa-based products in the future.

Efforts to boost demand for VSS-compliant cocoa may need to target Asia, which is expected to become the world's second-largest consumer market of cocoa-based ingredients (i.e., cocoa powder used in sweet biscuits and cookies), outpaced only by Western Europe. This trend is largely fuelled by growth of the middle-upper class in Asia, along with higher income levels among young people (Voora et al., 2019b).

Whether this demand growth can be fulfilled, however, is another question. Cocoa producers are grappling with low yields, income disparities and the effects of rising temperatures at cocoa plantations, especially in major growing countries. If these challenges persist, cocoa producers may have difficulty meeting the expected increase in market demand in a sustainable way.

Coordinated efforts are needed among industry actors, including governments, standard-setting bodies, development organizations and private companies to ensure more resilient cocoa operations and that increased market demand can be met. At the same time, benefits must be equitably shared across value chain actors.

Coffee

Demand for VSS-compliant coffee is still growing, primarily due to consumer preferences in traditional markets. Another important demand driver is the growing prevalence of buyers' requirements for sourcing healthier and sustainably grown coffee, which can help deliver positive social and environmental outcomes. However, progress towards achieving their sustainable-sourcing commitments vary, and there is still room for growth (Voora, V., Bermudez, S., and Larrea, C., 2019a).

Consumers in Germany and Finland are buying more VSS-compliant coffee, leading the way in Europe (CBI, 2019). The United States reported a 1% increase in consumption of sustainably grown coffee in 2018 (Nielsen, 2018). Consumers in these markets are also choosing coffee that complies with sustainability schemes established by private companies, rather than by independent third parties, including Starbucks' CAFÉ Practices and Nestle's Nespresso AAA programmes.

However, research suggests that demand for VSS-compliant coffee remains lower than supply (Voora et al., 2019a). This puts pressure on farm gate prices, undermining producers' livelihoods and risking further growth in the production of VSS-compliant coffee (Voora et al., 2019a). Demand growth in traditional markets is not enough to balance existing oversupply.

In addition, consumers in emerging economies that are both leading producers and consumers of coffee – such as Brazil, Colombia, Indonesia and China – are more price-sensitive and tend to be less concerned

about the sustainability concerns linked to the coffee sector. As a result, they often prefer conventionally produced coffee, rather than its VSS equivalent (Voora et al., 2019a).

Measures that stimulate greater sustainable consumption in importing and producing countries must be implemented to lift demand for VSS-compliant coffee and drive increased production. Such measures include education campaigns, establishing subsidies or incentives to source VSS-compliant coffee, and raising the price of coffee that is not produced in line with sustainable practices (Organisation for Economic Co-operation and Development, 2008; Voora et al., 2019a).

Coffee-sourcing companies, such as traders and roasters, could also contribute to the greater uptake of VSS-compliant coffee by being more accountable to their sustainable-sourcing commitments and consistently increasing the share of sustainably grown coffee.

Cotton

Demand for VSS-compliant cotton has increased in recent years, especially in Europe and North America. The main trends driving this growth include sourcing commitments from textile, clothing and apparel brands that are seeking to respond to consumer preferences for more eco-friendly clothes and hardware (Parcerisa, 2018).

Moreover, sourcing VSS-compliant cotton helps reduce the supply and potential reputational risks linked with the sector. Indeed, important concerns are associated with cotton cultivation, including its high environmental footprint from hefty levels of water consumption and considerable pesticide use. Its social problems are also noteworthy: poverty among cotton farmers is widespread, and there are worrisome reports of forced labour on some plantations (Voora, V., Larrea, C., and Bermudez, S., 2020c).

Estimates suggest that consumption of products made with VSS-compliant cotton, particularly organic cotton, rose globally by almost 70%, reaching a retail value of \$1.6 billion in 2015. Other voluntary sustainability standards operating in the sector, such as CmiA and BCI, registered significant growth in sales of certified cotton in 2017–2018 (Voora et al., 2020c). In addition, research suggests that demand for organic cotton apparel will outpace supply in the coming years (Parcerisa, 2018; Donaldson, 2017).

Although demand for VSS-compliant cotton is growing, the sector faces major challenges in expanding market uptake. These include the wide use of cheaper fibres, mainly synthetics, by the textile and apparel industries. Another factor is the perception among consumers that conventional cotton-based products are sustainable, regardless of the methods used for growing cotton, relative to other natural fibres such as wool and silk, as well as human-made fibres (Cotton Incorporated, 2019).

In addition, global cotton consumption estimates, which can include VSS-compliant cotton, have been revised downward due to measures taken to mitigate the impacts of COVID-19. These include lockdowns in many countries, retail and clothing stores closures, and supply chain disruptions in Asian countries that produce and process cotton (Maltais, 2020).

There is still plenty of room for greater uptake in VSS-compliant cotton, particularly in emerging economies, where demand for more sustainable goods is forecast to rise among consumers (Voora et al., 2020c). To boost the uptake of VSS-compliant cotton, the sector must deal with price instabilities and market uncertainties, while also providing consumers with more detailed and clearer information about the environmental and social issues concerning the sector. This can be achieved partly through awareness-raising efforts, including education and communication campaigns (Voora et al., 2020c).

Expanding the consumption of more sustainable cotton worldwide, especially in major producing and consuming countries such as China and India, is crucial to providing better environmental and social conditions to the millions of farmers and workers whose livelihoods come from the cotton sector.

Palm oil

Demand for VSS-compliant palm oil continues to grow, especially in Europe and the United States, as well as in some emerging economies. Consumers and governments alike are primarily driven this growth to address the palm oil sector's socio-environmental impacts, particularly land grabbing, deforestation and biodiversity losses. (Voora, V., Larrea, C., and Bermudez, S., 2020b). Many goods and food manufacturers in Europe and the United States are also driving demand for VSS-compliant palm oil by adopting sustainable sourcing and forest conservation commitments and increasing their purchases of VSS-compliant palm oil. These decisions

are largely motivated by lowering reputational risks, remaining compliant with palm oil regulations, lowering potential supply disruptions while promoting transparency along the value chain (Voora et al., 2020b).

Many goods and food manufacturers in Europe and the United States have also contributed to this demand growth, announcing in recent years that they are undertaking sustainable-sourcing and forest conservation commitments. These decisions are largely motivated by the need to address reputational risks with consumers and comply with palm oil policies (i.e. support for producing biofuels from palm oil), along with managing potential supply disruptions and promoting transparency along the value chain (Voora et al., 2020b).

The uptake of VSS-compliant palm oil has increased in recent years, especially in Europe. For example, global sales of palm oil certified by the Roundtable for Sustainable Palm Oil rose 11% in 2016–2018, which amounted to 6.2 million tons (RSPO, 2019). Furthermore, 74% of the palm oil that the European Union food industry imported in 2017 was RSPO-certified (IDH & MVO, 2019).

Many stakeholders in the European palm oil supply chain, along with EU governments themselves, have committed to supporting multiple initiatives aimed at ensuring that all palm oil consumed in Europe comes from sustainable sources by 2020 (IDH & MVO, 2019; EPOA, 2020).

Similar commitments have been made in North America and by emerging economies such as India and China, two of the biggest and fastest-growing consumers of palm oil destined for the food industry (Tullis, 2019; Jadhav, 2019). These countries have committed to raising their VSS-compliant palm oil sourcing to 30% and 10% of their total palm oil consumption, respectively, by the end of 2020. (RSPO, 2018; Chain Reaction Research, 2019; Yeo, 2019). This trend might boost additional VSS-compliant consumption of palm oil in the coming years.

Despite the growing number of sustainable-sourcing commitments and progress among industry actors and governments, current estimates show that demand for VSS-compliant palm oil remains lower than supply. For instance, only half of the RSPO-certified palm oil was reported as having been sold as such in 2018 (RSPO, 2018).

This is largely due to the inherent challenges in expanding sustainable palm oil consumption beyond the traditional consumer markets, especially in Asia. The Asian market is highly fragmented, and palm oil is critical in diets, given that it is the most affordable vegetable oil for use in everyday cooking in the region (Nesadurai, 2013).

These difficulties are especially pronounced in India and China, where consumers are less aware of the environmental impacts associated with palm oil production and may therefore be reluctant to pay a premium for VSS-compliant palm oil (Voora et al., 2020b).

Current market trends and prospects are positive on the uptake of VSS-compliant palm oil. However, there is a pressing need to lower the production costs of VSS-compliant palm oil so they are more closely aligned with preferred consumer prices. It is also vital to increase public awareness on the negative environmental aspects linked to the production of conventional palm oil in major consuming countries, particularly in Asia, where the population is expected to demand more vegetable oil in the coming years.

Of the available vegetable oil options – which include soybean, sunflower and rapeseed oil – palm oil may have the greatest potential to fulfil this expected increase in demand while having the least adverse impacts on the environment. . The growth of the VSS-compliant palm oil market could also help support the execution of economic and social development strategies in producing countries.

However, this will only be the case if this palm oil is produced sustainably, especially given the large volumes that will be required to meet market demand (Voora et al., 2020b).

Soybeans

Evidence suggests that demand for VSS-compliant soybeans is growing primarily in Europe and the United States, driven by consumer preferences to buy more sustainable and healthy goods. In Europe, this consumption trend is largely driven by regulatory frameworks instituted by several countries – such as France, Germany and the Netherlands – to ban the cultivation and import of genetically modified crops including soybeans, and by private sector initiatives towards sourcing soy that is not linked to deforestation and is free of genetically modified organisms.

Demand for certified organic soybeans has climbed in the past decade and is expected to reach an estimated market value of \$635.45 million in 2022 (Voora, V., Larrea, C., and Bermudez, S., 2020e). The Asia-Pacific region leads the consumption of organic-certified soy-based products, accounting for about 61.2% of the

market in 2017. Retail demand for such products is also rising in countries such as the United States, the United Kingdom and Germany.

However, studies reveal that consumption of VSS-compliant soybeans is not growing as fast as supply, and evidence suggests that they are not being sold as such (Voora et al., 2020e). This mismatch between VSS-compliant production and sales limits the current market uptake and could restrict the market growth potential of VSS-compliant soybeans.

The soy market faces specific challenges that cause this lower uptake. More than three-quarters of cultivated soybeans are used as a hidden ingredient in animal-protein products destined for animal feed. As a result, the visibility of soy is minimal, which limits its market update.

The remainder is destined for human consumption, where soybeans are processed and incorporated into various end products. This makes it more difficult to boost consumer demand for VSS-compliant soy than for other consumer-facing commodities, such as coffee, tea and bananas.

Other concerns associated with the potential growth of the soybean market include its ongoing deforestation and the ecosystem conversion of the Amazon tropical rainforest, and the Brazilian biome known as the Cerrado. The reduction of crop yields, caused by high levels of soil erosion due to soybean monoculture practices and the use of machinery, is also an issue in the main producing countries (Voora et al., 2020e).

Manufacturers and processors in the animal feed and food industries must lead the way in boosting demand for more VSS-compliant soy. Some promising signs are coming from the European feed industry, which in 2018 reported an increase in soybeans from different sources including VSS, which amounted to 38% of the total volume.

Yet there is still room for growth. The feed industry share also includes volume sourced from private schemes established by soybean traders such as Cargill, Amaggi and Bunge that differ in coverage and quality.

Growth in demand for VSS-compliant soy must come from food manufacturers in the Asia-Pacific, the top consuming region of soybean-based products. China, which accounted for almost two-thirds of global demand growth in the last decade (Voora et al., 2020e), is expected to continue driving consumption growth.

Concerns about deforestation might also motivate many governments and private sector companies to commit to sourcing VSS-compliant soy as a compliance and reporting mechanism. Ensuring that soy production does not cause deforestation, along with mandatory due diligence requirements in national regulations and trade agreements, could potentially leverage the uptake of VSS-compliant soy as a compliance mechanism.

Sugar

The latest evidence suggests that demand for VSS-compliant sugar is growing moderately, driven by corporate sustainable-sourcing commitments, which are themselves a response to consumer preferences for more sustainably sourced sugar in certain markets. For instance, research indicates that the consumption of organic and Fairtrade sugar is rising in Europe (Voora, V., Bermudez, S., and Larrea, C., 2020a).

The data also show that global demand for organic sugar has risen in recent years and is expected to increase at a compound annual growth rate of 15.55% by 2022. This growth is driven by food manufacturers' preference to use organic sugar to make their chocolate, confectionery and bakery products (Voora et al., 2020a).

Despite the projected rise in demand for VSS-compliant sugar, sales remain currently lower than supply. Demand for sustainably produced sugar is still new and has not been matched by consumer willingness to pay higher prices. Another aspect that limits the consumption uptake is that sugar is an ingredient found in many end products, so few consumers know the origin of the sugar used in these goods.

The lack of traceability through the value chain makes sugar the least 'observed' agricultural product. Furthermore, the negative health perceptions linked to sugar consumption, which discourages companies to market VSS-compliant sugar content in end products. The supply-demand imbalance and its underlying causes can greatly limit the potential growth in the market for VSS-compliant sugarcane (Voora et al., 2020a).

One way to help address this imbalance is by incentivizing greater demand for VSS-compliant sugarcane in the biggest producing countries, namely Brazil, India and China, and promoting the uptake in developing countries, which are the largest and fastest-growing sugar-consuming markets. Increasing demand could be achieved by undertaking educational campaigns, price incentives and targeted procurement programmes by private and public actors.

The sugar sector also faces important challenges that need to be addressed by industry actors to profit from this potential market growth and enable the sustainability of the sector. These challenges include poverty among farmers and the high price volatility of raw sugar, which might prevent sugarcane producers from adopting VSS-compliant practices.

Water depletion due to overconsumption or the overuse of fertilizers and pesticides also affect the long-term environmental performance and sustainability of the sugarcane sector. Efforts within VSS are ongoing to connect their supply chain stakeholders and develop sustainable solutions to the sector's challenges.

For instance, the Bonsucro Connect Platform offers strategic information to its members to improve their competitiveness and sustainability. Efforts are clearly under way to improve the sustainability performance of sugar operations by leveraging VSS and incentivize market uptake via sustainable-sourcing commitments and procurement programmes of value chain actors.

Tea

Demand for VSS-compliant tea is concentrated in Europe and North America, thanks both to commitments by large tea manufacturers to source sustainably grown tea and to consumer interest in buying more healthy and sustainable products. Based on their sustainable-sourcing commitments, some of these manufacturers, such as Unilever and Twinings, are expected to obtain all their tea from sustainable sources by 2020.

TEuropean, North American and Australian markets are forecast to be the main consumers of VSS-compliant tea (Euromonitor International, 2018). Demand in these markets will likely grow as consumers raise awareness about social and environmental issues concerning tea production, and are willing and able to pay a premium for sustainable produced tea (Voora, V., Bermudez, S., and Larrea, C., 2019c).

However, research suggests that demand for VSS-compliant tea is lower than supply, as the main tea-consuming countries, such as China and India, are also the top tea producers. Consumers in these countries tend to prefer conventionally grown options rather than more costly sustainable versions (Voora et al., 2019c). This trend might be shifting amid the growth of the middle class, which has more disposable income and prefers more ethical and premium tea.

In addition, some of the main consuming and producing countries have developed their own sustainability schemes. These include the Trustea standard in India and the Lestari standard in Indonesia, which could further bolster domestic consumption of VSS-compliant tea.

There is also an opportunity to develop demand for sustainably grown tea in fast-growing tea-consuming countries in East Africa, such as Rwanda, Uganda and Kenya. However, VSS-compliant tea must be affordable for local populations as well as cost-effective for tea producers to ensure market uptake.

The tea sector must tackle important challenges to profit fully from this potential demand growth. One of these is ensuring more equitable wealth distribution among value chain actors (as just a few highly integrated multinational companies control the tea value chain) (Voora et al., 2019c). In addition, given reports of increased soil erosion and the high use of agrochemicals to maintain productivity levels, it is critical to build the resilience of tea plantations to the effects of a changing climate.

Efforts to bring together industry stakeholders to address some of these challenges include Tea 2030 – Forum for the Future, the Ethical Tea Partnership and the Intergovernmental Group on Tea supported by the Food and Agriculture Organization of the United Nations (FAO). These ongoing initiatives are working towards strengthening tea operations to meet potential increase of VSS-compliant tea demand (Voora et al., 2019c).

How to encourage consumption of sustainable goods?

The growth in demand for VSS-compliant agricultural commodities in most of the sectors examined in this report is promising. But it also highlights the challenges ahead.

Some markets, such as cocoa, cotton and palm oil, have registered double-digit demand growth. Europe and North America continue to drive demand for more VSS-compliant products, accounting for around 10% of the market share for some commodities (i.e. banana and cocoa).

In some markets, however, there is an oversupply of VSS-compliant goods and sustainably grown production is not sold as such (i.e. coffee, palm oil, soybean, sugar and tea). Going forward, increasing demand for VSS-compliant commodities will require interventions by all value chain stakeholders, as the private sector can drive demand. At the public sector level, governments are well-placed to intervene by enacting policies and programmes to incentivize and boost the consumption of VSS-compliant commodities. Some of the interventions that private and public sector actors can implement include:

Sustainable sourcing commitment objectives and transparency. The buyers of most of the commodities analysed are moving towards establishing and disclosing sustainable sourcing commitments, along with their progress to achieving them. However, the level of disclosure of related information, and the progress achieved, differ for each buyer and in each commodity market.

Corporate buyers have room for more progress and stronger accountability when it comes to sourcing sustainably grown commodities, including those that are VSS-compliant. This can be done through more ambitious sustainable sourcing commitments and greater transparency on their progress towards achieving them. Sustainable sourcing programs need to go beyond end-consumer preferences and business-risk considerations, and set out clear mandates for improving the social and environmental performance of their business operations in the commodity markets where they operate and for which they have a shared responsibility (i.e. price and wages paid to farmer and workers, workers' health and safety conditions, and deforestation).

Education and awareness campaigns. It is vital to raise awareness among end-consumers, supply chain actors and government agencies on the social and environmental issues plaguing these agricultural product sectors and the potential for VSS-compliant products to address them. Conducting these educational efforts is relevant in traditional markets, such as Europe and North America, but is even more crucial in developing and emerging countries that are the largest consumers of some of these commodities (as seen with tea, soybean, palm oil, sugar, and banana). Consumers in these countries tend to be less informed of the sustainability issues concerning these sectors, which means they may be more prone to buying conventionally produced alternatives.

Monetary incentives for sustainable consumption. Another important demand driver is the design and implementation of public initiatives that promote the consumption of more sustainably grown commodities, including those compliant with VSSs. This is especially relevant in developing countries, as consumers in these markets tend to be more price-sensitive and will choose conventional products when faced with more costly, sustainably grown options. Monetary incentives for more sustainable consumption can include raising prices on less sustainable products through taxes and charges, and/or by providing consumers with subsidies and incentives through money grants, donations, or tax reductions. In turn, this can help encourage consumers to choose more sustainably grown commodities (OECD, 2008).

Regulatory frameworks concerning production practices. The design and implementation of regulatory frameworks in producing and consuming countries cannot be overlooked, especially with those regulations that aim at influencing cultivation practices in each commodity market. Important examples of how these regulations can have a positive impact include the push towards deforestation-free soy, deforestation-free palm oil and GM-free cotton. These regulatory frameworks could, in turn, promote the sourcing of VSS-compliant commodities, which can be complementary mechanisms to encourage compliance with these regulations.



CHAPTER 4

MEET THE SUSTAINABILITY STANDARDS

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For more details about the voluntary sustainability standards and interactive infographics, see www.standardsmap.org/trends.



4C

The 4C project (Common Code for the Coffee Community) was initiated in 2003 through an extensive participatory, transparent and balanced consultation with coffee stakeholders worldwide. As of April 2016, the 4C Association evolved into the Global Coffee Platform and handed over the responsibility of operating the 4C certification system to 4C Services.

4C certification aims to gradually raise the social, economic and environmental conditions of coffee production and processing worldwide. To achieve this, the 4C Code of Conduct comprises:

- 12 principles across economic, social and environmental dimensions based on good agricultural and management practices as well as international conventions and recognized guidelines accepted in the coffee sector; and
- 45 criteria, entailing specific checkpoints to be controlled during the audit, in order to verify compliance with the respective criteria.

4C stands for climate-friendly coffee. Under 4C, the carbon footprint from coffee production can be significantly reduced by regarding land-use change, improved agricultural practices, reduced fertilizer application, soil conservation and efficient-energy use. Its certification system aims to promote sustainable coffee production that respects people, nature and the climate.

Through the strict application of the 4C Code of Conduct, including improvement plans for participating farmers, 4C helps protect landscapes with high biodiversity and carbon values, safeguard natural resources and promote working conditions along the supply chain. Therefore, on many levels, the resulting impacts contribute directly and indirectly to achieving the Sustainable Development Goals.

4C also incorporates advanced and innovative tools during the auditing process, including the latest remote sensing technologies and other tools to support risk assessments and verification of compliance based on land-use change criteria.

More than 1.3 million hectares of coffee worldwide received a 4C certificate in 2018, representing 0.03% of global agricultural land and 12.6% of the global coffee area. More than 437,000 producers were 4C certified and produced more than 2.1 million tons of coffee.

Brazil had the largest 4C area (517,221 hectares), followed by Colombia (326,694 hectares), Vietnam (124,346 hectares) and Côte d'Ivoire (96,364 hectares). In 2009–2016, the 4C certified area grew almost fivefold (+380%). However, because of the increase in the number of small producers compared to large producers, it dropped by 27% in 2016–2018.

4C: Key indicators 2018	
Area [hectares]	1,328,504
Share of 4C area of global agricultural land	0.03%
Share of 4C coffee area of global coffee area	12.6%
Production volume [tons]	2,139,989
Certificate holders [no.]	251
Producers [no.]	437,456
Smallholders [no.]	321,014

Source: 4C, 2020.

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BETTER COTTON INITIATIVE

The Better Cotton Initiative – a global non-profit organization that was launched in 2009 – is the largest cotton sustainability programme in the world. The Better Cotton Principles and Criteria, a core component of the Better Cotton Standard System, lays out the global definition of Better Cotton. Adhering to these seven principles enables BCI farmers to produce cotton in a way that is measurably better for people, the environment and farming communities.

The initiative is in its 'mainstreaming phase' and aims to transform cotton production worldwide by developing Better Cotton as a sustainable mainstream agriculture product. By the end of the 2020/21 cotton season, BCI aims to support 5 million farmers globally to improve their livelihoods by adopting sustainable agricultural practices and account for 30% of global cotton production.

The BCI programme focuses on building the capacity of cotton farmers so they become more resilient to unpredictable climate conditions and are able to make a decent living from cotton farming – better for farmers, the environment and the sector's future. To achieve meaningful impact, this means reaching the farmers who need the most support and helping them to access vital training, such as more sustainable water conservation approaches and pest management techniques.

To support the BCI mission, the Better Cotton Growth and Innovation Fund was established in 2016 with IDH—the Sustainable Trade Initiative, BCI Retailer and Brand Members, and other public and private donors. The fund invested significant resources in the 2017/18 cotton season, reaching more than 1 million farmers through Better Cotton projects in China, India, Mozambique, Pakistan, Senegal, Tajikistan and Turkey.

BCI's Assurance Programme, a key component of the Better Cotton Standard System, involves regular farm assessments to ensure that the Better Cotton Principles and Criteria are respected through a series of complementary mechanisms: self-assessments, second-party credibility checks and third-party verification (by independent verifiers) to ensure compliance (Potts et al., 2014).

BCI¹⁷ Farmers grew Better Cotton on more than 4.1 million hectares worldwide in the 2018/19 season, representing 0.09% of the global agricultural area and 12.9% of the global cotton area. Nearly 1.3 million farmers participating in the BCI programme produced 5.2 million tons of Better Cotton lint in the 2018/19 season. Brazil harvested the largest area (1,121,000 hectares), followed by Pakistan (1,072,000 hectares) and India (785,000 hectares). The area where Better Cotton grew increased almost tenfold in 2011–2018 and by 17% in 2017–2018.

BCI: Key indicators 2018/19 season ¹⁸	
Area [hectares]	4,167,000
Share of BCI area of global agricultural land	0.09%
Share of BCI cotton area of global cotton area	12.9%
Production volume [tons] (cotton lint)	5,208,700
Certificate holders [no.]	1,595
Producers [no.]	1,291,498
Smallholders [no.]	1,286,519
Smallholder groups [no.]	1,595

Source: BCI, 2020.

17. Figures reported here do not include BCI-CmiA benchmarked figures, which are reported separately in this report. (For BCI-CmiA benchmarked figures, see BCI's 2019 annual report at <http://stories.bettercotton.com/2019AnnualReport/index.html>).

18. Excludes BCI-CmiA benchmarked figures.

BONSUCRO

Bonsucro is a non-profit organization that sets standards for sustainable production of sugarcane, with a community of more than 280 members, from farms, mills, non-governmental organizations and civil society to traders, retailers and end users.

Its vision is a sugarcane sector with thriving, sustainable producer communities and resilient, assured supply chains. Its mission is to ensure that responsible sugarcane production creates lasting value for the people, communities, businesses, economies and ecosystems in all cane-growing countries.

Bonsucro has certified sugarcane mills since 2011. By 2020, 134 sugar mills were Bonsucro-certified. Products certified by Bonsucro (including sugar, ethanol, molasses and bagasse) are traded physically and via a credit-trading scheme that supports the sustainable production and processing of sugarcane.

The Bonsucro Production Standard and the Chain-of-Custody Standard guide the certification process and underpin efforts to change the sector. In 2018, Bonsucro launched a version of its Production Standard tailored to a smallholder farming context. A revised version of the Chain of Custody Standard was published in 2019, and the Production Standard is being revised and will be launched in 2021.

In addition to its standards, Bonsucro offers its members tools and resources to help with their continuous improvement towards sustainability. Bonsucro also runs impact projects on key issues for its members, such as training on implementing the standard, collaborating with policymakers on sustainability, assisting smallholder farmers and collaborating with finance institutions on how to assess sustainability.

Bonsucro certified 1.3 million hectares in 2018, of which 842,529 hectares were sugarcane. That represents 0.03% of the global agricultural area and 3.2% of the global sugarcane area. In 2018, 128 producers grew more than 80.8 million tons of Bonsucro-certified sugarcane. Brazil had the largest certified sugarcane area (734,810 hectares), followed by the Dominican Republic (30,497 hectares) and Colombia (23,494 hectares). Bonsucro's total certified area increased by 79.7% in 2011–2018 and by 10.2% in 2017–2018.

Bonsucro: Key indicators 2018	
Area [hectares]	1,279,251
Share of Bonsucro area of global agricultural land	0.03%
Share of Bonsucro sugarcane area of global sugarcane area	3.2%
Production volume sugarcane [tons]	80,811,575
Certificate holders sugarcane [no.]	128
Producers sugarcane [no.]	128

Source: Bonsucro, 2020.

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COTTON MADE IN AFRICA

Founded in 2005, Cotton made in Africa is an initiative of the Aid by Trade Foundation that aims to assist African cotton farmers in helping themselves through trade (CmiA, 2019). It works with cotton farmers in nine countries, and specifically with smallholder farmers, who cultivate rain-fed, handpicked cotton in accordance with the CmiA standard criteria, which are regularly verified for compliance (Cotton made in Africa, 2018).

In 2017, about 40% of all African cotton was grown in accordance with the CmiA standard. More than 1 million smallholder cotton farmers are part of the initiative (CmiA, 2017). Demand for CmiA cotton by international retailers and brands led to the fabrication of some 90 million CmiA-labelled textiles representing more than €2 million (\$2.2 million) in license revenues – an increase of about 49% compared to 2016 (Cotton made in Africa, 2017).

Income from licensing fees is reinvested to benefit farmers and nature protection. The Aid by Trade Foundation directly invested €1.7 million (\$1.9 million) in e.g. training measures for the smallholders and accompanying cooperation projects as part of the project implementation (Cotton made in Africa, 2017).

Almost 1.8 million hectares were CmiA-certified in 2018, representing 0.04% of the global agricultural area and 0.8% of the African agricultural area. Looking solely at the cotton area, the shares are considerably higher: the CmiA area represents 5.5% of the global cotton area and 46.1% of the African cotton area.

In 2018, Burkina Faso had the largest area (879,097 hectares), followed by Zambia (267,869 hectares) and Côte d'Ivoire (257,556 hectares). In 2009–2018, the CmiA-certified area grew by a factor of 15. In 2017–2018, growth of 9.9% was reported.

CmiA: Key indicators 2018	
Area [hectares]	1,779,584
Share of CmiA area of global agricultural land	0.04%
Share of CmiA cotton of global cotton area	5.5%
Production volume cotton lint [tons]	578,562
Export [tons]	121,885
Certificate holders [no.]	20
Smallholders [no.]	999,425

Source: CmiA, 2020.

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FAIRTRADE INTERNATIONAL

Fairtrade International is a global network working to share the benefits of trade more equally – through standards and certification, producer support, focused programmes, advocacy and awareness-raising.

Three Fairtrade producer networks co-own the international Fairtrade system, representing more than 1.7 million farmers and workers in 75 countries in Latin America and the Caribbean, Africa and the Middle East, and Asia and the Pacific. More than 25 organizations promote Fairtrade on a national level, supporting and challenging businesses and governments to increase commitments to sustainable production and consumption, as well as connecting farmers and workers with the people who buy their products.

The first Fairtrade label was launched in 1988 in the Netherlands, called Max Havelaar after a fictional Dutch character who opposed the exploitation of coffee pickers in Dutch colonies. Following the growth of additional Fairtrade initiatives in other countries, Fairtrade International was founded in 1997 to unite the national organizations under one umbrella and harmonize worldwide standards and certification.

Fairtrade International sets standards for smallholder farmers, for plantations that use hired labour and for traders, setting out social, economic and environmental requirements. All entities along the supply chain must be certified for the end product to carry the Fairtrade label.

The standards require buyers to pay a set Fairtrade minimum price to producers for most goods. That price is based on the average cost of sustainable production and acts as a safety net when market prices fall.

Producers also receive a Fairtrade premium, a required additional amount on top of the selling price, which farmers and workers decide how to invest in their businesses and communities. Fairtrade partners with other stakeholders are working to resolve issues that affect producers, including climate change, human rights such as tackling child and forced labour, and enabling farmers and workers to earn a decent living (Fairtrade, 2019).

Related to COVID-19 in 2020, Fairtrade contributed more than €3 million (\$3.6 million) and is raising additional donations to two funds that provide financial support to producer organizations to respond to immediate community needs, as well as invest in business resilience and longer-term recovery.

More than 2.6 million hectares were Fairtrade-certified in 2018, representing 0.05% of the global agricultural area. Fairtrade International certifies a wide range of commodities, from tropical fruit and cereals to gold and textiles.

Cocoa accounted for almost half of the total Fairtrade International area, with nearly 1.2 million hectares, or 10% of the global cocoa area. Coffee was the second most important product, with more than 961,000 hectares, representing 9.1% of the global coffee area. Fairtrade International certified more than 1.6 million farmers and over 178,000 agricultural workers in 2018, mainly in Africa (65%), followed by Latin America (19%) and Asia (11%). The Fairtrade-certified area expanded 93% in 2011–2018 and remained stable (+0.7%) in 2017–2018.

Fairtrade: Key indicators 2018	
Area [hectares]	2,654,330
Share of Fairtrade area of global agricultural land	0.05%
Share of Fairtrade cocoa area of global cocoa area	10.0%
Share of Fairtrade coffee area of global coffee area	9.1%
Production [tons] ¹⁹	3,833,964
Producers [no.]	1,605,010
Employees/workers, full and part time [no.]	178,051

Source: Fairtrade International, 2020.

19. This excludes gold, flowers and sport balls.



FOREST STEWARDSHIP COUNCIL

Founded in 1993, the Forest Stewardship Council is a member-based initiative with certificates operating in 122 countries. The core FSC standard for forest management – the FSC Principles and Criteria – articulates the requirements for forest management certification. To ensure that the global principles and criteria are well suited for national and regional contexts, standard development groups are formed to establish national and regional standards.

Based on annual field and office audits, independent, accredited certification bodies issue forest management and chain-of-custody certificates, which correspond to the different origins and stages of production of forestry goods through the value chain. Forest management certification aims to protect the environmental and social values of managed forests including, but not limited to, protection of areas of high conservation value and the rights of indigenous peoples.

FSC chain-of-custody certification ensures that FSC-certified wood can be traced through certified supply chains. Products must be made up of at least 70% FSC-certified material to display the FSC Mix label (the initiative's most common label). The remainder can be FSC Controlled Wood or recycled material.

The controlled wood standard aims to avoid unacceptable material in the FSC supply chain. FSC Controlled Wood status ensures that wood is harvested legally in accordance with traditional and human rights and is not sourced from areas where forest management activities threaten high conservation values, from forests with genetically modified trees or from areas being converted to give way to plantations or other non-forest uses.

More than 197 million hectares of forest were FSC-certified in 2018 (data per January 2019), representing 4.9% of the global forest area. Canada had the largest area, with almost 52 million hectares, followed by the Russian Federation (more than 45 million hectares) and the United States (more than 14 million hectares). Together, these three countries represented 56% of the global FSC-certified area. There were 1,584 forest-management certificate holders and 37,607 chain-of-custody certificate holders in 2018.

Forest Stewardship Council: Key indicators 2018	
Area [hectares]	197,141,010
Share of FSC area of global forestry area	4.9%
Forest-management certificate holders	1,584
Chain-of-custody certificate holders [No.]	37,607

Source: FSC, 2020.

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GLOBAL G.A.P.

Founded in 1997, the Global Partnership for Good Agricultural Practices is a private initiative operating in the food and agriculture sector across 136 countries including the Integrated Farm Assurance Standard and its scopes aquaculture, livestock and crops.²⁰

GLOBALG.A.P. started as an initiative by the Euro-Retailer Produce Working Group²¹ and has since become an international standard that is based on an equal partnership among producers of raw agricultural food products and their buyers, such as retailers and foodservice organizations. GLOBALG.A.P. standards are tools for the entire agri-food sector that cover food safety and environmental aspects as well as worker health and safety. GLOBALG.A.P. has more than 500 members worldwide, and a farmer currently chairs its board.

GLOBALG.A.P. runs 40 standards for crops, livestock and aquaculture production. It also implements a chain-of-custody standard to ensure product segregation and traceability of the certified products. The 'localg.a.p.' programme provides buyers with a step-by-step approach to accessing local markets, which allows them to grow a supplier base that will eventually achieve certification against a GLOBALG.A.P. standard (GLOBALG.A.P., 2018a).

This approach enables growers engaging with the localg.a.p. programme to meet the minimum requirements for food safety and hygiene at its 'foundation' level before advancing to the full food safety and sustainability criteria that are included in the standards. For retailers and foodservice organizations looking to go beyond GLOBALG.A.P. certification, the standard modular approach offers add-ons that are tailor-made to address any particular needs. Examples are the GLOBALG.A.P. Risk Assessment on Social Practice, the Sustainable Program for Irrigation and Groundwater Use and the Tesco Nurture Program associated with a limited list of plant protection products (GLOBALG.A.P., 2018b).

In 2018, more than 3.8 million hectares were certified against the GLOBALG.A.P. standard,²² managed by almost 200,000 horticultural producers.²³ Potatoes had the largest non-covered area, followed by bananas and apples. Most GLOBALG.A.P.-certified area is in Europe (43%), followed by Latin America (24%), Africa (12%) and North America (12%).

The United States had the largest certified area (more than 456,000 hectares), followed by Spain (more than 446,000 hectares) and South Africa (over 234,000 hectares). The area certified by GLOBALG.A.P. increased by 44% in 2011–2018 and 8% in 2017–2018. Today, 347 different fruit and vegetable products are certified with the Integrated Farm Assurance standard worldwide.

GLOBALG.A.P.: Key indicators 2018	
Area [hectares]	3,853,612
Share of global agricultural land	0.08%
Certificate holders [no.]	50,334
Producers [no.]	199,045

Source: GLOBALG.A.P., 2020.

20. The GLOBALG.A.P. Certificate, also known as the Integrated Farm Assurance Standard, covers Good Agricultural Practices for agriculture, aquaculture, livestock and horticulture production. It also covers other aspects of the food production and supply chain, such as chain of custody and compound feed manufacturing. More information is available at https://www.globalgap.org/uk_en/for-producers/globalg.a.p./integrated-farm-assurance-ifa/.

21. For more information about the history of GLOBALG.A.P., see https://www.globalgap.org/uk_en/who-we-are/about-us/history.

22. This includes more than 137,000 hectares covered by greenhouses and plastic tunnels for intensive production.

23. The number of producers includes crop producers only, and excludes livestock and aquaculture operators.



www.ifoam.bio/



IFOAM – ORGANICS INTERNATIONAL

Founded in 1972, IFOAM – Organics International is a membership-based umbrella organization representing the organic movement across the entire food system, with 779 affiliates from 110 countries (Willer et al. 2020). It facilitates development towards truly sustainable agriculture systems based on the principles of organic agriculture. One of its tasks is setting reference standards and establishing quality assurance systems.

Standards set at the national or regional level typically determine organic certification. Many different organic standards may operate within a single country, and they may not follow the IFOAM standard or comply with those included in the IFOAM Family of Standards. In total, 103 countries have an organic regulation or are in the process of drafting one (Busaca et al., 2020).

IFOAM – Organics International focuses on three strategic areas that target the main drivers of the adoption of organic agriculture principles in a complementary and synergistic way: Enhancing know-how to increase supply, raising awareness to enhance demand and contributing to an environment that is truly conducive to sustainable production and consumption by supporting national and international policy development.

Unlike most other standard-setting organizations, IFOAM – Organics International is not involved in the certification and control process; all its efforts focus on the development of the organic sector.

In 2018, 71.5 million hectares were certified organic worldwide, representing 1.5% of all agricultural land. Almost 2.8 million producers in 181 countries were practising organic farming; most of them were certified through group certification. Australia had the largest organic area, with 35.7 million hectares, followed by Argentina (3.6 million hectares) and China (3.1 million hectares).

Almost all agricultural goods can be certified according to organic standards and regulations. Indeed, organic has the widest range of commodities of all the standards presented in this report. Apart from agricultural commodities, wild collection, aquaculture and forestry products are certified. These areas covered more than 69.2 million hectares in 2018.

The organic market was worth more than \$114 billion in 2018, and the leading countries were the United States (42% of the global organic market), Germany (11%) and France (9%). FiBL collects data on organic agriculture every year, and these data are published in the joint FiBL-IFOAM – Organics International publication *The World of Organic Agriculture* (Willer et al. 2020). Textile Exchange provided the data on organic cotton presented in this report (Textile Exchange, 2020).

Production volume data are not available for most countries. For these countries, FiBL has estimated the area harvested and the production volume for the commodities covered in this report: bananas, cocoa, coffee, cotton, oil palm, soybeans, sugarcane and tea. If available, the fully converted area or 90% of the certified area was taken as area harvested. FiBL calculated the production volume by using estimated yields based on country yields provided by the FAO statistical database (FAOSTAT), assuming that organic has a lower yield in most cases.

IFOAM: Key indicators 2018	
Area [hectares]	71,499,151
Share of organic of global agricultural land	1.5%
Producers [no.]	2,796,916
Retail sales [\$ millions]	114,182

Source: FiBL, 2020.

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PROGRAMME FOR THE ENDORSEMENT OF FOREST CERTIFICATION

Founded in 1999, the Programme for the Endorsement of Forest Certification is a leading global alliance of national forest certification systems. As an international non-profit, non-governmental organization, PEFC promotes sustainable forest management through independent third-party certification.

Geneva, Switzerland-based PEFC has more than 80 members around the world. These include 53 national members: independent, national organizations that develop and implement the PEFC system in their country. Through its endorsement process, PEFC ensures these national systems meet its exacting international benchmark standards.

PEFC provides large and small forest owners with a tool to demonstrate their responsible practices, while empowering companies to buy sustainably. Through its group certification mechanisms, PEFC further ensures that certification is accessible to small and family forest owners around the world. The PEFC label enables consumers to recognize products originating from a PEFC-certified forest – a forest managed in line with the strictest environmental, social and economic requirements.

PEFC continues to push the boundaries of forest certification. In 2018, with the publication of the latest PEFC Sustainable Forest Management benchmark standard, PEFC extended the impact of its certification beyond forests and enhanced its contribution to the Sustainable Development Goals.

As previously mentioned, more than 309 million hectares of forest worldwide were PEFC-certified in 2018 – that is 7.7% of the global forest area. Canada had the largest PEFC-certified forest area, with more than 132 million hectares, followed by the United States and Russia. There were 11,466 chain-of-custody certificate holders.

PEFC: Key indicators 2018	
Forest area [hectares]	309,473,277
Share of global forest area	7.7%
Chain-of-custody certificate holders [no.]	11,466

Source: PEFC, 2020.

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PROTERRA FOUNDATION

The ProTerra Foundation, a not-for-profit organization that was created in 2006 and became an independent foundation in 2012, is registered in the Netherlands and operates in 39 countries (ProTerra Foundation, 2018).

The ProTerra standard is based on the Basel Criteria for Sustainable Soy Production, but was designed to apply to all agricultural products (ProForest, 2004). The ProTerra standard has been applied primarily to the sustainable production of soy and soy-derived consumer products. However, it is also used in the sugarcane, tapioca and tree nut sectors, and may be applied to the production of any crop. All certified products arrive in the market as 'identity-preserved', meaning there is full traceability and the raw material comes from certified production.

The ProTerra Foundation standard version 4.0 was last revised in 2018 and was fully deployed as of 1 January 2020. Its key components centre around the protection of the Amazon, Cerrado and Chaco biomes, and other high conservation value areas; the protection of the rights of communities, indigenous people and smallholders; the promotion of good labour practices such as workplace safety, equal opportunities and particular attention to preventing child and forced labour; the promotion of good agricultural practices, especially regarding soil fertility, water management and continuous efforts to reduce the use of fertilizers and pesticides; and the protection of biodiversity, particularly through rigorous requirements against genetically modified organisms (ProTerra Foundation, 2020).

In 2018, more than 2.2 million hectares were ProTerra-certified or GAP-audited.²⁴ The ProTerra standard applied mainly in soybean and sugarcane production (ProTerra reported sugarcane data for the first time in 2017).

Almost 1.1 million hectares of soybeans, representing nearly 1% of the global soybean area, and more than 1.1 million hectares of sugarcane, or 4.3% of the global sugarcane area, were reported in 2018. ProTerra-certified producers were active in 21 countries.

The largest certified area was in Brazil, representing almost half of the global ProTerra Foundation area (nearly 980,000 hectares), followed by Thailand (almost 500,000 hectares) and Malawi (more than 313,000 hectares). The soybean area almost halved in 2016–2018, with drops of 36% in 2016–2017 and 12% in 2017–2018. The sugarcane area increased slightly (1%) in 2017–2018.

ProTerra: Key indicators 2018	
Area [hectares], total	2,202,076
■ Soybeans	1,072,390
■ Sugarcane	1,129,686
Share of ProTerra area of global agricultural land	0.05%
Share of ProTerra soybean area of global soybean area	0.86%
Share of ProTerra sugarcane area of global sugarcane area	4.30%
Production volume [tons]	96,161,141
Certificate holders [no.]	38
Producers [no.]	837

Source: ProTerra Foundation, 2020.

24. The certified areas of Costa Rica, Malawi, Nicaragua, Paraguay, Philippines, Thailand and Zambia have been estimated based on data from previous years. Of the total area certified, a share of 46% was gap-audited.



www.rainforest-alliance.org/

RAINFOREST ALLIANCE

Rainforest Alliance and UTZ merged in 2018, forming a new organization that carries forward the Rainforest Alliance name (Rainforest Alliance, 2019). The Rainforest Alliance is an international non-profit organization working to create a better future for people and nature. Both sustainability standards work in similar agricultural commodity sectors, which primarily include coffee, tea and cocoa. Rainforest Alliance also certifies bananas and other fruit and juices, palm oil, coconut oil and cut flowers, while UTZ certifies hazelnuts.

When the Rainforest Alliance seal appears on agricultural products, it means the item or an ingredient specified on the packaging was grown on farms certified to either the Rainforest Alliance Sustainable Agriculture Standard or the UTZ Code of Conduct.

Both standards encompass all three pillars of sustainability – social, economic and environmental – and have credible systems in place to verify that their requirements are followed. They help to address four main areas of sustainability:

- Conserve forests;
- Advance the human rights of rural people;
- Improve the livelihoods of farmers and forest communities;
- Build climate resilience.

In 2020, the Rainforest Alliance published the new, single 2020 Certification Program and started the transition from the previous Rainforest Alliance and UTZ programmes. The 2020 Sustainable Agriculture Standard, along with its assurance and technology systems, are designed to deliver more value to the two million farmers and thousands of businesses that use Rainforest Alliance and UTZ standards to drive more sustainable agricultural production and responsible supply chains.

Data were still reported separately for Rainforest Alliance and UTZ in 2018.

In 2018, Rainforest Alliance certified almost 4.5 million hectares of a wide variety of commodities, managed by more than 1.3 million producers. Cocoa had the largest area (more than 723,000 hectares), followed by tea (more than 593,000 hectares) and coffee (almost 471,000 hectares).

Most Rainforest Alliance-certified area was in Africa (46%), followed by Latin America (32%) and Asia (17%). Côte d'Ivoire had the largest area (almost 521,000 hectares), followed by Brazil (more than 491,000 hectares) and Kenya (almost 489,000 hectares). The Rainforest-certified area grew by 29.5% in 2017–2018.

Rainforest Alliance: Key indicators 2018	
Area [hectares]	4,478,091
Share of Rainforest Alliance area of global agricultural land	0.09%
Share of Rainforest Alliance cocoa area of global cocoa area	6.1%
Share of Rainforest Alliance tea area of global tea area	14.2%
Share of Rainforest Alliance coffee area of global coffee area	4.5%
Production volume ²⁵ [tons]	18,837,523
Certificate holders ²⁶ [no.]	2,234
Producers [no.]	1,339,146

Source: Rainforest Alliance, 2020.

25. Excluding flowers and foliage.

26. Corrected for multiple certification.



UTZ

The UTZ programme certified almost 3.9 million hectares worldwide in 2018, representing 0.08% of the global agricultural area. Cocoa was the most important UTZ-certified product, with more than 3 million hectares, representing 25.4% of the global cocoa area and nearly 80% of the total UTZ-certified area. UTZ coffee was grown on more than 770,000 hectares, or 7.3% of the global coffee area (20% of UTZ's certified area). UTZ tea was grown on more than 74,000 hectares, or 1.8% of the global tea area.

More than 1.1 million producers operated under UTZ standards in 2018. Côte d'Ivoire had the largest UTZ area (more than 1.7 million hectares), followed by Ghana (619,826 hectares) and Nigeria (264,516 hectares). The UTZ-certified area grew almost fivefold in 2011–2018 and 14.5% in 2017–2018.

UTZ: Key indicators 2018	
Area [hectares]	3,867,688
Share of UTZ area of global agricultural land	0.08%
Share of UTZ cocoa area of global cocoa area	25.4%
Share of UTZ coffee area of global coffee area	7.3%
Share of UTZ tea area of global tea area	1.8%
Production volume [tons]	2,852,334
Production volume sold [tons]	1,503,001
Certificate holders [no.]	1,742
Producers [no.]	1,115,361

Source: Rainforest Alliance, 2020.

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ROUNDTABLE ON SUSTAINABLE PALM OIL

Founded in 2004, the Roundtable on Sustainable Palm Oil is a member-based initiative operating in the palm oil sector across 89 countries, with 16 countries producing RSPO-certified oil palm (RSPO, 2017a). The initiative aims to achieve mainstream market uptake of palm oil production and processing.

Accredited certification bodies certify palm oil producers by verifying the production process in keeping with the RSPO principles and criteria. Certification can be withdrawn at any time in case of infringement of the rules and standards. Elements of the RSPO certification scheme include the standard itself, accreditation and the process requirements. RSPO principles and criteria are developed and revised every five years (RSPO, 2018).

RSPO continues to expand and work towards capturing more market share. In December 2017, it announced the formation of the North American Sustainable Palm Oil Network, which aims to mainstream sustainable palm oil in North America (RSPO, 2017b). It is expanding steadily in South America and specifically in Colombia and Brazil. By establishing the RSPO smallholder task force and fund, it hopes to make its certification programme accessible to palm oil producers (Andrade, 2016; RSPO, 2018; Voora, 2014).

More than 3.7 million hectares were RSPO-certified in 2018. Of these, more than 2.8 million hectares were used to produce oil palm, representing 0.08% of the global agricultural land and 14.8% of the global oil palm area, respectively. The largest areas were in Indonesia (almost 1.9 million hectares), Malaysia (nearly 1.2 million hectares) and Papua New Guinea (184,313 hectares). Asia had the largest RSPO-certified area (83%), followed by Latin America (8%), Oceania (5%) and Africa (4%). The RSPO-certified oil palm area grew 18.4% in 2014–2018. An increase of 13.3% was reported in 2017–2018.

RSPO: Key indicators 2018	
Area [hectares]	3,740,611
Share of RSPO area of global agricultural land	0.08%
Share of RSPO oil palm area of global oil palm area	14.8%
Production volume oil palm ²⁷ [tons]	59,709,428
Production volume palm oil [tons]	13,474,502
Production volume palm kernels [tons]	3,061,071
Production volume sold palm oil [tons]	6,255,840
Production volume sold palm kernels [tons]	2,182,315
Certificate holders ²⁸ [no.]	362
Producers ²⁹ [no.]	113,248

Source: RSPO, 2020.

27. Refers to the fresh fruit bunches of the oil palm.

28. Refers to the number of certified palm oil mills.

29. Refers to the number of scheme and independent smallholders.

Explore the latest trends at www.standardsmap.org/trends



ROUNDTABLE ON RESPONSIBLE SOY ASSOCIATION

Founded in 2006 in Zürich, Switzerland, the Roundtable on Responsible Soy Association is a global multi-stakeholder, non-profit organization. RTRS promotes the growth of production, trade and use of responsible soy through cooperation with those in, and related to, the soy value chain, from production to consumption, in an open multi-stakeholder dialogue including producers, suppliers, manufacturers, retailers, financial institutions, civil society organizations and other relevant actors.

Responsible soy is economically viable, socially beneficial and environmentally appropriate.

RTRS also sets the standards for responsible soy and chain of custody. The RTRS Standard for Responsible Soy Production scheme ensures that RTRS soy not only meets the highest environmental criteria (including a guarantee of third party-verified zero deforestation and zero conversion) but also a wide-reaching set of social and labour requirements. It is based on five principles: legal compliance and good business practices; responsible labour conditions; responsible community relations; environmental responsibility and good agricultural practices.

Since joining the UN Global Compact in 2014, and in accordance with and based on the above statements and all related actions and initiatives carried out by the association, RTRS has been committed to its sustainability initiatives and its 10 principles grouped in four areas: human rights, labour practices, environment and corruption. The strategy of the UN Global Compact is to drive business awareness and action in support of achieving the Sustainable Development Goals by 2030. The RTRS Standard for Responsible Soy Production contributes to many of the Global Goals, as several certification criteria and indicators are in line with the associated targets

The Aquaculture Stewardship Council requires its feed manufacturers to source strictly RTRS-certified soy (Confino, 2014; RTRS, 2017).

RTRS offers a generic set of principles and criteria explicitly designed to apply to genetically modified, conventional and organic production systems. Version 3.0 of the RTRS Soy Production Standard, which was approved in 2016, includes zero-deforestation provisions for all-natural conservation areas. In 2017, RTRS made two important changes to the standard by including a requirement to phase out paraquat by 2021 and updating the biofuel-specific module (RTRS EU-RED) to align it with European Commission requirements (RTRS, 2017).

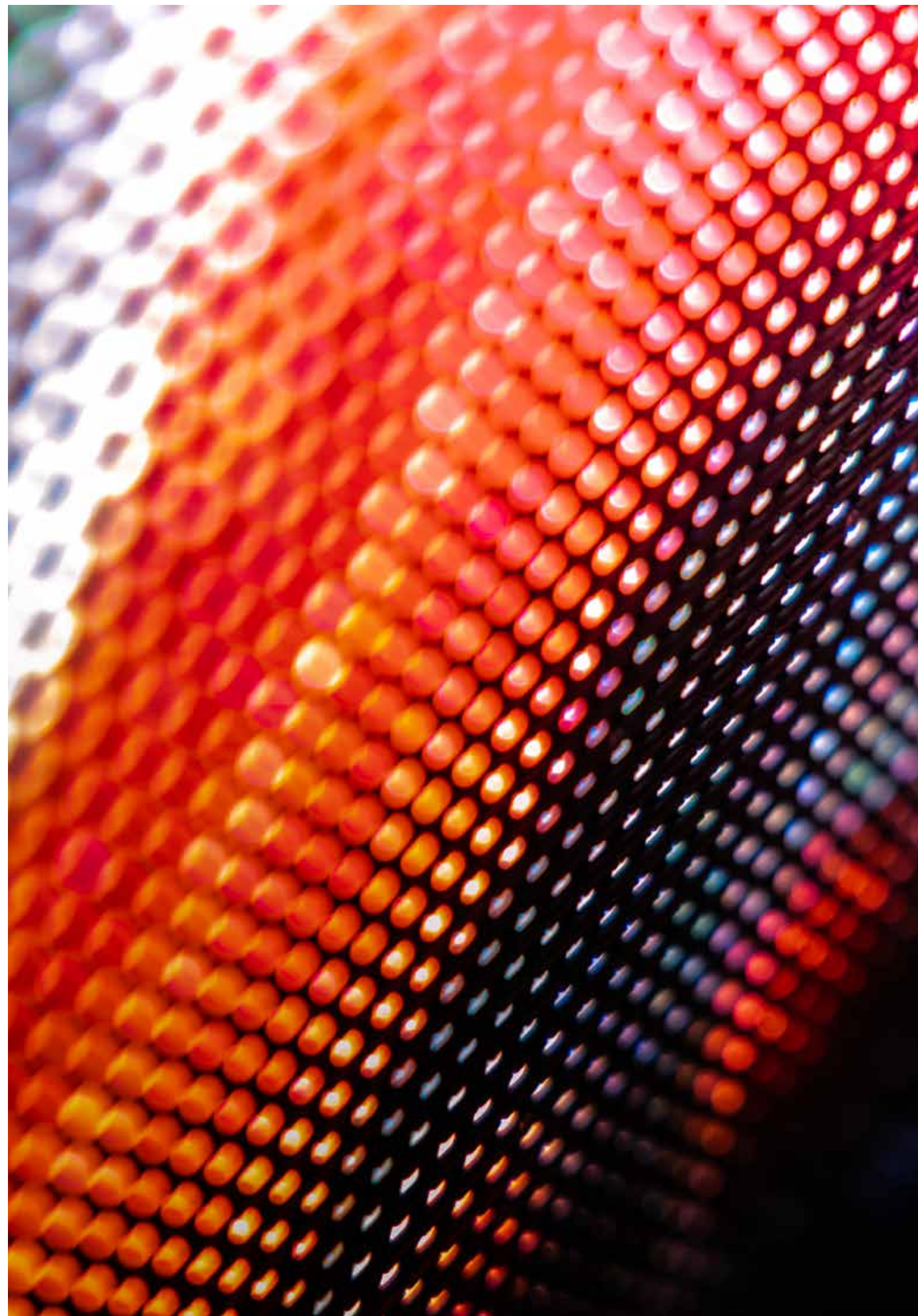
In 2018, RTRS certified nearly 1.3 million hectares, representing 0.03% of the global agricultural area and 1% of the global soybean area. A total of 7,099 producers harvested almost 4.5 million tons of soybeans worldwide. Brazil had the largest RTRS area (1,040,807 hectares), followed by Argentina (142,071 hectares). The RTRS-certified area increased almost ninefold in 2011–2018 and remained constant in 2017–2018 (+0.3%).

RTRS: Key indicators 2018	
Area [hectares]	1,263,254
Share of RTRS area of global agricultural land	0.03%
Share of RTRS soybean area of global soybean area	1.0%
Production volume [tons]	4,466,182
Production volume sold [tons]	2,802,722
Certificate holders [no.]	64
Producers [no.]	7,099

Source: RTRS, 2020.

Methodology

Explore the latest trends at www.standardmap.org/trends



CHAPTER 5

METHODOLOGY

Research Institute of Organic Agriculture
(Helga Willer, Claudia Meier and Bernhard Schlatter)
IFOAM – Organics International (Julia Lernout)

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METHODOLOGY

The data presented in this report were obtained either directly from the standard-setting organizations or indirectly from published annual reports and other literature. For organic agriculture, data were gathered from private-sector organizations, governments and certification bodies as part of the annual FiBL survey on organic agriculture worldwide (Willer et al., 2020). The data collection process, voluntary sustainability standards, indicators and commodities covered, as well as the quality checks carried out, are described below.

FiBL sent a standardized questionnaire to the sustainability standard organizations in early 2020. All of them returned data, but not consistently across all the indicators requested and not on all commodities.

Focus on eight products and forestry

The focus was on the same crops as those presented in previous editions of *The State of Sustainable Markets* (Lernoud et al., 2015, 2017, 2018; Willer et al., 2019): bananas, cocoa, coffee, cotton, oil palm, soy, sugarcane and tea, as well as forestry. The sustainability standards were also asked to provide data on other crops they covered and on the total certified area.

Sustainability standards

The following standards were analysed:³⁰

- 4C (previously 4C Association)
- Better Cotton Initiative (BCI)
- Bonsucro
- Cotton made in Africa (CmiA)
- Fairtrade International
- Forest Stewardship Council (FSC)
- GLOBALG.A.P.
- IFOAM – Organics International³¹
- Programme for the Endorsement of Forest Certification (PEFC)
- ProTerra Foundation
- Rainforest Alliance
- Roundtable on Sustainable Palm Oil (RSPO)
- Roundtable on Responsible Soy (RTRS)
- UTZ

30. For more information about the standards, see the ITC Standards Map: www.sustainabilitymap.org.

31. Not all production considered organic actually complies with IFOAM norms. IFOAM – Organic International is nevertheless the leading global reference for defining organic standards. Market data on organic production and trade include all recognized organic production, regardless of whether the production complies with IFOAM criteria per se.

List of indicators

The sustainability standards that were surveyed for this report were asked to provide data on the following indicators:

Indicator	Definition	Unit of measure
Area		
Area	Area certified (fully converted plus under conversion)	Hectares
Area cultivated	Area that was cultivated	Hectares
Harvested area	Area actually harvested	Hectares
Production		
Production value	Value of production volume that is VSS-compliant, even if not sold as compliant at the first point of sale	\$ million
Production volume	Production volume that is VSS-compliant, even if not sold as compliant at the first point of sale	Tons
Production volume sold under a VSS label	Volume of VSS-compliant product that is sold as compliant at the first point of sale (e.g. from cooperative to trader)	Tons
Operators		
Certificate holder	Total number of current valid certificates and those in process	No.
Producer	Production unit operated under a single management for the purpose of producing agricultural products (including processing, packaging and initial labelling of own crop and livestock products on the farm).	No.

This publication focuses on the indicators for which all sustainability standards provided data: area, area harvested, production volume and producers/operators.

Quality checks

The following quality checks were used to validate the data received from the standards:

- Area and production data were compared with the data from the previous year as provided by the sustainability standards themselves in previous surveys (Lernoud et al., 2015, 2017, 2018, 2019) or as available in the IISD database (data as published by Potts et al., 2014).
- Area and production data were compared with the total area and production as provided by FAO (FAOSTAT, 2020) and, for cotton, by the International Cotton Advisory Committee (International Cotton Advisory Committee, 2019).
- Yields provided by FAO were compared with the yields calculated on the basis of the area and production data provided by the sustainability standards.

Pivot tables were used to analyse the data, which enabled the identification of data anomalies. The standards were asked to explain suspicious data, which resulted either in plausible explanations or in data revisions.

For most countries and territories, the Standard Country and Area Classifications as defined by the United Nations Statistics Division were applied. Where the designation 'country' appears in this report, it covers countries or areas. To calculate the share of the total certified area and commodity area, per country and worldwide, total country and world data were taken from the FAOSTAT database (FAOSTAT, 2020).³²

32. FAOSTAT, Data Archives, the FAO Homepage, FAO, Rome, at faostat3.fao.org/download/E/*E.

Data year

Data collected and reported as crop year spanning two consecutive years were relabelled as, and attributed to, the latter of the two years. For instance, data reported in 2017/2018 were labelled as 2018 in the report to ensure consistency in data handling. This assumption was necessary to allow comparisons across the standards, as there are inconsistencies in how they report their data.

Multiple certification skews calculations

Reporting a global total of certain commodities remains difficult. This is because many producers are certified by more than one sustainability standard, and there are not enough reliable data on the share of multiple certification. Considering this, FiBL, IISD and ITC decided that the best approach was to provide a range that encompassed the minimum and the maximum amounts possible, along with the average of the two at the country level.

To calculate the maximum, the total area and production volume of all standards in the country were aggregated. For the minimum, the sustainability standard with the largest area or most production volume in the country was used as the reference. An average of the maximum and minimum was then calculated. These figures must be treated with caution, however, as they are estimates that indicate a trend.

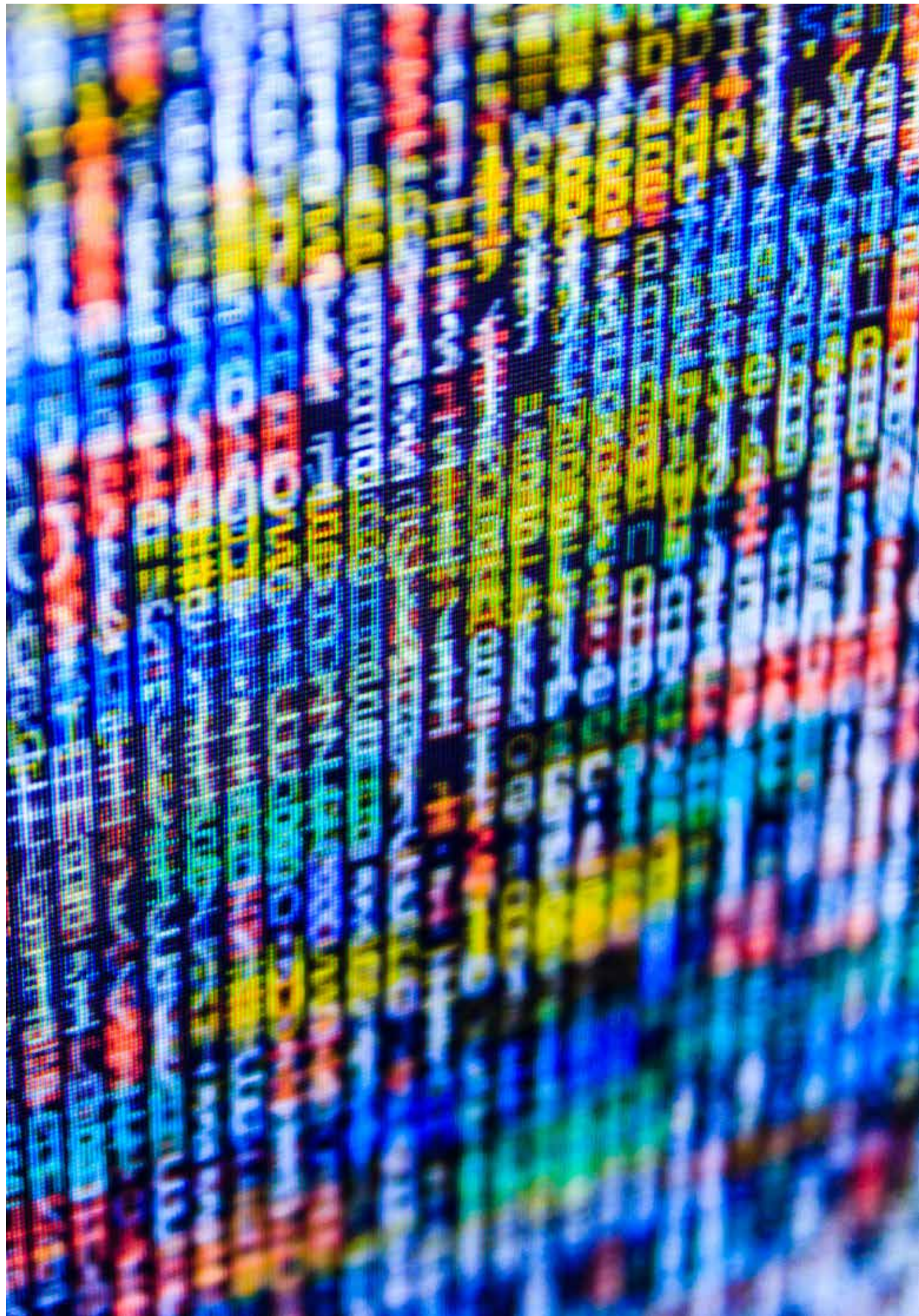
The survey asked for the extent of multiple certification by country and for the standard in question. Only two standards provided data on multiple certification, which made it impossible to calculate the actual share of multiple certification.

FiBL, IISD and ITC agreed to implement the method explained above to be able to report a development trend for each of the selected commodities. Nevertheless, the three organizations remain committed to providing more accurate global figures in subsequent publications as data on multiple certification become available. FiBL and ISEAL Alliance are working to improve the availability of data on multiple certification from ISEAL members.

Data publication and revisions

Data going back to 2008 have been stored in the ITC Trade for Sustainable Development database and are available in the 'Trends' module of the Sustainability Map portal, www.sustainabilitymap.org/trends. Data revisions and corrections will be communicated at <http://www.vss.fibl.org/de/vss-report/data-revisions.html>.





CHAPTER 6

INTERACTIVE ONLINE GRAPHICS

International Trade Centre
(Gregory Sampson)

ACCESSING THE STATE OF SUSTAINABLE MARKETS 2020 DASHBOARD	50
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STRUCTURE OF THE STATE OF SUSTAINABLE MARKETS 2020 DASHBOARD	52

INTERACTIVE ONLINE GRAPHICS

Graphics previously available as part of *The State of Sustainable Markets* report are now available on the ITC Standards Map at www.standardsmap.org/trends.

Digitalizing visual data provides numerous advantages, including:

- A wider dissemination and reach of the data included in the report.
- Facilitated access to specific information.
- Additional use of the information, as this year's report integrates not only a 'commodity' and 'standard' dimension, but it is possible to explore data by 'country'. While the report has previously provided information for only the top 10 countries, it is now possible to review information across country, standard and product.
- Easier continuous data update to ensure data integrity after the report is published.
- Interested parties can download and analyse data in its raw form.

Accessing the State of Sustainable Markets 2020 Dashboard

- Go to <http://www.standardsmap.org/trends>.
- Click on one of the two images to explore data pertaining to either the agriculture or forestry sector.

The State of Sustainable Markets - 2020

Click and review market trends specific to 14 major Voluntary Sustainability Standards (VSS) for bananas, cocoa, coffee, cotton, palm oil, soybeans, cane sugar, tea and forestry products. For more information on the main findings and data methodology, download the report here.

Market trends of certified commodities and 12 VSS

Click on the image to explore market trends.

Market trends of certified forests and two VSS

Click on the image to explore market trends (DRAFT)

In collaboration with: **FiBL** **IISD**

Supported by:

Data source: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Round Table on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.

Version

Navigating the State of Sustainable Markets 2020 Dashboard

Explore key graphics and tables that provide an overview of the most recent trends specific to a sector. To further refine your analysis, select a focus area to explore this year's trends:

- By country
- By product / for forestry
- By VSS

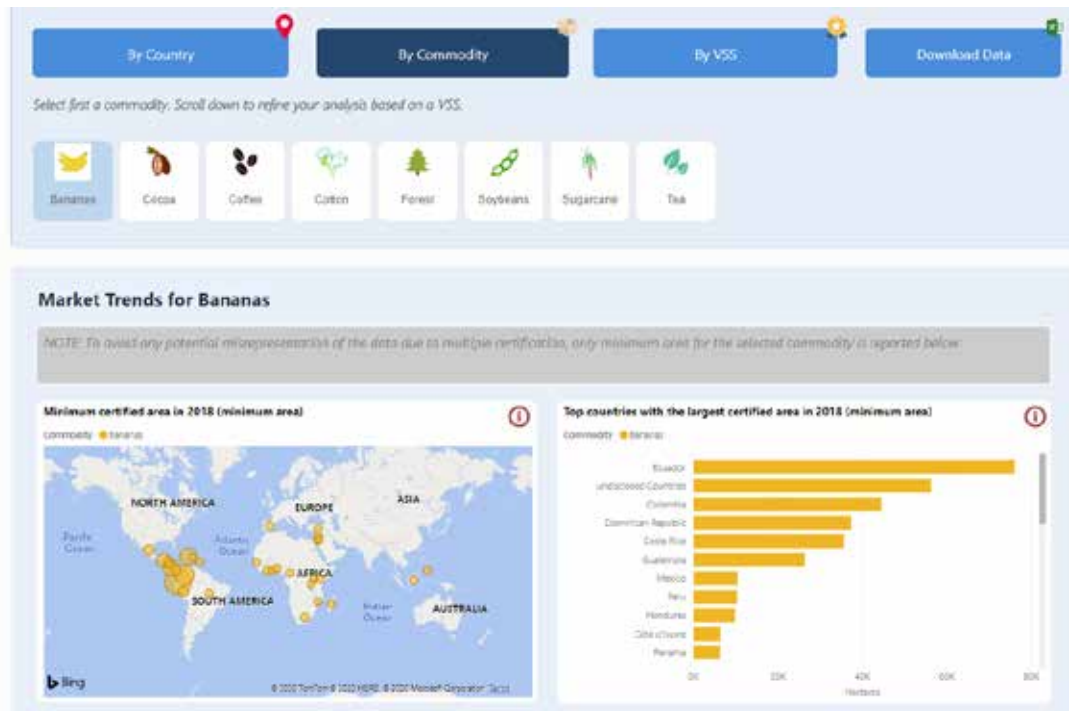
Download data



Structure of the State of Sustainable Markets 2020 Dashboard

Each focus area has two levels of analysis.

- First level – Users are invited to refine their analysis based on a country, product/forestry or VSS, depending on the focus area that was selected



- Users then have the option lower on the page to review information specific to their selection.







APPENDIX

KEY DATA, AREA AND PRODUCTION

Table 7: Ranges of certified area by agricultural product, 2018

Commodity	Indicator	Area certified [ha]	Share of global area	Area growth 2017–2018	Area growth 2014–2018
Bananas	Minimum area possible	343,128	6.0%	0.9%	22.8%
	Average area	461,992	8.1%	3.2%	30.3%
	Maximum area possible	580,856	10.1%	4.6%	35.2%
Cocoa	Minimum area possible	3,174,438	26.8%	9.1%	89.7%
	Average area	4,200,947	35.5%	6.5%	79.4%
	Maximum area possible	5,227,456	44.2%	5.0%	73.7%
Coffee	Minimum area possible	2,195,681	20.7%	-13.3%	-12.2%
	Average area	3,214,381	30.4%	-7.6%	-4.5%
	Maximum area possible	4,233,081	40.0%	-4.3%	0.1%
Cotton	Minimum area possible	5,885,938	18.2%	14.2%	173.2%
	Average area	6,122,085	18.9%	12.6%	164.6%
	Maximum area possible	6,358,232	19.6%	11.2%	157.2%
Oil palm	Minimum area possible	2,864,161	15.1%	12.9%	7.1%
	Average area	2,885,643	15.3%	11.7%	7.6%
	Maximum area possible	2,907,124	15.4%	10.6%	8.2%
Soybeans	Minimum area possible	1,957,154	1.6%	8.7%	14.6%
	Average area	2,468,561	2.0%	3.1%	32.7%
	Maximum area possible	2,979,967	2.4%	-0.3%	48.1%
Sugarcane	Minimum area possible	1,947,924	7.4%	-1.6%	75.2%
	Average area	2,079,246	7.9%	-2.6%	83.3%
	Maximum area possible	2,210,568	8.4%	-3.4%	91.1%
Tea	Minimum area possible	673,763	16.1%	0.7%	56.8%
	Average area	791,346	18.9%	2.4%	51.5%
	Maximum area possible	908,928	21.7%	3.7%	47.8%

Sources: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Roundtable on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.

Table 8: Area harvested by agricultural product, 2018

Product	Standard	Area harvested [ha]	Share of global area harvested	Area growth 2017–2018	Area growth 2014–2018
Bananas	Rainforest	166,405	2.91%	3.3%	84.3%
	Fairtrade	41,143	0.72%	7.4%	15.4%
	GLOBALG.A.P.	299,071	5.22%	8.8%	18.9%
	Organic	74,236	1.30%	-0.2%	42.5%
Cocoa	Rainforest	723,487	6.11%	-2.3%	-14.5%
	Fairtrade	1,178,644	9.96%	15.4%	173.4%
	Organic	318,202	2.69%	-14.0%	38.6%
	UTZ	3,007,123	25.41%	11.1%	100.2%
Coffee	Rainforest	470,827	4.45%	14.4%	29.1%
	4C	1,328,504	12.55%	-12.8%	-19.9%
	Fairtrade	961,774	9.09%	2.5%	-13.4%
	Organic	701,553	6.63%	-17.4%	13.1%
	UTZ	770,423	7.28%	29.9%	62.0%
Cotton	BCI	4,167,000	12.85%	17.0%	159.6%
	CmiA	1,779,584	5.49%	9.9%	204.0%
	Fairtrade	55,516	0.17%	-11.7%	-9.2%
	Organic	356,131	1.10%	-24.7%	61.3%
Oil palm	Rainforest	91,147	0.48%	-3.4%	76.4%
	Organic	8,600	0.05%	-57.1%	235.9%
	RSPO	2,807,377	14.84%	11.7%	6.6%
Soybeans	Organic	644,323	0.52%	21.7%	93.7%
	ProTerra	1,072,390	0.86%	-12.4%	-11.8%
	RTRS	1,263,254	1.01%	0.3%	171.9%
Sugarcane	Bonsucro	842,529	3.21%	-10.6%	-8.5%
	Fairtrade	149,738	0.57%	2.3%	-4.3%
	Organic	88,615	0.34%	5.9%	11.8%
	ProTerra	1,129,686	4.30%	1.3%	NA
Tea	Rainforest	593,471	14.16%	7.8%	55.5%
	Fairtrade	136,453	3.25%	1.0%	0.4%
	Organic	104,467	2.49%	-18.0%	77.0%
	UTZ	74,536	1.78%	-3.6%	93.1%

Sources: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Roundtable on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.

Please note that due to methodological challenges, the production ranges cannot be made available for all of the selected commodities.

Table 9: Estimated production volume ranges by agricultural product, 2018

Product	Indicator	Estimated production [tons]	Share of global production	Production growth 2017–2018	Production growth 2014–2018
Bananas*	Minimum production possible	9,486,156	8.2%	10.7%	43.0%
	Average	10,385,644	9.0%	9.8%	44.3%
	Maximum production possible	11,285,133	9.8%	9.0%	45.5%
Cocoa	Minimum production possible	1,707,722	32.5%	11.9%	9.6%
	Average	2,214,552	42.2%	10.9%	32.3%
	Maximum production possible	2,721,382	51.8%	10.3%	52.0%
Coffee	Minimum production possible	2,660,178	25.8%	-8.9%	-15.1%
	Average	3,858,129	37.4%	-1.7%	-3.6%
	Maximum production possible	5,056,080	49.1%	2.5%	3.8%
Soybeans	Minimum production possible	6,161,241	1.8%	18.4%	80.3%
	Average	7,802,367	2.2%	10.9%	100.8%
	Maximum production possible	9,443,492	2.7%	6.5%	116.8%
Tea	Minimum production possible	1,397,545	22.1%	9.6%	61.4%
	Average	1,572,108	24.8%	7.9%	57.2%
	Maximum production possible	1,746,672	27.6%	6.7%	54.0%

* Production volume of bananas is missing for GlobalG.A.P.

Sources: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Roundtable on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.

Table 10: Estimated production volume by agricultural product and standard, 2018

Agricultural product	Standard	Estimated production [tons]	Share of global production	Production growth 2017/2018	Production growth 2014/2018
Bananas*	Rainforest	8,412,652	7.27%	7.7%	42.0%
	Fairtrade	1,005,041	0.87%	3.6%	25.2%
	Organic	1,867,440	1.61%	29.7%	49.1%
Cocoa	Rainforest	404,253	7.70%	-11.6%	-29.7%
	Fairtrade	536,556	10.22%	25.3%	145.6%
	Organic	180,412	3.43%	26.1%	33.5%
	UTZ	1,600,161	30.47%	10.4%	NA
Coffee	Rainforest	655,312	6.36%	17.5%	43.5%
	4C	2,139,989	20.77%	-11.0%	-25.5%
	Fairtrade	745,516	7.24%	17.6%	35.7%
	Organic	412,438	4.00%	-13.3%	57.5%
	UTZ	1,102,826	10.70%	28.6%	51.1%
Soybeans	Organic	1,466,310	0.42%	12.8%	185.1%
	ProTerra	3,511,000	1.01%	-9.4%	40.5%
	RTRS	4,466,182	1.28%	7.6%	229.6%
Tea	Rainforest	1,209,771	19.09%	3.4%	49.7%
	Fairtrade	189,765	2.99%	-12.2%	-2.6%
	Organic	227,348	3.59%	6.6%	97.8%
	UTZ	119,787	1.89%	-0.1%	68.2%

* Production volume of bananas is missing for GlobalG.A.P.

Sources: FiBL-ITC-SSI survey, 2020; 4C Services, 2014, 2015, 2016, 2018, 2019 and 2020; Better Cotton Initiative, 2014, 2015, 2017, 2018, 2019 and 2020; Bonsucro, 2014, 2015, 2016, 2018, 2019 and 2020; Cotton made in Africa, 2014, 2015, 2016, 2018, 2019 and 2020; Fairtrade International, 2017, 2018, 2019 and 2020; GLOBALG.A.P., 2015, 2016, 2018, 2019 and 2020; FiBL survey, 2020; ProTerra Foundation, 2014, 2015, 2016, 2018, 2019 and 2020; Rainforest Alliance, 2014, 2015, 2016, 2018, 2019 and 2020; Roundtable on Sustainable Palm Oil, 2019 and 2020; Roundtable on Responsible Soy, 2014, 2015, 2016, 2018, 2019 and 2020; Textile Exchange 2013–2020.

```
mirror_mod = modifier_ob.  
# Set mirror object to mirror  
mirror_mod.mirror_object
```

```
operation == "MIRROR_X":  
mirror_mod.use_x = True  
mirror_mod.use_y = False  
mirror_mod.use_z = False
```

```
operation == "MIRROR_Y":  
mirror_mod.use_x = False  
mirror_mod.use_y = True  
mirror_mod.use_z = False
```

```
operation == "MIRROR_Z":  
mirror_mod.use_x = False  
mirror_mod.use_y = False  
mirror_mod.use_z = True
```

```
# Selection at the end  
mirror_ob.select=1  
modifier_ob.select=1
```

```
context.scene.objects.active  
("Selected" + str(modifier  
mirror_ob.select = 0  
= bpy.context.selected_object  
data.objects[one.name].select
```

```
print("please select exactly 1")
```

OPERATOR CLASSES

```
bpy.types.Operator):  
X mirror to the selected  
object.mirror_mirror_x"  
mirror X"
```

```
context):  
context.active_object is not
```

REFERENCES AND FURTHER READING

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