

The State of Sustainable Markets 2023

STATISTICS AND EMERGING TRENDS



International
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Centre

In collaboration with:

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Swiss Confederation

Federal Department of Economic Affairs FDE
State Secretariat for Economic Affairs SECO

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THE STATE OF SUSTAINABLE MARKETS 2023

STATISTICS AND EMERGING TRENDS

ABOUT THE REPORT

This seventh global report provides new insights into the evolution of certified agriculture and forestry. 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 about 14 major sustainability standards for bananas, cocoa, coffee, cotton, oil palm, soybeans, sugarcane, tea and forestry products.

This year's report adds data from 2021 and finds that slow growth resumed after a dip in 2020. The publication helps shape decisions of policymakers, producers and businesses, working to address systemic labour and environmental challenges through certified sustainable production.

Title: The State of Sustainable Markets 2023: Statistics and Emerging Trends

Publisher: International Trade Centre, International Institute for Sustainable Development, and Research Institute of Organic Agriculture

Publication date and place: December 2023, Geneva

Page count: 80

Language: English

ISBN: 9789210030229

UN Sales Number: 24.III.T.1

ITC Document Number: P124.E/GIVC/DSIT/23-XII

Citation: Laura Kemper, Gregory Sampson, Cristina Larrea, Bernhard Schlatter, Erika Luna, Tuan Duc Dang and Helga Willer (Eds.), *The State of Sustainable Markets 2023: Statistics and Emerging Trends*. ITC, Geneva.

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For more information on sustainability standards, see www.standardsmap.org.

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FOREWORD

Can sustainability standards help suppliers, traders and brands in the fast-moving world of trade?

As public bodies develop trade legislation to address deforestation and corporate sustainability, demand for market information on these standards continues to grow.

These standards are a response to consumer demand, yet they offer more: sustainability standards provide robust frameworks for companies to ensure their operations are environmentally friendly and socially responsible.

As governments and international bodies step up efforts to tackle climate change, businesses embracing sustainability standards can demonstrate responsible corporate citizenship and position themselves as frontrunners in navigating evolving legal terrains.

In a global economy where supply chains traverse borders, consistency in what sustainability means is vital to avoid false claims and greenwashing. While sustainability standards are not perfect, they foster transparency and trust among trading partners. Whether in agriculture, textiles or forestry, adherence to uniform sustainability standards promotes fair competition and ethical business practices.

This annual report on sustainable markets is the seventh of its kind, serving as a compass towards a more sustainable future. Each of these reports has chronicled growth in the land dedicated to sustainability standards. Single-sector standards dominate that growth, and organic standards again emerge as leaders in area and product variety.

Market data is just one aspect of the sustainability standards landscape. We encourage you also to consult the International Trade Centre's Standards Map (www.standardsmap.org) to learn more about the numbers presented in this publication.

It is a testament to the transformative power of sustainability standards to foster responsible business practices, prepare for regulatory shifts and contribute to a more environmentally conscious, socially responsible global economy..



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 (SECO) for its financial support of the global data collection on voluntary sustainability standards and the production of this publication.

Further thanks are due to all the standard-setting organizations that collaborated on the report: 4C, Better Cotton, 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 Round Table on Responsible Soy (RTRS), Textile Exchange and UTZ.¹

The publishers also wish to thank the following individuals, without whose contributions this report would not have been possible:

Oshin Abrami, GLOBALG.A.P., Cologne; **Ana Laura Andreani**, RTRS, Buenos Aires; **Thorsten Arndt**, PEFC International, Geneva; **Lisa Barsley**, Textile Exchange, London; **Stefanny Bermudez**, IISD, Ottawa; **Thuong Minh Bui**, Rainforest Alliance, Amsterdam; **Thomas Cierpka**, IFOAM – Organics International, Geneva; **Lise Favre**, PEFC International, Geneva; **Laura Ferreira**, Bonsucro, London; **Miguel Gomez-Escolar Viejo**, Better Cotton, Geneva; **Félix Gréverath**, Better Cotton, Geneva; **Phan Ha**, Rainforest Alliance, Amsterdam; **Marion Karmann**, FSC International, Bonn; **Laura Kemper**, FiBL, Frick; **Kristin Komives**, ISEAL Alliance, London; **Karin Kreider**, ISEAL Alliance, London; **Cristina Larrea**, IISD, Ottawa; **Julia Lernoud**, IFOAM World Board of Directors, Bonn; **Erika Luna**, IISD, Ottawa; **Emese van Maanen**, ProTerra Foundation, Bilthoven; **Oliver Mandila**, FSC International, Bonn; **Claudia Meier**, FiBL, Frick; **Sally Millett**, IISD, Toronto; **Madelaine Rüger**, FiBL, Frick; **Gregory Sampson**, ITC, Geneva; **Bernhard Schlatter**, FiBL, Frick; **Nina Schöttle**, CmiA, Hamburg; **Mohd Shafiqul Syaznil**, RSPO, Kuala Lumpur; **Muhammad Shazaley bin Abdullah**, RSPO, Kuala Lumpur; **Evonne Tan**, Textile Exchange, Petaling Jaya; **Andrea Valenzuela**, Rainforest Alliance, San José; **Gerrit Walter**, Fairtrade International, Bonn; **Helga Willer**, FiBL, Frick; **Benedikt Zimmer**, 4C Services, Cologne. ITC would also like to thank **Sarah McCue** of Georgetown University for her review and comments.

We are also grateful to Natalie Domeisen and Anne Griffin, ITC, for quality 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 2021 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. It builds on well-established online tools such as Standards Map, which offers comprehensive, verified and transparent information on more than 260 standards for environmental protection, worker and labour rights, economic development, quality and food safety, as well as business ethics.

Contribution to this report: Conceptual elaboration; data validation and visualization (dashboard).

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 extensive 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. Since 2014, FiBL has also been active in the collection of data on sustainability standards.

For more information, see <https://statistics.fibl.org>.

Contribution to this report: Data collection, processing, validation, and visualization; authors of Chapters 1, 2 and 4.

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 advances sustainable and inclusive value chains by providing credible and solutions-oriented research, dialogue and strategic advice for decision-makers about voluntary sustainability standards and other supportive initiatives.

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

For more information, see <https://www.iisd.org/ssi/> and <https://www.iisd.org>.

Contribution to this report: Authors of Chapter 3.

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ACRONYMS, UNITS AND MEASURES

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

4C	Common Code for the Coffee Community
CmiA	Cotton made in Africa
CoC	Chain of custody
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	FAO corporate statistical database
FiBL	Research Institute of Organic Agriculture
FSC	Forest Stewardship Council
ha	Hectare
IFOAM	IFOAM – Organics International
IISD	International Institute for Sustainable Development
ITC	International Trade Centre
MT	Metric tons
PEFC	Programme for the Endorsement of Forest Certification
RSPO	Roundtable on Sustainable Palm Oil
RTRS	Round Table on Responsible Soy
SECO	Swiss State Secretariat for Economic Affairs
SSI	State of Sustainability Initiatives
VSS	Voluntary sustainability standard



EXECUTIVE SUMMARY

By Gregory Sampson, Laura Kemper and Helga Willer

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EXECUTIVE SUMMARY

The concept of a 'sustainability standard' has evolved from a mere buzzword into a crucial pillar of global trade. Sustainability standards are important in international trade due to their role in promoting ethical business conduct, preparing businesses for upcoming mandatory regulations, fostering harmonization in global trade and driving innovation. As the world continues to prioritize sustainability, these standards serve as a potential framework upon which a more environmentally conscious and socially responsible global economy can be built.

Sustainability standards have gained importance in international trade due to interconnected factors. First, in an era marked by environmental crises and climate change, there is growing global awareness of the need for sustainable practices. Consumers, investors and businesses are increasingly inclined towards environmentally and socially responsible goods and production methods.

Sustainability standards, such as those explored in this report, provide a framework for companies to ensure that their operations are environmentally friendly and socially responsible. These standards serve as a signal to consumers, demonstrating a company's commitment to ethical practices and thereby enhancing its reputation and marketability.

Also, sustainability standards act as a potential mechanisms to comply with upcoming regulatory requirements. As the world grapples with the urgent need to mitigate climate change, governments and international bodies are working to formulate stricter regulations related to environmental protection and social responsibility.

By adopting sustainability standards, businesses gain valuable experience and insights into sustainable practices, making it easier for them to comply with future regulations. This proactive approach has the potential to position and prepare companies for the evolving legal landscape, ensuring they stay ahead of the regulatory curve.

This comprehensive annual update on the state of sustainable markets is crucial to understand the dynamic landscape of sustainability standards and their impact on global trade. It shares the 2021 data on area, production volume and producers for 14 major standard-setting organizations¹ and focuses on eight commodities: bananas, cocoa, coffee, cotton, oil palm, soy, sugarcane, tea and forestry.

1. The Common Code for the Coffee Community (4C), the Better Cotton Initiative (Better Cotton), Bonsucro, Cotton made in Africa (CmiA), Fairtrade International, Forest Stewardship Council (FSC), GLOBALG.A.P., IFOAM – Organics International (organic), Programme for the Endorsement of Forest Certification (PEFC), ProTerra Foundation, Rainforest Alliance and UTZ, the Round Table on Responsible Soy Association (RTRS) and the Roundtable on Sustainable Palm Oil (RSPO).

The data in this report not only provide insights into the current state of these markets, but also shed light on the progress and challenges faced by key standard-setting organizations in promoting sustainability. It serves as a valuable resource for policymakers, businesses and consumers looking to make informed decisions in support of sustainable and ethical trade practices across these sectors.

Highlights

Features of the current market context continued in 2021, with slow growth resuming after a dip in 2020. Dominance of single-sector standards remained in some sectors. Among the highlights of this year's report:²

The big four: Cotton, oil palm, cocoa and sugarcane

- In 2021, cotton continued to have the largest certified area. Oil palm was the second-largest commodity in terms of area certified in 2021, followed by cocoa and sugarcane (Table 1).
- Cotton: At least 6.7 million hectares or a minimum of 20.3% of the global cotton area was certified, 14.6% by Better Cotton alone.
- Oil palm: At least 3.3 million hectares or a minimum of 11.6% of the global oil palm area was certified, the vast majority by RSPO.
- Cocoa: At least 2.5 million hectares or a minimum of 21.7% of the global cocoa area was certified, 17.5% by UTZ alone.
- Sugarcane: At least 2.3 million hectares or a minimum of 8.8% of the global sugar area was certified, 7.1% by Bonsucro alone.

Standard compliance rose for some crops, but others lost ground

- Organic is the biggest sustainability standard in terms of both area and product variety. In 2021, more than 76 million hectares (ha) of agricultural land were certified as organic (including areas in the process of becoming organic-certified), representing 1.6% of agricultural land worldwide (Table 4).
- In 2021, after organic, four standards covered land exceeding 4 million hectares each. Of these, Rainforest Alliance certified the largest area (5.2 million ha), followed by Better Cotton (almost 4.8 million ha), RSPO (4.6 million ha) and GLOBALG.A.P. (4.3 million ha), each representing between 0.09% and 0.11% of global agricultural land (Table 4).
- In 2017–21, most of the standards covered in this report, except 4C, Pro Terra and UTZ, expanded their compliant areas, most of them by double digits. Bonsucro saw the greatest jump, with its certified area increasing by two-thirds (+60.3%), followed by Rainforest Alliance (+50.7%) and RSPO (+38.3%) (Table 4).
- In 2020–21, four of the 12 agricultural standards³ experienced double-digit area growth, with ProTerra achieving the highest growth rate (+26.6%) (Table 4).

Organic is the leading standard in terms of total area certified

- Organic is the biggest sustainability standard in terms of both area and product variety. In 2021, more than 76 million hectares (ha) of agricultural land were certified as organic (including areas in the process of becoming organic-certified), representing 1.6% of agricultural land worldwide (Table 4).
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2. The commodity-specific data are based on the minimum possible values. For an explanation, see the section on reporting challenges.

3. The 14 standards included in this report are divided into 12 agricultural standards and two forestry standards (FSC and PEFC). The forestry standards are discussed separately as they only certify forest products and none of the other commodities included in the report.

Why this report?

This publication aims 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.standardsmap.org/en/trends.

Data from the latest survey (2021 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 (VSSs) suggests there is considerable 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 VSSs 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 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.

VSSs continue to play a key role in enabling the shift of agricultural supply chains towards more sustainability and resilience. This will require greater 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 2021, as well as earlier years.

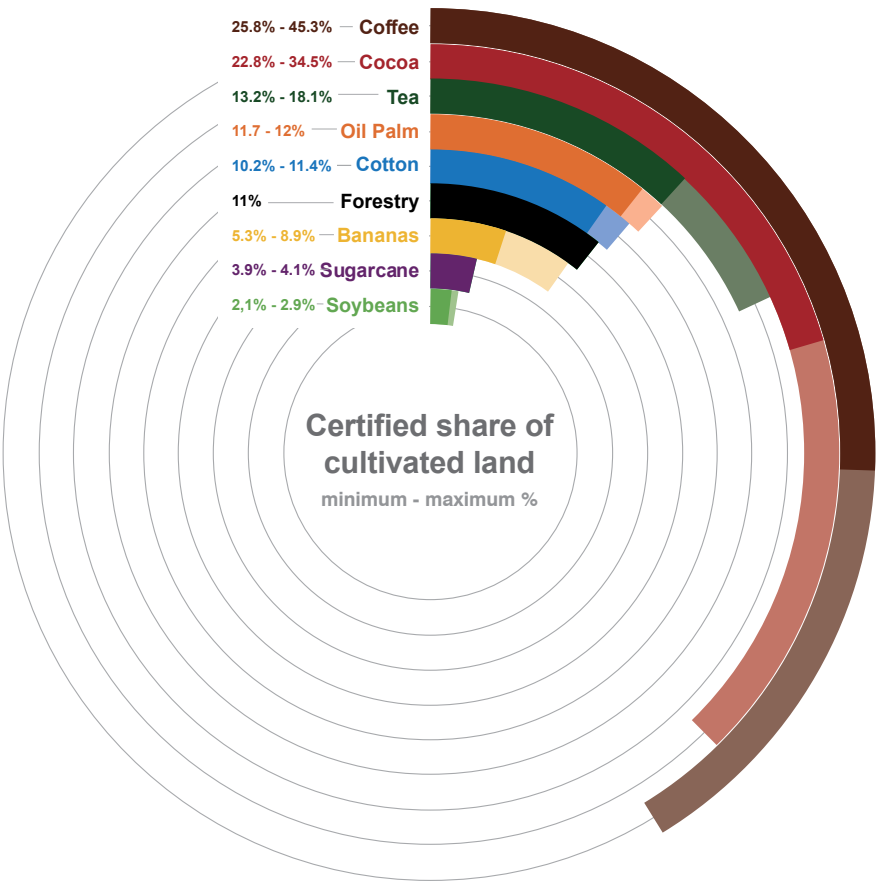
Featured crops and standards

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

The report covers the following standards: 4C, Better Cotton, Bonsucro, CmiA, Fairtrade International, FSC, GLOBALG.A.P., organic, PEFC, ProTerra, Rainforest Alliance, RSPO, RTRS and UTZ.⁴

4. Although UTZ merged with Rainforest Alliance in 2018, the 2021 data used for this report were provided for each standard individually.

Figure 1: Coffee and cocoa have biggest certified share of cultivated land



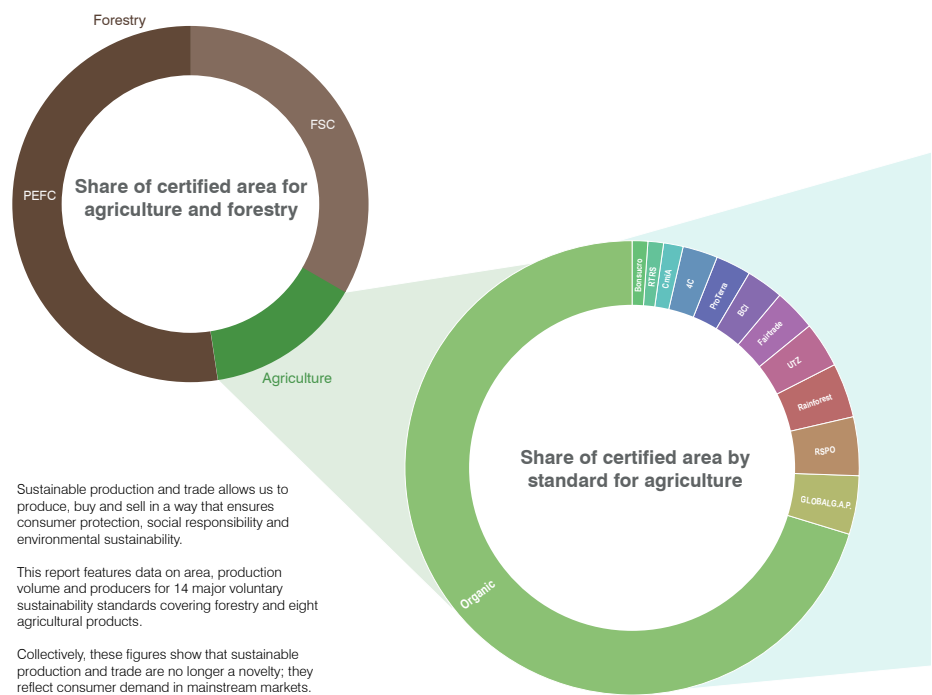
How much of the world's agricultural and forestry production is certified as sustainable?

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

The chart gives a snapshot of sustainable production today. It shows how much cultivated land is certified by at least one sustainability standard. Almost a quarter of the world's land dedicated to cocoa, for example, is now certified. But the real share may be closer to half of the world's cocoa areas. This minimum and maximum range for each product is given because many producers have multiple certifications.

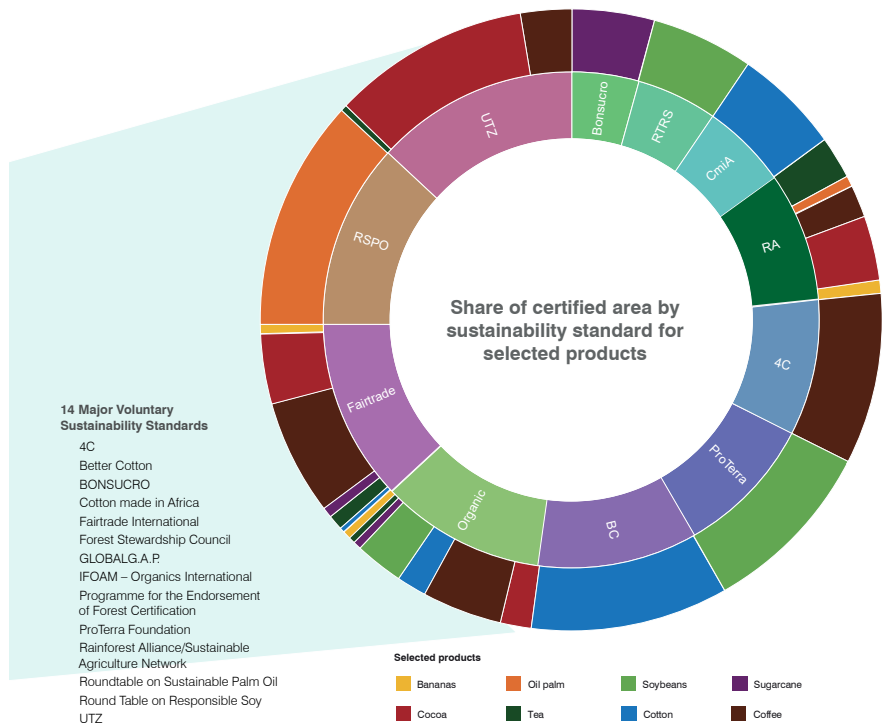
Source: FiBL-ITC-IISD/SSI survey, 2023.

Figure 2: Organic is biggest agricultural standard, PEFC is biggest forestry standard



Source: FiBL-ITC-IISD/SSI survey, 2023.

Figure 3: Twelve agricultural voluntary standards and eight commodities analysed



Source: FiBL-ITC-IISD/SSI survey, 2023.

Reporting challenges: Lack of data, multiple certification

Policymakers, producers and businesses need 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 is difficult, as many producers are certified by more than one sustainability standard and reliable data on the share of multiple certifications are limited. Bearing this in mind, FiBL, IISD and ITC opted 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. These figures must be treated with caution as they are estimates that indicate a trend.

Unless otherwise stated, the data presented show the minimum possible.



CHAPTER 1

SELECTED COMMODITIES GREW, BUT SLOWLY

By Laura Kemper, Bernhard Schlatter and Helga Willer

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CERTIFIED FOREST GREW BY 4%	6
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SELECTED COMMODITIES GREW, BUT SLOWLY

This chapter examines the harvested area 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 minimums⁵ (leading to a global minimum value for each commodity), the country maximums⁶ (leading to a global maximum value for each commodity) and the country minimum–maximum averages⁷ (leading to a global average value for each commodity).

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

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

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

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

At least 7.9% of the global harvested area of eight crops is certified

Minimum area certified

In 2021, the standards covered in this report certified a minimum of 19.8 million hectares (ha) of the eight agricultural commodities that were studied: bananas, cocoa, coffee, cotton, oil palm, soybeans, sugarcane and tea. This constituted at least 7.9% of the global harvested area for these crops.

For the sixth consecutive year, **cotton** had the largest harvested area (four standards). With a minimum of 6.7 million ha, at least 20.3% of the global cotton area was certified.

Oil palm had the second-largest certified area (three standards). With a minimum of 3.3 million ha, at least 11.6% of the global oil palm area was certified.

The commodities with the third- and fourth-largest certified area were cocoa (four standards) and sugarcane (four standards). Certified **cocoa** covered at least 2.5 million ha, representing 21.7% of the global cocoa area. Certified **sugarcane** covered a minimum of 2.3 million ha, corresponding to at least 8.8% of the global sugarcane area.

Certified **soybeans** (three standards) and **coffee** (five standards) covered a minimum of 2.2 million ha and 1.6 million ha, respectively, representing at least 1.7% and 14.5% of the global soybean and coffee areas, respectively.

The commodities with the smallest certified area were **tea** (four standards) and bananas (four standards). Certified tea covered a minimum of 0.7 million ha, representing at least 14.5% of the global tea area, and certified **bananas** covered a minimum of 0.3 million ha, corresponding to at least 6.6% of the global banana area (Table 1).

Table 1: Minimum harvested area certified by agricultural commodity in 2020–21

Commodity	Area harvested [ha]	Share of global area ⁸	Area growth 2020–21	Area growth 2017–21
Bananas	350,633	6.6%	-2.7%	5.4%
Cocoa	2,527,652	21.7%	-3.5%	-13.1%
Coffee	1,647,526	14.5%	-2.5%	-32.8%
Cotton	6,696,306	20.3%	17.3%	29.9%
Oil palm	3,366,257	11.6%	2.3%	32.8%
Soybeans	2,196,355	1.7%	6.5%	17.2%
Sugarcane	2,321,290	8.8%	10.2%	17.2%
Tea	760,890	14.5%	6.2%	13.8%
<i>Total based on minimum</i>	<i>19,866,909</i>	<i>7.9%</i>	<i>7.1%</i>	<i>11.0%</i>
<i>Total (based on maximum)</i>	<i>23,254,484</i>	<i>9.3 %</i>	<i>6.2%</i>	<i>10.2%</i>
<i>Total (based on average)</i>	<i>26,642,059</i>	<i>10.6%</i>	<i>5.6%</i>	<i>9.7%</i>

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

Sources: FiBL-ITC-IISD/State of Sustainability Initiatives (SSI) survey, 2023; 4C Services, 2014–16, 2018–23; Better Cotton, 2014, 2015, 2017–23; Bonsucro, 2014–16, 2018–23; Cotton made in Africa, 2014–16, 2018–23; Fairtrade International, 2017–23; GLOBALG.A.P., 2015, 2016, 2018–23; FiBL survey, 2008–23; ProTerra Foundation, 2014–16, 2018–23; Rainforest Alliance, 2014–16, 2018–23; Roundtable on Sustainable Palm Oil, 2019–23; Round Table on Responsible Soy, 2014–16, 2018–23; Textile Exchange 2013–23.

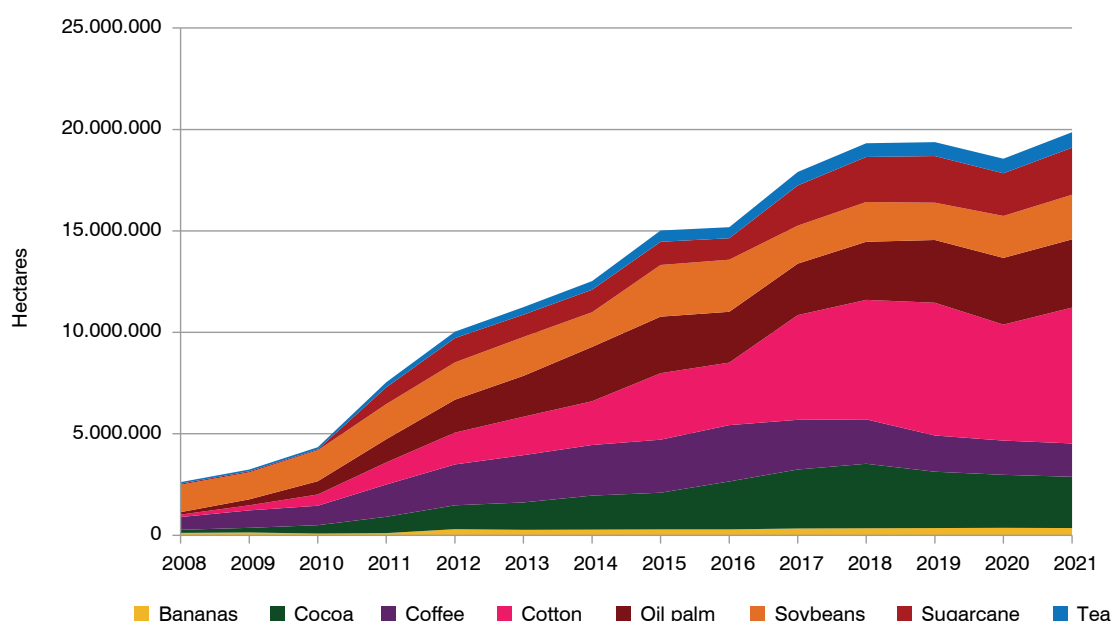
8. For the comparison with the total area for each crop, FAOSTAT data were used (retrieved 13 January 2023), which are available at <https://www.fao.org/faostat/en/#data>

Growth of minimum certified area

In 2017–21, the minimum certified area of the selected crops expanded by 11%. The minimum certified oil palm area grew the most (+32.8%), followed by cotton (+29.9%), sugarcane and soybean (both +17.2%). The smallest growth rates were recorded for tea, at 13.8%, and bananas, at 5.4%. The minimum certified cocoa area shrank by 13.1% and the minimum certified coffee area dropped by 32.8% (Table 1 and Figure 4).

The minimum certified area grew again in 2020–21 after an unusual drop in 2019–20 that was largely due to the COVID-19 pandemic. Nevertheless, growth remained relatively slow, with only a 7.1% increase in the minimum certified area of the selected crops in 2020–21. The minimum certified area of cotton grew by 17.3% and sugarcane grew by 10.2%. However, soybean, tea and oil palm grew by less than 10% and the growth rate was negative for coffee (-2.5%), bananas (-2.7%) and cocoa (-3.5%) (Table 1 and Figure 4).

Figure 4: Minimum certified cotton area grew most in 2008–21



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-IISD/SSI survey, 2023; 4C Services, 2014–16, 2018–23; Better Cotton, 2014, 2015, 2017–23; Bonsucro, 2014 – 2016, 2018 – 2023; Cotton made in Africa, 2014–16, 2018–23; Fairtrade International, 2017–23; GLOBALG.A.P., 2015, 2016, 2018–23; FiBL survey, 2008–23; ProTerra Foundation, 2014–16, 2018–23; Rainforest Alliance, 2014–16, 2018–23; Roundtable on Sustainable Palm Oil, 2019–23; Round Table on Responsible Soy, 2014–16, 2018–23; Textile Exchange 2013–23.

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 may actually be considerably higher.

Minimum production volume certified

Production data are often incomplete⁹ and/or based on estimates. For organic, the production volumes presented in Table 2 were computed based on partly estimated data. Therefore, both production shares and growth rates need to be interpreted with care, particularly if they differ from area shares and growth rates presented in Table 1. Please note that production data for cotton, oil palm and sugarcane were not available.

Of the five commodities listed in Table 2, global shares in certified production (based on minimum) were largest for tea (24.1%), coffee (23.9%) and cocoa (22.8%). The production shares were lower for certified bananas (8.3%) and soybeans (1.7%).

The production in 2017–21 grew the most for bananas (+19.6%), tea (+16.1%) and soybeans (+11.1%). Coffee and cocoa production declined by 19.5% and 16.7%, respectively.

In 2020–21, the production volume of certified coffee grew the most, rising by 7.3%, whereas bananas and tea remained relatively stable and soybean and cocoa declined (Table 2).

Table 2: Estimated minimum production by agricultural commodity in 2020–21

Commodity	Estimated minimum production [metric tons or MT]	Share of global production	Production growth 2020–21	Production growth 2017–21
Bananas*	10,241,362	8.3%	1.7%	19.6%
Cocoa	1,272,867	22.8%	-7.3%	-16.7%
Coffee	2,366,646	23.9%	7.3%	-19.5%
Soybeans	6,276,485	1.7%	-6.8%	11.1%
Tea	1,564,454	24.1	0.9%	16.1%

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

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.

Source: FiBL-ITC-IISD/SSI survey, 2023; 4C Services, 2014–16, 2018–23; Better Cotton, 2014, 2015, 2017–23; Bonsucro, 2014–16, 2018–23; Cotton made in Africa, 2014–16, 2018–23; Fairtrade International, 2017–23; GLOBALG.A.P., 2015, 2016, 2018–23; FiBL survey, 2008–23; ProTerra Foundation, 2014–16, 2018–23; Rainforest Alliance, 2014–16, 2018–23; Roundtable on Sustainable Palm Oil, 2019–23; Round Table on Responsible Soy, 2014–16, 2018–23; Textile Exchange 2013–23.

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

Certified forest grew by 4%

The Programme for the Endorsement of Forest Certification (PEFC) and the Forest Stewardship Council (FSC) certified more than 460 million¹⁰ hectares of forest in 2021, representing 11.4% of the global forest area. In 2017–21, the combined PEFC- and FSC-certified forest area grew by 7.8%, with one-year growth in 2020–21 of 2.9% (Table 3).

For forestry, no production data are available.

Table 3: FSC and PEFC certified area, 2021

Commodity	FSC and PEFC certified area [ha]	Share of global forest area	Area growth 2020–21	Area growth 2017–21
Forest	463,821,193	11.4%	2.9%	7.8%

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 the years 2000, 2005, 2010 and 2015–21.

Source: FiBL-ITC-IISD/SSI survey, 2023; FSC-PEFC, 2023.

Agricultural and forestry products – highlights by commodity

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 2021. 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 (data are adjusted to remove all possible multiple certification) to the maximum area possible (data are not adjusted for multiple certification).

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

Data by country are available at <https://www.standardmap.org/en/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** (Table 8).
- Combined, they certified at least 350,633 ha (minimum), representing 6.6% of the global banana area. Assuming there was no double certification among the four standards, their common certified area would amount to 636,064 ha (maximum), representing 12% of the global banana area (Table 7).
- In 2017–21, the minimum certified banana area grew by 5.4% (Table 7).
- In 2020–21, the minimum certified banana area shrank by 2.7% (Table 7).
- GLOBALG.A.P., with 344,861 ha, certified the largest banana area, representing 6.5% of the global banana area (Table 8).
- Banana area that was certified organic grew by 30.5% in 2020–21, thus showing the strongest growth of the banana-producing standards, reaching a total of 97,426 ha. In the 2017–21 period, it also grew more than the other standards (+32.3%) (Table 8).

10. 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.



- Four of the 14 standards covered in this report certified the production of cocoa, namely **Fairtrade International**, organic, **Rainforest Alliance** and **UTZ** (Table 8).
- Combined, they certified at least 2.5 million ha (minimum), representing 21.7% of the global cocoa area. Assuming there was no double certification among the four standards, their common certified area would amount to 4.4 million ha (maximum), representing 38.1% of the global cocoa area (Table 7).
- In 2017–21, the minimum certified cocoa area decreased by 13.1% (Table 7).
- In 2020–21, the minimum certified cocoa area decreased by 3.5% (Table 7).
- With more than 2 million hectares, **UTZ** certified the biggest cocoa area, representing 17.5% of the global cocoa area (Table 8).
- **Fairtrade International** achieved the highest growth in 2017–21 (+49.1%).
- **Organic** achieved the highest growth in 2020–21 (+23.3%) (Table 8).



- Five of the 14 standards covered in this report certified the production of coffee, namely the **Common Code for the Coffee Community (4C)**, **Fairtrade International**, organic, **Rainforest Alliance** and **UTZ** (Table 8).
- Combined, they certified at least 1.6 million ha (minimum), representing 14.5% of the global coffee area. Assuming there was no double certification among the five standards, their common certified area would over 4 million ha (maximum), representing 35.6% of the global coffee area (Table 7).
- In 2017–21, the minimum certified coffee area decreased by 32.8% (Table 7).
- In 2020–21, the minimum certified coffee area decreased by 2.5% (Table 7).
- **Fairtrade International** certified the largest coffee area – 1.2 million ha – representing 10.2% of the global coffee area (Table 8).
- **Rainforest Alliance** achieved the highest growth in 2017–21: its certified coffee area expanded by 41.7% in that period, reaching 583,026 ha in 2021 (Table 8).
- **Organic** achieved the highest one-year growth, with a 24.6% increase in 2020–21.



- Four of the 14 standards covered in this report certified the production of cotton, namely **Better Cotton**, **Cotton made in Africa (CmiA)**, **Fairtrade International** and organic (Table 8).
- Combined, they certified at least 6.7 million ha (minimum), representing 20.3% of the global cotton area. Assuming there was no double certification among the four standards, their common certified area would amount to 7.1 million ha (maximum), representing 21.8% of the global cotton area (Table 7).
- In 2017–21, the minimum certified cotton area expanded by 29.9% (Table 7), thus representing the second strongest growth (after oil palm) for the selected commodities.
- In 2020–21, the minimum certified cotton area increased by 17.3% (Table 7). This was the largest one-year increase of all commodities, partly due to a decrease in certified area in 2020.
- **Better Cotton** certified the biggest cotton area by far, with almost 4.8 million ha, representing 14.6% of the global cotton area (Table 8). It achieved the highest four-year and one-year growth: +34.8 in 2017–21 and +22.8% in 2020–21 (Table 8).



Oil palm

- Three of the 14 standards covered in this report certified the production of oil palm, namely **organic**, **Rainforest Alliance** and **Roundtable on Sustainable Palm Oil (RSPO)** (Table 8).
- Combined, they certified at least 3.4 million ha (minimum), representing 11.6% of the global oil palm area. Assuming there was no double certification among the three standards, their common certified area would be only marginally higher, amounting to 3.5 million ha (maximum), representing 12.1% of the global oil palm area (Table 7).
- In 2017–21, the minimum certified oil palm area expanded by 32.8%, thus representing the largest growth of all commodities in this period (Table 7).
- In 2020–21, the minimum certified oil palm area expanded by 2.3% (Table 7).
- **RSPO** certified nearly all of the oil palm area – 3.3 million ha – representing 11.6% of the global oil palm area (Table 8).
- **Organic** achieved by far the highest four-year and one-year growth: its certified area increased by 146% in 2017–21 and by 54% in 2020–21, reaching 32,344 ha or 0.1% of the global oil palm area in 2021 (Table 8).



Soybeans

- Three of the 14 standards covered in this report certified the production of soybeans, namely **organic**, **ProTerra Foundation** and the **Round Table on Responsible Soy (RTRS)** (Table 8).
- Combined, they certified at least 2.1 million ha (minimum), representing 1.7% of the global soybean area. Assuming there was no double certification among the three standards, their common certified area would amount to 3 million ha (maximum), representing 2.3% of the global soybean area (Table 7).
- In 2017–21, the minimum certified soybeans area increased by 17.2% (Table 7).
- In 2020–21, the minimum certified soybeans area increased by 6.5% (Table 7).
- **RTRS**, with 1.3 million ha, certified the largest soybean area, representing 1% of the global soybean area (Table 8).
- **Organic** achieved the highest four-year growth and one-year growth: its certified area grew by 69.7% in 2017–21 and by 20.1% in 2020–21, reaching 991,890 in 2021 (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** (Table 8).
- Combined, they certified at least 2.3 million ha (minimum), representing 8.8% of the global sugarcane area. Assuming there was no double certification among the four standards, their common certified area would amount to 2.9 million ha (maximum), representing 11.2% of the global sugarcane area (Table 7).
- In 2017–21, the minimum certified sugarcane area expanded by 17.2% (Table 7).
- In 2020–21, the minimum certified sugarcane area shrank by 10.2% (Table 7), meaning sugarcane was the commodity with the second highest growth (after cotton) in that time period.
- **Bonsucro**, with almost 1.9 million ha, certified the largest sugarcane area, representing 7.1% of the global sugarcane area (Table 8).
- **Bonsucro** also achieved the highest growth in 2017–21; its certified area almost doubled (+97.4%) (Table 8).
- **ProTerra** achieve the highest one-year growth with a 55.6% increase in 2020–21 (Table 8).



- Four of the 14 standards covered in this report certified the production of tea, namely **Fairtrade International**, **organic**, **Rainforest Alliance** and **UTZ** (Table 8).
- Combined, they certified at least 760,890 ha (minimum), representing 14.5% of the global tea area. Assuming there was no double certification among the four standards, their common certified area would amount to 953,640 ha (maximum), representing 18.2% of the global tea area (Table 7).
- In 2017–21, the minimum certified tea area expanded by 13.8% (Table 7).
- In 2020–21, the minimum certified tea area expanded by 6.2% (Table 7).
- **Rainforest Alliance** certified the largest tea area – 693,866 ha – representing 13.2% of the global tea area (Table 8).
- **Rainforest Alliance** also achieved the highest growth in 2017–21 with a 26% increase.
- **Organic** achieved the highest one-year growth: its certified area increased by 17% in 2020–21, reaching 139,700 ha or 2.7% of the total tea area in 2021 (Table 8).



- Two of the 14 standards covered in this report certified forestry, namely **PEFC** and **FSC** (Table 3).
- Combined, they certified a forest area of 464 million ha, representing 11.4% of the global forest area (Table 3).
- In 2017–21, the combined PEFC- and FSC-certified forest area grew by 7.8%, with one-year growth in 2020–21 of 2.9% (Table 3).
- As in previous years, the PEFC-certified area exceeded the FSC-certified area in 2021. With 328.5 million ha of forest, 8.1% of the global forest area was PEFC-certified, expanding by 4.8% in 2017–21 and by 1.2% in 2020–21. FSC reported 230.7 million hectares of certified forest, representing 5.7% of the global forest area and an increase of 16% in 2017–21 and by 4.1% in 2020–21 (Table 5).



CHAPTER 2

DEVELOPMENT OF THE SELECTED STANDARDS

By Laura Kemper, Bernhard Schlatter and Helga Willer

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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). For this purpose, this chapter focuses on variables for which an aggregation across commodities is meaningful, namely, a standard's certified area and its 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.

Organic covers the widest mix of agriculture products

Area certified

Organic is the sustainability standard with the largest variety of agricultural products and has by far the largest area certified (Willer et al., 2023). A total of 76.4 million hectares¹¹ were organic-certified in 2021, representing 1.6% of all agricultural land worldwide.

Of the remaining 11 agricultural standards, four covered land exceeding 4 million ha each in 2021. Of these, Rainforest Alliance certified the largest area (5.2 million ha), followed by Better Cotton (almost 4.8 million ha), RSPO (4.5 million ha) and GLOBALG.A.P. (4.3 million ha), each representing between 0.09% and 0.11% of global agricultural land (Table 4).

Growth in area certified

The area of most sustainability standards expanded by double digits in 2017–21. However, RTRS and CmiA only grew by about 5% while 4C Services,¹² ProTerra and UTZ¹³ declined by 48%, 19% and 13%, respectively. Bonsucro had the largest growth in this period with an increase of 60.3%, followed by Rainforest Alliance (+50.7%) and RSPO and Better Cotton, which both grew by more than one-third (Table 4).

In 2020–21, ProTerra, Rainforest Alliance, Bonsucro and Better Cotton all grew by more than 20%. Five standards (Fairtrade, Global G.A.P., RSPO, CmiA and organic) experienced growth between 2% and 6%, while three standards (4C, RTRS and UTZ) experienced a decline in area certified (Table 4). The largest absolute growth was noted for organic, which increased by almost 2 million hectares.

Number of producers

As the standard with the biggest certified area, organic also has the most producers – 3.7 million in 2021. Still, Fairtrade, Better Cotton, Rainforest and UTZ, which certified much smaller areas than organic, each had more than 1 million producers: Fairtrade reported 1.8 million producers followed by Better Cotton (1.7 million), Rainforest (1.5 million) and UTZ (1 million) (Table 4).

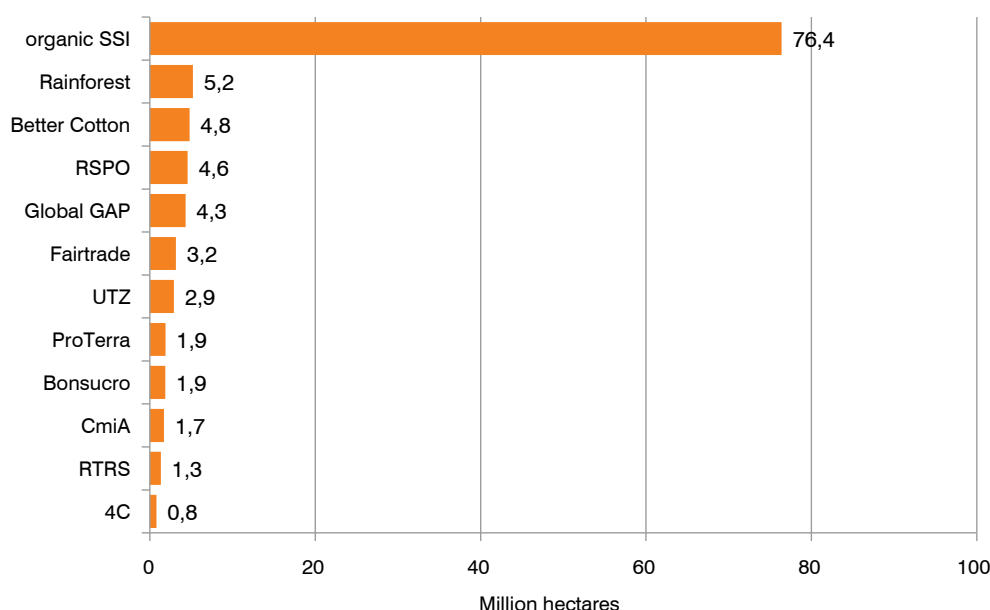
This apparent contradiction can be explained by the fact that most of the sustainability standards examined in this report focus on the Global South, where smallholders prevail. In contrast, organic is prominent globally, including in countries where large farms dominate, such as Australia and the United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

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

12. This can mainly be explained by the more rigorous certification procedures by the 4C standard.

13. Many UTZ certificate holders moved to Rainforest Alliance after the merger between the two certification schemes in 2018.

Figure 5: Organic had largest certified area in 2021



Note: This figure shows the total area certified by VSSs, including all commodities each VSS certifies, hence going beyond the eight commodities examined in this report. For organic, the reported number also includes permanent grazing areas, which account for more than two-thirds of the total area certified.

Sources: FiBL-ITC-IISD/SSI survey, 2023; 4C Services, 2023; Better Cotton, 2023; Bonsucro, 2023; Cotton made in Africa, 2023; Fairtrade International, 2023; GLOBALG.A.P., 2023; FiBL survey, 2023; ProTerra Foundation, 2023; Rainforest Alliance, 2023; Roundtable on Sustainable Palm Oil, 2023; Round Table on Responsible Soy, 2023; Textile Exchange 2023.

Table 4: Area certified and producers by agricultural standard in 2020–21

Standard	Area certified [ha]	Producers [no.]	Share of global agricultural area	Area growth 2020–21	Area growth 2017–21
4C	792,309	304,831	0.02%	-6.3%	-48.0%
Better Cotton	4,799,532	1,705,194	0.10%	22.8%	34.8%
Bonsucro	1,861,109	150	0.04%	24.0%	60.3%
CmiA	1,705,088	926,747	0.04%	2.2%	5.3%
Fairtrade	3,159,493	1,846,787	0.07%	5.3%	19.9%
GLOBALG.A.P.	4,316,766	204,575	0.09%	4.4%	21.7%
Organic	76,403,777	3,667,288	1.59%	2.0%	10.4%
ProTerra	1,894,913	91,993	0.04%	26.6%	-19.0%
Rainforest Alliance	5,212,359	1,514,289	0.11%	25.9%	50.7%
RSPO	4,564,086	165,505	0.10%	2.9%	38.3%
RTRS	1,332,065	49,918	0.03%	-2.9%	5.7%
UTZ	2,916,618	1,053,878	0.06%	-10.6%	-13.6%

Note: This table shows the total area certified by VSSs, including all commodities each VSS certifies, hence going beyond the eight commodities examined in this report. For organic, the reported number also includes permanent grazing areas, which account for more than two-thirds of the total area certified.

Sources: FiBL-ITC-IISD/SSI survey, 2023; 4C Services, 2014–16, 2018–23; Better Cotton, 2014, 2015, 2017–23; Bonsucro, 2014–16, 2018–23; Cotton made in Africa, 2014–16, 2018–23; Fairtrade International, 2017–23; GLOBALG.A.P., 2015, 2016, 2018–23; FiBL survey, 2008–23; ProTerra Foundation, 2014–16, 2018–23; Rainforest Alliance, 2014–16, 2018–23; Roundtable on Sustainable Palm Oil, 2019–23; Round Table on Responsible Soy, 2014–16, 2018–23; Textile Exchange 2013–23.

PEFC outpaces FSC on forest area certification, though FSC is growing faster

Area certified

The forest area certified by PEFC exceeded the forest area certified by FSC in 2021 as well as in preceding years. With 328.4 million ha of forest, 8.1% of the global forest area was PEFC-certified. FSC reported 230.7 million ha of certified forest, representing 5.7% of the global forest area (Table 5).

However, FSC grew more in both 2017–21 (16%) and 2020–21 (4.1%) than PEFC (4.8% and 1.2% in the same time periods) (Table 5).

Number of chain-of-custody certificate holders

FSC counted 51,995 chain-of-custody (CoC) certificate holders in 2021, and PEFC 12,671 (Table 5).

Table 5: Certified forest area and CoC certificate holders by forestry standard, 2021

Standard	Area certified [ha]	CoC certificate holders [no.]	Share of global forest area	Area growth 2020–21	Area growth 2017–21
FSC	230,703,916	50,185	5.7%	4.1%	16%
PEFC	328,464,110	12,671	8.1%	1.2%	4.8%

Source: FiBL-ITC-IISD/SSI survey, 2023; FSC-PEFC, 2023.

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 standards¹⁴ 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 2021, Better Cotton and CmiA had the biggest certified cotton area (global share of cotton of 14.6% and 5.2%, respectively), RSPO the largest certified oil palm area (11.6% of total oil palm area), RTRS the biggest certified soybean area (1% of total soybean area) and Bonsucro the largest sugarcane area (7.1% of total sugarcane area). Only the coffee area certified by the single-commodity standard 4C fell short of the coffee area certified by Fairtrade International, UTZ and organic (Table 6).

Multiple-commodity standards¹⁵ such as Fairtrade, GLOBALG.A.P. organic, ProTerra, Rainforest Alliance and UTZ may have lower coverage of a specific commodity than single-commodity standards because of their wider scope. This is most notable for organic agriculture. In 2021, organic certified 3.2 million hectares for the eight agricultural products analysed in this report, but more than 76.4 million hectares in total, covering more or less all agricultural commodities (Table 6).

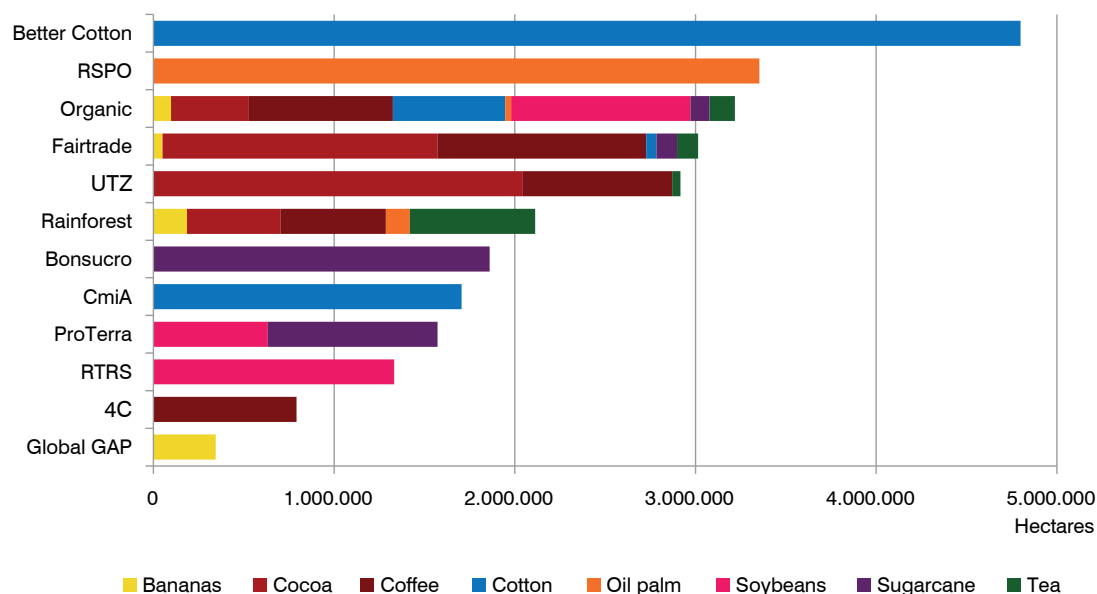
However, multiple-commodity standards are gaining importance – in the coffee sector, and also in the sugarcane and soybean sectors. Fairtrade, UTZ, organic and Rainforest Alliance all certified a substantial share of the global coffee area in 2021 (10.2%, 7.3%, 7% and 5.1%, respectively). ProTerra Foundation certified an important portion of the global sugarcane area (3.6%) and organic certified 1.9% of the global cotton area (Table 6).

UTZ remained the most important standard in the cocoa sector (global cocoa area share of 17.5%) and Rainforest Alliance in the tea sector (global tea area share of 13.2%), 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).

14. Single-commodity standards are sustainability standards that certify only one commodity. An example is 4C, which only certifies coffee.

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

Figure 6: Better Cotton and RSPO harvested bigger areas of selected commodities



Note: This figure shows the area certified by VSSs for the eight selected agricultural commodities.

Sources: FiBL-ITC-IISD/SSI survey, 2023; 4C Services, 2023; Better Cotton, 2023; Bonsucro, 2023; Cotton made in Africa, 2023; Fairtrade International, 2023; GLOBALG.A.P., 2023; FiBL survey, 2023; ProTerra Foundation, 2023; Rainforest Alliance, 2023; Roundtable on Sustainable Palm Oil, 2023; Round Table on Responsible Soy, 2023; Textile Exchange 2023.

Table 6: Area harvested by agricultural standard and commodity in 2020–21

Standard	Commodity	Area harvested [ha]	Share of global area harvested	Area growth 2020-21	Area growth 2017-21
4C	Coffee	792,309	7.0%	-6.3%	-48.0%
4C total		792,309	7.0%	-6.3%	-48.0%
Better Cotton	Cotton	4,799,532	14.6%	22.8%	34.8%
Better Cotton total		4,799,532	14.6%	22.8%	34.8%
Bonsucro	Sugarcane	1,861,109	7.1%	24.0%	97.4%
Bonsucro total		1,861,109	7.1%	24.0%	97.4%
CmiA	Cotton	1,705,088	5.2%	2.2%	5.3%
CmiA total		1,705,088	5.2%	2.2%	5.3%
Fairtrade	Bananas	50,054	0.9%	3.0%	30.6%
	Cocoa	1,523,686	13.1%	7.6%	49.1%
	Coffee	1,153,327	10.2%	2.3%	22.9%
	Cotton	57,010	0.2%	-8.1%	-9.4%
	Sugarcane	113,366	0.4%	8.1%	-22.6%
	Tea	116,620	2.2%	-6.7%	-13.7%
Fairtrade total		3,014,063	3.2%	4.5%	28.7%
GLOBALG.A.P.	Bananas	344,861	6.5%	5.0%	25.4%
GLOBALG.A.P. total		344,861	6.5%	5.0%	25.4%

Standard	Commodity	Area harvested [ha]	Share of global area harvested	Area growth 2020-21	Area growth 2017-21
Organic	Bananas	97,426	1.8%	30.5%	32.3%
	Cocoa	430,745	3.7%	23.3%	16.4%
	Coffee	797,436	7.0%	24.6%	-5.9%
	Cotton	621,691	1.9%	5.7%	31.4%
	Oil palm	32,344	0.1%	54.0%	146.0%
	Soybeans	991,890	0.8%	20.1%	69.7%
	Sugarcane	106,957	0.4%	7.4%	27.9%
	Tea	139,700	2.7%	17.0%	9.6%
Organic total		3,218,188	1.3%	18.4%	25.1%
ProTerra	Soybeans	632,900	0.5%	-29.1%	-48.3%
	Sugarcane	939,913	3.6%	55.6%	-15.7%
ProTerra total		1,572,813	1.0%	5.1%	-32.8%
Rainforest	Bananas	185,390	3.5%	-2.0%	15.1%
	Cocoa	517,431	4.4%	-4.9%	-30.2%
	Coffee	583,026	5.1%	12.2%	41.7%
	Oil palm	133,148	0.5%	-0.1%	41.1%
	Tea	693,866	13.2%	7.9%	26.0%
Rainforest total		2,112,861	3.4%	4.1%	7.9%
RSPO	Oil palm	3,353,641	11.6%	2.9%	33.4%
RSPO total		3,353,641	11.6%	2.9%	33.4%
RTRS	Soybeans	1,332,065	1.0%	-2.9%	5.7%
RTRS total		1,332,065	1.0%	-2.9%	5.7%
UTZ	Cocoa	2,043,873	17.5%	-15.0%	-24.5%
	Coffee	826,397	7.3%	6.9%	39.4%
	Tea	46,348	0.9%	-17.5%	-40.0%
UTZ total		2,916,618	10.3%	-9.8%	-13.6%

Sources: FiBL-ITC-IISD/SSI survey, 2023; 4C Services, 2014–16, 2018–23; Better Cotton, 2014, 2015, 2017–23; Bonsucro, 2014–16, 2018–23; Cotton made in Africa, 2014–16, 2018–23; Fairtrade International, 2017–23; GLOBALG.A.P., 2015, 2016, 2018–23; FiBL survey, 2008–23; ProTerra Foundation, 2014–16, 2018–23; Rainforest Alliance, 2014–16, 2018–23; Roundtable on Sustainable Palm Oil, 2019–23; Round Table on Responsible Soy, 2014–16, 2018–23; Textile Exchange 2013–23.





CHAPTER 3

CONSUMPTION TRENDS FOR CERTIFIED PRODUCTS

By Erika Luna and Cristina Larrea

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CONSUMPTION TRENDS FOR CERTIFIED PRODUCTS

This chapter highlights specific consumption trends affecting eight agricultural commodities that are increasingly grown under voluntary sustainability standards. It explores social, economic and cultural characteristics and differences among consumers, and identifies opportunities to boost demand for sustainable products worldwide.

Please note that data in this chapter relate to 2020 unless explicitly mentioned. References for this chapter can be found towards the end of this report.

Demand for certified goods has picked up

Recovering from the disruption caused on entire supply chains by the COVID-19 pandemic, VSS-compliant commodities are again gaining momentum thanks to growing consumer demand in both developing and developed economies. While Europe and North America remain the leading markets for certified commodities, the developing world – the main producer of many agricultural commodities where VSSs operate – is starting to increase its market share of these products.

Growing populations, rising disposable incomes and greater awareness of the socioenvironmental and health impacts of agricultural commodities are the main drivers of increasing demand worldwide. Still, demand for VSS-compliant commodities can expand even further by raising awareness about the sustainability impacts of commodity production, making end-products more accessible to price-sensitive consumers and available in supermarkets and other points of sale, especially in emerging economies and producing countries.

The engagement and coordination of value-chain stakeholders, from producers to retailers and end-consumers, is essential to address these persistent concerns. Considering the social and economic characteristics of consumers, as well as cultural differences, is therefore key in the uptake of these VSS-compliant commodities.



Bananas: Buoyant sales, but room to grow

Global banana supply chains proved resilient in 2020, with traditional markets in the Global North leading VSS-compliant consumption, particularly organic. More than 10% of all the bananas consumed in Europe and North America in 2020–21 were organic. In the United States, organic produce sales – led by bananas in terms of volume – have outperformed conventional sales. Sales of Fairtrade bananas in the United States grew 10% a year in 2019 and 2020, and make up a third of all bananas sold in the United Kingdom.

Low prices in retail stores, growing consumer preference for organic fruits and vegetables, consumer awareness about the socioenvironmental impacts of banana production and the shift to home meal preparation during the pandemic have driven the success of VSS-compliant bananas in these markets. Nevertheless, the consumption of VSS-compliant bananas has room for growth.

Boosting VSS-compliant consumption requires efforts across the supply chain, including importers, end-consumers and retailers. The latter can significantly influence shopping choices, as they determine where and what bananas are placed on shelves. Retailers could replicate education campaigns such as Behind the Peel by Fairtrade Canada, which highlights the direct socioenvironmental impacts of banana production on the produce to encourage consumers to purchase certified bananas.

Promoting sustainable banana consumption in developing economies is also essential, as these countries are the most prominent producers and consumers. About 80% of bananas are consumed locally in large producing countries such as India, China and Brazil.

India alone produces and consumes about 25% of bananas worldwide, but its share of global exports in 2020 was only 0.8%. The consumption of VSS-compliant bananas in India is minimal because the production of bananas that comply with a standard is almost non-existent. This presents a significant opportunity to increase the demand and production of bananas grown under sustainability standards.

Most VSS-compliant bananas are grown in Latin America. Although Brazil is a major producer and consumer of bananas, VSS-compliant bananas are largely exported. Facilitating intraregional trade of VSS-compliant bananas enhances their sustainable consumption across the region. For instance, the Memorandum of Understanding on Organic Products between Chile and Brazil, implemented in 2019, aims to expedite the trade of organic products, such as bananas, between these two nations.

Holistic strategies such as consumer education campaigns and price incentives can increase local consumption in emerging markets. Besides targeting consumers at the retail level, smaller local businesses and farms could offer incentives to consumers by introducing community-supported agriculture programmes. Through these programmes, consumers can subscribe to receive fresh produce (including bananas) at a discounted price rather than buying products separately. This also creates a consumer base for farmers who struggle to access other markets.



Cocoa: Need to target new consumers

Europe remains the world's most important market for certified cocoa. The region underpins growing demand for VSS-compliant cocoa, with more and larger chocolate manufacturers buying certified cocoa. Although the COVID-19 pandemic disrupted the cocoa value chain, favourable long-term market prospects are seen for sustainable cocoa.

Policy regulations and emerging national sustainability initiatives will continue to drive demand for VSS-compliant cocoa. Switzerland, Germany and Belgium are among countries that have set up national cocoa platforms with targets to move towards a sustainable cocoa sector. The Dutch government has articulated specific sustainable procurement guidelines with which producers must either comply or set commitments to comply with; these guidelines also apply to the cocoa sector.

Despite these efforts, the global supply of certified cocoa continues to surpass demand. While Europe and North America are responsible for most of the consumption of certified cocoa, consumption in North America remains weak as consumers have access to many other snacks. Nevertheless, Fairtrade reported in 2020 that sales of cocoa-based products in the United States had grown by 14%.

Promoting the consumption of VSS-compliant cocoa beyond Europe and North America is crucial to balance the market. Strategies should target new consumers in traditional markets and more sustainably conscious consumers with higher disposable incomes.

For instance, exploring e-commerce tools and the use of sustainable cocoa in the cosmetic and pharmaceutical industries could open opportunities to expand the market of VSS-compliant cocoa, notably in growing emerging markets such as China. Attractive packaging is extremely important, especially as chocolate is often given as a gift and regarded as a luxury or status item.

In the main producing countries of VSS-compliant cocoa, such as Ghana and Côte d'Ivoire, some key challenges hinder the expansion and uptake of sustainable cocoa consumption. These include the absence of cocoa in traditional diets, price sensitivity and low sustainability awareness among consumers, a lack of processing facilities and high production costs. According to the Ghana Cocoa Board, fewer than half of the cocoa beans produced in the country are processed at Ghanaian factories, and less than 2% percent of total production is locally consumed.

Locals describe the chocolate produced by Ghanaian brands as harder and grittier than that from European or American markets. However, processing and high import tariffs on chocolate mean few Ghanaians can afford an imported chocolate bar. All this leads to low consumption of chocolate in the country, including that domestically produced.

To encourage chocolate consumption, the government has introduced initiatives such as setting a national chocolate day, educational campaigns and public procurement programmes. These efforts could help expand consumption of domestic cocoa-based products, including those made with VSS-compliant cocoa.



Coffee: Consumers seek ethical choices

The success of VSS-compliant coffee in traditional markets reflects growing consumer preference for ethical consumption. Consumers are increasingly concerned about the social and environmental impacts of the products they consume. Around 43% of American coffee drinkers say 'ethical, environmentally friendly or socially responsible coffee options would influence their product choice'.

In Europe, retailers such as Lidl, ALDI and Sainsbury's have entered the certified market by developing private labels that comply with VSSs, such as Rainforest Alliance/UTZ and organic, boosting retail sales of certified coffee in the region.

While the market for sustainable coffee is growing, an imbalance remains between supply and demand. Not all VSS-compliant coffee is being sold as such, which means farmers miss out on premium prices and struggle to maintain certifications. Falling incomes and the higher production costs experienced in 2020 because of supply-chain disruptions have led to greater poverty rates among smallholder coffee growers and, in some cases, limits investments in sustainable production and climate resilience.

There is also an issue with miscommunication, purposeful 'greenwashing' and a general lack of knowledge about VSS-compliant coffee and the meaning of VSS logos. In addition, consumers may distrust their credibility and effectiveness. Building trust and transparency from large coffee buyers is key to shaping coffee consuming behaviour, especially when many consumers are seeking ways to lead a more environmentally friendly lifestyle.

Boosting consumption of VSS-compliant coffee is especially important in emerging economies, where domestic consumption rates are growing exponentially thanks to the influence of millennials with higher disposable incomes. While the younger generations are generally more willing to pay for VSS-compliant coffee, price will still limit many people in emerging economies.

Providing monetary incentives to consumers to buy VSS-compliant coffee could help stimulate sustainable consumption. In addition, initiatives such as the Global Coffee Platform are essential to keep educating consumers and promote local consumption of VSS-compliant coffee.

In Colombia, for instance, the market for VSS-compliant coffee is still a small niche but growing, alongside the emergence of specialty high-quality coffee in the country. Household incomes have grown over the past two decades, leaving more disposable income available and allowing households to 'trade up' for higher-quality goods. In Indonesia, greater production under VSSs might be reflected in consumption volumes, as the domestic market increasingly absorbs domestic production.



Cotton: Shift towards sustainable clothing

The pandemic has created an opportunity to re-evaluate approaches to sustainability in the cotton value chain. Brands and retailers are increasingly committing to sourcing more VSS-compliant cotton.

For instance, Better Cotton, the top producer of sustainable cotton, reported that retailer consumption rose from 85,000 tons in 2013 to 1.7 million tons in 2020, at a compound annual growth rate of 53.4%.

Organic cotton, the most consumed sustainably grown cotton by volume after Better Cotton, has also experienced an uptake in the past couple of years. Large textile manufacturers (members of Textile Exchange) reported that 11% of total cotton sourced in 2020 was organic.

Beyond sustainable sourcing, the concerns of consumers are reflected in retailers' move towards incorporating recycled clothing lines and implementing traceability systems along the value chain to guarantee the integrity of the cotton they purchase. In addition, due diligence rules in the European Union will require companies to source more sustainable materials. This is important, as there are concerns about the reliability of the organic cotton sourced and sold in the market.

Awareness and a willingness to pay for more sustainable clothing go hand in hand, particularly for the younger generation (also now the largest consumer cohort). The European market is already a substantial market for cotton, where about a quarter of consumers in countries including Poland, Italy and Spain are most likely to buy clothes made of sustainable materials (such as organic or Better Cotton certified).

A survey in the United States found that 66% of participants were aware of the negative impacts of cotton and textiles. The same study reported that 31% of Gen Z consumers were willing to pay more for environmentally friendly fashion, in contrast to 12% of Boomer consumers.

Nonetheless, an action gap remains as greater awareness and willingness do not always translate into sustainable purchases. Even though this intention–action gap has been a prevailing attitude among consumers, researchers predict a change towards purchasing more sustainable clothing in a post-pandemic scenario.

Promoting sustainable cotton production and consumption is essential, especially in China, the largest textile and apparel producer and consumer. Thanks to advertising and educational campaigns by activists and apparel brands, awareness and willingness among Chinese consumers to purchase sustainable clothing have vastly improved.

Concerned consumers have shed light on the challenges that need to be addressed in the sector, mainly social and human rights issues. For instance, the region of Xinjiang, the biggest cotton producer and exporter in China, gained media attention in early 2021 after human rights organizations reported that Uyghur farmers were victims of forced labour supplying big brands.

India is also influential in the cotton value chain. A stronger middle class (with more purchasing power) and wider availability of fast-fashion clothing and Western brands across India have undermined sustainability. The expansion of fast fashion in the Indian market has led activist groups, such as Fashion Revolution India, to encourage consumers to demand sustainable and ethical practices from brands. These activists have helped to increase consumer awareness of the environmental impacts and social issues such as gender inequalities faced by women cotton farmers.



Soybeans: A lack of traceability

Consumption of VSS-compliant soybeans rose exponentially from 2019 to the first half of 2020. This boost in demand was driven by sustainable sourcing commitments by supply-chain actors, from processing and trading companies to food manufacturers and retailers.

However, most of this increase was in the form of RTRS credits, which are not linked to physical supplies of soybeans. Farmers who produce soybeans that comply with RTRS obtain credits equivalent to the volume of certified soy produced. Value-chain actors can purchase these credits to compensate for feed and other soybean-derived products that were not obtained from sustainable sources.

The global surge in demand for VSS-compliant soy has come from North America and Europe (especially the Netherlands), where consumers are looking for non-animal protein sources with health and environmental benefits. While consumers, particularly young ones, are increasingly interested in consuming sustainable soy, only 19% of the total soy production is consumed by people (in the form of tofu, soy milk, oil and other soy-based products). The rest is used for animal feed (77%) and a smaller amount (3%) has industrial uses.

As most soy is for animal consumption, concern persists about the lack of traceability systems in soy end-products, making it harder to trace the soy and label meat from animals fed with sustainable soy. As a result, there is less visibility of certifications for end-users of meat products, and thus less consumer awareness.

Boosting sustainable consumption in China, the largest soybean consumer in the world, is crucial to ensure sustainability in the sector. Although China is stepping up its domestic soy production to reduce its dependence on foreign sources, most demand is still covered by imports (75% of total consumption) from Brazil, the United States and Argentina (with 85% of those imports going towards animal feed).

Much of the pressure to increase sustainable soy consumption from imports comes from the private sector, as the Chinese government is more focused on addressing the negative environmental impacts (such as deforestation) associated with domestically produced soybeans than those in the countries that export soybeans to China.

A significant step to support international VSSs came when the not-for-profit sector collaborated with industry stakeholders and academia to create the Sustainable Soybean Trade Platform for imported soybeans in China. To increase national demand, however, the government must provide incentives (financial or others) to import and consume VSS-compliant soybeans from abroad.



Sugarcane: Sales drop amid health concerns

Sugarcane-producing countries in Latin America (including Colombia and Brazil) have benefited from growing demand for organic sugar, especially from the European Union. In 2020, imports of organic sugar in Europe rose by 29% from 2018. Almost all of this sugar is used as an ingredient in beverages and confectionary products, and for direct human consumption.

Nonetheless, the COVID-19 pandemic triggered a decline in sales of processed foods that use a lot of sugar because of the associated human health concerns related to sugar over-consumption (along with high daily calorie intake and low physical activity).

Amid the trend of reducing human consumption of sugar, growing demand for biofuels has underpinned demand for sugarcane and its VSS-compliant counterpart. Market uptake of ethanol that complies with leading VSSs such as International Sustainability & Carbon Certification (ISCC), and Bonsucro is growing, driven by regulatory frameworks – in particular, European regulations on sustainable biofuels that recognize voluntary schemes as a valid form of compliance.

Among emerging and producing economies, Brazil stands out as a country where consumption of VSS-compliant cane sugar could expand because consumers are more willing to purchase products that are healthier and have a positive impact – especially organic sugarcane, as Brazil's organic market is growing. In South Africa, the Sugar Masterplan aims to boost consumption of domestic cane sugar while encouraging sustainable sugarcane production. However, it does not refer to sustainability standards or to cane sugar produced in compliance with a VSS.

Concerns among different actors about consumer awareness of VSSs, the price of VSS-compliant products and their limited availability in stores remain a challenge to increase consumption in both countries. Moreover, as sugar is mostly a hidden commodity, consumers have little information about cane sugar ingredients in a final product.



Tea: Opportunities to close an offer-demand gap

Global demand for tea surged during the height of the pandemic, providing opportunities to build a more sustainable and resilient sector. Initial lockdowns slowed distribution and marketing logistics in the sector, affecting activities such as auditing, leading tea producers to postpone their plans to switch to sustainable certifications. However, the industry adapted quickly to the 'new normal' and returned to a stable state in 2021.

The tea industry foresees an increase in VSS-compliant production, coupled with steady demand from predominantly European consumers who favour certified products. Consumers in both developed and emerging economies are willing to spend their money on more sustainable food and drink options.

European sales of organic products such as tea outpaced those of non-organic products in 2020. Increased demand for organic tea during the pandemic led to a supply challenge in India (a major source of organic tea), where food processing and exports were halted in March 2020.

However, there is an offer-demand gap, especially outside of Western Europe and India, where many consumers who desire a more sustainable lifestyle have no access to VSS-compliant tea brands. For instance, almost 80% of Brazilians say they are interested in a sustainable lifestyle, but only 13% of hot beverages, including tea, sold in Brazil are labelled as sustainable.

Another issue is the price discrepancies between VSS-compliant teas and their conventional counterparts. In major tea-consuming countries such as Türkiye, conventional teas are sometimes as much as 625% cheaper than the sustainable alternative. Sustainable products like certified tea are often handled as luxury goods, which increases the price. A price premium could continue to be a barrier to a growing consumer base, particularly in price-sensitive markets (i.e. emerging economies and major producing countries).

India is one of the top producing and consuming countries of tea (the Indian population consumes about 80% of domestic production) and a large proportion is VSS-compliant. In 2013, trustea was launched as a national initiative with the mission to 'sustainably transform the Indian tea industry for the benefit of consumers, workers, farmers and the environment'. Its mission has progressed and, by 2021, trustea had certified 791,000 tons of tea, representing 57% of total national production.

These efforts to certify large volumes of production could eventually lead to more sustainable consumption of tea in India. Expansion of trustea certification is accompanied by growing consumer awareness of the social and environmental implications of the tea supply chain.

China is the world's largest tea-consuming country, with a market valued at \$10 billion that is expanding due to the popularity of non-traditional offerings, which presents an opportunity for certified tea. Similar to India, about 80% of China's tea is consumed domestically, highlighting the importance of greening the entire value chain and promoting sustainable consumption.

Encouraging consumption of sustainably grown tea requires improved market transparency as well as greater awareness about the importance of sustainability for rural development and livelihoods. One way to expand sustainable consumption in China is to effectively communicate sustainability considerations regarding tea to consumers. The growing popularity of ready-to-drink tea is an opportunity to engage consumers, as it is easier to communicate information about sustainability on this sort of packaging (compared to loose, unbranded tea leaves).



CHAPTER 4

MEETING THE SUSTAINABILITY STANDARDS

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For more details about the voluntary sustainability standards and interactive infographics, see <https://www.standardsmap.org/en/trends>.



4C

4C (Common Code for the Coffee Community) was launched in 2003 to promote sustainable global coffee production that respects people and the environment. Through its strict Code of Conduct, comprising 12 principles and 45 criteria, it helps protect landscapes with high biodiversity and carbon values, safeguard natural resources and promote good working conditions along the supply chain.

The 4C Code covers the three pillars of sustainability (economic, social and environmental) in a balanced approach. Advanced and innovative tools support the auditing procedure, for example, satellite imagery-based remote sensing technology to support the risk assessment and verification of deforestation-free supply chains.

In 2021, 4C-certified land accounted for more than 790,000 hectares of coffee crops worldwide, representing 0.02% of global agricultural land and 7% of the global coffee area. Upwards of 300,000 certified producers – including almost 290,000 smallholders – produced more than 1.6 million tons of coffee. Colombia had the largest area (222,949 ha), followed by Brazil (193,396 ha), Viet Nam (159,580 ha) and Côte d'Ivoire (48,931 ha). Between 2009 and 2016, 4C's certified area grew almost 400%; because of more rigorous certification procedures, however, it dropped by 48% between 2017 and 2021.

4C: Key indicators, 2021	
Area [hectares]	792,309
4C share of global agricultural land	0.02%
4C share of global coffee area	7%
Coffee production volume [MT]	1,623,014
Certificate holders	178
Producers	304,831
Smallholders	287,428

Source: 4C, 2023.

Explore the latest trends at <https://www.standardsmap.org/en/trends>



BETTER COTTON

Launched in 2009, Better Cotton is the world's largest cotton sustainability programme. The global non-profit's mission is to help cotton communities survive and thrive, while protecting and restoring the environment. It aims to embed sustainable farming practices and policies, enhance the well-being and economic development of cotton farmers, and drive the global demand for sustainable cotton. Better Cotton is defined by the Better Cotton Standard System – core components include the Better Cotton Principles and Criteria, and the Assurance Programme to ensure compliance.

For the 2021/22 season, Better Cotton was grown on almost 4.8 million hectares worldwide, representing 0.1% of global agricultural land and 14.6% of the global cotton area. More than 1.6 million farmers produced upwards of 4.7 million tons of Better Cotton. India harvested the largest area, followed by Brazil (more than 1.3 million ha each) and then Pakistan (more than 1 million ha). Better Cotton's global cotton area increased by 35% between 2017 and 2021, and almost 23% in 2020–21.

Better Cotton: Key indicators, 2021/22 season ¹⁶	
Area [hectares]	4,799,531
Better Cotton share of global agricultural land	0.1%
Better Cotton share of global cotton area	14.6%
Production volume [cotton lint, tons]	4,781,853
Certificate holders	1,367
Licensed producers	1,705,194
Smallholders	1,700,626
Producer groups	1,040

Source: Better Cotton, 2023.

16. Figures reported here do not include BCI-CmiA benchmarked figures, which are reported separately. (For BCI-CmiA benchmarked figures, see BCI's 2020 Annual Report at https://issuu.com/better-cotton-initiative/docs/better_cotton_2021_annual_report.)

BONSUCRO

Bonsucro sets standards for sustainable sugarcane production. The non-profit organization has a community of more than 300 members, from farms, mills and non-governmental organizations to traders, retailers and end-users. Bonsucro seeks to collectively accelerate the sustainable production and uses of sugarcane. Its strategic aims are to create value across the supply chain, improve the environmental impact of sugarcane and strengthen human rights and decent work in sugarcane farming and milling.

Launched in 2011, Bonsucro's process is guided by the Production Standard and the Chain-of-Custody Standard, to effect industry-wide change. Members can also access impact projects on key issues such as implementing the standard, collaborating with policymakers on sustainability, assisting smallholder farmers and collaborating with finance institutions on sustainability assessment.

Bonsucro certified more than 1.8 million hectares of sugarcane in 2021, representing 0.04% of global agricultural land and 7.1% of the global sugarcane area. In 2021, 150 certified producers grew more than 118 million tons of sugarcane. Brazil had the largest area (1.5 million ha), followed by Thailand (more than 40,000 ha) and Colombia (more than 39,000 ha). Bonsucro's total certified area increased by more than 60% between 2017 and 2021, and by 24% in 2020–21.

Bonsucro: Key indicators, 2021	
Area [hectares]	1,861,109
Bonsucro share of global agricultural land	0.04%
Bonsucro share of global sugarcane area	7.1%
Production volume [MT]	118,460,746
Certificate holders	232
Producers	150

Source: Bonsucro, 2023.

Explore the latest trends at <https://www.standardsmap.org/en/trends>



COTTON MADE IN AFRICA

Founded in 2005, Cotton made in Africa – an initiative of the Aid by Trade Foundation – supports small-scale African cotton farmers to improve their lives through trade. In 2021, more than 34% of all African cotton was grown in accordance with the CmiA standard, and some 600 million CmiA-labelled textiles were produced to meet international demand, representing around €3.9 million (\$4.1 million) in licence revenues – an increase of about 40% in 2020–21. Income from licensing fees is reinvested to benefit farmers and the environment.

The CmiA programme encompassed 10 countries and worked with almost 1 million smallholder cotton farmers in 2021. More than 1.7 million hectares were CmiA-certified that year, representing 0.04% of global agricultural land and 0.15% of the African agricultural area. CmiA's share of the total cotton areas is considerably higher, at 5.18% globally and more than 15% of the African cotton area.

Burkina Faso had the largest area (511,078 ha), followed by Côte d'Ivoire (444,264 ha) and Chad (233,389 ha). The CmiA-certified area grew by more than 5% from 2017–21, with a 2.2% increase from 2020–21.

CmiA: Key indicators, 2021	
Area [hectares]	1,705,088
CmiA share of global agricultural land	0.04%
CmiA share of global cotton area	5.2%
Production volume [cotton lint, tons]	677,479
Certificate holders	21
Smallholders	926,747

Source: CmiA, 2023.

Explore the latest trends at <https://www.standardsmapi.org/en/trends>



FAIRTRADE INTERNATIONAL

The global Fairtrade International network ensures an equal share of trade benefits for farmers and workers in 70 countries through standards and certification, focused programmes and advocacy. Standards encompass social, economic and environmental requirements for smallholder farmers, traders and plantations using hired labour, and they guarantee a minimum price and premium on most goods for producers.

More than 3 million hectares were Fairtrade-certified in 2021, representing 0.07% of global agricultural land. Fairtrade International certifies a wide range of commodities, from tropical fruit to cereals and textiles. Cocoa accounted for almost half of Fairtrade International's total area, exceeding 1.5 million hectares – 13.1% of the global cocoa area. Coffee was the second most important product at more than 1.1 million hectares, representing 10.2 % of the global coffee area.

Fairtrade International has certified more than 1.8 million farmers, mainly in Africa (68%), followed by Latin America (18%) and Asia (9%). The Fairtrade-certified area expanded by 20% between 2017 and 2021, and grew by 5.3% in 2020–21.

Fairtrade: Key indicators, 2021	
Area [hectares] ¹⁷	3,159,493
Fairtrade share of global agricultural land	0.07%
Fairtrade share of global cocoa area	13.1%
Fairtrade share of global coffee area	10.2%
Production [MT] ¹⁸	5,073,118
Producers ¹⁹	1,846,787

Source: Fairtrade International 2023.

17. This excludes honey, nuts, pulp, gold and sports balls.

18. This excludes gold, flowers and sports balls.

19. This does not include workers in hired labour workplaces.



FOREST STEWARDSHIP COUNCIL

The Forest Stewardship Council is a member-based initiative with certificates operating in 135 countries. Its core Principles and Criteria Standard articulates the requirements for forest-management certification, which aims to protect the environmental and social values of managed forests, including protection of areas of high conservation value and the rights of indigenous peoples. To display the FSC Mix label (the initiative's most common label), material used for products must comprise at least 70% certified material; the remainder can be FSC-controlled wood or recycled material.

More than 230 million hectares of forest were FSC-certified in 2021, representing 5.8% of the global forest area. The Russian Federation had the largest area, with almost 62 million hectares, followed by Canada (more than 50 million hectares) and Sweden (more than 19 million hectares). Together, these three countries represented more than half of the global FSC-certified area. There were 1,810 forest-management certificate holders in 2021 and 50,185 chain-of-custody certificate holders. The certified area grew by 16% between 2017 and 2021 and grew by about 4% in 2020–21.

FSC: Key indicators, 2021	
Area [hectares]	230,703,916
FSC share of global forestry area	5.7%
Forest-management certificate holders	1,810
Chain-of-custody certificate holders	50,185

Source: FSC, 2023.

Explore the latest trends at <https://www.standardmap.org/en/trends>



GLOBALG.A.P.

GLOBALG.A.P. is a brand of smart farm assurance solutions developed by FoodPLUS GmbH in Cologne, Germany, with cooperation from producers, retailers and other stakeholders from across the food industry. These solutions include a range of standards for safe, socially and environmentally responsible farming practices.

The most widely used GLOBALG.A.P. standard is Integrated Farm Assurance, applicable to fruit and vegetables, aquaculture, floriculture, livestock and more. This standard also forms the basis for the GGN label – the consumer label for certified, responsible farming and transparency.

In 2021, more than 4.3 million hectares of agricultural land were under GLOBALG.A.P. certification,²⁰ managed by upwards of 204,000 agricultural producers.²¹ The product with the largest noncovered area was potatoes, followed by bananas and apples.

Most of the area under GLOBALG.A.P. certification (both covered and noncovered) is in Europe (61%), followed by Africa (15%), Latin America (12%), Asia (10%), North America (1%) and Oceania (1%). Spain has the largest area under certification (almost 470,000 ha), followed by the United States (more than 450,000 ha) and Italy (more than 280,000 ha).

The total area under GLOBALG.A.P. certification increased by 21.4% between 2017 and 2021, and by 4.4% in 2020–21. Production processes for 370 fruit and vegetable products are certified to the Integrated Farm Assurance standard worldwide.

GLOBALG.A.P.: Key indicators, 2021	
Area (hectares)	4,316,766
Share of global agricultural land under GLOBALG.A.P. certification	0.09%
Certificate holders	58,963
Producers under certification	204,575

Source: GLOBALG.A.P. c/o FoodPLUS GmbH, 2023.

20. This includes more than 117,000 hectares covered by greenhouses and plastic tunnels for intensive production.

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



ifoam.bio, statistics.fibl.org, organic-world.net



IFOAM – ORGANICS INTERNATIONAL

The global membership-based organization represents the organic movement across the entire food system, with upwards of 700 affiliates in 127 countries. IFOAM – Organics International celebrated its 50th anniversary in 2022.

Of the standards presented in this report, organic applies to the widest range of commodities. Almost all agricultural products are certified. In addition to the agricultural land, there are wild collection, aquaculture and forestry products, and these sectors accounted for 31.8 million hectares in 2021.

In 2021, more than 76 million hectares were certified organic worldwide, representing 1.6% of all agricultural land. Furthermore, almost 3.7 million producers in 191 countries practiced organic farming; most were certified through group certification. Australia had the largest organic area at 35.7 million hectares, followed by Argentina (4 million hectares) and France (2.8 million hectares).

In 2021, the global organic market was worth €125 billion (\$133 billion today) and the leading countries were the United States, Germany and France.

Where a country's production volume data were not available, FiBL estimated the area harvested and the production volume for the commodities covered in this report: bananas, cocoa, coffee, soybeans and tea. If available, the fully converted area or 90% of the certified area was taken as the area harvested. FiBL calculated the production volume by using estimated yields based on country yields provided by the United Nations Food and Agriculture Organization corporate statistical database (FAOSTAT), assuming that organic has a lower yield in most cases.

For organic cotton, data from Textile Exchange were used.

IFOAM: Key indicators, 2021	
Area [hectares]	76,403,777
Organic share of global agricultural land	1.6%
Producers	3,667,288
Retail sales [million EUR]	124,845

Source: FiBL,²² 2023; Textile Exchange, 2023 (for organic cotton data). More information at <https://www.organic-world.net/yearbook/yearbook-2023.html>

22. Every year, FiBL collects data on organic agriculture that are published in the annual joint FiBL/IFOAM – Organics International publication *The World of Organic Agriculture*. Textile Exchange provided the data on organic cotton shown in this report.

Explore the latest trends at <https://www.standardsmap.org/en/trends>



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 with more than 80 international members. The non-profit, non-governmental organization promotes sustainable forest management through independent third-party certification. Certified entities must meet strict environmental, social and economic requirements.

PEFC enables forest owners around the world to demonstrate responsible practices and access certification, and empowers companies and consumers to buy sustainably. In 2018, with the publication of its latest Sustainable Forest Management benchmark standard, PEFC extended the impact of its certification beyond forests and enhanced its contribution to the United Nations Sustainable Development Goals.

In 2019, more than 326 million hectares of forest worldwide were PEFC certified – 8.16% of the global forest area. Canada had the largest PEFC-certified forest area with more than 137 million hectares, followed by the United States and the Russian Federation. There were 11,984 chain-of-custody certificate holders.

PEFC: Key indicators, 2021	
Forest area [hectares]	328,464,110
PEFC share of global forest area	8.1%
Chain-of-custody certificate holders	12,671

Source: PEFC, 2023.

Explore the latest trends at <https://www.standardsmap.org/en/trends>

PROTERRA FOUNDATION

The non-profit ProTerra Foundation was created in 2006 and became independent in 2012. Its standard is applied primarily to the sustainable production of soy and soy-derived consumer products, but is designed to encompass all agricultural products and offer full traceability. Key components centre on protecting high conservation value areas, biodiversity and the rights of communities, indigenous people and smallholders, and promoting good labour and agricultural practices.

In 2021, almost 1.9 million hectares were ProTerra-certified or Good Agricultural Practice-audited.²³ The ProTerra standard was applied mainly in the production of non-genetically modified soybean and sugarcane (ProTerra reported sugarcane data for the first time in 2017). There were more than 600,000 hectares of soybeans, 0.5% of the global soybean area, and almost 940,000 hectares of sugarcane, 3.6% of the global sugarcane area.

ProTerra-certified producers were active in 22 countries, with the largest certified area in Brazil (more than 880,000 hectares), representing almost 50% of the foundation's global area. Between 2017 and 2021, the total area decreased by 19%. The soybean area dropped by 29% between 2019 and 2020, though the sugarcane area expanded by 56% in the same period.

ProTerra: Key indicators, 2021	
Total area [hectares]	1,894,913
Soybeans	632,900
Sugarcane	939,913
ProTerra share of global agricultural land	0.04%
ProTerra share of global soybean area	0.5%
ProTerra share of global sugarcane area	3.6%
Certificate holders	60
Producers	91,993
Producers	9,252 ²⁴

Source: ProTerra, 2023.

23. Of the total area certified, a share of 79% was Good Agriculture Practice-audited.

24. Direct comparison with previous years is not possible due to changes in the way the producers are counted.

RAINFOREST ALLIANCE

Rainforest Alliance and UTZ merged in 2018 to form a new Rainforest Alliance organization. The international non-profit organization works to create a better future for people and the environment and focuses largely on four priority crop sectors: coffee, tea, cocoa and bananas.

For 2021, data were still reported separately for Rainforest Alliance and UTZ. Rainforest Alliance certified more than 5.2 million hectares of a wide variety of commodities, representing 0.1% of the global agricultural area. Tea had the largest harvested area (more than 690,000 hectares), representing 13.2% of the global tea area. This was followed by coffee (more than 580,000 hectares; 5.1% of the global coffee area) and cocoa (almost 520,000 hectares; 4.4% of the global cocoa area).

More than 1.5 million producers were operating under the Rainforest Alliance standard in 2021. Kenya had the largest certified area (almost 680,000 ha) followed by Brazil (more than 400,000 ha) and Côte d'Ivoire (almost 340,000 ha). The Rainforest-certified area grew by 51% between 2017 and 2021, and by 26% from 2020–21.

Rainforest Alliance: Key indicators, 2021	
Area [hectares]	5,212,359
Rainforest Alliance share of global agricultural land	0.1%
Rainforest Alliance share of global cocoa area	4.4%
Rainforest Alliance share of global tea area	13.2%
Rainforest Alliance share of global coffee area	5.1%
Production volume ²⁵ [MT]	21,698,327
Certificate holders	2,728
Producers	1,514,289

Source: Rainforest Alliance, 2023.

25. Excluding flowers and foliage.



UTZ

UTZ certified more than 2.9 million hectares worldwide in 2021, representing 0.06% of the global agricultural area. Cocoa was the most important UTZ-certified product, with upwards of 2 million hectares, representing 17.5% of the global cocoa area and 70% of the total UTZ-certified area. UTZ coffee was grown on more than 820,000 hectares, or 7.3% of the global coffee area (28% of UTZ's certified area). UTZ tea was grown on more than 46,000 hectares, or 0.9% of the global tea area (1.6% of UTZ's certified area).

More than 1 million producers were operating under UTZ standards in 2021. Côte d'Ivoire had the largest UTZ area (more than 880,000 ha), followed by Ghana (more than 510,000 ha) and Brazil (almost 190,000 ha).

UTZ: Key indicators, 2021	
Area [hectares]	2,916,618
UTZ share of global agricultural land	0.06%
UTZ share of global cocoa area	17.5%
UTZ share of global coffee area	7.3%
UTZ share of global tea area	0.9
Production volume [tons]	2,422,531
Production volume sold under the label [tons]	1,506,071
Certificate holders	1,367
Producers	1,053,878

Source: Rainforest Alliance, 2023.

Explore the latest trends at <https://www.standardsmat.org/en/trends>



ROUNDTABLE ON SUSTAINABLE PALM OIL

Founded in 2004, the Roundtable on Sustainable Palm Oil is a member-based initiative that unites stakeholders from the key sectors of the palm oil industry across 102 countries and territories. Certification supports smallholders to improve their livelihoods and produce more oil using less land, and reduces the risk of land conversion, which threatens forests, wildlife and biodiversity.

More than 4.5 million hectares were RSPO-certified in 2021, representing 0.1% of global agricultural land and 11.6% of the global oil palm area. The largest areas were in Indonesia (more than 2.3 million hectares), Malaysia (more than 1.2 million hectares) and Papua New Guinea (198,470 hectares). Asia had the largest RSPO-certified area (80%), followed by Latin America (10%), Africa (5%) and Oceania (5%). The RSPO-certified oil palm area grew by more than 38% between 2017 and 2021 and increased by 3% in 2020–21.

RSPO: Key indicators 2021	
Area [hectares]	4,564,086
RSPO share of global agricultural land	0.1%
RSPO share of global oil palm area	11.6%
Production volume, oil palm ²⁶ [MT]	84,500,839
Production volume, ²⁷ palm oil [MT]	18,883,353
Production volume, palm oil sold under the label [MT]	9,510,268
Certificate holders ²⁸	526
Producers (excluding mills and supply bases) ²⁹	165,042

Source: RSPO, 2023.

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

27. The production volume of palm oil refers to the 'certified volume', i.e. the estimated volume to be produced by a management unit based on historical production data.

28. Refers to the number of certified palm oil mills and independent smallholder groups.

29. Refers to the number of members certified under the scheme and independent smallholders.

Explore the latest trends at <https://www.standardsmap.org/en/trends>

ROUND TABLE ON RESPONSIBLE SOY ASSOCIATION

The Round Table on Responsible Soy Association is a global multistakeholder non-for-profit organization. It promotes the production, trade and use of responsible soy – which is economically viable, socially beneficial and environmentally appropriate – through cooperation with actors in and relevant to the soy value chain from production to consumption in an open dialogue.

RTRS also sets the standards for responsible soy and chain of custody. Notably, 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 Labor Conditions; Responsible Community Relations; Environmental Responsibility and Good Agricultural Practices.

In 2021, RTRS certified more than 1.3 million hectares, representing 0.03% of global agricultural land and 1% of the global soybean area. A total of 49,918 producers harvested upwards of 4.6 million tons of soybeans worldwide. Brazil had the largest RTRS area (967,864 hectares), followed by Argentina (193,211 hectares). The RTRS-certified area increased by almost 6% between 2017 and 2021 and decreased by 3% from 2020–21.

RTRS: Key indicators, 2021	
Area [hectares]	1,332,065
RTRS share of global agricultural land	0.03%
RTRS share of global soybean area	1.0%
Production volume [tons]	4,639,071
Certificate holders	94
Producers	49,918

Source: RTRS, 2023.

Explore the latest trends at <https://www.standardmap.org/en/trends>



CHAPTER 5

METHODOLOGY

FiBL (i.e. "Research Institute of Organic Agriculture FiBL")
(Helga Willer, Laura Kemper and Bernhard Schlatter)

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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. 2023). 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 2023. All of them returned data, but not consistently across all the indicators requested and not on all commodities.

Please note that for this edition for some standards revised data for previous years were received and numbers might differ from previous editions of this report.

Focus on commodities

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; Meier et al. 2020; Meier et al. 2021, Willer et al., 2022): 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 (previously 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)
- Round Table on Responsible Soy (RTRS)
- UTZ

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

31. Not all production considered organic actually complies with IFOAM norms. IFOAM – Organics 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 harvested	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 previous years as provided by the sustainability standards themselves in previous surveys (Lernoud et al., 2015, 2017, 2018, Willer et al., 2019, Meier et al., 2020 and 2021, Willer et al., 2022) 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 the Food and Agricultural Organization of the United Nations (FAO) (FAOSTAT, 2023).
- 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.³² 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, 2023).³³

32. For the composition of macrogeographical (continental) regions, geographical subregions and selected economic and other groupings, see the United Nations Statistics Division homepage at <http://unstats.un.org/unsd/methods/m49/m49regin.htm>.

33. FAOSTAT, Data Archives, the FAO Homepage, FAO, Rome, at [faostat.org > Inputs > Land at http://faostat3.fao.org/download/E/*E](http://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 2020/2021 were labelled as 2021 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 Standards Map portal, <https://www.standardsmap.org/en/trends>. Data revisions and corrections will be communicated at <https://vss.fibl.org/vss-report>.





APPENDIX

KEY DATA, AREA AND PRODUCTION

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INTERACTIVE ONLINE GRAPHICS

Graphics previously available as part of *The State of Sustainable Markets* report are now available on the ITC Standards Map at <https://www.standardsmap.org/en/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 commodity.
- 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 SSM 2023 Dashboard

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

The State of Sustainable Markets - 2023

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

In collaboration with: Fairtrade, FIBL, IISD

Supported by: Swisscontact, Swiss Agency for Development Cooperation SDC, Swiss State Secretariat for Economic Affairs SECO

Data source: FIBL-ITC-ISO/ISSI survey, 2021; AC Services, 2014-2016, 2018-2023; Better Cotton, 2014, 2015, 2017-2023; Bonsucro, 2014-2016, 2018-2023; Cotton made in Africa, 2014-2016, 2018-2023; Fairtrade International, 2017-2023; GLOBALG.A.P., 2015, 2016, 2018-2023; FIBL survey, 2008-2023; ProTerra Foundation, 2014-2016, 2018-2023; Rainforest Alliance, 2014-2016, 2018-2023; Roundtable on Sustainable Palm Oil, 2019-2023; Round Table on Responsible Soy, 2014-2016, 2018-2023; Textile Exchange, 2013-2023

Navigating the SSM 2023 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 commodity / for forestry
- By VSS

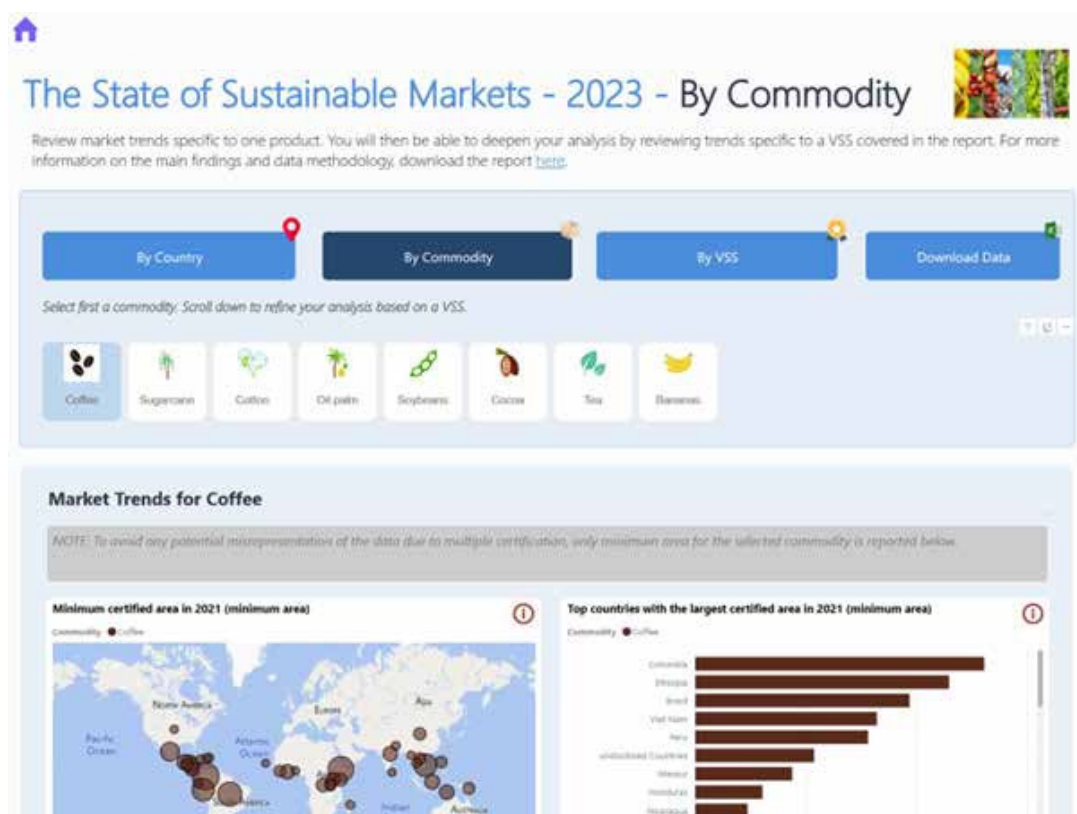
Download data



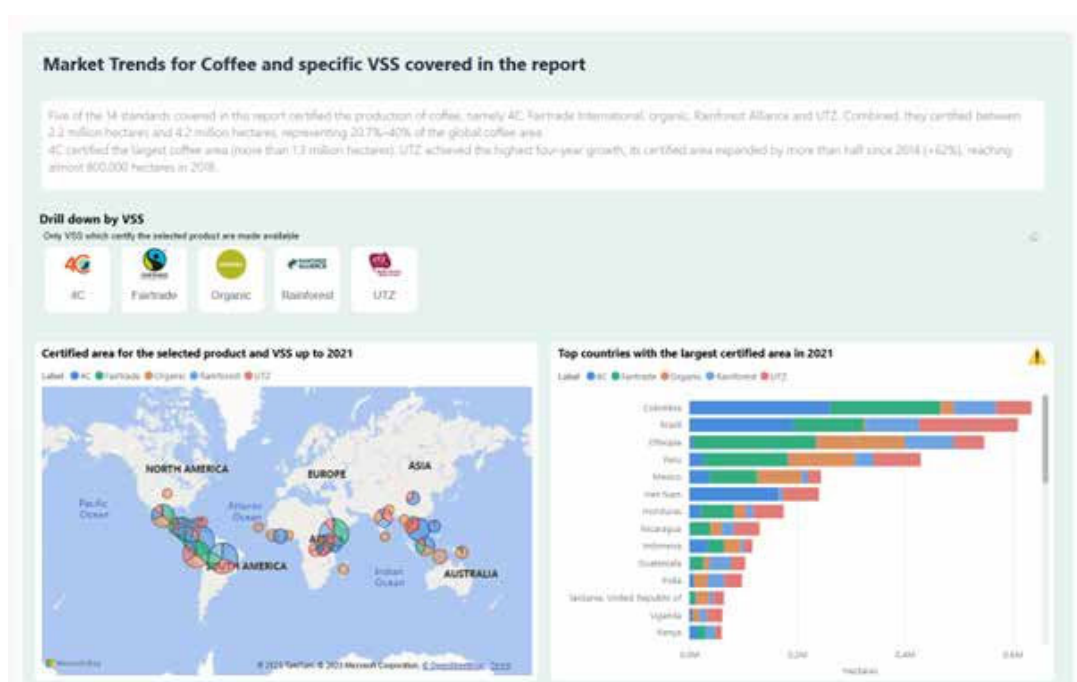
Structure of the SSM 2023 Dashboard

Each focus area has two levels of analysis.

- First level – Users are invited to refine their analysis based on a country, commodity/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.



TABLES

Table 7: Ranges of certified area by agricultural commodity, 2021

Commodity	Indicator	Area harvested [ha]	Share of global area	Area growth 2020–21	Area growth 2017–21
Bananas	Minimum area possible	350,633	6.6%	-2.7%	5.4%
	Average area	493,349	9.3%	-1.5%	12.0%
	Maximum area possible	636,064	12.0%	-0.8%	16.1%
Cocoa	Minimum area possible	2,527,652	21.7%	-3.5%	-13.1%
	Average area	3,485,554	29.9%	-5.0%	-10.0%
	Maximum area possible	4,443,452	38.1%	-5.8%	-8.2%
Coffee	Minimum area possible	1,647,526	14.5%	-2.5%	-32.8%
	Average area	2,839,187	25.1%	1.6%	-16.1%
	Maximum area possible	4,030,850	35.6%	3.4%	-6.6%
Cotton	Minimum area possible	6,696,306	20.3%	17.3%	29.9%
	Average area	6,931,189	21.1%	16.1%	27.5%
	Maximum area possible	7,166,069	21.8%	15.1%	25.4%
Oil palm	Minimum area possible	3,366,257	11.6%	2.3%	32.8%
	Average area	3,430,384	11.9%	2.3%	33.1%
	Maximum area possible	3,494,513	12.1%	2.3%	33.3%
Soybeans	Minimum area possible	2,196,355	1.7%	6.5%	17.2%
	Average area	2,576,605	2.0%	0.0%	4.3%
	Maximum area possible	2,956,855	2.3%	-4.3%	-3.6%
Sugarcane	Minimum area possible	2,321,290	8.8%	10.2%	17.2%
	Average area	2,640,951	10.0%	19.6%	23.7%
	Maximum area possible	2,960,616	11.2%	28.2%	29.4%
Tea	Minimum area possible	760,890	14.5%	6.2%	13.8%
	Average area	857,265	16.3%	3.3%	9.9%
	Maximum area possible	953,640	18.2%	1.0%	7.1%

Sources: FiBL-ITC-IISD/SSI survey, 2023; 4C Services, 2014–16, 2018–23; Better Cotton, 2014, 2015, 2017–23; Bonsucro, 2014–16, 2018–23; Cotton made in Africa, 2014–16, 2018–23; Fairtrade International, 2017–23; GLOBALG.A.P., 2015, 2016, 2018–23; FiBL survey, 2008–23; ProTerra Foundation, 2014–16, 2018–23; Rainforest Alliance, 2014–16, 2018–23; Roundtable on Sustainable Palm Oil, 2019–23; Round Table on Responsible Soy, 2014–16, 2018–23; Textile Exchange 2013–23.

Table 8: Area harvested by agricultural commodity and standard, 2021

Commodity	Standard	Area harvested [ha]	Share of global area harvested	Area growth 2020–21	Area growth 2017–21
Bananas	Rainforest	185,390	3.5%	-2.0%	15.1%
	Fairtrade	50,054	0.9%	3.0%	30.6%
	GLOBALG.A.P.	344,861	6.5%	5.0%	25.4%
	Organic	97,426	1.8%	30.5%	32.3%
Cocoa	Rainforest	517,431	4.4%	-4.9%	-30.2%
	Fairtrade	1,523,686	13.1%	7.6%	49.1%
	Organic	430,745	3.7%	23.3%	16.4%
	UTZ	2,043,873	17.5%	-15.0%	-24.5%
Coffee	Rainforest	583,026	5.1%	12.2%	41.7%
	4C	792,309	7.0%	-6.3%	-48.0%
	Fairtrade	1,153,327	10.2%	2.3%	22.9%
	Organic	797,436	7.0%	24.6%	-5.9%
	UTZ	826,397	7.3%	6.9%	39.4%
Cotton	CmiA	1,705,088	5.2%	2.2%	5.3%
	Fairtrade	57,010	0.2%	-8.1%	-9.4%
	Organic	621,691	1.9%	5.7%	31.4%
	Better Cotton	4,799,532	14.6%	22.8%	34.8%
Oil palm	Rainforest	133,148	0.5%	-0.1%	41.1%
	Organic	32,344	0.1%	54.0%	146.0%
	RSPO	3,353,641	11.6%	2.9%	33.4%
Soybeans	Organic	991,890	0.8%	20.1%	69.7%
	ProTerra	632,900	0.5%	-29.1%	-48.3%
	RTRS	1,332,065	1.0%	-2.9%	5.7%
Sugarcane	Bonsucro	1,861,109	7.1%	24.0%	97.4%
	Fairtrade	113,366	0.4%	8.1%	-22.6%
	Organic	106,957	0.4%	7.4%	27.9%
	ProTerra	939,913	3.6%	55.6%	-15.7%
Tea	Rainforest	693,866	13.2%	7.9%	26.0%
	Fairtrade	116,620	2.2%	-6.7%	-13.7%
	Organic	139,700	2.7%	17.0%	9.6%
	UTZ	46,348	0.9%	-17.5%	-40.0%

Sources: FiBL-ITC-IISD/SSI survey, 2023; 4C Services, 2014–16, 2018–23; Better Cotton, 2014, 2015, 2017–23; Bonsucro, 2014–16, 2018–23; Cotton made in Africa, 2014–16, 2018–23; Fairtrade International, 2017 – 2023; GLOBALG.A.P., 2015, 2016, 2018–23; FiBL survey, 2008–23; ProTerra Foundation, 2014–16, 2018–23; Rainforest Alliance, 2014–16, 2018–23; Roundtable on Sustainable Palm Oil, 2019–23; Round Table on Responsible Soy, 2014–16, 2018–23; Textile Exchange 2013–23.

Table 9: Estimated production volume ranges by agricultural commodity, 2021

Commodity	Indicator	Estimated production [MT]	Share of global production	Production growth 2020–21	Production growth 2017–21
Bananas*	Minimum production possible	10,241,362	8.3%	1.7%	19.6%
	Average	11,556,417	9.3%	3.2%	23.8%
	Maximum production possible	12,871,470	10.4%	4.4%	27.4%
Cocoa	Minimum production possible	1,272,867	22.8%	-7.3%	-16.7%
	Average	1,812,777	32.5%	-4.4%	-9.0%
	Maximum production possible	2,352,687	42.2%	-2.7%	-4.3%
Coffee	Minimum production possible	2,366,646	23.9%	7.3%	-19.5%
	Average	3,759,219	37.9%	5.6%	-4.5%
	Maximum production possible	5,151,795	51.9%	4.9%	4.5%
Soybeans	Minimum production possible	6,276,485	1.7%	-6.8%	11.1%
	Average	7,328,580	2.0%	-12.0%	-2.1%
	Maximum production possible	8,380,671	2.3%	-15.5%	-10.1%
Tea	Minimum production possible	1,564,454	24.1	0.9%	16.1%
	Average	1,753,197	27.0%	0.0%	13.8%
	Maximum production possible	1,941,938	29.9%	-0.7%	12.1%

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

Sources: FiBL-ITC-IISD/SSI survey, 2023; 4C Services, 2014–16, 2018–23; Better Cotton, 2014, 2015, 2017–23; Bonsucro, 2014–16, 2018–23; Cotton made in Africa, 2014–6, 2018–23; Fairtrade International, 2017–23; GLOBALG.A.P., 2015, 2016, 2018–23; FiBL survey, 2008–23; ProTerra Foundation, 2014–16, 2018–23; Rainforest Alliance, 2014–16, 2018–23; Roundtable on Sustainable Palm Oil, 2019–23; Round Table on Responsible Soy, 2014–16, 2018–23; Textile Exchange 2013–23.

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

Table 10: Estimated production volume by agricultural commodity and standard, 2021

Commodity	Standard	Estimated production [MT]	Share of global production	Production growth 2020–21	Production growth 2017–21
Bananas*	Rainforest	9,411,763	7.6%	-0.5%	20.5%
	Fairtrade	1,461,353	1.2%	7.1%	50.6%
	Organic	1,998,353	1.6%	7.2%	50.8%
Cocoa	Rainforest	341,201	6.1%	4.1%	-25.4%
	Fairtrade	699,234	12.5%	14.8%	63.4%
	Organic	218,786	3.9%	-2.6%	76.5%
	UTZ	1,093,466	19.6%	-13.5%	-24.6%
Coffee	Rainforest	851,232	8.6%	10.5%	52.6%
	4C	1,623,014	16.4%	1.5%	-32.5%
	Fairtrade	923,464	9.3%	3.8%	45.7%
	Organic	519,217	5.2%	22.5%	9.3%
	UTZ	1,234,867	12.5%	-0.1%	44.0%
Soybeans	Organic	1,760,360	0.5%	-13.8%	34.6%
	ProTerra	1,981,240	0.5%	-35.7%	-48.9%
	RTRS	4,639,071	1.3%	-3.3%	11.8%
Tea	Rainforest	1,299,273	20.0%	-3.5%	11.0%
	Fairtrade	180,575	2.8%	-8.2%	-16.4%
	Organic	367,891	5.7%	18.6%	62.4%
	UTZ	94,199	1.4%	-21.6%	-21.4%

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

Sources: FiBL-ITC-IISD/SSI survey, 2023; 4C Services, 2014–16, 2018–23; Better Cotton, 2014, 2015, 2017–23; Bonsucro, 2014–16, 2018–23; Cotton made in Africa, 2014–16, 2018–23; Fairtrade International, 2017–23; GLOBALG.A.P., 2015, 2016, 2018–23; FiBL survey, 2008–23; ProTerra Foundation, 2014–16, 2018–23; Rainforest Alliance, 2014–16, 2018–23; Roundtable on Sustainable Palm Oil, 2019–23; Round Table on Responsible Soy, 2014–16, 2018–23; Textile Exchange 2013–23.

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- FAOSTAT (2022). FAOSTAT Database. FAO, Rome. Retrieved 13.01.2023 from <http://www.fao.org/faostat/en/>.
- International Trade Centre (2022). Standards Map website, www.standardsmap.org, International Trade Centre (ITC), Geneva, Switzerland.
- Lernoud, J., Potts, J., Sampson, G., Voora, V., Willer, H., and Wozniak, J. (2015). **The State of Sustainable Markets – Statistics and Emerging Trends 2015**. ITC, Geneva. <https://vss.fibl.org/vss-report/vss-report.html>.
- Lernoud, J., Potts, J., Sampson, G., Garibay, S., Lynch, M., Voora, V., Willer, H., and Wozniak, J. (2017). *The State of Sustainable Markets – Statistics and Emerging Trends 2017*. ITC, Geneva. <https://vss.fibl.org/vss-report/vss-report-2017.html>.
- Lernoud, J., Potts, J., Sampson, G., Schlatter, B., Huppe, G., Voora, V., Willer, H., Wozniak, J., and Dang, D. (2018). *The State of Sustainable Markets – Statistics and Emerging Trends 2018*. ITC, Geneva. <https://vss.fibl.org/vss-report/vss-report-2018.html>.
- Meier, C., Sampson, G., Larrea, C., Schlatter, B., Voora, V., Dang, D., Bermudez, S., Wozniak, J., and Willer, H. (2020). *The State of Sustainable Markets 2020. Statistics and Emerging Trends*. ITC, Geneva. <https://www.intracen.org/publication/Sustainable-Markets-2020/>.
- Meier, Claudia, Gregory Sampson, Cristina Larrea, Bernhard Schlatter, Steffany Bermudez, Duc Dang and Helga Willer (Eds.), *The State of Sustainable Markets 2021: Statistics and Emerging Trends*. ITC, Geneva <https://intracen.org/media/file/11643>.
- Potts, J., Lynch, M., Wilkings, A., Huppé, G., Cunningham, M., and Voora, V. (Eds.) (2014). *The State of Sustainability Initiatives Review 2014. Standards and the Green Economy*. 1st edition. International Institute for Sustainable Development (IISD) and International Institute for Environment and Development, Winnipeg and London. Available at https://www.iisd.org/pdf/2014/ssi_2014.pdf.
- Potts, J., Van der Meer, J., & Daitchman, J. (2010). *The State of Sustainability Initiatives Review 2010. Sustainability and Transparency* (1st ed.). Winnipeg, London: International Institute for Sustainable Development and International Institute for Environment and Development.
- Willer, H., Sampson, G., Voora, V., Dang, D., and Lernoud, J. (2019). *The State of Sustainable Markets 2019 – Statistics and Emerging Trends*. ITC, Geneva. <https://vss.fibl.org/vss-report/vss-report-2019.html>.
- Willer, H., Sampson, G., Larrea, C., Schlatter, B., Bermudez, S., Dang, T.C., Rüger, M., and Meier, C. (Eds.). (2022) *The State of Sustainable Markets: Statistics and Emerging Trends*.
- Willer, H., Schlatter, B., and Trávníček, J. (Eds.) (2023) *The World of Organic Agriculture Statistics and Emerging Trends 2023*. Research Institute of Organic Agriculture and IFOAM – Organics International, Frick and Bonn. <https://orgprints.org/id/eprint/45973/>.

References from Chapter 3 Consumption trends for certified products

1. FAO. (2021). *Banana Market Review*. Rome.
2. Growing organic bananas in Latin America [Internet]. Compagnie fruitière. 2020 [cited 2022 Apr 22]. Available from: <https://www.compagniefruitiere.fr/en/derose/>
3. Organic Produce Network. Organic Produce Performance 2021 Q1. 2021 Apr.
4. Banana Impact Report - 2020 [Internet]. Fairtrade America. 2021 [cited 2022 May 2]. Available from: <https://www.fairtradeamerica.org/why-fairtrade/global-impact/reports-trends/banana-impact-report-2020/>.
5. Organic and Fairtrade banana consumption amounts to 10% in Europe and North America [Internet]. Banana Link. 2020 [cited 2022 Apr 22]. Available from: <https://www.bananalink.org.uk/news/organic-and-fairtrade-banana-consumption-amounts-to-10-in-europe-and-north-america/>.
6. Why sustainability is the fastest growing purchase consideration [Internet]. Banana Link. 2021 [cited 2022 Apr 22]. Available from: <https://www.bananalink.org.uk/news/why-sustainability-is-the-fastest-growing-purchase-consideration/>.
7. Behind the Peel [Internet]. Behind The Peel | Sous la peau. [cited 2022 May 17]. Available from: <https://behindthepeel.com/>.
8. Banana Link. All About Bananas | Producers, Where They're Grown & Why They Matter [Internet]. Banana Link. [cited 2022 Apr 22]. Available from: <https://www.bananalink.org.uk/all-about-bananas/>.
9. Willer H, Schlatter B., Trávníček J. The World of Organic Agriculture Statistics and Emerging Trends 2020.
10. Vancouver Farmers Markets. CSA Box « Vancouver Farmers Market [Internet]. [cited 2022 May 17]. Available from: <https://eatlocal.org/programs/csa-box-program/>.
- 11 Willer, H., Trávníček, J., Meier, C., & Schlatter, B. (2021). The World of Organic Agriculture Statistics and Emerging Trends 2021. Switzerland. *Research Institute of Organic Agriculture FiBL and IFOAM*, (Feb): 340.
- 12 Sikuka, W., & Geller, L. (2019). South African Sugar Production Forecast to Grow Despite Revenue Pressures. *USDA Foreign Agricultural Service*, (Apr): 17.
13. Foggitt L. The impact of COVID-19 on sugarcane sustainability [Internet]. Bonsucro. 2020 [cited 2022 Jul 26]. Available from: <https://bonsucro.com/the-impact-of-covid-19-on-sugarcane-sustainability/>.
- 14 Chesnut, W. M., MacDonald, S., & Wambier, C. G. (2021). Could diet and exercise reduce risk of COVID-19 syndemic? **Medical Hypotheses**, 148, 110502. <https://doi.org/10.1016/j.mehy.2021.110502> PMID:33529978.
15. Cassata C. Eating Excess Sugar Is Worse for You During COVID-19: 6 Ways to Cut It [Internet]. Healthline. 2020 [cited 2022 Jul 26]. Available from: <https://www.healthline.com/health-news/eating-excess-sugar-is-worse-for-you-during-covid-19-6-ways-to-cut-it>.
16. Viart N, Seixas R, Foggitt L, Chen-Wei C, Earley K. Outcome Report 2019. Bonsucro; 2020 Apr.
17. Sullivan M. Argentina's first Bonsucro certification for ethanol [Internet]. Bonsucro. 2019 [cited 2022 Jul 26]. Available from: <https://bonsucro.com/first-argentine-bonsucro-certification-for-ethanol-production/>.
18. Colens H. ISCC Certification of Brazilian Ethanol Production. 2017.
19. European Commission. Voluntary schemes [Internet]. European Commission. 2022 [cited 2022 Jul 26]. Available from: https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/voluntary-schemes_en.
20. Government Gazette Staatskoerant - Republic of South Africa [Internet]. 700 Jun 23, 2020 p. 28. Available from: <https://sasa.org.za/wp-content/uploads/2020/07/Government-Gazette-No-43466.pdf>.
21. Voora V, Larrea C, Bermudez S, Baliño S. Global Market Report: Palm Oil [Internet]. International Institute for Sustainable Development; 2020. (Sustainable Commodities Marketplace Series 2019). Available from: <https://www.iisd.org/system/files/publications/ssi-global-market-report-palm-oil.pdf>.
22. CBI. Increased certified coffee consumption in Europe despite COVID-19 pandemic | CBI [Internet]. 2021 [cited 2023 Aug 10]. Available from: <https://www.cbi.eu/news/increased-certified-coffee-consumption-europe-despite-covid-19-pandemic>.
23. CBI. Which trends offer opportunities or risks in the European coffee market? [Internet]. 2022. Available from: <https://www.cbi.eu/market-information/coffee/trends>.
24. GlobalData Consumer. COVID-19: Four key coffee trends for 2020–2022 [Internet]. 2020 [cited 2023 Aug 10]. Available from: <https://www.drinks-insight-network.com/comment/covid-19-coffee-trends/>.
25. Bermudez S, Voora V, Larrea C. Global Market Report: Coffee prices and sustainability [Internet]. 2022. (Sustainable Commodities Marketplace Series). Available from: <https://www.iisd.org/system/files/2022-09/2022-global-market-report-coffee.pdf>.
26. Mongabay. Coffee sustainability check: Q&A with Sjoerd Panhuysen of Coffee Barometer report [Internet]. Mongabay Environmental News. 2021 [cited 2023 Aug 10]. Available from: <https://news.mongabay.com/2021/04/coffee-sustainability-check-qa-with-sjoerd-panhuysen-of-coffee-barometer-report/>.
27. International Coffee Organization. Impact of COVID-19 on the Global Coffee Sector: Survey of ICO exporting members [Internet]. 2020 Jun. (Coffee Break Series No.3). Available from: <https://www.ico.org/documents/cy2019-20/coffee-break-series-3e.pdf>.
28. Barry M. The Sustainability Gap in Hot Beverages [Internet]. Euromonitor International. 2021 [cited 2022 Jul 22]. Available from: <https://www.euromonitor.com/article/the-sustainability-gap-in-hot-beverages>.

29. Global Coffee Platform. GCP Annual Report 2019 [Internet]. 2019. Available from: <https://www.globalcoffeeplatform.org/wp-content/uploads/2021/01/AnnualReport-2019.pdf>.
30. Federación Nacional de Cafeteros de Colombia. Ensayos sobre Economía Cafetera [Internet]. 2019. Available from: <https://federaciondecafeteros.org/app/uploads/2020/05/Economi%CC%81a-Cafetera-No.-33-Web-mayo-30.pdf>.
31. Food ingredients Asia. Sustainability in Indonesia [Internet]. 2022 Sep. Available from: <https://www.figlobal.com/content/dam/Informa/figlobal/asia-indonesia/en/2020/pdf/HLN20FDA-VK-Sustainability%20in%20Indonesia.pdf>.
32. FAO. Celebrating tea is celebrating peace, culture and hope [Internet]. Food and Agriculture Organization of the United Nations. 2021 [cited 2022 Jul 22]. Available from: <https://www.fao.org/news/story/pt/item/1401575/icode/>.
33. Ecovia Intelligence. COVID-19 prevents organic certification for new natural ingredient producers | CBI [Internet]. CBI. 2021 [cited 2022 Jul 22]. Available from: <https://www.cbi.eu/news/covid-19-prevents-organic-certification-new-natural-ingredient-producers>.
34. Munya, H. P., & Boga, H. I. (2021). *Tea industry remains resilient amidst Covid-19* (p. 2). Daily Nation.
35. Askew K. Organic food's coronavirus boost: "Health crises have a long-term impact on consumer demand" [Internet]. foodnavigator.com. 2020 [cited 2022 Jul 22]. Available from: <https://www.foodnavigator.com/Article/2020/05/06/Organic-food-gets-coronavirus-boost>.
36. Market Insights. Indian Tea Market Share 2020, Size, Impressive Industry Growth Report 2026 [Internet]. Market Insight. 2021 [cited 2022 Jul 25]. Available from: <https://marketinsight.in/industry-reports/indian-tea-market-share>.
37. trustea. trustea Yearbook 2021. West Bengal: trustea; 2021 p. 30.
38. Ghosal S. Typhoo to market environmentally sustainable tea in India. The Economic Times [Internet]. 2015 [cited 2022 Jul 25]; Available from: <https://economictimes.indiatimes.com/industry/cons-products/food/typhoo-to-market-environmentally-sustainable-tea-in-india/articleshow/47011856.cms>.
39. Bolton D. China Thirsts for the World's Tea [Internet]. World Tea News. 2019 [cited 2022 Jul 20]. Available from: <https://www.worldteanews.com/Insights/china-thirsts-worlds-tea>.
40. FAO. FAOSTAT [Internet]. FAOSTAT. 2022 [cited 2022 Apr 7]. Available from: <https://www.fao.org/faostat/en/#data>.
41. People's Daily Online. China's tea industry brims with vitality alongside growing shift towards consumption upgrading - People's Daily Online [Internet]. People's Daily Online. 2022 [cited 2022 Jul 25]. Available from: <http://en.people.cn/n3/2022/0224/c90000-9962606.html>.
42. BCI. 2020 Annual Report [Internet]. Geneva: Better Cotton Initiative; 2021 p. 25. Available from: <https://bettercotton.org/wp-content/uploads/2021/09/BCI-2020AnnualReport.pdf>.
43. Textile Exchange. Organic Cotton Market Report 2021 [Internet]. Lamesa: Textile Exchange; 2021. Available from: https://textileexchange.org/wp-content/uploads/2021/07/Textile-Exchange_Organic-Cotton-Market-Report_2021.pdf.
44. Corporate sustainability due diligence [Internet]. European Commission. [cited 2022 Apr 28]. Available from: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1145.
45. Wicker A, Schmall E, Raj S, Paton E. That Organic Cotton T-Shirt May Not Be as Organic as You Think. The New York Times [Internet]. 2022 [cited 2022 Apr 4]; Available from: <https://www.nytimes.com/2022/02/13/world/organic-cotton-fraud-india.html>.
46. IPSOS. Sustainable Fashion Survey [Internet]. 2018. Available from: http://changingmarkets.org/wp-content/uploads/2019/01/IPSOS_MORI_summary_survey_results.pdf.
47. BoF. (2020). McKinsey & Company. *The State of Fashion, 2020*, 108.
48. U.S. Cotton Trust Protocol. Research: In a Post-COVID 2021, Fashion Will Trend Toward Sustainability [Internet]. Sustainable Brands. 2020 [cited 2022 Apr 25]. Available from: <https://sustainablebrands.com/read/defining-the-next-economy/research-in-a-post-covid-2021-fashion-will-trend-toward-sustainability>.
49. Kim M (Chloe). Green is the New Black: The Effects of COVID-19 on the Fashion Industry's Need for Sustainability. Joseph Wharton Scholars [Internet]. 2021; Available from: https://repository.upenn.edu/joseph_wharton_scholars/108.
50. New evidence of Uighur forced labour in China's cotton industry - BBC News [Internet]. 2020 [cited 2022 Apr 4]. Available from: <https://www.youtube.com/watch?v=t28nnviKar4>.
51. Indian Retailer Bureau. H&M opens 50th store in India [Internet]. Indian Retailer. [cited 2022 Apr 25]. Available from: <https://www.indianretailer.com/news/h-m-opens-50th-store-in-india.n10389/>.
52. Fashion Revolution India [Internet]. Fashion Revolution. [cited 2022 Apr 25]. Available from: <https://www.fashionrevolution.org/asia/india/>.
53. Singh S, Dusanj-Lenz S. Gender Equity and its Impact on Sustainability in Cotton Farming in India by Fashion Revolution - Issuu [Internet]. India; 2019 Aug [cited 2022 Apr 25]. Available from: https://issuu.com/fashionrevolution/docs/gender_equity_cotton_farming_policy_pilot_fr_bc.
54. Voora, V., Larrea, C., & Bermúdez, S. (2020). *Global Market Report: Soybeans* (p. 20). International Institute for Sustainable Development.
55. CBI. What is the demand for grains, pulses and oilseeds on the European market? | CBI [Internet]. CBI. 2022 [cited 2022 Jun 14]. Available from: <https://www.cbi.eu/market-information/grains-pulses-oilseeds/trade-statistics>.
56. Bashi Z, Mccullough R, Ong L, Ramirez M. Alternative proteins: The race for market share is on [Internet]. McKinsey & Com-

- pany. 2019 [cited 2022 Jun 14]. Available from: <https://www.mckinsey.com/industries/agriculture/our-insights/alternative-proteins-the-race-for-market-share-is-on>.
57. Nepstad I. The history and future of sustainable soy in China [Internet]. China Dialogue. 2021 [cited 2022 Jun 14]. Available from: <https://chinadialogue.net/en/food/history-and-future-of-sustainable-soy-in-china/>.
58. The President and Fellows of Harvard College. Straight Talk About Soy [Internet]. The Nutrition Source. 2018 [cited 2022 Jun 14]. Available from: <https://www.hsph.harvard.edu/nutritionsource/soy/>.
59. Ritchie H, Roser M. Forests and Deforestation. Our World in Data [Internet]. 2021 [cited 2022 Jun 14]; Available from: <https://ourworldindata.org/soy>.
60. Good Growth Partnership, WWF, profores, gef. Soy traceability and supply chain transparency.
61. Understanding the challenges and opportunities associated with the soy supply chain to address deforestation [Internet]. The Institute of Grocery Distribution. 2020 [cited 2022 Jun 15]. Available from: <https://www.igd.com/articles/article-viewer/t/understanding-the-challenges-and-opportunities-associated-with-the-soy-supply-chain-to-address-deforestation/i/27114>.
62. Reidy S. China plans to produce 40% more soybeans in five years [Internet]. SOSLAND PUBLISHING COMPANY. 2022 [cited 2022 Jun 14]. Available from: <https://www.world-grain.com/articles/16343-china-plans-to-produce-40-more-soybeans-in-five-years>.
63. Wishnick E. Sino-Russian Consolidation at a Time of Geopolitical Rivalry [Internet]. China Leadership Monitor. 2020 [cited 2022 Jun 14]. Available from: <https://www.prcleader.org/elizabeth-wishnick>.
64. CDP. (2019). *The Neglected Risk: Why deforestation risk should matter to Chinese financial institutions*. Carbon Disclosure Project.
65. Cabezas S, Bellfield H, Lafortune G, Streck C, Hermann B. Towards more sustainability in the soy supply chain: How can EU actors support zero-deforestation and SDG efforts? Climate Focus; 2019 Nov.
66. CBI. What is the demand for cocoa on the European market? | CBI [Internet]. 2022 [cited 2023 Aug 10]. Available from: <https://www.cbi.eu/market-information/cocoa/what-demand>.
67. CBI. The European market potential for certified cocoa | CBI [Internet]. 2020 [cited 2023 Aug 10]. Available from: <https://www.cbi.eu/market-information/cocoa-cocoa-products/certified-cocoa/market-potential>.
68. Yu D. Chocolate confectionery contributes most to value sales of sustainable cocoa products: Euromonitor [Internet]. confectionerynews.com. 2017 [cited 2023 Aug 10]. Available from: <https://www.confectionerynews.com/Article/2017/06/29/Euromonitor-forecasts-value-sales-of-sustainable-cocoa-products>.
69. Fairtrade. Cocoa Impact Report - 2019 [Internet]. Fairtrade America. 2020 [cited 2023 Aug 10]. Available from: <https://www.fairtradeamerica.org/why-fairtrade/global-impact/reports-trends/cocoa-impact-report-2018-2019/>.
70. Bermudez S, Voora V, Larrea C, Luna E. Cocoa prices and sustainability [Internet]. IISD; 2022. (Sustainable Commodities Marketplace Series). Available from: <https://www.iisd.org/system/files/2022-11/2022-global-market-report-cocoa.pdf>.
71. ICCO. Sustainability of the World Cocoa Economy [Internet]. International Cocoa Organization. 2022 [cited 2023 Aug 10]. Available from: <https://www.icco.org/economy/>.
72. Mordor Intelligence. China Chocolate Market - Size, Share & Industry Analysis [Internet]. 2022 [cited 2023 Aug 10]. Available from: <https://www.mordorintelligence.com/industry-reports/china-chocolate-market>.
73. Caifu Global. Fortune World Magazine - China's Newfound Appetite for Chocolate Is Big Business [Internet]. 2017 [cited 2023 Aug 10]. Available from: <https://www.fortuneworldmagazine.com/en/industry/manufacturing/520-china-s-newfound-appetite-for-chocolate-is-big-business>.
74. Chocolate Class. Producing what they don't consume | Chocolate Class [Internet]. 2019 [cited 2023 Aug 10]. Available from: <https://chocolateclass.wordpress.com/2019/03/23/producing-what-they-dont-consume/>.
75. Just Food. Global brands to see stiffer competition in China's chocolate market [Internet]. Just Food. 2019 [cited 2023 Aug 10]. Available from: <https://www.just-food.com/features/global-brands-to-see-stiffer-competition-in-chinas-chocolate-market/>.
76. Ghana Cocoa Board. Cocobod - [News Article Title] [Internet]. 2021 [cited 2023 Aug 10]. Available from: <https://cocobod.gh/news/cocobod-launches-2021-national-chocolate-week-to-promote-chocolate-consumption>.
77. Knott S. Ghanaian Entrepreneurs Are Leading a Sweet Revolution [Internet]. Food Tank. 2018 [cited 2023 Aug 10]. Available from: <https://foodtank.com/news/2018/08/ghanaian-chocolate-revolution/>.
78. Food Tank. From Bean to Bar: Ghanaian Chocolate Companies Chasing a Billion-Dollar Gap. 2018. Available from: <https://foodtank.com/news/2018/08/ghanaian-chocolate-revolution/>.
79. FAO. (2021). Banana Production and Markets. Available from: <https://www.fao.org/3/Y5136E/y5136e09.htm>.

SOURCES

- **4C:** For 2008–2012, 4C data as quoted by Potts et al., 2014. Since 2013, data were provided by 4C (www.cas-veri.com).
- **Better Cotton:** For 2008–2012, Better Cotton data as quoted by Potts et al., 2014. From 2013 onward, data were provided by Better Cotton (formerly Better Cotton Initiative - BCI), Geneva, Switzerland, www.bettercotton.org.
- **Bonsucro:** For 2008–2012, Bonsucro data as quoted by Potts et al., 2014. For 2013 onward, data were provided by Bonsucro, London, United Kingdom, www.bonsucro.com.
- **Cotton made in Africa (CmiA):** For 2008–2011, CmiA data as quoted by Potts et al., 2014. From 2012 onward, data were provided by CmiA, Aid by Trade Foundation, Hamburg, Germany, www.cottonmadeinafrica.org.
- **Fairtrade International:** Data since 2011 were provided Fairtrade International, Bonn, Germany, www.fairtrade.net. Market data based on Fairtrade International Annual Reports 2005–2017, available at <https://www.fairtrade.net/about-fairtrade/annual-reports.html>. Fairtrade data have been revised, and the figures reported here might differ from previous Fairtrade International reports.
- **Forest Stewardship Council International (FSC):** Data were provided FSC International, Bonn, Germany; see also FSC Annual Reports on www.fsc.org.
- **GLOBALG.A.P.:** Data were provided by GLOBALG.A.P., Cologne, Germany, starting with 2012 data.
- **Organic:** FiBL surveys among national data providers and certifiers. Based on the data on the certified area, FiBL estimates the area harvested and the production volume. For full list of original data sources, see www.organic-world.net/yearbook.
The organic cotton data were provided by Textile Exchange, United Kingdom, textileexchange.org.
- **Programme for the Endorsement of Forest Certification (PEFC):** Data were provided by PEFC International, Geneva, Switzerland, www.pefc.org; see also PEFC annual reports.
- **ProTerra Foundation:** For 2008–2012, ProTerra Foundation data as quoted by Potts et al., 2014. For 2013 onward, data were provided by ProTerra Foundation, www.proterrafoundation.org.
- **Rainforest Alliance:** For 2008–2012, Rainforest data as quoted by Potts et al., 2014. Since 2013, data were provided by Rainforest Alliance.
- **Roundtable on Sustainable Palm Oil (RSPO):** Data from 2008, data were provided by the Roundtable on Sustainable Palm Oil, Kuala Lumpur, Malaysia, www.rspo.org.
- **Round Table on Responsible Soy (RTRS):** For 2008–2012, RTRS data as quoted by Potts et al., 2014. From 2013 onward, data were provided by Daniel Kazimierski and Laura Villegas, Round Table on Responsible Soy, Ciudad Autónoma de Buenos Aires, Argentina, www.responsiblesoy.org.
- **UTZ:** For 2008–2012, UTZ data as quoted by Potts et al., 2014. For 2013–2016, data were provided by UTZ. Since 2017 onward, data has been provided by Rainforest Alliance, www.utz.org.

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