INTERNATIONAL STANDARD

ISO 34101-3

First edition
2019-05

Sustainable and traceable cocoa —

Part 3: Requirements for traceability

Cacao durable et traçable —

Partie 3: Exigences de traçabilité

Reference number
ISO 34101-3:2019(E)

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Published in Switzerland

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 415, *Sustainable and Traceable Cocoa*, in collaboration with ISO Technical Committee TC 34, *Food products*, Subcommittee SC 18, *Cocoa*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 34101 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The ISO 34101 series specifies requirements for the sustainable production of cocoa beans, for traceability of sustainably produced cocoa and for the scheme for certifying sustainable and traceable cocoa.

Sustainably produced cocoa beans are obtained by fulfilling the management system requirements of either ISO 34101-1 or ISO 34101-4:2019, Annex A or B, and the performance requirements of ISO 34101-2.

The stepwise approach of the ISO 34101 series comprises three requirement levels: entry, medium and high. The requirements for the three levels for the performance requirements are all specified in ISO 34101-2. The requirements for the three levels for the cocoa sustainability management system requirements are specified in ISO 34101-1 or ISO 34101-4 as follows:

— entry: ISO 34101-4:2019, Annex A;

— medium: ISO 34101-4:2019, Annex B;

— high: ISO 34101-1.

An organization that is sustainably producing cocoa beans can apply for initial certification to any level and will then be on a path towards a higher level until the high level is reached. The path from entry level to medium level can take up to 60 months. The path from medium level to high level can take up to 60 months.

The performance requirements specified in ISO 34101-2 are complementary to the cocoa sustainability management system requirements. Only organizations that fulfil both the cocoa sustainability management system requirements (either ISO 34101-1 or ISO 34101-4:2019, Annex A or B) and the performance requirements (ISO 34101-2) may claim their cocoa beans have been sustainably produced.

This document specifies the requirements for traceability of sustainably produced cocoa (fulfilling the requirements of the ISO 34101 series) from an organization that is sustainably producing cocoa beans and throughout the cocoa supply chain.

ISO 34101-4 specifies the requirements for the scheme for certifying traceable, sustainably produced cocoa conforming to the requirements of the ISO 34101 series and includes the requirements for the entry and medium level for the cocoa sustainability management system.

Document	Subject	Intended to be applied by
ISO 34101-1	High-level requirements for cocoa sustainability management systems. (Entry- and medium-level requirements for cocoa sustainability management systems are specified in ISO 34101-4.)	Registered cocoa farmers and organizations that are sustainably producing cocoa beans.
ISO 34101-2	Entry-, medium- and high-level requirements for performance (related to economic, social, and environmental aspects).	
This document	Requirements for traceability.	The cocoa supply chain actors.
ISO 34101-4	Requirements for certification schemes. Entry- and medium-level requirements for cocoa sustainability management systems. (The high-level requirements for cocoa sustainability management systems are specified in ISO 34101-1.)	Certification scheme owners and certification bodies certifying conformity to the ISO 34101 series. Organizations wishing certification by an accredited third-party certification body in order to make claims of conformity. Registered cocoa farmers and organizations that are sustainably producing cocoa beans applying the entry- or medium-level requirements for cocoa sustainability management systems.

This document specifies the requirements for the traceability of sustainably produced cocoa. A traceability system for sustainably produced cocoa is a technical tool to assist a cocoa supply chain actor operating within a cocoa supply chain to achieve defined sustainable cocoa objectives. The complexity of the traceability system for sustainably produced cocoa may vary depending upon requirements of each stage of the cocoa supply chain and the objectives to be achieved.

It is intended to be flexible enough to allow cocoa supply chain actors within the sustainably produced cocoa supply chain to achieve identified objectives but robust enough to ensure credible implementation. The choice of a traceability system for sustainably produced cocoa is influenced by applicable requirements, product characteristics and customer expectations.

Traceability determines the history or location of sustainably produced cocoa. Due to the complexity of the cocoa supply chain, mass balance is an acceptable traceability system in this document.

The mass balance system administratively monitors the trade of conforming cocoa throughout the cocoa supply chain, and facilitates the development of mainstream trade in sustainably produced cocoa. The mass balance system allows everyone within the cocoa supply chain to demonstrate their commitment to sustainable cocoa production.

Traceability requires the engagement and collaboration of actors along the entire cocoa supply chain. Developments in technology and demands for greater transparency from both business and government sectors are making this increasingly more manageable.

The implementation by a cocoa supply chain actor of a traceability system for sustainably produced cocoa depends on technical limits inherent to the cocoa supply chain actor and the cocoa (e.g. the nature of the raw cocoa, size of the lots, collection, handling, transport, production and processing procedures), and the cost and benefits of applying such a system.

In this document:

— “shall” indicates a requirement;

— “should” indicates a recommendation;

— “may” indicates a permission;

— “can” indicates a possibility or a capability.

Information marked “NOTE” is for guidance in understanding or clarifying the associated requirement.

Sustainable and traceable cocoa —

Part 3:
Requirements for traceability

1 Scope

This document specifies basic requirements for the design and implementation of traceability systems within the cocoa supply chain for sustainably produced cocoa beans and cocoa products derived from sustainably produced cocoa beans that conform to ISO 34101-2 and either ISO 34101-1 or ISO 34101-4:2019, Annex A or B, as described in the Introduction.

This document also specifies administrative requirements for a mass balance system whereby cocoa conforming to this document can be used together with nonconforming cocoa and which provides the necessary traceability within a manufacturing process.

This document specifies requirements for traceability of sustainably produced cocoa from an organization that is sustainably producing cocoa beans to the point of exit from the manufacturer of the final retail product.

This document does not apply to a credit system.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 34101-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
audit
systematic, independent and documented *process* (3.20) for obtaining objective evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled

Note 1 to entry: An audit can be an internal audit (first party), or an external audit (second party or third party), and it can be a combined audit (combining two or more disciplines).

Note 2 to entry: An internal audit is conducted by the *organization* (3.19) itself, or by an external party on its behalf.

Note 3 to entry: "Audit evidence" and "audit criteria" are defined in ISO 19011.

Note 4 to entry: External audits include those generally called second and third-party audits. Second-party audits are conducted by parties having an interest in the organization, such as customers, or by other persons on their behalf. Third-party audits are conducted by external, independent auditing organizations.

[SOURCE: ISO 34101-1:2019, 3.2, modified — Note 5 to entry has been deleted.]

3.2
cocoa
cocoa beans (3.3) or derived *products* (3.21)

[SOURCE: ISO 34101-1:2019, 3.7]

3.3
cocoa bean
seed of the cocoa tree (*Theobroma cacao* Linnaeus)

Note 1 to entry: Commercially, and for the purposes of this document, the term refers to the whole seed, which has been fermented and dried.

[SOURCE: ISO 2451:2017, 3.5]

3.4
cocoa product
product (3.21) derived from the processing of the *cocoa bean* (3.3), including nibs, cocoa liquor/mass, cocoa butter, cocoa cake and cocoa powder

3.5
cocoa supply chain
sequence of the stages and operations involved in the movement and processing of *cocoa* (3.2), from farm to the point of exit from the factory door of the manufacturer of the final retail *product* (3.21)

3.6
cocoa supply chain actor
organization (3.19) that physically handles, takes legal ownership or makes claims of *sustainably produced cocoa* (3.27)

Note 1 to entry: The requirements for sustainably produced cocoa are specified in ISO 34101-2 and either ISO 34101-1 or ISO 34101-4:2019, Annex A or B, as described in the Introduction.

3.7
competence
ability to apply knowledge and skills to achieve intended results

Note 1 to entry: Demonstrated competence is sometimes referred to as qualification.

[SOURCE: ISO 34101-1:2019, 3.15, modified — Note 2 to entry has been deleted.]

3.8
conformity
fulfilment of a requirement

[SOURCE: ISO 34101-1:2019, 3.16, modified — Note 1 to entry has been deleted.]

3.9
corrective action
action to eliminate the cause of a nonconformity and to prevent recurrence

Note 1 to entry: There can be more than one cause for a nonconformity.

Note 2 to entry: Corrective action is taken to prevent recurrence whereas preventive action is taken to prevent occurrence.

[SOURCE: ISO 34101-1:2019, 3.20, modified — Note 3 to entry has been deleted.]

3.10
flow of cocoa
movement of *cocoa* (3.2) at any point in the *cocoa supply chain* (3.5)

3.11
flushing
cleaning equipment used in a *process* (3.20) to be able to start a new process to reduce contamination to an agreed level

Note 1 to entry: In this document, contamination could be a mixture of *sustainably produced cocoa* (3.27) and non-sustainably produced cocoa.

3.12
identity
characteristics of *cocoa* (3.2) maintained to determine its origin

3.13
identity preserved
IP
maintained *segregation* (3.22) and documented *identity* (3.12) of *cocoa* (3.2) from an *organization* (3.19) that is sustainably producing *cocoa beans* (3.3) (e.g. an individual farmer or a group of registered farmers) throughout the whole *cocoa supply chain* (3.5) until manufacture of final consumer *product* (3.21)

3.14
location
place of production, processing, distribution, storage or handling from primary production to consumption

3.15
lot
set (3.23) of units of *cocoa* (3.2) in bags or in bulk established at any point in the *cocoa supply chain* (3.5) or a set of units of cocoa which have been produced and/or processed or packaged under similar circumstances

Note 1 to entry: The lot is determined by parameters established beforehand by the *cocoa supply chain actor* (3.6).

Note 2 to entry: A set of units may be reduced to a single unit of *product* (3.21).

Note 3 to entry: Lot can also be expressed as "batch" when applied to goods produced by the industrial processing of cocoa.

3.16
mass balance administration
cocoa supply chain (3.5) model for mixing and/or *substitution* (3.26) of *sustainably produced cocoa* (3.27)

3.17
multi-site mass balance
mass balance administration (3.16) performed at multiple *sites* (3.25) within one *cocoa supply chain actor* (3.6)

3.18
one step forward and one step back
identification from where the *cocoa* (3.2) came and to where the cocoa went

[SOURCE: CAC/GL 60 2006,[6] modified — In the definition, "food" has been substituted by "cocoa".]

3.19
organization
person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives

Note 1 to entry: The concept of organization includes, but is not limited to sole-trader, cooperative (coop), company, corporation, firm, enterprise, authority, partnership, association, charity or institution, or part or combination thereof, whether incorporated or not, public or private.

[SOURCE: ISO 34101-1:2019, 3.38, modified — Note 1 to entry has been modified and Notes 2, 3 and 4 to entry have been deleted.]

3.20
process
set (3.23) of interrelated or interacting activities which transforms inputs into outputs

Note 1 to entry: Inputs to a process are generally the outputs of other processes.

Note 2 to entry: Processes in an *organization* (3.19) are generally planned and carried out under controlled conditions to add value.

[SOURCE: ISO 34101-1:2019, 3.43, modified — Note 3 to entry has been deleted.]

3.21
product
output of an *organization* (3.19) that can be produced without any transaction taking place between the organization and the customer

3.22
segregation
process (3.20) that separates conforming from nonconforming *cocoa* (3.2) but allows mixing of conforming cocoa from different *cocoa supply chain actors* (3.6)

3.23
set
number of similar activities in different *locations* (3.14) falling under the same *multi-site mass balance* (3.17) system

EXAMPLE Roasting and grinding.

3.24
single-site mass balance
guarantee provided by the *cocoa supply chain actor* (3.6) of the *conformity* (3.8) of a single *site* (3.25)

3.25
site
location (3.14) where value-added manufacturing *processes* (3.20) occur

3.26
substitution
specific amount of conforming *cocoa* (3.2) that can be substituted for the same amount of nonconforming cocoa

3.27
sustainably produced cocoa
cocoa beans (3.3) that are produced in an economically viable, socially responsible and environmentally sound manner within an *organization* (3.19)

Note 1 to entry: The requirements for an economically viable, socially responsible and environmentally sound manner are specified in ISO 34101-2 and either ISO 34101-1 or ISO 34101-4:2019, Annex A or B, as described in the Introduction.

[SOURCE: ISO 34101-1:2019, 3.53, modified — Note 1 to entry has been added.]

3.28
traceability
ability to follow the physical movement and/or mass *conformity* (3.8) of *sustainably produced cocoa* (3.27) through specified stage(s) of production, processing and distribution

3.29
traceability system
totality of data and operations that is capable of maintaining desired information about *sustainably produced cocoa* (3.27) and its components through all or part of its production and/or *cocoa supply chain* (3.5)

4 Principles

The objective of traceability is to improve transparency and contribute to accountability in the cocoa supply chain.

Traceability systems for sustainably produced cocoa shall be able to document the history of the cocoa or locate the cocoa in the cocoa supply chain. Traceability systems for sustainably produced cocoa contribute to the identification of the cause of nonconformity. Traceability systems for sustainably produced cocoa improve appropriate use and reliability of information, effectiveness and productivity of the cocoa supply chain actor.

Traceability relates to the origin of the sustainably produced cocoa, processing history or movement of the cocoa in the cocoa supply chain, and addresses at least one step forward and one step back for each cocoa supply chain actor in the cocoa supply chain. On agreement among the cocoa supply chain actors concerned, it may apply to more than one part of the cocoa supply chain. The cocoa supply chain actor identifies the relevant cocoa for which the objectives of its traceability system for sustainably produced cocoa apply.

Each element of a traceability system for sustainably produced cocoa is considered and justified on a case-by-case basis, taking into account the objectives to be achieved.

5 Objectives

The cocoa supply chain actor shall establish traceability objectives at relevant functions, levels and processes needed for the traceability system.

The traceability objectives shall be:

a) measurable;

b) monitored;

c) communicated to relevant internal and external interested parties;

d) updated as appropriate.

The cocoa supply chain actor shall maintain documented information on the cocoa traceability objectives.

6 Documented information

6.1 General

The cocoa supply chain actor's traceability system shall include:

a) documented information required by this document;

b) documented information determined by the cocoa supply chain actor as being necessary for the effectiveness of the cocoa traceability system.

NOTE The extent of documented information for a cocoa traceability system can differ from one cocoa supply chain actor to another due to:

— the size of the cocoa supply chain actor and its type of processes;

— the complexity of processes and their interactions.

6.2 Creating and updating documented information

When creating and updating documented information, the cocoa supply chain actor shall ensure appropriate:

a) identification and description (e.g. a title, date, author, reference number);

b) format (e.g. language, software version, graphics) and media (e.g. paper, electronic);

c) review and approval for suitability and adequacy.

6.3 Control of documented information

6.3.1 Purpose

Documented information required by the cocoa traceability system and by this document shall be controlled to ensure it is:

a) available, complete and suitable for use, where and when it is needed;

b) adequately protected (e.g. from loss of confidentiality, improper use, loss of integrity).

6.3.2 Actions

For the control of documented information, the cocoa supply chain actor shall address the following activities, as applicable:

a) distribution, access, retrieval and use;

b) storage and preservation, including preservation of legibility;

c) control of changes (e.g. version control);

d) retention and disposition.

Documented information shall be retained for a period of at least five years.

7 Requirements

7.1 General requirements

7.1.1 Traceability system elements

The traceability system for sustainably produced cocoa shall include:

a) objectives, including provisions to ensure the integrity of the sustainably produced cocoa;

b) position in the cocoa supply chain;

c) flow of sustainably produced cocoa;

d) procedures needed for the effective operation of the traceability system;

e) documented information (see Clause 6).

7.1.2 Traceability system requirements

The traceability systems for sustainably produced cocoa:

a) shall be verifiable;

b) shall be applied consistently and equitably;

c) shall be results oriented;

d) shall be implemented;

e) should be cost effective;

f) should be practical to apply;

g) should fulfil defined accuracy requirements for the weight of cocoa.

The traceability system for sustainably produced cocoa shall balance the different requirements, the technical feasibility and the economic acceptability.

The cocoa supply chain actor shall only use the same traceability level as its supplier or use a lower level of traceability in accordance with the following order:

Identity preserved (IP) → Segregated → Mass balance → Nonconforming cocoa

7.2 Organizational requirements

The cocoa supply chain actor shall demonstrate its commitment to the implementation of a traceability system for sustainably produced cocoa by:

a) assigning a management representative with the overall responsibility for ensuring that the cocoa supply chain actor, inclusive of all operational units, fulfils the requirements of this document;

b) defining and assigning tasks and responsibilities for the effective implementation and operation of the traceability system;

c) providing resources necessary for the effective implementation and operation of the traceability system.

The cocoa supply chain actor shall determine applicable statutory and regulatory requirements relevant in relation to traceability of sustainably produced cocoa. The cocoa supply chain actor shall ensure that these requirements are understood and constantly met.

The cocoa supply chain actor shall ensure that the persons doing work under its control that affects the performance and effectiveness of the traceability system are competent on the basis of appropriate education, training and/or experience. The cocoa supply chain actor shall ensure that externally provided processes, products and services conform to the applicable requirements of this document. The cocoa supply chain actor shall determine the verification or other activities necessary to ensure the externally provided processes, products and services meet these requirements.

7.3 Specific requirements for documentation

7.3.1 Documentation elements

The cocoa supply chain actor shall determine the information to be:

a) obtained from its suppliers;

b) collected concerning the cocoa and process history;

c) provided to its customers and/or suppliers.

7.3.2 Documentation requirements

Documentation shall fulfil the requirements specified in Annex A and shall include, as a minimum, the following:

a) description of the relevant steps in the chain;

b) description of the responsibilities for the management of traceability data;

c) information on the traceability activities and manufacturing process, flows and results of traceability verification and audits;

d) information identifying its suppliers and customers;

e) information for verification of traceability of cocoa one step forward and one step back;

f) information for verifying that any external storage of cocoa meets the requirements of this document;

g) information on actions taken to manage nonconformities related to the traceability system;

h) documented retention times (see also 6.3).

In the development and implementation of a traceability system for sustainably produced cocoa, the cocoa supply chain actor shall take into consideration its existing operations and management systems.

NOTE 1 The information required for a traceability system for sustainably produced cocoa is influenced by its objectives and by the position of the cocoa supply chain actor in the cocoa supply chain.

NOTE 2 Guidance on how to implement a traceability system for sustainably produced cocoa is outlined in Annex B.

8 Physical traceability

8.1 Identity preserved

Identity preserved (IP) enables the identification of cocoa that has met specific requirements designed to preserve the genetic and/or physical identity of the cocoa from an organization that is sustainably producing cocoa beans.

The cocoa supply chain actor shall be able to document the conforming flow of cocoa and quantities from one cocoa supply chain actor (both central and local), and throughout all processing and handling. If a cocoa supply chain actor operates nationally or internationally, the level to which IP cocoa is traced back shall be defined to a specific location (e.g. per country, per district, per farm).

The cocoa supply chain actor shall have documented procedures to ensure that no mixing with non-IP cocoa is performed in processing, intermediate storage, transport or final conversion into a final retail product. The system shall ensure 100 % physically segregated IP-cocoa and shall ensure that no mixture with other cocoa occurs.

Cocoa processors and final retail product manufacturers shall apply flushing procedures. The procedures shall specify the flow of cocoa and actions to be taken in each step of the process and the crossover at each level.

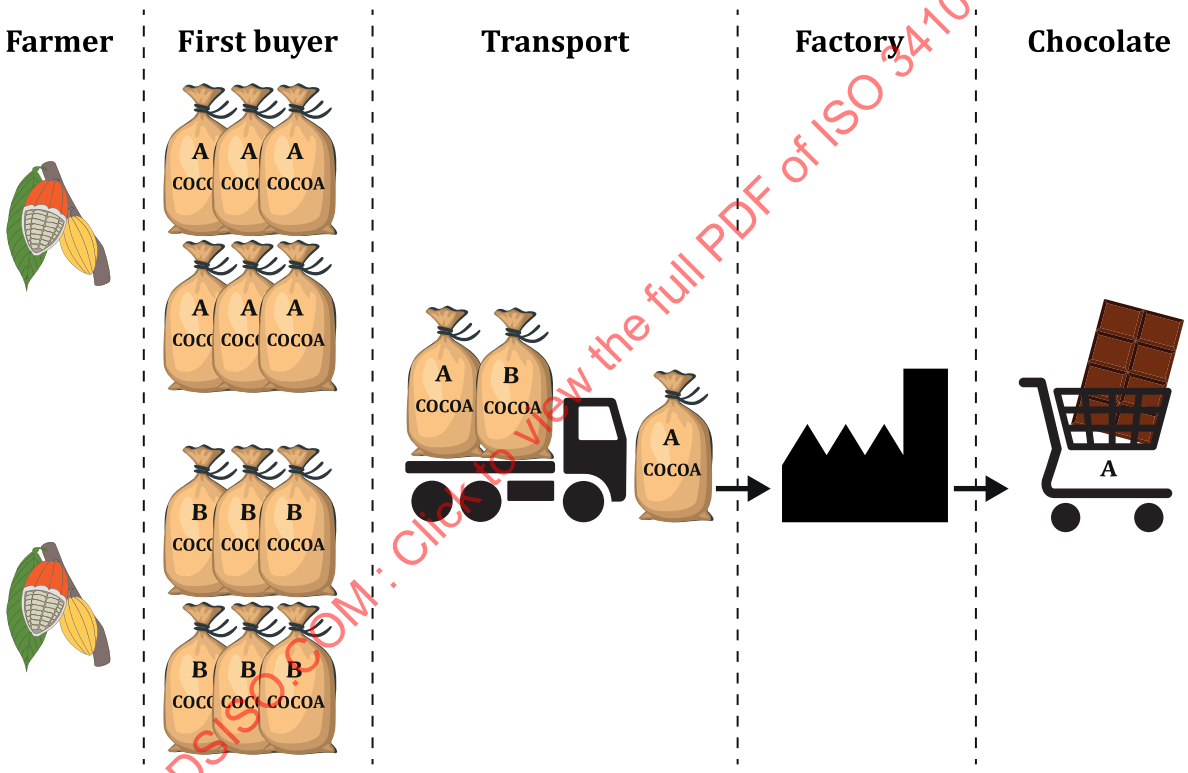
For IP, the actual processing yields shall apply and shall be documented. In addition, any weight losses/gains shall be documented.

8.2 Cocoa segregation

The cocoa supply chain actor shall ensure and verify through procedures and documentation that conforming cocoa is kept segregated from nonconforming cocoa, including during transport and storage. The cocoa supply chain actor shall demonstrate that it has taken measures to avoid mixing conforming cocoa with nonconforming cocoa (see Figure 1).

There is no need to interrupt processing when switching from processing nonconforming cocoa to conforming cocoa for segregated conforming cocoa. Any loss due to cleaning of equipment in this case shall not be considered. The system should guarantee a minimum of 90 % physically segregated cocoa. A maximum of 10 % unavoidable mixing with nonconforming cocoa is accepted.

For segregation, actual processing yields shall apply and be documented. The documentation shall include any weight losses/gains.



Key

A conforming cocoa

B nonconforming cocoa

Figure 1 — Schematic presentation of segregation

9 Administrative traceability — Mass balance system

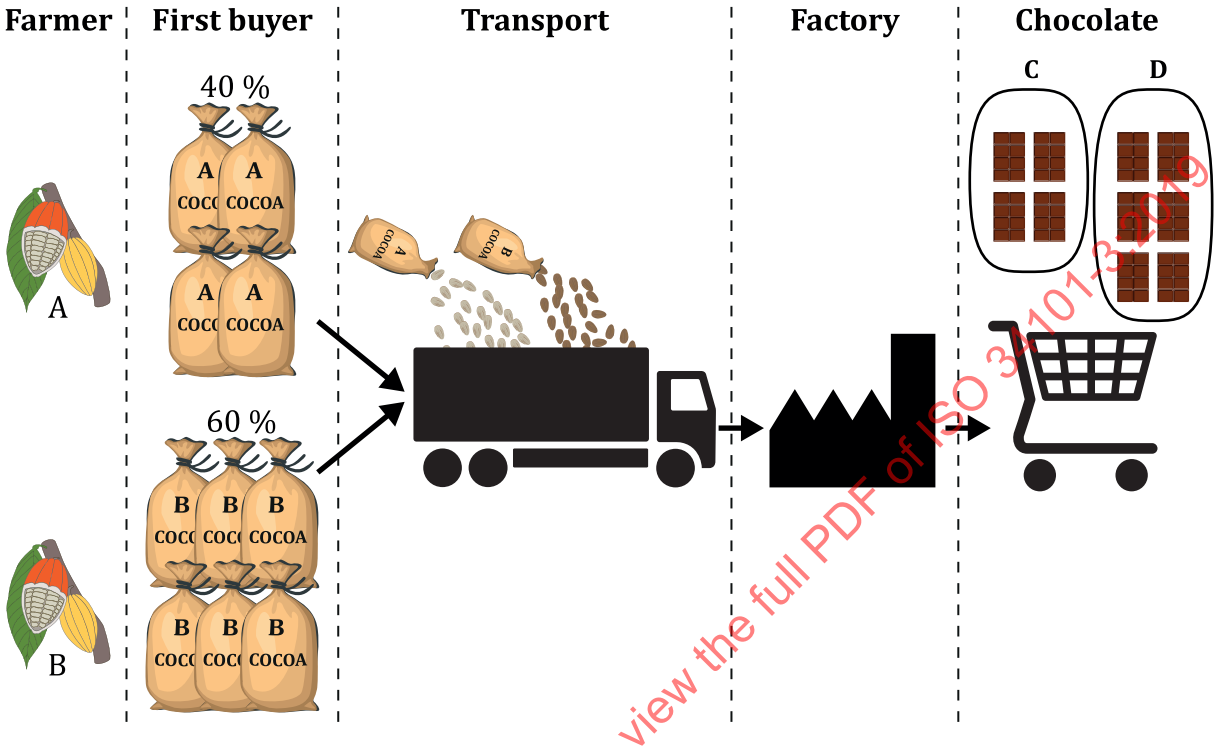
9.1 Principles

The mass balance system administratively monitors the trade of conforming cocoa throughout the entire supply chain, and acts as a driver for mainstream trade in sustainably produced cocoa.

The mass balance system makes it possible for cocoa supply chain actors to demonstrate their commitment to sustainable cocoa production and to actively promote mainstreaming the trading of

sustainably produced cocoa. The mass balance system makes it possible to mix or substitute conforming and nonconforming cocoa from the first buyer through the cocoa supply chain.

A cocoa supply chain actor can purchase a certain mass of conforming cocoa and use it to match the sales of equal quantities of cocoa without requiring a physical or chemical link between the acquired sustainably produced cocoa and the cocoa that is administrated by mass balance concept (see Figure 2).



Key

A conforming cocoa
B nonconforming cocoa
C claim for conforming cocoa
D no claim for conforming cocoa

Figure 2 — Schematic illustration of mass balance

9.2 Mass balance requirements

The cocoa supply chain actor shall ensure that the amount of outputs (final products) sold as conforming cocoa is equivalent to the amount of conforming inputs taking into account the conversion factors specified below, and all weight losses/gains between purchases and sales.

The basis of the cocoa supply chain requirements for mass balance shall consist of reconciliation between the quantity of conforming cocoa bought, and the quantity of conforming cocoa sold. This includes control of purchases and sales of conforming cocoa, which shall be independently verified. Separate storing or controls in the production process are not required.

When cocoa under mass balance is sold with a claim regarding a specific origin such as a country or several countries within one region, then the cocoa supply chain actor shall have purchased the equivalent input from the same origin or region and this shall be stated in the purchase records.

The following conversion factors shall apply for the mass balance system and shall be used at all times:

a) 100 kg of cocoa beans = 82 kg of cocoa liquor;

b) 82 kg of cocoa liquor = 41 kg of cocoa butter plus 41 kg of cocoa cake or cocoa powder.

NOTE 1 The calculation is a world average conversion factor to accommodate all the different yields of cocoa origins and for mass balance purposes only.

Only a positive volume balance on realized purchases and sales is acceptable. The cocoa supply chain actor shall ensure that the quantity of physical mass balance material inputs and outputs (volume or weight) within the cocoa supply chain actor are monitored as it happens.

The cocoa supply chain actor shall ensure that the internal material accounting system always shows a positive position of the sustainably produced cocoa.

Under exceptional circumstances, if volumes of sustainably produced cocoa have been sold short, i.e. the cocoa supply chain actor has sold more sustainably produced cocoa than it has purchased, the cocoa supply chain actor shall document the mitigation of the short-selling.

The cocoa supply chain actor shall implement the documented mitigation measures, including delivery of sustainably produced cocoa, within two months.

The volume of the delivery shall be equivalent to the short-selling.

No substitution is possible between different products (liquor, butter, powder). Conversion is only possible in the direction of the physical process. No backwards conversion is allowed. Cocoa can be converted to liquor. Liquor can be converted to butter and powder.

Mass balance claims shall be volume-based. No physical traceability should be demonstrated to document conformity.

NOTE 2 See Annex C for further information and clarification of the mass balance system.

9.3 Mass balance administration

9.3.1 General

A common centrally documented internal control and reporting system should be used and monitored by the mass balance administration.

Different operations within the cocoa supply chain actor shall be grouped by process sets. The main process sets shall have the same administration and may include:

a) first conversion (roasting and grinding into cocoa liquor);

b) pressing and refining;

c) chocolate making;

d) transport and distribution;

e) production (final manufacture of end product);

f) blending;

g) outsourcing (e.g. tank farms).

9.3.2 Single-site mass balance

Conforming inputs shall be delivered and substituted/processed in the same site where conforming outputs with a claim of conformity are processed.

Single-site mass balance shall be audited per site. Warehouse and other external storage are not regarded as separate sites. The site shall ensure that any external storage facilities conform to requirements.

9.3.3 Multi-site mass balance

The cocoa supply chain actor shall administer and control activities and sites in relation to fulfilling requirements of this document at an identified site. Participation of sites shall be documented.

NOTE The geographical scope of the multi-site option is worldwide unless specified by the cocoa supply chain actor.

Multi-site mass balance claims shall be audited at the identified site administering the group of sites.

Conforming inputs shall be purchased by any of the sites within the traceability system of the cocoa supply chain actor. They shall also be equal to the weight of conforming outputs sold by any of these sites.

10 Monitoring, measurements, analysis and evaluation

10.1 Monitoring

The cocoa supply chain actor shall establish a monitoring scheme including key performance indicators for evaluation of the performance and the effectiveness of the traceability system for sustainably produced cocoa.

10.2 Internal audit

10.2.1 The cocoa supply chain actor shall conduct internal audits at planned intervals of not more than 12 months to provide information on whether the traceability system:

a) conforms to:

   1) the cocoa supply chain actor's own requirements for its traceability system;

   2) the requirements of this document;

b) is effectively implemented and maintained.

Internal audits shall be based on the concept of risk management system auditing (see NOTE below) for obtaining objective evidence.

NOTE This risk-based approach relates both to the risk of the audit process not achieving its objectives and to the potential of the audit to interfere with the auditee's activities. The risk-based process recognizes that the cocoa supply chain actor can focus audit effort on matters of significance to the traceability system and that the selection of sites to be audited can be based on risk assessment and evaluation.

10.2.2 The cocoa supply chain actor shall:

a) plan, establish, implement and maintain an internal audit programme(s), including the frequency, methods, responsibilities, planning requirements and reporting, which shall take into consideration the cocoa traceability objectives, the importance of the processes concerned, changes impacting the cocoa supply chain actor, and the results of previous audits;

b) define the internal audit criteria and scope for each internal audit;

c) select auditors and conduct internal audits to ensure objectivity and the impartiality of the internal audit process;

d) ensure that the results of the internal audits are reported to relevant management and to relevant persons;

e) take appropriate corrective actions within a reasonable timeframe;

f) retain documented information as evidence of the implementation of the internal audit programme and the internal audit results.

NOTE See ISO 19011 for guidance.

11 Improvement

11.1 Nonconformity and corrective actions

When nonconformity occurs, the cocoa supply chain actor shall:

a) react to the nonconformity, and, as applicable:

   1) take action to control and correct it;

   2) deal with the consequences;

b) evaluate the need for action to eliminate the cause(s) of the nonconformity, in order that it does not recur or occur elsewhere, by:

   1) reviewing and analysing the nonconformity;

   2) determining the causes of the nonconformity;

   3) determining if similar nonconformities exist, or could potentially occur;

c) implement any action needed;

d) review the effectiveness of any corrective action taken;

e) make changes to the traceability system for sustainably produced cocoa, if necessary.

Corrective actions shall be appropriate to the effects of the nonconformities encountered.

The cocoa supply chain actor shall retain documented information as evidence of:

— the nature of the nonconformities and any subsequent actions taken;

— the results of any corrective action.

11.2 Continual improvement

The cocoa supply chain actor shall continually improve the suitability, adequacy and effectiveness of the traceability system for sustainably produced cocoa.

12 Review

The cocoa supply chain actor shall review the traceability system for sustainably produced cocoa at appropriate intervals, or whenever changes are made to the objectives and/or the cocoa or processes. Based on this review, the appropriate improvements (see Clause 11) shall be undertaken. This allows the establishment of a continuous improvement process.

This review shall include, but is not limited to, the following traceability-related aspects:

a) audit results;

b) changes to cocoa or processes;

c) information provided by other cocoa supply chain actors in the cocoa supply chain;

d) corrective actions (see 11.1);

e) customer feedback, including complaints;

f) new or amended regulations affecting traceability;

g) statistical evaluation methods.

Annex A
(normative)

Documentation requirements

Table A.1 — Documentation requirements

Traceability partner (TP)	Role	Traceability documentation requirements
TPs internally within the organization producing sustainably produced cocoa beans		Specified in ISO 34101-1 or in ISO 34101-4:2019, Annex A or B.
TP 1 Any buyer from the organization producing conforming cocoa to processor		**Purchase records:** lot ID, date, quantity, weight, purchase record number, names of buyer and seller; evidence of conformity to ISO 34101-2 and either ISO 34101-1 or ISO 34101-4:2019, Annex A or B, as described in the Introduction. **Sales records:** date, quantity, weight, sale date, price, carrier information, sales records number, names of buyer and seller.
TP 2 Storage/warehouse	Traceability data creator Traceability data source Traceable item recipient Traceable item source	**Documentation to manage links between inputs, internal process and outputs (lot/serial number, shipment information):** traceability certificates. **Stock management system:** procedure of management of landing of the conforming cocoa to the load-out. **Receipt:** gross/net weight, unique receipt number, transport date, names of buyer and seller, transport reference [truck registration plate, bill of lading (B/L)]. **Storage receipt (stock record):** weight list of mass coming in and out, end stock from previous season. **Evacuation/release:** weight net/gross, farmer group name(s) and number of bags (if applicable), unique sale lot number, transport date, names of buyer and seller, storage/warehouse name, transport reference (truck registration plate, B/L). **Physical handling (fermenting, drying, blending/mixing, cleaning, bagging):** type of reconditioning, net weight prior and after reconditioning, reason why they would differ, procedure of management of reconditioned cocoa in relation to the segregation of conforming cocoa. **Purchases records:** net/gross weight, purchase dates, unique purchase lot number, name of buyer and seller, price. **Sales records:** net/gross weight, sale date, unique sale lot number, name of buyer and seller, price.

Table A.1 *(continued)*

Traceability partner (TP)	Role	Traceability documentation requirements
		Sales records at level of the organization having produced the conforming cocoa beans: list of all individual sales to one organization having produced the conforming cocoa beans, weight gross/net, sales date, registered farmer name, name of the organization having produced the conforming cocoa beans. **Segregation required before the organization fulfilling the requirements of** ISO 34101-2 and either ISO 34101-1 or ISO 34101-4:2019, Annex A or B, as described in the Introduction. **Segregation/mass balance** allowed after the organization fulfilling the requirements in ISO 34101-2 and either ISO 34101-1 or ISO 34101-4:2019, Annex A or B, as described in the Introduction.
TP 3 Third party logistics provider	Traceability data creator Traceability data source Traceable item recipient Traceable item source	**Shipment information:** Stack allocation/movement (logistic information). Records to manage links between inputs, internal process and outputs (lot/serial number). Identification of output traceable item with individual non-replicable ID indicating the content in % of conforming equivalent cocoa. Mass balance allowed (see Clause 9).
TP 4 Processor/manufacturer	Traceability data creator Traceability data source Traceable item recipient Traceable item source	**Shipment information:** Stack allocation/movement (logistic information). Records to manage links between inputs, internal process and outputs (lot/serial number). **Physical handling (winnowing, roasting, grinding and pressing):** **Processing in**: evacuation note including net weight in, type of cocoa, processing date, unique lot number, company name, subcontractor name. **Processing out:** including net weight out, type of cocoa, processing date, unique lot number, packaging number, company name. **Chocolate products manufacturing:** Identification of output traceable item with individual non-replicable ID. Mass balance allowed (see Clause 9)