State of Sustainability Initiatives

Traceability Systems

A Powerful tool for Agricultural Voluntary Sustainability Standards

Commentary Report

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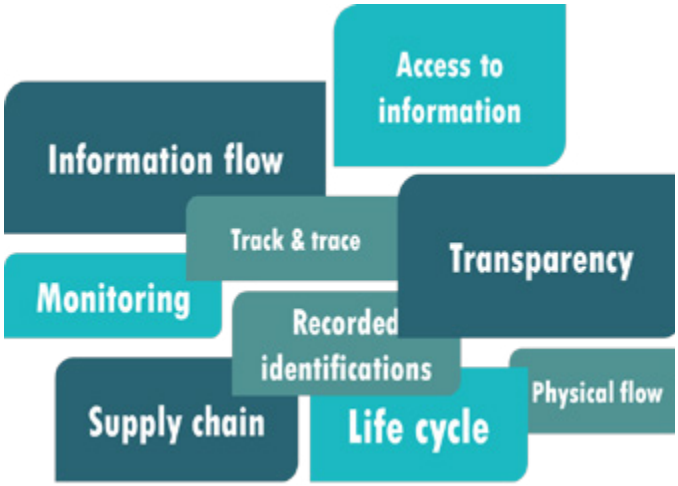
Traceability System Characteristics

Increasing concerns for food safety in many parts of the world, as well as the emerging demands for imperceptible product attributes[1] such as sustainably produced, low-carbon footprint, etc., have led to a call for the creation and improvement of traceability systems (TSs).[2]

Traceability is the ability to access any or all information about a product throughout its life cycle by using a system of recorded identifications. Traceability also relates to the ability to track and trace along the supply chain.[3] While tracking allows the supply-chain stakeholders to follow the downstream path of a product, tracing enables identification of the origins and characteristics of the product when following an upstream path in the supply chain.

Laws, international agreements and standards have established a basis for requiring TSs for food origin, hygiene and safety in various countries. For example, the European Commission General Food Law Regulation 178/2002 requires a certain level of TS for all food and feed products.[4]

Figure 1: Key Traceability Concepts



In the United States, the Food Safety Modernization Act lays out the basis for a TS that requires preventive and inspection measures for food safety. A number of the International Organization for Standardization (ISO) standards (e.g., ISO 22005:2007) have also introduced standards for food TS.[5]

Figure 2, which lays out TS characteristics, provides some of the main requirements for implementing a successful TS along with its potential benefits, challenges and

[1] Imperceptible attributes are those that cannot be noticeable by looking at a product. Although some may contest this, you cannot detect that an apple is organic by looking at it. In this case, the organic label provides information on the imperceptible attribute.

[2] Dabbene, F., Gay, P., & Tortia, C. (2014, April). Traceability issues in food supply chain management: A review. Biosystems Engineering, 120, p. 65; UN Global Compact. (2014). A guide to traceability: A practical approach to advance sustainability in global supply chains. Retrieved from https://www.unglobalcompact.org/docs/issues_doc/supply_chain/Traceability/Guide_to_Traceability.pdf

[3] Dabbene (2014)

[4] The European Union General Law, entered into force in 2002, makes it obligatory for the food and feed industries to implement TSs for origin and safety purposes. All operators in Europe must be able to identify where products come from and where they are going, as well as other processing and quality details. More detailed information can be found at http://ec.europa.eu/food/food/foodlaw/traceability/factsheet_trace_2007_en.pdf

[5] Dabbene et al. (2014)

Figure 2: Traceability Systems Characteristics

Requirements	Challenges	Opportunities	Benefits
• Record system	• Difficult to separate certain bulk products in the day-to-day flow	• Policies that lay foundation for development of TS	• Supports transparency, accuracy and truthfulness
• Agreement, collaboration, partnerships	• Difficult to desegregate mixed products	• Technologies being developed	• Shows evidence of sustainability claims
• Systemic implementation	• Lack of models that allow evaluation and comparisons of methodologies	• Many TS approaches and models being developed and reviewed	• Added value on safety and quality information
• Technology: optical and radio	• TSs still need to go beyond principle of one-step-back and one-step-forward, covering the entire supply chain	• Need for reliability of sustainability claims	• Tool to avoid market breakdowns
• Monitoring and evaluation schemes	• Complexity for achieving absolute certainty within the TS	• Need for monitoring systems	• Streamline product recall
	• Language, skill and access barriers		• Fraud prevention and anti-counterfeit
	• Security of data systems		• Guarantee policy requirements
	• Costs for all supply chain actors		• Supports impact assessment systems
			• Helps organize production system and manage supply chain

opportunities.[6]

A Tool to Ensure Reliability of Sustainability Claims

Traceability can assist with determining the reliability of certain claims associated with a product's attributes, which can strengthen transparency along the supply chain. This is the case for sustainability claims made by voluntary sustainability standards (VSS). The United Nations Global Compact's guide for traceability maintains that TSs ensure "the reliability of sustainability claims, in the areas of human rights, labour (including health and safety), the environment and anti-corruption."[7]

Ongoing Discussions on Sustainability in Supply Chains

Recent discussions on sustainability in supply chains describe TS as an important tool for VSS to improve the validity of sustainability claims. Furthermore, there is a growing need for rigorous VSS impact information to show evidence of sustainability claims and communicate how VSSs contribute to meeting sustainable development goals (SDGs).[8] During the ISEAL Alliance 2014 Global Sustainability Standards Conference, representatives of two key purchasers in agricultural supply chains, Unilever and Mondelez International, highlighted the need for companies to show evidence that their sustainably sourced materials are driving change toward sustainability in order to build trust in

Did you know?

Full TSs are being developed or have been adopted for a number of VSSs. Developing a TS requires significant effort, allowing stakeholders along supply chains to share information to track and trace the transformation and value addition of commodities allowing credible sustainability claims at various stages of the supply chain. The key to an effective TS is the willingness of supply chain stakeholders to adequately collect and share important data resulting in value addition for all supply chain stakeholders.

[6] The Traceability System Characteristics chart was compiled based on analyzing information found in the following sources: Dabbene, et al. (2014); UN Global Compact (2014); Lindh, H., & Olsson, A. (2010). Communicating imperceptible product attributes through traceability: A case study in an organic food supply chain; Renewable Agriculture & Food Systems, 25(4), 263; Olsen, P. & Borit, M. (2013), How to define traceability. Trends in Food Science & Technology, 29(2), 142–150. http://doi.org/10.1016/j.tifs.2012.10.003; Storøy, J., Thakur, M., & Olsen, P. (2013). The TraceFood Framework: Principles and guidelines for implementing traceability in food value chains. Journal of Food Engineering, 115(1), 41–48. Retrieved from http://doi.org/10.1016/j.jfoodeng.2012.09.018

[7] UN Global Compact (2014, p. 6)

[8] Davis de Andrade Lessa, J. (2014). Goal systems: An exploration of links between voluntary sustainability standards in agriculture and public sustainable development goals. CEU Department of Environmental Sciences & Policy Master Theses 2014/6. Budapest: CEU, Budapest College; Potts, P., van der Meer, J., & Daitchman, J. (2010). The state of sustainability initiatives review 2010: Sustainability and transparency. Retrieved from http://www.iisd.org/pdf/2010/ssi_sustainability_review_2010.pdf

their sustainability claims.[9] During the International Trade Centre's (ITC) Trade for Sustainable Development Forum 2014, a panel discussion featuring a cross section of private sector purchasers maintained that effective communication, data sharing and supplier-supplier collaboration are fundamental for supply chains.[10] The United Nations Global Compact suggests that there are increasing demands for more detailed information on characteristics and impacts of VSS.[11] TS can potentially assist with fulfilling this need.

By providing access to information on the components, parts and materials of products, as well as information on transformations throughout the value chain, TSs can aid in the delivery of transparency and evidence for sustainability claims. Increased transparency also leads to improving and facilitating participatory governance, which is imperative for sustainable development.[12] By facilitating transparency, VSSs also enable the market to communicate and promote efficiency, social welfare and cost-internalization, which are fundamental to sustainable development. Transparency also provides investors, policy-makers and donors with the necessary understanding of sustainability in supply chains, enabling meaningful decisions for accountability.[13]

Steps Towards More Traceability

Recent developments within some VSSs demonstrate serious efforts in implementing more traceability within supply chains, which can be challenging to varying degrees, depending on the commodity sector. For instance, VSS chain-of-custody specifications are regularly revisited to strengthen traceability and transparency along the supply chain. The Roundtable for Sustainable Biomaterials recently revised their chain of custody standard to enhance clarity, ease of use and completeness.[14]

The 2014 Roundtable for Sustainable Palm Oil (RSPO) annual general meeting concluded with a vote on an important resolution tabled by Unilever to enhance traceability. The resolution, which narrowly passed (96 for, 84 against, 37 abstained), moved the RSPO members closer to implementing full traceability and greater transparency in their supply chains by imposing the disclosure of specific mills linked to book and claim, mass balance or segregated RSPO certified palm oil and palm kernel oil purchases. It was argued that implementing more traceability in the supply chain would enable RSPO member companies to achieve zero deforestation. Knowing exactly how palm oil flows through the supply chain, including which mills and plants process the palm fruit and kernel, will move RSPO towards full traceability.

Unilever, the proponent of the resolution, maintained that current transactions do not require the disclosure of certified mills. Book and claim must have information on the source of certified mills on green palm certificates and etrace mass balance, and segregated palm oil should disclose certified mills. Unilever "would like to mandate the RSPO to work with book and claim and the etrace system so that any buyer of RSPO certified palm oil has full traceability including the mills."[15]

Some members argued against the resolution by stating that traceability is more important for conventional production. Tracing back to the mills for book and claim as well as mass balance will be challenging, and mill disclosure may be disadvantageous to some RSPO members. Other members argued for the resolution by pointing out the virtues of traceability to source palm oil from mills with a lower carbon footprint and increasing the competitiveness of RSPO members.

The challenge associated with implementing the resolution was also highlighted by pointing out the difficulties with tracking the crusher plants involved in extracting palm kernel oil and in tracing mills for mass balance where mixed certified and uncertified palm oil product are sold.

The following question posed to Unilever highlighted some of the reservations around the resolution: "Are your intentions to support specific mills in your supply base?"[16]

The Unilever representative answered that, in their 900-mill supply base, only 10 per cent are certified, and that, although complete traceability is challenging, it will help move the overall sector towards sustainability.
RSPO members were left with mixed feelings on the approved resolution, with some feeling that it represented an important step towards full traceability and therefore transparency for sustainability, and others feeling that implementing the resolution for both palm oil and palm oil kernel would be a challenge. Overall, this important development towards traceability demonstrates RSPO's

[9] Davis de Andrade Lessa, J. (2014).

[10] International Trade Centre News (2014, October 3). Buyers see transparency and traceability as the challenges for sustainability standards. Retrieved from http://www.intracen.org/news/Buyers-see-transparency-and-traceability-as-the-challenges-for-sustainability-standards

[11] UN Global Compact (2014)

[12] Ibid.

[13] Potts et al. (2010)

[14] Roundtable for Sustainable Biomaterials (2014). RSB Standard for Traceability of RSB Certified Material (Chain of Custody) Version 3.1. Retrieved from http://rsb.org/pdfs/standards/RSB-STD-20-001-vers.3.1%20RSB%20Std%20for%20Traceability.pdf

[15] Unilever Representative, Proposed Resolution at the 11th General Assembly of the Roundtable on Sustainable Palm Oil - Resolution 6f: Declaration of Mills (Kuala Lampur, 2014).

[16] Roundtable on Sustainable Palm Oil Member, Proposed Resolution at the 11th General Assembly of the Roundtable on Sustainable Palm Oil - Resolution 6f: Declaration of Mills (Kuala Lampur, 2014).

commitment to transparency and its push for further sustainability within the palm oil and palm kernel oil commodity sectors.

Sustainability via Traceability Systems

TSs provide a foundation for improving transparency along supply chains, facilitating the development of monitoring systems, allowing access to information, enabling agricultural goods to be traceable and improving the reliability of sustainability claims. By enabling transparency, TS can build bridges between producers, governments, non- governmental organizations and market actors, providing a basis for ensuring that VSSs contribute to achieving the SDGs.

Traceability systems can be integrated within data-sharing platforms along supply chains, providing an opportunity to add additional value to traceability efforts. Well-designed data-sharing platforms provide an opportunity to fast-track sustainability within commodity sectors by aggregating information among its data providers in a supply chain to provide important intelligence for the sector as a whole while maintaining the confidentiality of sensitive information. Supplyshift provides one example of such data-sharing platforms providing flexibility for information sharing through aggregation while maintaining information confidentiality. In doing so, its data-sharing participants receive additional competitive and sustainability intelligence.[17]

[17] For more information on supplyshift, see https://www.supplyshift.net

Author: Jefferson Andrade & Vivek Voora
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