INA Initiative für nachhaltige Agrarlieferketten

DIASCA Digital Integration of Agricultural Supply Chains Alliance

DIASCA Hypotheses Paper

Subsumed Survey/Interview Results

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1 Introduction

Towards interoperability in global agricultural supply chains the project DIASCA (Digital Integration of Agricultural Supply Chains Alliance) has been launched in May 2022.

WHY

Global agricultural supply chain actors are increasingly confronted with due diligence and Environmental, Social and Governance (ESG) reporting requirements. While there is a steadily growing market of digital traceability solutions, these are hardly interoperable. A broad acceptance of global standards to track and trace products and report on their sustainability could significantly boost efficiency and facilitate information exchange within supply chains. Interoperability of traceability systems from farm to fork can benefit all supply chain actors in addressing issues like transparency, avoided deforestation and safeguarding a living income for farmers.

WHAT

The objective is to find a broad agreement on joint standards for traceability, forest monitoring and farm income, as fundamental building blocks for efficient data flow and compliance within agricultural supply chains. The round table talks will be underpinned by concrete use cases and field-level reference projects.

WHO

The project is commissioned by the Federal Ministry for Economic Cooperation and Development (BMZ) of Germany and implemented by the GIZ Initiative for Sustainable Agricultural Supply Chains (INA) together with GS1 Germany, in collaboration with ISO/DIN, COSA and other key sector stakeholders.

HOW

In order to prepare for DIASCA round-table talks of stakeholders GS1 Germany has carried out a survey among subject matter experts from June to August 2022 which contained an online questionnaire accompanied by telephone interviews. Its results are summarised in this paper and will be discussed at the first roundtable talk taking place 7th Sept. 2022.

2 Clusters of the Topic

The questionnaire contained 22 questions in total of which two addressed personal data.

After deriving a general framework from the 20 questions the following clusters have been identified as vital for the discussion and build the six hypotheses:

1. General Framework
2. Positive correlation between "traceability“, “due diligence” and “deforestation-free products”
3. Benefitting Farmers
4. Right Degree of Harmonization
5. Technical Enablement
6. Emphasizing Social and Ecological Criteria

3 Exploitation of Results

3.1 General Framework

To reach interoperability in integration digital agricultural supply chains primarily data related issues have to be solved, e. g. data quality / availability, data sharing and willingness to share, data standardization, structural problems in different countries.

Hypothesis 1

The following word cloud represents the answers given to survey questions 1, 2, 3, 4, 11, 12, 15 and 19 adressing the topics of technical obstacles, willingness/ability to share data, benefits for farmers, role of regulations, most important critical tracking events, due diligence and sustainability reportings, core components and services, and last but not least piloting aspects.

Regarding this widespread spectrum obtained in the results the word cloud make the importance of the factor “data” in the context of traceability visible.

3.2 Positive correlation between "traceability“, “due diligence” and “deforestation-free products”

What is the correlation of "traceability“, “due diligence” and “deforestation-free products”?

> Traceability building on global and interoperable standards is a necessary precursor to understanding the issues in a particular supply chain, including deforestation, labor abuses, etc.

Hypothesis 2

As far as product quality is concerned a positive correlation between data exchange, sustainability and product quality was confirmed. This can be interpreted as data exchange being one key enabler for product quality in general and for ensuring quality-related aspects like “due diligence” and “deforestation-free”.

Concerning the aim of “due diligence” and “deforestation-free” products the respondents to the questionnaire see the clear need for the integration of all stakeholders of the relevant value network. This refers for example to Non-Governmental Organisations, workers’ associations on the one hand but also to individual stakeholders’ entire networks of the industry itself or international trade agreements. The latter can have a dimension of over 10.000 organisations and single actors. Thus, only global and interoperable standards for traceability and data sharing can be considered since they can span the entire network.

In addition, the clear need for the definition of Critical Tracking Events and Key Data Elements for every product type (coffee, cocoa, etc.) should be defined. As stated above this category-related approach must be embedded in a global approach to avoid non-scalable stand-alone solutions. Those applicable to one product type should be interoperable with approaches designed for other product types and flexibility and interoperability must be considered at all time.

The respondents mostly stated that they rather integrate new standards in their internal systems or create joint data systems with their business partners than using different systems in parallel. This again is a clear message for the use of open and global standards.

The strong need for education on how data sharing can be carried out efficiently and the offer to support especially smallholders and farmers was highlighted several times.

3.3 Benefitting Farmers

How could farmers benefit from traceability based upon open standards?

> By implementing existing open global standards in the agricultural sector once to achieve interoperability of sustainability data, many stakeholders including farmers, manufacturers, brands and policymakers can benefit several times and at various stages.

Hypothesis 3

With regard to benefit farmers, survey feedback advises the creation of win-win situations among supply chain partners to be the most promising approach.

Data transfer should in this respect be a double-sided way. Data provided by farmers should benefit downstream partners. Data provided by distributers/retailers should benefit upstream partners. Farmers thus could benefit from better understanding customers' needs and cater for these accordingly.

For reaching better market access and alluring new customers farmers would benefit from implementing existing traceability standards already widely adopted downstream. In this effect, one way of serving customers' needs leads to flexibility and avoiding double-work.

There is a need for a system of traceability standards which is easily accessible and applicable, has local support in each country and available implementation guidelines.

3.4 Right Degree of Harmonization

To what extent would global harmonization and/or regulation of national traceability requirements be required?

> Legislation, e. g. by global organisations like the EU and the legislative proposal on deforestation-free supply chains, is desired to create conditions of competition and define the basic requirements, but remain technology agnostic.

Hypothesis 4

It is expressed in the feedback to the survey the overall understanding that global harmonisation is an important topic. It is appreciated legislators to set the framework (outcome/aim, e. g. living income) whereas market players take on to set the standards for reaching such goals. Drivers in the context of standardisation should be global organisations. International trade agreements are considered as a helpful accompanying measure.

3.5 Technical Enablement

How can technical enablement be provided?

> Alignment on data elements per product class builds the basis of both critical tracking events (CTE) and key data elements (KDE); thus defines focus to bring forward the technical enablement of the stakeholders.

Hypothesis 5

The participants of the survey expressed their wish for the definition of Critical Tracking Events and Key Data Elements per product class and a mapping on global level. The use of global interoperable standards is seen as a guarantee for systems "speaking the same language". Many data items like identification of parties, products, supplies, locations, processes, operators, dates, quantities, satellite images were mentioned expressively. An alignment on common interfaces, the use of the digital-twin concept or blockchain technology are supposed to bring forward the technical enablement of the stakeholders.

There are globally aligned data requirements, formats, processes and interfaces that are key parts of a data standard. GS1 standards can cover the stakeholder needs and will foster technical enablement. Trustworthy and easy-to-use solutions and the support and training of smallholders are seen as other vital preconditions for the technical enablement of all stakeholders of the relevant value networks.

3.6 Emphasizing Social and Ecological Criteria

How can social and ecological criteria be emphasized?

> The interoperable traceability framework to identify, capture and share data should be flexible enough to address the (social and ecological) key topics today and extensible enough to address those will come in the future.

Hypothesis 6

On the one hand deforestation-free products and living income are upcoming necessities to be demanded by legislators. On the other hand, the list of criteria is considered likely to be enlarged with further criteria over time. In conclusion, it becomes vital to find a generic approach suitable for realising the first criteria but suitable for potential further ones as well. The interoperable integration into existing traceability solutions is of importance.