POWER OF DATA

Traceability solutions in cocoa to contribute to the Sustainable Development Goals (SDGs)

by Daniel Stähli, CABOZ AG

CABOZ

To what sustainable development goal do you deliver?

Product traceability always means knowing the people behind a product. As such, traceability helps to support farmers, their families and communities with the services they really need. This allows us to support farmers in getting more efficient, to diversify and rejuvenate their farms, to protect forests and to assess and address children and other people at risk.

What was the situation?

Most farmers we work with, were formerly not organised. This means they sold cocoa to any buyer who was ready to buy. This cocoa is usually not traceable and the buyer has no objectives other than buying cocoa. Once a farmer starts to deliver cocoa to us on a regular basis, we integrate him or her into our traceability system. This allows us to have the farmer and their family benefit from our certification and sustainability programmes.

What did you do?

We manage traceability pragmatically within a hybrid system. Given the frequently poor access to electricity, poor network coverage and low experience of buyers with digital systems, we trace the buying process with the farmer on paper up to the reception in our warehouses. We then digitise these and any further movements of goods in our digital database system. The system allows us to track the product flow from farm to port and, more importantly, link it with information about the farmer, his family, their plots and the programmes they are involved in.

We plan to digitise the entire process in the future. But this only becomes really powerful if combined with digital payment for the cocoa. We are, however, far from this in West Africa. It is an situation that needs to be addressed on higher levels and would resolve many issues of an untransparent supply chain like cocoa.

What are the results?

Because of traceability, we know more about the farmers, their families and the plots they grow cocoa on. This allows us to certify the farmers and pay premiums. We can identify the needs of farmers and their families more easily and, with time, are able to follow the impact our sustainability programmes and adopt them if necessary.

Who was involved and how?

Traceability is a concept that involves everybody along the supply chain. This starts with the farmer communities, involves buyers, truck drivers, warehouse managers and the administration in the office. The management is strongly involved as traceability is a concept that has to be introduced top-down. Traceability means to introduce a corporate culture that is based on transparency. This means challenges along a supply chain become visible. To accept and then address these challenges is the ultimate goal of traceability.

How could the solution be scaled?

Scaling traceability is not a technical problem but rather an issue for people management and corporate culture. Technology is just a tool, digitisation in itself not an asset. It's about the people along the value chain who need to see value behind traceability and transparency.
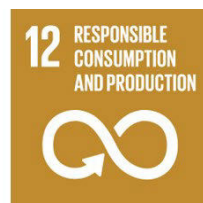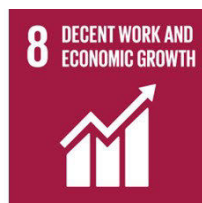
POWER OF DATA

Traceability solutions in cocoa to contribute to the Sustainable Development Goals (SDGs)

by Eliana Mingard and Martin Rossi, Cocoasource SA

To what sustainable development goal do you deliver?

1 - No poverty, 8 - Decent work and economic growth, 12 - Responsible consumption and production, 15 - life on land

What was the situation?

During internal inspections, cooperatives collect numerous primary data on paper. Data collected on paper are often forgotten, lost, hard to read, not standardised and outdated as smallholders' groups evolve rapidly. Many projects are implemented but it remains very difficult to assess the impact/need for people. Below are some practical examples:

1. Training: Difficult to assess the impact of GAP classes and to analyse attendance per theme of farmers in cooperatives (some farmers miss some themes).
2. Community projects: Still a need for community projects in West Africa. Many projects, however, are implemented and collapse after a while (water pumps out of usage, school w/o teachers, ...).
3. Good governance: In some cooperatives, ideas and decisions are the fruit of few strong leaders instead of a group consensus.
4. Tree plantations: No- or poor follow up of trees' death rates.

What did you do?

Digitalisation of the cooperative enabling them to gather any data regarding all cooperative activities.

- Training in digitalisation and data collection.
- Training in mapping and projection.
- Training in data management, analysis, and reporting.
- Financial support for equipment acquisition, internal inspections and polygons recording.

By analysing the data, cooperatives can address all the previous situations described above.

What are the results?

With digitalised data, cooperatives have a better insight of their communities. Audits are facilitated with automatic reports for farmers and mistakes are limited by reducing human intervention with one entry per data set (could result in cost efficiency, quicker and remote auditing).

- Training: Can be performed in groups but also in more dedicated classes. We can link progress to training attendances and customise coaching.
- Community projects: By listing the members in relation to their immediate community (city>village>camp) and performing online surveys, one can obtain a precise census and prioritise projects by impact and needs.
- Good governance: If decisions are made to answer observed needs, it reinforces the power of good governance and the cooperative work for the general interest of its members' community.
- Tree plantations: Coordinates and digital registration is helping the follow up of agroforestry projects and verifications.

Who was involved and how?

Three cooperatives involved in the project: IBA (cocoa in Togo), ATW group of farmers (Cocoa in Uganda) and Copavgon (Cashew in IVC, Bondoukou). PCs (Purchasing Clerks), Lead farmers (trained and coaching all members) as well as responsible staff of the cooperatives, are trained to collect, organise, and analyse the data.

NGO (in Uganda, we work with Swisscontact for registration, training, and certification support) and any potential funds and/or customers willing to support cooperatives with implementation costs.

And of course, the software tool provider. In our case, we want the coop to own their own license and to choose their preferred system to be used in all cooperative level.

How could the solution be scaled?

Eventually, we are willing to replicate this activity with other partner cooperatives.

The next step could lead to better understanding of farms (better yields, CO2 reduction or retention leading to new premiums). Assessed experience could create better models of agroforestry by analysing higher quality data thanks to frequency of the internal inspections and their analysis on the long run.

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Traceability solutions in cocoa to contribute to the Sustainable Development Goals (SDGs)

by Moritz Runge, Max Felchlin AG

To what sustainable development goal do you deliver?

1 - No poverty, 3 - Good Health and Well-being, 17 - Partnerships for the Goals

What was the situation?

In most cocoa areas, access to affordable healthcare is limited, and sustainable impact-driven projects are the exception, often lacking scalability. Farmers are motivated to join this project because they have both 1) healthcare access and 2) long-term financial planning.

With new ESG laws approaching and ethical consumerism on the rise, chocolate manufacturers need to improve supply chain transparency through sharing real-time data on socio-economic, health, and environmental indicators.

What did you do?

We created a sustainable win-win-win along the cocoa supply chain:

- The farmer receives health insurance without financial risk, reducing out-of-pocket expenditures for health and promoting sustainable livelihoods. With the help of the digital platform, Elucid, farmers can voice their opinion and play a more active role in the supply chain.
- The cooperative and the chocolate manufacturer receive a digital real-time database of farming families, including health, socio-economic and environmental data. The data allows the planning of interventions that create meaningful impact.
- By joining such projects, the product manufacturers/customers create a direct connection with the farmers, support the development of context-specific interventions that create measurable impact, and can use customer-specific data for impact-reporting to differentiate themselves in the market

Starting point were the 2 criteria are often underestimated but we believe them to be very important: Motivation of the farmer and real sustainability (also financially). The underlying question is: Do both, farmers and customers, benefit from it and does it add long-term value?

Other criteria were:

- Strategic levers: Measurable impact and transparency
- Scalability: Scalable and adaptable across communities and countries
- Cost effectiveness: In relation to production to compare with premium schemes. If an average farmer produces 0,5 metric ton (MT) cocoa the coverage costs between 15 and 30 USD/MT per year.

What are the results?

In Madagascar, where we launched the project, health-care access is now possible for 860 farmer families (2.200 people), and 3700 treatments have been administered since September. The cooperative has received 400 demands from new farmers wanting to enter the cooperative due to the health coverage scheme.

The project sustains itself without much input from Felchlin and partners. In return, Felchlin and partners benefit from the direct connection with the farmers and can monitor project impact and development via a real-time dashboard. As a by-product, socio-economic and environmental data is produced and can be used to implement need-targeted impact projects.

Who was involved and how?

The project works because it was initiated by the needs of the farmers while considering the needs of the customers. Initial implementation costs were supported by SWISSCO, and long-term financing is secured through strong support and collaboration of the cooperative, the exporter, and our customers. The project is now already financed for the next 6 years. It is not philanthropy but a common project between equal partners: Farmers contribute as well and pay around 10% of the insurance premiums in form of physical cocoa deliveries. In future, the co-pay will increase and be directly paid from their mobile health wallet.

How could the solution be scaled?

We are currently implementing the next project in Ghana and Elucid is now onboarding more than 8000 beneficiaries until the end of April '22 - in short, anyone can do it if the cooperative and farmers are on board. I believe this project can work across the industry and value chain due to the following reasons:

- It addresses a real need of smallholder farmers in most cocoa areas and is highly adaptable to the local context.
- It is very cost-effective and sustainable. If a farmer produces on average 0,5 Mt it costs between 30 and 50 USD/MT per year.
- It allows chocolate manufacturers to use modular data that is customer-specific and can be used to differentiate themselves via impact-driven communication.
- Through collaboration between manufacturers, implementation costs can be shared, and impact is created on large scale.
- It creates the true win-win-win.

Also, I believe it is a great chance for certification companies to create a sustainable measurable impact by allowing cocoa premiums to flow directly into healthcare and context-specific livelihood projects.

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Traceability solutions in cocoa to contribute to the Sustainable Development Goals (SDGs)

by Michael Stamm/Cathrine Cornella, Gebana AG

To what sustainable development goal do you deliver?

Mainly SDG 1 "No Poverty" and SDG 10 "Reducing inequalities".

What was the situation?

Cocoa farmers in Togo still receive too little from their cocoa bean sales to achieve a "living income" (according to our own calculations). This is caused by small plots of land on the one hand, and by too low farmgate prices for the cocoa beans on the other.

What did you do?

Gebana introduced the so-called Gebana model in 2020 in Togo whereby 10% of sales revenue from cocoa and chocolate products through Gebana's online shop is paid back to the farmers. This revenue share is distributed directly to all cocoa farmers that supplied cocoa beans to Gebana in the previous season. It is done once a year and payment is mainly done via mobile transfers to increase accountability and traceability. Phone numbers are checked for each farmer before any transfer and farmers are informed about the amount they are going to receive. The transfer is then done via mass upload from the head office while our staff and the farmers are there. Farmers can instantly see the credited amount.

Traceability is key to being able to make those payments directly to the farmers who supplied the cocoa. Each farmer is registered in Gebana's app, Cropin, with details like location, phone number, crops planted, and volumes sold.

What are the results?

Farmers received an additional premium for the cocoa sold to Gebana in 2021 which amounts to EUR 75 per farmer on average (equal to about 1.5 times the national monthly minimum wage). Premium amounts are linked to the organic certification status and volumes supplied.

566 cocoa farmers received a Gebana model premium for the 2021 season (premium paid out in spring 2022) and 80% of them via mobile payment.

This amount helps to decrease the gap between cocoa been revenue at prevailing market prices and the living income an average Togolese farmers would have to achieve from his cash crop to sustain her/his family. Therefore, it also helps reducing inequalities in income distribution within Togo as the poorest farmers experience an increase of their income.

Who was involved and how?

Most important is that we know, and have contacts, to every individual farmer supplying cocoa to Gebana. Gebana field staff and the agricultural department are heavily involved in managing the traceability systems and calculating the individual amounts based on volumes delivered and organic status (i.e., organically certified or in conversion). Head office in Switzerland is calculating the total premium amount for Togolese cocoa farmers based on sales revenues in the applicable calendar year and transferring it to Gebana, Togo.

How could the solution be scaled?

Gebana plans to extend the model to most of its suppliers. It is crucial to have the traceability of product supplied down to the individual farmer to be able to distribute premium amounts directly to those farmers. Ideally, Gebana can administer payments to farmers directly from the Cropin app (some tests have already been successful) in future and without having to rely on field teams on the ground to supervise and organise premium payments. This would decrease organisational expenses and is even more important for suppliers without Gebana shareholding.

In the future, Gebana wants to win B2B customers to support this model as well to fully close the gap to the living income and to ensure meaningful premium payments for farmers when lots of produce is going towards wholesale instead of into Gebana's direct sales.

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Traceability solutions in cocoa to contribute to the Sustainable Development Goals (SDGs)

by Megan Passey, International Cocoa Initiative

To what sustainable development goal do you deliver?

4 - Quality education, 8 - Decent work and economic growth, 16 - peace, justice and strong institutions

- 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.

- 8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms.

- 16.2 End abuse, exploitation, trafficking and all forms of violence and torture against children.

What was the situation?

An estimated 1.56 million children were used for cocoa-related child labour in cocoa-growing areas of Côte d'Ivoire and Ghana in 2018/9. This represents 45% of children aged 5-17 in agricultural households. The large majority work on smallholder farms, alongside family, to support their households' livelihood. Since child labour is so common, it is a salient human rights risk for any company purchasing cocoa from Côte d'Ivoire and Ghana. Forced labour, while less common, is another salient risk. Under the UN Guiding Principles for business and human rights, companies have the responsibility to assess their supply chain and show that they are taking action to prevent, address and mitigate human rights abuses linked to it.

What did you do?

Child Labour Monitoring and Remediation Systems are a common approach to preventing and addressing child labour, as well as other child rights risks. Monitors visit every household in a community or cooperative to (a) raise awareness, (b) identify children at risk, (c) provide targeted support, (d) follow-up with children over time, until they are no longer at risk.

Child Labour Monitoring and Remediation Systems are social traceability systems, that build upon, and remain linked to physical traceability systems. To monitor child labour, physical traceability is an essential starting point. Simply put, without knowing which households, communities and cooperatives are linked to a supply chain, it's impossible to monitor which individuals are at risk of child labour.

What are the results?

Child Labour Monitoring and Remediation Systems are effective in reducing child labour by around a third among children identified. They are also effective at addressing other child rights risks, such as supporting out-of-school children to re-enter formal education, as well as facilitating birth registration for children who lack official documentation.

Who was involved and how?

Child Labour Monitoring and Remediation Systems are a collaborative approach, involving farming households, community members and committees, cooperatives, companies, local and national authorities.

Different individuals play different roles within the system: monitors are often local community members, who raise awareness and identify children at risk. Their salary and equipment may be paid by the local cooperative. When a child is identified in child labour, a remediation fund, often provided by the buying company, is used to provide support to the child and household. Bridging classes for out-of-school children are a common form of support – these are set up in collaboration with relevant local and national authorities, for example the Ministry of Education.

How could the solution be scaled?

Child Labour Monitoring and Remediation Systems are already estimated to cover around 25% of cocoa-growing households in Côte d'Ivoire and Ghana, but effective implementation and further up-scaling is needed to cover all children at-risk. To scale up coverage and ensure alignment, there is a need for greater coordination, motivation, and investment by both private and public stakeholders, especially to reach households who are part of the unorganised supply chain.

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Traceability solutions in cocoa to contribute to the Sustainable Development Goals (SDGs)

by Anian Schreiber, Koa Switzerland AG

To what sustainable development goal do you deliver?

By upcycling the white pulp of the cocoa fruit, Koa increases the income of Ghanaian smallholders and aims to reduce farmer poverty according to SDG 1.

What was the situation?

Over the last decades, supply chain scandals and cocoa farmer poverty have continued to rock the cocoa industry, leading to increased consumer demand and political efforts to improve transparency and accountability within the cocoa industry. While products carry certification labels, the question remains how can consumers be sure that farmers receive the money that they're entitled to? Existing certification labels often validate transactions through non-transparent, error-prone control procedures, with farmers regularly only receiving a portion of the funds claimed to be earmarked for them.

What did you do?

Koa launched a system, using blockchain technology, that proves transactions and higher income for cocoa farmers. In an international collaboration with the companies seedtrace (Germany), and MTN Group (South Africa), Koa has implemented a new, tamper-proof, and scalable transparency system that re-cord payments made to cocoa smallholders. The unique part: Mobile money payments are verified in real-time and are irreversibly stored on a low-emission blockchain.

What are the results?

Transactions are publicly available, differentiating themselves from existing certification labels, providing consumers with direct proof that farmers receive the full payment.

Who was involved and how?

To develop the pioneering transparency system, Koa collaborated with Berlin-based seedtrace, a SaaS start-up on a mission to make supply chain transparency the norm. Moreover, they partnered with MTN Group, Africa's largest telecommunications operator, whose mobile money transaction data serves as secure inputs for the blockchain. Leading the way towards full transparency is Jeff Oberweis, the renowned pastry chef from Luxembourg, who sends consumers on a journey from cocoa farmers to the final product. A QR code on the packaging of the product containing Koa ingredients leads consumers to the seedtrace platform where they can see the additional farmer income.

How could the solution be scaled?

The more internationally renowned companies and multinationals are implementing the "verified by Blockchain" solution, the bigger the steps towards a transparent supply chain, which enables customers to trace payments and products back to their origin to see that cocoa farmers received fair payments. This supports a higher degree of trust regarding food origin but also puts it in the hand of the consumer to choose suppliers that treat their sourcing partners fairly.

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Traceability solutions in cocoa to contribute to the Sustainable Development Goals (SDGs)

by Florian Studer, SCHÖKI AG

To what sustainable development goal do you deliver?

1 - No poverty, 8 - Decent work and economic growth, 10 - reduced inequalities, 12 - Responsible consumption and production, 11 - Sustainable cities and communities

What was the situation?

Farmers deserve to receive a living income on cocoa prices - the true price for their work. However, most cocoa farmers still live below the poverty line. Despite promises by the chocolate industry to improve working and payment conditions for farmers, the situation continues to turn for the worst. Current schemes sand initiatives (such as certification) usually pay a premium on top of market cocoa prices. Unfortunately, the premiums are rarely high enough to really make a difference towards a decent living income.

What did you do?

We at SCHÖKI strongly believe that visibility through complete transparency along supply chains will empower the change of the most urgent problem in countries of origin: poverty. It is SCHÖKI's goal to demonstrate how the chocolate industry's value- and supply chains can become 100% transparent.

SCHÖKI is developing the tools and sharing them as open-source solutions for others to follow (SusChain.org). We believe in cooperation instead of competition.
SCHÖKI, as a chocolate brand, guarantees cocoa farmers a living income price for the cocoa delivered to produce SCHÖKI chocolate bars. Therefore, SCHÖKI identifies the paid farm gate price and pays the living income differential (LID) as an additional premium directly to the farmers.

To prove that a LID premium has been paid to cocoa producers and to scale this living income approach, a transparent and traceable supply chain is required. Therefore, SCHÖKI founded the SusChain initiative which develops a software for transparency, fairness, and accountability in raw material sourcing. By using cryptographically verified data and digital fingerprinting, SusChain is an open-source platform enabling companies to seamlessly visualise and share supply chain information, thus empowering consumers to choose products that are sourced and produced responsibly and helping farming communities to gain visibility and tackle poverty.

What are the results?

The SusChain initiative will publish a ready to use open-source software free of charge. Using this software will enable companies to collect data starting at the farm level, across all steps of their supply chains and production up to the consumer ready product. This will lead to 100% traceable and transparent chocolate supply chains which enable activities to counteract shortcomings such as poverty and abusive child labour.

SCHÖKI will use SusChain to track back its raw materials to every single farmer and pay living income prices for cocoa farmers and producers of other raw materials. By giving the software to other companies and enabling them to implement 100% transparency, they obtain the possibilities to directly use their data to start activities that lead to improvements directly at the source (e.g., fairer prices). The software will easily connect multiple stakeholders and supply chains without jeopardising the data sovereignty.

Who was involved and how?

The SusChain initiative is a cooperation of SCHÖKI and its production partners (Max Felchlin AG, Chocolat Bernrain AG) together with their sourcing partners based in Ghana, Peru, and Uganda. The project is supported by the Swiss Platform for Sustainable Cocoa and partly funded by State Secretariat for Economic Affairs SECO (Switzerland). The team is supplemented by the Institute for Applied Informatics (InfAI) at the University of Leipzig, developing the technical concept and software development.

SCHÖKI will provide initial support to the sourcing partners for the implementation and ensures complete traceability along its supply chain. In spring 2023, the first SusChain traced cocoa will be used in SCHÖKIs production. Updates on the project will be available on suschain.org and on our blog.

How could the solution be scaled?

SusChain is a free open-source software that allows companies to establish full traceability and transparency along their supply chain. SusChain has enormous potential for change in the chocolate sector. The first version will be tested in Autumn 2022. To reach our goal of a complete, user-friendly, well-developed software, further investments will be necessary.

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Traceability solutions in cocoa to contribute to the Sustainable Development Goals (SDGs)

by Ross Jaax, Swisscontact

To what sustainable development goal do you deliver?

4 - Quality education, 8 - Decent work and economic growth, 12 - Responsible Consumption and production, 17 - Partnerships for the goals

What was the situation?

Farmers in traceable, sustainable supply chains are adopting best practices and improved technology at a lower rate than expected. The effort to boost adoptions is to provide 1-on-1 coaching to farmers, but is slow, expensive, and lacks effective communication tools. Current strategy is to treat each farmer identically in terms of engagement, which is not a strategy and wastes field staff time and resources. Field staff performance is not easily, nor effectively measured. There are instances of low levels of

effective feedback, and a high burnout rate. The level of supply from certified, sustainable growers is lower than expected, and the quality is dropping.

What did you do?

FarmNetX is a service to provide decision tools to agricultural commodity aggregators to help them direct their precious investments to improve farmer performance with attention to how improvements can be shared and diffused across the network.FarmNetX makes use of the current data being collected on cropping practices and uses that to better understand the farmers' levels of innovation relative to each other. From this, FarmNetX can identify the more innovative farmers, and how they are tied to other farmers, as well as the laggards in the network, in order to better target budget for farmer engagement.

- **Segmentation and measurement of performance**
  We quantified the relative adoption levels of each farmer and the impact field staff had on those levels. We did this using the existing data from sustainable supply chain networks.

- **Understanding of Knowledge Sharing Networks**
  Using sociometric data, we visualised and quantified how knowledge and ideas spread within farmer networks.

- **Cost effective strategy to reach farmers**
  Using transformative coaching and network facilitation strategies, designed engagement to improve innovation and trust in farmer networks.

What are the results?

We provided a detailed engagement plan for each sub-network, typically at the village level because that is the most consistent network boundary. The plan had very clear visibility for farmers to engage with, how to reach less centralised farmers in the network, and then included easy to understand metrics for success.

Who was involved and how?

1. The Sustainability Manager overseeing the farmer engagement and results strategy.

2. The survey application designer. FarmNetX data is best collected through a mobile application, so we also helped design user interface, questions to be asked, and lastly parameters for how the data would be analysed.

3. Field staff of the company. They are key stakeholders in this effort, which has the objective to make them more effective in doing their job.

How could the solution be scaled?

The solution can easily apply to any traceable, certified supply chain that collects data from farmers on a regular basis, as is required for most certifications. The power of this is to compare differences rates of adoption/innovation by farmers from year to year. A multiple year effort will bear the fruit of this approach more than one-off.