

Possible steps towards transparency in supply chains with conflict minerals



A CHAINPOINT SOLUTION PAPER



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Introduction

You are probably reading this solution paper on a laptop, tablet or mobile device. Raw materials used to produce these electronic devices are often sourced in countries where armed conflicts take place. The local population works under poor conditions in mines to extract precious minerals such as tin, tungsten, tantalum and gold.

To keep the costs of sourcing minerals low, local people, including children, are exploited and oppressed. As the mines are often in the hands of armed groups who buy weapons with the earnings, the local community does not benefit from the high value of those raw materials. Indirectly it can be stated that armed conflicts and violence can continue because of you and me.

The *Enough project* explains: “Tin is used as solder on circuit boards in every electronic device we use; tantalum stores electricity and is essential to portable electronics and high-speed processing devices; tungsten enables cell phone vibration alerts; and gold is not only made into jewelry but is also used in the wiring of electronic devices.”

https://enoughproject.org/files/corporate_action-1.pdf

What are conflict minerals?

According to the European Commission, conflict minerals can be described as following: *“In politically unstable areas like the Democratic Republic of Congo, armed groups often use forced labour to mine minerals which they then sell to fund their activities, for example to buy weapons. These so-called 'conflict minerals' such as tin, tungsten and gold can be used in everyday products such as mobile phones and cars or in jewellery.”*

Challenges for the industry

Producers of electronics, jewellery and the automotive industry are under growing pressure and demand, with competition increasing. This places demand on the quantity and prices of raw materials. Regulations and scrutiny from stakeholders are also increasing, raising the need for industry to act both ethically and transparently. With consumers demanding high quality, ethically produced products, the scope of the challenges faced by producers is significant.

With the complex economic and social conditions in the countries where most minerals are sourced, producers are facing a hard challenge. The local organization of the mines, including the extraction, processing, transporting and trading is often unstructured. This makes it difficult for companies to get insight into issues in their supply chain.

ChainPoint solution

In this solution paper, we will highlight several challenges and drivers for change in supply chains with conflict minerals and describe how ChainPoint solutions can help in taking action against these issues.

¹ <http://ec.europa.eu/trade/policy/in-focus/conflict-minerals-regulation/regulation-explained/>.

Key challenges related to conflict minerals

In supply chains where conflict minerals are used, several key challenges can be identified. And even though many challenges exist, it's particularly important to emphasize the following: complex economic and social conditions; child- and forced labour; the structure of supply chains.

1. Complex economic and societal conditions

Minerals used in electronics come from mines which, for the larger part, are in Africa, but also in China, Brazil and other parts of the world. Especially in the African countries where the minerals can be sourced, the economic and political situation is not stable. Rebels and armed groups are often controlling the mines, using the earnings to make investments in on-going wars. The most well-known country for conflict minerals is the Democratic Republic of Congo, but also neighbouring countries are facing major problems related to mining. Abuse of power, corruption, disreputable business deals and no investments in safety equipment make it difficult to create change for the people living and working in these areas.



2. Child and forced labour

Children in mines

Because of the complex economic and social conditions, children are often found working in mines. Child labour in mines is categorized as one of the worst forms of child labour. Mining can be very dangerous because of the physical aspects associated with it, along with unstructured working sites and unsafe tools. According to the Stop Child Labor Coalition² injuries include over-exertion, respiratory ailments, headaches, joint problems, hearing and vision loss. Also situations have occurred where children have been exposed to toxic chemicals, leading to death.³

[1http://www.freeusandworldmaps.com/html/WorldRegions/WorldRegionsPrint.html](http://www.freeusandworldmaps.com/html/WorldRegions/WorldRegionsPrint.html)

According to the International Labour Organization (ILO) there are currently about one million children working in mines and this number is increasing.⁴

There have been examples of children as young as four participating in mining⁵. The children are working in all stages of the process - underground or in the narrow tunnels and shafts,

² <http://stopchildlabor.org/?p=3853>

³ <https://www.hrw.org/report/2011/12/06/poisonous-mix/child-labor-mercury-and-artisanal-gold-mining-mali>

⁴ <http://www.ilo.org/ipec/areas/Miningandquarrying/lang--en/index.htm>

⁵ <https://www.youtube.com/watch?v=JcJ8me22NVs>

pulling up and/or carrying heavy bags, digging and crushing ore.

Reasons

There are several reasons why these children are in these situations. One is the fact that armed groups are using the money to fund their war effort, which results in local workers living in poverty. The workers do not gain enough money to feed their children, let alone send them to school. Another reason is that many children are orphans. Without parents these youngsters are vulnerable to trafficking and forced labour. Children who join their peers could be another reason. As bad and incredibly sad it is to discover children in mines, several organizations agree that boycotting these mines is not a solution. When producers avoid these locations, the situation can worsen even further for the local community. Without an existing source of income, albeit little, local workers have a high chance of falling even deeper into poverty. According to Human Rights Watch⁶ companies should work on programs removing children from the supply chain.

3. Structure of supply chains

Supply chains exist of a network of various actors working together to create products. Businesses where conflict minerals might potentially be used are often in supply chains that are complex, with number of elements needed to produce one final product. A car, for example, can consist of half a million parts.⁷ Keeping an overview of all those materials, for planning, forecasting and usage is already a tough job. Getting an overview of the provenance of materials is an even more complex task. In the Harvard Business Review a supply chain manager of a Fortune 500 company explains: *'the firm had over 1,000 first-tier suppliers, and these suppliers had 8,000 second-tier suppliers, and the second-tier suppliers had perhaps 30,000 third-tier suppliers'*.⁸ The combination of a huge number of raw materials, many suppliers, and the fact that materials are sourced all over the world, makes it very complicated to make sure companies know all the details of materials entering the supply chain. As business ethics in different parts of the world vary, procurement managers can be overwhelmed and unsure about the accuracy of the information they gather.

⁶ <https://www.hrw.org/news/2013/09/11/africas-child-mining-shame>

⁷ <https://www.supplychainquarterly.com/topics/Procurement/20140304-conflict-minerals-and-corporate-supply-chains-the-challenge-of-complying-with-dodd-frank/>

⁸ <https://hbr.org/2017/01/80-of-companies-dont-know-if-their-products-contain-conflict-minerals>

Drivers for Change

Companies have several reasons why they want to see change. Next to 'making the industry better for everyone working in it', as well as personal reasons for wanting to avoid child labour in their business, laws, regulations and more business-related reasons are equally as important. In the following section, a closer look at a few of those drivers is presented. Let's start with the more direct business-related drivers: future supply, brand protection, operational efficiency and costs, and quality control. And let's then follow with external drivers: regulations and stakeholder demands, including those of investors.

1. Future supply

There is an increasing demand for electronics, and with the upcoming developments of electric cars, the need for minerals will grow even more quickly. Where ING⁹ claims that 100% market share of electric cars in 2035 is a realistic expectation, others are a bit more modest in their figures¹⁰. In any case, the growing demand for electronics cannot be denied, and to ensure the supply of these raw materials, companies are willing to invest in improving their supply chains. By being sure that suppliers remain in business, producers of electronics can secure their own future, too. Not only the demand of electric cars is growing, but also other devices which rely on batteries. A consumption-based society means there is no shortage of consumer interest in new phones, tablets and other devices. The demand for the latest model of a smartphone shows us that the market is always looking for 'the next best thing'. This means that the demand for minerals used in these smartphones will rise too.¹¹

2. Brand Protection

One of the things that defines successful companies is brand value. Among other things, how consumers think about a brand and how it is seen in the market defines the willingness to purchase a product associated with a brand. Therefore, companies are focusing more and more on taking responsibility for their whole supply chain: from procurement of raw materials all the way down to the end consumers. Consumers can easily share their opinion about brands using social media, and this makes it easier to hold companies accountable for their actions. Just controlling your tier 1 suppliers is not sufficient anymore, and statements such as 'we did not know' are increasingly received with less acceptance. To make sure companies do know what is going on, insight into their supply chain is essential. This means gathering data: registering all suppliers (tier 1...Tier X), measuring, analysing, benchmarking and sharing data to define an improvement strategy and to improve on a continual basis.

Communication

When companies know what is going on in their supply chain, it is key that they communicate this. In relation to conflict minerals, examples are the statements and updates regarding progress and performance from companies such as HP and Apple.^{12 13}. Through these reports companies explain what they know about their supply chains and how they are taking action

⁹ https://www.ing.nl/media/ING_EBZ_breakthrough-of-electric-vehicle-threatens-European-car-industry_tcm162-128687.pdf

¹⁰ <http://energypost.eu/fast-market-electric-vehicles-grow/>

¹¹ <https://www.bloomberg.com/news/articles/2017-10-27/iphone-x-wait-times-rise-as-apple-device-sells-out-in-hong-kong>

¹² <http://www8.hp.com/us/en/hp-information/global-citizenship/human-progress/conflictminerals.html>

¹³ <https://images.apple.com/supplier-responsibility/pdf/Apple-Progress-Report-2017.pdf> In

to make improvements. How companies act in relation to conflict minerals is not only communicated and presented by brands themselves, but also by external organizations. Naming and shaming has proven itself to be a strong tool to force people and organizations to act. For example, *Rank a brand* (an international community of responsible consumers who want to buy sustainable and fair products or services) researches how companies are scoring on a set of questions including the following: *Does the brand (company) have a clear policy to only source from smelters that have passed the conflict-free audits, and has the brand already achieved this for at least one metal/mineral?*¹⁴ This clear yes/no question does not leave any room for discussion. When companies proactively share their statements and progress, they can show consumers how seriously they are taking their responsibilities. This drive to gain and retain consumer trust is therefore also a driver for improvement in supply chains containing conflict minerals.

3. Operational efficiency and costs

As companies want to make a profit at the end of the day, making sure raw materials go as smoothly through the supply chain as possible is key. With insight into processes and procedures, companies can identify supply chain bottlenecks and points where to improve. This business principle can also drive change in sensitive and complex situations. Looking at conflict minerals, the supply chains are very complex. When you have a clear overview of the full chain, you can optimize your procurement processes, perform supplier assessments to make sure the suppliers further up in the supply chain comply with your standards, and you can optimize lead times and flows of products, information and money. While doing this, suppliers with poor quality business methods can be identified and corrective actions can be taken. This can also help in the battle to improve the situation related to conflict minerals.

4. Quality control

Quality is also an important driver for change. With increasing demand for high quality products as well as increased competition, quality control is essential. When good quality standards are put into place, products perform as expected, resulting in satisfied consumers. When the quality of products is lower, trust in your company is also going to be less. When you do not know the origin of your raw materials, you also cannot be assured about quality. This strong business driver is also a trigger for change in the world of conflict minerals. By understanding the provenance of the minerals, quality can be assured whilst also setting change in motion.

¹⁴ <https://rankabrand.org/electronics/Toshiba>

5. Regulations

It's not just companies that have concerns about conflict minerals, but also governments and organizations that want to raise awareness and bring about change. The Dodd Frank Act, section 1502, and the OECD guidelines are examples of laws and regulations to make companies aware of their impact.

Dodd-Frank Act

On July 21, 2010, President Barack Obama signed the Dodd-Frank Act, which included a section about conflict minerals. This section did not explicitly ban organizations sourcing conflict minerals from Congolese mines but made companies aware of being linked to such sources. The law requests publicly listed American companies to disclose whether any of their products include minerals from mines controlled by armed groups in or around Congo. Since the law went into effect, more and more companies have shown progress in auditing their supply chains; however, not all companies have achieved this, and, where auditing has been achieved, it has been done so to varying degrees of granularity.

Section 1502 of the Dodd Frank Act: requires persons to disclose annually whether any conflict minerals that are necessary to the functionality or production of a product of the person, as defined in the provision, originated in the Democratic Republic of the Congo or an adjoining country and, if so, to provide a report describing, among other matters, the measures taken to exercise due diligence on the source and chain of custody of those minerals, which must include an independent private sector audit of the report that is certified by the person filing the report. Certain aspects of this rulemaking will require consultation with other federal agencies, including the State Department, the Government Accountability Office, and the Commerce Department. Persons are not required to comply with these rules until their first full fiscal year after the date on which the Commission issues its final rules.
<https://www.sec.gov/spotlight/dodd-frank/speccorpdisclosure.shtml>

OECD due diligence

The Organization for Economic Cooperation and Development (OECD) exists to '*promote policies that will improve the economic and social well-being of people around the world.*'¹⁵ This organization set up the OECD guidance, which helps companies with an international framework for the due diligence measures and practices required for the section 1502 of the Dodd-Frank legislation. This OECD Guidance was recognized by the US Securities and Exchange Commission.

According to the OECD, the **Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas** provides *detailed recommendations to help companies respect human rights and avoid contributing to conflict through their mineral purchasing decisions and practices. This Guidance is for use by any company potentially sourcing minerals or metals from conflict-affected and high-risk areas.*

The guidance contains a five-step framework:

Step 1	Strengthen your due diligence skills, internal systems and record keeping, including through chain of custody tracking and/or traceability systems
Step 2	Undertake individually, or in cooperation with your customers, a risk assessment of mines, transportation routes, points where minerals are traded and suppliers
Step 3	Engage in risk mitigation and regularly monitor risks in your supply chain
Step 4	Participate in audit programs as they develop
Step 5	Describe annually your due diligence efforts and make the report available at your offices and on your website

¹⁵ <http://www.oecd.org/about/>

Starting with the OECD due diligence, even when the steps are set out on a detailed level, can be complicated. Still, doing this is a universal way of showing internal and external stakeholders of a company the efforts being taken to avoid conflict and drive change in the supply chain.

6. Stakeholders, including investors

Nowadays stakeholders, such as staff, shareholders, users, customers, suppliers and contractors can put more and more pressure on a company to act responsibly. With the availability of information and the opportunity to move money or assets to another company, organizations feel the pressure to undertake ethical business. Personal values are playing more and more a role in making business decisions, with the rise of possibilities and availability of money and access to information. By showing efforts to change the hard reality of conflict minerals and child labour in mines, companies show a positive ambition which can reflect in the actions of stakeholders.

Use cases of how ChainPoint is being used

1. iTSCI

International Tin Association Ltd. is a not-for-profit membership organisation that represents the tin industry worldwide. One of their networks is iTSCI. iTSCI is a joint industry programme of traceability and due diligence. The iTSCI system aims to meet the needs of companies wishing to maintain trade with responsible supply chain actors in the Democratic Republic of Congo (DRC) and adjoining countries, as well as to meet due diligence expectations of the international community in terms of guidance from the UN, OECD and national laws such as the Dodd Frank Act in the US. iTSCI aims to encourage progressive improvement in the cassiterite and other conflict mineral sectors as well as sustainable production and economic development in the longer term. Please visit www.itri.co.uk for more information.

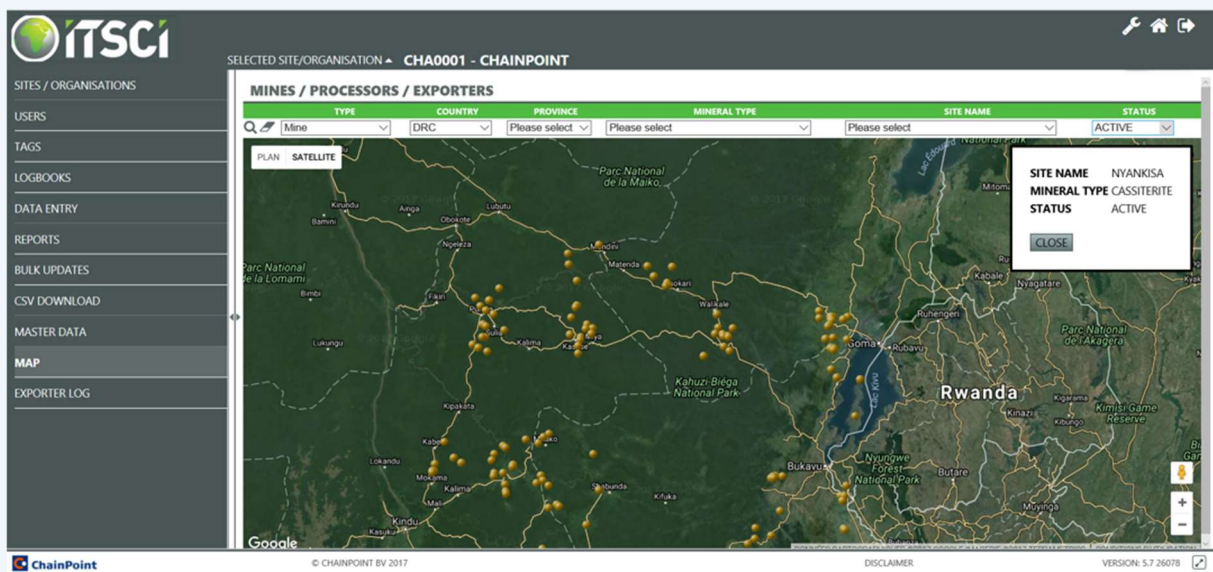
Using technology to gain transparency.

iTSCI uses ChainPoint software to track and trace tin from mines, processors, traders and smelters in the Democratic Republic of the Congo, Rwanda, Burundi and Uganda. This means that batches of tin can be tagged with a specific code that is unique for that batch and shipment. With a very detailed logging system, users at the end of the supply chain can see for each bag of tin where it was mined, processed, traded and smelted. This data can be presented in multiple ways, including maps, charts and graphs.

Using customized software in the tin industry

The software that iTSCI uses on day-to-day basis is built on ChainPoint technology and is customized to the specific needs for iTSCI. The following solutions are used:

- Data collection along the mineral supply chain
- Reporting and analytics
- Traceability, from mine to exporter
- Multitenancy, multi-language and advanced authorization



The iTSCI solution by ChainPoint includes mapping options

2. Tony's Choclonely

The cocoa industry is one of the industries where child labour and slavery is endemic. An estimated two million children are working on cocoa plantations in Africa, often conducting hazardous and forced labour in terrible conditions. To stop child slavery in the cocoa industry, true market transformation is needed with all stakeholders involved.

That is why Tony's Choclonely was founded in 2005 with exactly that mission. Tony's Choclonely does not source cocoa beans mass-balance but chooses to work with a number of dedicated farming cooperatives in Ghana and Ivory Coast. Farmers who deliver cocoa via the cooperatives to Tony's Choclonely see their livelihood improved and are trained in better agricultural practices.



ChainPoint and Tony's Choclonely

Tony's Choclonely has the requirement to have a fully transparent 'bean to bar' supply chain, knowing the origin, the flow and the quantities of the beans – in others words the 'bean whereabouts'. ChainPoint was commissioned by Tony's Choclonely to develop the BeanTracker platform which realises data collection from the farmer coop down until production. All supply chain actors from bean to chocolate bar are connected to the platform, entering data on a weekly basis. By doing this, full traceability of the cocoa beans is realised. Their BeanTracker platform can be easily modified for other industries such as the mining industry.

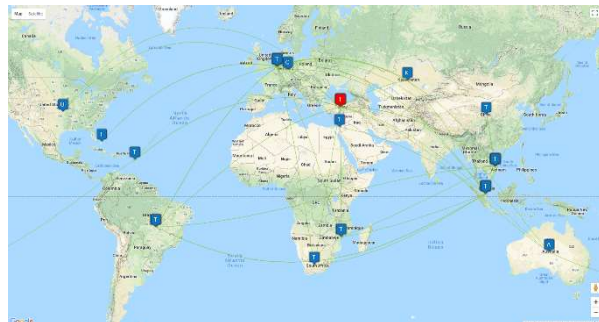
ChainPoint's solutions

To avoid child labour and to collaborate in the aim to stop conflicts related to the mining of minerals, the due diligence guideline of the OECD is a good starting point. ChainPoint's solutions can support companies with the five steps described in the framework - for example, through supply chain mapping, supplier monitoring & evaluation and/or product-level traceability. Companies can also use ChainPoint to communicate on their progress and performance with ChainPoint's storytelling application. What remains important, no matter how deep you want to go in your supply chain, is the quality of the data, the security of the system and the avoidance of added complexity. At ChainPoint we have experience with this on at a high level. In the following section the different solutions ChainPoint offers are explained.

1. Supply chain mapping

An important first step in creating better supply chains and avoiding using minerals from conflict areas, is getting a clear overview of the supplier base. ChainPoint helps companies to create an overview of all their suppliers. When we look at an electronics supply chain, a company can simply start onboarding their suppliers by inviting them on the platform. After filling in some key information, those suppliers can in turn invite their suppliers and so on. With the collection of information from all actors in the supply chain, the relations can also be visualized. Showing the relationships on a map will help to in understanding a supply chain's complexity and can help in identifying hotspots. With the ChainPoint software platform, you can understand the relationships with suppliers in even the most complex supply chains.

Adding suppliers can be done in various ways: using the web-based environment, uploading batches of data with an Excel or XML file, or using an interface with your own existing systems via REST-APIs. The aim is to deliver added value without adding complexity, therefore we work together with our clients to find the easiest approaches.



All data capture options should be connected to a cloud based back-end platform which gathers, stores and verifies data and turns it into actionable information. The ChainPoint platform is very flexible and can easily adapt to changing requirements. In the case of a mobile app, data collection fields are defined in the back-office platform and can be pushed to mobile devices. Once the device connects to the internet, new items are automatically updated. This enables self-service of forms and form fields, providing full flexibility.

2. Traceability with different chain-of-custody models

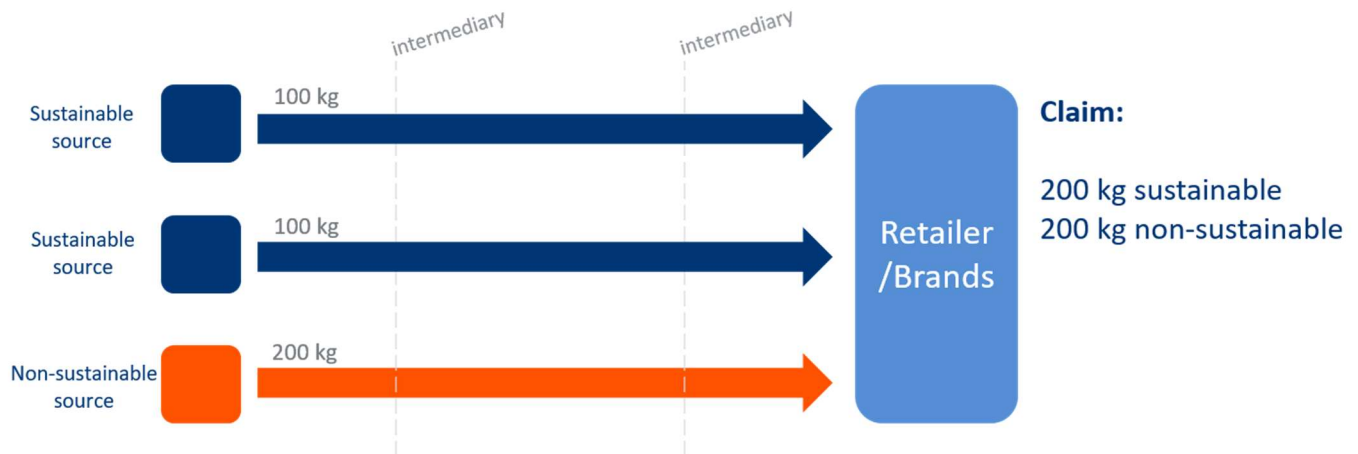
Together with the overview of suppliers, the traceability of goods in the supply chain is requested in step 1 of the OECD Guidelines. ChainPoint supports a range of industry standard Chain of Custody models including identity preservation, segregation, mass-balance and book & claim.

As explained in the previous section, ChainPoint is the software provider for the iTSCi system. The information collected during the 'bagging and tagging' is flowing through ChainPoint.

ChainPoint works in various industry sectors, but this specific example demonstrates our experience in the field of conflict minerals. Below you can find the 4 CoC models, explained with a simplified image.

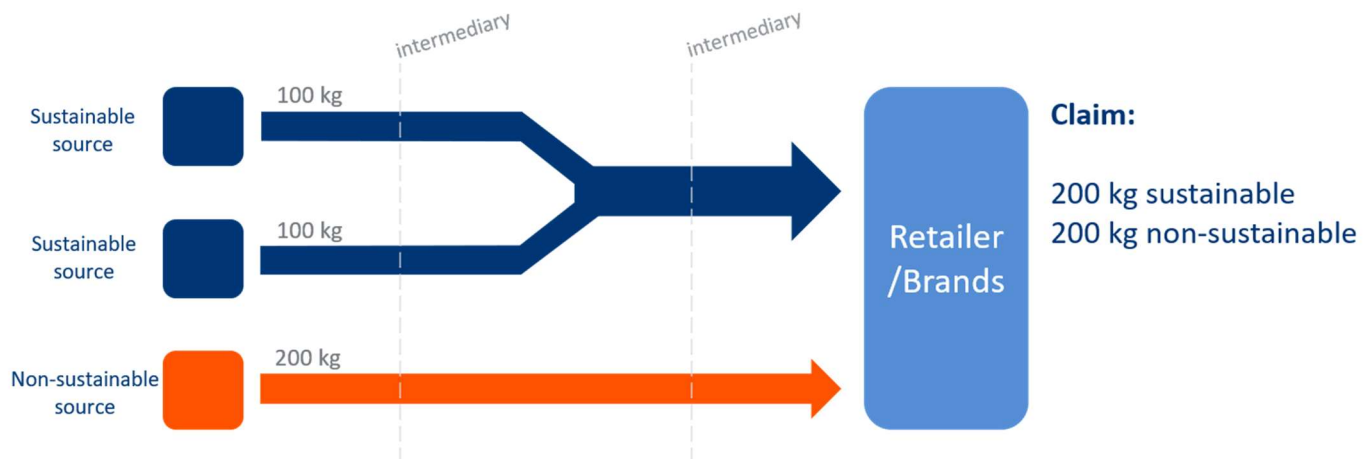
Traceability: Identity Preservation

- Tracking and tracing of batches, with detailed information from mine to device



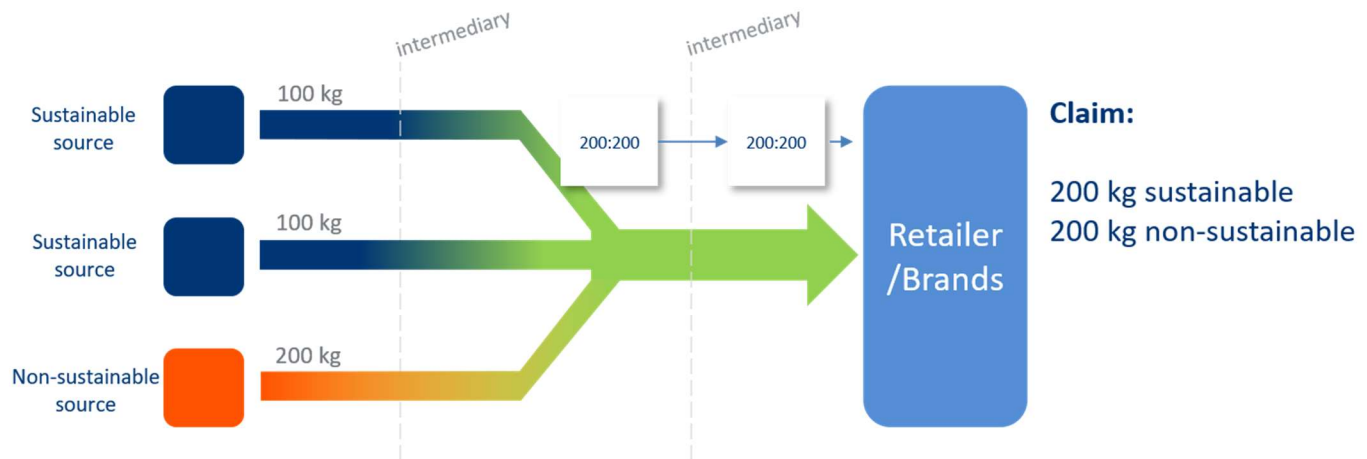
Traceability: Segregation

- Products produced according to the same sustainability standard are kept strictly separated from other products.



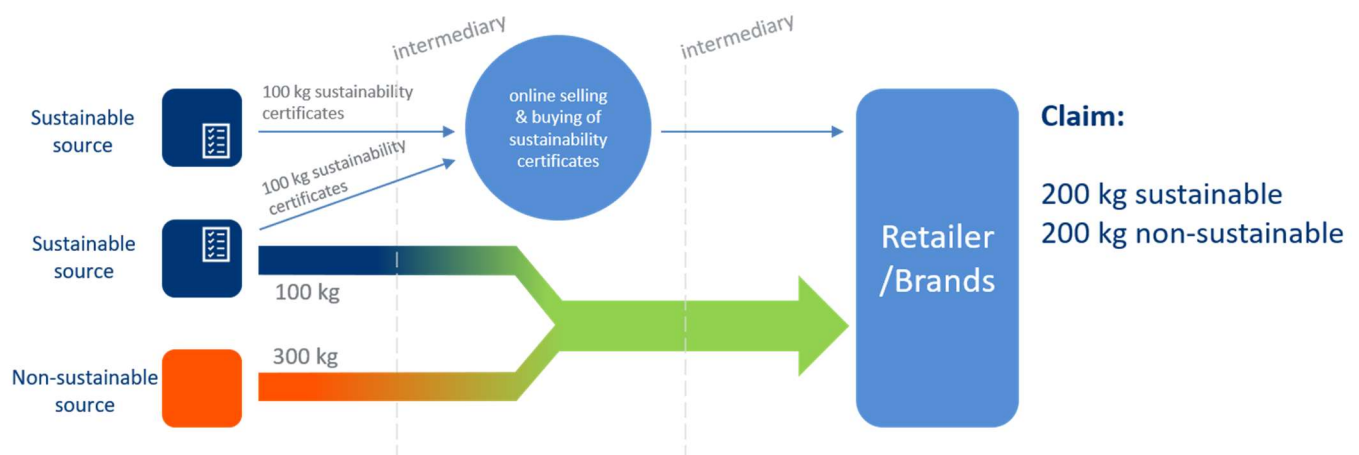
Traceability: Mass Balance

- The administrative monitoring of products and their derivatives throughout the entire supply chain



Traceability: Book & Claim

- Online selling & buying of certificates for the quantity of sustainably produced material



3. Monitoring and evaluation

Step 2 and 3 in the guideline refer to risk assessments and risk mitigation. Continuous monitoring and evaluation can help to achieve this. It allows companies to define hotspots and zoom in on non-compliances. In this way, supply chain risks can be anticipated proactively, and the right actions can be taken to meet quality and sustainability standards. Based on the needs of the sector or companies, the frequency of the data entry (either directly in the web environment, via Excel uploads or via REST-APIs) can be defined. This helps to perform continuous monitoring and evaluation. When the data is registered into ChainPoint, it can only be accessed based on the level of authorization given in the system. This means that a tier 1 supplier can be prevented from seeing the details of the tier 3 supplier. The system can, however, allow the tier 1 supplier to see a green check mark or a red flag, based on the answers of a tier 3 supplier. Alerts can be pushed via emails and text messages, or can be presented on a dashboard. In the case of non-conformities, a supplier can ask his supplier (tier 2 in this example) to take corrective actions.

4. Auditing and Certification

Next to self-assessments, independent third-party auditors can also visit supply chain actors and enter the data or cross check the data in the system. Those audits can be scheduled and carried out with the ChainPoint web platform or the mobile app. An interface with existing systems (from third-party auditors) can be made or auditors can work directly in ChainPoint. When audits are carried out, the management of the certificates can also be handled on the platform. Based on the roles and levels of authorization, actors in the supply chain can or cannot see the details. Alerts and push messages can be sent out, in case of risks or exceeding predefined settings. The fourth step of the guidance states: 'Participate in audit programs as they develop'. The audits prescribed and developed in the sector can be linked to the ChainPoint platform, avoiding the need to manage two systems or to fill in data on several systems.

5. Analyses, reporting and storytelling

The fifth and last step in the guideline is to '*describe annually your due diligence efforts and make the report available at your offices and on your website*'. With the information available within ChainPoint, facts and figures can be presented. Analyses and reports can be created showing information including the origin of the minerals and the finished product's journey through the different steps of its value chain.

For internal usage, dashboards can be used showing the most important points of attention. Scheduled audits, alerts and actions taken can be shown, based on the personal needs of the users. Automated reports provide detailed results regarding standard KPIs. When aspects of a supply chain need to be analysed from multiple, unforeseen angles that are not defined by core KPIs, ChainPoint's SelfService Analytics lets managers analyse their supply chain data from almost limitless perspectives, without the need of specialist IT staff. It allows data from individual elements of the chain to be grouped, joined, sliced and diced, and presented with easy-to-read visualizations that tell the story behind a supply chain in ways that everyone can follow.

Conclusion

ChainPoint helps companies to connect their supply chains and make them more visible and transparent, thereby providing valuable information on how to reduce risks, increase efficiency and reduce bottom line costs. Using advanced cloud based software, ChainPoint connects all stakeholders and data sources in a supply chain to bring them into a secure online platform, enabling full visibility and traceability. ChainPoint can integrate data from existing systems, such as Excel or SAP, into a centralized platform to avoid redundant data entry. Using a supply chain information system, brand owners and producers know exactly the impact they have in a supply chain and can act accordingly. Corrective measures and improvement programs can be managed using the information gathered across the supply chain to fully mitigate risks, improve sustainability and seize new opportunities.

Looking at supply chains with conflict minerals, ChainPoint can provide an overview of what is happening in the chain, with information and reports allowing for corrective measures can be taken. For example, a large brand owner who wants to meet the due diligence of the OECD guidelines can use ChainPoint to create an overview of his tier 1, tier 2, tier 3, ..., tier X suppliers. All those suppliers can be asked to fill in a self-assessment or an external auditor can visit those suppliers to gather data. Together with information about the products flowing through the supply chain, a complete overview can be created.

When all information is collected, online or offline, and everything is added in the ChainPoint platform, analysis and reporting can be performed. The information can be used internally to decide on strategy, or externally to communicate about the progress being made to eliminate conflict minerals from the supply chain.

When you are looking for information or help to get insight into your supply chain, please feel free to reach out to us. We are very willing to help you make your supply chain more sustainable, more profitable and more futureproof.

About the author

Anneleen Veldhuizen, MSc graduated from Wageningen University in International Supply Chain Management. While conducting research in various parts of the world, partly on behalf of Heineken, she saw first-hand the importance of transparency and traceability in complex supply chains. Anneleen is now responsible for business development at ChainPoint. She helps customers to reach a higher level of transparency in their supply chains to improve their business from both an ethical and a financial perspective.



About ChainPoint

ChainPoint offers software for sustainable supply chains. At ChainPoint we believe that collaboration and sharing of information is crucial for the efficient production of high quality, safe and sustainably produced products. ChainPoint is a secure, online software platform to manage and share product, process and supplier information, from raw material to finished product. With our software and services, we help companies improve quality and sustainability whilst reducing cost and risk.

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Disclaimer

This solution paper has been created based upon multiple sources and should be used as a reference only. We have taken efforts to provide correct information on all concerned topics. This solution paper offers an insight into a number of challenges in the mining industry and possible solutions offered by ChainPoint.