The Transparent Collective-Voice Consortium

in response to: 00521_ TRCM: Final Report

IDH REQUEST FOR PROPOSALS (RFP) FOR CONSULTANCY SERVICES TO

MODEL A NATION-WIDE COCOA TRACEABILITY SYSTEM FOR CAMEROON, FROM FARMGATE TO PORT OF EXIT

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(via email to: Mr Michael Ndoping ONCC and Mr Elvis Ngwa IDH)

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This document should be read as a partner document to the final presentation (PowerPoint document) that was delivered on 6 April 2022. The slides contain further visualisations and references not contained in the limited scope of this report.

LIST OF ABBREVIATIONS

Abbreviation	Description
ONCC	National Cocoa and Coffee Board, Cameroon
IDH	The Sustainable Trade Initiative
DG	Director General
PM	Project Manager
RFP	Request for Proposal, may be used interchangeably with ToR (terms of reference)
EFI	The European Forest Institute
GISCO	German Initiative on Sustainable Cocoa
GIZ	The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
HDI	Human Development Index

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1 VISION

This project, from the onset, clearly intends to set up a new, future proof, paradigm for traceability. To unleash the full potential for Cameroon's cocoa (and other agricultural[1]) value chains, it is essential to break free from the old mindset that limits the scope and impact of traceability by viewing it simply as a means of compliance with externally driven requirements.

Through the course of our investigation a clear vision for the traceability system has taken hold. The vision relates to how various dimensions of traceability impact farmers, buyers, traders, exporters and processors at individual, regional and national levels and how this fits in evolving international supply chains.

Firstly we aspire a traceability system that empowers a new generation of digitally enabled agri-entrepreneurs. Data and transparency should support and accelerate the competitiveness of our national farming community and agricultural value chain actors. In many other areas, Africa has shown the lead in anticipating and adopting new uses for mobile digital technology. A new generation of farmers and agricultural value chain actors are already using digital technology in various aspects of their lives. A national traceability system should support them by providing access to and benefits of better data.

We envisage a system that promotes, exposes, and leverages sustainable farming practices, rather than simply applying a punitive gate for compliance. We need to elevate the information generated by the system from "data" to "intelligence." A system, where ESG[2] achievements are captured, where trustworthy ESG data are captured and transmitted along the value chain together with the cocoa, and where the sustainability achievements are equitably rewarded.

This model will be based on pricing structures for hybrid (data + beans) cocoa, where the (trustworthy) sustainability data of the cocoa are an integral part of the traceability dataset. This digital and data led approach promotes a transparent value chain where ESG achievements are leveraged, and where all actors in the value chain transform into sustainability driven entrepreneurs. We thus envisage an interoperable traceability system, reliable from farm level to port of export, providing substantial due diligence support to clients further down the supply chain, allowing them to effectively identify and mitigate their ESG risks. Cocoa traceability shall contribute to leveraging and valorising environmental assets (forests and biodiversity) and social assets (many smallholder cocoa farmers) in cocoa producing areas in Cameroon.

Ultimately, we ***must*** differentiate Cameroon as a reliable, valuable, sustainable, and efficient country of origin for cocoa.

[1] As per the scope of the assignment, the focus is on a national system for cocoa traceability. But the whole vision and approach is applicable across multiple agricultural commodities and value chains. Cross-commodity synergies in traceability are crucial for optimising its cost-effectiveness.

[2] ESG stands for: Environmental, Social and Governance.

2 TRACEABILITY STRATEGY

2.1 Strategic concept and scenarios

Strategy is both an action and a noun. The "strategy" of an organisation is defined more by its behaviour (actions) than its intensions (as captured in "strategy documents"). We envisage a living and dynamic strategy with a broad support base.

Before defining the specific elements of the strategy we need to define "How we play," in other words outline different scenarios that describe the nature of our strategic intent.

For the purposes of this proposal, we are describing three scenarios that should be considered:

1. The leapfrog play
2. The basic compliance play
3. The intermediate play

The 'Leapfrog strategy' is the most comprehensive national strategy; it ensures that Cameroon's natural assets and social potential are valorised and leveraged. This scenario avoids having to play a game that sets Cameroon back and transforms its assets in handicaps. On the contrary, this scenario enables structural transformation as to allow Cameroon's cocoa sector to be fully prepared for and flourish in the future sustainability driven setup of international agricultural supply chains. This strategy envisages a dynamic, anticipative and future proof traceability system.

Accordingly, we have described the attributes and requirements for this approach in the document. The other strategies will be scaled back versions of this approach.

The 'Basic compliance strategy' is about survival of Cameroon's cocoa sector in view of the short-term threats (ban of import to EU of non-compliant cocoa) posed by the upcoming EU Regulation on deforestation-free products. This is about how best to comply with existing and upcoming (minimal) requirements and about mitigating or minimising drawbacks.

The 'Intermediate strategy' tries to combine a focus on short term survival of Cameroon's cocoa sector with elements of a more forward-looking strategy for cocoa traceability. It comprises all elements of the basic compliance strategy with the less demanding aspects of the 'leapfrog strategy'.

2.2 Strategy Design Principles

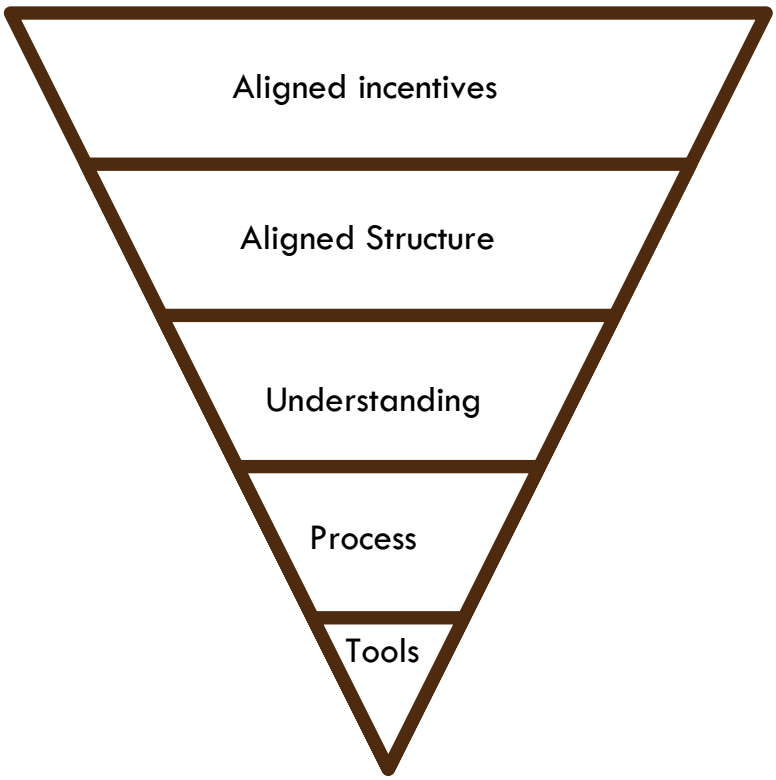
Key strategic principles allow for aligning the traceability actions and initiatives towards a harmonised and intentional result. To ensure systemwide harmonisation, individual tactics and operations are to be aligned with or fine-tuned against such principles.

Based on the feedback we received on the interim presentation and additional analysis conducted by Nitidae, we suggest the following set of strategic alignment principles:

1. Inclusive Digitalisation
2. Comprehensive Inter-operability
3. Transparent Incentives

4. Holistic Perspective

In prioritising the strategic activities, we outlined the following hierarchy of impact drivers.



Clearly the most important layer to address in defining the strategy for a new traceability system is to ensure that the system's, explicit and implicit (including hidden), incentives are fully aligned with the sustainability aims.

2.3 Opportunities for the EU and the EU-Cameroon partnership

This vision brings essential opportunities to overcome critical limitations of the draft EU regulation on deforestation-free products and for to boost the preservation of Cameroon's forest and for tackle the Country's sustainability challenges.

Under the current wordings of the draft EU Regulation on deforestation-free products, Cameroon's natural assets, a high percentage of forest cover, is suddenly presented as a liability for Cameroon as a country of origin. With a rule that determines that, to be labelled as 'deforestation-free' and thus to be eligible for import into the EU, all cocoa must be sourced from farmland that has not been deforested since 31st December 2020. As such the countries and regions who have already degraded their forests before the cut-off date suddenly gain an advantage.

From the perspective of sustainability achievements, mere compliance with the EU deforestation-free requirement cannot be leveraged as it does not demonstrate impact. The legislation does not in fact redress or support the ultimate aim which is the decarbonisation of European value chains through carbon neutral or carbon positive sourcing.

Cameroon needs to demonstrate that by following a higher order of sustainability and traceability standards and practices, it can produce and export “forest friendly cocoa”. Demonstrating real impact in forest preservation, Cameroon shall thus be able to leverage its role as protector and preserver of its many natural forests. The rewarding of such environmental achievements by the EU (and other) clients of the cocoa (and other) supply chains, will be an essential part of the whole system.

Cameroon envisages a multidimensional approach to sustainable cocoa. In addition to moving the focus beyond ‘deforestation-free’ and targeting truly ‘forest friendly’ cocoa, the proposed future proof traceability system shall track the characteristics of cocoa batches against a broad set of social, environmental and governance criteria.

While this document focuses on sustainability and traceability of cocoa, it is essential to acknowledge and leverage the many potentials for cross-commodity synergies in promoting, establishing and ensuring sustainability and traceability in agricultural value chains, including the synergies at the level of farming communities and agricultural production areas.

Acknowledging that the draft EU Regulation puts Cameroon at a disadvantage and transforms sourcing from densely forested regions and from thousands of smallholders into a liability, it is essential for the EU to support Cameroon in a more fundamental transformation that really empowers the country in preserving and leveraging its natural and social assets.

While supporting such more fundamental transformation, the EU shall collaborate with Cameroon and its cocoa value chain actors to adequately mitigate the social and environmental risks of EU-cocoa sourcing. In essence, Cameroon should insist that EU cocoa sourcing be instrumental to produce positive social and environmental impact where such impact support is most needed. Transforming the whole cocoa sector in Cameroon allows such good practices to be mainstreamed for all cocoa exports, whatever the destination market.

2.4 Follow the Money

Cocoa is a commercial crop and as such people enter the market with the intension of generating an income. Every step of the value chain automatically generates transactions that characterise the flow of cocoa as it is passed from one stakeholder to the next.

Financial traceability = a key part of chain of custody data.

From the women breaking pods and documenting their “cuvets”, up to the export from warehouses in Douala port, the trail of cocoa is already creating a financial (paper) trail.

It is no surprise that the cocoa board of the Ivory Coast have recently shifted their focus towards financial traceability as the backbone for a cocoa traceability system. The inevitable transactions that result from the flow of cocoa, most accurately document and inform on the flow of cocoa.

The key challenge in turning this existing process into a traceability system may be tackled by proper digitalisation. The use of 'fit for purpose' digital payment solutions at farmer level allows for greatly advancing the move towards financial traceability, fairness and transparency. This also allows for many multiple other benefits for farmers and 1st mile intermediaries.

As stated in the European Parliament's draft report on the proposed legislation[3]: "a credible traceability system can empower smallholder farmers as it can avoid the non-payment of promised sustainability premiums, allow for electronic payments to producers by using the national traceability system thus combatting fraud …"

De facto we see digital transactions as a fundamental component of credible traceability data. By specifying the required data to be included in legal sales receipts and contracts, we create a digital chain of custody.

2.5 Identification of cocoa value chain actors

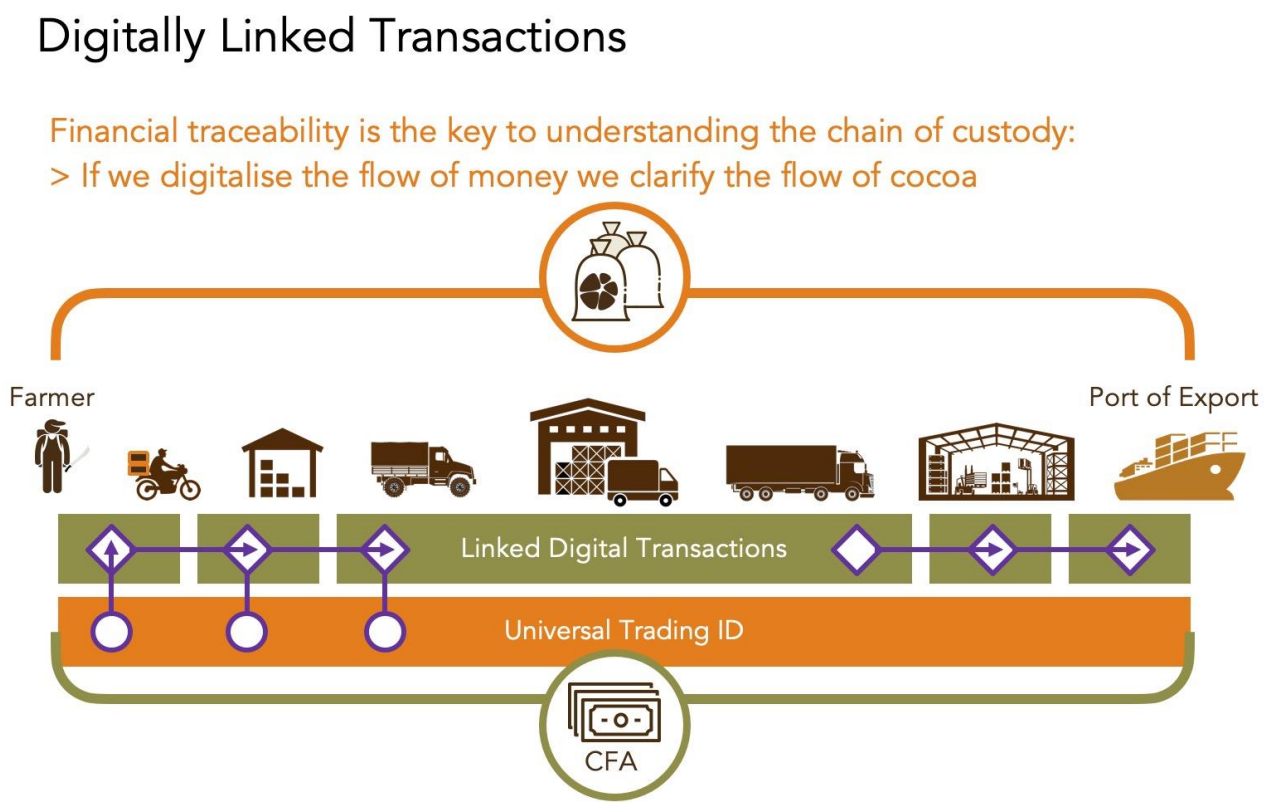
The envisaged traceability system requires a comprehensive database of participants. There are a number of routes towards building such a national database:

1. Use existing tax systems as a reference base
2. Incentivize through a government program
3. Create a national mandatory registration program

[3] https://www.europarl.europa.eu/doceo/document/ENVI-PR-729953_EN.pdf

Any traceability system will ultimately require a comprehensive UID (unique identity) system so this is a baseline for the implementation. From a national perspective it is more efficient to establish a UID dataset that is interoperable and useful across sectors and functions. (The Estonian E-ID card is a useful reference)

It is understood that the deployment of a national traceability system cannot wait for the establishment of a national ID system, so we can consider the option of using traceability compliance as a driving force to get the cocoa value chain players registered as a Step 1.

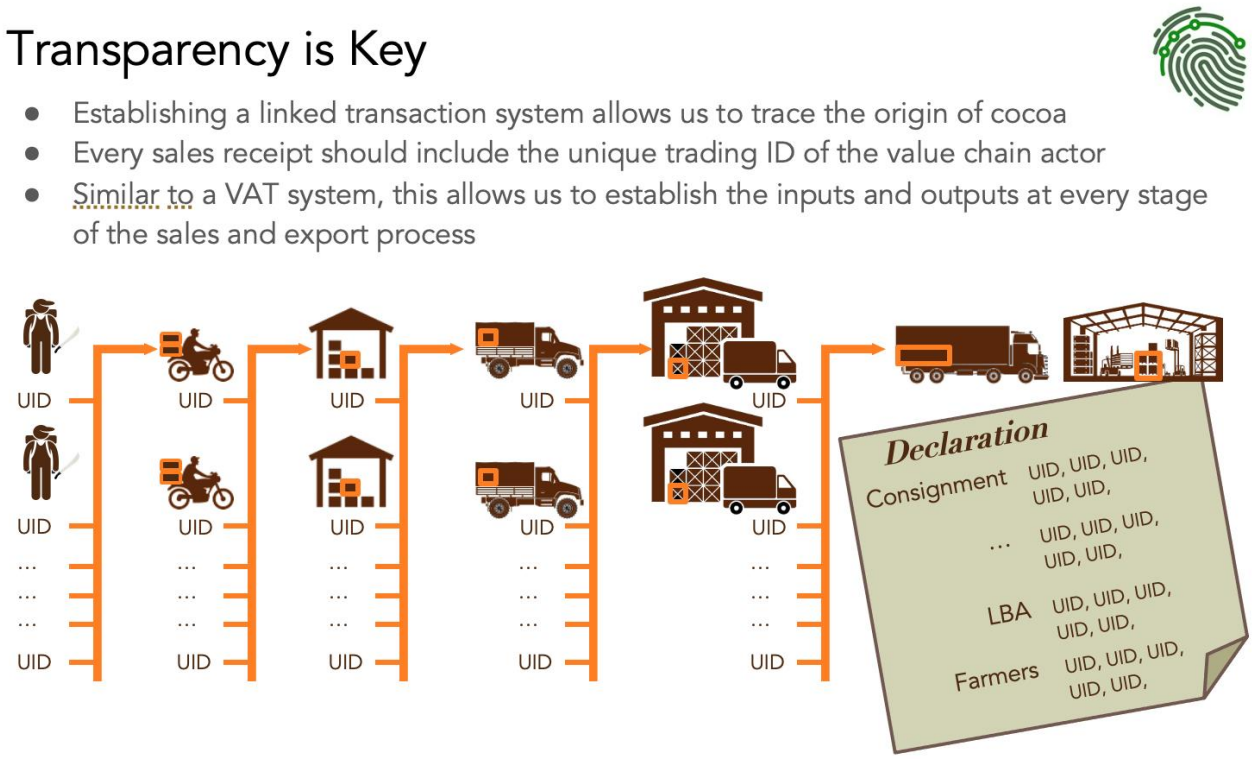


This Universal Trading ID can be used as an anchor point to cross reference various attributes for analysis e.g.:

1. Demographic information
2. Polygon of farmed plots
3. Role in the value chain
4. Social investments and school access of local community

This basic referencing data can then establish the foundations of an analytics and reporting dashboard/interface. Moreover, as the cocoa moves through the value chain and is combined with other batches, we develop an inherent accumulation of source of origin data.

We envisage a very flexible, yet trustworthy, system. This implies that value chain intermediaries (up to those operating at the 1st mile) can be empowered and recognized for registering and/or updating data on value chain actor identification. Also additional identification functionalities offered by traceability solution providers shall be leveraged. Essential is that continuous updating and improvement of data at low-cost is integrated from the onset in the chosen unique identification mechanisms.



2.6 Geo-location attributes

As essential as the identity of the producer, is the geo referencing of the produce. As farmers and sellers have access to, and may draw and sell produce from multiple plots, it is important to include batch level geographic attributes.

Key policy decisions need to be made on whether the cocoa sector in Cameroon engages in a detailed mapping of cocoa farming plots, farms, etc.; or whether alternative / complementary approaches to trustworthy geo-referencing will be employed.

Anyhow, each bag/batch of cocoa needs to have a clear geo-reference. Nonetheless there are still important choices to be made on how to proceed. The following aspects are to be considered.

1) As single farmers may have multiple plots, farms or concessions the geographic reference needs to relate to the cocoa, not the farmer.
2) Detailed geo-mapping of farming plots and linking cocoa bags, entering the cocoa supply chain, to the (previously mapped) farming plots where they were produced, is the traditional approach. While such approach is often presented or understood as a requisite for adequate agricultural value chain traceability, it might not be the only or always most suitable approach for cocoa traceability in Cameroon.
    a) Plot mapping initiatives and programs seem to be often confronted with recurring underestimation of efforts and time needed to: (a) conduct and complete b) maintain and update trustworthy detailed geo-mapping of farms and farming plots.
    b) Experience in Ghana and Côte d'Ivoire also show that difficulties multiply when extending geo-mapping of plots beyond the longer established 'direct' supply chains. It should be noted

here that in Nigeria such direct supply chains only cover around 30% of the cocoa sector and that the % of already mapped farming plots is significantly lower than in Ghana and Côte d'Ivoire. If detailed plot mapping must be applied all-over, then we shall acknowledge that the Cameroon cocoa sector is therefor lagging significantly behind Ghana and Côte d'Ivoire.

c) Important hurdles on land rights discussion, disputed concessions, etc. often hamper further roll-out of plot mapping.

d) The volatility in relations between plots, farmers, farms, crops, plot use, etc. are often underestimated; while embedded and low cost mechanisms for continuous updating are often lacking. This implies that the plot mapping database, if established, may quickly become outdated and thus less reliable and less useful.

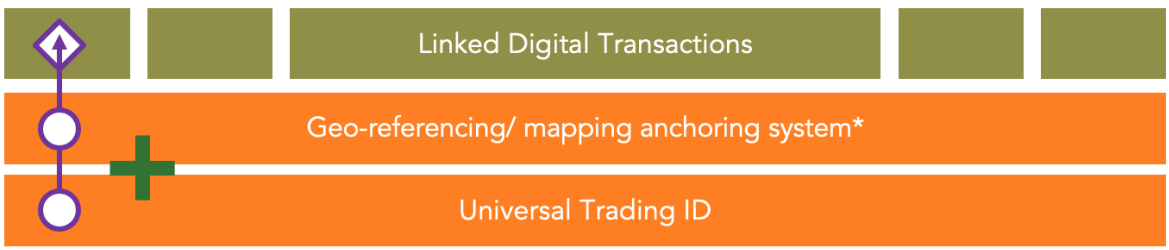
3) Detailed geo-mapping of plots may be wise when the mapping is conducted as part of a more comprehensive ambition and used for multiple, mutually reinforcing objectives. Such ambitions could include: securing land use rights of farmers, transforming sharecroppers in smallholder farmers, using drones to generate geo-reference agri-analytics and advice, etc. Successful geo-mapping initiatives imply: (a) area-based approaches, (b) proper assessment and confirmation of their local-level feasibility and embedment, (c) embedded mechanisms for continuous maintenance and updating with involvement of key local cocoa value chain actors.

4) Therefore, it must be acknowledged that generalized geo-mapping of plots is not a short term nor a quick-win solution. Furthermore, it should be acknowledged that the value chain actors in Cameroon still have little experience with such geo-mapping.

5) However **geo-referencing the point of harvest** may provide as much (or even more effective) means of verification. In such case, the granular geo-referencing of the point of harvest is to be combined with collecting data on time of harvest, multi-actor collection/confirmation of ESG data and potential photos at time of harvest, financial and other transactional traceability and cross referencing with geo-mapping of all types of forests, including of forest preservation and restoration initiatives and their targets.

It should be noted that, sufficiently granular, georeferencing of points of cocoa harvesting – appropriately linked to batches of cocoa – can also be used for geo-based visualization of cocoa farming, overlaying with forest mapping and plotting of changes in forest coverage in (equally mapped and tracked) cocoa producing areas.

- The geo-referencing of each batch needs to be reflected on the receipts of transactions:



* Cross referenced with national forest & tree cover mapping system

With the batch level georeferencing data embedded in the sales receipt, we build a transactional chain of custody that also provides geographic data that can be linked to national and international deforestation monitoring systems.

2.7 Incentivise the Change to enhanced sustainability

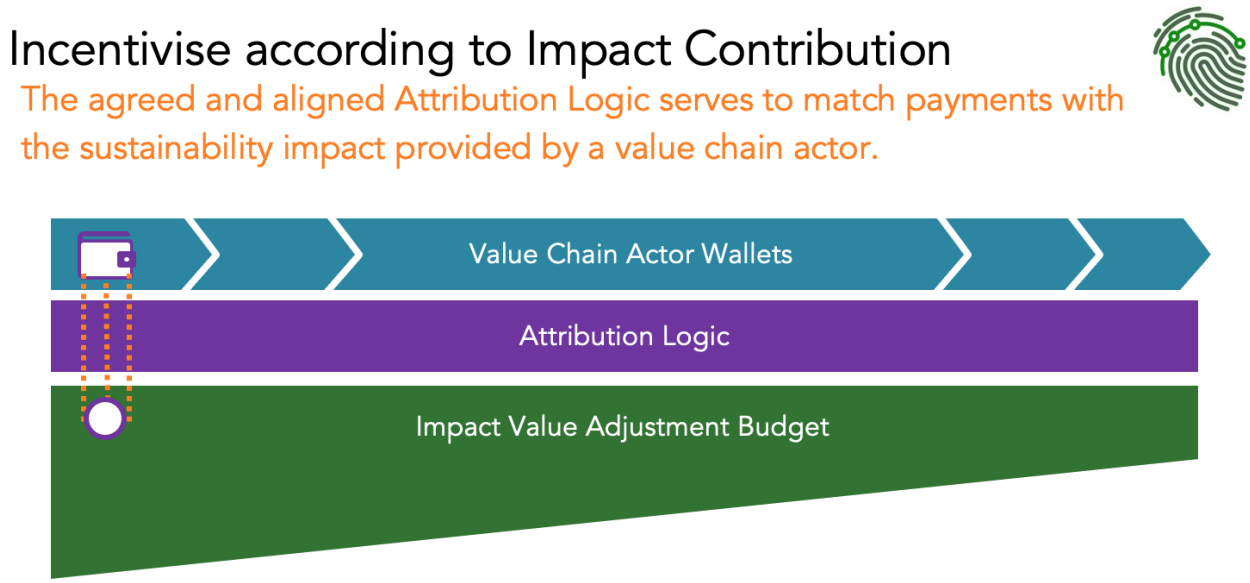
Besides tracking steps in a chain of custody (batch traceability and transaction data), the traceability system should capture, store and transmit relevant and accurate sustainability data. Part of the challenge in existing systems is that the incentives to provide accurate and reliable data are lacking or do not match the corresponding efforts and costs. Overall the incentives mechanisms are not aligned with the sustainability and governance ambitions.

Two key reasons play into the lack of accurate data:

1. Traceability data is seen as a compliance requirement (a cost), providing no benefit for farmers and other value chain actors.
2. In practice there are financial and normative incentives to circumvent the provision of accurate data.

If a producer, buyer or trader has an incentive to not provide meaningful data and/or to not contribute to traceability, it will be very difficult to change behaviour, no matter how sophisticated the traceability system.

In essence the value of submitting and transferring accurate data should deliver a proportionate benefit.



A value actor can only claim their incentive if upstream actor data is accurately recorded.
Gaps in the chain = loss of payments.

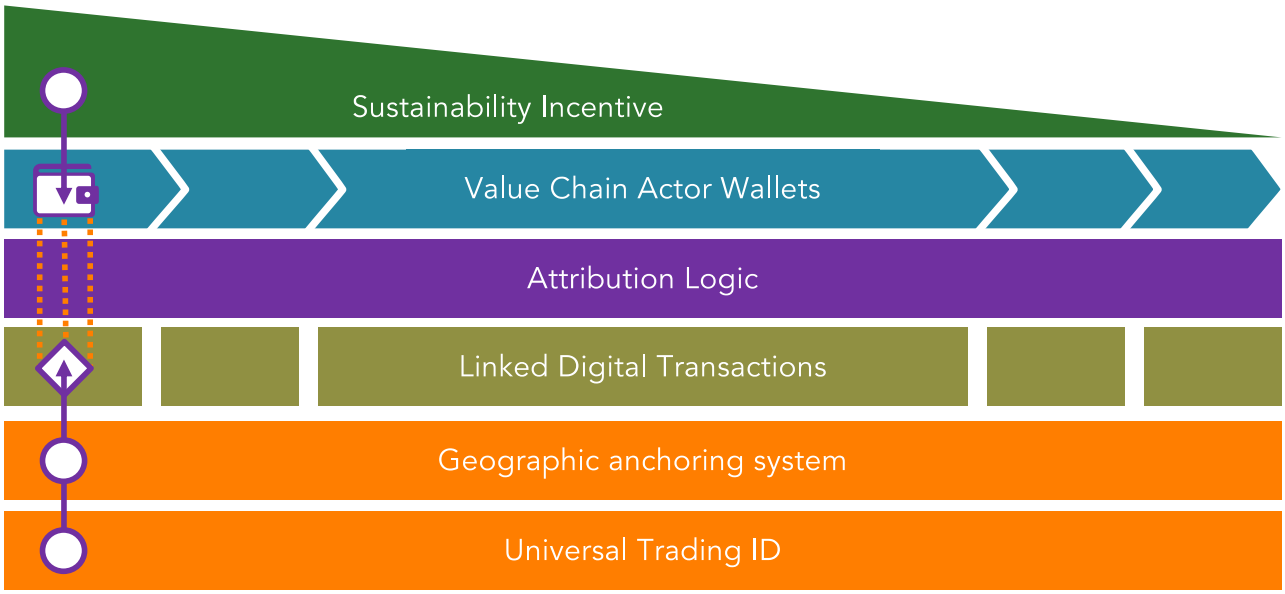
The same holds for adopting more sustainable farming and value chain practices, without which traceability becomes meaningless. As long as the (perceived and real) interests and incentives of farmers and other value chain actors are not aligned with enhancing sustainability, then the ambitions of more sustainable value chains cannot be achieved and certainly not be maintained.

2.8 Model Inversion: The Impact Value Adjustment (IVA)

2.8.1 The IVA model

The current paradigm views the farmer as the primary cause of environmental harm. They are seen as the actors who affect deforestation and cause the environmental impacts through unsustainable farming practice.

The inverse is also true and shall be leveraged. Farmers are the key and indispensable players when it comes to forest and soil preservation, bio-diversity and other sustainability factors. Their farming practice can directly lead to valuable environmental impacts that other value chain actors cannot replicate.

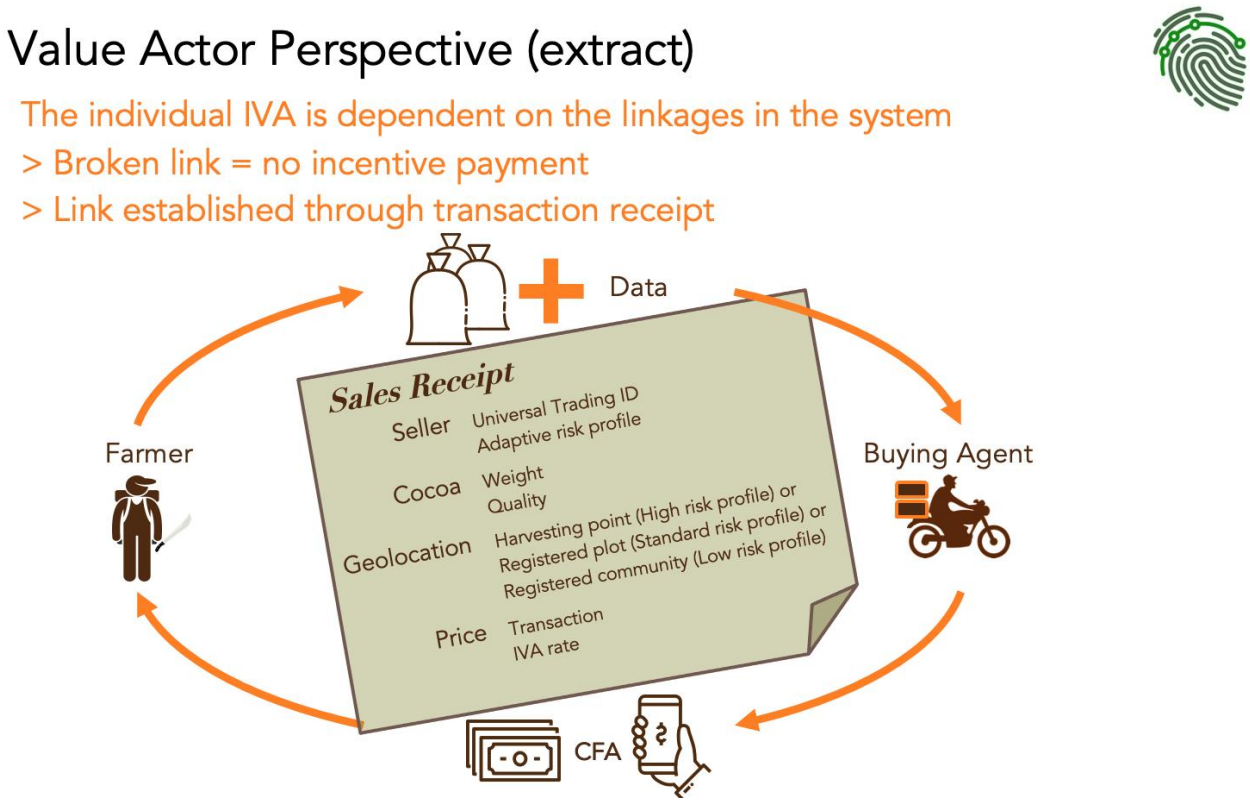


The IVA accrues at the point of production and is distributed according to contribution.

Traditionally the challenge has been to find a market for this "value." Traditional traceability systems lock this information inside compliance process for standards and certification and/or for export and customs declarations. But overall, they fail to provide real impetus for (further) improving and maintaining performance against multiple dimensions of sustainability. Furthermore existing traceability systems, as required for certification schemes, actually do not generate meaningful sustainability information.

Over the last number of years the value of sustainability impacts have become more obvious and various markets have started to develop to incentivise these data. The most topical and clear such a market is the carbon credit trading market. As the EU moves towards implementing a social taxonomy, further financial incentives will become aligned with social aspects.

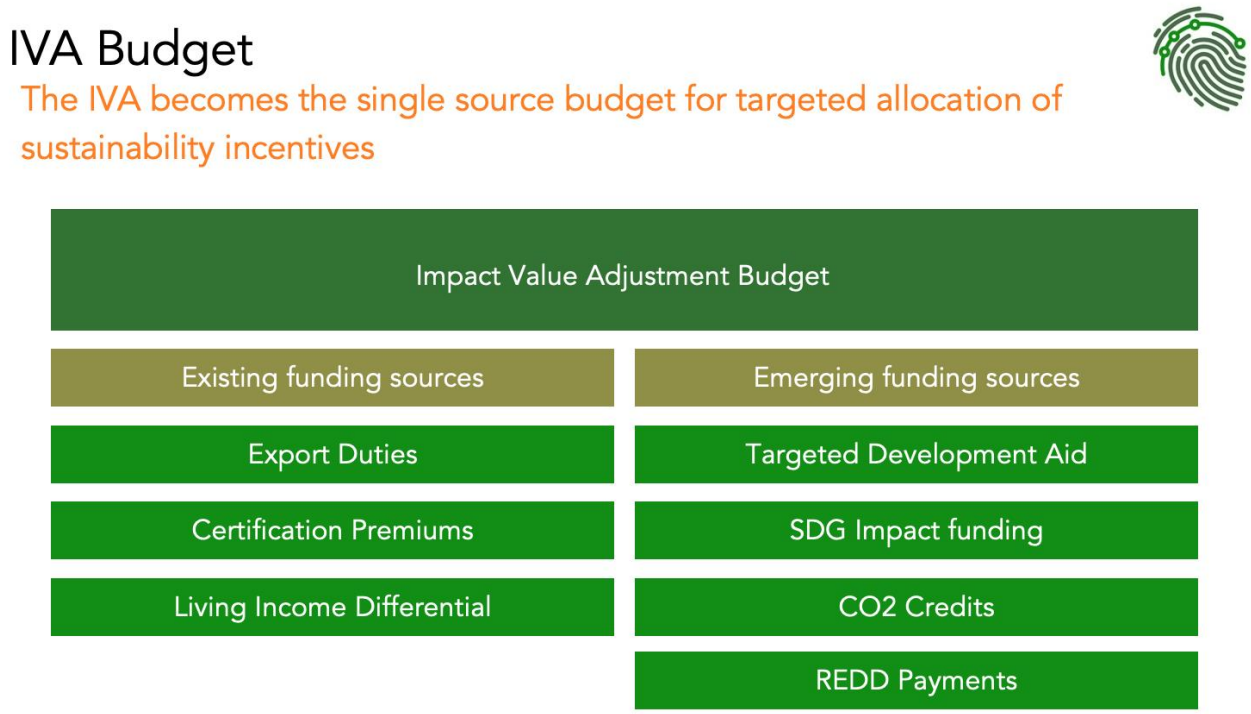
Below demonstrates what the operational reality of the IVA system would look like from the farmer's perspective.



They key challenge will be to link the incentives appropriately and proportionately to the actors involved.

2.8.2 IVA Budget setting

A potentially interesting scenario to manage and assign the impact incentives appropriately, might be developing and managing a national Impact Value Adjustment budget. The budget will draw on existing funds for sustainability development and emerging markets for ESG/impact investment.



The national budget would become the single source repository for targeted and aligned sustainability incentives.

Such scenario would then require the standing body, in consultation with the various industry and producer stakeholders, to agree on the allocation keys. This needs to be agreed on an annual basis according to:

1. Sustainability targets
2. Sustainability achievements
3. Regulatory requirements
4. Special and strategic development goals

In essence we would be establishing a national fund for national action. In line with the developing EU discussion of carbon border adjustments, the port of export can serve as a regulatory "gate" to determine the accumulated sustainability impacts as a proportion of the export price. This means all sustainability achievements accumulated by the value chain up and till the port of export should be considered for inclusion.

The current 4.7% export duty can serve as a benchmark for establishing the initial budget. As more markets emerge to fund social, environmental and climate action, these funds should be included and aligned with the national program, under the direction of the standing body.

As the market for carbon trading increases in sophistication[4], we should take stock of the value of the national asset, particularly as it relates to cocoa farming. One avenue could be to evaluate and align the volume of the exported cocoa to a surface area of land impacts. This total value of this carbon credit can then be set as an environmental services asset, with increases in forest cover and restoration being financially rewarded.

[4] https://www.thenationalnews.com/business/markets/2022/03/29/abu-dhabi-to-launch-worlds-first-carbon-credit-trading-exchange-and-clearing-house/

2.8.3 IVA Transactional mechanism

To address this, we propose the introduction of an incentive system similar to VAT (value added tax). The traceability relevant system is different in the following key aspects:

1. Instead of a "Tax" the model cascades "Incentives"
2. Instead of "Value Added" we focus on "Sustainability Achievements"
3. Instead of accumulating at the end of the value chain, it accumulates at the start

2.8.4 Impact Value Adjustment funding

The total budget for the Impact Value Adjustment (IVA) is set at a national level and comprises existing and new premium models:

1. Existing certification systems
2. Existing living income index adjustment premiums
3. Cocoa market development export taxes
4. Emergent sustainability impact markets such as carbon credits

This total budget is set at a national level and disbursed according to a national development plan outlining:

1. Sustainability priorities
2. Key sustainability acceleration landscapes/zones
3. Value chain actor proportioning key

2.9 Impact Value Adjustment (IVA) formula

The disbursement of the IVA will be determined by a basic and universal formula:

Impact Value Adjustment

Incentive = (Scope of Impact x % of Volume) x IVA rate

Scope of Impact is the key determinant that links the incentive with Environmental, Social and Governance Impacts. These factors may include examples such as forest cover, farming practice, social factors etc. determined by the national standing committee

% of Volume is determined by the value chain actor's ability to verify/document scope of impact score for the volume or percentage of suppliers up-stream

IVA rate is determined by the national budget, adaptive risk register score, regional classification plus commodity specific factors

When the value chain actors apply for their incentive payments they need to consider the following factors:

2.9.1 Scope of Impact

Over time the attributes required to qualify for a scope of impact rating will evolve. In the short term this may be pragmatically focussed on deforestation related factors as they directly relate to the new proposed regulation:

1. Identifiable land that the cocoa has been harvested from
2. Attributes of the land or landscape (tree cover, size of trees)
3. Risk rating of the community as it pertains to deforestation risk

Over time the ambition is to shift the focus towards promoting and outlining further environmental, social and economic factors. In this sense the qualification criteria will be evolved to include:

1. Forest friendly factors (e.g. reforestation and agro-forestry schemes)
2. Child and community friendly factors (e.g. % of school attendance)
3. Living income factors (e.g. value chain appropriate pricing)

2.9.2 % of Volume

This takes into consideration the percentage of the delivered goods that comply to the various Environmental, Social and Economic criteria. This becomes particularly important at the later stages of the value chain when consolidation, aggregation and disaggregation has occurred.

2.9.3 IVA rate

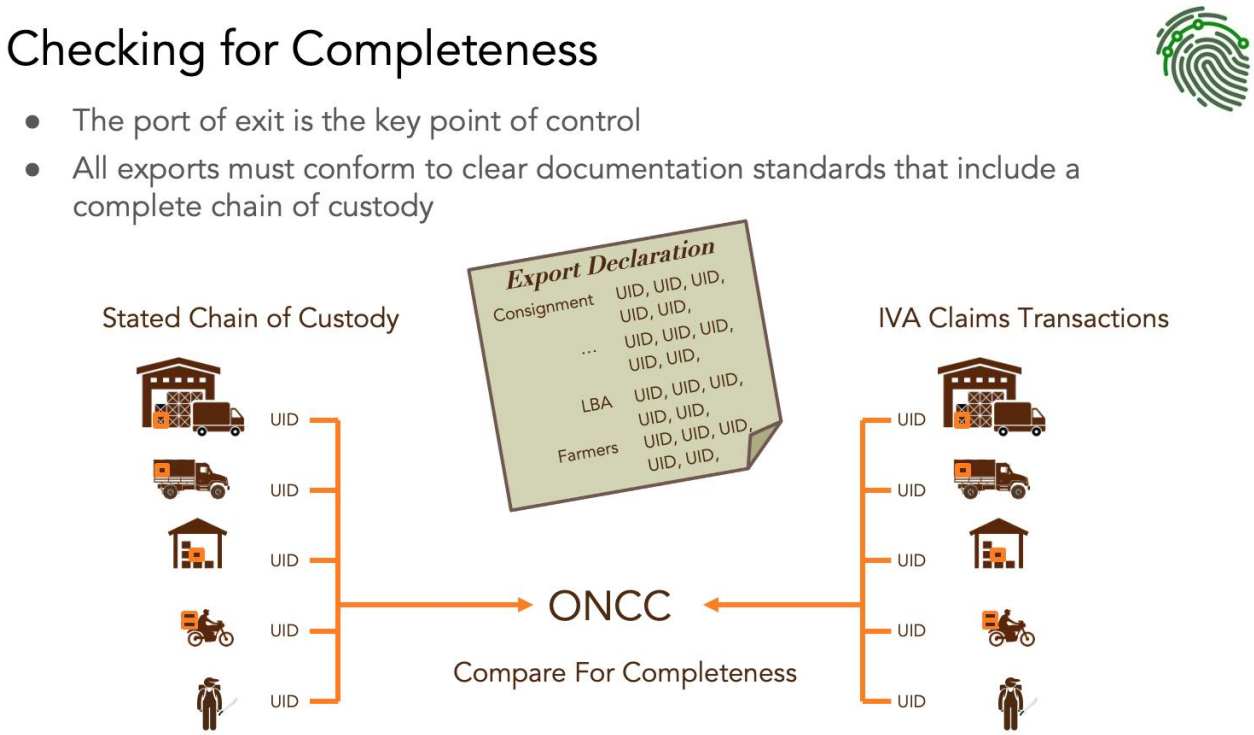
The IVA rate is set according to the role of the value chain actor (linked to their Unique Trading ID). In addition we may consider developing specific economic development zones that become the focus of particular incentives.

2.10 Sanctions and Controls

The strongest form of control for the government will be the port of export. Export documentation should provide a clear chain of custody that can be traced back to the linked digital transactions.
Not only does this allow for the accurate payment of IVA incentives, it serves as a check ana balance on leakage and infiltration of falsely claimed cocoa.

The government might consider the use of both incentives and penalties at the port of exit to reenforce the importance of declaring comprehensive source of origin data.

The data generated by export declarations can then be analysed and reviewed by ONCC for inconsistencies and completeness. By having a complete list of contributing actors we can cross reference the IVA claims made by the various actors to confirm the volumes declared and the consistency of claims.



3 TECHNICAL DESCRIPTION

3.1 Traceability System scope

To define a useful and clear strategy for the traceability system it will help to have an aligned view on the system's scope and boundaries. To apply resources effectively we need to agree on what is and what is not part of the traceability system. For the purposes on this strategy paper, we align on the following definition and components.

3.2 Data requirements of the Traceability System

At the heart of a traceability system is the veracity and reliability of the data. The core data related requirements of the traceability system may be broken down into the following categories:

1. Data Capture (and standards)
2. Data Transmission
3. Data Storage and Protection
4. Data Analysis
5. Data Ownership and Verification
6. Data Reporting
7. Data-based Decision Support (predictive analytics)
8. Data Monetisation/Incentive Structures

Functions of a Traceability Systems

The comprehensive quality assurance regarding the traceability data enables an integrated system with the following functions:

1. Registration and identification
2. Chain of custody and batch identification
3. Linking characteristics to batches
4. Sustainability reporting

5. Risk mitigation and assurance
6. Technical support
7. Training and quality assurance
8. Incident reporting

3.3 Stakeholders and roles

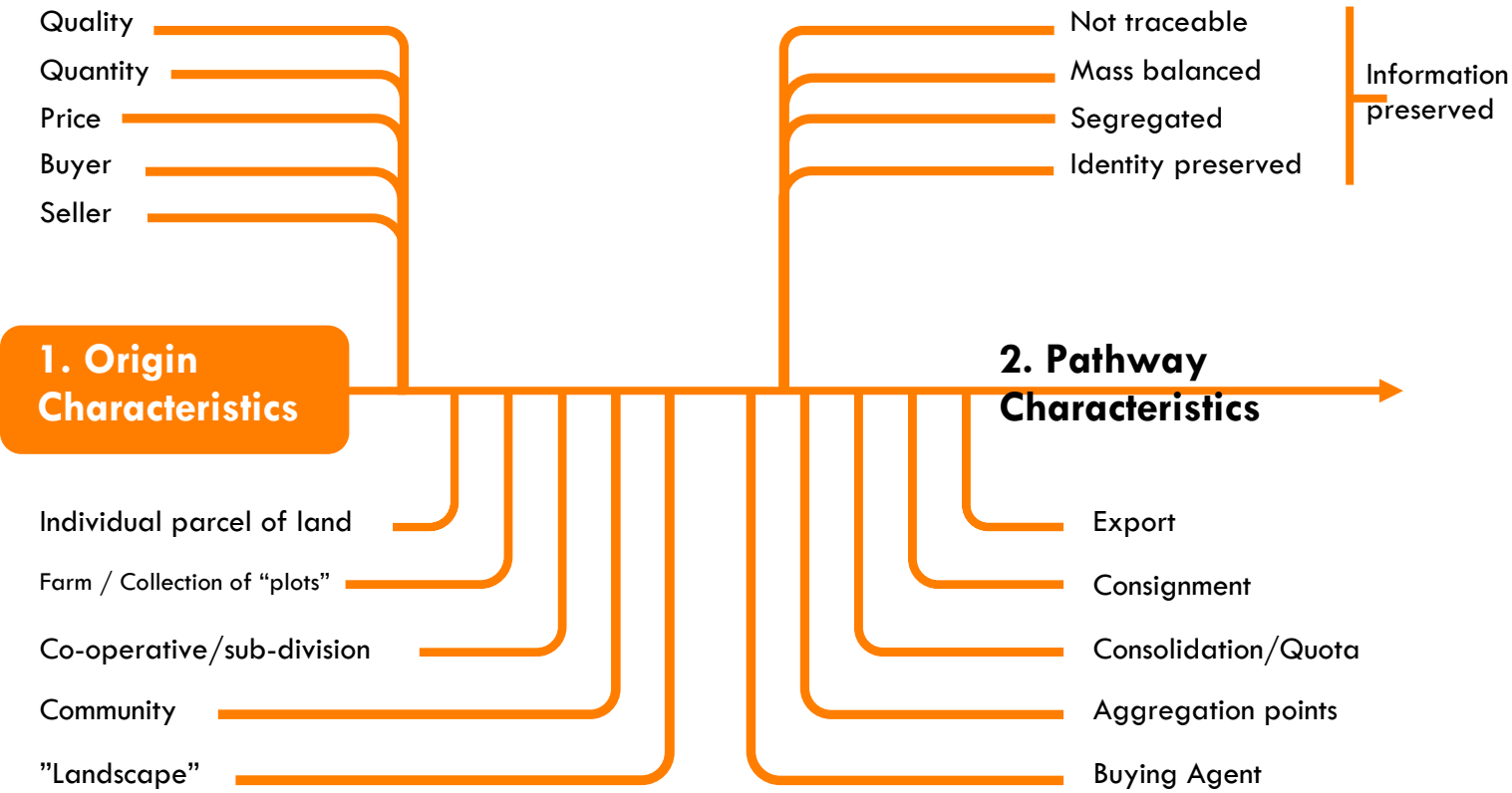
The key stakeholders in the traceability system reflect the stakeholders in the cocoa value chain. Their roles and engagement with the value chain, as it relates to traceability, can be stated as follows:

1. Producing communities and landowners
2. Producers (farmers)
3. Post-harvest processing support
4. Cooperatives
5. Licensed Buying Agents
6. Non-licensed Buying Agents
7. Logistics and transportation providers
8. Storage and aggregation providers
9. Cocoa processing and refinement
10. Testing and quality verification
11. Cocoa exporting
12. Local government and regulation
13. National government and regulation
14. Certification bodies
15. NGO's
16. 3rd Party inspection bodies

Each of the stakeholders interact with the system by receiving and providing the system with information. The purpose of the current system design is to align and harmonise these inputs towards delivering a comprehensive overview.

Data framework

As indicated in the interim review, the traceability system needs to support the delivery of the following data framework as it pertains to Environmental (deforestation) factors:



4 GOVERNANCE MODEL

Governance is defined as "the system by which entities are directed and controlled. It is concerned with rules of the game, the structure and processes for decision making, accountability, control and behaviour of an entity. The entity in this case is the cocoa value chain extending from plots in Cameroon to consumers worldwide. The ultimate authority for the new traceability system lies with the Standing Body (as per presidential decree). This body is the main institution for decision making responsible for the coordination and alignment of all activities related to traceability set-up and the IVA traceability system, for making and enforcing rules, exercising, and sharing power, and ensuring participation, accountability and transparency.

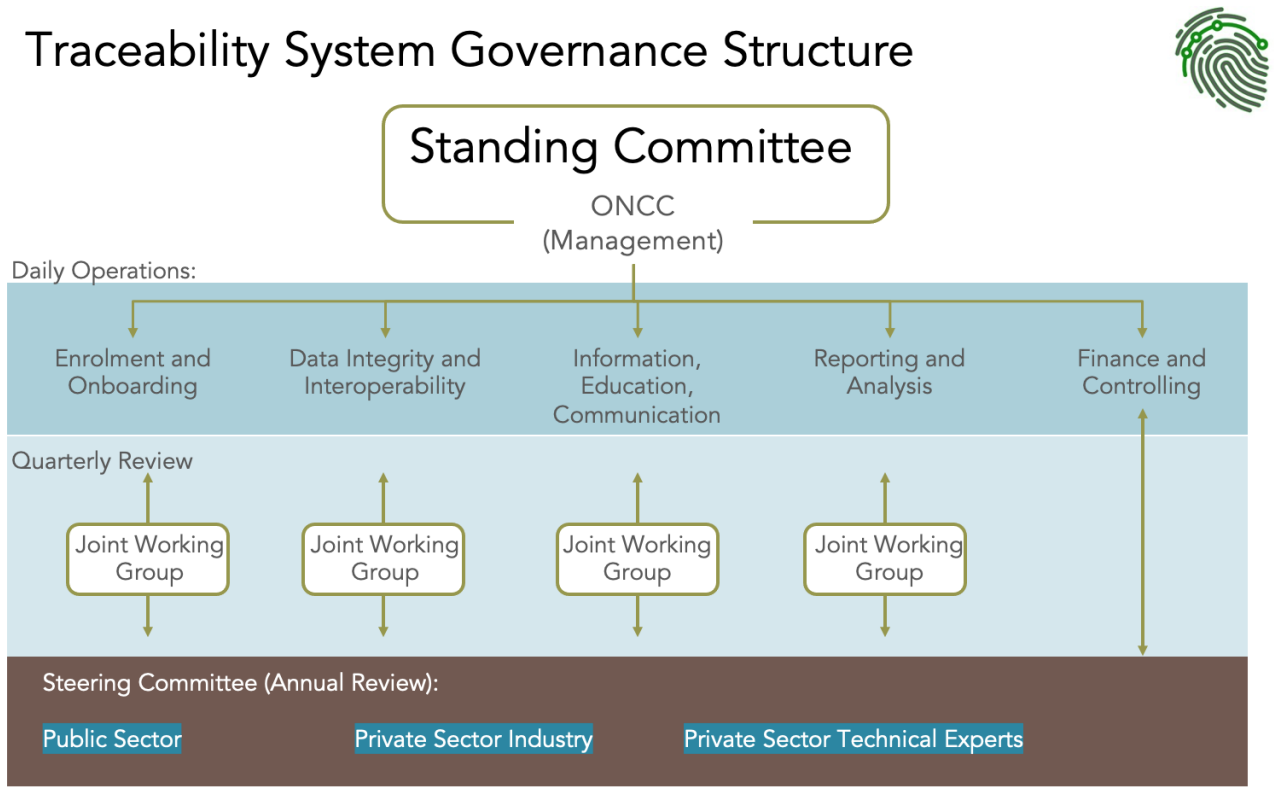
Governance should be linked to a **management system** which enables activities of different stakeholders and strategies of stakeholders to be coordinated, set short and medium goals linked to the governance systems goals and carry out these actions, allocate financial, human and knowledge resources and monitor and report on progress and achievements, and set specific objectives to reach the overall goals.

Our proposal for the overall goal of a governance model for the Cameroonian cocoa value chain is to ultimately **differentiate Cameroon as a reliable, valuable, sustainable and efficient country of origin for cocoa** (… and eventually for other products) with specific goals to:

1. Address **legality** (in Cameroon and internationally- particularly the EU as one of the major markets for Cameroonian cocoa)
    - Expose and promote sustainable farming practices

- Set and disseminate legal requirements for sustainable cocoa from Cameroon

2. Determine, monitor and publish **pricing mechanisms**
    - Determine pricing structures for hybrid (data + beans) cocoa
3. Ensure **information about prices and IVA (ESG+quality) price setting mechanisms** is available for **all** value chain actors
    - Empower digitally enabled and sustainability driven agri-entrepreneurs
    - Capture ESG achievements (=> trustworthy ESG data including quality, risk profiles and reliability assurance) and equitably rewarded
    - Foster value chain transparency where ESG risks are effectively identified / mitigated and due diligence is largely supported



5 ECONOMIC & SOCIAL IMPACTS

Understanding the impacts of a traceability system means looking from different value chain stakeholders' perspectives and particularly how each interest is incorporated into the system; this determines how, who and what the human locational database embraces (Popper, 2007). Traceability itself offers the promise that an individual consumer knows the full story, or footprint: the places, people, processes, and practices of cocoa originating from Cameroon.

While (donor) funding is required to support the initial transformation to a traceable cocoa value chain in Cameroon, stricter compliance requirements from importing countries imply that a premium needs to be paid for traceability. A premium which exporters would receive and pass along to cover traceability system costs. As traceability continues to evolve, it is anticipated that the generated impact value and the corresponding rewards paid by international cocoa supply chain actors will far outweigh the set up and ongoing costs of traceability. This implies agreed-upon-payments for demonstrated (and trustworthy) sustainability achievements.

It will be essential to support and/or guide Cameroon stakeholders in identifying and negotiating predictable rewards and incentive mechanisms for sustainable cocoa. In addition to market-defined premiums that exporters will be able to pass along for sustainable, traceable cocoa. Emerging concepts, such as the Impact Value Added (IVA) model will be further explored in international platforms. To foster market preference for sustainable, traceable cocoa compared to cocoa without sustainability and/or origin data, an export tax could be applied in a scaled fashion to untraceable cocoa, making it less profitable.

The proposed 'future proof' concept of cocoa traceability in Cameroon will allow Cameroon to actively participate in ongoing consultations, alignments and negations for structural, transparent and significant incentives and rewards provided by the international cocoa supply chain clients for demonstrated 'forest friendly" and "child friendly" cocoa from Cameroon; cocoa that also scores well on the other sustainability dimensions. All these elements will be part of an appropriate "social return on investment" formula to support SDG-impact funding mechanisms that will be integrated in the international cocoa supply chain mechanisms.

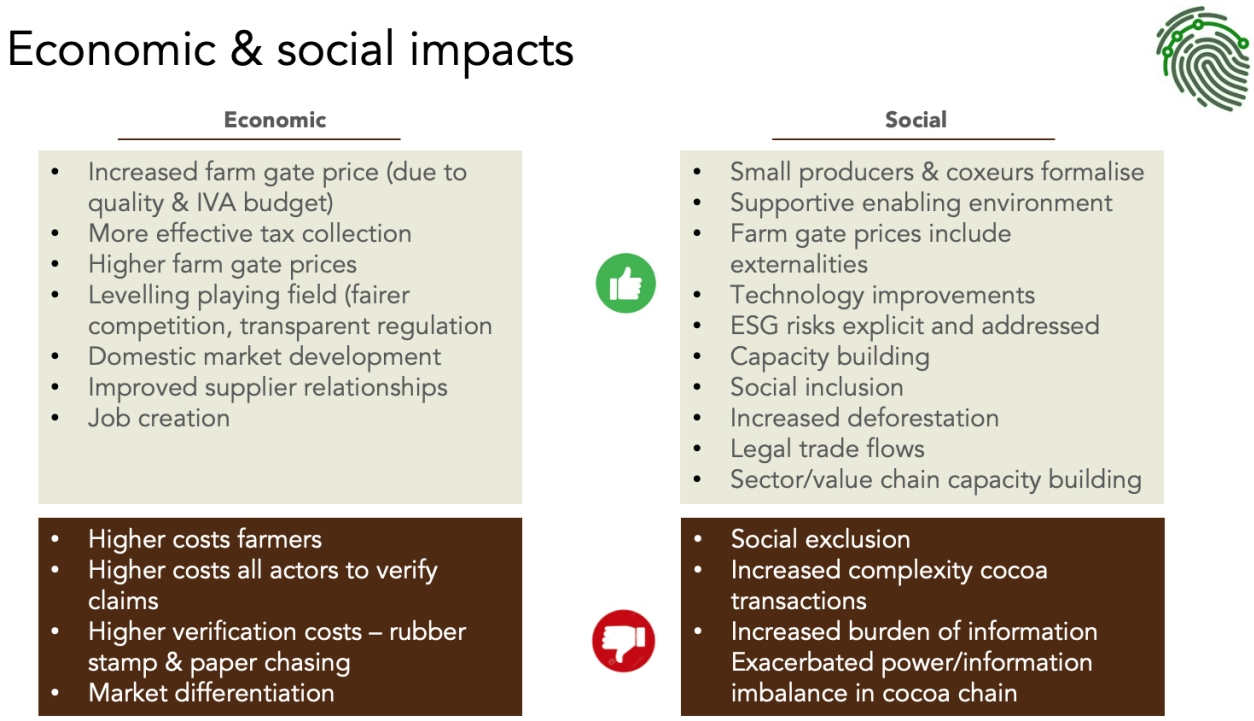
It is often assumed that there is a positive relationship between sustainability and value chain performance, with traceability identified one of the key elements in performance for reaching sustainability as enhancing social and environmental dimensions in cocoa value chains internationally[5]. However, both negative and positive economic and social impacts can be anticipated, drawing on experiences from the Cameroonian FLEGT VPA timber traceability system[6] and from cocoa and other global food chains[7, 8.]

[5] Syahruddin & Kalchschmidt 2012 https://ei-ado.aciar.gov.au/sites/default/files/Syahruddin-Kalchschmidt(2012)TraceabilityCocoaSupplyChainIndoContext.pdf

[6] CIFOR 2020 https://vpa-library.cifor.org/assets/publications/FLEGT-VPA_Cameroon.pdf

[7] UN Global Compact & BSR 2014 https://www.bsr.org/reports/BSR_UNGC_Guide_to_Traceability.pdf

[8] Lain 2019 https://www.politesi.polimi.it/handle/10589/145879, Amegashie-Duvon 2014 https://theses.ncl.ac.uk/jspui/bitstream/10443/2623/1/Amegashie-Duvon%2C%20E.%2014.pdf



Social impacts

The design and application of social impacts, i.e. positive returns on investment in sustainable cocoa, will have to be developed in international consultation to avoid distorting the international (London) market for conventional cocoa, for example collaborating with the European Initiatives for Sustainable Cocoa (GISCO, Beyond Chocolate, SWISSCO, DISCO, etc.). For example, transitioning from a "deforestation-free cocoa" concept to a "forest friendly cocoa" concept will allow to leverage the environmental assets of Cameroon. This is about "content interoperability" where key actors will agree on what sustainability characteristics to track and on how to measure and value them. Here it will be essential to connect with related initiatives, such as what GIZ is currently preparing on interoperability of traceability systems in agricultural value chains.

Economic impacts

Economic impacts - as detailed above - can be expected all along the value chain during both set up and implementaiton stage. Experiences[9] of the costs and benefits of setting up voluntary sustainability standards (UTZ, Rainforest Alliance and organic) in West Africa strongly indicate that higher proportion of costs (both direct cash costs and in terms of additional hours), are born at farm producer level and also by international traders implementing the systems. Given the informal actors (buying agents) who predominate in the Cameroonian chain[10], the majority of whom are not included in certified systems, the economic costs (including contacting, training and monitoring) of introducing and setting up a traceability system for these actors are also expected to be high.

[9] Ingram van Rijn et al 2018 https://www.mdpi.com/2071-1050/10/11/4249/pdf, KPMG 2012. Cocoa Certification A Study on the Costs, Advantages and Disadvantages of Cocoa Certification; The International Cocoa Organization (ICCO): Den Haag, The Netherlands, 2012; p. 99.

[10] Nkoudjou et al. 2020 https://doi.org/10.1016/j.geoforum.2020.09.005, Lescuyer, G., & Bassanaga, S. (2021). Positive influence of certification on the financial performance of cocoa production models in Cameroon. *Frontiers in Sustainable Food Systems*, 451.

6 BUDGET FRAMEWORK

In reviewing the essential factor of system costs, it is essential to understand that the specific costs cannot be calculated at this stage. Key strategi choices still have to be made and levels of ambitions set. The limited scope of the design phase placed key constraints that would affect the validity of any estimate (limited geographic scope, limited time, reduced technical assessment of technology vendors).

Moreover, the process of consultation with stakeholders is required to define exact scope and requirements. Now that we have established a “straw man” description of the system, we are able to get specific feedback on the requirements and constraints of the value chain actors. This process of requirements analysis provides a crucial opportunity to establish understanding and buy-in for the national system.

In order to support ONCC and the ministries in evaluating the feasibility of the system we can refer to benchmark costs to guide decision making.
Iterative learning process is suggested to reduce risk and manage scaling costs

It is possible to drastically limit costs by:

- ✓ Leveraging innovative traceability solutions available on the market;
- ✓ Fostering (technical and content) Interoperability – international alignment & synergy;
- ✓ Applying innovative geo-referencing of point of harvest when plot mapping is too costly and not fit for purpose;
- ✓ Empowering value chain acters and holding them accountable.

The traceability solution can be broken down into distinct cost components:

1. Establishing a universal trading ID system
2. Establishing a system for geo-referencing
3. Creating a national framework for digitally linked transactions
4. “Impact Value Adjustment” incentive disbursements
5. The integration, coordination and control of the system

The final costs related to the overall system will depend on the specific decisions made regarding the implementation and deployment of the components.

In general the risk and cost profile can be affected by the following choices:

1. Creating a new and untested element represents the highest risk
2. Creating a bespoke or “custom made” solution increases risk and operational costs
3. Using an established product or service might reduce costs
4. Collecting bids from a field of standardised solutions is the best way to manage risk and cost

The degree of novelty and the demand for unique features drive the cost of the solution up, however this cost may be offset by the specific value and challenges required to deployment in Cameroon. As an example, Cameroon has a proportionately high degree of cocoa being farmed in areas with forest cover. The difficulty and cost involved in applying traditional or standard solutions may require the use of a novel and untested technology.

Prior to implementation of the solution, the following steps need to be budgeted, both in terms of time and costs:

1. Component design, sourcing and build
2. Component integration and alignment within entire solution

Each of the components will generate similar operational costs that need to be budgeted:

1. Stakeholder enrolment and onboarding
2. Ongoing data capture, transmission, storage and analysis
3. Information, Education and Communication
4. Management reporting and analysis

The implementation and deployment of the national traceability system will require the coordination and cooperation of multiple ministries and private sector actors. Each of these will be able to contribute resources and place specific demands on the system. The process of cost validation will therefore also be a process of national stakeholder engagement and review. We propose the following steps to this process:

1. Assess the capabilities of the various existing systems
2. Map these capabilities to the requirements of the proposed new system
3. Establish the cost for harmonisation and alignment of existing systems
4. Scope out and cost the specific new elements that are required

Inside that context we may look at the implementation and deployment of similar systems at a national scale, to understand the cost range we should budget and anticipate.

Cost Estimates (Central Government Costs)

- The start-up and running costs drivers can be viewed per sub-system:

	Universal Trading ID	Geo-location/anchoring	Digitally Linked Transactions	IVA disbursements	Implementation, Coordination and Control
Low cost scenario	€800 k	1.5 Million	€2 Million	TBA	€1.8 Million
High cost scenario	€3.5 Million	€6 Million	€8 Million	TBA	€6 Million

Start-up costs range (4 years): €4.3 Million - €17.5 Million

+

Running costs range 4 years

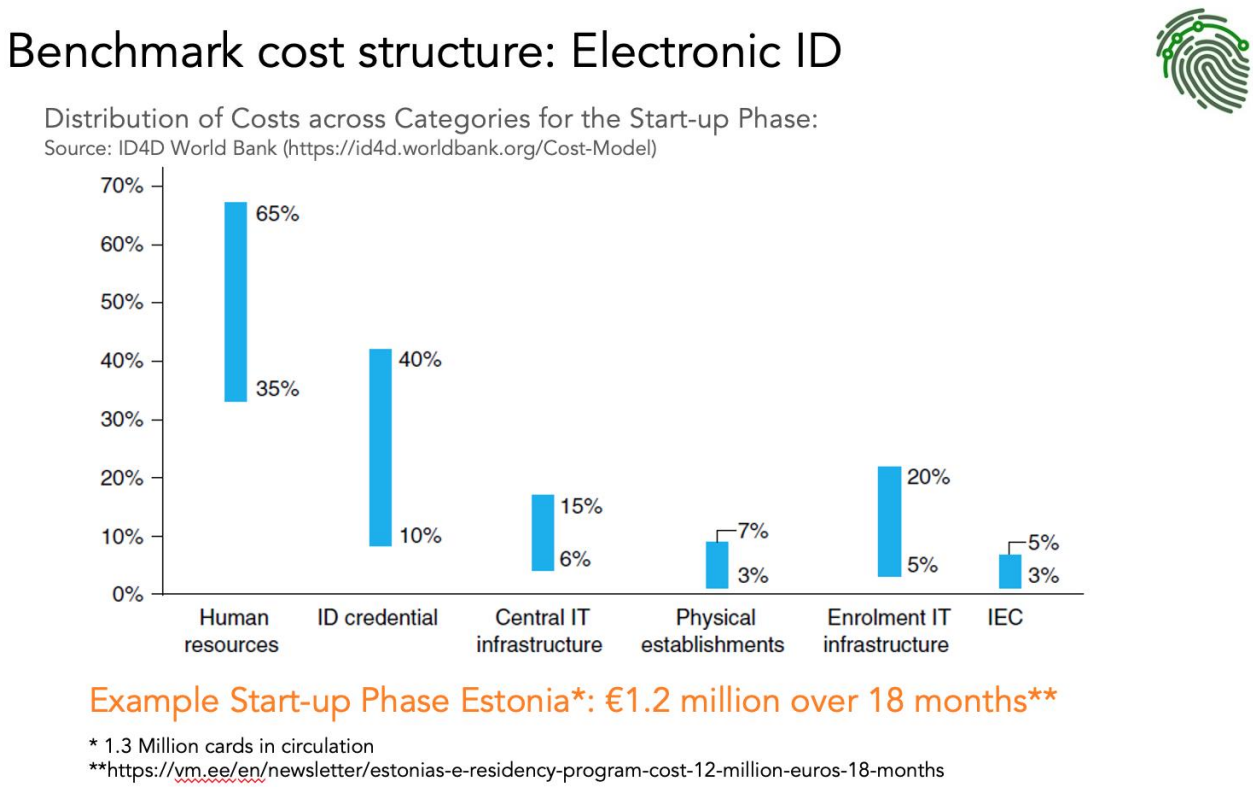
2022	2023	2024	2025
€ 800k € 2 Million	€ 1 Million € 5.5 Million	€ 2 Million € 7.5 Million	€ 2.3 Million € 8.5 Million

After an initial investment of between €4.3 Million and €17.5 Million in the first four years, the government should budget for running costs of between €1.8 and €6 Million annually.

The IVA disbursements are not included in the system costs as they will be proportionately self-funded (e.g. through the export levy, CO2 credits and other dedicated programs) and do not impact the traceability system costs.

In addition, the IVA should be seen as a policy tool that can be aligned to support specific policy goals and draw funding from the programs associated with those goals. In essence the proposed traceability system can be viewed as a targeted sustainability financing tool.

When analysing the structure of the cost deployment we can again look at the World Bank's[11] around digitalisation projects at a national scale to understand where and how the money will be spent.



The largest cost component is situated in the human resources required to set up and maintain the system. Based on the scale of the operation and intensity of interactions with the farming communities, the use of regional hubs should be considered.

These costs have effectively been reduced in other countries by utilizing existing infrastructure and administrative bodies already engaged with the target communities. During the set up and onboarding phase ONCC should consider private partnerships and the use of existing facilities such as schools as locations for temporary enrolment offices.

The actual credentials used to verify identity play a large role in determining the set up and operational costs. In cases where cloud based biometric data is used, the cost is reduced

[11] https://id4d.worldbank.org/Cost-Model

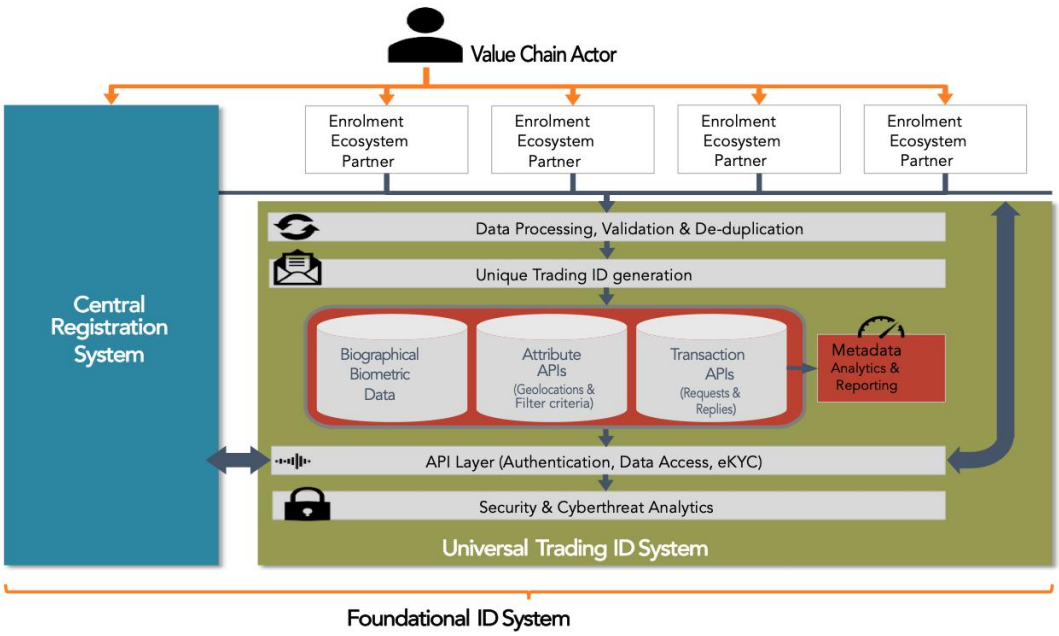
substantially. Authentication at point of transaction or contact happens through iris scan or finger printing, negating the cost of issuing physical ID cards.

Data privacy and security requirements will play a crucial role in determining the IT infrastructure costs. It is essential to note that technology advances in the IT sector are at such a pace that the investment in physical infrastructure faces the risk of quickly becoming outdated and redundant. Smart leasing and dynamic hosting agreements can ensure flexible infrastructure that is adaptive and up to date. We specifically caution against the investment in large proprietary IT infrastructure (server farms). Having seamless and useful access to and analysis of the data does not require owning a large IT infrastructure.

The enrolment IT infrastructure is largely dependent on the decisions regarding which data needs to be captured (e.g. finger print scanners, voice recorders) and who is doing the data capture (i.e. centralised vs. distributed).

As indicated in the following IT system map, the task of enrolment can be shared with private industry if we have a central system for verification and authentication to avoid system abuse.

Benchmark IT Infrastructure*



*The World Bank, Nigeria Digital Identification for Development Project (P167183)

Crucially the information, education and communication budget (IEC) should not be overlooked. In our estimation this project will require a higher level of communication and education engagement than the referenced benchmarks. As the traceability system has wide ranging and income relevant impacts, it is essential that all value chain actors understand their role and contribute accordingly.

There will also be the requirement for ongoing communication campaigns to reenforce the benefits and specific impacts of the system.

In this context we have prepared the following decision matrix to help guide the conversations with value chain actors in the design and development of the proposed solution.

Cost Components

- The start-up and running costs drivers can be viewed per sub-system:

	Universal Trading ID	Geo-location/anchoring	Digitally Linked Transactions	IVA disbursements	Implementation, Coordination and Control
Enrolment and onboarding	Use of existing vs new systems PPP/hybrid registrations	Integration of existing Development of new /embedded solutions	Establish common framework for interoperability Central oversight and control system	Discussed in dedicated section	Standard setting, quality assurance and KYC
Ongoing Data Capture, Transmission, Analysis and Storage	Integration of online/off line systems National data standards harmonisation	Linking UID with geo-location and national tree cover database Expanding coverage of geo-location systems	Daily reporting and consolidation Fraud protection and control	Quarterly budget reconciliation	Alignment between deployment partners Quality assurance
Information, Education, Communication	National roll-out vs. targeted economic zones	Building on existing systems and the access to resources	Transaction level identification of registered traders	Momentum building Share successes	Monthly updates and internal reporting
Management, Reporting and Analysis	Verification and fraud detection	Alignment with national and international monitoring	Verification and fraud detection	Impact measurement and assessment	Monthly updates and internal reporting

7 ROADMAP FOR IMPLEMENTATION

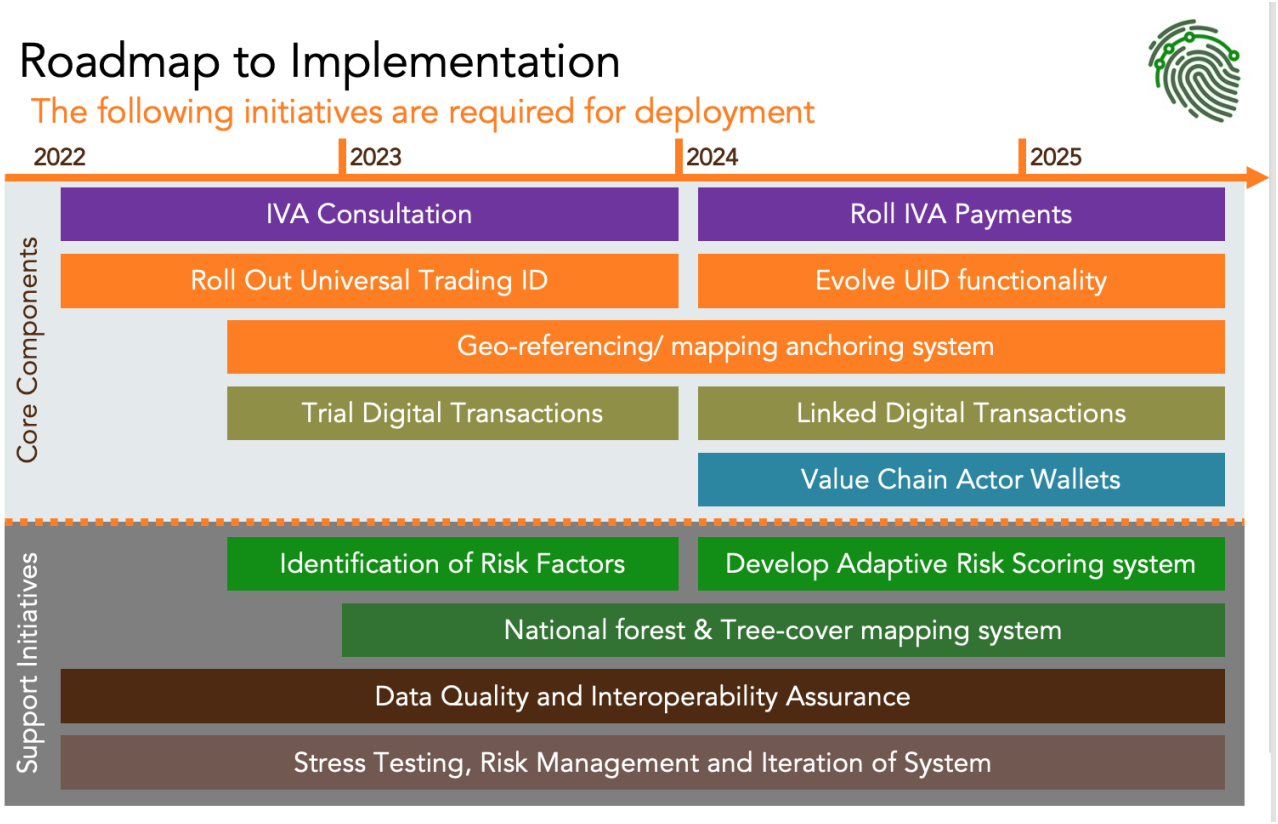
There are a number of elements of the new traceability system that will need to be piloted and tested prior to full scale deployment. To structure and align the learning and deployment plan we suggest a coordinated roadmap that sequences multiple workstreams into three global phases:

1. 2022: Learning and coordination
2. 2023/24: Pilot and evolve
3. 2025: Coordinated roll-out

The traceability system will not operate in a vacuum. In order to set the context for the traceability system's operations, the following auxiliary processes and systems need to be implemented:

1. Risk identification and adaptive risk scoring mechanism
2. National tree cover and mapping system
3. Data Quality and interoperability assurance (including the 1st mile traceability task force)
4. System improvement, stress testing and impact monitoring

Individually the specific functions of the system are at various stages of readiness. Based on our current assessment, the following could represent a structured roadmap for deployment.



8 NEXT STEPS

In order to achieve the implementation and deployment of such an ambitious scheme we recommend the following steps to be implemented to prepare the groundwork and context for implementation:

1. Establish a project coordination group for operational ownership and deployment
2. Identify the interfaces and interdependencies between the various government bodies that will be required
3. Legislative review of required laws and proclamations required
4. Cost out the infrastructure requirements and allocate budgets to the relevant departments
5. Initiate communications plan to inform and engage all relevant stakeholders