



DATA ISLANDS

DIASCA Virtual Learning Series

Session 1

Your co-facilitators



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Recording notice

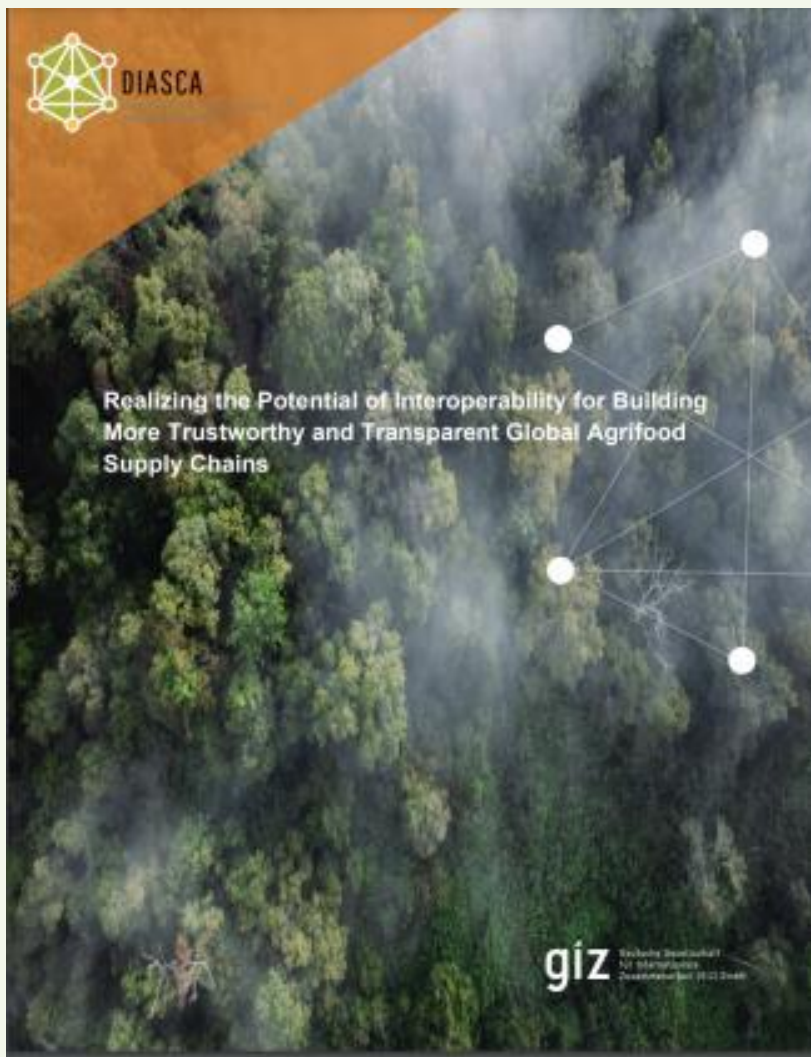
This series will be recorded



Leveraging the DIASCA Brain Trust (Brian)

Type of Organization
Role within the Organization

Traceability & Governance Workgroup: Phase 1 Report (Brian)







The DIASCA Virtual Learning Series (Brian)

How can the agri-food sector build shared infrastructure and services for more trustworthy supply chains?

We examine public, private, and public-private approaches to pre-competitive collaboration.

Four threads connect the series, across five sessions: supply chain integrity, mediation and co-design, shared infrastructure, and governance.



Five sessions (John)

1 Data Islands

Triggers and incentives for collaboration

2 From Mapping to Mandate

Shared interests and a mandate to act

3 A Reference Architecture of Trust

Systems for trustworthy supply chains

4 Governing the Commons

Governance that can take root and mature

5 Ecosystems for Scale

Shared infrastructure at sector and system scale



Today's agenda (Brian)

1 Welcome & framing

The data-islands problem and the series arc

2 Telecom inflection points

Russell Southwood

3 Pre-competitive collaboration in pharma

Stew Stremel & Megan Toon

4 The game-theoretic case

Federico Ceballos

5 Moderated discussion

Chipu Mupure

6 Close

Common patterns and the bridge to Session 2



Session 1: Data Islands (Brian)

Does anything other than regulation move a sector to build shared infrastructure?

Perspectives from telecommunications, pharma, and research on repeated interaction among industry actors.

Our aim: identify common triggers, levers, and incentives for pre-competitive collaboration.



The data-islands problem (John)

Fragmentation exacerbates information asymmetry and may undermine supply chain integrity.

Shared infrastructure and pre-competitive collaboration can help address this problem.

Government-led digital public infrastructure is one path. What other mechanisms can move sectors to act together?

Telecom inflection points



Russell Southwood

Balancing Act News Update and Consulting

Drawing on 20 years covering African telecommunications and advising many of its protagonists.

Why Private sector BuilDS CROSS-INDUSTRY STRUCTURES



- To mobilise funding a single company would not be able to (Intelsat, international fibre consortia, Airbus, bank loans, etc, research consortia)
- Open industry standard and protocols to speed implementation (Connected Vehicles Systems Alliance, Paper Flex Consortium) May be all or some players
- Competing on different layers/levels (energy pipelines, shipping - Ocean Alliance and 2M Alliance)). Share underlying physical assets while fierce competition on retail pricing
- To create a unified infrastructure for all players to interact with (SWIFT for banks, Amadeus, Sabre and Travepoint for airlines/trael)
- To build industry credibility and verification (ABC circulation, RAJAR research)

Government and regulatory Pressures



- Competition issues – Do the big ‘guys’ (with the money) benefit more from ‘planned’ markets? (access for small guys in fibre consortia)
- Quid pro quo – Public interest objectives (WIOCC fibre consortium – You get the funding, the ‘public’ gets lower wholesale prices leading to lower retail prices)
- Standard-setting abuse and lock-out (Accusations by Dyson that EU standards on vacuum cleaners did this)
- Who’s actually responsible? Conflict resolution processes? What happens in event of failure? Divorce procedures?
- The sheer complexity of private sector-Government-regulatory discussions for consortia. In telcoms case, Governments protecting state-owned telcos interests
- Cross-border issues – Regulatory fragmentation?

Public interest structures with private operating skills

- Special purpose vehicle – Consortia of participating parties (can include Government or Government bodies) usually with a lead body/managing agent (SAT3 fibre consortium, managing agent Telkom SA)
- Joint agreement consortia outlining risks, rights and profit splits without a separate entity
- Design-Build-Finance-Operate and Private Finance Initiative (Usually for physical assets)
- Many things are possible if there is a clear consensus on overall purposes

Telecom inflection points



- Standard setting. In fibre discussions, it was Open Access. Discuss. But it served a pragmatic purpose even if it was not always strictly adhered to.
- Policy objectives – Lowering prices and widening access.
- Increasing competition at a retail level. It started in 2010 and kept delivering. But this has not lasted to the present day
- Success? Overall, yes it was foundational but it was not successful in every case.

Collaboration in pharma



Stew Stremel

Lightwell LLC



Megan Toon

Program lead for Supply Chain Funders' Forum &
Verification & Traceability Initiative /
Actura Advisory

Three cases of pre-competitive collaboration in public health, from
rapid response to wider market mobilization.

Verification & traceability initiative

DIASCA & DPI

“Does anything other than regulation move a sector to build shared infrastructure?

Yes.

A crisis can start it, the economics of staying out can grow it, and governance that no single player can capture keeps it alive. Regulation is the floor, not the engine.”

A shared ambition: trusted product visibility across health supply chains

A future where every health product can be identified, verified and traced - enabled by common standards, interoperable systems and sustainable country capability.



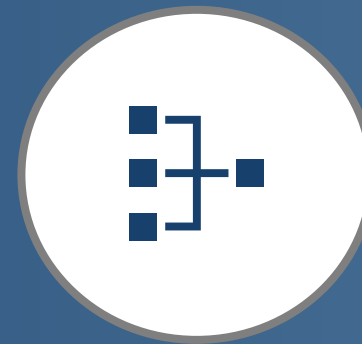
TRUST

Every product can be identified and verified



VISIBILITY

Trusted data for surveillance, recalls & decisions



INTEROPERABILITY

Systems exchange information seamlessly across actors



SUSTAINABILITY

In-country institutions, capability and financing

From Pharma to Global Health Ecosystem

The right product, in the right place, at a price and availability people can rely on.

STRATEGIC NEED



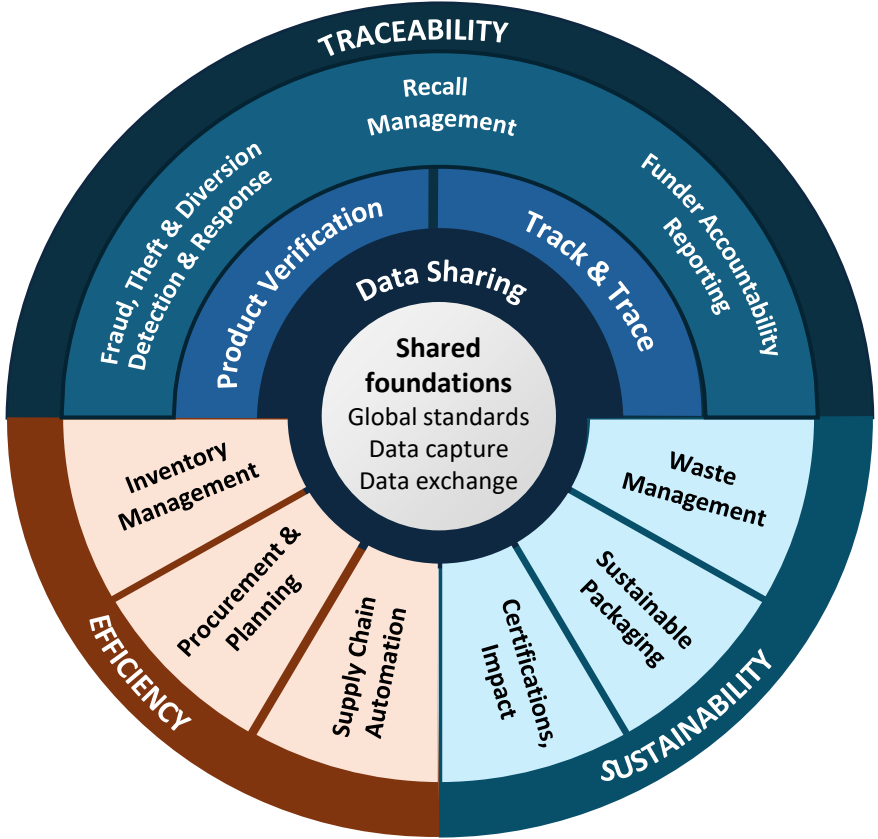
Healthy ecosystem: a range of product options, multiple manufacturers, shared quality standards, and public trust in the commodities and services.



Shared infrastructure; each of those is a shared asset no single company can build or own. That is what makes it infrastructure.



High stakes: Africa has highest rate of substandard & falsified medicines among LMICs (18.7%) & imports c. 70% products*. Trust in the product a public good.



** pooled studies from low- and middle-income countries only. These found 13.6% of medicines substandard or falsified overall, 19.1% for antimalarials and 12.4% for antibiotics. Africa had the highest regional rate, at 18.7%.*

Case 1: Rapid response during the pandemic

A crisis is a powerful trigger, but only what you design to outlast it survives.



Trigger. COVID-19 vaccine distribution to the Global South. Urgency lowered the usual barriers: competitors, donors and regulators had a shared, visible problem and a deadline.



The design decision. It was clear early that whatever was built had to move past vaccines, and past pandemic response, to be effective. That decision produced TRVST as a tool and the VTI Community as the forum around it.



Why the forum mattered as much as the tool. The VTI Community's job is to lower the barrier to entry for stakeholders on their journey to verification and traceability, through advocacy, collaboration and education.



Evidence it outlived the crisis. Botswana adopted TRVST and is progressing toward full track-and-trace and a verification app. Ghana is moving from strategy to a TRVST pilot, with its National Health Insurance Scheme at the table.

Case 2: Scaling through sustained engagement

Scale can come from making the next step cheap and obvious for every country, not from a mandate.



The mandate exists, but it's soft law. AU Health Ministers called for traceability, serialization and track-and-trace in August 2024. The resulting Continental Plan against substandard and falsified products is deliberately non-binding, and traceability appears in its ~100-activity matrix exactly once, with no timeline and no standard named. A mandate **without technical substance doesn't move a market.**



What sustained engagement supplied instead: a shared ladder any country can climb.

- A readiness benchmark across all 54 AU member states: 28 indicators in 6 categories.
- A self-assessment a national team completes in 30–45 minutes, which scores its capability tier and stakeholder cohesion.
- A policy starter kit with a 25-article draft national regulation, drawn from 12 precedents including Nigeria, Rwanda, Ethiopia, Zambia, Zimbabwe, South Africa and Kenya.



Why it works pre-competitively. Everyone uses the same public standards (GS1 identifiers& event data), so manufacturers build once and comply in many markets. Harmonization is the value proposition for industry: country engagement found manufacturers asking for regional collaboration to reduce market fragmentation.

What pulls and keeps competitors at the table

Competitors share infrastructure when not joining costs more than joining, or when joining opens a market they can't reach alone.

Lever	How it works	Example from the cases
Cost of staying out	Going alone costs more than using the shared rails	SWIFT and Visa; pooled buying 13–20% cheaper
Market access	One compliance effort opens many markets	Shared GS1 standards; one certification for multiple registrations
Payment tied to proof	Getting paid requires the shared data	Turkey's reimbursement against verified serials
Payment credibility	Suppliers engage where they trust they'll be paid	Payment guarantees and backstop funds in the RH scenarios
Returned value	Contributors get more out than they put in	Benchmarks and price comparisons countries can act on
An exclusive on-ramp	Participation is the only route to something valuable	Lowest tiered price, priority allocation, prequalified supply

What drives wedges

Shared infrastructure fails by governance, rarely technology. It must not depend on the goodwill of its strongest participant.

Lever	How it works
The tragedy of the commons	- Shared infrastructure gets overused, underfunded & degraded because everyone benefits & no one is responsible. - The draft DPI-for-health reference architecture (out for public comment): stating principles doesn't secure them; "a principle does not fund the infrastructure, give underserved groups a place in governance, or cap anyone's usage."
Capture by the strongest player	Visa and SWIFT hold because members own the rules together. SWIFT also carries the warning: where one jurisdiction has enough leverage, neutrality can be revoked.
Data sovereignty & value capture	- Governments increasingly treat health and supply chain data as a national asset. They disengage from infrastructure that turns their data into value captured somewhere else. - In a DPI setting, the terms of use have to be agreed before the first record is shared: who can use the data and for what, where it is held, which secondary and AI uses are allowed, and who benefits from the analytics built on top.
Boom-and-bust funding	Donor-funded point solutions constrain operating costs, are abandoned, and then rebuilt. A "free" subsidized tool can undercut local innovation. Separating build from run, and planning a donor off-ramp, keeps the commons alive.
Accidental adversaries and the graduation paradox	Partners whose missions align can end up competing for the same volume and country relationships. And a pool that builds country capability shrinks as countries graduate. Name these openly in the governance, early.



Thank you!

The game-theoretic case



Federico Ceballos

Alliance Bioversity International-CIAT

A game theoretic frame for industry collaboration

COORDINATION FAILURE

The problem: everyone benefits from cooperation, but nobody wants to move first

Two coffee-sector actors deciding whether to join a shared digital infrastructure

	B: Participate	B: Stay outside
A: Participate	4, 4	1, 5
A: Stay outside	5, 1	2, 2

☐ Collectively better ☒ Nash equilibrium (actual outcome)

For **A**: if B participates, **5** beats **4** — stay outside. If B stays outside, **2** beats **1** — stay outside.

Staying outside is the individually rational strategy for A — and for B.

Nash equilibrium: both stay outside → **(2, 2)**.
Collectively better: both participate → **(4, 4)**.

The problem is not that cooperation has no value — it is that each actor has an incentive to wait for others to move first.

A Stackelberg framework for precompetitive collaboration — digital infrastructure in the Honduran coffee sector

THE STACKELBERG MECHANISM

The Stackelberg solution: change the sequence of the game

The infrastructure initiative moves first and changes the conditions under which followers decide.

What moving first can look like

- Subsidize integration & tech costs
- Cover compliance & traceability setup
- Guarantee market access for early joiners
- Cost-share certification during the pilot

Before leader support

	B: Participate	B: Stay outside
A: Participate	4, 4	1, 5
A: Stay outside	5, 1	2, 2

After: leader lowers A's cost by 2

	B: Participate	B: Stay outside
A: Participate	6, 4	3, 5
A: Stay outside	5, 1	2, 2

A's best response to Participate rises from 1–4 to 3–6 — now Participate beats Stay outside either way. The leader has not forced this; it has changed the payoff structure.

SEQUENTIAL ADOPTION DYNAMICS

Early adopters change the payoff of the next actor

Exporter A → Cooperative B → Exporter C — A joins first because the leader lowered its initial cost

Network benefit — B can now interact with an existing participant.

B's decision, given A

	A: Participate	A: Stay outside
B: Participate	5, 6	2, 2
B: Stay outside	3, 3	3, 2

Endorsement benefit — B sees that participation is feasible and credible.

C's decision, given B

	B: Participate	B: Stay outside
C: Participate	7, 5	2, 2
C: Stay outside	3, 3	3, 3

Each cell reads (mover, predecessor). The tinted cell is what each actor now gets by joining; the outlined cell is the original (2, 2) coordination-failure baseline from slide 1.



Positive feedback loop — the first adoption is difficult; each next one is easier, because participation itself creates value and information. This is not automatic — it holds only if the network and endorsement effects are strong enough.

PRECOMPETITIVE COLLABORATION

The game changes: cooperation can become the best individual strategy

Before — one-shot Prisoner's Dilemma

	Participate	Stay outside
Participate	4, 4	1, 5
Stay outside	5, 1	2, 2

Result: both stay outside — each actor individually prefers to defect.

Decision after critical mass

Participate: 7

Stay outside: 3

→ *Participate becomes the rational choice*

Coordination failure → Strategic investment → Early adoption → Endorsement & network effects → Critical mass → Participation attractive

The Stackelberg framework explains how a leader can change the sequence and payoff structure so cooperation becomes progressively more attractive. For Honduran coffee infrastructure, the goal is not universal cooperation from day one — it is a credible first group of participants that changes the incentives for those who hesitate.

"Dominant strategy" applies only if participation yields a higher payoff regardless of what the other actor does — not merely after the payoff structure changes.

After — sequential Stackelberg coordination

Leader invests → A joins

B observes A → B joins

C observes A + B → C joins

Participation becomes the sector norm

Moderated discussion



Chipu Mupure

COO, Spark Health Africa
Technical Advisor, Verification and Traceability Initiative

What common patterns emerge across the sectors examined?



Closing reflections

Central question: is there a shared set of factors that may move industries toward pre-competitive collaboration?

Which triggers, levers, and incentives appear across the examples?

Which could help an agri-food sector begin to collaborate?

What characterizes an enabling regulatory environment for digital infrastructures in the public interest?

If pre-competitive collaboration is the most efficient strategy, but it is not happening, what actions can change the game so that incentives to collaborate become stronger?

Next: From Mapping to Mandate

Session 2 asks: How do we harness shared interests and turn them into action?

We examine ecosystem mapping, group mediation, prototyping and co-design, and how to begin to build governance from the ground up.



Thank you!

SASI – Sustainable Agricultural Supply Chains Initiative by



On behalf of

