COCOA DATA AWARENESS

When Cocoa Data Is Gold - and When It Becomes Dust

An evidence-backed research paper for CocoaRadar

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Executive Argument

Ahead of the 2025 European Cocoa Association Forum, Christian Vollers, managing director of Vollers Group, told CocoaRadar that cocoa data could be 'gold or dust'.[1] He repeated the point at the conference: for years, data had been used more to criticise than to collaborate. He called for an industry-wide data consortium and open standards because AI and real-time traceability cannot deliver trustworthy insight from fragmented, incompatible datasets.

That observation is the central issue in cocoa intelligence. The sector does not lack data. It has prices from exchanges, crop estimates from governments and analysts, quarterly grinding reports, certified-stock data, shipping and customs records, farm polygons, certification records, satellite imagery and company sustainability dashboards. Its persistent problem is that the data is unevenly owned, inconsistently defined, selectively disclosed and often presented without enough information to test the claim behind it.

Data becomes gold when it is traceable to a source, accompanied by its methodology and limitations, comparable across time and geographies, and challengeable by parties without a commercial stake in the conclusion. It becomes dust when the owner controls the definition, selection, denominator, timing or public narrative, leaving the reader unable to reconstruct the underlying reality.

The opportunity for the CocoaRadar Intelligence Engine (CRIE) is not to claim that it can replace primary data. It is to make primary data legible: identify its provenance, reconcile competing measurements, preserve revisions, expose methodological differences and distinguish independently verifiable facts from stakeholder claims.

1. Market Prices: A Real Benchmark, but Not the Whole Price

Cocoa futures prices are visible, timely and highly influential. They are also routinely mistaken for the price of physical cocoa received by farmers or paid by manufacturers.

The ICCO daily price is a constructed benchmark: it averages quotations for the nearest three active futures months in London and New York at the London close. It is therefore a useful indicator of international futures-market conditions, rather than a direct observation of a particular farmer's sale or a universal physical-bean price.[2]

The difference matters. Physical cocoa pricing includes origin basis, quality, freight, financing, certification premiums, taxes, LID payments where applicable and the timing of contracts. A futures rally can coexist with a previously fixed farmgate price; conversely, a futures decline may not immediately reach a producer under a regulated marketing system.

The data risk is not that an exchange price is inherently unreliable. The risk is framing:

- A headline may present futures as 'the cocoa price', obscuring basis and farmer-price effects.
- A daily price can be selected from an unusually volatile period to support a bullish or bearish story.
- Different contract months, currencies and exchange locations can be compared without normalising them.
- Market participants with proprietary physical positions can have a richer view of availability than a public reader looking only at futures.

There is also a documented regulatory reason to avoid treating market data as self-validating. In 2015, the US Commodity Futures Trading Commission fined Olam International and Olam Americas $3 million after finding that their cocoa-futures accounts were not independently controlled, positions exceeded the applicable spot-month limit and required disclosures did not state the lack of independent control.[3] This is not evidence that cocoa pricing is generally manipulated; it is evidence that ownership, control and disclosure can materially affect the interpretation of cocoa-market data.

An independent intelligence product should display the benchmark, but always label what it is: exchange-derived futures information, not a complete physical-market or farm-income measure.

2. Stocks: The Most Powerful Number May Be the Least Complete

Stocks are central to cocoa narratives because stock-to-grindings ratios are commonly used as a shorthand for market tightness. Yet 'stocks' can mean very different things:

- **Exchange-certified stocks:** inventories eligible for delivery against a futures contract.
- **Warehouse inventories:** stock held in particular locations, which may not be deliverable.
- **Port or origin stocks:** beans accumulated before export or processing.
- **Processor and manufacturer inventories:** commercially sensitive holdings, generally not public.
- **Estimated global end-season stocks:** a residual calculation based on supply and demand estimates.

ICE makes certified stocks, warehouse inventories, gradings, receipts, warrants and delivery activity available through its data services.[4] These are valuable observations, but they represent the exchange system, not all cocoa in commercial storage. A fall in certified stocks may signal tight deliverable supply, a change in financing incentives, a quality issue, movement to non-certified storage or delivery decisions. It does not automatically establish a fall in world stocks.

This is where 'dust' can be created by category error. A data owner or commentator can use a narrow but vivid inventory measure as evidence for a broad claim about global scarcity without showing the unobserved inventories or explaining the definition.

CRIE should report stock data in layers: certified exchange stocks; known warehouse stocks; estimated global stocks; and an explicit 'not observable' category for private inventory. It should avoid treating one series as a total-market census.

3. Grindings: A Valuable Demand Proxy, Not Consumption Itself

Quarterly grindings are among the most watched cocoa data releases because they give a timely view of industrial bean processing in Europe, North America and Asia. They matter, but they are not retail chocolate consumption.

Grindings measure beans processed. They can rise because processors are replenishing semi-finished product inventories, shifting processing geographically or responding to margins and capacity, not only because

consumers are eating more chocolate. They can fall even when retail demand is resilient if processors destock, reduce utilisation or face weak processing economics.

The ICCO itself treats production and grindings as statistical series gathered through multiple channels. Its public methodology says data is collected primarily through questionnaires to ministries, trade ministries and cocoa organisations, supplemented by libraries, internet sources, trade organisations, specialist institutions and news agencies.[5] That is a serious, necessary statistical process, but it is not a real-time global audit.

The appropriate interpretation is therefore probabilistic: grinding data is strong evidence about processing activity in the reporting region and period. It is weaker evidence about final consumer demand and still weaker evidence about global chocolate consumption.

4. Supply and Demand: Estimates Become Dangerous When Their Uncertainty Disappears

The global cocoa balance is usually expressed as:

Production + beginning stocks - grindings/consumption = end stocks

This equation is indispensable, but every component contains assumptions. Production is affected by farmgate reporting quality, crop disease, weather, smuggling, informal trade, harvest timing and the conversion from pod or purchase data to exportable-bean estimates. Demand is inferred through grindings, trade and product-market assumptions. Stocks are often the residual.

ICCO's *Quarterly Bulletin of Cocoa Statistics* covers production, grindings, stocks, prices and trade and is published quarterly.[6] The bulletin's data is an essential reference point, but users should retain historical vintages. A revised estimate is not necessarily poor data; it is evidence that the first estimate was uncertain. Misuse occurs when an outdated forecast is repeated as settled fact or a single revision is presented as proof of intentional distortion without examining the underlying methodology.

A sound independent dashboard should therefore show:

- Publication date and cocoa-year coverage.
- Forecast versus estimate versus final figure.
- Original release and later revisions.
- Source hierarchy: official origin source, intergovernmental compilation, exchange data, company disclosure or analyst estimate.
- A range or confidence flag where estimates materially diverge.

That preserves the information contained in disagreement. If several reputable sources see different crop sizes, the difference is itself market intelligence.

5. Differentials: The Information Most Relevant to Physical Trade Is Often Least Transparent

Differentials convert a futures reference price into a physical trading price. They capture origin, quality, availability, freight, financing, certification, delivery timing and buyer-seller bargaining power. Yet many physical differentials are private contractual information.

This creates an asymmetry: major traders, processors and origin institutions may know contemporaneous physical-market conditions much better than public-market participants. A public futures chart can look transparent while the economically decisive price information remains proprietary.

The Living Income Differential illustrates why definitions and pass-through matter. Côte d'Ivoire and Ghana introduced the LID in 2019 to use collective market power to raise the value and price accruing to farmers.[7] The headline amount may be public, but the effective farmer outcome depends on the farmgate price-setting system, quality adjustments, taxes, marketing-board economics, contract terms and whether other premiums or differentials are reduced, absorbed or restructured.

The data misuse risk is to equate a published premium with a verified farmer-income gain. CRIE should distinguish:

1. Announced differential.
2. Contractual differential.
3. Exporter or buyer payment.
4. Government or cooperative allocation.
5. Verified farm-level receipt.
6. Change in household income.

These are not interchangeable data points.

6. Sustainability Data: Abundance of Claims, Shortage of Comparability

Sustainability is now the cocoa sector's largest data-collection exercise: farmer registries, GPS points and polygons, household surveys, certification databases, child-labour monitoring, deforestation alerts, agroforestry metrics and carbon calculations. The problem is not simply missing information. It is that company-managed systems can use distinct scopes, standards, dates, sampling rules and definitions.

The World Cocoa Foundation and the Alliance of Bioversity International and CIAT have explicitly argued for standardised environmental monitoring because commonly referenced maps require quality assessment if they are to become transparent and comparable.[8] The need for such work is itself evidence that 'mapped', 'traceable', 'deforestation-free' and 'sustainable' cannot automatically be compared across programmes.

Corporate reports can be informative while remaining owner-defined. For example, Barry Callebaut's published criteria show that its 'certified or verified' cocoa category can include external schemes alongside company programmes; some products qualify at a traceability level of at least mass balance; cut-off dates vary

by sourcing entity; and selected KPIs receive external *limited assurance*.[9] None of this means the data is false. It means that the metric must be read with its scope, calculation rules and assurance level.

The distinction is critical:

Statement	What It Proves	What It Does Not Necessarily Prove
'Farm mapped'	A location record or polygon exists	Full chain-of-custody traceability or legal compliance
'Traceable to first purchase'	The first commercial link is known	That every later blend can be identified physically
'Certified/verified'	A stated programme or standard applies	A uniform sustainability outcome across all farms
'No deforestation detected'	No breach was detected under a stated method	No deforestation occurred, unless coverage and method support that conclusion
'Farmer reached'	A service, survey or intervention occurred	A living-income or productivity outcome

Independent investigation shows why this discipline is necessary. An Associated Press investigation reported that one verifier assessed a sample of farms against the buyer's own sustainability policies; the verifier said the specific criteria and protocols were set by that buyer and did not disclose the results publicly.[10] This does not invalidate all certification or verification. It demonstrates that 'independently verified' is not a sufficient description without asking: independent from whom, against which protocol, using which sample and with what public evidence?

Traceability gaps remain material. Trase reported that a lack of disclosure from companies about their indirect sources limits visibility and makes risk assessment harder, even as EUDR preparations improve traceability.[11]

7. How Data Can Be Manipulated Without Changing a Number

Manipulation need not mean falsification. The more common risk is 'interpretive manipulation': presenting a technically correct number in a way that produces an unsupported conclusion.

Common mechanisms include:

- **Changing the denominator:** reporting the percentage of a programme's supply rather than total corporate cocoa supply.
- **Changing the scope:** measuring direct suppliers while omitting indirect supply.
- **Choosing the cut-off date:** claiming progress based on contracts, invoices, delivery or payment dates, each of which can produce a different result.
- **Selecting a favourable baseline or comparison period.**
- **Reporting activity as outcome:** hectares mapped, farmers trained or children screened are not the same as forests protected, incomes improved or labour risks remediated.
- **Using opaque composite estimates:** presenting a single crop number without showing original sources, revision history or uncertainty.
- **Conflating categories:** treating certified exchange stocks as all inventories, futures as farmgate prices, grindings as final demand or certification as verified impact.

- **Using limited assurance as though it were a full audit of every underlying claim.**
- **Restricting access to underlying farm, supplier or methodology data:** making claims impossible to test independently.

This is why data ownership matters. A company can be the best-informed party about its supply chain and still be an interested party in the public presentation of that information. Independence does not require hostility towards company data; it requires preserving the distinction between disclosed evidence, verified evidence and unverified assertion.

Conclusion: What Turns Cocoa Data Into Intelligence

Cocoa data should not be treated as either inherently trustworthy or inherently compromised. It is an asset with a provenance problem.

The sector needs more data collaboration, but collaboration without governance can simply centralise private control. The better model is a layered evidence system:

- Preserve primary sources rather than overwrite them.
- Show methods, definitions, coverage and update date.
- Retain revisions and explain why figures changed.
- Separate independently sourced data from owner-reported data.
- Compare claims with external sources, including exchange records, customs data, satellite analysis, public registries, academic research and investigative reporting.
- Label what is observed, estimated, modelled and asserted.
- Make uncertainty visible rather than burying it.

That is the case for CRIE. Its authority should rest not on claiming omniscience, but on methodological transparency: every chart should answer where the number came from, who owns it, what it measures, what it excludes, whether it has been independently verified and what competing evidence says.

In cocoa, data becomes gold when it can be challenged. When it cannot, it is too easily treated as dust or used to throw dust in the reader’s eyes.

Notes

1 CocoaRadar, 'Preview: European Cocoa Association Forum 2025', 15 September 2025.

2 International Cocoa Organization, 'Statistics: Cocoa Daily Prices', accessed 24 August 2026.

3 US Commodity Futures Trading Commission, 'CFTC Imposes $3 Million Penalty Against Olam International, Ltd. and Olam Americas, Inc. for Violating Cocoa Position Limits and Unlawfully Executing Noncompetitive Trades', press release 7104-15, 20 January 2015.

4 Intercontinental Exchange, 'ICE Fundamentals - Commodities & Energy', accessed 24 August 2026.

5 International Cocoa Organization, 'Data on Production and Grindings of Cocoa Beans', 2025 archive, accessed 24 August 2026.

6 International Cocoa Organization, 'Quarterly Bulletin of Cocoa Statistics', accessed 24 August 2026.

7 Ole Boysen, Emanuele Ferrari, Norbert Nechifor and Patrick Tillie, 'Impacts of the Cocoa Living Income Differential Policy in Ghana and Côte d'Ivoire', European Commission Joint Research Centre, Publications Office of the European Union, 3 September 2021, doi:10.2760/984346.

8 World Cocoa Foundation, 'Speaking the Same Language: How Standardised Data Can Transform Cocoa Sustainability', 25 April 2025.

9 Barry Callebaut, 'Forever Chocolate 2022/23: Independent Limited Assurance Report and Reporting Criteria', including PricewaterhouseCoopers LLP's assurance report, 23 November 2023.

10 Taiwo Adebayo, 'Takeaways on AP's Investigation Into Cocoa Coming From a Protected Nigerian Rainforest', Associated Press, 20 December 2023.

11 Trase, 'Gaps in Tracing and Disclosure Hide Supply-Chain Risks in 52% of Ivorian Cocoa', 13 May 2026.