

Cattle Traceability and Monitoring in Brazil

Key considerations for complementary private and public sector action



November 2023

1 - Summary

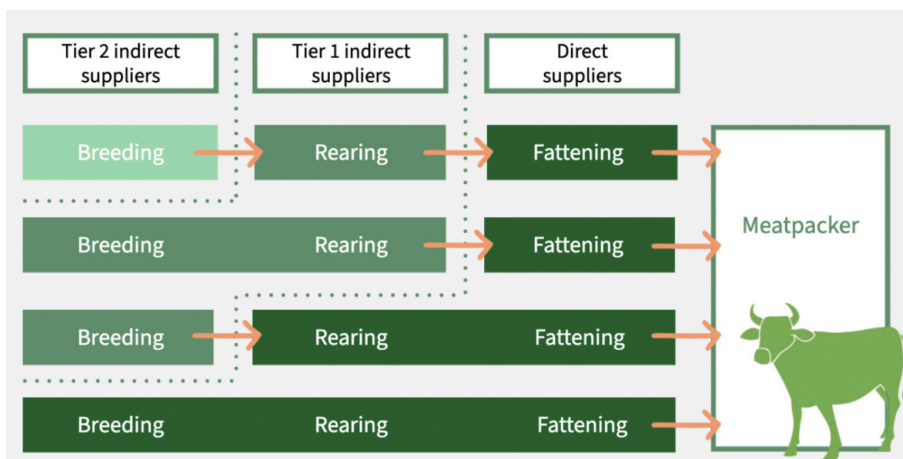
Expanding traceability and monitoring of cattle to indirect suppliers incurs a number of challenges, because of the expansive, variable network of suppliers, and large proportion of slaughter volume that must be regularized in order to make compliant sourcing feasible. While the animal transit document (GTA) is widely acknowledged as the best current option for expanding monitoring to indirect suppliers at scale, the implications of a batch-level system must be considered for any system to be effectively implemented. Most notably:

- Private sector and government systems and efforts are complementary and have the same purpose; to help the beef and leather production chains overcome challenges, and comply with legislation and with voluntary commitments and sustainability goals. Both will be more effective by collaborating on shared goals;
- Batch-level (GTA-based) and individual ID traceability initiatives are complementary solutions; GTA-based systems can be rapidly deployed at scale and can assist the private sector in both the selection of priority ranches for the adoption of individual ID systems, and government in the selection of priority municipalities and regions to develop regularization plans;
- If GTA-based traceability is applied to all possible transactions in the lifespan of cattle, up to 5 tiers of indirect suppliers, the average direct supplier can be connected to thousands of ranches but only actually receive animals from a small proportion of these. Meatpackers would not be able to make meaningful decisions about this large number of properties connected to a single direct supplier; therefore a more targeted approach would be more effective and appropriate for using the GTA to reduce non-compliance with legal and market demands.
- Use of the GTA to expand monitoring to Tier 1 indirect suppliers incorporates over 95% of remaining forest, because the vast majority of indirect suppliers are a Tier 1 supplier to at least one meatpacker.
- Because any non-compliant ranch in a supply chain contaminates all the ranches it sells to, the majority of slaughter volume reaching meatpackers is currently non-compliant with legal and market demands. Therefore, in order to ensure it is feasible for meatpackers to implement these demands, there is a pressing need to accelerate and expand regularization efforts, so that sufficient compliant slaughter volume becomes available. This effort will be most effective if focused on the 1% of indirect suppliers serving as 'contaminators' responsible for almost half the non-compliant slaughter volume.

2 - The Cattle supply-chain in Brazil

Similar to cattle production in many countries, in Brazil most cattle are produced on more than one ranch.

The animal life cycle is typically divided into three phases: breeding (from birth to weaning), rearing (growth phase), and fattening (weight gain and carcass finishing), lasting approximately 24 to 36 months, and often, ranches are specialized in one or two of these phases.

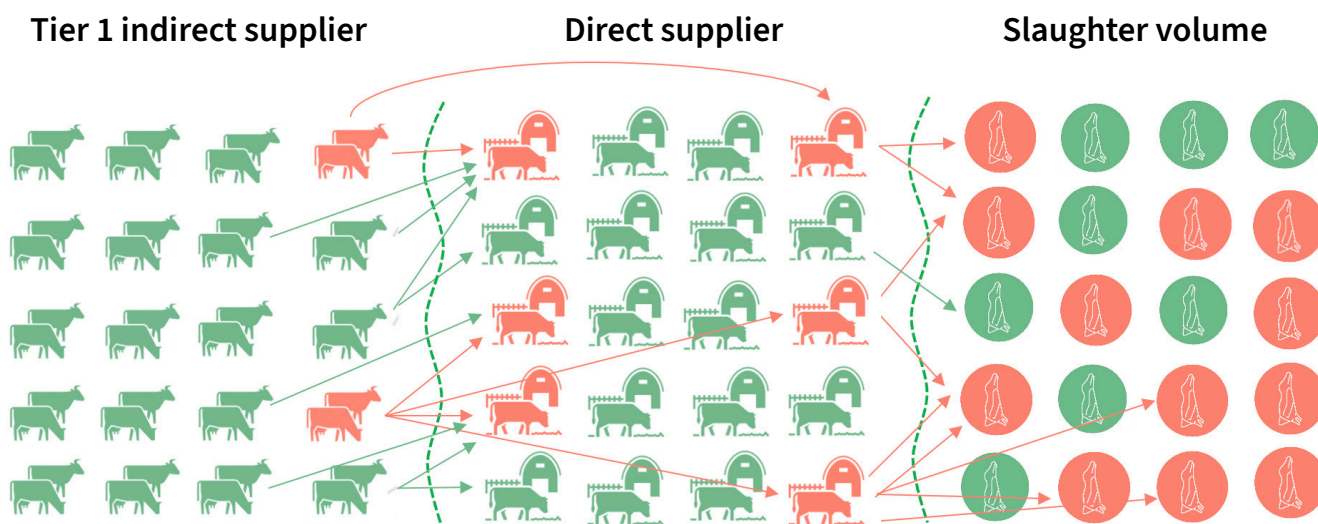


This explains why, from a meatpacker perspective, there are direct supplying–ranches (selling fattened cattle to them) and indirect supplying–ranches (are part of the production chain but do not have commercial relationships with them).

In the Cattle Agreements (multi-stakeholder platforms¹, and agreements between meatpackers and federal prosecutors, see below), meatpackers are responsible for socio-environmental monitoring of the production chain. Therefore, it is essential that any effective systems for monitoring and traceability analyze the supply chain production from a meatpacker perspective.

The GTFI has been analyzing the non-compliant slaughter volume and identified that, in Pará state, 9% of non-compliant indirect suppliers were ‘contaminating’ the majority of slaughter volume- and just 1% of indirect suppliers are responsible for half this non-compliant volume. The figure below demonstrates how a small proportion of non-compliant indirect suppliers can result in a high non-compliant slaughter volume.

Indirect Suppliers- few can contaminate large volumes



Therefore, regularization to ensure sufficient compliant slaughter volume is possible with a targeted effort driven by GTA-CAR analysis that identifies the priority indirect suppliers, who either sell to many direct suppliers, or sell to ‘high volume suppliers’ that sell a large slaughter volume to meatpackers. Moreover, the non-compliant ranches are clustered in just a few municipalities, and therefore regularization efforts can begin by focusing on priority indirect suppliers in high risk municipalities, and deliver rapid results.

3 - Why it is important to include indirect suppliers

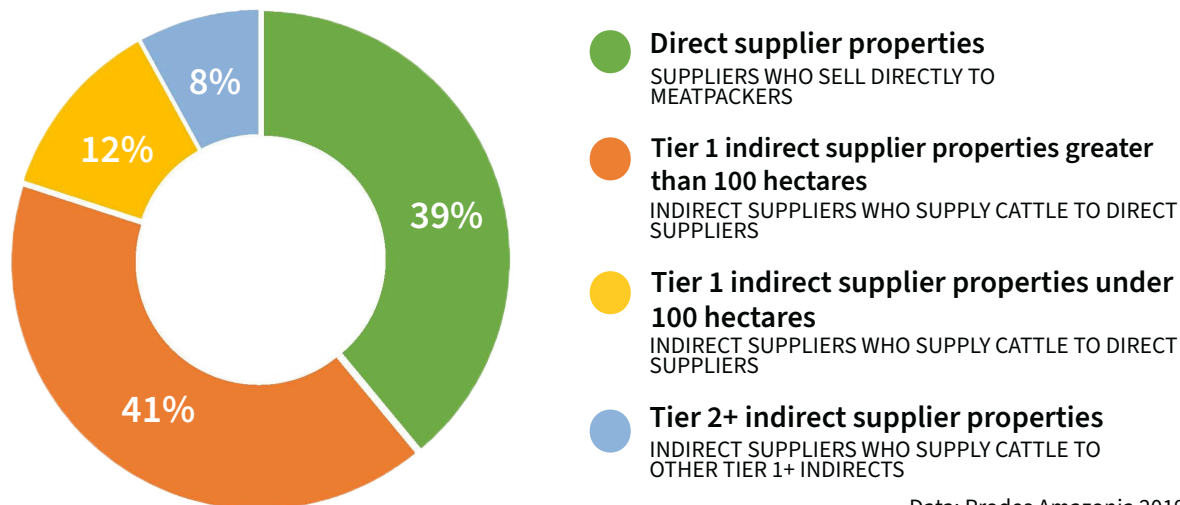
The results in the audits of meatpacker implementation of the TAC Agreements², conducted by Federal Prosecutors (MPFs), shows an important evolution towards the construction of a sustainable supply chain. Nevertheless, the monitoring systems meatpackers have currently in place, working at a large scale, can only monitor their direct-supplying ranches, as they do not have the necessary information about their indirect ranches.

¹ Beef on Track, the Cerrado Protocol and the Brazilian Indirect Suppliers’ Working Group

² Terms of Adjustment of Conduct, signed between meatpacking companies and Brazilian Federal Prosecutors MPF, in Amazon Global Land Use and Environmental Lab, University of Wisconsin – Madison <https://gibbs-lab.wisc.edu/>

However, according to GLUE UW – Madison³/ NWF data and analysis, nowadays, meatpackers' indirect suppliers are responsible for more than 60% of the cattle-related deforestation in Amazon.

Origin of cattle-related deforestation in Pará, Brazil



Data: Prodes Amazonia 2019-2021 - Pará State
Source: University of Wisconsin-Madison

*considering the highly complex dynamics of the cattle supply chain, the data refers to the highest level occupied by a supplier between 2019 - 2021

Therefore, to address cattle-related deforestation it is necessary to have a system that encompasses indirect-supplying ranches and that enables meatpackers to monitor their social-environmental compliance in the same way as they do with direct-supplying ranches.

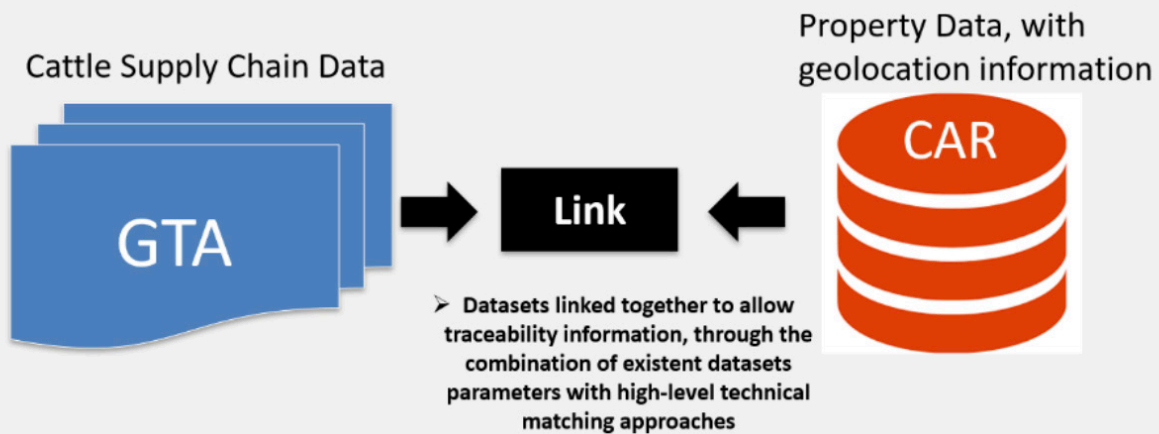
4 - How to monitor indirect ranches

As meatpackers do not have a database available that provides the necessary information about the relationships beyond their direct suppliers, they require additional data in order to trace their indirect suppliers. Currently, many stakeholders, including the Brazilian Government, are discussing options for an Individual Animal Identification System (Animal Id), from how to identify the animals to effective information management systems. But considering the herd-size and its coverage throughout Brazil (234.4 million animals in 2022, according to IBGE), even with a concerted and accelerated effort, this will take years longer than we have to respond to new market demands. Therefore, the most efficient available option is to use public databases already in place in Brazil — the CAR - Rural Environmental Register, and GTA.

³ Global Land Use and Environmental Lab, University of Wisconsin – Madison <https://gibbs-lab.wisc.edu/>

Link Cattle Transaction & Property Data

Standardized all datasets



Both documents are obligatory for all producers in Brazil. Every rural property must have its own valid CAR, which contains property data, including boundaries and land use with geolocations. Additionally, every animal transportation must be accompanied by a GTA that, while it does not contain data about individual animals, tracks the batch from its last origin to next destination.

These two databases are currently separate and independent but, using sophisticated data techniques, it is possible to match both of them to enable spatial data to be applied to link cattle transactions between ranches. As a result, it is possible to identify the indirect-supplying ranches connected to direct suppliers, know their boundaries, and monitor their social-environmental compliance.

As these two databases already exist in Brazil, are largely adopted, and would not bring extra costs to producers, this is widely regarded as the most cost-effective and scalable option that could be adopted at biome level.

5 - How to make GTA+CAR an effective approach

There are some crucial technical prerequisites for the establishment of a traceability system that facilitates accurate, robust and efficient monitoring of socio-environmental standards for indirect suppliers.

Purpose

The primary purpose of a traceability system significantly influences its technical requirements and to enable meatpackers to monitor their indirect suppliers, the system must consider the supply chain from meatpacker's perspective.

Taking action

Any effective solution must enable meatpackers to engage non-compliant suppliers and actively help them to identify and address issues.

Traceability model

Traceability using the GTA is done by batch tracking, so it is important to note that, regardless of the chosen tool, using this database imposes limitations on how far back one batch of animals can be traced without linking to hundreds or thousands of ranches, which would make monitoring decisions unfeasible (see section 6). Given growing demand for Brazilian beef, any approach needs to ensure that it could be implemented by meatpackers without requiring them to greatly reduce their slaughter volume.

Animal life-cycle

Systems seeking to trace animals using the GTA (batch tracking) must ensure they can accurately identify the properties genuinely involved in production prior to reaching the slaughterhouse.

Property-level information

The system must be based on property-level information to reflect the same approach currently used to monitor direct suppliers and also enable the engagement and orientation of indirect suppliers.

Market rules

It is essential that the traceability system adhere to competitively neutral monitoring rules (such as cut-off date, monitored information, and data source) already agreed upon by a substantial number of stakeholders in the value chain.

Minimum transparency requirements

It is necessary that compliance results are disclosed so stakeholders can make progress as a chain and also reap the rewards of market recognition.

6 - Benefits vs limitations

Following extensive analysis of options for monitoring indirect suppliers, including assessment of millions of transaction records, the technical recommendation was to use GTA+CAR, that was included in the GTFI Good Practices⁴, which were adopted in a consensus agreement in 2019. Beyond this, the same analyses recommend tracing just one level back in the supply chain, in other words, to trace and monitor Tier 1 indirect-supplying ranches.⁵

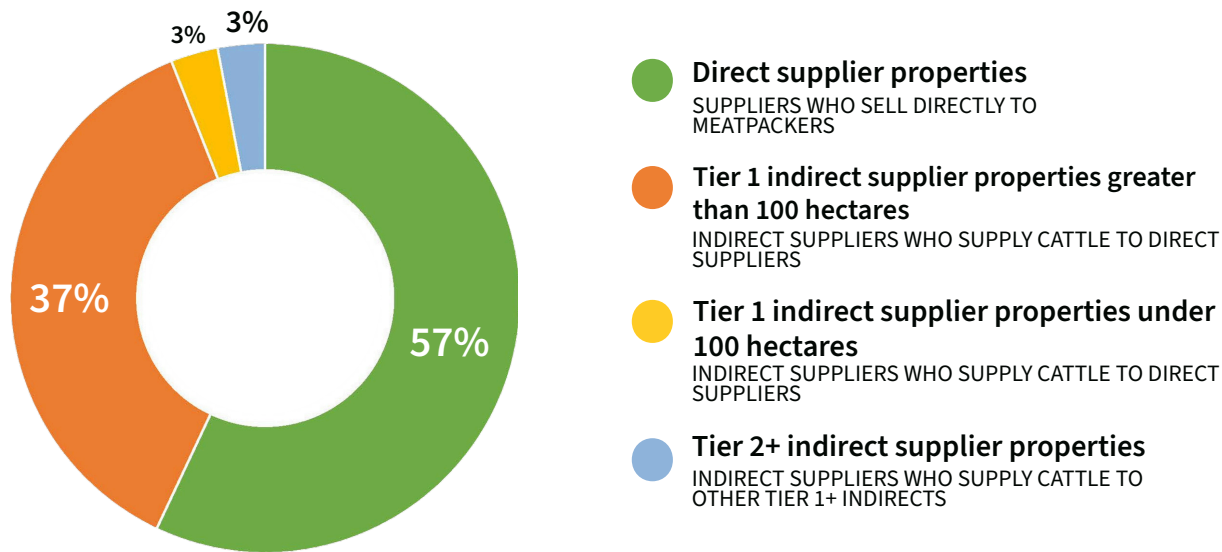
The reason for this is that meatpackers should only be responsible for ranches where there is proof of a commercial relationship with the direct supplier and supply chain analyses should be auditable.

The nature of batch-level transactions means that going two or more levels back from a direct supplier results in a high degree of uncertainty and a very large number of potential suppliers. In addition, because ranches play multiple roles in supply chains, going back to tier 1 suppliers enables meatpackers, and consequently the entire value chain, to increase visibility over the remaining forest in cattle properties from 57% to 94%.

⁴ GTFI Indirect-Suppliers Working Group – Good Practices <https://gtfi.org.br/good-practices>GTFI

⁵ Tier 1 - the first level of indirect from the perspective of the meatpacker, or the last commercial transaction between the direct and its calf supplier before selling to the meatpacker.

Remaining forests in Pará, Brazil — percentage withing properties per tier



Data: Prodes Amazonia 2019-2021 - Pará State
Source: University of Wisconsin-Madison

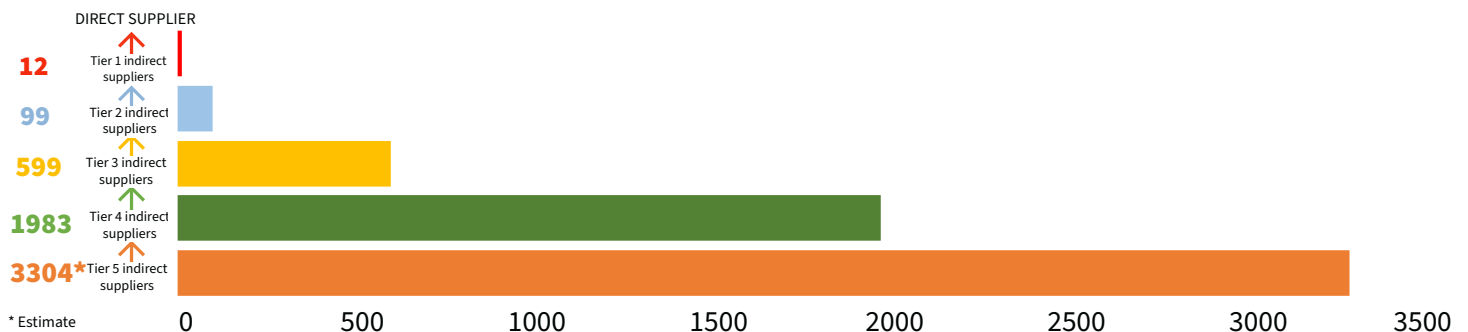
*considering the highly complex dynamics of the cattle supply chain, the data refers to the highest level occupied by a supplier between 2019 - 2021

As the traceability system moves upstream in the supply chain, the involvement of more animals and properties increases exponentially when trying to connect Tier 2 or higher indirects using the GTA approach. This is an inherent aspect of batch traceability, raising the likelihood of errors and inconsistencies. Because there are many transactions between ranches at each level, the batch-level nature of the GTA means that there is actually less than 1% probability of an animal sold by a direct supplier actually originating from any particular ranch that is Tier 2 or further back in the supply chain. Moreover, the number of ranches that can be connected to any single direct supplier is in the thousands, far too large for a meatpacker to be able to make sourcing decisions related to that single direct supplier that actually received animals from a small proportion of these ranches.

Number of distinct* properties potentially involved in the animal life cycle over 3 years (using batch traceability)

*not considering properties that appear more than once in different levels

Over 3 years of GTA transactions:



* Estimate

GTA transactions in Pará from 2016 to 2018

Existing GTA-based tools demonstrate that Tier 1 indirect suppliers can be connected and monitored for compliance with the Cattle Agreements by matching the CAR and GTA. In the individual traceability model, a management system for a new database must be developed and maintained, in addition to the associated costs and time required for implementation, and adoption by producers forming a critical mass of the national herd.

Additionally, systems utilizing existing nationally available databases such as CAR and GTA can deliver results rapidly, even if limited in impact by the availability of information. Overall, the two approaches, batch or individual ID, do not compete; on the contrary, they can be complementary bringing key, useful and actionable information to all stakeholders.

7 - Monitoring Tier 1 Indirect Suppliers Only Is Unlikely To Result In Leakage

Considering the structure of the cattle production chain and its operations, there are several reasons to believe that monitoring only tier 1 indirect supplying-ranches is unlikely to result in leakage:

- To avoid current monitoring systems (restricted to direct suppliers), producers can decide to become exclusively indirect suppliers, all they need to do is stop selling to meatpackers, and the ranch becomes an indirect supplier. But to be sure that the ranch becomes exclusively a tier 2 or higher, and avoids being a tier 1 indirect supplier, the producer must necessarily come to an agreement with those that are buying their cattle that they will no longer be able to act as direct supplier. This is much more complex and the decision is no longer in the hands of the original single producer, because all ranches they sell to would need to collude by agreeing to never sell to a meatpacker.
- Establishing an agreement between producers to make this arrangement would increase costs and make the operation much more complex, incurring: additional transport costs; animal weight loss due to transport and stress; and fiscal complications.
- In an analysis of transactions over a period of three years using batch traceability documents, it was found that only 22% of relationships between different ranches were persistent through time. In other words, in a spot market the majority had no loyalty in commercial relationships throughout that period.

8 - Monitoring and Traceability needs to be Coupled with Support for Regularization

The Cattle Agreements requires that all ranches comply with socio-environmental rules, and any individual ranch that does not comply contaminates all the ranches it sells to. Regardless of the system used for traceability, the level of non-compliance is currently too high for meatpackers to be able to apply these rules to indirect suppliers at scale without significantly reducing slaughter volume. At present, only around one third of slaughter volume complies with the Cattle Agreements if expanded to Tier 1 indirect suppliers. Given the growing demand for cattle products, it is not feasible to expect meatpackers to reduce their slaughter so substantially- therefore in order to enable meatpackers to expand their monitoring systems, it's essential to scale-up efforts to accelerate and increase support for ranches to regularize.

9 - Conclusions

NWF recognizes that an individual-ID system may be better to trace cattle through all the ranches they pass through during their lifespan and, possibly, for zootechnical, sanitary and social-environmental controls. However, social-environmental concerns continue to grow, therefore it is urgent that the value chain responds to the new market demands by demonstrating compliance beyond direct-supplying ranches. The present scenario plus the information shared above leads to the following key conclusions regarding the GTA+CAR approach:

- It is the fastest deployed and most cost-effective option available for the Brazilian beef and leather supply chains;
- This solution can also support the sector in its need to respond to new market demands while the value chain develops an individual ID system;
- It is a viable solution for meatpackers to meet MPF (Federal Prosecutors) demands to expand the current monitoring systems to encompass T1 indirect suppliers, as reaffirmed during 2023TAC Audits release;
- It provides actionable information and support for the regularization process for producers and thereby entire beef and leather value chain;
- Batch-level and individual ID must be seen as complementary solutions assisting the private sector in both the selection of priority ranches for the adoption of individual ID, and Government in the selection of priority municipalities / regions to develop regularization plans;
- It was key to developing the GTFI – Good Practices, a set of pre-competitive criteria to monitor indirect supplying-ranches that have been evolving and adopted by many stakeholders to improve monitoring systems;
- It is seen as viable approach by many stakeholder in the private sector such as Abiec⁶, who is discussing its use; the Consumer Goods Forums' Forest Positive guidance for meatpackers; and Febraban.⁷ Therefore, the most important discussion now is how to make it work;
- Regardless of the databases that are used to develop monitoring and traceability systems, they should be designed from the perspective of the final user and, wherever possible, be able to be integrated with existing systems;
- Private sector and government systems and efforts should collaborate with each other as they are complementary and have the same purpose; to help the beef and leather production chains overcome challenges, and comply with legislation and with voluntary commitments and sustainability goals;
- There is an urgent need to scale up efforts to regularize non-compliant producers, and this effort will be most effective if focused on the 1% of indirect suppliers serving as 'contaminators' identified by the GTFI.

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⁶ Abiec – Brazilian Beef Exporters Association <https://www.abiec.com.br/en/>

⁷ Febraban - Brazilian Federation of Banks <https://portal.febraban.org.br/>