Socio-environmental monitoring of the cattle sector in Brazil

The Brazilian cattle industry has developed initiatives to improve its productive efficiency and reduce the pressure on natural ecosystems, mainly through socio-environmental monitoring and control of direct cattle suppliers, and the promotion of good production practices.

Even with significant advances, there are still challenges to be overcome in order to achieve supply chains that are free of deforestation, slave labour, and other unacceptable practices. The systems implemented by the three largest Brazilian meat processors to monitor their suppliers in the Amazon were the first steps in this direction. However, currently only direct suppliers to meat processors are covered by these systems. This means that, of all the farms through which cattle passes throughout the different stages of production, only the last one is identified and monitored.

In this sense, identifying indirect suppliers of cattle to meat processors remains one of the greatest challenges to traceability. The good news is that by using existing tools, it is possible to extend the range of monitoring systems.

Key points

- Cattle traceability in Brazil is challenging as cattle might pass through many different farms between birth and slaughter – meaning there are many indirect suppliers.

- A range of tools exist to help meat processors to assess cattle suppliers against purchase requirements, including remote socio-environmental monitoring and traceability tools, like the Animal Transit Guide (GTA).

- In order to include indirect suppliers in traceability systems, the GTA should become 100% digital and more accessible to the public. It should also be integrated with other systems and linked to previous GTAs.

Complexity of the supply chain

In Brazil, beef cattle farming has three stages of production: breeding, rearing, and finishing. The three phases can be carried out on the same farm (full cycle) or on different farms (partial cycle).

In a simplified way, considering the three phases, Figure 1 shows that there are three different levels of producer visibility or the extent to which they can be reached via monitoring tools.
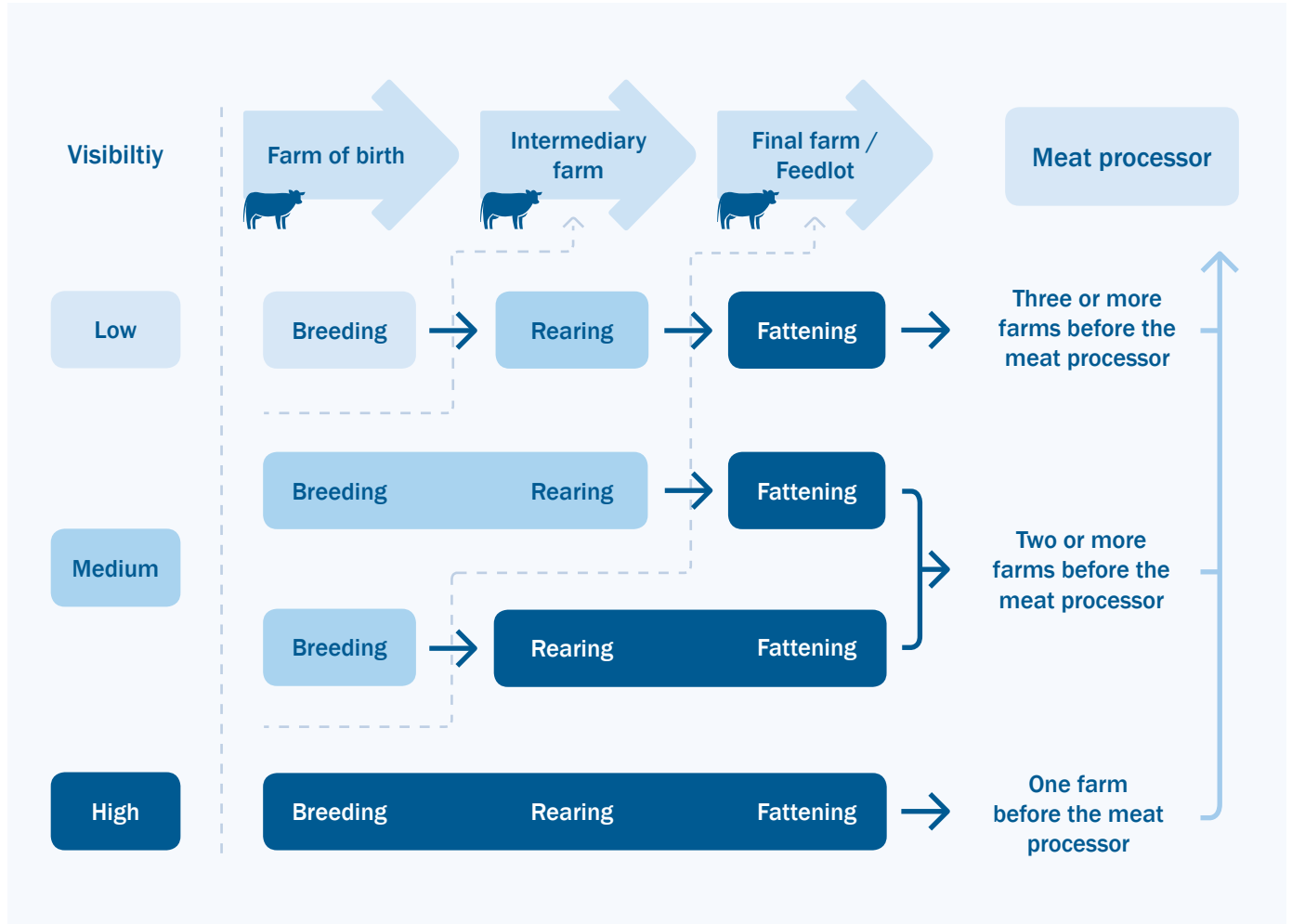

Figure 1: Stages in the production and levels of visibility originating from the meat processor

In addition to the direct purchases of calves and lean cattle from breeding and rearing farms, cattle transactions along the supply chain may involve other avenues, such as auctions, and transactions between producers using the same system, among others. In other words, for each direct supplier, there may be several indirect suppliers, as seen in Figure 2.
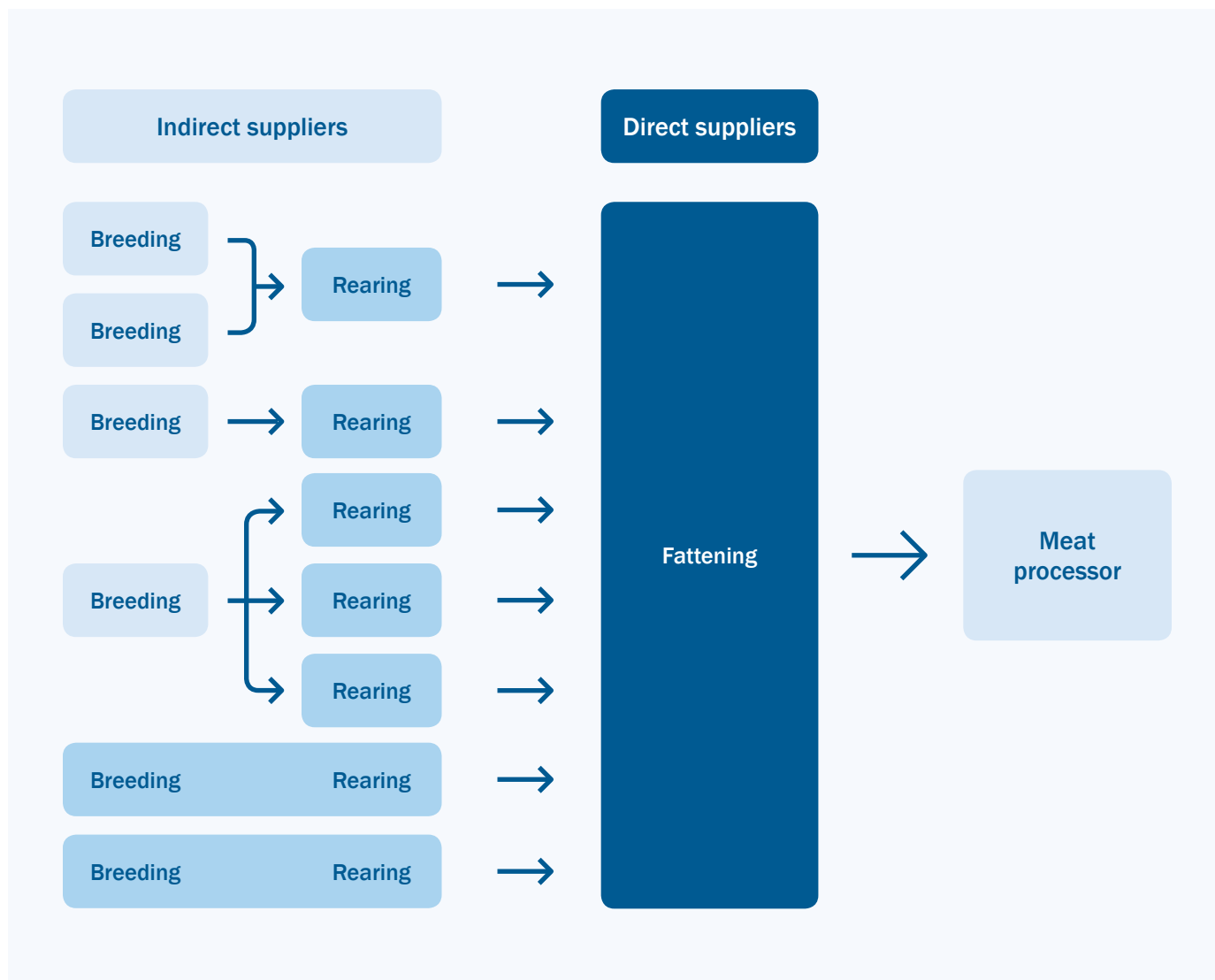

Figure 2: Example of the complexity of the supply chain: for each direct supplier, there can be many indirect suppliers.

Socio-environmental monitoring and traceability tools

In 2009, the three largest Brazilian meat processors made a commitment to the Federal Prosecutors Office and Greenpeace to monitor their suppliers in order to ensure that the cattle they purchased met a number of requirements: they did not come from deforested areas inside the Amazon, were not produced on indigenous lands or conservation units, that they came from producers that complied with the Brazilian Forest Code, and were not related to agrarian conflicts and slave labour or labour analogous to slavery.

In order to implement this commitment, these companies began to use two key approaches:

a) traceability tools – to identify and locate the farms from which the lots of cattle bought by the meat processors come; and

b) remote socio-environmental monitoring – to verify compliance with the minimum requirements for cattle purchase.

Together, these tools form a system whose goal is to block suppliers who do not meet minimum purchase criteria.
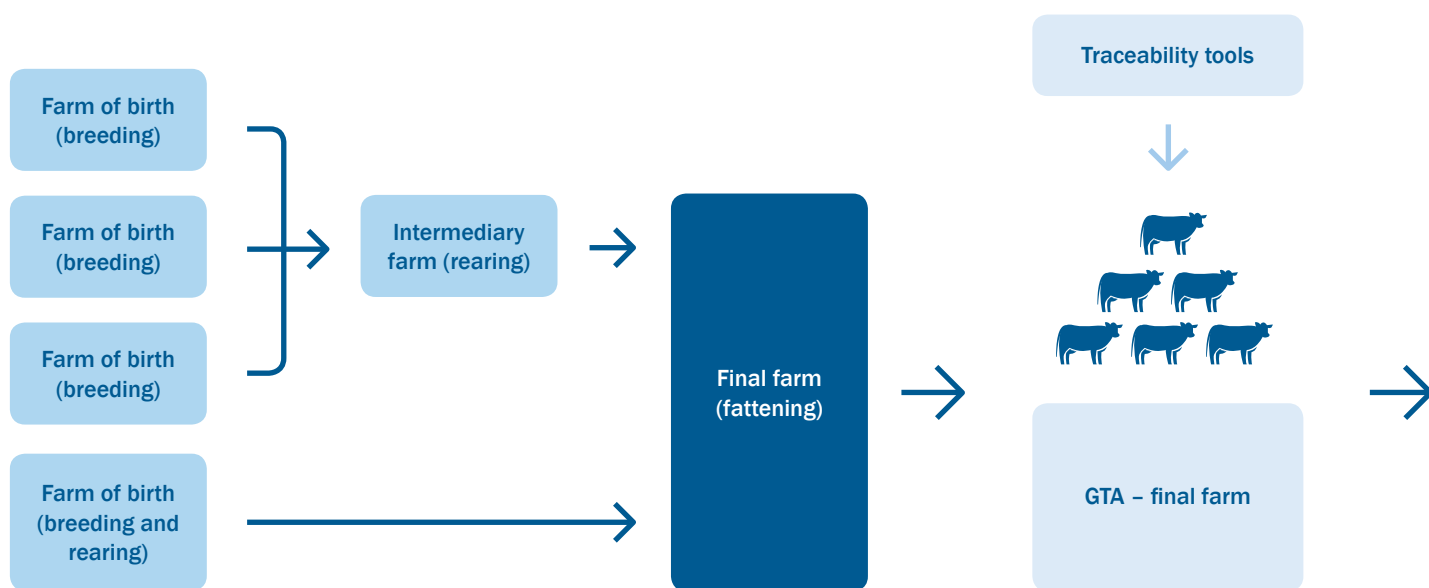
Figure 3: Scheme demonstrating how traceability and socio-environmental monitoring tools are implemented.

Sources of information for remote socio-environmental monitoring

The main sources currently used for remote socio-environmental monitoring are:

- Environmental Registry (Cadastro Ambiental Rural, CAR, in Portuguese): mandatory electronic registration of the boundaries of rural properties, which forms a database critical for the control, monitoring, and combatting of the clearing of forests and other forms of native vegetation.

- List of areas embargoed by the Brazilian Institute of the Environment and Renewable Natural Resources, IBAMA: public list of farms that have breached environmental legislation in some way and that are prohibited from producing until they regularize their situation.

- The "Slave Labour List" of the Ministry of Labour and Employment, MTE: a public list of farms assessed on the basis of practices characterized as slave labour or labour analogous to slavery.

- Maps of the location of indigenous lands, conservation units, settlements, and Quilombola[1] territory; satellite images and DETER[2] and PRODES[3] information to monitor deforestation in the Amazon: public and official information provided by governmental organizations.

For areas outside the Amazon biome, monitoring of deforestation can also be done through satellite images acquired from providers of this type of service, or from new tools already available, such as MapBiomas, or under development, such as PRODES Cerrado.

Most of these sources can cover the entire supply chain of meat processors, regardless of their complexity or location, as long as information on the origins of cattle (farms) is provided. However, it is in traceability that the greatest limitation is found.

[1] Descendants of slaves who escaped from slave plantations that existed in Brazil until abolition in 1888.

[2] Real Time System for Detection of Deforestation (DETER), a satellite-based system that enables frequent and quick identification of deforestation hot spots (Climate Policy Initiative).

[3] Program for the Estimation of Deforestation in the Brazilian Amazon (PRODES).
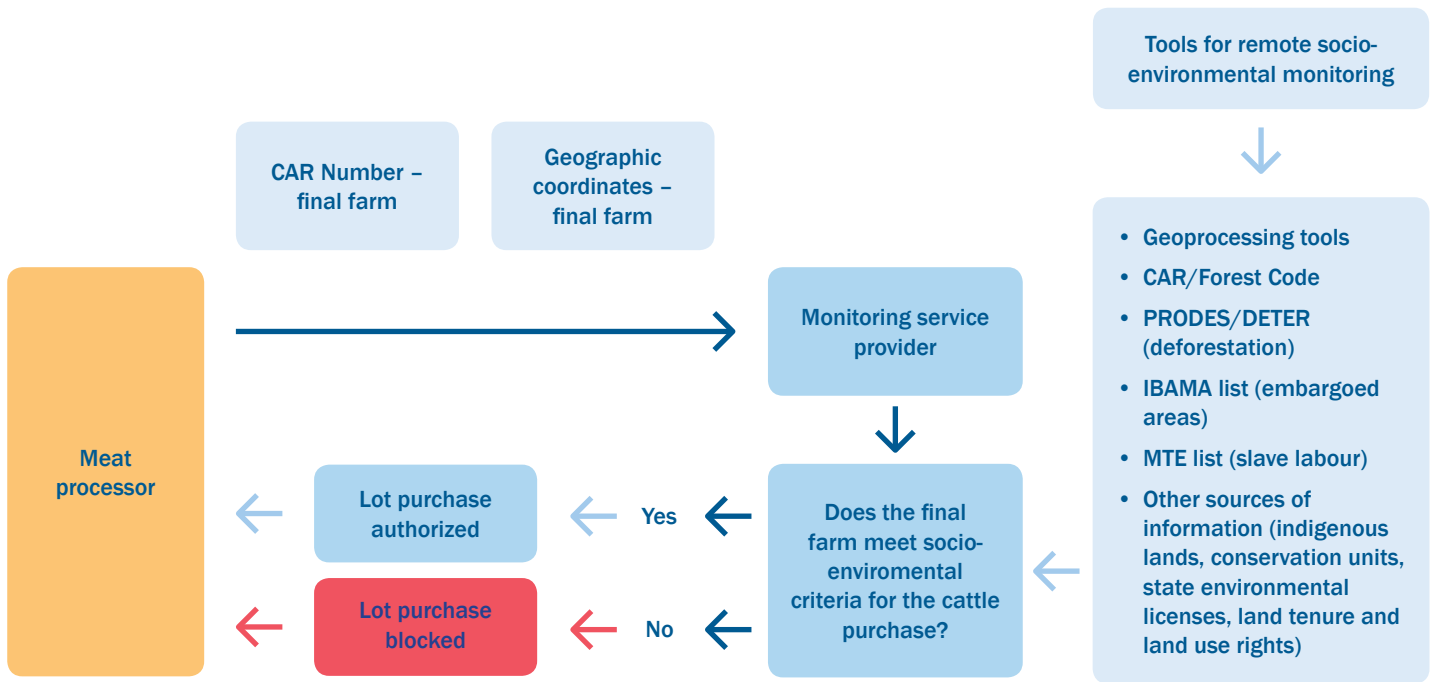
Traceability tools

Traceability by cattle lots is the main system used in Brazil to record cattle movements for sanitary control purposes, through the Animal Transit Guide (GTA), which tracks cattle during transportation. All the cattle lots received by meat processors are accompanied by GTAs, which indicate the farm from which the lot derives. However, if a particular lot or part of it has passed through other farms throughout its production period, the GTA will not contain this information. The lack of information about which farms the animals have passed is the main limitation of the GTA as a traceability tool.
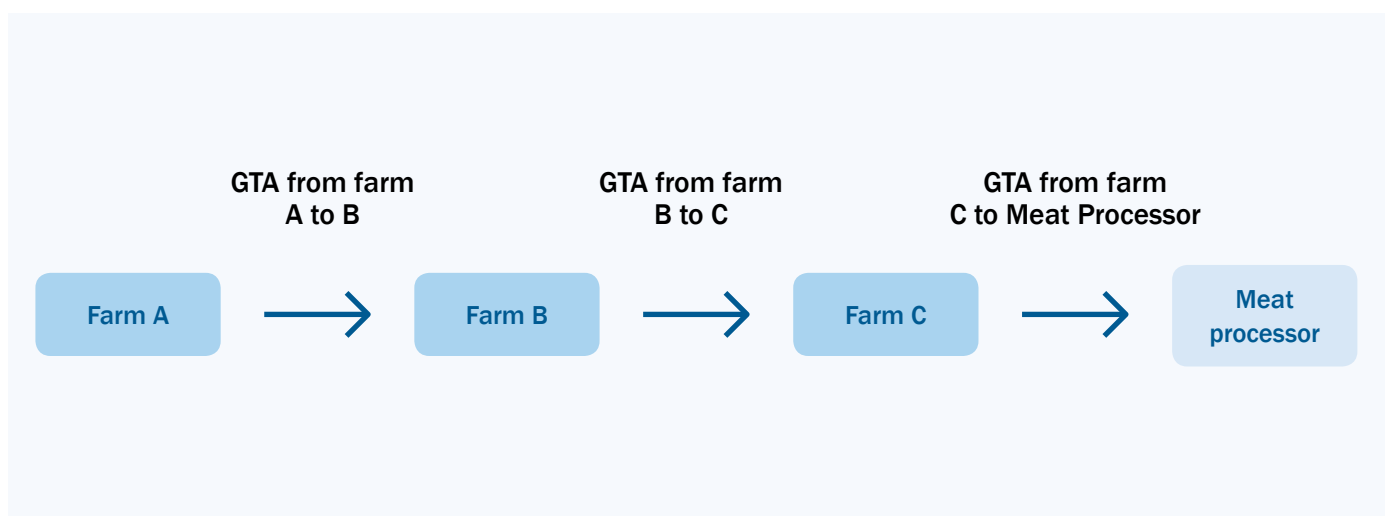
Figure 4: Scheme demonstrating the GTA emission. In this example, the meat processor will receive a GTA informing that the origin of the cattle lot is farm "C", only.

How to include indirect suppliers in traceability systems?

Even with limitations, GTA combined with other tools has enormous potential to extend the scope of socio-environmental monitoring to indirect cattle suppliers. In order for the GTA to support traceability more effectively it should be:

- **100% digital:** electronic GTA or GTAe is implemented in all states of Brazil, but some also operate with paper GTAs when errors occur in the digital system.

- **Accessible:** it is essential that at least the meat processor has free access to all GTAs generated throughout the cattle production phases. Access to GTA is currently only possible if each producer supplies the access code to the meat processor.

- **Integrated:** since CAR is the main tool to demonstrate compliance with the Brazilian Forest Code, it is important that its database can be cross-checked with the data present in the GTAs. This already happens in the state of Pará, for example, where a GTA should only be issued if the property of origin is registered in the CAR.

- **Recording previous GTAs:** the main way to identify indirect suppliers along the supply chain would be to connect the different GTAs generated throughout the production phases. In other words, in each GTA there would be an indication of the previous GTAs, thus allowing identification of all the farms where the animals from the cattle lots passed before arriving at the meat processors.

A mechanism that can be used for the operationalization of GTAs, interconnected to previous GTAs, integrated with CAR and with public access, is the Agricultural Management Platform (PGA), which aggregates data from GTAs and is administered by the Ministry of Agriculture, Livestock, and Supply.

Brazil has a good individual traceability system, SISBOV, which allows tracking of the animal from birth to slaughter. However, due to a history of difficulties in its implementation, SISBOV is currently only used in some cases, such as meat export requirements or differentiated product lines, for example.
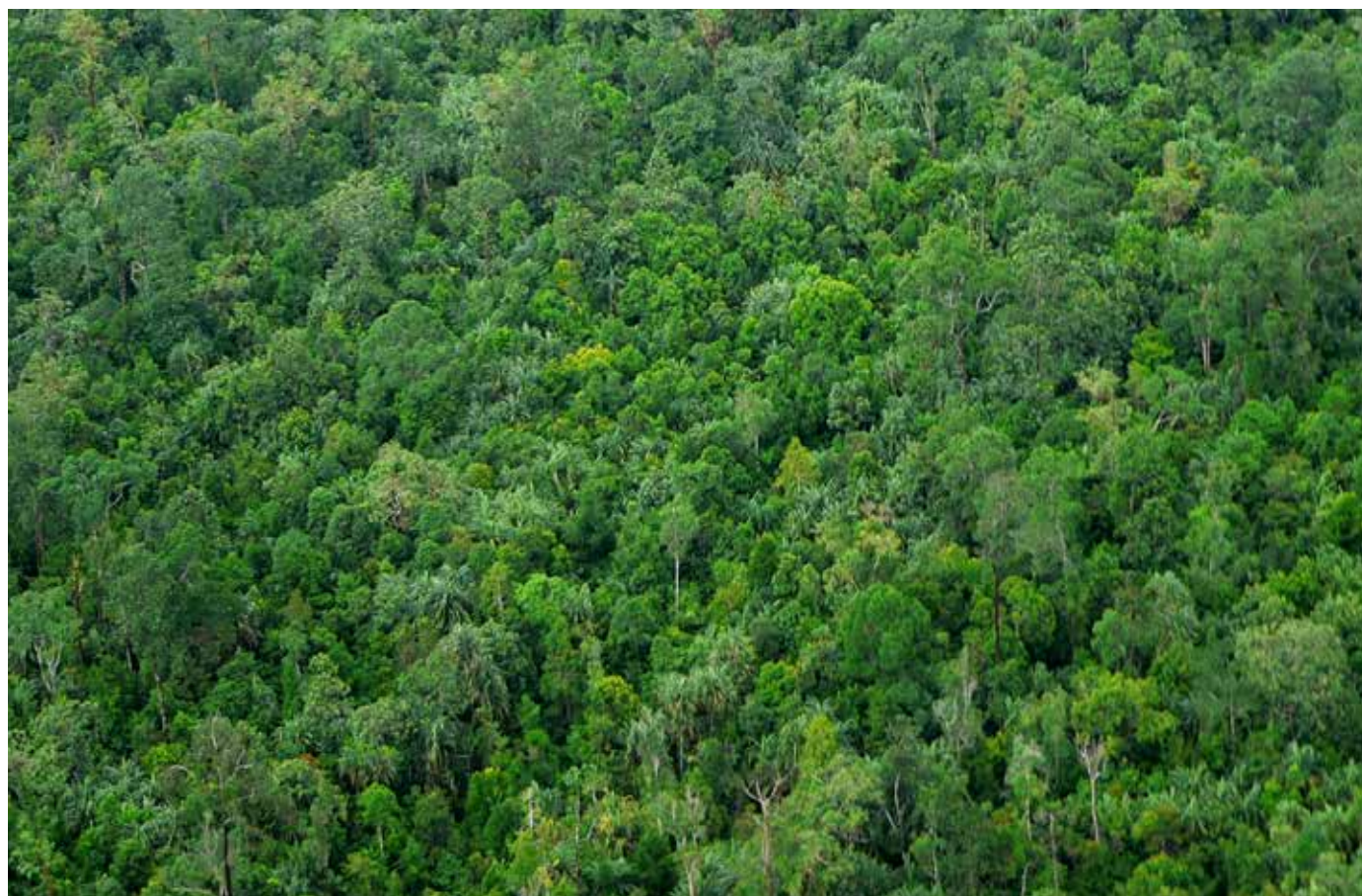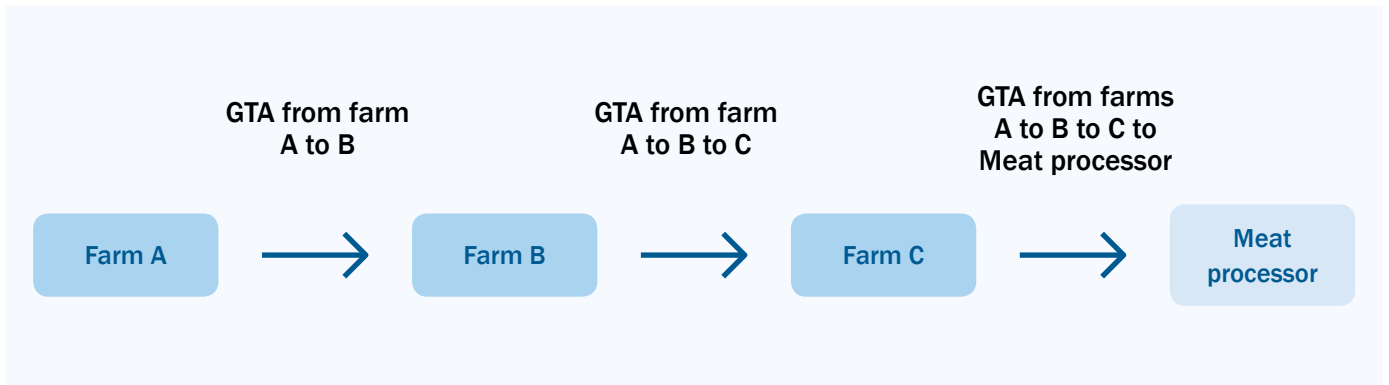
Figure 5: Scheme demonstrating GTA interconnection. In this example, the final GTA received by the meat processor would contain the information of all farms through which the animals of the lot passed.

Risk analysis

Even if the scope of the monitoring system of a certain meat processor is not 100% of the supply base, the PGA could be used to implement, based on a risk analysis, socio-environmental monitoring protocols adapted to each situation. A risk analysis allows users to concentrate actions to deepen traceability and implement remote individual monitoring where there is more risk, rather than scattering efforts to identify indirect suppliers where there is a low risk of non-compliance with purchasing policies.
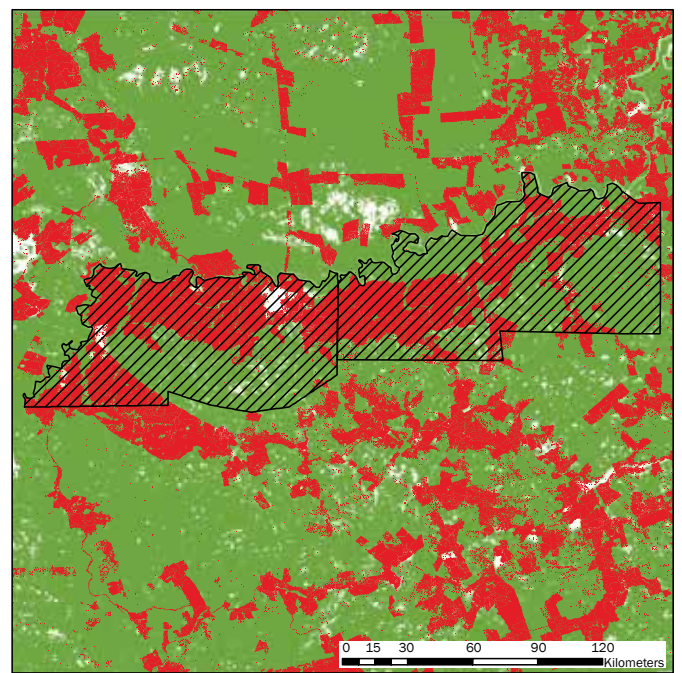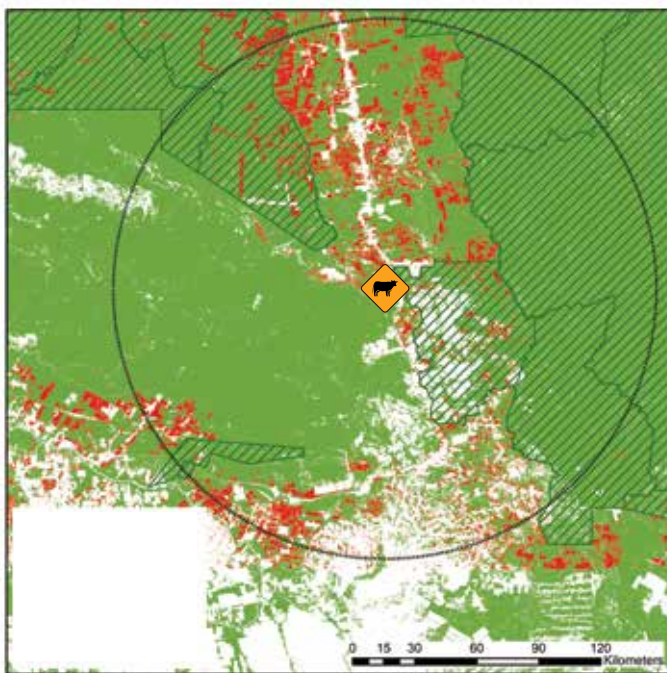
Slaughterhouse

Slaughterhouse sourcing area

Protected area

Primary forest

Deforestation

Farm boundaries

Primary forest

Deforestation

Figure 6: Example of a remote risk analysis

Working Group of Indirect Suppliers, GTFI

Led by Amigos da Terra - Amazônia Brasileira and the National Wildlife Federation (NWF), the GTFI is a multi-stakeholder group whose objective is to align existing policies and discuss tools for monitoring the cattle production chain in Brazil.

Based on the results of a study conducted by Proforest in 2016, at the request of WWF Brazil, the GTFI defined a strategy for the cattle sector to improve its ability to reach indirect suppliers, which includes the development of a voluntary purchase protocol which would be likely to use GTAs interconnected and integrated with the CAR.

The protocol proposed by GTFI is being validated by some stakeholders and will be tested throughout 2017 to prove the concept and understand how the different links in the chain can contribute to this challenge.

In addition to the protocol development and implementation, other challenges to be overcome by the industry include:

- Implementation of incentive strategies to encourage indirect suppliers to adhere to the protocol.

- Including meat processors that do not have agreements with the Federal Prosecutors Office or Greenpeace.

- Expansion of monitoring of other biomes, especially the Cerrado.

- Support for small producers to meet the minimum requirements established by the meat processors.