Understanding the beef supply chain
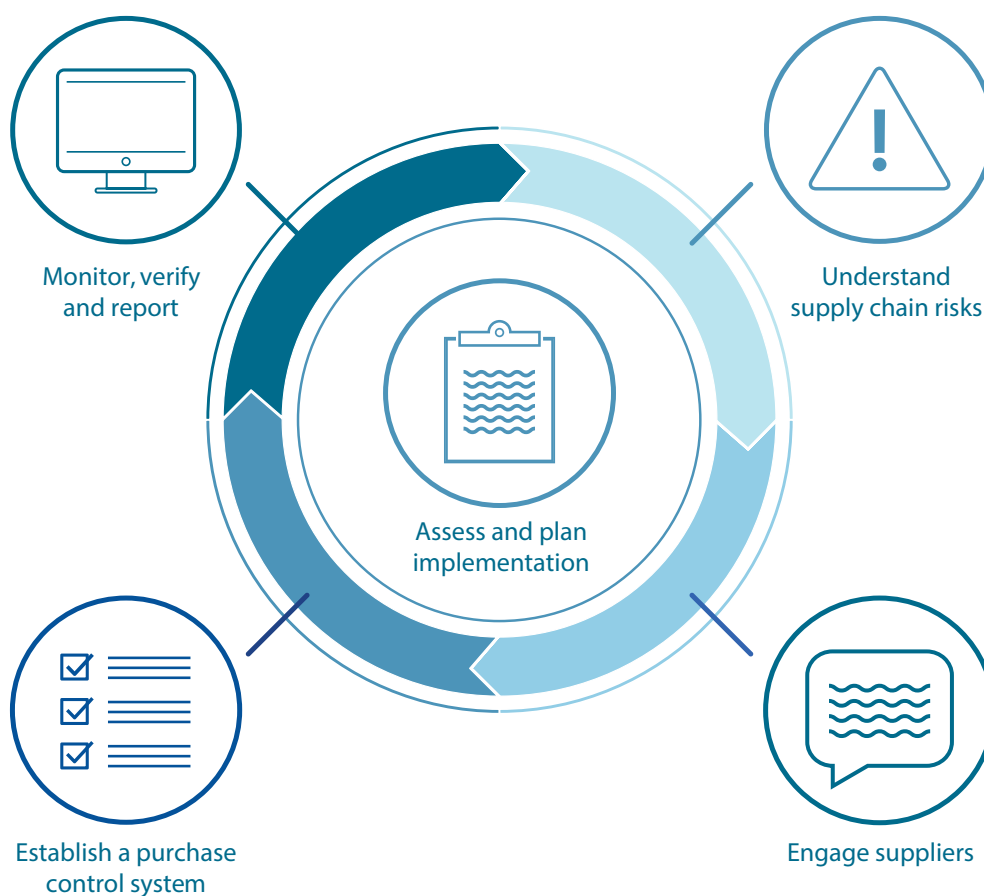## Beef traceability and supply chain transparency

5-element approach

Figure 1 - A 5-element approach for sourcing environmentally and socially sustainable beef

Key Points

- **According to the Accountability Framework - AFi[4]**, traceability is the "ability to follow a product or its components through stages of the supply chain (e.g., production, processing, manufacturing, and distribution)".

- Traceability is important to enable companies to assess whether their procurement policies on deforestation and other issues are being met at the production level. In other words, the level of traceability can reflect whether an organization is able to comply with its commitments.

- Defining the level and scope of traceability required is crucial, depending on the company's objectives. For example, downstream companies can achieve relevant insights from tracing as far as the slaughterhouse, without necessarily tracing as far as the birth farm.

- Cattle are raised in multiple different ranching stages and achieving visibility beyond whoever is selling to the slaughterhouse remains one of the greatest challenges on the agenda – but there are promising avenues being explored.

Purpose of this briefing note

This briefing note is part of the Responsible Sourcing: A Beef Toolkit guide. It relates to element 2 (Understand Supply Chain Risks) of the 5-element approach for responsible sourcing of beef (**Figure 1**).

The main purpose of this briefing note is to consolidate best practices in the sector around traceability. It outlines a process to map the supply chain and implement traceability systems, considering the main challenges, tools, and practical examples for companies at different positions in the supply chain. Its geographical focus is Brazil, which is the world's largest exporter of beef[1] and has several social and environmental issues associated with cattle ranching.

In summary, this briefing note starts with a description of the beef supply chain and then covers the following key processes for companies to better understand their supply chain:

| Define traceability level & scope | Gather information | Map the supply chain | Categorise | Monitor |

The Beef Supply Chain

The supply chain for beef and other cattle products is composed of a complex set of actors that are involved in different stages of cattle production, meat and cattle by-product processing; and ultimately the end buyers, which are as diverse as retailers, restaurants, pet food companies and leather industries (Figure 2). Even though beef and cattle by-products share many stages of the supply chain, traceability of offal and leather might have its own particularities, such as additional players in the supply chain.

Comprehending this complexity is essential for tracing beef or cattle by-products back to origin, where most risks occur (such as deforestation[21], labour and land issues[22]). These risks often occur through two stages in the supply chain: a) the place where cattle are raised, and b) practices at farm-level. For companies to better understand and manage their exposure to risks, and assess progress towards implementing responsible sourcing policies, they need to ensure traceability through the supply chain. This can be challenging for commodities with a complex supply chain, such as beef and cattle by-products **(Figure 2).**
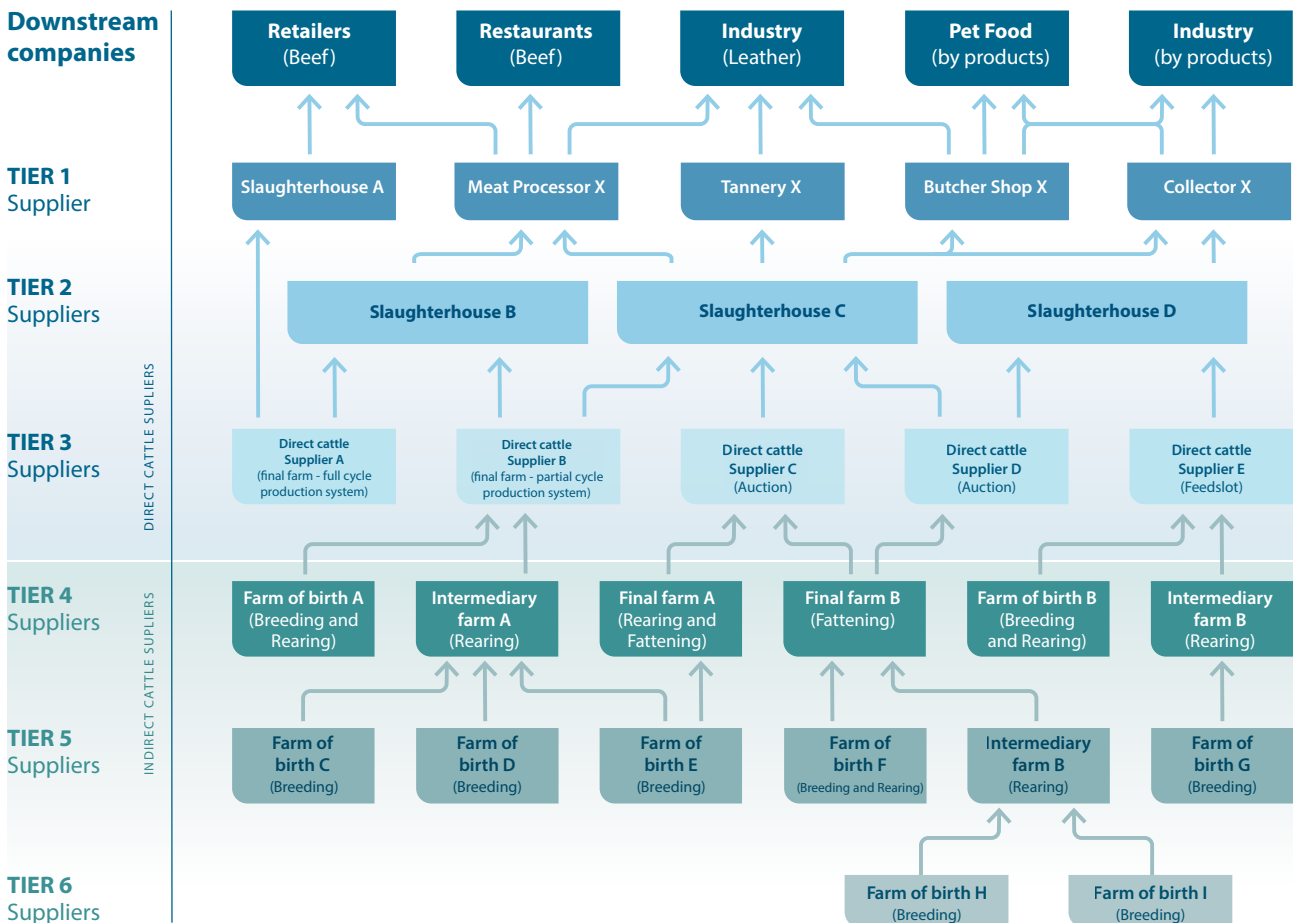

Figure 2 – Example of a beef supply chain.

There are three levels of complexity in the beef and cattle by-products supply chain to be highlighted:

1 The first is related to cattle products and by-products links in the supply chain:

a) Beef, offal and leather (or cattle by-products) supply chains are connected (as shown in Figure 2). For example, a slaughterhouse may: i) supply directly to a retailer; ii) go through a meat processor before reaching the same retailer; iii) supply several players (such as tanneries, butcher shops and collectors) before the raw material reaches a downstream company.

b) Products can be exported to countries in different forms (live animals to be processed elsewhere, meat, processed offal, hides or by-products). This aspect is important because it shows the connection between the different forms of cattle products that are exported, and the different types of Tier 1 suppliers presented in Figure 2.

2 The second refers to the lack of data access linked with the Animal Transit Guide (GTA), which tracks cattle during transportation and indicates the farm that the lot derives from. It is the main system used in Brazil to record cattle movements for sanitary control purposes. However due to this issue around access to information, its use has limitations. This aspect is further detailed in the "Key Challenges and Alternative Approaches" section.

3 The third is related to production systems:

Often, there are 3 stages of production which may or may not be combined in the same place. (**Figure 3**). To illustrate this, an example from Brazil is provided below.

With a herd of over 210 million head of cattle, Brazil has the biggest cattle herd in the world and is the largest beef exporter[1]. Cattle farming in Brazil often has three stages of production: breeding, rearing and finishing or fattening. The three phases can be carried out on the same farm (known as a full cycle system) or on different farms (known as partial cycle).[2]

Within this context, there are three different levels of producer visibility which affect the extent to which they can be reached via monitoring tools. A company has high visibility when the producer carries out the three phases on the same farm (full cycle) and medium or low visibility when there are two, three or more farms before the meat processor (Figure 3).
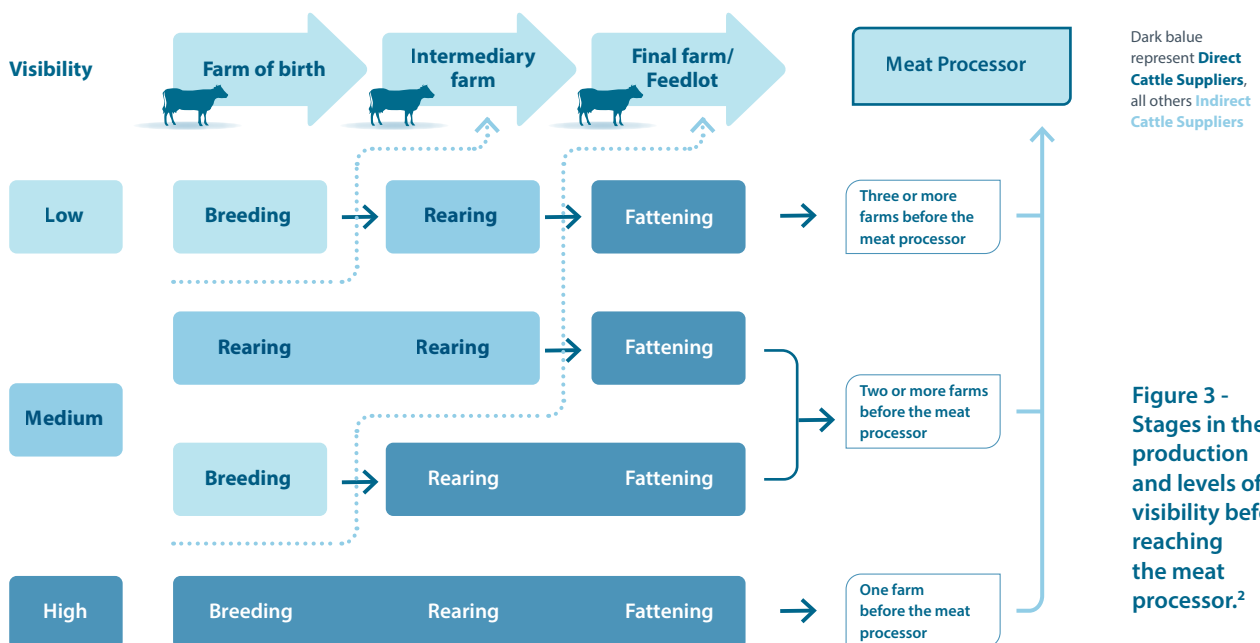

Figure 3 - Stages in the production and levels of visibility before reaching the meat processor.[2]

Currently, most traceability systems used by slaughterhouses and meat processors in Brazil only go as far as the direct cattle suppliers. This means that usually only the last farm that the cattle pass through is identified and monitored, regardless of how many more farms are involved throughout the production process. However, it is important to note that systems exist which are able to track cattle beyond the direct supplier (see **Section 3** for more detail), and not all cattle pass through indirect farms, as shown in **Figure 3**.

Nonetheless, reaching the indirect cattle suppliers is one of the main challenges facing the sector that prevents full policy implementation. New innovative tools and approaches to deal with this issue are being developed by different organizations, but there are still challenges to be overcome – as described in more detail at the "Key Challenges and Alternative Approaches" section.

This scenario can become even more complex when a company's supply chain also contains auctions or feedlots, as an extra layer of traceability is needed to reach the last farm before slaughter – **Figure 2**.

Traceability

According to the **Accountability Framework (AFI)** definitions[4], there is a clear difference between traceability and supply chain mapping, which is important to highlight as these related terms are often used interchangeably, leading to some confusion:

- *"Traceability is the ability to follow a product or its components through stages of the supply chain (e.g. production, processing, manufacturing, and distribution)."*

- *"Supply mapping is the process of identifying the actors in a company's supply chain and the relationships among them."*

Within this context, traceability of beef to origin (meaning the country, biome, municipality or ultimately the farm or farms where the cattle were raised) is crucial for companies to identify social and environmental risk in their supply chains and to put in place measures necessary to ensure compliance with their commitments. Thus, traceability can help organizations to link cattle product volumes to non-compliant suppliers and make an informed decision on the best approach to address the issue.

01 Define level and scope of traceability required

Defining the level of traceability required to deliver on a responsible beef sourcing commitment or policy is an important first step in developing a beef traceability strategy.

Having the right level of traceability is imperative for companies to match their commitments with feasible resource allocation efforts, and to achieve the granularity they need to take action. From the perspective of a downstream company, the end goal does not need to be full traceability of its beef supply chain, which can be costly and complex, but rather reaching the slaughterhouse level. This could then lead to engaging with a set of suppliers based on a risk prioritization assessment. On the other hand, upstream companies like meatpackers could be expected to have traceability to the birth-farm level, as they are much closer to the ranching activities.

There is no single approach to trace products back to origin, as companies often have different objectives and strategies to implement traceability and several factors may influence their approach (e.g. position in the supply chain, size of the company, diversity of products and commitments made). Within this context, defining basic traceability requirements is an important first step (**Figure 4**): which purchases will be traceable (the scope) and which stages of the supply chain will be included (the traceability level)?

Traceability requirements	Slaughterhouses	Downstream companies
Scope **Which purchases will be traceable?**	Slaughterhouses may start by prioritising the cattle suppliers that represent the highest portion of the volumes, that have less complex supply chains or that are more exposed to social and environmental risks. Then, gradually move towards including all cattle purchases within the traceability scope.	Downstream companies should define which cattle products will be within the traceability scope (eg. only beef or other cattle products such as leather or offal as well). Downstream companies may start by prioritising the cattle products that represent the highest portion of the volumes, that have less complex supply chains or that are more exposed to social and environmental risks. Then, gradually move towards including all cattle products purchases within the traceability scope.
Traceability Level **What stages of the supply chain will be included?**	Slaughterhouses may prioritise their traceability efforts in regions with higher risk of non-compliance with their policies. As slaughterhouses are closer to the production, they are in a good position to reach the fattening farm. When the direct cattle supplier is an intermediary (like in auctions), companies need to engage with this additional stage to identify the farm of origin. In higher risk regions, slaughterhouses should develop strategies to reach the indirect cattle suppliers (eg. breeding and rearing farms)	Downstream companies can adopt a risk-based approach for traceability reach. Companies should start with mapping their cattle origin back to the country level, and then prioritising further traceability where more action is needed. The next step would be identifying the location of the slaughterhouses your company sources from. Depending on the level of exposure to risk in these locations, priority suppliers could be engaged to provide traceability data up to the municipality of origin or to the farm level. In higher risk regions, consider asking direct suppliers to disclose data on their indirect cattle suppliers.

Figure 4 – Basic traceability requirements to define level and scope of traceability required.

Business case examples presented in **Box 1** illustrate how companies at different positions in
the supply chain are implementing their beef traceability strategies.

**Box 1 – Some business case examples of how downstream companies and slaughterhouses
are implementing their beef traceability strategies.**

1

Slaughterhouses

- **Marfrig**[9] applies its cattle purchase traceability strategy to the Amazon and Cerrado biomes.
- Since 2014 it has had 100% traceability of its direct cattle suppliers in the Amazon and from 2019 it started to monitor direct cattle suppliers in the Cerrado.
- Recently it has announced a 10-year plan (**Plano Marfrig Verde+**)[15] that will seek to have full supply chain traceability, including indirect cattle suppliers.
- This will be achieved through a combination of different mechanisms (individual traceability of the cattle using chips or ear tags, satellite monitoring and georeferencing of rural properties, blockchain systems and a risk analysis approach).

- **Frigol**[11] partnered with a service provider to establish a social-environmental monitoring process as part of its purchase control system.
- On its website there is a link for clients to look up the origin of their products.
- Frigol has committed to implement the TAC criteria with the Public Prosecutor Office and the auditing results can be checked **here**[10].

- **Mercúrio Alimentos**[12] partnered with a service provider to establish a social-environmental monitoring process as part of its purchase control system.
- Mercúrio Alimentos has committed to implement the TAC[a] criteria with the Public Prosecutor Office and the auditing results can be checked here[10].

Downstream Companies

- McDonald's applies a risk-based approach to define where more granular traceability information is needed. This approach was developed and is implemented in partnership with its suppliers and local franchisees.
- The strategy comprises a prioritisation analysis at different scales: Country-level > Territory-level > Slaughterhouse level > Farm-level. More granular traceability information is needed in high priority territories (biomes, or parcels of land).
- Priority direct cattle suppliers are remotely assessed with geospatial tools for compliance with their Deforestation-Free Beef Procurement Policy which covers a set of social-environmental criteria related to their **Commitment on Forests.**[13]
- This risk methodology was developed based on the **Accountability Framework.**[14]

- Mars applies a risk-based approach, in which it starts by engaging with suppliers sourcing beef from Brazil to map the site where the beef was processed.
- Based on the risk of deforestation occurring in each sourcing area, Mars collaborates with partners and suppliers to ensure its commitments are upheld by adopting best practices to monitor the cattle supply chain.
- **Mars' aim is to stop deforestation and conversion of natural ecosystems** in its supply chains by 2025, up to the direct cattle suppliers in Latin America.

- GPA launched a **Social and Environmental Beef Purchasing Policy** in 2016 and updated it in 2020, which is applied to all beef products originating in Brazil.
- It has adopted its own traceability tool in which data showing direct origin and goods dispatch are made available to GPA by suppliers.
- Suppliers that purchase cattle in the Amazon biome must ensure the compliance of the farms using the **Monitoring Protocol for Cattle Suppliers in the Amazon**, including the zero deforestation criterion.

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[a] TAC is the acronym for Term of Adjustment of Conduct, a legally binding agreement that promotes commitments from private sector actors as a means to solve judiciary conflicts. These agreements demand that slaughterhouses monitor cattle purchases for environmental and labour law compliance with supplier farms and initiated the process of setting standards for cattle purchase that include deforestation-free criteria, as well as other social and environmental aspects[23].

02 Gather traceability information from direct cattle product suppliers

Regardless of the approach used to map the supply chain, supplier collaboration is key to the success of a traceability programme. Companies should engage with direct raw material/ product suppliers to explain why traceability is needed and what information suppliers are expected to share. The type of information requested will differ between companies in different positions along the beef supply chain (**Box 2**).

- **Slaughterhouses:** Should have traceability to the direct cattle supplier level (tier 1) for all purchases, and as a minimum, full traceability systems including indirect cattle suppliers (tier 2) for regions with a high risk of noncompliance with social and/or environmental commitments.

- **Meat processors and tanneries:** Should request information from slaughterhouses about the origin of the cattle within their supply chain for all purchases.

- **End buyers (i.e. retailers, restaurants, pet food and leather companies):** Should request tier 1 and tier 2 suppliers to provide evidence that traceability systems are in place to ensure volumes are traceable to origin (breeding, rearing and fattening farms).

Box 2 - Example of good practices in gathering direct cattle suppliers' information in Brazil **2**

Farm-level information to be requested by slaughterhouses

Supplier	Farm name	Volume sourced in [previous year]	Rural environmental registry (CAR)
Farmer 1	Farm 1	5,000 heads	GO-8768290-5BNHY6TGKS87652GHNSTU3
Farmer 1	Farm 2	10,000 heads	GO-8768290-5BNHY6TGKS87652GHNSTU3
Farmer 2	Farm 3	8,000 heads	None
Auction	Unknown	6,000 heads	Unknown[b]

B. Supply chain information to be requested by downstream companies

Supplier name	Type of supplier	Volume sourced from supplier	Location of supplier	Tier 2 supplier	% from Tier 2	Location of Tier 2
Supplier 1	Meat processor	50,000 t	Santarém, PA. Lat:XXX Long: YYY	Slaughterhouse 1	80%	Xinguara, PA
Supplier 1	Slaughterhouse	5,000 t	Santarém, PA. Lat:XXX Long: YYY	Farm 1	10%	Redenção, PA
Supplier 2	Slaughterhouse	15,000 t	Corumba, MS. Lat:XXX Long: YYY	Auction 1	35%	Unknown
Supplier 2	Slaughterhouse	30,000 t	Paracatu, MG. Lat:XXX Long: YYY	Slaughterhouse	60%	Formosa, GO

C. System information to be requested by downstream companies

Supplier name	Type of supplier	Volume sourced in previous year	Does the supplier have a traceability system? What is the scope?	Traceability to direct cattle supplier (%)	Traceability to indirect cattle suppliers (%)
Supplier 1	Slaughterhouse	15,000 t	Yes (all of Brazil)	80%	30%
Supplier 2	Slaughterhouse	5,000 t	No	0	0
Supplier 3	Meat processor	30,000 t	Yes (Amazon biome)	25%	5%

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[b] Often when the direct cattle supplier is an auction, information on the farm of origin of the cattle is unknown.

03 Map your supply chain

After gathering information from direct cattle raw material/product suppliers, companies can map their beef or cattle product supply chain. There are different ways to do this, and the best approach or tool for doing so may be influenced by the company's position in the supply chain (**Box 3**).

			3
Box 3 – A set of approaches and tools that can be used by companies to map their supply chain			
For whom?	**Supply chain mapping approaches**	**How to use it**	**When to use it**
Global downstream companies	Open platform: TRASE is a free platform that provides links between beef-buying countries via trading companies to biome, state and municipalities of production in Brazil. It is not supply chain specific, so it provides a general idea. **www.trase.earth**	By tracing flows through a list of direct and indirect suppliers, companies can link beef purchases to the production region. It gives a general idea but is not necessarily an accurate, tailored perspective for a company's supply chain reality.	Useful for companies that use beef exported from Brazil to have an idea of the region where the beef came from. If the identified beef is being supplied from a high-risk region more detailed traceability could be carried out.
Downstream companies	Build on supplier programmes Companies can assess the robustness of suppliers' traceability systems against their requirements and build on their existing efforts.	Gather information on how suppliers map their supply chains, verify data and check if output information meets companies' needs. Harmonizing traceability information can be challenging and often requires external support. Where suppliers do not have a program, companies can support them to develop one.	Useful for downstream companies, as this would provide accurate supply chain data, rather than high level analysis based on publicly available information.
Upstream and down-stream companies	**Develop your own traceability system or adopt an existing platform** Gather initial information from direct raw material/ product suppliers on their suppliers' names and/or locations and volumes supplied using questionnaires. This can be done by the company's own staff or through a third party.	Meat processors and downstream companies can engage direct and indirect beef suppliers to trace beef purchases with tailored tools and questionnaires. Third parties can be useful when suppliers are unwilling to share commercial information directly with buyers. They can gather and provide aggregated data to buyers, protecting sensitive information.	This solution requires collaboration within the supply chain and can be time-intensive, so it is most effective when the volumes involved are high and the supply chains relatively short.

Which systems can could be used to support traceability mapping?

Experienced geotechnology companies such as Agrotools[5], Agrosatélite[6], Niceplanet[7] and Geoflorestas[8] offer services that can embed monitoring into the purchase control systems of Brazilian slaughterhouses[19], for example to match the farm boundaries with deforestation satellite data, and provide analysis if there is overlap. Downstream companies can assess the level of traceability monitoring their suppliers have in place and develop strategies to work with what they have available.

Example of a supply chain mapping exercise and how it could be used by a downstream company

To illustrate what kind of information a downstream company could gather from conducting a supply chain exercise, the map in Figure 5 shows a hypothetical example of a downstream company's supply base in the Brazilian Amazon alongside recent deforestation data. It is clear that some of the seven supplying slaughterhouses located in the Amazon biome are more exposed to deforestation than others. If the downstream company had to prioritize efforts and resources, slaughterhouses B and C would be the ones to engage first, as they have the highest exposure to deforestation within their sourcing radius. Slaughterhouses G, A and E would be next, while slaughterhouses D and F would be low priority, as they are less exposed to deforestation than the others.
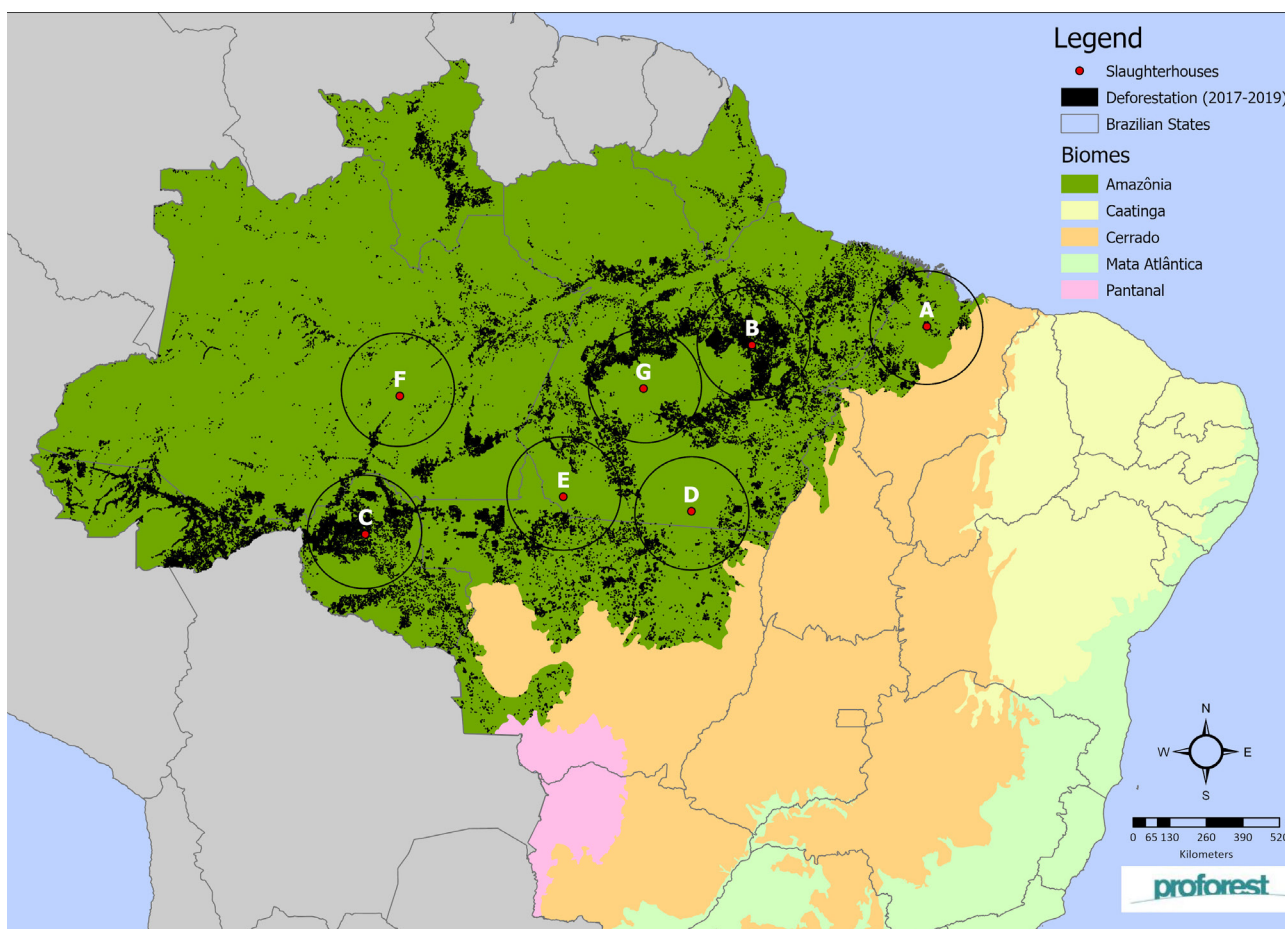
Figure 5 – Illustrative example of a supply chain mapping exercise conducted by a downstream company, reaching the slaughterhouse level.

How to include indirect cattle suppliers in traceability systems?

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 and indicates the farm that the lot derives from. However, the GTA does not contain data showing if a particular lot or part of it has passed through other farms during production[2].

Another aspect to consider is that the slaughterhouse needs farmer authorization to receive the GTA information[c], as it is not publicly available. Therefore, even though GTAs can be a useful tool, they have significant limitations in terms of data access and integration.

Several different organisations are developing new innovative tools and approaches to address this issue. A company-led example is the PECSA model, which developed a pioneering business model to produce sustainable beef in the Amazon by increasing productivity while investing in forest protection and traceability.[23] Another example is the Indirect Suppliers Working Group (GTFI, acronym in Portuguese), which has been working to create advanced monitoring solutions for the tracing of indirect suppliers in the Brazilian livestock supply chain.[17] **GTFI**[18] lists a few approaches to monitor indirect cattle suppliers, all of which are at different stages of development:

- **GTA Verde (Green GTA): JBS proposes a new mandatory procedure for** issuing the GTA, where the document would be issued only to properties registered in the Rural Environmental Registry (CAR, acronym in Portuguese)[d]. It also recommends that all GTAs should be available in electronic format and accessible to the public.

- **Visipec: Visipec**[20] works as an "add-on" tool, complementary to the systems that the slaughterhouses are already using to monitor their direct suppliers. Based on the intersection between CAR and GTA data, the tool is able to provide additional information on indirect cattle suppliers. Two of the biggest meatpackers in Brazil, Marfrig and Minerva, recently stated that they were planning to pilot and test it.[25, 26]

- **Request for Information (RFI): Marfrig uses this tool**, through which ranchers declare the origin of animals purchased from third parties (indirect suppliers). It is a voluntary procedure where the farmer declares the taxpayer number, the name of the supplier farm and the municipality.

- **SMGeo Indiretos: A voluntary platform** developed by Niceplanet[7], which allows socio-environmental monitoring of indirect suppliers' properties and herds. The platform is fed with information provided by the producers themselves and has a mobile application that allows companies to check the social and environmental compliance of indirect suppliers.

[c] Slaughterhouses in Brazil need the farmer authorization to receive the GTA information because of the Personal Data Protection Legislation (Federal Law n° 13,709 from 201824). In the case of Visipec project, the federal prosecutor office has to allow it.

[d] Rural 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.2

04 Categorise volumes purchased and validate the information

Cattle products can be traced back to different stages of the supply chain, such as the slaughterhouse, municipality or biome.

Companies at different stages of the beef supply chain often categorize traced purchased volumes as "known" and untraced volumes as "unknown". The unknown and known categories relate not only to the ability to trace beef and cattle by-products to their origins, but also to the ability to assess risks associated with their origins.[2, 16] Figure 5 illustrates an example of a downstream company's traceability categorization of purchased volumes throughout different stages of the beef supply chain:
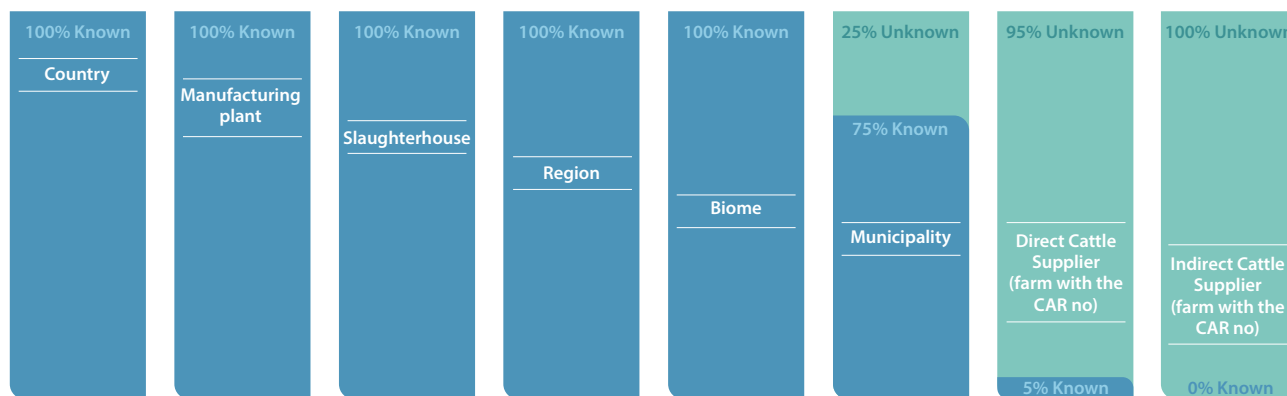

Figure 5 - Traceability categoriszation of purchased volumes throughout different stages of the beef supply chain

Companies may wish to validate information provided by suppliers using a verification process, managed by a third party. It is important to understand how third parties obtain the information, how accurate it is, how often it will change, and if the criteria used to categorize 'traceable' volumes are consistent and compatible. If the information cannot be validated, a supplier may need support from the purchasing company to improve its system.

Not all suppliers need to undergo a verification process. Depending on supply chain complexity and existing verification systems, additional verification requirements may only be needed where there is a higher likelihood of inaccurate information.

When is traceability enough?

Traceability usually takes time, sometimes several years. Therefore, companies need to define a timebound plan to gradually increase the traceability of their supply chain. At the same time, it is important to remember that full traceability is not the ultimate goal, unless applied in specific contexts, such as in higher risk regions. For downstream companies, tracing to the slaughterhouse level may be sufficient to assess which suppliers have the highest risk exposure, and therefore prioritize engaging with these suppliers to understand the level of control and traceability they have over their supply chains.

Improving supply chain transparency on how and where beef is produced is only a tool to enable companies to take positive action. There is a point in the process when continuing to pursue better information on origin becomes ineffective and diverts resources from changing actual practices. Therefore, it is important to periodically review the information available and evaluate whether it is sufficient for the company to start taking action.

05 **Monitor traceable volumes**

A key characteristic of the beef market is frequent changes in the supply base and volumes sourced at any level of its value chain. To deal with this, companies can set up a system to update and review the 'known' volumes at regular intervals, according to the prevailing purchase control system model.[19] Regular communication with direct cattle raw material/ product suppliers is also important to monitor progress in traceability.

It is normal for known volumes to reduce in the short-term due to shifts in the supply base. In these cases, it is critical to understand why this is happening, and devise a strategy to reverse the trend and gradually increase known volumes.

When it comes to reporting, companies provide information on their known origins using different metrics, based on their policy, delivery strategy, and the platform used to report. Moreover, companies may not disclose the exact links between suppliers in different stages of the supply chain but rather point straight to the origin location, which is less commercially sensitive.

Box 5 – Examples of how companies report on traceability and origin data   **5**

Example 1: GPA

GPA reported in their **2019 sustainability report:**
- Percentage of suppliers that shared information on beef or cattle product origin
- Percentage of cattle products volume that have origin monitored
- Number of suppliers excluded from their supply chain because of non-compliances with their policy

Example 2: Mars

Mars discloses annually:
- A list of direct suppliers of beef ingredients
- The sourcing region based on the slaughterhouse's location at the municipality level, including the total volume procured

Example 2: McDonalds

McDonald's reports on the overall compliance of its global beef supply within its Commitment on Forests, providing information on:
- Percentage of volume from low risk origins
- Percentage of volume that is verified compliant
- Percentage of volume from high risk origin not yet verified compliant

To be able to report on these figures, it uses a combination of different levels of traceability through a risk-based approach (from country to farm level)

Example 4: CDP's KPIs on traceability in the Implementation module of the Forests 2020 Questionnaire

Through CDP, companies report on the percentage of volume that is traceable and the point to which it is traceable
- Percentage traceable to Tannery
- Percentage traceable to Slaughterhouse
- Percentage traceable to Breeding farm
- Percentage traceable to Rearing farm
- Percentage traceable to Fattening farm

Key challenges and alternative approaches

CHALLENGE	OPPORTUNITY
Lack of traceability system to indirect suppliers GTA, the current traceability system adopted by meatpackers in Brazil, only identifies direct cattle suppliers – the last farm which the batches passed through. The system does not cover indirect suppliers which can make up a significant proportion of farms within supply chains, meaning the associated social and environmental risks are hidden.	**Creating linked GTAs** If each GTA generated throughout the different phases of production was connected to the previous GTAs, it would allow meatpackers to identify all the farms a particular lot of cattle passed through before slaughter. This would require a change in public policy or the development of voluntary approaches.
Lack of an integrated and accessible traceability data platform Although there are various state-level platforms that manage GTA data online, the lack of integration and accessibility makes it difficult to use these platforms for full socio-environmental monitoring.	**Emerging blockchain technologies can be an alternative** Blockchain technology could be applied on existing public platforms or on a purpose-built platform to trace cattle batches to their origin with a socio-environmental monitoring system covering the entire supply chain.
Complexity on cattle by-products traceability to farm of origin There are many products and by-products from the cattle supply chain, including fine cuts, leather, and pet food. Some of these come directly from slaughterhouses, whereas others pass through additional stages in the supply chain, such as rendering or a tannery. Figure 2 depicts some of the links between beef and cattle by-products. In these cases, brands and retailers can ask their direct suppliers to provide information about the slaughterhouses they buy from.	**Awareness, education and collaboration** Intermediaries between downstream companies and supplying slaughterhouses should be brought onboard with the agenda. Downstream companies should also work to raise awareness about market demands, and the existing approaches to meet such demands. Ultimately, sourcing commitments need to be met at the farm level, and slaughterhouses, being the first aggregation point of cattle, are best positioned to do so. This will be made easier with support from the downstream companies working to roll out their commitments.
Lack of traceability requirements within procurement policies Many companies do not yet enforce traceability in their procurement policies, so slaughterhouses, meat processors, butcher shops and collectors do not feel pressure to establish their own traceability strategies. In addition, most procurement policies focus on traceability in the Amazon biome, leaving out other high priority biomes such as the Cerrado.	**Industry knowledge sharing** Sectoral initiatives such as the **Consumer Goods Forum** offer downstream companies the opportunity to align on the best approaches, practices and strategies to deal with traceability in the beef and other cattle products supply chain, helping companies to embed these strategies into their responsible sourcing policies.

You can refer back to Proforest's 2016 **Briefing Note #9 on socio-environmental monitoring of the cattle sector in Brazil,** which documents key challenges and alternative approaches for improving the transparency of the beef sector to achieve supply chains that are free of deforestation, slave and child labour, among other social and environmental issues.

Learn more and help us improve

More information is provided in the references below and at **www.beeftoolkit.net**

Please also share with us information that will improve this Briefing Note (via **beeftoolkit@proforest.net**).

Acknowledgments

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