Cattle

EUDR mapping for cattle — v1.1

- Cattle EUDR Overview — Colombia
- Cattle Geolocation & Land Use Tracking
- Cattle Deforestation Risk Assessment
- Silvopastoral Systems & Sustainable Ranching
- Cattle Supply Chain Traceability
- Cattle Certification & Compliance
- Cattle-Coffee Landscape Integration
- Cattle Smallholder & Family Ranch Challenges

Cattle EUDR Overview — Colombia

EUDR Context

Field	Value
eudr_commodity	cattle
country_focus	Colombia
eudr_article9_field	geolocation — establishment-level for each farm in animal lifetime
eudr_evidence_type	satellite_verification, primary_field_data
deforestation_risk	HIGH
last_updated	2026-05-26

Overview

Cattle is one of seven commodities regulated under the EU Deforestation Regulation (EUDR, Regulation 2023/1115), alongside coffee, cacao, palm oil, soy, wood, and rubber. The regulation covers a broad scope of cattle-derived products including beef, leather, tallow, and other processed goods. Operators placing these products on the EU market must demonstrate that the commodities were not produced on land subject to deforestation or forest degradation after 31 December 2020, and were produced in compliance with the laws of the country of production.

Under Article 9, cattle has a unique geolocation requirement: rather than requiring the perimeter of a production plot, the EUDR requires at least one latitude/longitude coordinate with six decimal digits for each establishment where the animal was kept during its lifetime. This reflects the reality that cattle move between farms, feedlots, and slaughterhouses during their production cycle — making cattle traceability fundamentally different from crop-based commodities like coffee or cacao.

The legally binding start date is 30 December 2026 for large and medium operators, and 30 June 2027 for micro and small operators. Country benchmarking will classify Colombia's cattle sector risk level, with strong likelihood of a HIGH risk designation given the well-documented deforestation-cattle nexus.

Colombian Context

Colombia holds the fourth-largest cattle herd in Latin America with over 29.5 million head (2024 ICA/Fedegan census) distributed across more than 620,000 farms. The cattle sector is a dominant economic force, particularly in departments like Antioquia, Meta, Casanare, Caqueta, and Cordoba. The sector is responsible for an

estimated 60-80% of national deforestation, driven by the phenomenon of praderizacion — the conversion of forest to pasture for extensive ranching and land speculation.

Colombia's beef and leather exports to the EU are modest but growing, and the EUDR will require Colombian operators to provide establishment-level geolocation data for all cattle movements, deforestation risk assessments for associated ranch lands, and compliance documentation meeting EU due diligence standards. The SINIGAN traceability system managed by Fedegan and ICA provides the institutional backbone, though significant gaps remain in farm-to-slaughterhouse tracking, especially for animals that pass through multiple establishments during their lifetime.

Cleantech Taxonomy Nodes

Primary relevant nodes: CT-AF-007 (Livestock and Fisheries — directly covers cattle technology), CT-EX-007 (Silvopastoral systems), CT-AF-002 (Forests and Woodlands — deforestation monitoring). EUDR compliance infrastructure nodes CT-EX-014 (Remote sensing), CT-EX-016 (Supply chain traceability), CT-EX-018 (Certification services), CT-EX-019 (Due diligence platforms), CT-EX-020 (Smallholder technical assistance), and CT-EX-021 (Operator documentation) all require eudr_cattle=Y flags. New extension rows needed for cattle-specific traceability via SINIGAN integration, pasture-to-forest restoration technology, cattle methane reduction, and landscape-level deforestation monitoring.

Cattle Geolocation & Land Use Tracking

EUDR Context

Field	Value
eudr_commodity	cattle
country_focus	Colombia
eudr_article9_field	geolocation — single coordinate per establishment, all establishments in animal lifetime
eudr_evidence_type	satellite_verification, primary_field_data, geospatial_analysis
deforestation_risk	HIGH
last_updated	2026-05-26

Overview

EUDR Article 9 establishes specific geolocation requirements for cattle that differ from crop-based commodities. For cattle, operators must provide at least one latitude/longitude coordinate with six decimal digits for each establishment where the animal was kept during its lifetime. This establishment-level approach contrasts with the plot-perimeter requirement for crops grown on areas larger than four hectares, reflecting the mobile nature of cattle production where animals transit through birth farms, fattening operations, feedlots, and slaughterhouses.

Satellite monitoring plays a critical role in verifying that ranch lands associated with cattle production have not undergone deforestation after the December 31, 2020 cutoff date. Technologies including Sentinel-2, Landsat, and NICFI Planet imagery enable detection of pasture expansion into forest areas. For Colombia, the deforestation monitoring system operated by IDEAM provides national-level forest change data, while Global Forest Watch and MapBiomas Amazonia offer complementary independent verification layers.

The integration of geolocation data with deforestation alert systems is essential: each ranch coordinate must be cross-referenced against forest cover change datasets to produce the deforestation risk assessment required under EUDR due diligence. The temporal dimension is critical — cattle may spend only months at a given establishment, but that establishment's land use history across the full post-2020 period must be verified.

Colombian Context

Colombia's deforestation hotspots for cattle-driven land clearing are concentrated in the Amazonian departments of Caqueta, Guaviare, and southern Meta, as well as the Orinoquia plains and Pacific coast lowlands. In 2024,

Caqueta recorded approximately 25,263 hectares deforested, Guaviare 16,908 hectares, and Meta 21,107 hectares — with cattle pasture expansion as the primary driver in all three regions. The phenomenon of praderizacion involves clearing forest to establish pasture, often as a mechanism for informal land claims rather than productive ranching.

Monitoring challenges include cloud cover in tropical forest regions which limits optical satellite revisit effectiveness, large ranch sizes in the Llanos Orientales where a single property may span thousands of hectares, and the prevalence of informal land tenure where property boundaries are poorly defined. The SINIGAN system records farm locations but does not systematically integrate satellite deforestation verification, creating a gap that EUDR compliance will require closing.

Cleantech Taxonomy Nodes

Directly relevant: CT-EX-014 (Remote sensing and satellite deforestation monitoring — requires eudr_cattle=Y), CT-AF-001 (Land and Soil — geolocation for ranch lands), CT-AF-006 (Smart Farming — precision data feeds for cattle geolocation). New extension needed: CT-EX-028 (Cattle establishment geolocation and movement tracking) to cover the unique multi-establishment geolocation challenge specific to cattle EUDR compliance.

Cattle Deforestation Risk Assessment

EUDR Context

Field	Value
eudr_commodity	cattle
country_focus	Colombia
eudr_article9_field	deforestation_risk_assessment
eudr_evidence_type	satellite_verification, risk_classification
deforestation_risk	HIGH
last_updated	2026-05-26

Overview

The cattle sector is the single largest driver of tropical deforestation globally, and Colombia is no exception. The EUDR requires operators to conduct risk assessments demonstrating that cattle products were not linked to post-2020 deforestation. For cattle, this assessment must cover every establishment in the animal's lifetime — a far more complex requirement than for stationary crops. The risk assessment must evaluate both direct deforestation (clearing forest for new pasture) and indirect deforestation (displacement effects where cattle ranching pushes into forest frontiers).

Colombia's cattle sector is estimated to be responsible for 60-80% of national deforestation. The country lost approximately 113,000 hectares of forest in 2024, with armed groups and cattle ranchers identified as the primary drivers of a 35% year-on-year increase. The three major deforestation fronts are the Amazonian arc (Caqueta, Guaviare, Putumayo), the Orinoquia transition zone (Meta, Vichada), and the Pacific lowlands (Choco, Narino). Each front has distinct deforestation dynamics, but praderizacion for cattle is the common driver.

The EUDR country benchmarking system will classify countries as low, standard, or high risk. Given Colombia's deforestation trajectory and the documented cattle-deforestation nexus, a high-risk classification for cattle is highly probable, triggering enhanced due diligence requirements including more detailed geolocation data, larger sample sizes for verification, and more frequent compliance checks.

Colombian Context

Praderizacion — the systematic conversion of forest to cattle pasture — is deeply embedded in Colombia's land colonization patterns. In many frontier regions, clearing forest and introducing cattle is used as a mechanism to

establish de facto land ownership, particularly on public lands (baldios) and in areas affected by armed conflict. National parks including Sierra de la Macarena, Tinigua, and Cordillera de los Picachos have documented thousands of head of cattle grazing illegally, with over 24,000 cattle reported in protected areas in 2023.

Land titling challenges compound the problem: much of Colombia's cattle frontier operates without formal land titles, making it difficult to assign responsibility for deforestation to specific operators. The intersection of armed conflict, coca cultivation, and cattle ranching in departments like Caqueta and Guaviare creates a complex risk landscape where deforestation drivers are interlinked. EUDR compliance for Colombian cattle will require untangling these dynamics at the individual establishment level.

Cleantech Taxonomy Nodes

Directly relevant: CT-AF-002 (Forests and Woodlands — deforestation risk monitoring, needs eudr_cattle=Y), CT-EX-014 (Remote sensing — satellite deforestation detection, needs eudr_cattle=Y), CT-EX-019 (Due diligence platforms — risk assessment tools, needs eudr_cattle=Y). New extension needed: CT-EX-029 (Pasture-driven deforestation monitoring and risk classification) covering the specific dynamics of cattle-linked deforestation including praderizacion detection, illegal pasture encroachment into protected areas, and landscape-level risk scoring for cattle supply chains.

Silvopastoral Systems & Sustainable Ranching

EUDR Context

Field	Value
eudr_commodity	cattle
country_focus	Colombia
eudr_article9_field	deforestation_risk_assessment, compliance_statement
eudr_evidence_type	primary_field_data, certification
deforestation_risk	MEDIUM (reduced through silvopastoral conversion)
last_updated	2026-05-26

Overview

Silvopastoral systems integrate trees with pasture and livestock, offering a pathway to reconcile cattle production with forest conservation. These systems reduce or eliminate the need for pasture expansion into forests by intensifying production on existing land while simultaneously sequestering carbon, improving soil health, and increasing biodiversity. For EUDR compliance, silvopastoral farms represent lower deforestation risk profiles and may serve as demonstration cases for sustainable cattle production that meets EU market access requirements.

Colombia has been a global pioneer in silvopastoral adoption through the Ganaderia Colombiana Sostenible (GCS) project, a landmark initiative supported by the Global Environment Facility, the World Bank, The Nature Conservancy, Fedegan, and CIPAV. The project operated on 4,100 farms across 87 municipalities in 12 departments, establishing 38,390 hectares of silvopastoral systems and sequestering 1.56 million tonnes of CO2 equivalent. The project demonstrated that silvopastoral conversion can increase stocking rates, improve farm productivity, and deliver measurable environmental co-benefits.

Colombia's NDC targets the agricultural sector for 13.46 MtCO2e/year in emissions reductions by 2030. Good pasture management and silvopastoral systems could deliver up to 77% of this agricultural NDC target, making cattle sector transformation a cornerstone of Colombia's climate commitments. The NDC includes specific targets for 69,000 hectares of livestock landscape restoration through intensification and silvopastoral conversion.

Colombian Context

Fedegan promotes silvopastoral adoption through its sustainable cattle programs, offering technical assistance and financial incentives for ranchers transitioning from extensive to intensive systems. Key silvopastoral models

in Colombia include leucaena-based intensive silvopastoral systems in the tropical lowlands, scattered-tree silvopastures in the Andean foothills, and living fence systems that connect forest fragments across cattle landscapes.

Challenges to scaling include upfront investment costs for tree establishment, a 2-3 year lag before silvopastoral systems reach full productivity, limited availability of suitable tree seedling nurseries in frontier regions, and the need for technical assistance to manage complex tree-pasture-animal interactions. The GCS project demonstrated viable business cases but nationwide adoption remains below 5% of total cattle area. The EUDR could accelerate adoption by creating market-access incentives for sustainably produced beef and leather.

Cleantech Taxonomy Nodes

Directly relevant: CT-EX-007 (Silvopastoral systems — already exists, needs eudr_cattle=Y), CT-AF-007 (Livestock and Fisheries — needs eudr_cattle=Y for sustainable ranching technology). New extension needed: CT-EX-030 (Pasture restoration and livestock intensification technology) covering degraded pasture recovery, rotational grazing systems, carrying capacity optimization, and the technology platforms that support the transition from extensive to intensive cattle production.

Cattle Supply Chain Traceability

EUDR Context

Field	Value
eudr_commodity	cattle
country_focus	Colombia
eudr_article9_field	supplier_identification, geolocation
eudr_evidence_type	primary_field_data, self_declaration, digital_traceability
deforestation_risk	HIGH
last_updated	2026-05-26

Overview

Cattle supply chain traceability presents unique challenges compared to crop commodities. A single animal may pass through 3-5 establishments during its lifetime — birth farm, calf-rearing operation, fattening ranch, feedlot, and slaughterhouse — each requiring geolocation data and deforestation verification under the EUDR. The leather supply chain adds further complexity, as hides may be aggregated from multiple slaughterhouses and processed through tanneries before reaching EU markets, making origin traceability particularly difficult.

Effective cattle traceability requires individual animal identification (ear tags, RFID, or digital systems), movement recording at each transfer between establishments, and integration with geolocation databases that enable deforestation risk assessment for each farm in the animal's history. The challenge is compounded by informal market channels: in many producing countries, a significant share of cattle transactions occurs outside formal traceability systems, particularly for animals sold at rural livestock markets or moved between farms without official documentation.

Digital traceability platforms using blockchain, IoT sensors, and mobile-based data capture are emerging as solutions. These systems can create immutable records of animal movements and link them to satellite-verified geolocation data, providing the evidence chain that EUDR due diligence requires. However, connectivity gaps in rural cattle regions and low digital literacy among smallholder ranchers remain barriers to adoption.

Colombian Context

Colombia's SINIGAN system (Sistema Nacional de Identificacion, Informacion y Trazabilidad Animal) is the institutional backbone for cattle traceability. Created by Law 914 of 2004 and managed by Fedegan under ICA oversight, SINIGAN was originally designed with a sanitary focus — recording vaccination campaigns and animal movements for disease control, particularly foot-and-mouth disease prevention. The system was recently upgraded to SINIGAN V6, a comprehensive digital platform that incorporates a mobile application, institutional

interoperability, mandatory digital registration, automatic verification, and real-time data availability.

Despite these advances, SINIGAN was built in a fragmented manner with multiple disconnected platforms: SINIGAN itself, SNIITA, sanitary transport guides (Guias Sanitarias de Movilizacion), and the Forest Monitoring System operate as separate systems without effective interoperability. For EUDR compliance, Colombia must bridge these silos to create a unified traceability chain from birth farm to export point, with deforestation verification integrated at each step. The gap between SINIGAN's sanitary traceability and the environmental traceability required by the EUDR represents a significant technical and institutional challenge.

Cleantech Taxonomy Nodes

Directly relevant: CT-EX-016 (Supply chain traceability platforms — needs eudr_cattle=Y), CT-AF-006 (Smart Farming — precision data for cattle), CT-EX-019 (Due diligence platforms — needs eudr_cattle=Y). New extension needed: CT-EX-028 (Cattle establishment geolocation and movement tracking) specifically covering individual animal identification technology, multi-establishment movement recording, SINIGAN integration platforms, and digital solutions bridging sanitary and environmental traceability for cattle.

Cattle Certification & Compliance

EUDR Context

Field	Value
eudr_commodity	cattle
country_focus	Colombia
eudr_article9_field	compliance_statement
eudr_evidence_type	certification, self_declaration
deforestation_risk	HIGH
last_updated	2026-05-26

Overview

The EUDR does not recognize voluntary certification schemes as sufficient evidence of compliance — operators must conduct their own due diligence regardless of certifications held. However, certification systems provide structured frameworks, verified data, and audit trails that can significantly reduce the due diligence burden. For cattle, the certification landscape is less mature than for commodities like coffee or palm oil, creating both a gap and an opportunity for the development of cattle-specific deforestation-free standards.

Rainforest Alliance launched a cattle certification program, but after eight years it had achieved only minimal adoption — fewer than a dozen certified operations across Brazil and Colombia. The Sustainable Agriculture Network (SAN) standard has been applied to some cattle operations, and the Global Roundtable for Sustainable Beef (GRSB) provides principles but not farm-level certification. The Leather Working Group certifies tanneries for environmental performance but does not address deforestation at the raw material level, creating a traceability gap in leather supply chains.

The EUDR is likely to catalyze development of more rigorous cattle certification standards that incorporate the regulation's specific requirements: establishment-level geolocation, deforestation-free verification for all farms in an animal's lifetime, and legality of production. Existing certification bodies will need to retrofit their cattle standards to meet these requirements, or new specialized cattle-EUDR certification services will emerge.

Colombian Context

Colombia's ICA administers the Buenas Practicas Ganaderas (BPG) certification — a quality and food safety assurance system for primary livestock production covering animal health, welfare, nutrition, environmental

management, and worker safety. Between 2010 and 2013, Fedegan conducted 191 Field Schools promoting BPG across Regional Livestock Development Units. However, adoption remains uneven: many ranchers lack awareness of or interest in BPG certification, particularly in frontier regions where EUDR compliance will be most critical.

Agrolonja SAS achieved Colombia's first Rainforest Alliance cattle certification, demonstrating that sustainable ranching can deliver both environmental benefits and improved market access through premium pricing. However, scaling certification across Colombia's 620,000+ cattle farms — the vast majority of which are smallholder operations — requires dramatic expansion of technical assistance capacity, simplification of certification processes, and financial mechanisms to cover compliance costs for small producers.

Cleantech Taxonomy Nodes

Directly relevant: CT-EX-018 (Deforestation-free certification services — needs eudr_cattle=Y), CT-EX-021 (EUDR operator documentation services — needs eudr_cattle=Y), CT-EX-020 (Smallholder technical assistance for EUDR — needs eudr_cattle=Y). New extension needed: CT-EX-031 (Cattle-specific deforestation-free verification and certification) covering BPG-EUDR alignment tools, cattle-specific audit methodologies, leather supply chain certification, and multi-establishment verification protocols unique to cattle.

Cattle-Coffee Landscape Integration

EUDR Context

Field	Value
eudr_commodity	cattle (cross-commodity with coffee)
country_focus	Colombia
eudr_article9_field	geolocation, deforestation_risk_assessment
eudr_evidence_type	satellite_verification, primary_field_data
deforestation_risk	HIGH (cattle component); MEDIUM (coffee component)
last_updated	2026-05-26

Overview

The EUDR regulates cattle and coffee as separate commodities, but in practice many Colombian farms produce both. Mixed cattle-coffee farms are common throughout the Andean foothills and transitional zones between highland coffee regions and lowland cattle areas. A single farm may have coffee plots on steeper slopes and cattle pasture on flatter areas, creating a situation where the same landowner must comply with EUDR requirements for two distinct commodities simultaneously.

This landscape integration has important implications for EUDR compliance. A landscape-level approach to deforestation risk assessment can serve both commodity supply chains: the same satellite monitoring that verifies deforestation-free status for coffee plots also covers cattle pastures on the same or neighboring farms. Shared geolocation infrastructure, technical assistance programs, and certification services can reduce per-commodity compliance costs when both cattle and coffee operate within the same landscape.

Conversely, the deforestation risk profiles differ significantly between the two commodities. Coffee cultivation in shade-grown agroforestry systems may actively support forest conservation, while cattle pasture on the same farm may be associated with historical forest clearing. The EUDR requires commodity-specific due diligence, meaning operators cannot use coffee compliance to substitute for cattle compliance on mixed farms — each commodity must independently meet all Article 9 requirements.

Colombian Context

The Colombian Andes host a gradient from highland coffee zones (1,200-1,800 meters) to mid-elevation mixed farming zones to lowland cattle areas. In departments like Huila, Tolima, Antioquia, and Caldas, the transition

zone supports thousands of mixed cattle-coffee farms. The Colombian Coffee Growers Federation (FNC) estimates that a significant portion of coffee-producing families also raise cattle, using livestock as an economic buffer against coffee price volatility and as a form of savings.

For EUDR compliance, the integration point offers efficiency gains: organizations already providing EUDR technical assistance to coffee farmers (through FNC, cooperatives, or certification bodies) can extend services to cover the cattle component on the same farms. This reduces the marginal cost of cattle EUDR compliance and leverages existing trust relationships and data infrastructure built for coffee. However, it requires cross-commodity traceability platforms that can manage both crop-based geolocation (plot perimeters for coffee) and establishment-based geolocation (single points for cattle) within a unified system.

Cleantech Taxonomy Nodes

Directly relevant: CT-AF-007 (Livestock and Fisheries — cattle component), CT-AF-008 (Crops — coffee component), CT-EX-005 (Community-led reforestation and agroforestry — landscape integration). New extension needed: CT-EX-032 (Cross-commodity EUDR landscape compliance) covering integrated deforestation monitoring for multi-commodity landscapes, shared geolocation infrastructure, and compliance platforms that manage both cattle and crop EUDR requirements on mixed farms.

Cattle Smallholder & Family Ranch Challenges

EUDR Context

Field	Value
eudr_commodity	cattle
country_focus	Colombia
eudr_article9_field	compliance_statement, supplier_identification
eudr_evidence_type	primary_field_data, self_declaration
deforestation_risk	HIGH
last_updated	2026-05-26

Overview

The EUDR grants micro and small operators an extended compliance deadline (30 June 2027 vs 30 December 2026) and reduced due diligence requirements, but the fundamental obligations remain: all cattle products entering the EU market must be traceable to deforestation-free production regardless of the operator's size. For producing countries like Colombia where the cattle sector is dominated by smallholders, this creates a systemic compliance challenge — the EUDR's requirements must ultimately be met at the level of hundreds of thousands of individual farms, most of which lack the technical capacity, digital infrastructure, or financial resources to independently generate EUDR-compliant documentation.

The cost of EUDR compliance for a smallholder cattle farmer includes individual animal identification and registration, geolocation recording for the farm, participation in a traceability system, and documentation of legal land use. These costs are proportionally much higher for small operations — a rancher with 20 head of cattle faces similar fixed compliance costs as one with 2,000 head, making per-unit compliance costs prohibitive without external support. The risk of market exclusion is real: smallholders who cannot demonstrate compliance may be cut from export supply chains by downstream operators seeking to minimize their own regulatory risk.

Aggregation models — where cooperatives, associations, or landscape-level programs provide shared compliance infrastructure — are essential for making cattle EUDR accessible to smallholders. These models can spread fixed costs across many producers, provide centralized technical assistance, and leverage group-level traceability systems that reduce the per-farm burden. Without such models, EUDR implementation risks concentrating cattle exports among large-scale operations while marginalizing the smallholder majority.

Colombian Context

Colombia has over 620,000 cattle farms and more than 600,000 livestock farmers, with the vast majority operating at small scale. Average herd sizes outside of the large Llanos ranches are modest, and many smallholder ranchers lack formal land titles — a prerequisite for demonstrating legal land use under the EUDR. In conflict-affected regions like Caqueta, Meta, and Guaviare, land tenure is particularly complex, with overlapping claims from traditional communities, displaced populations, and informal colonizers.

Technical assistance infrastructure for cattle ranchers is thin compared to the coffee sector, where FNC and the cooperative network provide extension services to over 500,000 families. Fedegan operates Regional Livestock Development Units and BPG field schools, but coverage is limited relative to the total number of cattle farms. The EUDR compliance gap for Colombian cattle smallholders spans digital literacy (ability to use SINIGAN and mobile traceability apps), legal documentation (land titles, environmental permits), technical capacity (understanding of EUDR requirements), and financial resources (cost of compliance activities).

A just transition approach is critical: EUDR implementation must avoid displacing smallholder ranchers from formal markets while failing to address the structural drivers of cattle-linked deforestation. Integrated programs combining EUDR compliance support with silvopastoral conversion, land formalization, and market access improvements offer the most promising pathway.

Cleantech Taxonomy Nodes

Directly relevant: CT-EX-020 (Smallholder technical assistance for EUDR — needs eudr_cattle=Y, description update to include cattle ranchers alongside coffee farmers), CT-EX-021 (EUDR operator documentation — needs eudr_cattle=Y). New extension needed: CT-EX-033 (Cattle rancher cooperative compliance and aggregation models) covering group-level EUDR compliance platforms, shared traceability infrastructure for smallholder cattle associations, land formalization technology support, and just transition mechanisms for cattle smallholders.