Peru — Taxonomy Node Mapping

country	Peru
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schema_version	1.1

Node Mapping Summary

Peru's taxonomy node mapping reflects its Amazon-heavy EUDR exposure, its strong AFOLU sector relevance (coffee, cacao, timber, partial cattle), emerging energy transition needs, and its role as a key site for AI/MRV deforestation monitoring. All AFOLU base nodes with coffee, cacao, or wood EUDR flags are tagged Y. Energy nodes are tagged partial reflecting Peru's hydropower-dominant grid with nascent solar/wind growth. IC nodes for Amazon monitoring and MRV are tagged Y.

AFOLU Nodes

Node ID	Label	latam_peru	Rationale
CT-AF-001	Land & Soil	Y	Critical for soil management in coffee/cacao regions of Junín and San Martín
CT-AF-002	Forests & Woodlands	Y	Amazon deforestation is Peru's largest emissions source; shade-grown coffee agroforestry
CT-AF-003	Oceans & Water	Y	Water management in coffee processing (beneficio húmedo); El Niño coastal impacts
CT-AF-004	Ice & Snow	Y	Andean glacier retreat directly threatens Lima's water supply and highland agriculture
CT-AF-005	Air & Atmosphere	partial	Limited direct relevance; air quality monitoring in Lima and mining regions
CT-AF-006	Smart Farming	Y	Precision agriculture for smallholder coffee and cacao in selva alta
CT-AF-007	Livestock & Fisheries	partial	Cattle frontier in Amazon (partial EUDR); anchovy fisheries climate-sensitive
CT-AF-008	Crops	Y	Coffee, cacao, and quinoa are major export crops with climate vulnerability

CT-AF-009	Alternative Meat & Seafood	N	Minimal market presence in Peru
CT-AF-010	Alternative Dairy & Egg	N	Minimal market presence in Peru

Energy Nodes

Node ID	Label	latam_peru	Rationale
CT-EN-001	Critical Minerals	Y	Peru is a top-5 global producer of copper, zinc, silver — essential for energy transition
CT-EN-002	Hydrogen	partial	Green hydrogen pilots in southern coastal desert; early stage
CT-EN-003	Nuclear	N	No nuclear energy program
CT-EN-004	Bio & Synthetic Fuels	partial	Biodiesel from palm oil in San Martín; small scale
CT-EN-005	Fossil Fuels (Transition)	partial	Camisea gas field transition planning; LNG export infrastructure
CT-EN-006	Solar	Y	Excellent irradiance in Arequipa, Tacna, Moquegua; rural off-grid solar in Amazon
CT-EN-007	Wind	partial	Ica and Piura wind corridors; 3 GW pipeline but slow permitting
CT-EN-008	Geothermal	partial	Volcanic Andes potential but no operating plants; exploration phase only
CT-EN-009	Biomass	partial	Coffee pulp and cacao husk biomass potential in selva alta
CT-EN-010	Hydro Tidal & Wave	Y	Peru's grid is ~60% hydropower; critical dependency with glacier retreat risk
CT-EN-011	Batteries	partial	Lithium exploration in Puno; battery storage for grid stabilization
CT-EN-012	Alternative Storage	partial	Pumped hydro potential in Andes; early feasibility studies
CT-EN-013	Grids	partial	Grid modernization needed for renewable integration; SEIN interconnection gaps
CT-EN-014	EV Charging	partial	Lima EV adoption nascent; regulatory framework under development
CT-EN-015	Peer-to-Peer Energy	N	No regulatory framework for P2P energy trading

Climate Intelligence & Carbon Nodes

Node ID	Label	latam_peru	Rationale
CT-IC-001	IoT & Earth Observation	Y	SERNANP Amazon monitoring; satellite deforestation detection is core use case
CT-IC-002	Climate Data	Y	SENAMHI climate data infrastructure; glacier monitoring networks
CT-IC-003	Climate Finance	Y	Green bond issuance; GCF project pipeline; sovereign sustainability-linked bonds
CT-IC-004	Climate Risk	Y	El Niño/La Niña exposure; flood risk in Amazon; drought in coastal agriculture
CT-IC-005	Climate Insurance	partial	Parametric insurance pilots for smallholder coffee farmers; limited scale
CT-XS-001	Carbon Capture & Storage	N	No CCS projects or geological storage sites under development
CT-XS-002	B2B Carbon Offsets & Exchanges	Y	Amazon REDD+ project pipeline; voluntary carbon market activity
CT-XS-003	B2C Carbon Offsets	partial	Tourism-linked offsets; limited domestic B2C market
CT-XS-004	Carbon Intelligence	Y	Huella de Carbono Perú program; corporate carbon footprint registry
CT-XS-005	Carbon Accounting	Y	MINAM greenhouse gas inventory system; REDD+ MRV requirements

Waste, Built Environment & Transport Nodes

Node ID	Label	latam_peru	Rationale
CT-WA-001	Waste to Energy	partial	Pilot projects in Lima; coffee processing waste valorization potential
CT-WA-002	Sustainable Materials	partial	Bamboo construction and bio-based materials from Amazon resources
CT-WA-003	Textiles	partial	Alpaca and organic cotton supply chains with sustainability potential
CT-WA-004	Recycling	partial	Lima municipal recycling expansion; informal sector formalization
CT-WA-005	Solid Waste & Water Waste	partial	Coffee processing wastewater (aguas mieles) treatment technology
CT-BU-001	Construction	partial	Green building standards emerging in Lima; seismic resilience overlap

CT-BU-002 to CT-BU-005	Built Environment (remaining)	partial	Urban sustainability nascent; transport infrastructure in expansion
CT-TR-001 to CT-TR-005	Transport (all)	partial	Lima Metro expansion; EV policy under development; limited cleantech startup activity

Extension Nodes

Node ID	Label	latam_peru	Rationale
CT-EX-001	Drought-resistant crop varieties and seed tech	Y	Critical for coastal agriculture under El Niño stress
CT-EX-002	Flood resilience infrastructure (nature-based)	Y	Amazon basin and coastal El Niño flooding
CT-EX-003	Heat adaptation for agriculture	Y	Coffee rust and heat stress moving upslope in Andes
CT-EX-004	Early warning systems for climate events	Y	El Niño early warning critical for agriculture and fisheries
CT-EX-005	Community-led reforestation and agroforestry	Y	Indigenous community forestry in Amazon; shade coffee agroforestry
CT-EX-006	Mangrove restoration and blue carbon	partial	Tumbes mangroves; limited compared to Caribbean nations
CT-EX-007	Silvopastoral systems	partial	Amazon cattle frontier; emerging silvopastoral pilots
CT-EX-008	Bioeconomy: non-timber forest products	Y	Brazil nut, camu camu, sacha inchi — Amazon bioeconomy
CT-EX-009	PES platforms	Y	REDD+ payments; Transferencias Directas Condicionadas program
CT-EX-010	Solar home systems and pico-solar	Y	Rural electrification in Amazon communities without grid access
CT-EX-011	Community biodigesters	partial	Highland livestock communities; limited scale
CT-EX-014	Remote sensing and satellite deforestation monitoring	Y	Core use case: SERNANP Amazon monitoring, GeoBosques platform
CT-EX-015	AI-powered carbon MRV	Y	REDD+ MRV requirements; growing CLP startup activity
CT-EX-016	Supply chain traceability platforms	Y	Coffee and cacao supply chain traceability for EUDR compliance
CT-EX-017	Precision agriculture data platforms	Y	Smallholder coffee/cacao precision agriculture
CT-EX-018	Deforestation-free certification services	Y	EUDR Article 9 compliance for coffee and cacao exporters
CT-EX-019	Supply chain due diligence platforms	Y	EUDR operator obligations for Peruvian exporters

CT-EX-020	Smallholder technical assistance for EUDR	Y	Hundreds of thousands of smallholder coffee farmers need EUDR support
CT-EX-021	EUDR operator documentation services	Y	Documentation requirements for Peruvian coffee/cacao operators
CT-EX-022	Cacao plot-level geolocation	Y	San Martín and Ucayali cacao polygon mapping
CT-EX-023	Cacao agroforestry monitoring	Y	Cacao agroforestry carbon monitoring in selva alta
CT-EX-026	Cacao climate adaptation	Y	Varietal resilience research for Peruvian fino de aroma cacao
CT-EX-029	Pasture-driven deforestation monitoring	Y	Amazon frontier cattle expansion monitoring
CT-EX-032	Cross-commodity EUDR landscape compliance	Y	Multi-commodity landscapes in Ucayali and San Martín
CT-EX-034	Palm oil mill traceability	Y	San Martín palm oil production
CT-EX-035	RSPO and palm certification	Y	RSPO-certified operations in Peruvian Amazon
CT-EX-036	Imported commodity deforestation risk screening	Y	Peru as origin country for EU-destined commodities
CT-EX-039	Community forest management	Y	Indigenous community forest governance in Amazon basin
CT-EX-040	Smallholder group certification	Y	Coffee cooperative group certification models
CT-EX-041	Alternative development crop compliance	partial	DEVIDA alternative development regions with coca-to-cacao transitions

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