Guatemala

Country layer — v1.2

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Guatemala — Overview & CTH Presence

country	Guatemala
iso_code	GT
cth_presence	CLP cohorts only (no REIN Hub)
gf_taxonomy	None — opportunity: largest Central American capital market
ndc_target	22.6% unconditional GHG reduction by 2030
eudr_commodities	Coffee (high — Huehuetenango, Antigua), Cacao (moderate), Wood (Petén), Rubber (minor)
schema_version	1.1
last_updated	2026-05-27

Country Profile

Guatemala is Central America's largest economy by GDP and population (~18 million). CTH engagement consists of CLP cohorts only, with no REIN Hub established. Despite this, Guatemala presents the most diverse cleantech opportunity set of the three Central American countries in the Origo taxonomy: world-leading cardamom exports, highland specialty coffee, the Maya Biosphere Reserve (Petén), and the region's strongest geothermal energy capacity after Costa Rica.

Economy and Climate Context

Guatemala's economy is diversified across agriculture (10% of GDP but 30% of employment), remittances (~18% of GDP), manufacturing, and services. Coffee from highland regions (Huehuetenango, Antigua, Cobán) is a major export commodity and the primary EUDR exposure. Guatemala is the world's largest cardamom exporter — a commodity NOT on the EUDR list but economically significant. The Petén department contains the Maya Biosphere Reserve, one of the largest contiguous forest areas in Mesoamerica, under severe deforestation pressure.

CTH Engagement Summary

CTH's Guatemala footprint includes CLP cohort participation since 2023. Startups have focused on geothermal energy applications, coffee traceability, and Maya forest conservation technologies. Guatemala has the largest untapped cleantech potential of the three Central American countries due to its market size, geothermal resources, and forest conservation needs. A REIN Hub for Guatemala could serve as a Central American anchor node.

EUDR Exposure

Guatemala has significant EUDR exposure across four commodities. Highland coffee (Huehuetenango, Antigua Guatemala, Cobán) is the highest-exposure commodity, with EU as a major destination market. Cacao production in Alta Verapaz represents moderate exposure. Wood from Petén and other forested departments faces EUDR requirements, particularly timber from community forest concessions in the Maya Biosphere Reserve's multiple-use zone. Rubber production is minor but present. Notably, cardamom — Guatemala's other major agricultural export — is not subject to EUDR.


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Guatemala — Regulatory & Climate Framework

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iso_code	GT
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gf_taxonomy	None — opportunity: largest Central American capital market
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last_updated	2026-05-27

Climate Framework

Guatemala's climate governance is anchored in Acuerdo Gubernativo 329-2009, which created the institutional framework for climate change response. This is one of the older climate instruments in the region and predates the Paris Agreement — it needs updating to reflect current ambitions. The Ley Marco para Regular la Reducción de la Vulnerabilidad, la Adaptación Obligatoria ante los Efectos del Cambio Climático y la Mitigación de Gases de Efecto Invernadero (Decreto 7-2013) provides a more recent legal foundation but implementation has been slow.

NDC Commitments

Guatemala's updated NDC (originally 2019, updated 2021) commits to a 22.6% unconditional GHG reduction by 2030 relative to BAU. This is the most modest unconditional target among the three countries in this phase, reflecting institutional and fiscal constraints. Key sectoral priorities: (1) LULUCF — reducing deforestation in Petén and the northern lowlands, which account for the majority of Guatemala's emissions; (2) Energy — expanding geothermal, solar, and biomass generation; (3) Agriculture — improved practices in coffee and staple crop production to reduce emissions intensity.

Key Institutions

MARN Guatemala (Ministerio de Ambiente y Recursos Naturales) is the primary climate and environmental authority. CONAP (Consejo Nacional de Áreas Protegidas) manages the Maya Biosphere Reserve and other protected areas. INAB (Instituto Nacional de Bosques) governs forest management and community forestry concessions. ANACAFÉ (Asociación Nacional del Café) manages coffee sector policy and export standards. The Superintendencia de Bancos regulates the financial sector but has limited green finance mandates.

Climate Plans and Strategies

Guatemala's Política Nacional de Cambio Climático provides the strategic vision. The Plan de Acción Nacional de Cambio Climático (PANCC) operationalizes NDC commitments. The Estrategia Nacional para la Reducción de la Deforestación (ENREDD+) targets reduced deforestation through REDD+ mechanisms, with Petén as the priority landscape. Guatemala's National Adaptation Plan focuses on water security, food sovereignty, and disaster risk reduction — reflecting the country's high vulnerability to hurricanes, drought, and volcanic activity.

Community Forest Concessions

Guatemala's community forest concession model in the Maya Biosphere Reserve's multiple-use zone is internationally recognized as one of the most successful community-managed forest governance systems in the tropics. ACOFOP (Asociación de Comunidades Forestales de Petén) coordinates 12 community concessions covering over 400,000 hectares. This model has demonstrated deforestation rates near zero within concession areas, significantly lower than surrounding unmanaged areas. It is directly relevant to EUDR timber compliance and REDD+ carbon market activity.


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Guatemala — Green Finance Taxonomy Alignment

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Green Finance Taxonomy Status

Guatemala does not have a national green finance taxonomy as of May 2026. However, this represents a significant opportunity: Guatemala has the largest capital market in Central America, with the Bolsa de Valores Nacional and a banking sector large enough to support green bond issuance. The Superintendencia de Bancos has not yet issued green finance guidance, but the institutional infrastructure exists for taxonomy development if political will materializes.

Gap Analysis

The absence of a Guatemalan GF taxonomy creates these gaps for Origo: (1) No domestic activity classification for crosswalking — latam_guatemala flags rely on NDC priorities, community forestry governance frameworks, and EUDR commodity exposure; (2) The largest Central American economy lacks a green finance standard, creating a regional gap that ripples through CABEI-financed programs; (3) No taxonomy means no standardized eligibility criteria for the community forest concession model — which could be a globally significant green finance use case.

Nearest Equivalents

Guatemala references the following proxy frameworks: (1) Costa Rica's green finance guidelines — the most developed Central American reference; (2) CBI taxonomy — applicable through CABEI bond programs; (3) EU Taxonomy — referenced by European coffee importers under EUDR compliance; (4) REDD+ safeguards and benefit-sharing standards — particularly relevant for Petén community forestry; (5) FSC (Forest Stewardship Council) certification — several community concessions in Petén hold FSC certification, which serves as a de facto green standard for timber.

Development Prospects

Guatemala could leapfrog other Central American countries in GF taxonomy development due to its capital market size and the internationally recognized community forestry model that provides a ready-made green activity classification template. IDB and World Bank technical assistance programs are supporting sustainable finance development in Guatemala. A realistic timeline for taxonomy adoption is 3–4 years, potentially accelerated if CABEI mandates taxonomy alignment for its regional lending programs.


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Guatemala — CLP Cohort Data Summary

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CLP Cohort History

Guatemala has participated in CLP cohorts since 2023. While lacking a REIN Hub, Guatemala produces a more diverse startup pipeline than El Salvador due to its larger economy and varied geography — highland coffee, Petén forests, Pacific coast agriculture, and volcanic geothermal resources create distinct cleantech niches. Guatemala's CLP cohorts have been moderately sized, reflecting an ecosystem with more entrepreneurs than El Salvador but less institutional support than Peru.

Cohort Summary

Year	Startups	Primary Sectors	Notes
2023	4	AF, EN	First cohort; coffee traceability and geothermal applications
2024	5	AF, EN, IC	Maya forest conservation tech; solar deployment
2025	4	AF, IC	EUDR-focused; community forest governance platforms
2026	3	AF, EN	Current cohort; geothermal + coffee

Sector Distribution

Across Guatemala CLP cohorts, sector distribution is: AFOLU (50%) — highland coffee, Maya forest conservation, community forestry governance, cacao agroforestry; Energy (31%) — geothermal applications, solar, biomass from agricultural waste; Climate Intelligence (19%) — deforestation monitoring for Petén, supply chain traceability, and REDD+ MRV platforms.

Key Observations

Guatemala's CLP participation reveals distinct patterns: (1) Community forestry governance technology is a unique niche — no other CTH country has this focus; (2) Geothermal startups reflect Guatemala's volcanic geology and existing geothermal infrastructure; (3) Highland specialty coffee (Huehuetenango, Antigua) creates premium market access that motivates EUDR compliance investment; (4) The Maya Biosphere Reserve generates carbon market activity (REDD+) that attracts climate intelligence startups; (5) Cardamom, Guatemala's most distinctive agricultural export, falls outside the EUDR framework but could benefit from Origo-style traceability infrastructure for voluntary sustainability markets.


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Guatemala — Taxonomy Node Mapping

country	Guatemala
mapping_type	taxonomy_node_mapping
schema_version	1.1

Node Mapping Summary

Guatemala's taxonomy node mapping reflects its diverse EUDR exposure (coffee, cacao, wood, rubber), its unique community forest concession model in Petén, strong geothermal energy potential, and highland agricultural adaptation needs. AFOLU nodes for coffee and forestry are tagged Y. Geothermal and solar energy nodes are tagged Y. NbS/bioeconomy extension nodes related to the Maya forest are tagged Y. Community forest governance creates a distinct node relevance pattern not seen in the other two countries.

AFOLU Nodes

Node ID	Label	latam_guatemala	Rationale
CT-AF-001	Land & Soil	Y	Highland coffee soil management; Petén land restoration after slash-and-burn
CT-AF-002	Forests & Woodlands	Y	Maya Biosphere Reserve — one of Mesoamerica's largest forests; community concessions
CT-AF-003	Oceans & Water	partial	Motagua and Polochic river basin management; Pacific coast fisheries
CT-AF-004	Ice & Snow	N	No relevance — tropical country
CT-AF-005	Air & Atmosphere	partial	Guatemala City air quality; volcanic emissions monitoring
CT-AF-006	Smart Farming	Y	Precision agriculture for highland coffee and cacao; cardamom production data
CT-AF-007	Livestock & Fisheries	partial	Petén cattle ranching contributes to deforestation; not a major EUDR exposure
CT-AF-008	Crops	Y	Coffee, cacao, cardamom — major export crops with climate vulnerability
CT-AF-009	Alternative Meat & Seafood	N	No market presence
CT-AF-010	Alternative Dairy & Egg	N	No market presence

Energy Nodes

Node ID	Label	latam_guatemala	Rationale
CT-EN-001	Critical Minerals	partial	Nickel (Izabal), some metallic mineral reserves; controversial mining sector
CT-EN-002	Hydrogen	N	No hydrogen development programs
CT-EN-003	Nuclear	N	No nuclear program
CT-EN-004	Bio & Synthetic Fuels	partial	Sugarcane ethanol and palm oil biodiesel; controversial social impacts
CT-EN-005	Fossil Fuels (Transition)	partial	Oil production in Petén; transition planning needed
CT-EN-006	Solar	Y	Good irradiance across Pacific slope; rural off-grid solar for remote communities
CT-EN-007	Wind	partial	San Marcos wind corridor; 2 operating wind farms
CT-EN-008	Geothermal	Y	Strongest geothermal potential in Central America after Costa Rica; Zunil, Amatitlán
CT-EN-009	Biomass	Y	Sugarcane bagasse, coffee husk, and palm waste; significant installed capacity
CT-EN-010	Hydro Tidal & Wave	partial	Hydropower significant (~30% of generation); Chixoy dam; social controversy
CT-EN-011	Batteries	N	No battery production or significant storage deployment
CT-EN-012	Alternative Storage	N	No alternative storage projects
CT-EN-013	Grids	partial	SIEPAC interconnection; grid modernization for renewable integration
CT-EN-014	EV Charging	N	Minimal EV adoption
CT-EN-015	Peer-to-Peer Energy	N	No regulatory framework

Climate Intelligence & Carbon Nodes

Node ID	Label	latam_guatemala	Rationale
CT-IC-001	IoT & Earth Observation	Y	CONAP Petén monitoring; satellite deforestation detection for Maya Biosphere Reserve
CT-IC-002	Climate Data	Y	INSIVUMEH climate/volcanic monitoring; drought early warning for Dry Corridor

CT-IC-003	Climate Finance	Y	Largest Central American capital market; CABEI green bond access; REDD+ finance
CT-IC-004	Climate Risk	Y	Hurricane, drought (Corredor Seco), volcanic, and seismic risk — extremely high vulnerability
CT-IC-005	Climate Insurance	partial	CCRIF SPC parametric insurance; agricultural index insurance pilots
CT-XS-001	Carbon Capture & Storage	N	No CCS activity
CT-XS-002	B2B Carbon Offsets	Y	Maya Biosphere Reserve REDD+ projects; active carbon credit generation
CT-XS-003	B2C Carbon Offsets	partial	Tourism-linked offsets; limited scale
CT-XS-004	Carbon Intelligence	partial	Limited national carbon registry; REDD+ reporting systems
CT-XS-005	Carbon Accounting	partial	National GHG inventory; community forest carbon accounting for REDD+

Waste, Built Environment & Transport Nodes

Node ID	Label	latam_guatemala	Rationale
CT-WA-001	Waste to Energy	partial	Guatemala City landfill methane; sugarcane waste cogeneration
CT-WA-002	Sustainable Materials	partial	Timber from community concessions (FSC-certified); bamboo potential
CT-WA-003 to CT-WA-005	Waste (remaining)	partial	Municipal waste challenges in Guatemala City; coffee processing waste
CT-BU-001 to CT-BU-005	Built Environment (all)	partial	Guatemala City green building emerging; seismic resilience technology overlap
CT-TR-001 to CT-TR-005	Transport (all)	partial	Transmetro BRT expansion; limited cleantech transport startup activity

Extension Nodes

Node ID	Label	latam_guatemala	Rationale
CT-EX-001	Drought-resistant crop varieties	Y	Corredor Seco drought affecting staple crops and coffee; critical food security
CT-EX-002	Flood resilience (nature-based)	Y	Hurricane and tropical storm flooding; Polochic/Motagua basins

CT-EX-003	Heat adaptation for agriculture	Y	Coffee rust at lower elevations; heat stress in Corredor Seco
CT-EX-004	Early warning systems	Y	Volcanic, seismic, hurricane, and drought early warning critical
CT-EX-005	Community-led reforestation	Y	Maya Biosphere community concession model — global best practice
CT-EX-006	Mangrove restoration	partial	Pacific coast mangroves; smaller scale than Caribbean nations
CT-EX-007	Silvopastoral systems	Y	Petén cattle ranching — silvopastoral as deforestation alternative
CT-EX-008	Bioeconomy: NTFPs	Y	Petén community concessions: xate palm, chicle, allspice — globally significant
CT-EX-009	PES platforms	Y	REDD+ payments for Maya Biosphere conservation; PINPEP incentive program
CT-EX-010	Solar home systems	Y	Rural electrification gaps in Alta Verapaz, Petén, and western highlands
CT-EX-011	Community biodigesters	partial	Highland livestock communities; limited scale
CT-EX-014	Remote sensing deforestation monitoring	Y	Petén deforestation monitoring; CONAP surveillance; fire detection
CT-EX-015	AI-powered carbon MRV	Y	Maya Biosphere REDD+ MRV requirements; community concession verification
CT-EX-016	Supply chain traceability	Y	Coffee, cacao, and timber traceability for EUDR and voluntary markets
CT-EX-017	Precision agriculture platforms	Y	Highland coffee, cacao, and cardamom farm management
CT-EX-018	Deforestation-free certification	Y	EUDR compliance for coffee and cacao; FSC for community timber
CT-EX-019	Supply chain due diligence	Y	EUDR operator obligations for Guatemalan exporters
CT-EX-020	Smallholder EUDR assistance	Y	Highland coffee smallholders need EUDR compliance support
CT-EX-021	EUDR operator documentation	Y	Documentation for coffee, cacao, and timber operators
CT-EX-022	Cacao geolocation	Y	Alta Verapaz cacao plot mapping
CT-EX-023	Cacao agroforestry monitoring	Y	Cacao under forest canopy in Alta Verapaz
CT-EX-032	Cross-commodity landscape compliance	Y	Multi-commodity landscapes in Petén and Alta Verapaz

CT-EX-038	Timber legality verification	Y	Community concession timber legality — FSC-certified operations in Petén
CT-EX-039	Community forest management	Y	ACOFOP community concessions — global best practice for forest governance
CT-EX-040	Smallholder group certification	Y	Highland coffee cooperatives; community forestry group certification