

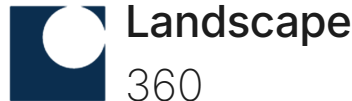
LANDSCAPE 360 CARBON MARKET UPDATES

Carbon Markets in Indonesian Agriculture

Emissions, targets, methodologies and the new rules for agricultural carbon offsets

The New Regulation

The Minister of Agriculture has issued Regulation No. 18 of 2026 on Procedures for Carbon Trading through Greenhouse Gas Emission Offsets in the Agriculture Sector (Peraturan Menteri Pertanian Nomor 18 Tahun 2026 tentang Tata Cara Perdagangan Karbon melalui Offset Emisi Gas Rumah Kaca Sektor Pertanian). The Minister signed it on October 6, 2026, and it was promulgated on October 12, 2026. It takes effect three months later, on January 12, 2027. It gives rice fields, livestock, estate crops, regenerative farming and biochar a clear route to carbon credits.



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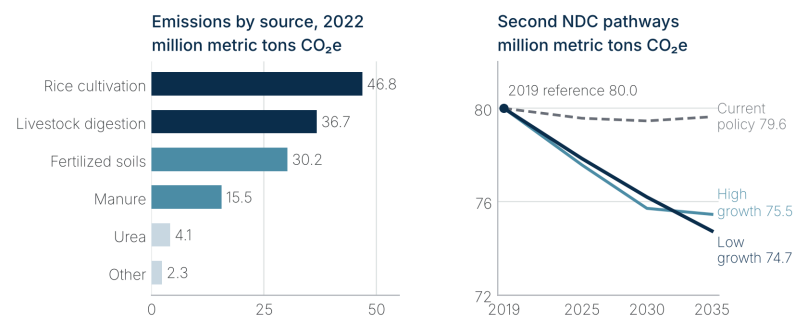


Figure 1. Agricultural emissions by source in 2022, from the national inventory, and the sector pathways in the Second NDC. The Second NDC recalculates the 2019 reference at 80.0 million metric tons. Sources: BTR1 and National Inventory Document 2000 to 2022; Second NDC, Table 1.

Emissions

Agriculture emitted 135.6 million metric tons of carbon dioxide equivalent (CO₂e) in 2022, according to Indonesia's first Biennial Transparency Report (BTR1). That is 9.8 percent of national emissions including forestry and other land use (FOLU), and 12.7 percent without it. Methane makes up 64 percent of the sector total, nitrous oxide 32 percent and carbon dioxide 5 percent.

Rice fields are the largest source, at 35 percent. The digestion of cattle and other ruminants adds 27 percent, nitrogen on fertilized soils 22 percent and manure 11 percent. Sector emissions rose 26 percent between 2000 and 2022.

The NDC Target

Indonesia's Second Nationally Determined Contribution (NDC), submitted in October 2025, uses 2019 as its reference year. It puts agriculture at 80.0 million metric tons in 2019, or 7.0 percent of net national emissions, after a recalculation of land data. Under current policy the sector stays near 80 million metric tons through 2035. The two low-carbon scenarios bring it to 74.7 to 75.5 million metric tons.

The sector must cut 3.3 to 3.7 million metric tons a year below current policy by 2030, and 4.2 to 4.9 million metric tons by 2035. The Enhanced NDC of 2022 asked for 10 to 12 million metric tons by 2030 against a business-as-usual level of 119.7 million metric tons. The inventory and the NDC use different estimates, so each project baseline needs careful documentation.

AGRICULTURE EMISSIONS, 2022

135.6 Mt
 Million metric tons of CO₂e, 9.8 percent of national emissions including FOLU.

SECOND NDC CUT BY 2035

4.2 to 4.9 Mt
 A year, below the current policy path.

TECHNICAL POTENTIAL

49.4 Mt a year
 36.7 Mt of cuts and 12.7 Mt of removals from regenerative farming, agroforestry and biochar.

Options, Methodologies and Rules

Farm practices could cut about 37 million metric tons a year, and regenerative agriculture, agroforestry and biochar could remove about 13 million more. That is ten times the Second NDC cut for 2035.

Table 1. Mitigation options, technical potential and methodologies, voluntary and compliance.

OPTION	POTENTIAL, MT A YEAR	SHARE, PERCENT	VOLUNTARY METHODOLOGIES	COMPLIANCE AND DOMESTIC	UNDER DEVELOPMENT
RICE					
Water-saving irrigation, such as alternate wetting and drying	18.3	13.5	Verra VM0051 v1.1 (CCP). Gold Standard rice water management v1.0 (CCP)	CDM AMS-III.AU. JCM (Philippines). SRN MSAP-002	Permentan technical guidelines
Low-emission varieties and straw management	2.9	2.1	Verra VM0051	SPE-GRK	Permentan technical guidelines
LIVESTOCK					
Better feed and feed additives	7.3	5.4	Verra VM0041	SPE-GRK	Article 6.4 proposal on ruminant vaccines
Manure to biogas or compost	3.1	2.3	Verra and Gold Standard with CDM methods	CDM AMS-III.D, ACM0010 and AMS-III.F	Article 6.4 proposal on manure methane
SOILS AND NUTRIENTS					
Balanced fertilizer and nitrification inhibitors	5.1	3.8	Verra VM0022 and VM0042 v2.2 (CCP)	SPE-GRK	Permentan technical guidelines
Subtotal, emission reductions	36.7	27.1			
REGENERATIVE AGRICULTURE AND CARBON REMOVALS					
Regenerative agriculture (reduced tillage, cover crops, compost)	5.0	n.a.	Verra VM0042 v2.2 (CCP). Gold Standard Soil Organic Carbon Framework	SPE-GRK	Article 6.4 proposal on soil recultivation
Agroforestry and perennial crops on degraded farmland	5.0	n.a.	Verra VM0047. Gold Standard A/R. Plan Vivo	SPE-GRK, coordinated across sectors	Article 6.4 proposal on afforestation
Biochar from rice husks, straw and palm residues	2.7	n.a.	Verra VM0044 v1.2 (CCP). Puro.earth. Isometric. CSI C-Sink	SPE-GRK, coordinated across sectors	Article 6.4 proposal on biochar
Enhanced rock weathering on cropland	n.e.	n.a.	Isometric. Puro.earth	None yet	None yet
Subtotal, removals	12.7				
AGRO-INDUSTRY, COUNTED IN THE WASTE SECTOR					
Methane capture from palm oil mill effluent	up to 37	n.a.	Verra and Gold Standard with CDM methods	CDM ACM0014 and AMS-III.H. SPE-GRK	Article 6.4 proposal on compressed biogas

Note. Landscape Advisory estimates of technical potential at full adoption, using the assumptions under Sources and method. Share is the percent of 2022 agriculture emissions. Removals carry no share. CCP is the Core Carbon Principles label. SPE-GRK is the Indonesian Greenhouse Gas Emission Reduction Certificate. Mt is million metric tons of CO₂e. n.e. is not estimated. n.a. is not applicable.

Supply and Demand

The potential far exceeds the NDC need, so most of it could be sold while the sector still meets its target. Farmer groups and cooperatives will aggregate smallholders. Buyers include companies seeking CCP-labeled credits and durable removals such as biochar, Article 6 buyers such as Japan, and power plants using SPE-GRK offsets. Palm oil, sugar, pulp and food companies may also buy if trading extends beyond power under Presidential Regulation No. 110 of 2025.

Sources and method

Emissions and targets: BTR1 and National Inventory Document, 2024. Enhanced NDC, 2022. Second NDC, 2025. **Potentials:** Rice irrigation cuts 39 percent of rice methane (UBA, 2025), then 10, 20, 15 and 20 percent for varieties, feed, fertilizer and manure. Soil carbon at 0.5 metric tons per hectare on 10 million hectares. Agroforestry at 5 metric tons per hectare on 1 million hectares.

The Permentan in Brief

The regulation covers rice, livestock, estate crops and horticulture, and names regenerative practices such as soil carbon, cover crops and conservation farming. Agroforestry, biochar and biogas run as cross-sector projects. Businesses must partner with at least three nearby farmer institutions. Domestic credits need a design document in the carbon unit registry, a 30-day review and accredited auditors. Verra and Gold Standard credits follow a parallel route. Article 6 authorization takes 20 days. Fixed review times, both domestic and international standards and a clear authorization path make projects easier to plan and finance. Guidelines are due by January 12, 2027.

Biochar from a third of husks from 53.1 million metric tons of paddy (BPS, 2024). Palm oil effluent from PASPI, 2026. **Methodologies:** Verra; Gold Standard; Puro.earth; Isometric; ICVCM decisions, 2025 and 2026; UNFCCC Article 6.4 register, October 2026; SRN. **Regulation:** Permentan 18/2026, Berita Negara 2026 No. 678.