

INDONESIA

DATA	Description	Source
Agricultural Indicators		
Palm oil production (t)	Total palm oil production (crude palm oil (CPO) equivalent) based on area of planted oil palm at kabupaten (district) level and CPO production at province level.	CPO production is from the Directorate General of Estate Crops via the statistics agency (BPS) (https://www.bps.go.id/) Planted oil palm is from Auriga's 2016 palm cover map derived from SPOT.
Oil palm cover (ha)	Area of land planted with oil palm trees. It includes all types of plantations such as estates and smallholders.	Auriga's 2016 palm cover map derived from SPOT
Product	Includes all crude palm oil (CPO) and refined palm oil (RPO) under the HS code 1511.	Trade data
Socio-economic indicators		
Smallholder productivity (kg/ha)	Total production (kg) by smallholders divided by productive area (hectare).	Crop Estate Statistics of Indonesia: Palm Oil (Directorate General of Estate Crops) (https://www.bps.go.id/)
Rural employment (%)	Rate of employment in rural areas, calculated as number of workers divided by population (age 15-64).	National Socio-Economic Survey (SUSENAS)
Environmental Indicators		
Forest cover (ha)	Area of forest cover (primary and secondary). Forests are defined as locations with greater than 90% tree canopy cover density that are not planted with fibre, rubber or oil palm plantations. Based on 2000 forest cover map masked by map of plantations. Limited to Kalimantan, Sumatra and Papua islands.	Carlson KM et al 2018 Effect of oil palm sustainability certification on deforestation and fire in Indonesia <i>Proceedings of the National Academy of Sciences</i> 115(1): 121-126, doi: 10.1073/pnas.1704728114 (https://www.pnas.org/content/115/1/121) Gunarso P et al 2013 Oil palm and land use change in Indonesia, Malaysia, and Papua New Guinea. Reports from the Technical Panels of the Second Greenhouse Gas Working Group of the Roundtable on Sustainable Palm Oil, eds Killeen TJ, Goon J (Roundtable on Sustainable Palm Oil, Kuala Lumpur, Malaysia), pp 29-63. (Link). Hansen MC et al 2013 High-resolution global maps of 21st-century forest cover change <i>Science</i> 342: 850-853, doi: 10.1126/science.1244693 (https://science.sciencemag.org/content/342/6160/850)

<p>Territorial deforestation (ha)</p>	<p>Annual deforestation per kabupaten (district) based on the loss of tree cover (based on Hansen using 90% tree canopy cover density) in locations which were previously defined as forest cover.</p> <p>Limited to Kalimantan, Sumatra and Papua islands.</p>	<p>Carlson KM et al 2018 Effect of oil palm sustainability certification on deforestation and fire in Indonesia <i>Proceedings of the National Academy of Sciences</i> 115(1): 121–126, doi: 10.1073/pnas.1704728114 (https://www.pnas.org/content/115/1/121)</p> <p>Gunarso P et al 2013 Oil palm and land use change in Indonesia, Malaysia, and Papua New Guinea. Reports from the Technical Panels of the Second Greenhouse Gas Working Group of the Roundtable on Sustainable Palm Oil, eds Killeen TJ, Goon J (Roundtable on Sustainable Palm Oil, Kuala Lumpur, Malaysia), pp 29–63. (Link).</p> <p>Hansen MC et al 2013 High-resolution global maps of 21st-century forest cover change <i>Science</i> 342: 850–853, doi: 10.1126/science.1244693 (https://science.sciencemag.org/content/342/6160/850)</p>
<p>Oil palm associated deforestation (ha)</p>	<p>Annual forest loss per kabupaten (district), calculated by identifying locations with a loss of tree cover (Hansen et al 2013) in locations which were previously defined as forest cover that fall within oil palm cover mapped using SPOT imagery in 2016 (Auriga).</p>	<p>Auriga's 2016 palm cover map derived from SPOT.</p> <p>Carlson KM et al 2018 Effect of oil palm sustainability certification on deforestation and fire in Indonesia <i>Proceedings of the National Academy of Sciences</i> 115(1): 121–126, doi: 10.1073/pnas.1704728114 (https://www.pnas.org/content/115/1/121)</p> <p>Gunarso P et al 2013 Oil palm and land use change in Indonesia, Malaysia, and Papua New Guinea. Reports from the Technical Panels of the Second Greenhouse Gas Working Group of the Roundtable on Sustainable Palm Oil, eds Killeen TJ, Goon J (Roundtable on Sustainable Palm Oil, Kuala Lumpur, Malaysia), pp 29–63. (Link).</p> <p>Hansen MC et al 2013 High-resolution global maps of 21st-century forest cover change <i>Science</i> 342: 850–853, doi: 10.1126/science.1244693 (https://science.sciencemag.org/content/342/6160/850)</p>

Oil palm deforestation risk	Annual rate of palm deforestation risk. Calculated based on the total deforestation for the period between 3 and 4 years prior to the year of harvest and export. This time period reflects the typical delay between the clearance of forest and the first harvest on cleared land, and provides an estimate of the new deforestation associated with the expansion of palm that has contributed to a given year of harvest. Palm deforestation risk is allocated to actors along the supply chain in proportion to the volume of palm oil that they export from a given kabupaten (district) relative to the total production of palm oil in that kabupaten.	Derived from oil palm associated deforestation.
Oil palm planted on peat (ha)	Area of peatland of all depths, based on the Indonesian Peatland Map, planted with oil palm in 2016. It includes all types of plantations such as estates and smallholders.	Auriga's 2016 palm cover map derived from SPOT. Wahyunto NK et al 2014 Indonesian peatland map: method, certainty, and uses <i>Proceeding Lokakarya Kajian dan Sebaran Gambut di Indonesia</i> 81-96
Fire hotspots (number)	Number of fire hotspots detected by satellite imagery in a given year within each kabupaten (district). Includes all hotspots identified regardless of confidence level.	The Fire Information for Resource Management System (FIRMS) – NASA (https://firms.modaps.eosdis.nasa.gov/)
Actor Commitments		
ISPO Certification (Number)	Number of mills certified by ISPO.	Indonesian Sustainable Palm Oil Systems (ISPO) (http://ispo-org.or.id/)
RSPO Certification (Number)	Number of mills certified by RSPO (Active Certification).	Roundtable on Sustainable Palm Oil (https://rspo.org/)

Zero deforestation commitments	Zero deforestation commitments (ZDCs) made by traders which have company commitments to zero deforestation across their global supply chains. If the company has made a No Deforestation, No Peat and No Exploitation commitment, this is labelled as “company NDPE commitment”.	Commitments made public on company websites as well as those collected by SPOTT and Forest 500
Contextual Layers		
Province boundaries		Badan Pusat Statistik (BPS) (https://www.bps.go.id/)
Geocodes	Spatial code given to kabupatens (districts) as ID-XXXX	2016 kabupaten boundaries defined by Badan Informasi Geospasial (BIG), Geocodes are from Badan Pusat Statistik (BPS) (https://www.big.go.id/) (https://www.bps.go.id/)