

Sustainability Performance Data



SUSTAINABILITY REPORT 2023



General Disclosures

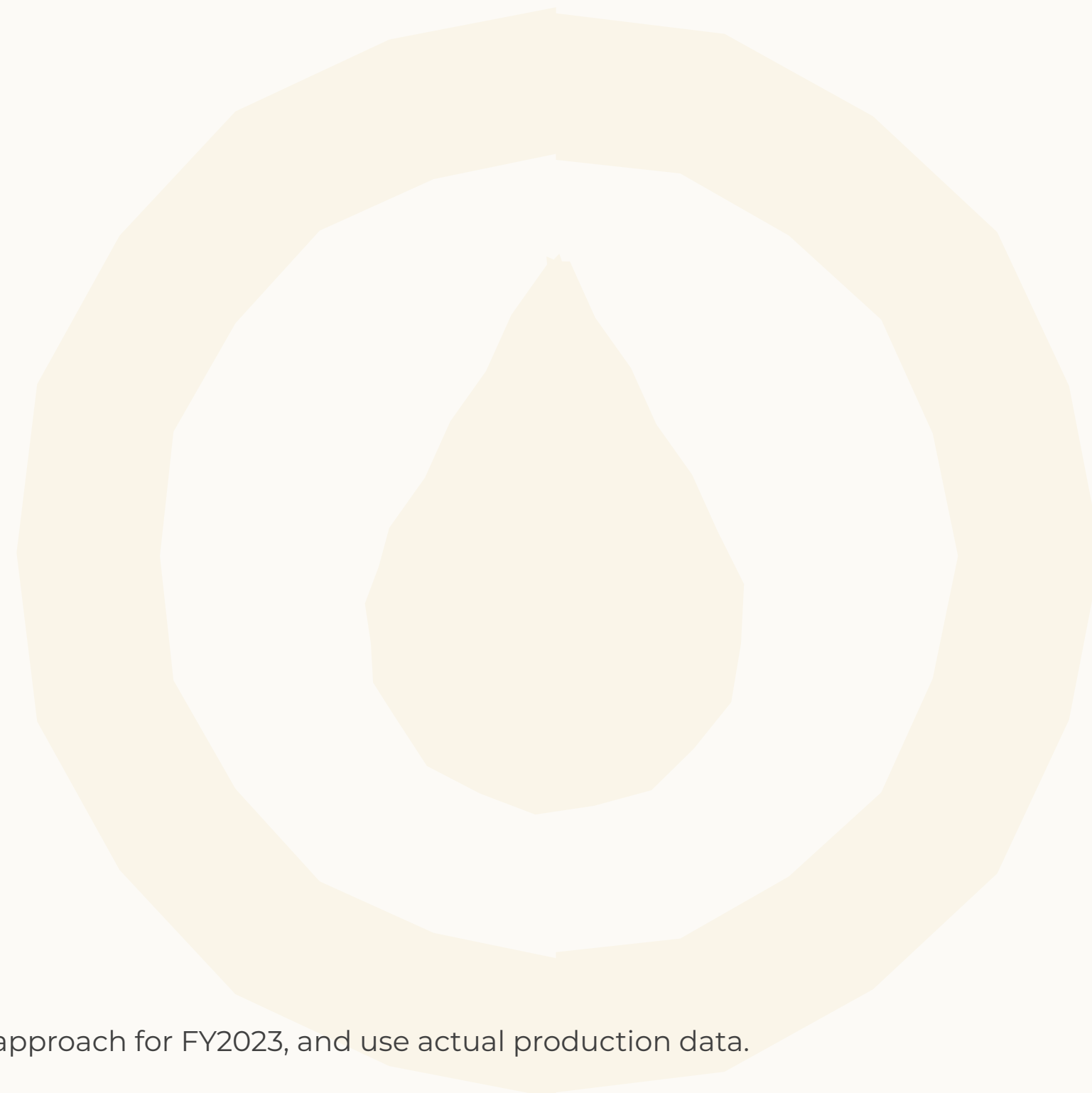
[GRI 2-6, 201-1, 13.22.2] [SASB FB-AG-000.A, FB-AG-000.C]

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Group Level						
Revenue	USD billion	8.9	10.8	10.0	7.0	7.0
Global operations	no. of countries	13	13	13	13	13
Upstream						
Total Landbank	ha	202,690	199,379	199,358	199,154	199,154
Sumatra	ha	68,065	67,035	67,035	66,915	66,915
Kalimantan	ha	134,625	132,344	132,323	132,239	132,239
Total Planted Area	ha	124,397	124,657	123,998	123,591	122,828
Sumatra	ha	55,376	56,272	56,282	56,584	56,610
Kalimantan	ha	69,021	68,385	67,716	67,007	66,218
Nucleus Planted Area	ha	118,080	118,452	118,121	117,679	117,032
Sumatra	ha	51,653	52,616	52,762	53,013	53,074
Kalimantan	ha	66,427	65,837	65,359	64,665	63,957
Scheme Smallholder Planted Area	ha	6,317	6,205	5,877	5,912	5,796
Sumatra	ha	3,723	3,656	3,521	3,571	3,535
Kalimantan	ha	2,594	2,549	2,356	2,341	2,261
Total FFB Produced by Own Plantations	MT	2,588,611	2,870,186	2,713,542	2,717,961	2,584,026
Nucleus	MT	2,461,614	2,727,498 ¹	2,578,755	2,594,064	2,475,555
FFB yield – own plantations	MT FFB/ha	22.60	24.65	23.55	23.71	22.79
Scheme smallholders	MT	126,997	142,688	134,787	123,897	108,471
FFB yield - scheme smallholders	MT FFB/ha	21.55	24.64	21.51	22.41	22.92
Total FFB Processed by Musim Mas Mills	MT	3,321,203	3,844,924	3,725,397	3,556,709	3,437,968
Nucleus	MT	2,461,614	2,727,498	2,578,755	2,546,003	2,414,967
Scheme smallholders	MT	126,997	142,688	134,787	114,064	103,953
Third-party FFB suppliers	MT	731,686	974,297	1,011,853	896,642	919,048
Independent smallholders – direct	MT	906	441	2		
Total mills	no.	18	18	18	17	17
CPO produced	MT	756,800	865,683	843,293	796,581	774,892
Extraction rate – CPO	%	22.79	22.51	22.64	22.40	22.54
PK produced	MT	196,840	224,179	214,126	202,829	195,859
Extraction rate – PK	%	5.93	5.83	5.75	5.70	5.70
CPO yield	MT CPO/ha	5.42	5.86	5.68	5.70	5.53
Midstream and Downstream						
CPO sourced by refineries	MT	5,740,617	6,320,292	6,468,782	6,908,045	7,585,746

¹ FY2022 FFB data from own plantations has been restated.

Certification

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Upstream						
RSPO-certified area – own plantation area	ha	146,923	146,923	146,924	136,588	136,588
RSPO-certified area – scheme smallholder area	ha	6,163	6,039	5,956	3,494	3,494
RSPO-certified mills	no.	15	15	15	13	12
CSPO produced, including scheme smallholder volumes	MT	602,107 ²	755,780	727,662	697,401	695,151
CSPK produced, including scheme smallholder volumes	MT	151,462 ³	188,930	182,458	175,555	176,645
ISPO-certified PTs	no.	17	15	11	5	5
ISCC-certified mills	no.	18	18	18	12	12
Midstream and Downstream						
CSPO sourced – SG/IP	MT	520,198	387,548	375,058	300,711	293,439
CSPO sourced – MB	MT	449,712	415,645	518,347	686,473	284,143
CSPKO sourced – SG/IP	MT	54,337	47,796	47,880	27,603	13,103
CSPKO sourced – MB	MT	123,632	132,987	162,165	137,601	41,623



^{2/3} We improved our data collection approach for FY2023, and use actual production data.

PILLAR 1 Improve the Lives of Smallholders, Workers and Communities

Employees⁴ [GRI 2-7, 401-1, 405-1, 404-1, 13.15.2]

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Group Level by Gender	no.	42,380	38,814	37,681	36,563	34,343
Male	no.	32,867	30,702	29,542	26,965	25,327
Female	no.	9,513	8,112	8,139	9,598	9,016
Permanent Employees by Country	no.	35,795	32,195	31,080		
Indonesia	no.	31,271	30,331	29,263		
Malaysia	no.	2,901	240	240		
Singapore	no.	353	353	350		
Other	no.	1,270	1,271	1,227		
Temporary Employees by Country	no.	6,585	6,619	6,601		
Indonesia	no.	6,574	6,619	6,601		
Malaysia	no.	0	0	0		
Singapore	no.	0	0	0		
Other	no.	11	0	0		
Upstream (Indonesia Only)						
Total Employees by Gender	no.	23,862	23,061	22,083	22,195	22,552
Male	no.	18,127	17,307	16,275	16,444	16,552
Female	no.	5,735	5,754	5,808	5,751	6,000
Total Senior Management by Gender	no.	12	14	14	25	23
Male	no.	12	14	14	25	23
Female	no.	0	0	0	0	0
Total Management by Gender	no.	85	76	81	66	62
Male	no.	81	74	79	64	60
Female	no.	4	2	2	2	2
Total Staff by Gender	no.	1,262	1,132	1,179	1,229	990
Male	no.	985	864	907	952	740
Female	no.	277	268	272	277	250
Total Workers by Gender	no.	22,503	21,839	20,809	20,875	21,477
Male	no.	17,049	16,355	15,275	15,403	15,729
Female	no.	5,454	5,484	5,534	5,472	5,748

⁴ Musim Mas' human resource data collection process has been revised for SR2023; other than upstream segment, prior years data are not comparable and have been excluded.

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Midstream and Downstream (Indonesia Only)						
Total Employees by Gender	no.	12,023				
Male	no.	11,170				
Female	no.	853				
Total Senior Management by Gender	no.	5				
Male	no.	5				
Female	no.	0				
Total Management by Gender	no.	99				
Male	no.	75				
Female	no.	24				
Total Staff by Gender	no.	3,601				
Male	no.	2,894				
Female	no.	707				
Total Workers by Gender	no.	8,318				
Male	no.	8,196				
Female	no.	122				
Others (Indonesia Only)						
Total Employees by Gender	no.	1,960				
Male	no.	1,023				
Female	no.	937				
Total Senior Management by Gender	no.	18				
Male	no.	17				
Female	no.	1				
Total Management by Gender	no.	164				
Male	no.	95				
Female	no.	69				
Total Staff by Gender	no.	1,481				
Male	no.	636				
Female	no.	845				
Total Workers by Gender	no.	297				
Male	no.	275				
Female	no.	22				

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Midstream and Downstream (Global Excluding Indonesia)						
Total Employees by Gender	no.	2,223				
Male	no.	1,661				
Female	no.	562				
Total Senior Management by Gender	no.	4				
Male	no.	4				
Female	no.	0				
Total Management by Gender	no.	103				
Male	no.	82				
Female	no.	21				
Total Staff by Gender	no.	1,285				
Male	no.	785				
Female	no.	500				
Total Workers by Gender	no.	831				
Male	no.	790				
Female	no.	41				
Other (Global Excluding Indonesia)						
Total Employees by Gender	no.	2,312				
Male	no.	886				
Female	no.	1,426				
Total Senior Management by Gender	no.	9				
Male	no.	8				
Female	no.	1				
Total Management by Gender	no.	598				
Male	no.	334				
Female	no.	264				
Total Staff by Gender	no.	1,677				
Male	no.	519				
Female	no.	1,158				
Total Workers by Gender	no.	28				
Male	no.	25				
Female	no.	3				

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Upstream, Midstream, Downstream and Others (Indonesia Only)						
Total Employees by Age Group	no.	37,845				
Under 30	no.	14,682				
30 - 50	no.	21,483				
Over 50	no.	1,680				
Total Senior Management by Age Group	no.	35				
Under 30	no.	0				
30 - 50	no.	10				
Over 50	no.	25				
Total Management by Age Group	no.	348				
Under 30	no.	1				
30 - 50	no.	255				
Over 50	no.	92				
Total Staff by Age Group	no.	6,344				
Under 30	no.	3,049				
30 - 50	no.	3,131				
Over 50	no.	164				
Total Workers by Age Group	no.	31,118				
Under 30	no.	11,632				
30 - 50	no.	18,087				
Over 50	no.	1,399				
Midstream and Downstream (Global Excluding Indonesia)						
Total Employees by Age Group	no.	2,223				
Under 30	no.	503				
30 - 50	no.	1,470				
Over 50	no.	250				
Total Senior Management by Age Group	no.	4				
Under 30	no.	0				
30 - 50	no.	1				
Over 50	no.	3				
Total Management by Age Group	no.	103				
Under 30	no.	0				
30 - 50	no.	61				
Over 50	no.	42				
Total Staff by Age Group	no.	1,285				
Under 30	no.	229				
30 - 50	no.	907				
Over 50	no.	149				

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Total Workers by Age Group	no.	831				
Under 30	no.	274				
30 - 50	no.	501				
Over 50	no.	56				
Others (Global Excluding Indonesia)						
Total Employees by Age Group	no.	2,312				
Under 30	no.	303				
30 - 50	no.	1,673				
Over 50	no.	336				
Total Senior Management by Age Group	no.	9				
Under 30	no.	0				
30 - 50	no.	1				
Over 50	no.	8				
Total Management by Age Group	no.	598				
Under 30	no.	1				
30 - 50	no.	425				
Over 50	no.	172				
Total Staff by Age Group	no.	1,677				
Under 30	no.	287				
30 - 50	no.	1,235				
Over 50	no.	155				
Total Workers by Age Group	no.	28				
Under 30	no.	15				
30 - 50	no.	12				
Over 50	no.	1				
New Hires by Gender						
Male	no.	9,511				
Female	no.	2,568				
Turnover by Gender						
Male	%	28.59%				
Female	%	32.40%				
New Hires by Age Group						
Under 30	no.	7,476				
30-50	no.	4,555				
Over 50	no.	48				

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Turnover by Age Group						
Under 30	%	41.10%				
30-50	%	23.50%				
Over 50	%	12.43%				
New Hires by Business Segments						
Upstream	no.	8,864				
Midstream and downstream	no.	2,772				
Other	no.	443				
Turnover by Business Segments						
Upstream	%	35.87%				
Midstream and downstream	%	20.11%				
Other	%	16.24%				

Safety and Health [GRI 403-9, 13.19.10][SASB FB-AG-320a.1]

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Upstream						
Total accidents	no.	148	236	305	440	377
Total days lost to accidents	no.	8,719	2,603	3,100	9,169	11,001
Total working hours	million hours	39.69	38.79	37.82	39.66	41.56
Accident frequency rate (per million hours worked)		3.73	6.08	8.06	11.09	9.07
Severity rate (average days lost per accident)		58.91	11.03	10.16	20.84	29.18
Total high-consequence accidents (excluding fatalities)	no.	4	3	2		
Fatalities	no.	3	2	3	7	3

Social and Community [GRI 203-1, 13.22.3]

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Support for Smallholders						
Scheme Smallholders (KKPA and VDP)						
Number of smallholders under KKPA programs	no.	4,159 ^{#5}	4,144	4,044	3,571	3,571
Number of KKPA programs	no.	11 [#]	10	9	9	9
KKPA area	ha	7,814	6,783	6,445	6,327	6,327
Training provided under KKPA program	no.	135	157	111	119	98
Villages under VDP program	no.	32 [#]	31	31	29	17
VDP area	ha	242	232	210	211	127
Trainings provided under VDP program	no.	34	53	27	21	
Gross Income for Smallholders	IDR million	300,124.8	390,214.8			
<i>Gross income of smallholders under KKPA</i>	<i>IDR million</i>	<i>293,304.7</i>	<i>382,693.0</i>			
<i>Gross income of villages under VDP</i>	<i>IDR million</i>	<i>6,820.1</i>	<i>7,521.8</i>			
Independent Smallholders						
Number of Smallholders Trained						
Training for smallholders	no.	36,751	36,179	35,632		
Training for trainers: Smallholders Hubs	no.	6,723	4,529	1,051		
Village extension officers trained under Smallholders Hubs	no.	460	347	177		
Infrastructure and Services Provided						
YAK secondary schools	no.	3	3	3	2	2
YAK primary schools	no.	11	10	9	9	9
YAK kindergartens	no.	11	10	9	9	9
Childcare centres	no.	47	48	48	49	
Total children living in plantations	no.	12,220	12,746	11,530	14,507	13,950
Clinics	no.	26	26	27	26	26
Aid posts	no.	2,691	2,655	2,602	2,401	2,285
Housing provided for employees	no.	14,110	13,918	13,805	14,439	13,486
Infrastructure area	ha	8,718	8,508	8,326	7,873	7,621
CSR and Community Program						
Contribution to CSR	IDR billion	32.9	30.2	21.3	22.4	15.2

[#] EY has performed limited assurance procedures on these figures

⁵ The 4,159 smallholders are from 10 KKPA programs. In 2023, we added a new program, bringing the total to 11. This has not yet increased the number of smallholders as the program is still in its early stages.

PILLAR 2 Deliver Positive Environmental Impacts

Environmental and Operations [GRI 302-1, 302-2, 303-3, 303-4, 303-5, 306-3, 306-4, 305-1, 305-2, 305-4, 13.1.2, 13.1.3, 13.1.5, 13.6.2, 13.7.4, 13.7.5, 13.7.6, 13.8.4, 13.8.5][SASB FB-AG-110a.1, FB-AG-130a.1, FB-AG-140a.1]

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
GHG Emissions (GHG Protocol - Group level)						
Gross Direct (Scope 1) GHG Emissions by Business Segment	MT CO₂e	1,514,141	1,635,429	1,699,673	1,337,533	1,275,589
<i>Oil palm plantations</i>	<i>MT CO₂e</i>	<i>366,703</i>	<i>361,356</i>	<i>384,384</i>	<i>368,038</i>	<i>385,745</i>
<i>Palm oil mills</i>	<i>MT CO₂e</i>	<i>47,309</i>	<i>53,814</i>	<i>69,157</i>	<i>54,476</i>	<i>55,727</i>
<i>Midstream and downstream</i>	<i>MT CO₂e</i>	<i>999,383</i>	<i>1,127,658</i>	<i>1,151,708</i>	<i>817,934</i>	<i>764,983</i>
<i>Other</i>	<i>MT CO₂e</i>	<i>100,746</i>	<i>92,601</i>	<i>94,424</i>	<i>97,085</i>	<i>69,134</i>
Gross Location-based Energy Indirect (Scope 2) GHG Emissions by Business Segments	MT CO₂e	430,913	411,579	414,430	320,178	291,186
<i>Oil palm plantations</i>	<i>MT CO₂e</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Palm oil mills</i>	<i>MT CO₂e</i>	<i>0</i>	<i>0</i>	<i>816</i>	<i>105</i>	<i>106</i>
<i>Midstream and downstream</i>	<i>MT CO₂e</i>	<i>429,569</i>	<i>411,452</i>	<i>410,874</i>	<i>319,276</i>	<i>290,436</i>
<i>Other</i>	<i>MT CO₂e</i>	<i>1,344</i>	<i>127</i>	<i>2,740</i>	<i>797</i>	<i>644</i>
Other Indirect (Scope 3) GHG Emissions by Category	MT CO₂e	39,957,805				
<i>Purchased goods & services</i>	<i>MT CO₂e</i>	<i>37,035,367</i>				
<i>Capital goods</i>	<i>MT CO₂e</i>	<i>25,981</i>				
<i>Fuel-and-energy-related activities</i>	<i>MT CO₂e</i>	<i>547,008</i>				
<i>Upstream transportation and distribution</i>	<i>MT CO₂e</i>	<i>546,004</i>				
<i>Waste generated in operations</i>	<i>MT CO₂e</i>	<i>29,107</i>				
<i>Business travel</i>	<i>MT CO₂e</i>	<i>1,534</i>				
<i>Employee commuting</i>	<i>MT CO₂e</i>	<i>11,725</i>				
<i>Upstream leased assets</i>	<i>MT CO₂e</i>	<i>6,037</i>				
<i>Downstream transportation and distribution</i>	<i>MT CO₂e</i>	<i>447,015</i>				
<i>Processing of sold products</i>	<i>MT CO₂e</i>	<i>1,122,492</i>				
<i>Use of sold products</i>	<i>MT CO₂e</i>	<i>180,101</i>				
<i>End of life treatment of sold products</i>	<i>MT CO₂e</i>	<i>5,434</i>				

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
GHG Emissions (PalmGHG - Upstream)						
Total net GHG emissions (RSPO-certified mills)	MT CO ₂ e	2,530,004	2,532,356	2,583,098	2,595,344	2,479,582
GHG emission intensity – Group	MT CO ₂ e/MT CPO	2.66 [#]	2.77	2.87	3.17	2.80
GHG emission intensity – Sumatra	MT CO ₂ e/MT CPO	4.68	4.68	4.87	4.97	4.34
GHG emission intensity – Kalimantan	MT CO ₂ e/MT CPO	0.81	1.08	1.12	1.25	1.12
Methane capture facilities installed	no.	17	17	16	15	15
Total emissions avoided by methane capture	MT CO ₂ e	539,225	619,749	575,075	544,220	537,965
Energy (Upstream)						
Total Energy Consumption	GJ	7,343,544	8,162,218	7,670,509		
Energy Consumption from Non-Renewable Sources	GJ	359,488	383,991	370,031		
<i>B30 biodiesel</i>	<i>GJ</i>	<i>324,888</i>	<i>353,707</i>	<i>343,647</i>		
<i>Diesel</i>	<i>GJ</i>	<i>3,341</i>	<i>2,266</i>	<i>3,620</i>		
<i>Petrol</i>	<i>GJ</i>	<i>31,259</i>	<i>28,017</i>	<i>22,764</i>		
Energy Consumption from Renewable Sources	GJ	6,984,056	7,778,227	7,300,478	5,190,706	5,278,085
<i>Palm kernel shell (PKS)</i>	<i>MT</i>	<i>49,031</i>	<i>48,255</i>	<i>44,913</i>	<i>31,240</i>	<i>39,639</i>
	<i>GJ</i>	<i>739,384</i>	<i>727,686</i>	<i>677,289</i>	<i>471,103</i>	<i>597,750</i>
<i>Palm fiber</i>	<i>MT</i>	<i>818,158</i>	<i>937,001</i>	<i>885,565</i>	<i>721,617</i>	<i>705,370</i>
	<i>GJ</i>	<i>5,682,198</i>	<i>6,522,253</i>	<i>6,078,182</i>	<i>4,719,603</i>	<i>4,680,335</i>
<i>Biogas from POME</i>	<i>million m³</i>	<i>56.79</i>	<i>55.25</i>	<i>59.68</i>		
	<i>GJ</i>	<i>562,474</i>	<i>528,288</i>	<i>545,007</i>		
Energy Intensity	GJ/MT CPO	7.70	7.49	7.25		
Surplus Electricity Generated from Biogas Exported to Grid	MWh	25,242	26,589	33,901	31,988	
Conservation						
Total Conservation Area	ha	28,513	28,460	28,453	28,210	24,220
<i>Total HCV area</i>	<i>ha</i>	<i>20,766</i>	<i>20,766</i>	<i>20,766</i>	<i>20,766</i>	<i>19,716</i>
<i>Total HCS area</i>	<i>ha</i>	<i>1,843</i>	<i>1,846</i>	<i>1,846</i>	<i>1,846</i>	<i>1,790</i>
<i>Other</i>	<i>ha</i>	<i>5,904</i>	<i>5,848</i>	<i>5,841</i>	<i>5,598</i>	<i>2,715</i>
Managed Peat						
Planted area	ha	35,081	35,254	35,254	35,273	35,274
Conserved area	ha	4,611	4,253	4,253	4,253	4,051

EY has performed limited assurance procedures on these figures

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Fire Incidents						
Hotspots within concession	no.	394	97	87	151	119
Fires within concession	no.	42	3	9	11	16
Hotspots surrounding concession area	no.	1,423	146	326	289	1,689
Fires surrounding concession area	no.	616	25	90	71	997
Fire trainings conducted	no.	150	127	161	144	148
Villages enrolled in Fire Free Village Program (FFVP)	no.	75	74	74	75	75
Area covered under FFVP	ha	457,513	450,769	450,769	468,569	458,361
Fertilizer Usage						
Matured area – Sumatra	MT/ha	1.42	1.46	1.54	1.63	1.73
Immature area – Sumatra	MT/ha	2.08	2.82	2.83	2.64	2.78
Matured area – Kalimantan	MT/ha	2.42	2.40	2.28	2.08	1.95
Immature area – Kalimantan	MT/ha	1.28	1.28	1.40	1.54	1.77
Total inorganic fertilizer usage	MT/ha	149,813	145,503	148,121	154,697	142,407
Herbicide Usage						
Toxicity per hectare planted	toxicity unit/ha	499	352⁶	513	531	476
<i>Moderately hazardous</i>	<i>toxicity unit/ha</i>	162	110	183	205	177
<i>Slightly hazardous</i>	<i>toxicity unit/ha</i>	327	236	323	318	291
<i>Unlikely to present acute hazards</i>	<i>toxicity unit/ha</i>	10	6	7	8	7
Water Usage (Group-level)						
Total water withdrawal	ML	17,159	18,709	20,591		
Total water discharge	ML	26,881	30,568	29,263		
Total water consumption	ML	9,722	11,859	8,672		
Water Usage (RSPO-certified Upstream Units)						
Plantations	ML	634.07	523.51	315.34	197.45	564.94
Mills	ML	3,269.92	3,850.38	3,538.32	3,550.92	3,603.45
Mill water usage intensity	m ³ /MT FFB processed	1.12 [#]	1.17	1.13	1.17	1.23

[#] EY has performed limited assurance procedures on these figures.

⁶ Herbicide toxicity for FY2022 has been restated.

Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Quality of Effluent Discharged (Upstream)						
Average BOD levels of river discharge – Sumatra	mg/l	59.26 [#]	55.45	61.08	52.07	67.57
Average BOD levels of river discharge – Kalimantan	mg/l	31.27 [#]	49.44	29.05	23.37	37.24
Average BOD levels land application – Sumatra	mg/l	63.42 [#]	52.56	45.42	47.08	58.85
Average BOD levels land application – Kalimantan	mg/l	58.64 [#]	47.61	34.13	31.99	46.55
Average COD levels of river discharge – Sumatra	mg/l	191.35 [#]	165.71	170.24	151.65	204.96
Average COD levels of river discharge – Kalimantan	mg/l	170.24 [#]	199.98	139.13	115.76	172.89
Average COD levels land application – Sumatra	mg/l	217.88 [#]	165.32	152.83	144.71	203.82
Average COD levels land application – Kalimantan	mg/l	205.11 [#]	149.39	156.67	148.61	216.72
Average Phosphorus and Nitrogen Levels in Water Courses						
P-level inlet – Sumatra	mg/l	0.05	0.08	0.08	0.67	0.47
P-level outlet – Sumatra	mg/l	0.07	0.09	0.09	1.05	1.07
P-level inlet – Kalimantan	mg/l	0.08	0.06	0.06	0.02	0.08
P-level outlet – Kalimantan	mg/l	0.07	0.07	0.06	0.01	0.08
N-level inlet – Sumatra	mg/l	5.52	5.17	4.95	2.71	1.70
N-level outlet – Sumatra	mg/l	5.44	5.33	5.22	2.86	1.94
N-level inlet – Kalimantan	mg/l	4.10	3.74	2.01	2.22	2.63
N-level outlet – Kalimantan	mg/l	3.98	3.79	2.36	2.06	2.24
Quantity of Effluent Discharged (Upstream)						
Treated Effluent Discharge for Land Application						
Sumatra	ML	984	1,183	996	1,030	1,022
Kalimantan	ML	1,273	1,376	1,108	1,183	998
Treated Effluent Discharge to Waterways						
Sumatra	ML	98	122	133	207	109
Kalimantan	ML	29	127	174	135	88
Total Organic Waste Reused						
EFB	MT	17,917	19,200	20,319	19,561	
POME	m ³	2,256,498	2,559,117	2,103,680	2,213,371	2,020,000
Decanter solids	MT	40,315	47,480	45,956	64,633	69,770
Boiler ash	MT	29,692	30,731	25,123		

[#] EY has performed limited assurance procedures on these figures.

PILLAR 3 Maintain Responsible and Enduring Relationships with Suppliers, Customers, and Stakeholders
Supply Chain [GRI 13.23.3]



Category/Indicator	Measurement Unit	FY2023	FY2022	FY2021	FY2020	FY2019
Upstream Sourcing						
FFB Volumes Processed by Musim Mas Mills						
Musim Mas plantations	MT	2,461,614	2,727,498 ⁷	2,578,755	2,546,003	2,414,967
Scheme smallholders	MT	126,997	142,688	134,787	114,064	103,953
Third-party FFB suppliers and independent smallholders via traders	MT	731,686	974,297	1,011,853	896,642	919,048
Independent smallholder – direct	MT	906	441	2		
Third-party supplier plantations	no.	3	2	2		
Independent smallholders via traders	no.	16,269 [#]	16,450	14,457	11,401	
Midstream Sourcing						
CPO supplier mills (excluding Musim Mas mills)	no.	547	553	535	558	582
CPO Supply Volume by Source						
Own mills	%	12.9%	12.9%	13.1%	15.3%	10.6%
Supplier mills	%	85.8%	85.9%	85.6%	83.9%	88.7%
Intermediary traders	%	1.3%	1.2%	1.3%	0.8%	0.7%
CPO Supply Volume by Country						
Indonesia	%	92.0%	92.7%	94.4%	92.4%	93.5%
Malaysia	%	7.5%	6.4%	5.5%	6.6%	6.1%
Other	%	0.5%	0.9%	0.1%	1.0%	0.4%
Traceability from Refinery Level						
Traceability to mill	%	100%	100%	100%	100%	100%
Overall traceability to plantation (TTP)	%	98%	97%	94%	83%	60%
TTP for supplier mills	%	98%	96%	93%	80%	58%
Supplier Engagement						
Supplier mills that have attended NDPE workshops	%	96.34%	92.86%	93.58%	76.07%	51.00%
Supplier mills that have submitted NDPE commitments	%	98.50% [#]	96.51%	92.53%	96.89%	80.00%
Suppliers that have completed the Musim Mas Self-Assessment Tool	%	81.86%	84.05%	77.26%	60.49%	24.48%
Cumulative Grievances Raised and Closed						
Third-party Suppliers (Cumulative since FY2019)						
Raised	no.	70				
Closed	no.	49				
Active	no.	21				
Musim Mas Own Operations (Cumulative since FY2019)						
Raised	no.	5				
Closed	no.	5				
Active	no.	0				


[#] EY has performed limited assurance procedures on these figures


⁷ FY2022 FFB data from own plantations has been restated.


IUCN Red List of Threatened Species Identified at Musim Mas Regions of Operations

As of December 2023 [GRI 304-4]

IUCN Status	Common Name	Common Name (English)	Scientific Name	Type
Critically Endangered 	Cucak Rawa	Straw-headed Bulbul	<i>Pycnonotus zeylanicus</i>	Bird
	Lutung Kokah / Monyet Kacamata	East Sumatran Banded Langur	<i>Presbytis percura / Presbytis femoralis percura</i>	Mammal
	Biuku / Tuntong Sungai	Southern River Terrapin	<i>Batagur affinis</i>	Reptile
	Kura-kura Sungai Kalimantan	Malaysian Giant Turtle / Malayan Giant Turtle	<i>Orlitia borneensis</i>	Reptile
Endangered 	Bangau Bluwok	Milky Stork	<i>Mycteria Cinerea</i>	Bird
	Bangau Storm	Storm's Stork	<i>Ciconia stormi</i>	Bird
	Cica Daun Besar	Greater Green Leafbird	<i>Chloropsis sonnerati</i>	Bird
	Empuloh Janggut	Grey-cheeked Bulbul	<i>Alophoixus bres</i>	Bird
	Julang Jambul Hitam	Wrinkled Hornbill	<i>Rhabdotorrhinus corrugatus</i>	Bird
	Bekantan	Proboscis Monkey	<i>Nasalis larvatus</i>	Mammal
	Beruk	Southern Pig-tailed Macaque / Pig Tailed Macaque	<i>Macaca nemestrina</i>	Mammal
	Kalong Besar	Large Flying-fox	<i>Pteropus vampyrus</i>	Mammal
	Kukang Sunda	Greater Slow Loris / The Sunda Slow Loris	<i>Nycticebus coucang</i>	Mammal
	Monyet Ekor Panjang	Long-tailed Macaque / Common Long-tailed Macaque	<i>Macaca fascicularis</i>	Mammal
	Owa Kalimantan	Bornean White-bearded Gibbon / Bornean Agile Gibbon	<i>Hylobates albibarbis</i>	Mammal
	Owa Ungko	Agile Gibbon	<i>Hylobates agilis</i>	Mammal
	Siamang	Siamang	<i>Symphalangus syndactylus / Hylobates syndactylus</i>	Mammal
	Tapir Asia	Malay Tapir	<i>Tapirus indicus</i>	Mammal
	Kura-kura Batok	Southeast Asian Box Turtle	<i>Cuora amboinensis</i>	Reptile
	Kura-kura Duri	Spiny Turtle	<i>Heosemys spinosa</i>	Reptile
Kura-kura Pipi Putih	Black Marsh Turtle	<i>Siebenrockiella crassicollis</i>	Reptile	
Senyulong / Buaya Sepit	False Gharial	<i>Tomistoma schlegelii</i>	Reptile	

IUCN Status	Common Name	Common Name (English)	Scientific Name	Type
Near Threatened 	Asi Besar	Rufous-crowned Babbler	<i>Malacopteron magnum</i>	Bird
	Asi Topi Jelaga	Sooty-capped Babbler	<i>Malacopteron affine</i>	Bird
	Bangau Sandang Lawe / Bangau Hitam	Asian Woollyneck	<i>Ciconia episcopus</i>	Bird
	Bangau Tongtong	Lesser Adjutant	<i>Leptoptilos javanicus</i>	Bird
	Beluk Jampuk	Barred Eagle-owl	<i>Bubo sumatranus</i>	Bird
	Berencet Besar	Large Wren-babbler	<i>Turdinus macrodactyluspothera macrodactyla</i>	Bird
	Betet Biasa	Red-breasted Parakeet	<i>Psittacula alexandri</i>	Bird
	Burung Madu Leher Merah	Red-throated Sunbird	<i>Anthreptes rhodolaemus</i>	Bird
	Cabai Tunggir Coklat	Brown-backed Flowerpecker	<i>Dicaeum everetti</i>	Bird
	Caladi Badok	Buff-necked Woodpecker	<i>Meiglyptes tukki</i>	Bird
	Cekakak Hutan Melayu	Rufous-collared Kingfisher	<i>Actenoides concretus</i>	Bird
	Celepuk Merah	Reddish Scops-owl	<i>Otus rufescens</i>	Bird
	Cica Daun Kecil	Lesser Green Leafbird	<i>Chloropsis cyanopogon</i>	Bird
	Cipoh Jantung	Green Iora	<i>Aegithina viridissima</i>	Bird
	Ciung Air Pong Pong	Fluffy-backed Tit-babbler	<i>Macronus ptilosus</i>	Bird
	Cucak Gunung	Orange-spotted Bulbul	<i>Pycnonotus bimaaculatus</i>	Bird
	Cucak Kelabu	Grey-bellied Bulbul	<i>Ixidia cyaniventris / Pycnonotus cyaniventris</i>	Bird
	Cucak Rumbai-tungging	Puff-backed Bulbul	<i>Euptilotus eutilotus / Pycnonotus eutilotus</i>	Bird
	Elang Ikan Kecil	Lesser Fish-eagle	<i>Ichthyophaga humilis</i>	Bird
	Elang Ikan Kepala Kelabu	Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaetus</i>	Bird
	Enggang Klihingan	Bushy-crested Hornbill	<i>Anorrhinus galeritus</i>	Bird
	Kadalan Beruang	Black-bellied Malkoha	<i>Phaenicophaeus diardi</i>	Bird
	Kucica Ekor Kuning	Rufous-tailed Shama	<i>Copsychus pyrropygus / Trichixos pyrropygus</i>	Bird
	Luntur Diard	Diard's Trogon	<i>Harpactes diardii</i>	Bird
	Luntur Kasumba	Red-naped Trogon	<i>Harpactes kasumba</i>	Bird
	Madi Hijau Kecil	Green Broadbill	<i>Calyptomena viridis</i>	Bird

IUCN Status	Common Name	Common Name (English)	Scientific Name	Type
Near Threatened 	Nuri Tanau	Blue-rumped Parrot	<i>Psittinus cyanurus</i>	Bird
	Pelanduk Dada Putih	White-chested Babbler	<i>Pellorneum rostratum / Trichastoma rostratum</i>	Bird
	Pelatuk Kumis Kelabu	Chequer-throated Yellownape	<i>Chrysophlegma humii</i>	Bird
	Pelatuk Raffles	Olive-backed Woodpecker	<i>Chloropicoides rafflesii / Dinopium rafflesii</i>	Bird
	Pentis Kumbang	Scarlet-breasted Flowerpecker	<i>Prionochilus thoracicus</i>	Bird
	Perenjak Sayap Garis / Perenjak Jawa	Bar-winged Prinia	<i>Prinia familiaris</i>	Bird
	Pergam Hijau	Green Imperial Pigeon	<i>Ducula aenea</i>	Bird
	Poksai Mantel	Sunda Laughingtrush	<i>Garrulax palliatus</i>	Bird
	Raja Udang Kalung Biru	Malay Blue-banded Kingfisher	<i>Alcedo peninsulae</i>	Bird
	Sempur Hujan Darat	Black-and-yellow Broadbill	<i>Eurylaimus ochromalus</i>	Bird
	Sepah Tulin	Fiery Minivet	<i>Pericrocotus igneus</i>	Bird
	Sikatan Melayu	Malay Blue-flycatcher	<i>Cyornis turcosus</i>	Bird
	Sikatan Rimba Dada Kelabu	Grey-chested Jungle-flycatcher	<i>Cyornis umbratilis</i>	Bird
	Takur Tutut	Red-crowned Barbet	<i>Psilopogon rafflesii / Megalaima rafflesii</i>	Bird
	Takur Warna-warni	Red-throated Barbet	<i>Psilopogon mystacophanos / Megalaima mystacophanos</i>	Bird
	Tangkar Ongklet	Crested Jay	<i>Platylophus galericulatus</i>	Bird
	Tepus Kaban	Black-throated Babbler	<i>Stachyris nigricollis</i>	Bird
	Tepus Tunggir Merah	Chestnut-rumped Babbler	<i>Stachyris maculata</i>	Bird
	Udang Punggung-Merah	Oriental Dwarf-kingfisher	<i>Ceyx erithaca / Ceyx rufidorsa</i>	Bird
	Jelarang bilalang	Pale Giant Squirrel	<i>Ratufa affinis</i>	Mammal
Musang Belang	Banded Civet	<i>Hemigalus derbyanus</i>	Mammal	
Kura-kura Bergerigi	Asian Leaf Turtle	<i>Cyclemys dentata</i>	Reptile	

IUCN Status	Common Name	Common Name (English)	Scientific Name	Type
Vulnerable 	Betet Ekor Panjang	Long-tailed Parakeet	<i>Belocercus longicaudus / Psittacula longicauda</i>	Bird
	Bubut Teragop	Short-toed Coucal	<i>Centropus rectunguis</i>	Bird
	Elang Wallace	Wallace's Hawk Eagle	<i>Nisaetus nanus / Spizaetus nanus</i>	Bird
	Julang Emas	Wreathed Hornbill	<i>Rhyticeros undulatus / Aceros undulatus</i>	Bird
	Kangkareng Hitam	Black Hornbill	<i>Anthracoceros malayanus</i>	Bird
	Kerak Kerbau	Javan Myna	<i>Acridotheres javanicus</i>	Bird
	Kuau Raja	Great Argus	<i>Argusianus argus</i>	Bird
	Punai Bakau	Cinnamon-headed Green-pigeon	<i>Treron fulvicollis</i>	Bird
	Punai Besar	Large Green-pigeon	<i>Treron capellei</i>	Bird
	Puyuh Hitam	Black Partridge	<i>Melanoperdix niger</i>	Bird
	Rangkong Badak	Rhinoceros Hornbill	<i>Buceros rhinoceros</i>	Bird
	Rangkong Papan	Great Hornbill	<i>Buceros bicornis</i>	Bird
	Sempidan Biru	Crested Fireback	<i>Lophura ignita</i>	Bird
	Tiong Batu Kalimantan	Bornean Bristlehead	<i>Pityriasis gymnocephala</i>	Bird
	Babi Berjenggot	The Bornean Bearded Pig	<i>Sus barbatus</i>	Mammal
	Berang-Berang Cakar Kecil	Asian Small-clawed otter	<i>Aonyx cinereus</i>	Mammal
	Beruang madu	Sun Bear	<i>Helarctos malayanus</i>	Mammal
	Kedih	Thomas's Langur	<i>Presbytis thomasi</i>	Mammal
	Lutung Kelabu	Silvery Lutung	<i>Trachypithecus cristatus</i>	Mammal
	Lutung Merah	Red Langur / Maroon Langur	<i>Presbytis rubicunda</i>	Mammal
	Rusa Sambar	Sambar / Sambar Deer	<i>Rusa unicolor / Cervus unicolor</i>	Mammal
	Tarsius bangka	Horsfield's Tarsier / Bornean Tarsier	<i>Cephalopachus bancanus / Tarsius bancanus</i>	Mammal
	Bulus	Asiatic Softshell Turtle	<i>Amyda cartilaginea</i>	Reptile
	Kura-Kura Tempurung Lunak	Chinese Softshell Turtle	<i>Pelodiscus sinensis</i>	Reptile
	Ular Kobra / Ular Anang	King Cobra	<i>Ophiophagus hannah</i>	Reptile