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South Korean Companies Have Outsized Impact on Palm Oil Leakage Market

December 2020

This report discusses the role of South Korean companies in the worldwide palm oil market and the country's position as an owner of oil palm concessions, a buyer of palm oil products, and a financier of palm oil operations. The analysis highlights the country's role in the palm oil "leakage market," which trades unsustainable palm oil from growers and producers that are not compliant with No Deforestation, No Peat, No Exploitation (NDPE) policies.

Key Findings:

- **South Korean companies are significant leakage players as both developers of plantations and buyers of palm oil products.** While NDPE commitments increasingly cover the global palm oil industry, deforestation-linked growers continue to leak unsustainable palm oil into international markets.
- **Six South Korean plantation owners have significant non-compliance issues linked to environmental, social, and human rights issues:** Posco International, Korindo Group, Samsung C&T, Daesang Corporation, LG Corporation, and JC Chemical.
- **Korindo and Posco have the highest amount of deforestation of all six companies.** In 2016 and 2017, concessions belonging to both cleared over 17,500 ha of forest. Moreover, Daesang Corporation cleared 347 ha of peatland on its plantation concession after 2016.
- **South Korean growers continue to find customers despite suspensions by large traders.** Korindo and Posco leak unsustainable palm oil to non-NDPE Indian refiners, notably Emami Agrotech and 3F Industries. Similarly, LG Corporation serves non-NDPE markets in India.
- **The top South Korean buyers of Indonesian palm oil and its derivatives - JC Chemical, Dansuk Industrial, GS Global, AK Holdings, LG Corporation, and SK Eco Prime -- do not have NDPE commitments.** Suppliers to non-NDPE buyers include Incasi Raya, Tunas Baru Lampung, Best Industry Group, the Salim Group, and Wings Group.
- **South Korean and European financial institutions fund South Korean leakage palm growers overseas despite deforestation and human rights violations.** National Pension Service, Samsung Life Insurance, and several other South Korean investors do not have policies on deforestation. Among European banks, BNP Paribas, Standard Chartered, and HSBC provide financial services and have zero-deforestation policies. BlackRock and Vanguard are major shareholders of these plantation developers.

'Leakage market' for South Korean-linked palm oil occurring despite positive industry transformation

While No Deforestation, No Peat, and No Exploitation (NDPE) commitments increasingly cover the global palm oil industry, non-compliant growers continue to leak unsustainable palm oil into international markets. South Korean companies play a significant role in this global leakage market. The group of leakage players includes South Korean-owned growers Korindo Group, Posco International, and Daesang Corporation. Plantation concessions in Indonesia belonging to all three have cleared tropical forest and peat after January 1, 2016. This date is commonly seen as the cut-off date for NDPE compliance.

Despite NDPE policies covering 83 percent of the palm oil refining capacity in Indonesia and Malaysia as of April 2020, other geographical markets have not seen coverage at such high levels. India, China, Pakistan, and Bangladesh likely represent the [largest leakage markets](#). South Korean growers Korindo, Posco, and LG Corporation [supply](#) crude palm oil (CPO) to non-NDPE refiners in India, such as Emami Agrotech.

Non-NDPE South Korean growers linked to deforestation and human rights abuses

Six South Korean companies operate palm plantations in Indonesia: Posco International, Korindo Group, Samsung C&T, Daesang Corporation, LG Corporation, and JC Chemical. They operate 235,512 hectares (ha) of oil palm plantations in Indonesia (Figure 1), which equates to one percent of Indonesia's total [22.3 million](#) ha of oil palm concessions. While this proportion seems relatively small, the social and environmental impacts caused on their plantation concessions are significant. Their reported annual production of CPO -- for fuel and food processing purposes -- is 410,000 metric tons (MT) (Figure 1), although this number does not include the production from Korindo's plantation concessions. The latter is not transparent about its annual palm oil production rates. With an estimated oil yield of [4-5 MT per ha](#) and an estimated planted area of 79,808 ha (concession area minus stranded land of 53,318 ha), palm oil from Korindo would at least add another 300,000 MT. Based on this data, South Korean growers' annual production of "leakage palm oil," i.e. unsustainable palm oil, in Indonesia totals 710,000 MT.

None of these South Korean oil palm growers have implemented NDPE policies to date. While Posco International [announced](#) in March 2020 it was the "the 1st Korean business to make NDPE commitments," no information on implementation measures or plans is available. While Samsung's Construction & Trading (C&T) Corporation Trading and Investment Group's palm plantations in Indonesia were [certified](#) by the Roundtable on Sustainable Palm Oil (RSPO) in May 2019, [reportedly](#) the "first time that a Korean company operating an Indonesian palm plantation has been awarded an RSPO certification," the company has not to date submitted any public palm suppliers list. It has also not showed overall compliance with an NDPE policy.

In 2019, two Korean NGOs, the Korea Federation for Environmental Movements (KFEM) and Advocates for Public Interest Law (APIL), [linked](#) the six South Korean growers to numerous environmental, social, and human rights issues in Indonesia.

Figure 1: South Korean corporations operating oil palm plantations in Indonesia

Company	Subsidiaries	Concession area (ha)/Location	NDPE policy?	Reported annual CPO production (tons)
Korindo Group	PT Papua Agro Lestari PT Gelora Mandiri Membangun PT Dongin Prabhawa PT Berkat Cipta Abadi 1 and 2 PT Tunas Sawaerma 1A, 1B, and 2	133,126 / Papua and North Maluku	No	No public information Estimate > 300,000
Posco International	PT Bio. Inti Agrindo	34,184 / Merauke, Papua	Yes (but not yet implemented)	<u>80,000</u>
LG Corporation	PT Parna Agromas PT Tintin Boyok Sawit Makmur PT Tintin Boyok Sawit Makmur Dua PT Grand Utama Mandiri	31,513 / Sekadau, West Kalimantan	No	<u>150,000</u>
Samsung C&T	PT Gandaerah Hendana and PT Inecda Plantation	21,703 (RSPO: <u>23,830 ha</u>) / Pelalawan & Indragiri Hulu, Riau	No	<u>100,000</u>
Daesang Corporation / Miwon Indonesia	PT Sintang Raya and PT Miwon Agro Kencana Sakti (no concession)	11,212 / Kubu Raya, West Kalimantan	No	<u>35,000</u>
JC Chemical	PT Niagamas Gemilang	3,774 (JC Chemical: <u>7,200 ha</u>) / Kutai Kartanegara, East Kalimantan	No	<u>45,000</u>
Total		235,512 ha		710,000

Source: Compiled by Aidenvironment, based on concession data (e.g. HGU, cadastral map) and corporate websites

Korindo and Posco linked to deforestation and human rights abuses

Korean companies Korindo Group and Posco International cleared a combined 16,674 ha of forest in Papua, Indonesia between 2016 and 2017. In the Merauke, Boven Digoel, and Mappi districts of Papua, Korindo’s subsidiaries PT Papua Agro Lestari (PT PAL), PT Tunas Sawaerma 1B, and PT Dongin Prabhawa deforested a total of 3,714 ha in their concessions in 2016, and 562 ha in 2017 (Figure 2). Moreover, Korindo cleared another 930 ha in its 8,432-ha concession in North Maluku, Indonesia, during this period. The companies used illegal fires to clear the land. Despite a moratorium on further development on its plantation sites, implemented since 2017, Korindo has not adopted any NPDE policies at the group level, resolved its conflicts and compensation schemes with local communities in Indonesia, or committed to compensate for or recovery of deforested areas.

Adjacent to Korindo’s PT PAL concession, Posco International’s subsidiary PT Bio. Inti Agrindo (PT BIA) cleared 36 percent (12,398 ha) of its 34,184 ha-concession between 2016 and 2017 (Figure 2). Between 2012 and 2017, PT BIA was responsible for destroying 26,500 ha of forest. Of this amount, the company cleared 12,398 ha after the 2016 cut-off date for NDPE compliance. The company also illegally used fires to clear the land.

Figure 2: Deforestation in Indonesia by Korindo and Posco after 2016

Company	Subsidiaries	Location (district, province, region)	Concession size (ha)	Deforestation (ha)		Total deforestation (ha)
				2016	2017	2016 and 2017
Korindo Group	PT Papua Agro Lestari	Merauke, Papua, Papua	25,203	1,854	562	2,416
	PT Tunas Sawaerma 1B	Boven Digoel, Papua, Papua	11,351	1,192	0	1,192
	PT Gelora Mandiri Membangun	Halmahera Selatan, Maluku Utara, Maluku	8,432	911	19	930
	PT Dongin Prabhawa	Mappi, Papua, Papua	33,537	668	0	668
Posco Int.	PT Bio. Inti Agrindo	Merauke, Papua, Papua	34,184	7,134	5,264	12,398
Total				11,759	5,845	17,604

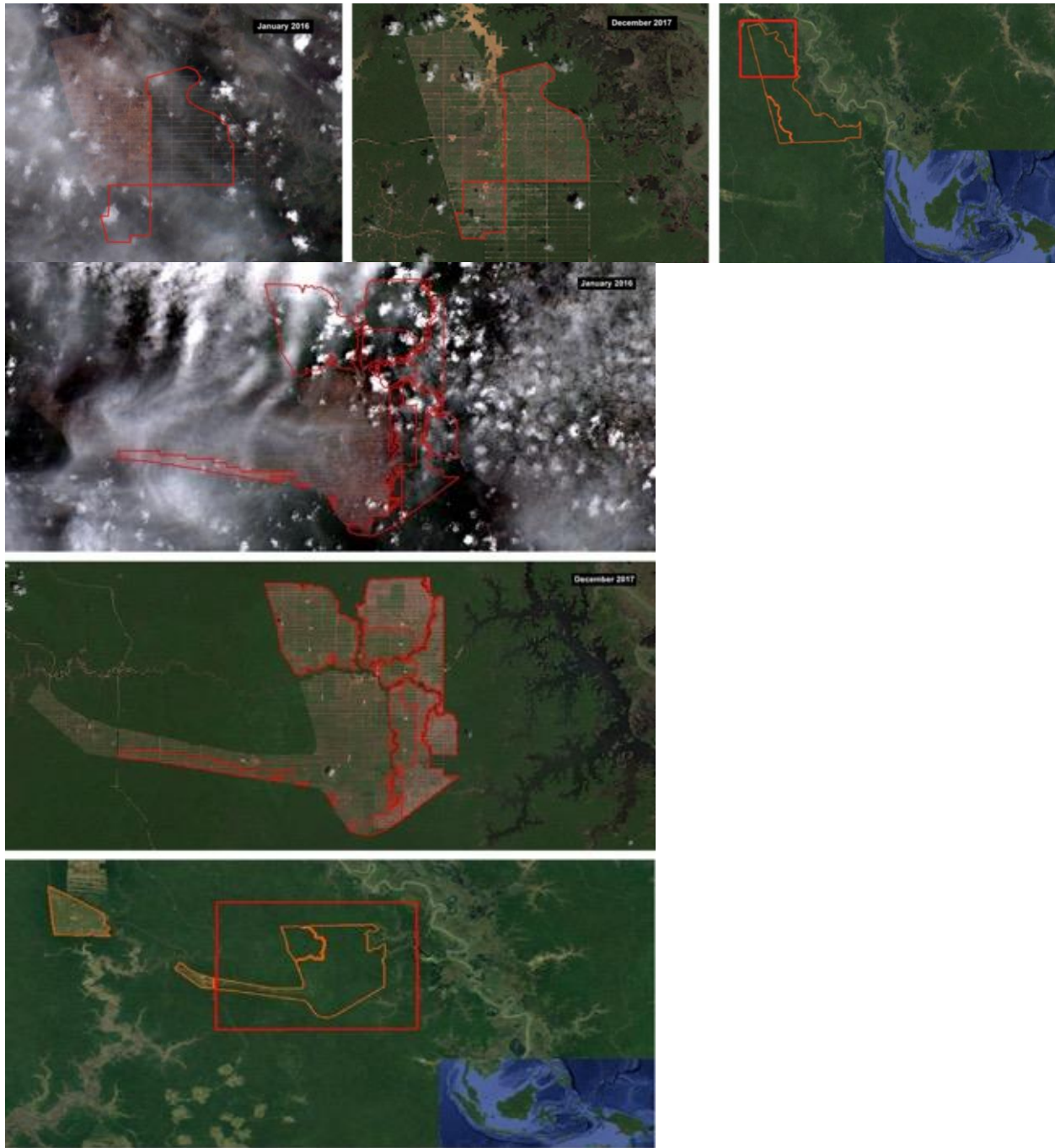
Source: Compiled by Aidenvironment, based on concession data (e.g. HGU, cadastral map), and deforestation data (Sentinel Satellites 1 and 2)

Korindo and Posco are linked to human rights abuses and the loss of High Conservation Value areas (HCVs). In 2017, the Forest Stewardship Council’s (FSC) Complaints Panel [concluded](#) that Korindo Group violated FSC’s standards through destruction of HCVs by deforestation and fires in its PT PAL and PT Gelora Mandiri Membangun (GMM) concession areas. Moreover, the company violated human rights by [withholding information](#) that is necessary for local communities to make informed decisions. Nevertheless, in November 2019, the FSC decided to [refrain](#) from sanctions and allow Korindo another five years to achieve full compliance with the FSC rules.

In 2020, Korindo has continued to be linked to serious social issues in its operations in Indonesia. In May 2020, an indigenous man was [reportedly](#) beaten to death by the police in the office of Korindo’s subsidiary PT Tunas Sawa Erma. [Allegedly](#), the victim wanted to “clarify the land grabbing issue that caused him to lose access to his banana plantation.” Additionally, in June 2020, Mongabay, the Korean Center for Investigative Journalism-Newstapa, and Al Jazeera [connected](#) a suspicious USD 22 million “consultancy” payment to a major land deal by Korindo’s PT PAL in Indonesia’s Papua province. This payment was allegedly concealed by Korindo’s [opaque ownership structures](#) through circular shareholdings and 62 shell companies in jurisdictions with little transparency. While Korindo claims to be [100 percent](#) Indonesian, the South Korean court ordered in 2018 the founding Seung family to pay around USD 90 million for tax evasion. The investigative [research](#) points to “*circular shareholdings [that] are a key feature of the giant, family-owned firms that dominate the South Korean economy.*”

Posco International’s subsidiary PT BIA has been accused of fueling land conflicts in indigenous clans and water pollution in its plantation site. PT BIA [allegedly](#) paid compensation money to the Marin tribe, while the Mandobo tribe holds the indigenous customary rights, resulting in aggravated conflict between the communities. Residents inside the plantation site also [pointed to](#) pollution of the Bian River from the company’s operations. To compensate for prior deforestation, Posco International [promised](#) to “implement a program outside its concessions on a scale that corresponds to the size of developed plantation.” In February 2020, Posco [reportedly](#) paid compensation of IDR 200 million (USD 14,132) to the Marin tribe for the destruction of sacred forests from plantation development. This amount was much lower than the anticipated IDR 3 billion (USD 212,300) demanded by the community.

Figure 3: Korindo and Posco plantation concessions with deforestation between 2016-2017



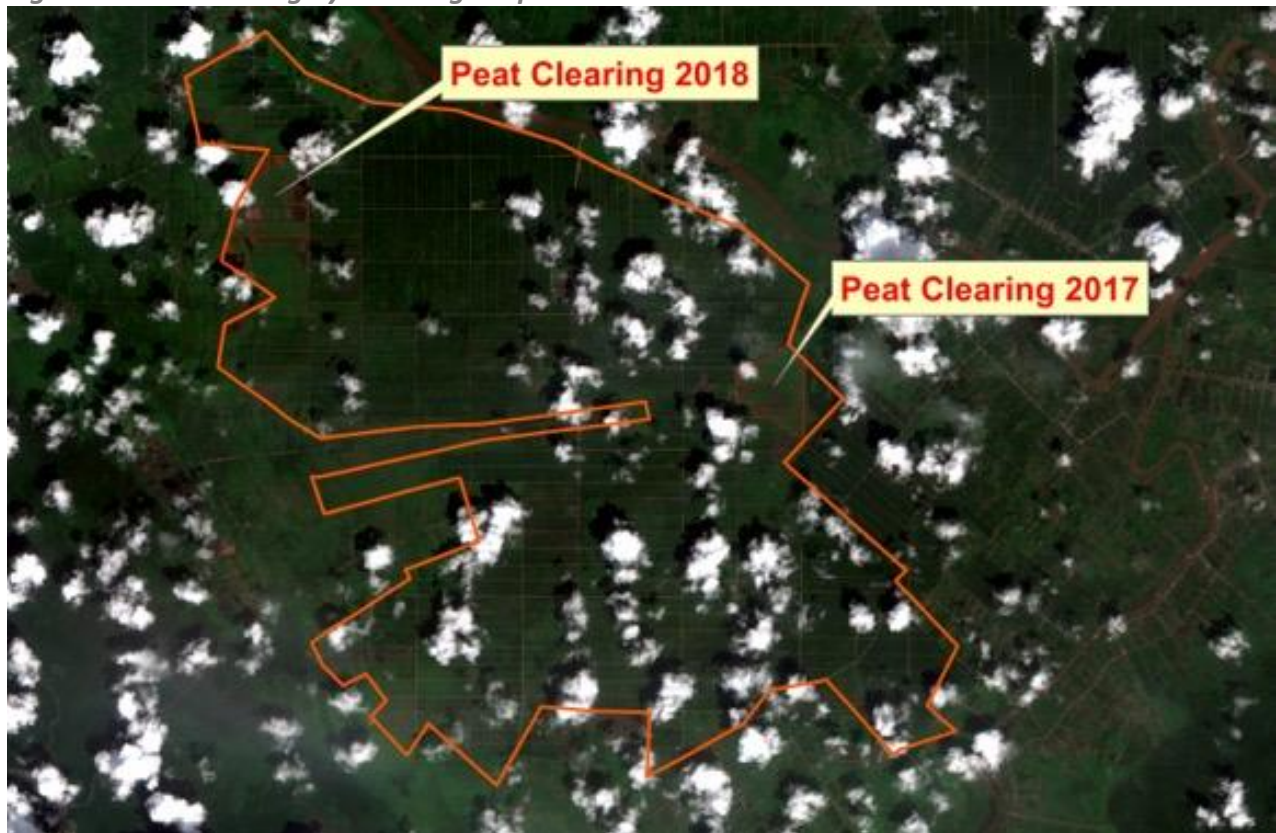
Source: Aidenvironment-Earth Equalizer, based on deforestation (Sentinel Satellites 1 and 2) and cadaster data. Top images: Korindo's subsidiary PT PAL. Bottom images: Posco International's subsidiary PT BIA.

Posco International and Korindo Group appear to share a close relationship. Korindo advises Posco on its PT BIA plantation, which is located next to its plantation PT PAL. Moreover, both plantation subsidiaries were [incorporated](#) by Korean businessman Kim Nam Ku in 2007 and 2006 respectively.

Plantation subsidiaries Deasang, Samsung, LG, JC Chemical linked to environmental, social, and human rights issues

Similar to Korindo and Posco, Korean palm growers Daesang Corporation, Samsung C&T, LG Corporation, and JC Chemical are linked to social, cultural, and human rights issues in Indonesia. Deasang Corporation was involved in clearing a total of 347 ha of peatland on its plantation concession after 2016 (Figure 4). Daesang Corporation produces condiments under its brand name Miwon and food items under its brand name Cheongjunwon. Its plantation subsidiary PT Sintang Raya cleared 148 ha of peatland in 2017 and 199 ha of peatland in 2018. Additionally, the local communities of Seruat Dua Village, Pontianak Regency [claimed](#) that PT Sintang Raya occupied land without their prior consent and that the company is not [fulfilling](#) its promise to allocate plasma plantations for local communities. Labor issues and the risk of child trafficking at the plantations have also been [reported](#).

Figure 4: Peat clearing by Daesang Corporation in West-Kalimantan between 2017-2018





Source: Aidenvironment-Earth Equalizer. Daesang Corporation's subsidiary PT Sintang Raya

Samsung C&T's plantation subsidiaries PT Gandaerah Hendana and PT Inecda in Riau, Sumatra are associated with land disputes, water pollution, compensation, and labor issues. Samsung's C&T Corporations Trading and Investment Group completed the [acquisition](#) of two palm plantations in Indonesia in 2008, aiming for a steady supply of palm oil for its biodiesel business. PT S&G Biofuel Pte. Ltd, the joint venture of Samsung C&T and Indonesian company Athena City Holdings, invested [USD 55 million](#) in the palm plantations' acquisition and operations. In 2016, local residents [asserted](#) that 42 ha of land the company claimed belonged to them. Local residents near the plantations [allegedly](#) suffer from destruction of ceremonial sites, water pollution, and scarcity, while plantation workers point to excessive working hours, use of toxic chemicals without protective gear, and poor living conditions. Resulting demands for compensation led to continuous [protests](#) and [strikes](#) from residents and workers up to 2020.

LG Corporation has seen land disputes and pollution issues at its three mills and four plantations. Local residents of Semadu village in Sekadau, West Kalimantan [asserted](#) in 2010 that 318 ha of their area under preservation were included in the plantation site of LG's subsidiary PT Parna Agromas. The issue has [still not](#) been resolved. Residents near PT Tintin Boyok Sawit Makmur Dua have also [raised](#) the issue of overlap between the plantation concession area and their land. Moreover, PT Tintin Boyok Sawit Makmur was accused of water pollution in 2015, and in 2019, PT Grand Utama Mandiri may have used [fire](#) to clear its land.

JC Chemical, a Korean biodiesel producer, is allegedly involved in waste dumping through its subsidiary PT Niagamas Gemilang. JC Chemical's subsidiary PT Niagamas Gemilang operates a plantation and mill in Kutai Kartanegara, East Kalimantan. It [produces](#) CPO and Palm Kernel Oil (PKO). While Aidenvironment/Earth Equalizer measured a 3,774-ha concession area, JC Chemical refers to a planted

area of [7,200 ha](#). In 2017, the Environment and Forestry Office of Kutai Kartanegara [suspected](#) PT Niagamas Gemilang of dumping waste water in the Jembayan river, leading to water [pollution](#) and the death of fish.

Korean growers continue to find a market for leakage palm oil despite suspensions

Korindo still produces and trades non-NDPE palm oil and timber despite suspensions

Korindo Group was [suspended](#) by multiple NDPE traders between 2016 and 2018 for deforestation, illegal burning, and loss of HCVs on its concessions. [Nestlé](#), [Bunge Loders Croklaan](#), [Wilmar](#) and [Cargill](#), among others, committed to not sourcing from Korindo. By 2016, the company had cleared [30,000 ha](#) of forest in Indonesia, of which 12,000 ha were primary forest on seven concessions. Between 1998 and 2016, another 50,000 ha were cleared in the grower's concession areas. Aidenvironment/Earth Equalizer recent calculations points to 53,318 ha of still intact forest and peat on the company's plantation sites that can be considered undevelopable, [stranded land](#) in Papua, Indonesia.

In response to the suspensions, Korindo entered the regional [biofuel market](#) 2019. Actors facing restricted NDPE market access may increasingly turn to the [biofuel industry](#) in Southeast Asia, which traditionally has weak sustainability demands. In a venture with South Korean companies GF Oil and Sejong Technology, Korindo is involved in [plans](#) to establish a biofuel plant on the Indonesian island of Bintan. The plant plans to use Korindo's palm oil, aiming to produce approximately [3 million](#) MT of biofuel by the end of its phase three.

Korindo continues to leak its palm oil to non-NDPE refineries in India, notably to refiners **3F Industries and Emami Agrotech**. In 2019, the company exported [46,480 MT](#) of palm oil to India, of which 23,510 MT were imported by 3F Industries (51 percent), 18,483 MT by Emami Agrotech (40 percent), and 4,487 MT (9 percent) by others (Golden Agri-Resources and Mantora Oil Products). 3F Industries is, next to Emami Agrotech, one of the [seven](#) largest non-NDPE refiners that account for 34 percent of India's CPO imports. The Indian multinational company's portfolio is largely in edible fats and oils, cosmetics, oleochemicals, and pharma. It operates processing facilities in Krishnapatnam, Hyderabad, Tadepalligudem (all India), and in Tema (Ghana).

[Emami Agrotech](#) is the edible oil and biodiesel business segment of the [Emami Group](#), an Indian business conglomerate that is primarily engaged in consumer goods, newsprint and packaging boards manufacturing, edible oil and biodiesel, real estate, and retail. It is the second-largest importer of edible oils in India and among the world's largest processors/traders of palm oil without an NDPE policy. Its [refineries](#) in Haldia (West Bengal) and Krishnapatnam (Andhra Pradesh) have a total refining capacity of [5,000 MT per day](#).

Apart from producing non-NDPE palm oil, Korindo is also [reportedly](#) a supplier of timber for the **(postponed) Tokyo 2021 Summer Olympics**. In 2018, the company allegedly provided plywood to Japanese timber and building materials trading company Sumitomo Forestry, who supplied the wood to the Ariake Arena venue in Tokyo. [Mongabay](#) estimated that Korindo produced plywood worth USD 319.9 million from the timber harvested at Korindo's oil palm plantation companies in Papua between 2000 and 2017.

Posco International, LG Corporation continue to serve non-NDPE markets in India

Posco International experienced divestments and a suspension due to its role in tropical forest conversion into oil palm plantations. The [Norwegian Sovereign Wealth Fund](#) and [ABP](#) divested from Posco (then Posco-Daewoo) in 2015 and 2018 respectively because of its “environmental damage.” [ABP said](#) that the fund had “lost faith in the company’s willingness to improve.” Following NGO campaigns, the UK’s largest drugstore retailer [Boots](#) ended its retail partnership with Posco.

Similar to Korindo, Posco International’s palm oil is being shipped to Indian non-NDPE refineries Emami Agrotech and 3F Industries. In total, Posco exported 56,397 MT of CPO to India in 2019, of which [80 percent](#) (45,261 MT) was shipped to Emami Agrotech and 20 percent to 3F Industries. All palm oil destined for Emami Agrotech originated directly from Asike port in Papua, while the remaining 11,136 MT destined to 3F Industries travelled through Dumai port in Sumatra.

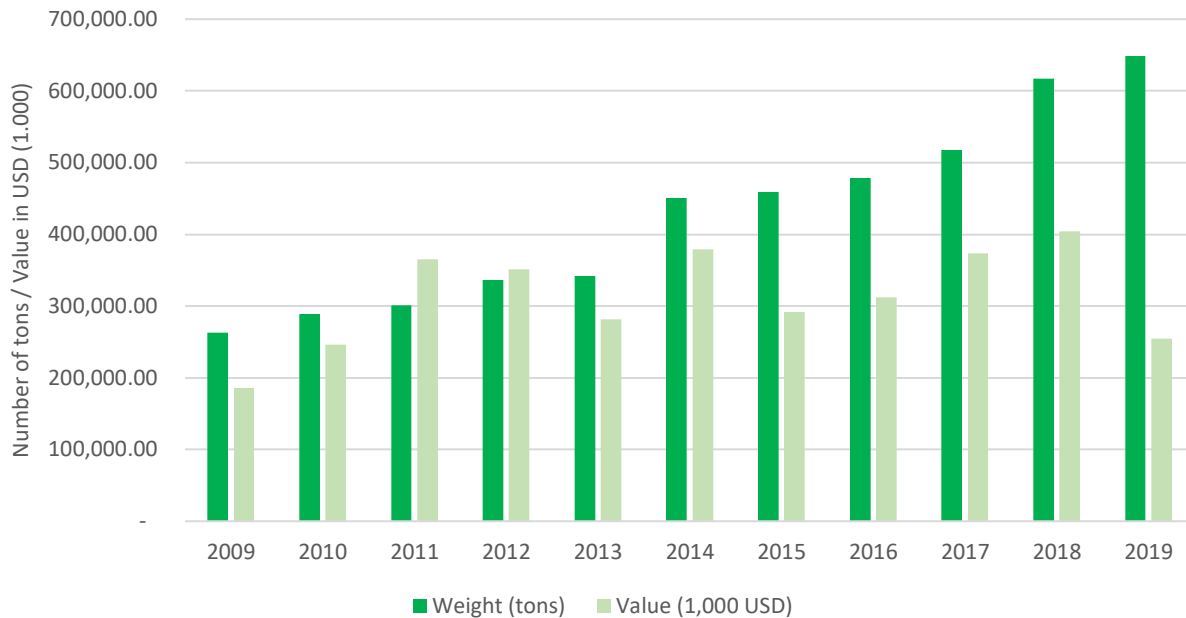
LG Corporation also supplied palm oil to non-NDPE refiners in India. LG Corporation exported 22,481 MT of CPO, according to retrieved Indonesian export data, of which 4,001 MT was supplied directly to Emami Agrotech and 3,076 MT to 3F Industries. Next to India, LG Corporation also supplied 5,001 MT of CPO to Felda IFFCO in Malaysia. Samsung exported a limited amount of 3,010 MT of CPO to IOI in Malaysia.

Daesang’s plantation subsidiary PT Sintang Raya was publicly listed as a supplier to [AAK](#), [Bunge Loders Crocklaan](#), [Wilmar](#), [Sime Darby](#), and [General Mills](#). JC Chemical’s subsidiary PT Niaga Mas Gemilang is publicly listed as supplier to [Fuji Oil](#), [Cargill](#), [General Mills](#), [Louis Dreyfus Company](#), [Golden Agri Resources](#), and [Lipidos Santiga](#).

South Korea increases its role in palm oil trade, consumption

South Korea more than doubled its palm oil imports within the last decade. In 2019, 648,496 MT of palm oil and palm oil products were declared at [customs](#) upon arrival in South Korea, compared to 262,556 MT in 2009 (Figure 5). By the middle of 2020, 61 percent of the 2019 figure had already been secured. Therefore, this upward trend will likely continue. For the marketing year (MY) 2019/2020, palm oil imports are forecast at [700,000 MT](#).

Figure 5: Palm oil imports in South Korea 2009-2019



Source: Korea Trade Statistics Promotion Institute (KTSP), based on an analysis of 7 HS codes linked to palm oil and its derivatives. KTSP's customs data only included PFAD imports after May 2020, therefore this palm oil processing residue was not included in his figure.

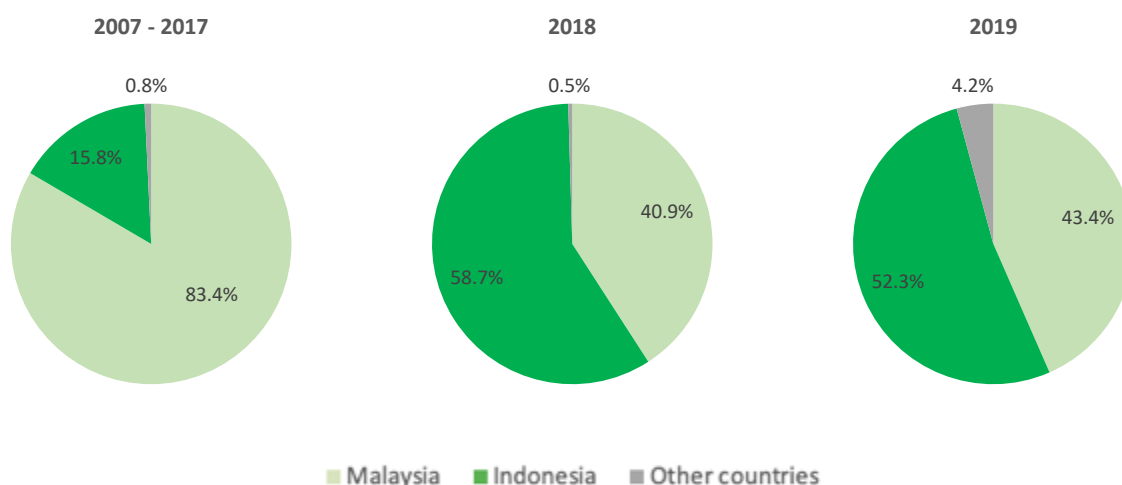
Rising palm oil imports and consumption are primarily the result of its use in food processing and local biodiesel production. With palm oil being “more functional and cheaper than soybean oil,” South Korea mainly uses palm oil for [food processing](#), in particular for ramen (instant noodle) production. Ramen [currently](#) dominates agri-food export value from South Korea to the United States, Japan, and China. Sixty-five percent (450,000 MT) of the total domestic palm oil consumption in South Korea is used for industrial domestic consumption (mainly biodiesel), while the remainder (240,000 MT) is for domestic food consumption.

South Korea imported 395,000 MT of Palm Fatty Acid Distillate (PFAD) from Indonesia and Malaysia, of which 130,288 MT originated in Indonesia, according to shipping [data](#) of 2019 and 2020 (through Q3). In contrast, South Korean [customs](#) data only started to integrate PFAD in its import data in May 2020. PFAD is a palm oil processing residue that is largely used for the production of biodiesel, animal feed, candles, and soap. PFAD is cheaper than palm oil and does not freeze in cold temperatures, making it a flexible product in winter conditions. A major recipient of the PFAD is South Korean biodiesel producer SK Eco Prime (formerly SK Chemicals), which imported [79 percent](#) of the PFAD exports from Indonesia in 2019 and 2020 (through August 2020).

South Korea’s vegetable oil content mandate in biodiesel has been met by cheaper palm oil. Soybean oil consumption in the biodiesel sector in South Korea has recently fallen to [zero](#) due to the lower price of palm oil. Nevertheless, palm oil imports for MY 2020/21 are [expected](#) to stay at the level of 2019/2020 (700,000 MT), due to “uncertainty about any further increases in the veg-oil content of biodiesel from the current level.” Since 2018, the biodiesel mandate has remained unchanged at 3 percent.

Indonesia's role as a palm oil provider to South Korea has increased. While South Korea largely imported its palm oil from Malaysia up to 2016, during the last four years there has been a shift toward palm oil originating from Indonesia (Figure 6). In 2019, [52.3 percent](#) of the imported palm oil originated from Indonesia (339,462 MT), 43.4 percent from Malaysia (281,687 MT), and the remaining 4.2 percent from other countries. Notably, 22,120 MT of CPO imports came from Papua New Guinea (PNG) in 2019. PNG previously did not supply South Korea. Field intelligence indicates that a portion of this CPO might have originated from the port at Vanimo, which is near the plantation and mill known as Bewani Oil Palm Plantation ([BOPPL](#)) in West-Sapik, PNG. The CPO arrived at South Korea's Ulsan port. The BOPPL mill is not compliant with NDPE policies and therefore likely supplies the palm oil leakage market.

Figure 6: Increasing role of Indonesia as a provider of palm oil to South Korea



Source: Korea Trade Statistics Promotion Institute ([KTSP](#)), based on an analysis of 7 HS codes linked to palm oil and its derivatives (PFAD not included).

The increase in Indonesian exports to South Korea particularly consists of refined, bleached, and deodorized (RBD) palm stearin. While South Korea has [refining](#) capacity, the country largely buys refined palm oil products from Indonesia. South Korean [customs data](#) reveals that the country imported 220,556 MT of RBD palm stearin, which is a solid fraction that is largely used for [food processing](#) and cosmetics, from Indonesia in 2019, compared to 81,213 MT from Malaysia. Moreover, imports of palm kernel oil and partly or wholly hydrogenated palm oil from Malaysia dropped from 5,838 MT to 593 MT and from 1,187 MT to 825 MT respectively between 2018 and 2019.

Only five non-NDPE buyers account for 78 percent of Indonesian palm oil exports to South Korea

The top-5 South Korean buyers of Indonesian palm oil -- JC Chemical, Dansuk Industrial, GS Global, AK Holdings, and LG Corporation -- accounted for 78 percent of imported palm oil from Indonesia in 2019. The five buyers imported only refined palm oil and refined palm oil products (palm stearin and fatty alcohol). Indonesian palm oil export data points to a total of 272,970 MT of palm oil exported by Indonesia in 2019 that were ultimately bought by 32 South Korean companies. Only five of them imported 78 percent (212,415 MT) of the 2019 figure (Figure 7). Likewise, in H1 2020, these five South Korean

companies remain the top importers of Indonesian palm oil. Trade data on palm oil originating from Malaysia, which is specified per importer and exporter, is not publicly available.

SK Eco Prime is South Korea's top biodiesel producer that leads the imports of PFAD. Formerly part of SK Chemicals and [acquired](#) by private equity investor Hahn & CO. in early 2020, the company's production [capacity](#) is 500,000 kilolitres per year of biodiesel and biofuel oil. These fuels are predominantly used for fuel blending for domestic transportation and power generation. However, the company is also exploring the use of biodiesel in marine fuels, which could add an additional 250,000 kilolitres. The main feedstock used by SK Eco Prime is PFAD, for which the company is the leading South Korean importer. About half of South Korea's PFAD [imports](#) originate from Indonesia, and SK Eco Prime accounts for 79 percent of these imports.

None of these key South Korean buyers appear to have public NDPE commitments, and they do not seem to screen their palm suppliers. As a result, the buyers are at greater risk purchasing unsustainable palm oil. The main buyers' websites do not provide any evidence of systematic due diligence on their palm oil suppliers to determine if violations of environmental, social, human rights, or cultural values have occurred. Nor is there any transparency on their suppliers through publicly listed mills and grievances or proof of segregated purchases of palm oil. Nevertheless, there are some indications of efforts for sustainable sourcing, such as Samsung C&T's RSPO [certification](#) of its palm plantations in 2019. Moreover, while LG Corporation does not have or mention an NDPE policy, the previous owner of its subsidiaries, PT Barito Pacific Tbk, has a "responsible plantation and forest policy" dated [March 2015](#). LG Corporation acquired some companies from Barito Pacific in [2018](#). It is unclear to what extent LG Corporation incorporated this responsible forest policy from the merger.

Figure 7: Top-5 South Korean buyers of Indonesian palm oil in 2019, including exporter groups

Korean buyers – Exporter groups	Palm oil imports (tons)	Korean buyers – Exporter groups	Palm oil imports (tons)
JC Chemical	59,392	AK Holdings	30,166
Incasi Raya	22,899	Tunas Baru Lampung	13,250
Astra Agro Lestari	25,539	PT Perkebunan Nusantara (PTPN) (in 2020)	-
Musim Mas	5,954	Royal Golden Eagle	6,000
Wilmar International (in 2020)	-	Musim Mas	2,031
Kuala Lumpur Kepong (KLK)	5,000	Salim Group (in 2020)	-
Dansuk Industrial	56,559	Astra Agro Lestari	3,000
Musim Mas	39,043	Wilmar International	2,994
KLK	6,999	KPN Corp	2,000
Royal Golden Eagle	5,000	Cahaya Nusantara Lestari	500
Astra Agro Lestari	3,500	Sinarmas Cepsa	391
Incasi Raya (in 2020)	-	LG Corporation	19,802
Sinarmas Cepsa	1,900	Astra Agro Lestari	12,999
Bakrie Sumatera Plantation	117	Musim Mas	3,194
GS Global	46,496	Wilmar International	2,109
Astra Agro Lestari	21,000	KLK	1,499
Incasi Raya	7,499	Other buyers (27)	60,555
Musim Mas	12,999		
Wilmar International (in 2020)	-		
KLK	4,998	Grand total	272,970

Source: Retrieved Indonesian [trade data](#). PFAD and the role of main buyer SK Eco Prime were not included as it based on different [shipping data](#).

JC Chemical and Dansuk Industrial specialize in the renewable energy industry, with biodiesel, bio heavy oil, and marine biofuel as the main products. [JC Chemical](#) also produces palm oil and glycerin, while [Dansuk Industrial](#) produces fine (e.g. PVC stabilizers) and metal materials (pure lead). Apart from being a palm oil buyer, JC Chemical also produces palm oil via its plantation and mill in Indonesia. JC Chemical is [reportedly](#) providing its products to domestic defense agencies and oil companies.

GS, comprised of GS Holdings and various subsidiaries and affiliates, operates the largest segment in the energy sector (gas and wind power), next to retail, and construction. The company [claims](#) to be the 7th largest business group in South Korea in terms of assets, with subsidiaries and affiliates including GS Global, GS Energy, GS Caltex, GS Retail, GS SHOP, GS EPS, GS Sports, and GS E&R, GS E&C. GS Global is the main arm for initiating and developing overseas businesses.

AK Holdings or Aekyung Group’s business portfolio covers chemistry, air transport, household/beauty, retail, and real estate. In 1982, the [Aekyung Group](#) and Royal Dutch Shell formed Aekyung Shell Co., that was changed into Aekyung Specialty Chemicals in 1998. AK ChemTech, incorporated in 2009, involved in the manufacturing of surfactant, paints and construction chemicals, is an [RSPO member](#) since November 1st, 2019. Midway 2020, the company did not submit any public palm supplier information.

Holding company LG Corporation is, next to being a grower of palm oil in Indonesia, also one of the five largest South Korean buyers of palm oil. The company’s overall [business segments](#) include electronics, chemicals, and communication & services.

South Korean buyers source 33 percent of Indonesian palm oil from leakage refiners

Since South Korea imports mostly refined palm oil products from Indonesia and Malaysia, the majority of imports are [covered](#) by trader and refiner NDPE policies. South Korea imported 414,119 MT of palm oil from Indonesia in 2019 and H1 2020 from only 18 palm oil traders/refiners. Of these traders/refiners, 78 percent have NDPE policies (Figure 8). In terms of volume, the top-5 exporting groups to South Korea in 2019 and H1 2020 were Musim Mas (103,442 MT), Astra Agro Lestari (73,038 MT), Incasi Raya (62,103 MT), Permata Hijau Group (35,446 MT) and Salim Group (31,790 MT). All of them except one, Incasi Raya Group, have NDPE group policies. While the Salim Group has an [NDPE commitment](#), the company appears to fall short on implementation and can therefore be considered a [leakage refiner](#).

Figure 8: All exporting groups of Indonesian palm oil to South Korea

Exporter Groups	Palm oil (tons)			NDPE group policy?
	2019	2020	Grand Total	
Musim Mas	69,433	34,009	103,442	Yes
Astra Agro Lestari	69,038	4,000	73,038	Yes
Incasi Raya Group	30,399	31,704	62,103	Leakage refiner (no NDPE policy)
Permata Hijau Group	11,000	24,446	35,446	Yes
Salim Group	17,025	14,765	31,790	Leakage refiner (has NDPE policy but falls short on implementation)
Wilmar International	5,255	15,741	20,996	Yes

Exporter Groups	Palm oil (tons)			NDPE group policy?
	2019	2020	Grand Total	
Tunas Baru Lampung	17,000	3,000	20,000	Leakage refiner (no NDPE policy)
Kuala Lumpur Kepong (KLK)	18,496		18,496	Yes
Wings Group	12,500		12,500	Leakage refiner (has NDPE policy but falls short on implementation)
Royal Golden Eagle	11,000		11,000	Yes
PT Perkebunan Nusantara (PTPN)		7,419	7,419	Leakage refiner (no NDPE policy)
Golden Agri-Resources		5,066	5,066	Yes
KLK-Astra	4,000		4,000	Yes
Sinarmas Cepsa	3,100		3,100	Yes
KPN Corp	2,000		2,000	Yes
Other exporters/refiners	899	998	1,897	Leakage refiner (no NDPE policy)
Ecogreen Oleochemicals	1,632		1,632	Yes
Bakrie Sumatera Plantation	193		193	Yes
Grand Total	272,970	141,149	414,119	

Source: Retrieved Indonesian [trade data](#), corporate websites, [CRR paper](#) leakage refiners. PFAD exports are not included, and 2020 only covers the first half year.

Thirty-three percent, or 135,709 MT, of all imported palm oil from Indonesia in 2019 and H1 2020 to South Korea comes from “leakage growers and refiners.” These are predominantly Incasi Raya Group, Salim Group, Tunas Baru Lampung, and Wings Group (Figure 8), who either lack NDPE commitments (Incasi Raya and Tunas Baru Lampung), or who do not seem to implement them (Salim Group and Wings Group). Salim Group, Tumas Baru Lampung and Wings Groups are among the [five largest leakage refiners](#) of Indonesia and Malaysia.

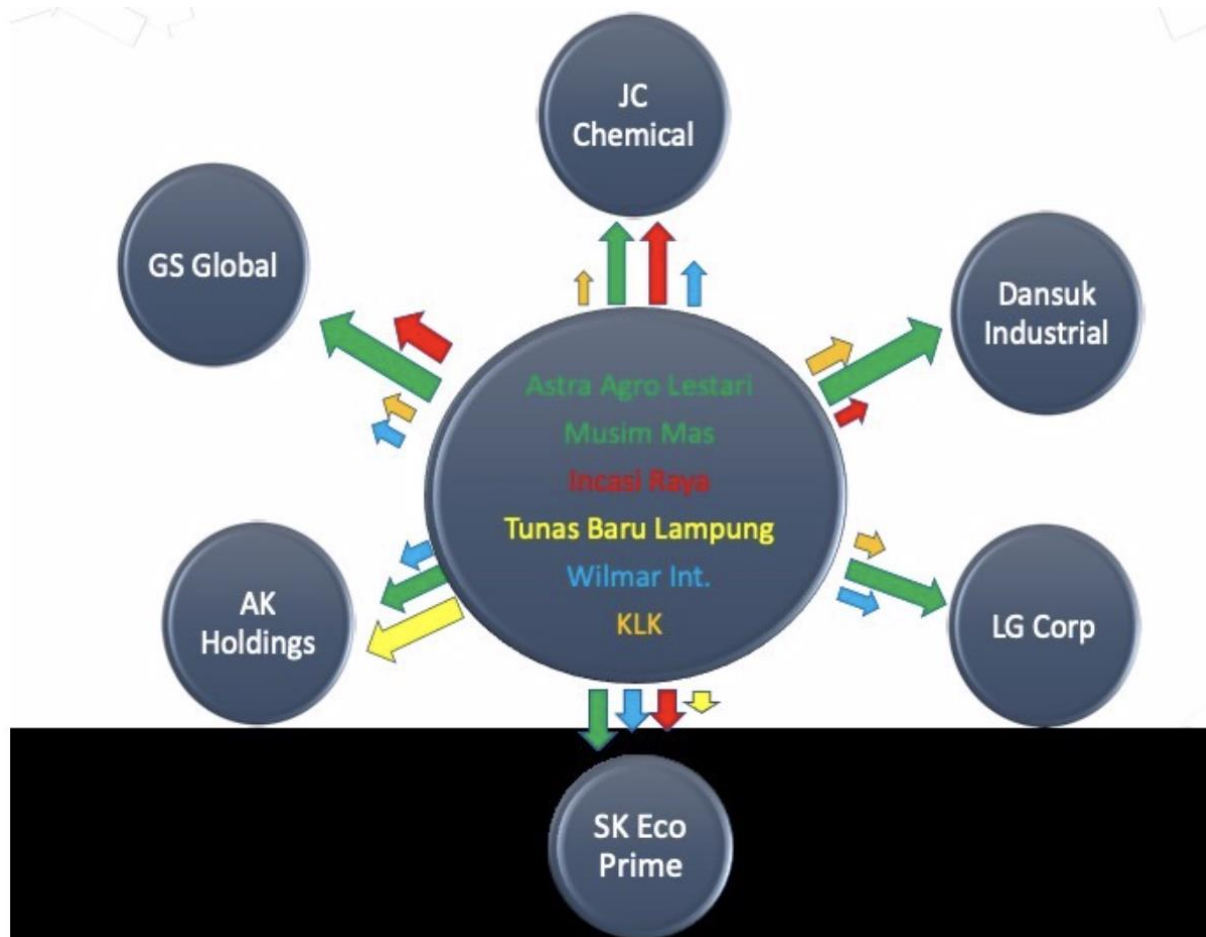
AK Holdings, JC Chemical, and SK Eco Prime source significant non-NDPE palm oil and PFAD

AK Holdings, JC Chemical, and SK Eco Prime are most reliant on leakage palm oil and PFAD from Indonesia, sourcing 64 percent, 40 percent, and 33 percent respectively from non-NDPE suppliers. The top-5 Korean buyers of Indonesian palm oil (PFAD excluded) source a total of 28 percent (83,315 MT out of 297,500 MT) from non-compliant palm oil growers and refiners. SK Eco Prime bought [103,488 MT](#) of PFAD from Indonesia in 2019 and 2020 (through August 2020), of which 33 percent was sourced from non-NDPE PFAD suppliers.

JC Chemical, Dansuk Industrial, SK Eco Prime, and GS Global all buy palm oil from non-NDPE palm oil grower Incasi Raya Group, which cleared 792 ha forest and peatland between 2016 and 2019. In particular, JC Chemical relies on this group for palm oil and rubber in Indonesia. Combining palm oil and palm oil products purchases from Indonesia in 2019 and H1 2020, the company sourced 40 percent (22,899 MT in 2019 and 9,990 MT in H1 2020) from Incasi Raya Group. By contrast, it sourced 31 percent of its supply from NDPE palm oil refiners Astra Agro Lestari and 12 percent from Musim Mas. GS Global bought 27 percent of its imports of palm oil from Incasi Raya in 2019 and H1 2020, SK Eco Prime sourced

14 percent of PFAD from them in 2019 and 2020 (through August 2020), while Dansuk Industrial sourced 4 percent in H1 2020.

Figure 9: Major Indonesian palm oil exporter groups to key South Korea palm oil buyers



Source: Aidenvironment, based on Indonesian [export data](#) (2019 and H1 2020) and shipping [data](#) (2019 and 2020 till Q3)

Incasi Raya Group owns 31 subsidiary palm oil companies throughout Sumatra and Kalimantan, with an estimated total landbank area of 322,615 ha. [Aidenvironment/Earth Equalizer](#)'s analysis shows that two of its subsidiaries, PT Sumatera Jaya Agro Lestari 1 (SJAL 1) and PT SJAL 2 located in Sanggau, West Kalimantan, deforested and converted 582 ha and 210 ha of peatland between 2016 and 2019 respectively. Moreover, subsidiary PT Sumatera Makmur Lestari has received complaints from plasma smallholders about inadequate compensation and distribution of production revenues.

Sixty-four percent of AK Holdings' palm oil sourcing from Indonesia can be considered leakage palm oil.

From the total 48,595 MT of palm oil the company sourced from Indonesia in 2019 and H1 2020, 64 percent (31,169 MT) originated from non-NDPE companies Tunas Baru Lampung (16,250 MT), PTPN (7,419 MT), Cahya Nusantara Lestari (500 MT), "non-implementing NDPE" refiner Salim Group (5,000 MT), and KPN Corporation – formerly Gama (2,000 MT). After being suspended from the NDPE market in 2018, Gama formally established itself as a corporate group and changed its name to KPN Corporation. Gama

was suspended, by Wilmar International, Musim Mas, and others, for forest and peatland [clearing](#) of 21,500 ha since 2013 in its five concessions in both Papua and West Kalimantan.

SK Eco Prime sources 33 percent of South Korean PFAD imports originating from Indonesia from leakage refiners. The company’s main Indonesian suppliers of PFAD in 2019 and H1 2020 were Astra Agro Lestari (30 percent), Wilmar (16 percent), Royal Golden Eagle (14 percent), and non-NDPE implementers Incasi Raya (14 percent), Best Industry Group (13 percent), Salim Group (4 percent) and Tunas Baru Lampung (2 percent). Best Group is one of the large Indonesian leakage refiners. [CRR](#) documented clearing of almost 2,300 ha of peatland for oil palm on its plantations in 2019. The company is also involved in a land conflict for over 1,800 ha that it allegedly planted illegally.

From these top Korean buyers, only LG Corporation seems to have bought Indonesian palm oil from solely implementing NDPE traders (Figure 9). Nevertheless, leakage of unsustainable palm remains likely due to absent NDPE group level commitments among buyers, lack of screening of suppliers, and non-transparent supply chains.

Instant noodles, snacks are key uses of palm oil in downstream sector

The downstream sector in South Korea uses palm oil mainly for food processing, food services, and biodiesel. In food processing, instant ramen noodles are a major destination for the 240,000 MT of palm oil used in industrial [food](#) production. In 2020, South Korean companies are expected to produce more than 460,000 MT of [noodles](#). With an average share of 20 percent in [weight](#), palm oil use in ramen totals an estimated 100,000 MT. South Korean is the world’s top consumer of ramen noodles. At the same time, the export of instant ramen reached USD 467 million in value in 2019, and more than doubled over a period of five years, with the United States as the largest overseas [market](#). In the first eight months of 2020, international [demand](#) surged by 37 percent y-o-y as the COVID-19 pandemic drove an increase in purchases of non-perishable foods. The leading South Korean ramen producers are listed in Figure 10, all of which have palm oil refining [capacity](#).

None of these leading ramen noodle producers seem to have NDPE policies, and it is unclear who their suppliers are.

Figure 10: Leading South Korean ramen noodle producers

Company	Products	PO volume (MT) 2019	Palm oil procurement
Nong Shim Co.	Largest ramen and snack company, products available in >100 countries.	40,000	PO purchased on spot market from Malaysia; RSPO member, expects purchasing certified PO from 2023 .
Ottogi Foods Co.	Dry foods, spices, fats, oils, cotton products.	Unknown	RSPO member, expects purchasing certified PO from 2020 .
CJ Cheiljedang Corp.	Next to ramen, also produces edible oils, sugar, other food products, biodiesel, animal feed.	3,600	2018 PO sourced 56% Malaysia, 19% Indonesia, 25% South America; RSPO member, 28% of certified PO in 2019 (only food use); 100% expected in 2024.

Source: Market Research Reports [2019](#); Company websites & Annual Reports; RSPO Annual Reports

Other common food uses of palm oil in South Korea include snacks, shortening, margarine, and coffee creamer. Use in food service is estimated to be small, as palm olein oil in mixed oil for deep frying is limited to 10-30 percent. Similarly, direct use as edible oil in home consumption is minimal.

South Korean’s financial institutions and banks, European investors continue to finance leakage palm oil

The largest shareholders in the South Korean leakage palm oil chain are the National Pension Service, Samsung Life Insurance, BlackRock, Vanguard, and Norges Bank. These investors cover the upstream, midstream, and downstream leakage chain. Most of the South Korean companies involved in the leakage palm oil market are part of larger conglomerates. Therefore, adjusters are used in Figure 12 to account for this. The total, unadjusted amount of financing is over USD 5 billion. Norges Bank/Norwegian Sovereign Wealth Fund’s position is noteworthy as the fund is increasingly active in avoiding deforestation in its investments. Korindo, which lacks transparency on production as well as financing, is not included in Figure 11 but discussed in the next section.

Figure 11: Shareholdings in the South Korean leakage palm oil chain (not adjusted)

	USD million
National Pension Service	3,510
Vanguard	629
BlackRock	625
Samsung Life Insurance	300
Norges Bank/Norwegian Sovereign Wealth Fund	200
Total	5,264

Source: Chain Reaction Research, Bloomberg, viewed 27 Nov 2020; Nong Shim Co., Ottogi Foods Co., CJ Cheiljedang Corp. AK Holding, JC Chemical, Posco International, LG Corporation, Samsung C&T, Daesang Corporation. No adjusters for % palm oil turnover versus total activities have been applied.

South Korean financial institutions (FIs) and European FIs continue their financing of leakage palm growers overseas despite deforestation and human rights violations. While the [Norwegian Sovereign Wealth Fund](#) and [ABP](#) divested from Posco for severe environmental damages, several South Korean FIs continue to finance Posco. [Forests & Finance](#) identified that South Korean FIs provided 43 percent of the total USD 390 million financing of Posco, Samsung, and LG between 2013 and April 2020. This amount is adjusted for the palm oil portion of the companies. For instance, in H1 2018, the South Korean government provided KRW [30.5 billion](#) (USD 27 million) of public loans to Posco, and 11.5 billion KRW (USD 10 million) to JC Chemical. Moreover, the Export-Import Bank of Korea (KEXIM) [reportedly](#) provided loans for Posco’s PT BIA’s operations. Finally, 21 percent of the identified financing of three overseas South Korean plantations was provided by European FIs. The European FIs face increasing [reputation risk](#) for providing financial services to supply chain actors linked to deforestation.

Figure 12: Adjusted identified financing of three South Korean palm oil plantations (USD million)

Financer	Bonds	Corporate loan	Shares	Share issuance	Bond issuance	Total
Grand Total	7.5	1.7	143.8	48.5	188.2	389.7
South Korean financiers			54.4	10.2	102.7	167.3
% of total			38%	21%	55%	43%
Top-6 institutions:						
NongHyup Financial			0.7	3.4	45.4	49.5
National Pension Service			39.2			39.2
Mirae Asset Financial Group			2.7		19.8	22.5
Korea Investment Holdings			1.1		18.3	19.4
KB Financial Group			1.3	0.2	5.5	6.9
Samsung Life Insurance			5.6			5.6
European financiers	0.4	0.9	15.5	6.5	59.2	82.4
% of total	5%	50%	11%	13%	31%	21%

Source: Chain Reaction Research, *Forests & Finance*, viewed 27 Nov 2020; Adjusters have been applied (correction to relevant activities); Posco, LG International, Samsung C&T

South Korea’s public institutions do not seem to take an active role in enforcement of human rights policies and/or due diligence of the companies they finance. The two South Korean NGOs KFEM and APIL, which have studied the government’s overseas funding mechanisms and due diligence, could not find [evidence](#) for systematic loan review processes. The South Korean government does not seem to have a mechanism for human rights due diligence. It also does not appear to have in place "appropriate measures to prevent or minimize [economic, social, and cultural] damage." There was a total of [KRW 29 billion](#) (USD 26 million) of public loans from the Korea Forest Service (KFS) to Posco International, Daesang Corporation, LG Corporation, Korea Development Corporation, and JC Chemical between 2011 and 2019, despite evident environmental and human rights issues on their plantations. The loan for Posco was dated April 2019, with an amount of KRW 4.9 billion (USD 4.4 million).

Along with the National Pension Service (see next section), other South Korean investors include NongHyup Financial, Mirae Asset Financial Group, Korea Investment Holdings, KB Financial Group and Samsung Life Insurance. These investors do not have policies on deforestation.

European financiers have been active in bonds issuance for the South Korean companies involved in leakage palm oil. [Standard Chartered](#), [BNP Paribas](#), [HSBC](#) and Credit Agricole have been most active. Except for Credit Agricole, the other banks have a zero-deforestation policy.

Korea’s National Pension Service: The largest investor in non-NDPE Posco International, Samsung C&T, LG International, and SK Eco Prime

As of April 2020, the palm oil-adjusted investment from banks and investors in Posco International (as subsidiary of Posco) totaled USD [137 million](#). South Korea’s National Pension Service (NPS) is the

second-largest shareholder in Posco with a 11.7 percent stake, after BlackRock's 12.3 percent shareholding. In Posco's 63 percent-owned subsidiary Posco International, which includes the palm oil activities, NPS has a 5.4 percent. The NPS is the country's largest investor and the world's [third-largest](#) pension fund with KRW 777 trillion ([USD 689 billion](#) in October 2020) in assets. NPS [stated](#) in May 2020 to increase its holdings of overseas investments by 2025. While the fund lists sustainability as an investment [principle](#), its development portfolio suggests otherwise. For instance, the fund [ranks](#) fifth in a list of global investors in coal plant development, holding shares of USD 4.2 billion in three coal plant developers. NPS recently showed [an interest](#) in incorporating ESG criteria in its domestic equity and bond investments, but there is no mention of its overseas portfolio.

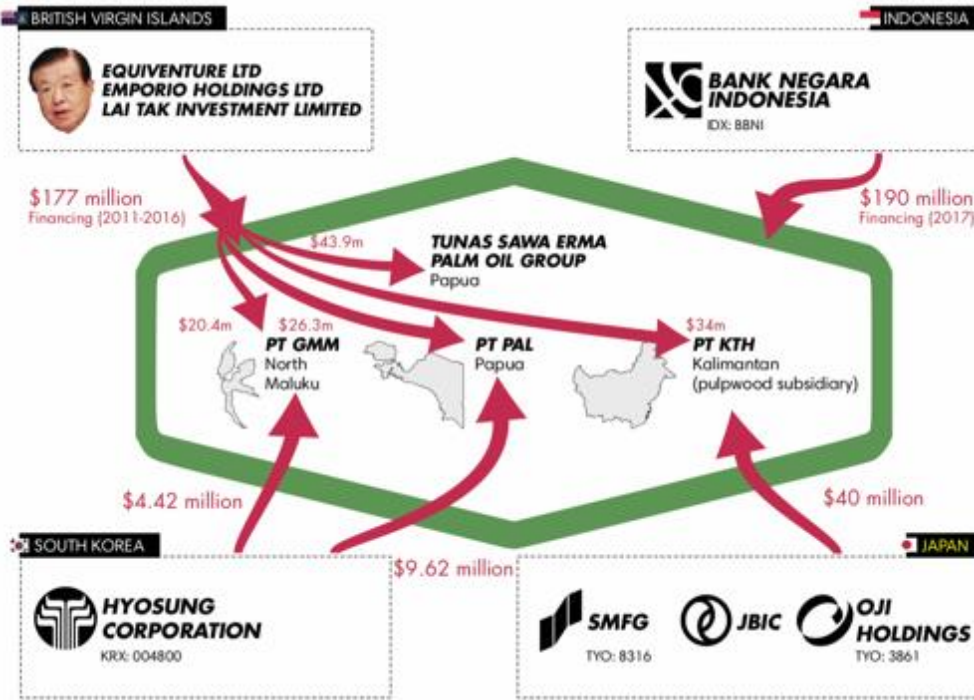
Next to Posco, NPS is also the main shareholder of South Korean companies Samsung C&T, LG International and SK Eco Prime, as of April 2020, with investments of respectively [USD 5.4 million](#) (USD 1.3 billion unadjusted), [USD 2.2 million](#) (USD 37 million unadjusted) and [USD 110 million](#) (unadjusted).

BlackRock is Posco International's second-largest shareholder with investment of [USD 15.9 million](#). A study on [BlackRock](#), released in August 2019, revealed the world's largest fund manager's substantial role in financing deforestation and land conflicts and that its "ESG-labeled funds contain numerous high-risk holdings in deforestation and conflict-linked securities." Other known and larger South Korean financiers of Posco include Samsung Life Insurance (USD 4.5 million) and Mirae Asset Financial Group (USD 2.4 million).

Major shareholders of Korindo lag on ESG policies

Direct investors of Korindo originate from Indonesia, Japan, the British Virgin Islands, and South Korea. A 2018 [study](#) on financiers of Korindo revealed that the company receives three direct investment streams. They include commercial and government-owned banks in Indonesia and Japan, joint venture partners in South Korea and Japan, and offshore shell companies controlled by Korindo chairman Eun-Ho Seung (Figure 13). Korindo Group receives a majority of its [credit](#) through the Indonesian government Bank Negara Indonesia (BNI), which appears to lack effective due diligence systems. In addition, Japan plays a role, too, as the country is an important export destination for Korindo's wood chips and timber products. Japanese SMBC Group (also known as Sumitomo-Mitsui Financial Group, or SMFG) has financed Korindo's pulpwood subsidiary PT Korintiga Hutani (PT KTH). It also provides significant financing of Korindo's two major Japanese business partners Oji Holdings and Sumitomo Forestry. At the time of loans provision, SMBC had no human rights or forest sector-specific policy.

Figure 13: Identified loans and investments into Korindo Group's forest sector operations [USD] in 2018



Source: Rainforest Action Network, TuK-INDONESIA, Walhi and Profundo. [Perilous: Korindo, land grabbing & banks \(2018\)](#)

Hyosung Corporation, a Korean family-owned conglomerate, and the only Korean company with shares in Korindo's subsidiaries PT PAL and PT GMM, was confronted by [KFEM](#) in September 2016 on ESG violations of its investee company. Hyosung replied that it will "check the facts," but in May 2019 it still had not taken any action. Finally, Korindo's operations are financed for at least [USD 177 million](#) by a "cluster of opaque companies in the British Virgin Islands," owned by Korindo's chairman since 2011.

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