

Chain Reaction Research is a collaborative effort of:

Aidenvironment
Climate Advisers
Profundo

1320 19th Street NW, Suite 400
Washington, DC 20036
United States
www.chainreactionresearch.com
info@chainreactionresearch.com

Authors:

Alexandra Christopoulou, Profundo
Tim Steinweg, Aidenvironment
Matt Piotrowski, Climate Advisers

USD 11B Loans to Palm Oil Industry: ESG Issues May Create Indirect Risks for Bank Investors

Since the palm oil sector is capital intensive and needs long-term financing, palm oil companies depend on bank loans. By investing in banks that provide loans to the palm oil industry, investors may indirectly face deforestation-related risks. These risks are magnified when a bank's exposure to palm oil companies with sustainability risks is relatively high and its equity position is relatively weak. Loans to a selection of 105 companies involved in the entire palm oil supply chain were analysed. The top 10 banks financing the palm oil sector were identified. The banks' relative exposure to the palm oil sector and the risks involved were then analysed by looking to their policies and their specific loan portfolios. Finally, the main investors of the top 10 banks are listed.

Key Findings

- **Banks have USD 11.4 billion in outstanding loans to the palm oil sector.** Southeast Asian (Indonesia, Malaysia, Singapore) banks are leading the list of palm oil sector financiers, providing 66 percent of the outstanding loans. East Asian (Japan, China, and Taiwan) and European banks follow, with 13 and 12 percent respectively. Banks hold virtually no bonds, which are controlled by institutional and private investors.
- **The ten largest loan issuers provide USD 7.5 billion, or 66 percent, of financing to the palm oil sector.** Bank Mandiri (Indonesia), Oversea-Chinese Banking Corporation (OCBC) (Singapore) and Bank Negara Indonesia broke the one billion US dollar barrier in currently outstanding loans to the palm oil sector. All three of the banks have weak sustainability policies.
- **The banks with the highest relative exposure to the palm oil sector are Indonesia EximBank (5 percent of net loans), Bank Mandiri (3 percent) and Bank Negara Indonesia (3 percent).** For these banks, palm oil loans represent 21 percent, 13 percent and 15 percent of equity. None of these banks include environmental standards for their clients. As a result, their borrowers are not required to have a NDPE policy in place to receive a loan, increasing risk for their investors.
- **Palm oil clients of the top 10 banks include companies with sustainability risks.** Among the largest borrowers is CBI Group (Indonesia), with its subsidiary Sawit Sumbermas Sarana (SSMS) receiving most of the group's loans. SSMS is excluded from the NDPE market and continues to deforest. Another borrower identified is Rajawali Group (owner of Eagle High Plantations). During the months of October and September of 2018, approximately 1,500 ha of peat were burned on one of its concessions. Tunas Baru Lampung (TBLA), also among the borrowers, has cleared almost 7,000 ha of peatland and forest across its concessions since 2014 and recently it was found to clear peat in South Sumatra.
- **Investors in banks could face indirect palm oil-related risk.** The banks' loan portfolios could be exposed to palm oil companies and their ESG risks. These risks relate to NDPE/market access, stranded assets and legal risks. The risks may result in a palm oil company not serving its debt anymore, reducing the value of the loan. Such a scenario would force a bank to write down a part of the loan, negatively affecting the equity value of the bank and finally its share price.
- **Case study: 79 percent of Bank Negara Indonesia (BNI) outstanding palm oil loans could pose a sustainability risk.** This represents 2.6 percent of the bank's total net loans. With equity to net loans ratio (EQL) at 22 percent, 12 percent of the bank's equity is at risk.

Palm Oil Sector Relies on Banks for Its Financing

The palm oil sector is capital intensive and often requires upfront financing. Growers need funds to develop land and plant palm oil trees. This process takes three to five years to start bearing fruit and production peaks at seven or more years. Palm oil processing companies need capital to build or acquire mills and refineries. Against this backdrop, most palm oil companies need to borrow funds and rely on banks for their financing.

This report analyses the bank financing of the palm oil sector by looking at loans provided to a selection of 105 companies involved in the palm oil supply chain. Chain Reaction Research (CRR) selected the companies from a broader selection of “forest-risk” companies provided by [Forests & Finance](#). All companies involved in palm oil were included. The figures in this study refer to bank loans provided from January 2010 to July 2018 (the period analysed in this report) and have yet to mature. The objective of this report is to provide an insight in the financing of the palm oil sector and focus on the top 10 banks now financing the industry at the moment.

Banks provided USD 34 billion in loans to the palm oil sector; USD 11 billion is currently outstanding

CRR found that banks provided USD 33.8 billion in loans to the palm oil refineries, traders and plantations during the analysed period. From those loans, **USD 11.4 billion is currently not matured**, referred to in the report as loans currently outstanding. Figure 1 below gives an overview of the yearly changes in the total amount of loans provided per year, as well as the breakdown of the loans currently outstanding per year of issuance.

Figure 1 Loans provided to the palm oil sector, Jan 2010 to Jul 2018

Sources: Forests & Finance, Chain Reaction Research

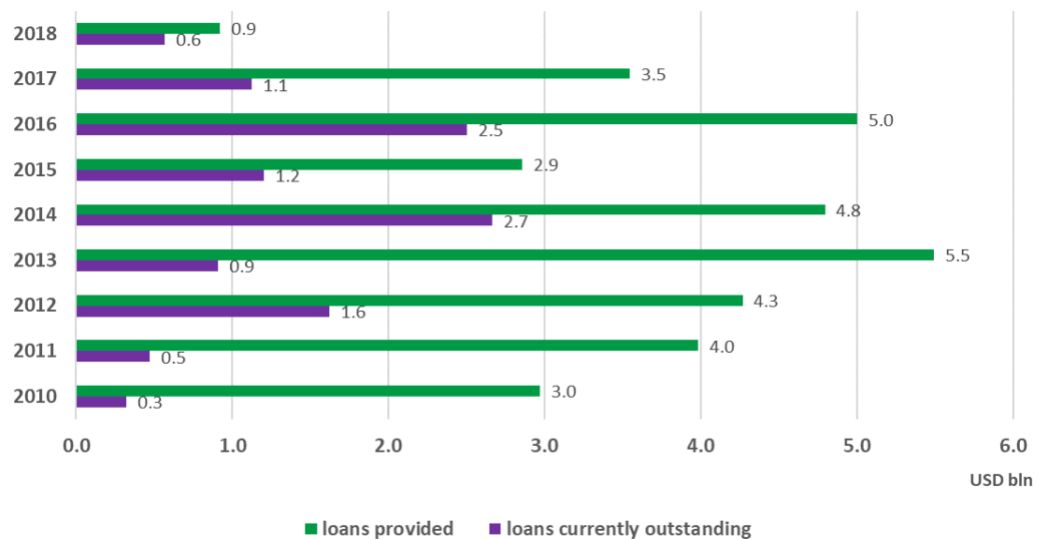
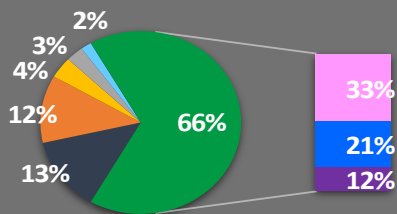


Figure 2 Palm oil loans outstanding per region



■ Southeast Asia ■ East Asia*
■ Europe ■ North America
■ Other ■ Oceania
■ Indonesia ■ Malaysia
■ Singapore

Sources: Forests & Finance, Chain Reaction Research
 *East Asia: Japan, China, Taiwan, South Korea

Southeast Asian banks lead palm oil sector financiers

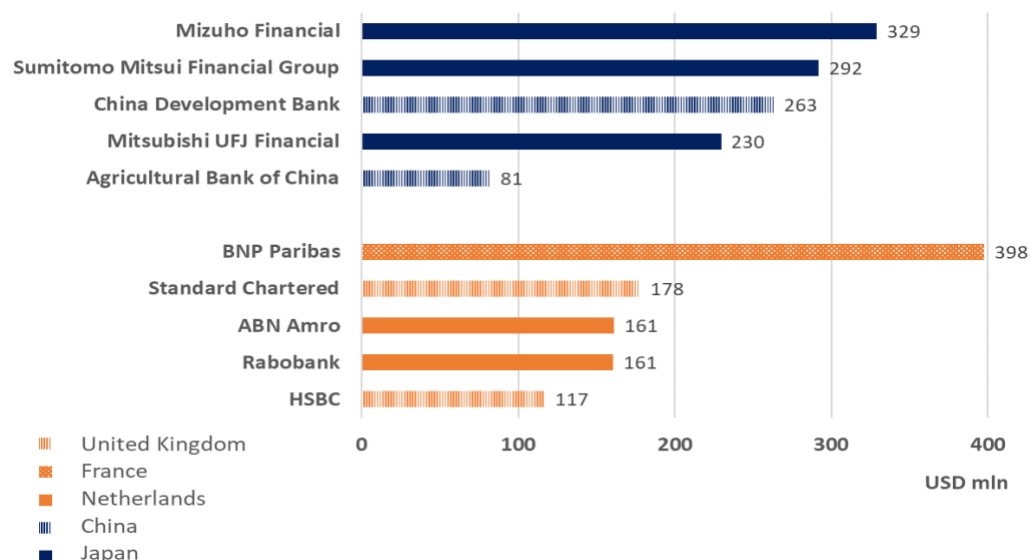
Indonesian, Malaysian and Singaporean banks provided 33, 21 and 12 percent respectively of the total palm oil loans (Figure 2). Altogether, Southeast Asian banks provided 66 percent of the loans currently outstanding, totalling USD 7.6 billion.

East Asian and European banks follow, with Japanese and Chinese institutions together providing the biggest chunk of the loans coming from East Asia. United

Kingdom and the Netherlands lead the financiers from Europe. North American banks and banks from Oceania make up 4 and 2 percent respectively of the financing in the palm oil sector. Figure 3 below shows the top 5 banks from East Asia and Europe financing the palm oil sector. Banks from Southeast Asia, which provided the majority of the loans, are discussed in the section below.

Figure 3 Top 5 banks from East Asia and top 5 banks from Europe with outstanding loans to the palm oil sector

Sources: Forests & Finance, Chain Reaction Research



10 banks provide USD 7.5 billion of financing to the palm oil sector

Of the USD 11.4 billion currently outstanding, 66 percent was provided by 10 banks. Figure 4 below shows the top 10 banks with outstanding loans to the palm oil sector.

Figure 4 Top 10 banks with outstanding loans to the palm oil sector

Sources: Forests & Finance, Chain Reaction Research, Thomson Reuters Eikon

Bank	Country	Loans to palm oil sector (USD mln)	% palm oil loans to net loans*	% equity to net loans (EQL)*	% palm oil loans to equity*
Bank Mandiri	Indonesia	1,510	3%	23%	13%
Oversea-Chinese Banking Corporation	Singapore	1,042	1%	16%	4%
Bank Negara Indonesia	Indonesia	1,031	3%	22%	15%
Bank Rakyat Indonesia	Indonesia	838	2%	22%	7%
Maybank	Malaysia	772	1%	15%	4%
RHB Banking	Malaysia	710	2%	14%	13%
CIMB Group	Malaysia	517	1%	15%	4%
HSBC	United Kingdom	398	0.04%	19%	0.2%
Mizuho Financial	Japan	329	0.05%	11%	0.4%
Indonesia Eximbank	Indonesia	326	5%	26%	21%
Total top-10 banks		7,471	-	-	-
Average top-10 banks		-	2%	18%	8%

*ratios where calculated with the most recent available quarter figures

Figure 5 Policies of top 10 palm oil banks

Bank	Policy score (max=50)
Bank Mandiri	2
Oversea-Chinese Banking Corporation	9
Bank Negara Indonesia	4
Bank Rakyat Indonesia	2
Maybank	0
RHB Banking	0
CIMB Group	0
HSBC	30
Mizuho Financial	17
Indonesia Eximbank	0

Source: Forests & Finance, Profundo

Bank Mandiri (Indonesia), Oversea-Chinese Banking Corporation (OCBC) (Singapore) and Bank Negara Indonesia broke the one-billion USD Dollar barrier in currently outstanding loans to the palm oil sector.

As presented from Figure 4, the percentage of palm oil loans to the net loans of the top-10 banks is on average 2 percent. **Indonesia EximBank, Bank Mandiri and Bank Negara Indonesia have the highest relative exposure to the palm oil sector, respectively 5, 3 and 3 percent.** Indonesia EximBank is 100 percent fully owned by the Government of Indonesia, and therefore no institutional shareholders are involved. Looking at the ratio of equity to net loans (EQL) we see that for both Bank Mandiri and Bank Negara Indonesia it is relatively high, 23 and 22 percent respectively. A more specific case study is conducted at the last subsection of this report about Bank Negara Indonesia.

Indonesia EximBank, Bank Mandiri and Bank Negara Indonesia all have weak sustainability policies. Indonesia Eximbank scores zero points on the [Forests and Finance matrix](#), Bank Mandiri two points and Bank Negara Indonesia four. Mizuho Financial has 17 points and HSBC is the only bank performing above the middle, scoring 30 out of 50 points (Figure 5). The two banks scoring high have very low exposure to palm oil loans, for both below 0.1 percent to their net loans.

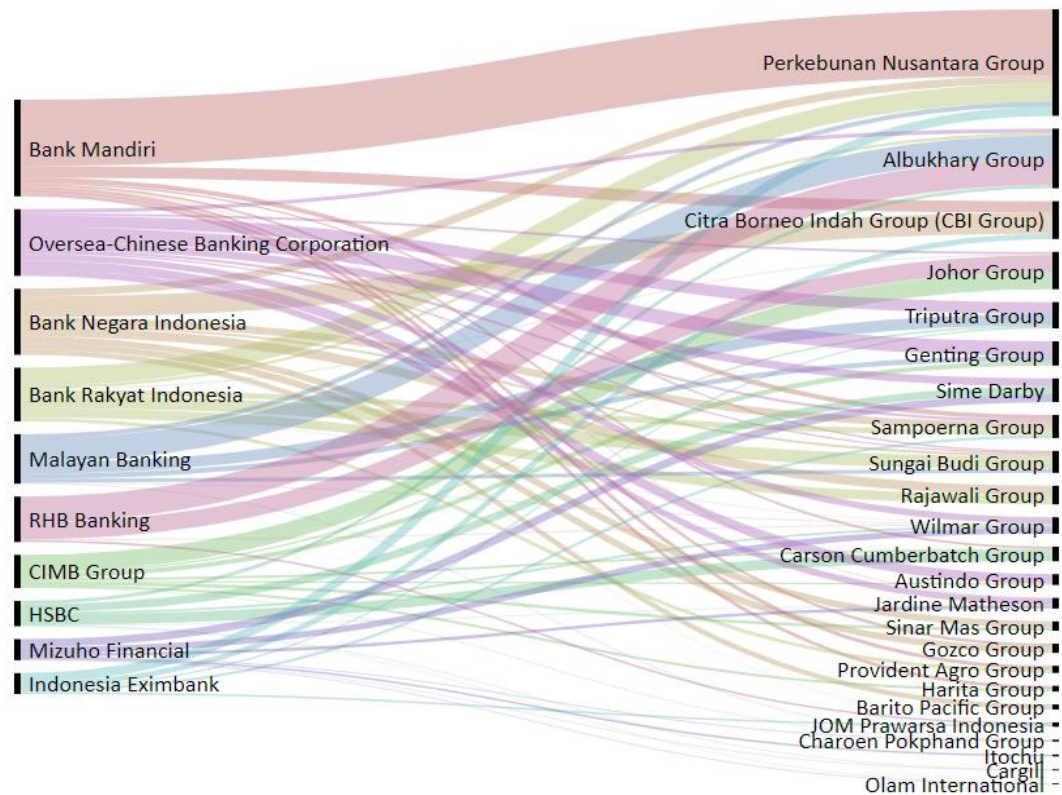
More specifically, these three banks score zero points regarding the environmental standards they require from their clients in order to provide financial services, meaning that a borrower is not required to have a “No Deforestation, No Peat, No Exploitation” (NDPE) policy in place to be granted a loan. Such absence of environmental standards for a bank’s clients might render investing in the bank risky.

Figure 6 Companies with palm oil loans outstanding provided by the top 10 banks as of 2010

Group	Amount (USD mln)
Perkebunan Nusantara Group	1,663
Albukhary Group	932
Citra Borneo Indah Group (CBI Group)	589
Johor Group	583
Triputra Group	410
Genting Group	380
Sime Darby	369
Sampoerna Group	358
Sungai Budi Group	343
Rajawali Group	291
Wilmar Group	257
Carson Cumberbatch Group	229
Austindo Group	168
Jardine Matheson	166
Sinar Mas Group	146
Gozco Group	144
Provident Agro Group	111

Sources: Forests & Finance, Chain Reaction Research

Top 10 banks’ main palm oil borrowers



Investing in a bank with high exposure to the palm oil sector and with a low policy score means there is no screening method in place and thus it is more likely that this bank is

providing loans to palm oil companies carrying sustainability related risks. In order to determine the risk investors of each bank might face, it is important not to look only at the exposure each bank has to the palm oil sector and the bank's policy score but also the breakdown of the palm oil companies each bank is providing loans to.

Figure 6 above shows the companies to which the top 10 banks currently have palm oil outstanding loans (above USD 10 million), while the figure on the side shows a summary of the total amount of the loans outstanding the top-10 banks have together in each palm oil group (above USD 100 million). A more detailed figure can be found in the Appendix of this report, Figure 11. Differences may arise in terms of sustainability related risks in each bank's palm oil loan portfolio.

Most of the loans went to the **Perkebunan Nusantara and Albukhary Groups** for the amount of USD 1.7 and USD 0.9 billion respectively. **Perkebunan Nusantara**, a state-owned Indonesian palm oil grower and processor, has an [agreement](#) with Unilever to accelerate sustainable palm oil production in Indonesia. Bank Mandiri provided 62 percent of Perkebunan Nusantara's palm oil loans.

Albukhary Group, a Malaysian conglomerate, is active in the palm oil sector mainly through its subsidiary Tradewinds Plantation. Tradewinds Plantation is managing [132,940 hectares](#) and owns 11 mills. In a company assessment from [SPOTT](#), the company scored low, reaching only about 10 percent in terms of sustainability transparency. Most of Albukhary Group's palm oil loans came from RHB Banking and Maybank, 43 and 40 percent respectively of the Group's total palm oil loans.

CBI Group (Indonesia) and **Johor Group (Malaysia)** follow with approximately USD 0.6 billion in palm oil loans outstanding for each. The main subsidiary of **CBI Group** attracting palm oil loans is the Indonesian **Sawit Sumbermas Sarana (SSMS)**. [CRR analysis](#), using satellite images, shows deforestation and peatland clearance by SSMS. SSMS still continues to clear forest, and it has been excluded from the NDPE market. Outstanding loans to SSMS were provided by Bank Mandiri (USD 179 million) and Bank Negara Indonesia (USD 162 million).

Johor Group, a palm oil grower managing [76,391 hectares](#) of land in Indonesia and Malaysia for palm oil use and the owner of five mills, is an RSPO member since 2009, with 79 percent of its managing land and all its mills currently certified. The majority of loans provided to Johor Group are from RHB Banking and CIMB Group.

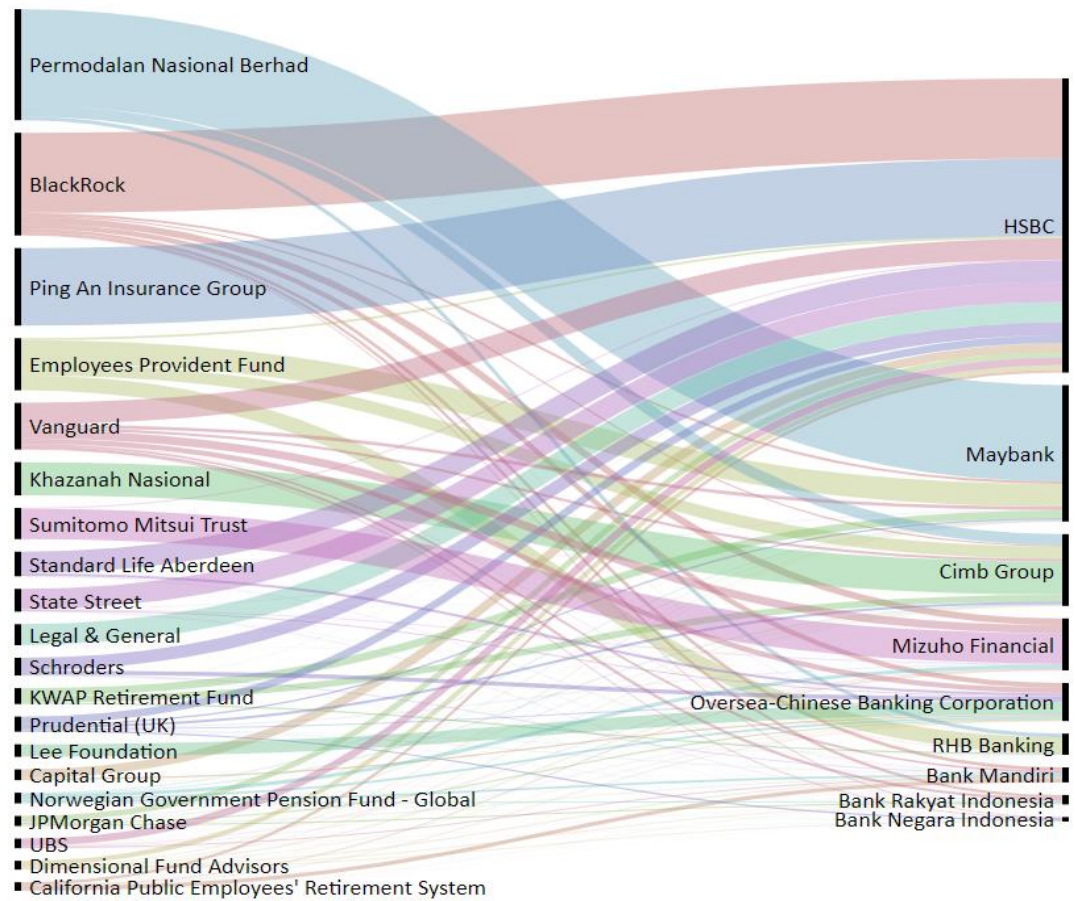
Institutional shareholders of the banks may face indirect risk

Figure 7 below and the summary figure on the side show the institutional shareholders in the top-10 banks with outstanding loans to the palm oil sector. Together these financial institutions hold shares in the top-10 palm oil banks of USD 91 billion in terms of value, at the most recent available date. A more detailed figure can be found in the Appendix of this report in Figure 12.

Figure 7 Top 20 institutional shareholders of the top-10 palm oil banks at most recent available filing date

Shareholder	Country	Value of shares held (USD mln)
Permodalan Nasional Berhad	Malaysia	15,734
BlackRock	United States	14,550
Ping An Insurance Group	China	10,980
Employees Provident Fund	Malaysia	7,384
Vanguard	United States	6,605
Khazanah Nasional	Malaysia	4,708
Sumitomo Mitsui Trust	Japan	4,416
Standard Life Aberdeen	United Kingdom	3,480
State Street	United States	3,222
Legal & General	United Kingdom	2,974
Schroders	United Kingdom	2,510
KWAP Retirement Fund	Malaysia	2,256
Prudential (UK)	United Kingdom	2,136
Lee Foundation	Singapore	1,777
Capital Group	United States	1,516
Norwegian Government Pension Fund - Global	Norway	1,508
JPMorgan Chase	United States	1,418
UBS	Switzerland	1,361
Dimensional Fund Advisors	United States	1,249
California Public Employees' Retirement System	United States	1,224
Total		91,010

Sources: Thomson Reuters Eikon, Chain Reaction Research



A shareholder of a bank providing loans to the palm oil sector could face indirect sustainability risks. The bank’s loan portfolio might be exposed to palm oil companies which face sustainability-related risks. These risks relate to NDPE and market access, and stranded assets as well as legal risks. As a consequence of these sustainability risks, a palm oil company may not be able to serve its debt anymore, leading to a reduction in the loan’s value. Subsequently, the bank would have to write down the loan. Such a scenario would negatively affect the equity value of the bank and finally the share price. Such an example is analysed in a case study at the last subsection of this report looking at Bank Negara Indonesia and its main institutional investors: Prudential UK, Vanguard and BlackRock.

The domino effect: Banks holding shares in other banks

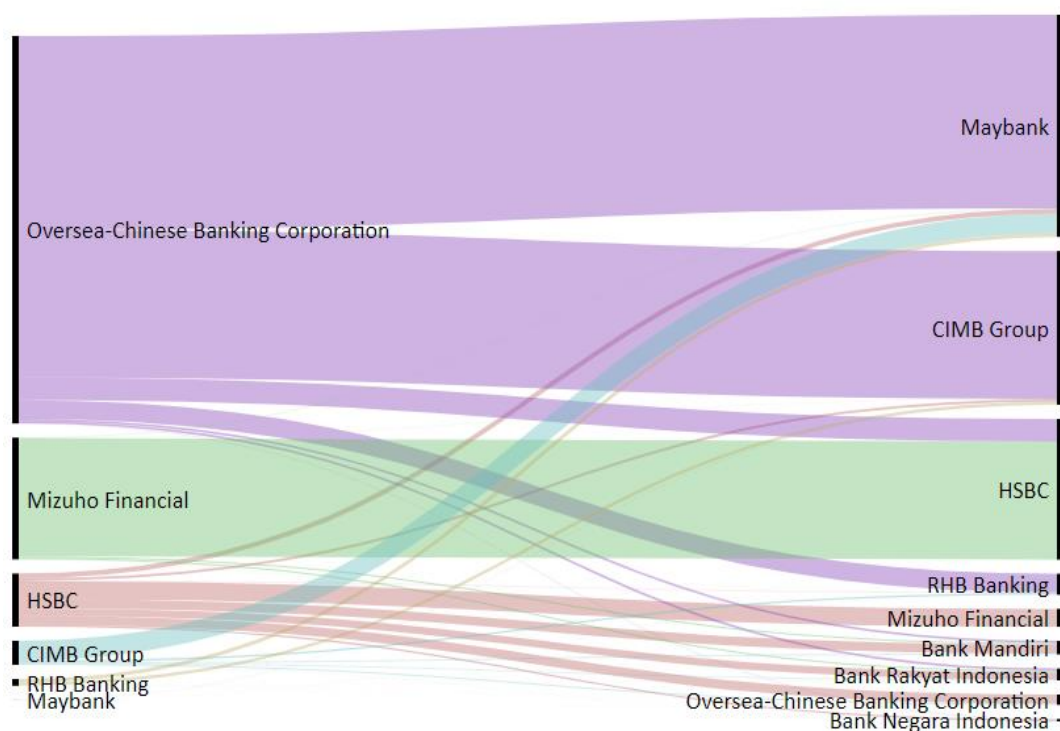
The top 10 banks financing the palm oil sector hold shares in each other. **When banks have similar loan portfolios and cross-hold shares, risk increases.** Looking at Figure 6, many banks provide loans to the same palm oil companies, resulting in similar exposures. Taking into account Figure 8 and the fact that these banks hold shares in each other, a domino effect could occur from both direct and indirect risks.

OCBC owns shares in multiple banks (see Figure 8). OCBC holds 1.33 percent in Maybank, 1.73 percent in CIMB Group and below 0.1 percent in HSBC, RHB Banking, Bank Mandiri, Bank Rakyat Indonesia and Bank Negara Indonesia. In a scenario that both Maybank and OCBC both provide loans to a palm oil company subjected to sustainability related risks, OCBC would face direct risk as a financier and additional indirect risk due to the shares OCBC holds to Maybank.

From the top 10 banks with loans to palm oil industry, CIMB Group has the most shares held by the other nine banks. Altogether, the other nine banks hold 1.82 percent of CIMB Group. A more detailed figure including all the banks holding shares in each other can be found in the Appendix of this report.

Figure 8 Top-10 palm oil banks holding shares in each other at most recent available filing date

Bank	% shares outstanding	Value of shares held (USD mln)
CIMB Group	1.82	308
Maybank	1.56	446
RHB Banking	0.77	42
HSBC	0.17	282
Bank Mandiri	0.12	27
Bank Rakyat Indonesia	0.09	24
Mizuho Financial	0.08	36
Oversea-Chinese Banking Corporation	0.06	21
Bank Negara Indonesia	0.05	5
Total	-	1,191



Sources: Thomson Reuters Eikon, Chain Reaction Research

Case study: Bank Negara Indonesia (BNI) – Exposed to palm oil chain

Bank Negara Indonesia has approximately USD 1 billion outstanding in loans that were issued during the analysed period of this study. This corresponds to 3 percent of the bank's net loans and 15 percent of its equity (see Figure 4 earlier in the report). Figure 9 below shows the portfolio of BNI's outstanding palm oil loans per borrower.

Figure 9 Outstanding palm oil loans of Bank Negara Indonesia

Sources: Forests & Finance, Chain Reaction Research

Group	Borrower	Amount (USD mln)
Citra Borneo Indah Group (CBI Group)	Sawit Sumbermas Sarana	162
	Sawit Multi Utama	68
	Tanjung Sawit Abadi	58
	Kalimantan Sawit Abadi	39
Rajawali Group	BW Plantation (Eagle High Plantation)	145
Perkebunan Nusantara Group	PTPN VII	119
	PTPN VIII	3
Sampoerna Group	Selatanjaya Permai	50
	Lanang Agro Bersatu	38
	Sawit Selatan	28
Gozco Group	Suryabumi Agrolanggeng	55

	Golden Blossom Sumatra	47
Sinar Mas Group	Sinar Mas Agro Resources	100
Barito Pacific Group	Grand Utama Mandiri	62
	Tintin Boyok Sawit Makmur	15
	Barito Pacific	1
Sungai Budi Group	Bumi Perkasa Gemilang	37
JOM Prawarsa Indonesia	Persada Alam Hijau	5
Total		1,031

The recipients of these loans include a number of companies with known sustainability risks:

- Citra Borneo Indah (CBI) Group** owns the [PT Sawit Mandiri Lestari](#) plantation via its subsidiary Sawit Sumbermas Sarana (SSMS). However, it sold the plantation to a related entity while subject to a Roundtable on Sustainable Palm Oil (RSPO) complaint. Approximately 1,000 ha of forest has been cleared at this plantation in 2018. Between 2016 and 2018, deforestation was also seen on SSMS's PT Kalimantan Sawit Abadi, PT Mitra Mendawai Sejati, PT Sawit Multi Utama and PT Tanjung Sawit Abadi, all of which are located in Central Kalimantan. SSMS have also cleared around 750 ha of peat on PT Borneo Sawit Gemerlang in Central Kalimantan in 2018.
- The Rajawali Group** owns Eagle High Plantations (formerly BW Plantation). The Group operates the Arrtu Energy Resources concession in West Kalimantan. During the dry season in September and October 2018, approximately 1,500 ha of peat burned on its concession, land that was possibly set aside as a conservation area. The area is also Bornean orangutan habitat.
- Perkebunan Nusantara (PT PN)** has among the highest number of palm oil mills of any developer in Indonesia. It mostly sources from its own plantations and associated smallholders. However, on 15 June 2017, PT PN 13 had announced plans on its website (link now dead) to start sourcing fresh fruit bunches from the Bewani Oil Palm Plantation (BOPPL) in Papua New Guinea. The BOPPL has [caused](#) large scale deforestation. The article implies PT PN may have external supply of palm oil that could be linked to deforestation.
- Between 2016 and 2018, **Sampoerna Group** deforested on the following plantations: PT Lanang Agro Bersatu in West Kalimantan (380 ha), PT Sampoerna Agro in South Sumatra (220 ha of peat), PT Sawit Selatan in South Sumatra (150 ha), PT Sungai Rangit in West Kalimantan (130 ha of peat) and PT Usaha Agro Indonesia (230 ha of peat).
- Sungai Budi Group**, the parent company of Tunas Baru Lampung (TBLA), was covered in an April 2018 Chain Reaction Research [report](#) detailing forest and peat clearance on PT Samora Usaha Jaya in South Sumatra, PT Solusi Jaya Perkasa in West Kalimantan and PT Bumi Perkasa Gemilang in West Kalimantan. As recently as November 2018, peat was [cleared](#) by TBLA on their PT Dinamika Graha Sarana in South Sumatra. Monitoring by CRR partner

Figure 10 Main shareholders of Bank Negara Indonesia at most recent available filing date

Main shareholders	Country	%
Government of Indonesia	Indonesia	60.6
Prudential (UK)	United Kingdom	2.1
Vanguard	United States	1.4
BlackRock	United States	1.3

Source: Thomson Reuters Eikon

Aidenvironment has also detected peat clearance on PT Samora Usaha Jaya concessions in South Sumatra in November 2018.

An estimated 79 percent of BNI’s outstanding palm oil loans could impose a sustainability risk. This totals 2.6 percent of the bank’s net loans. Although the bank has a small cushion available to absorb loan losses as equity to net loans ratio (EQL) is 22 percent, **12 percent of the bank’s equity is at risk.**

Due to BNI’s exposure to risky loans and the low policy score of the bank, 4 out of 50, the bank’s shareholders could face indirect risk. The government of Indonesia holds 60.6 percent of BNI. **Institutional investors Prudential UK and US-based Vanguard and BlackRock hold above 1 percent of BNI’s shares.**

Appendix

Figure 11 Companies with palm oil loans outstanding provided by the top 10 banks as from 2010

Sources: Forests & Finance,
Chain Reaction Research

Bank	Company	Amount (USD mln)
Bank Mandiri	Perkebunan Nusantara Group	1,038
	Citra Borneo Indah Group (CBI Group)	179
	Sampoerna Group	73
	Provident Agro Group	57
	Harita Group	51
	Gozco Group	42
	Carson Cumberbatch Group	34
	Sungai Budi Group	26
	Jardine Matheson	10
Total Bank Mandiri		1,510
Oversea-Chinese Banking Corporation	Genting Group	228
	Triputra Group	182
	Austindo Group	146
	Sime Darby	123
	Jardine Matheson	99
	Wilmar Group	99
	Albukhary Group	62
	Sampoerna Group	41
	Johor Group	37
	Sungai Budi Group	24
	Cargill	2
COFCO	1	
Total Oversea-Chinese Banking Corporation		1,042
Bank Negara Indonesia	Citra Borneo Indah Group (CBI Group)	326
	Rajawali Group	145
	Perkebunan Nusantara Group	121
	Sampoerna Group	116
	Gozco Group	102
	Sinar Mas Group	100
	Barito Pacific Group	78
	Sungai Budi Group	37

	JOM Prawarsa Indonesia	5
	Perkebunan Nusantara Group	288
	Sungai Budi Group	198
	Rajawali Group	146
	Sampoerna Group	85
	Provident Agro Group	54
	Albukhary Group	45
	Johor Group	13
	Wilmar Group	9
	Tiga Pilar Sejahtera Group	0.2
	Toba Bara Sejahtera Group	0.2
Total Bank Negara Indonesia		1,869
Maybank	Albukhary Group	370
	Triputra Group	176
	Genting Group	78
	Perkebunan Nusantara Group	72
	Sungai Budi Group	58
	Wilmar Group	9
	Charoen Pokphand Group	8
Total Maybank		772
RHB Banking	Albukhary Group	403
	Johor Group	267
	JOM Prawarsa Indonesia	31
	Wilmar Group	9
Total RHB Banking		710
CIMB Group	Johor Group	267
	Genting Group	73
	Sinar Mas Group	46
	Harita Group	39
	Carson Cumberbatch Group	34
	Triputra Group	25
	Austindo Group	22
	Charoen Pokphand Group	10
Total CIMB Group		517

HSBC	Carson Cumberbatch Group	160
	Sime Darby	123
	Albukhary Group	52
	Wilmar Group	34
	Cargill	9
	Jardine Matheson	9
	Olam International	6
	Triputra Group	3
	Bolloré	1
	COFCO	0.2
	Itochu	0.1
Total HSBC		398
Mizuho Financial	Sime Darby	123
	Wilmar Group	99
	Jardine Matheson	49
	Itochu	30
	Charoen Pokphand Group	12
	Olam International	10
	Cargill	7
Total Mizuho Financial		329
Indonesia Eximbank	Perkebunan Nusantara Group	144
	Citra Borneo Indah Group (CBI Group)	84
	Sampoerna Group	44
	JOM Prawarsa Indonesia	31
	Triputra Group	23
Total Indonesia Eximbank		326
Total top-10 banks		7,471

Figure 12 Top 20 institutional shareholders of the top-10 banks with outstanding loans to the palm oil sector, values at the most recent available date

Sources: Chain Reaction Research, Thompson Reuters Eikon

Shareholder	Bank	Amount (USD mln)
Permodalan Nasional Berhad	Maybank	13,652
	CIMB Group	1,555
	RHB Banking	527
Total Permodalan Nasional Berhad		15,734
BlackRock	HSBC	11,363
	Mizuho Financial	951
	Oversea-Chinese Banking Corporation	706
	Bank Mandiri	462
	Bank Rakyat Indonesia	380
	Maybank	336
	CIMB Group	198
	Bank Negara Indonesia	120
	RHB Banking	34
Total Blackrock		14,550
Ping An Insurance Group	HSBC	10,980
Total Ping An Insurance Group		10,980
Employees Provident Fund	Maybank	3,221
	RHB Banking	2,126
	CIMB Group	1,745
	HSBC	292
Total Employees Provident Fund		7,384
Vanguard	HSBC	3,035
	Mizuho Financial	1,148
	Oversea-Chinese Banking Corporation	733
	Maybank	480
	Bank Rakyat Indonesia	386
	CIMB Group	361
	Bank Mandiri	288
	Bank Negara Indonesia	128
	RHB Banking	46
Total Vanguard		6,605
Khazanah Nasional	CIMB Group	4,708
Total Khazanah Nasional		4,708
Sumitomo Mitsui Trust	Mizuho Financial	4,283

	HSBC	112
	Oversea-Chinese Banking Corporation	17
	Bank Mandiri	2
	Bank Rakyat Indonesia	1
	Bank Negara Indonesia	1
	Maybank	0.4
	CIMB Group	0.4
	RHB Banking	0.03
Total Sumitomo Mitsui Trust		4,417
Standard Life Aberdeen	HSBC	3,032
	Oversea-Chinese Banking Corporation	374
	Bank Mandiri	42
	Mizuho Financial	10
	Bank Rakyat Indonesia	10
	Bank Negara Indonesia	8
	CIMB Group	4
	Maybank	0.3
	RHB Banking	0.005
Total Standard Life Aberdeen		3,480
State Street	HSBC	2,871
	Oversea-Chinese Banking Corporation	135
	Mizuho Financial	79
	Bank Rakyat Indonesia	50
	Maybank	38
	Bank Mandiri	20
	Bank Negara Indonesia	14
	CIMB Group	11
	RHB Banking	4
Total State Street		3,222
Legal & General	HSBC	2,913
	Mizuho Financial	22
	Oversea-Chinese Banking Corporation	11
	Maybank	8
	Bank Rakyat Indonesia	8
	CIMB Group	7

	Bank Mandiri	3
	Bank Negara Indonesia	1
	RHB Banking	1
Total Legal & General		2,974
Schroders	HSBC	1,790
	Oversea-Chinese Banking Corporation	602
	Bank Mandiri	84
	Bank Negara Indonesia	17
	Bank Rakyat Indonesia	9
	Mizuho Financial	4
	Maybank	4
	CIMB Group	1
Total Schroders		2,511
KWAP Retirement Fund	Maybank	1,087
	CIMB Group	929
	RHB Banking	211
	HSBC	29
KWAP Retirement Fund		2,256
Prudential (UK)	HSBC	1,082
	CIMB Group	359
	Maybank	225
	Bank Negara Indonesia	208
	Oversea-Chinese Banking Corporation	130
	Mizuho Financial	50
	Bank Mandiri	38
	RHB Banking	25
	Bank Rakyat Indonesia	19
Total Prudential (UK)		2,136
Lee Foundation	Oversea-Chinese Banking Corporation	1,777
Total Lee Foundation		1,777
Capital Group	HSBC	1,245
	Oversea-Chinese Banking Corporation	228
	Bank Rakyat Indonesia	19
	Bank Mandiri	13
	Mizuho Financial	11

Total Capital Group		1,516
Norwegian Government Pension Fund	Mizuho Financial	513
	Oversea-Chinese Banking Corporation	316
	Bank Mandiri	304
	Bank Rakyat Indonesia	137
	CIMB Group	106
	Maybank	92
	Bank Negara Indonesia	24
	RHB Banking	16
Total Norwegian Government Pension Fund		1,508
JPMorgan Chase	HSBC	812
	Oversea-Chinese Banking Corporation	205
	Bank Rakyat Indonesia	188
	CIMB Group	68
	Bank Mandiri	64
	Maybank	63
	Mizuho Financial	11
	Bank Negara Indonesia	7
RHB Banking	0.3	
Total JPMorgan Chase		1,418
UBS	HSBC	1,049
	Bank Mandiri	134
	Mizuho Financial	60
	Oversea-Chinese Banking Corporation	40
	Maybank	21
	CIMB Group	20
	Bank Negara Indonesia	19
	Bank Rakyat Indonesia	17
RHB Banking	1	
Total UBS		1,361
Dimensional Fund Advisors	HSBC	667
	Bank Mandiri	100
	Mizuho Financial	99
	Bank Rakyat Indonesia	87
	Bank Negara Indonesia	84

	Maybank	78
	CIMB Group	68
	Oversea-Chinese Banking Corporation	51
	RHB Banking	15
Total Dimensional Fund Advisors		1,249
California Public Employees' Retirement System	Bank Mandiri	564
	HSBC	401
	Mizuho Financial	110
	Oversea-Chinese Banking Corporation	61
	Bank Rakyat Indonesia	28
	Maybank	25
	CIMB Group	20
	Bank Negara Indonesia	13
	RHB Banking	3
Total California Public Employees' Retirement System		1,225
Total top-20 shareholders		91,011

Figure 13 Top 10 banks with outstanding loans to the palm oil sector, crossholding shares, most recent available date

Sources: Chain Reaction Research, Thomson Reuters Eikon

Bank	Shareholder	Amount (USD mln)	% shares outstanding
Maybank	Oversea-Chinese Banking Corporation	389	1.33
	CIMB Group	39	0.16
	HSBC	10	0.04
	RHB Banking	7	0.03
	Mizuho Financial	1	0.003
Total Maybank		446	1.56
CIMB Group	Oversea-Chinese Banking Corporation	297	1.73
	RHB Banking	6	0.05
	HSBC	5	0.04
	Maybank	0.3	0.003
	Mizuho Financial	0.3	0.003
Total CIMB Group		308	1.82
HSBC	Mizuho Financial	237	0.15
	Oversea-Chinese Banking Corporation	45	0.02
	CIMB Group	0.2	0.0001
Total HSBC		282	0.17
RHB Banking	Oversea-Chinese Banking Corporation	37	0.68
	CIMB Group	4	0.07
	HSBC	1	0.01
	Mizuho Financial	0.2	0.003
	Maybank	0.1	0.003
Total RHB Banking		42	0.77
Mizuho Financial	HSBC	36	0.08
Total Mizuho Financial		36	0.08
Bank Mandiri	HSBC	18	0.09
	Oversea-Chinese Banking Corporation	4	0.02
	Mizuho Financial	3	0.01
	CIMB Group	2	0.01
	RHB Banking	0.2	0.001
Total Bank Mandiri		27	0.12

Bank Rakyat Indonesia	HSBC	15	0.06
	Oversea-Chinese Banking Corporation	4	0.02
	Mizuho Financial	3	0.01
	CIMB Group	1	0.01
	RHB Banking	0.2	0.001
Total Bank Rakyat Indonesia		24	0.09
Oversea-Chinese Banking Corporation	HSBC	18	0.05
	CIMB Group	2	0.01
	Mizuho Financial	0.3	0.001
	RHB Banking	0.1	0.0003
Total Oversea-Chinese Banking Corporation		21	0.06
Bank Negara Indonesia	HSBC	4	0.04
	Oversea-Chinese Banking Corporation	1	0.01
	Mizuho Financial	0.3	0.003
	CIMB Group	0.2	0.002
	RHB Banking	0.1	0.001
Total Bank Negara Indonesia		5	0.05
Total top-10 banks		1,191	-

Disclaimer:

This report and the information therein is derived from selected public sources. Chain Reaction Research is an unincorporated project of Climate Advisers, Profundo, and Aidenvironment (individually and together, the "Sponsors"). The Sponsors believe the information in this report comes from reliable sources, but they do not guarantee the accuracy or completeness of this information, which is subject to change without notice, and nothing in this document shall be construed as such a guarantee. The statements reflect the current judgment of the authors of the relevant articles or features, and do not necessarily reflect the opinion of the Sponsors. The Sponsors disclaim any liability, joint or severable, arising from use of this document and its contents. Nothing herein shall constitute or be construed as an offering of financial instruments or as investment advice or recommendations by the Sponsors of an investment or other strategy (e.g., whether or not to "buy", "sell", or "hold" an investment). Employees of the Sponsors may hold positions in the companies, projects or investments covered by this report. No aspect of this report is based on the consideration of an investor or potential investor's individual circumstances. You should determine on your own whether you agree with the content of this document and any information or data provided by the Sponsors.