



Nickel Rush in Indonesia

The blind spots of the green energy transition



Transitioning from ICE to electric is a priority for achieving net zero emissions targets, regardless of vehicle size, but mitigating the impacts of higher battery sizes will also be important.

—International Energy Agency, 2023

Antam's nickel mining in Pakal Island,
East Halmahera, North Molucca.
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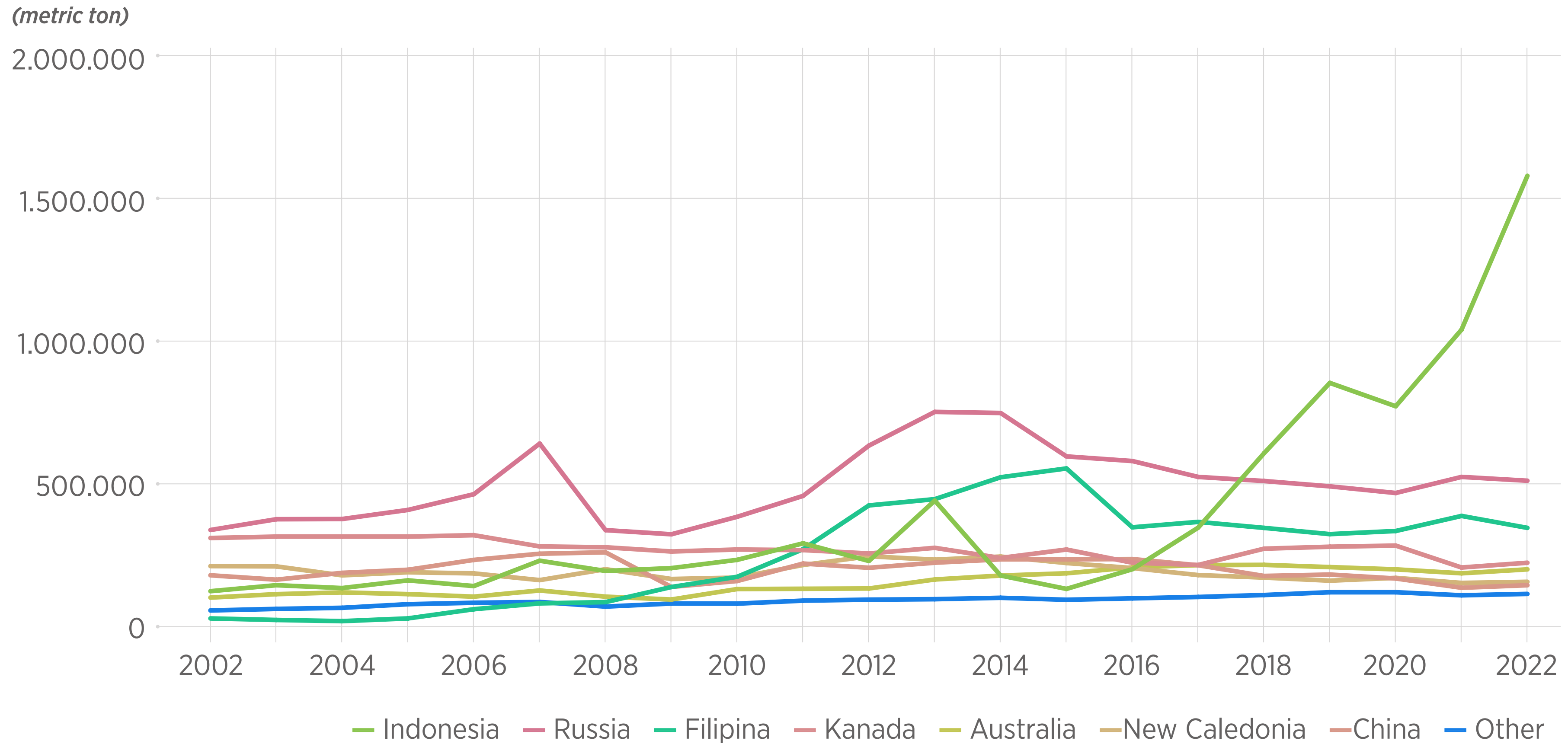




Hengjaya Mineralindo mining site in Morowali, Central Sulawesi.

Nickel production by countries, 2002-2022

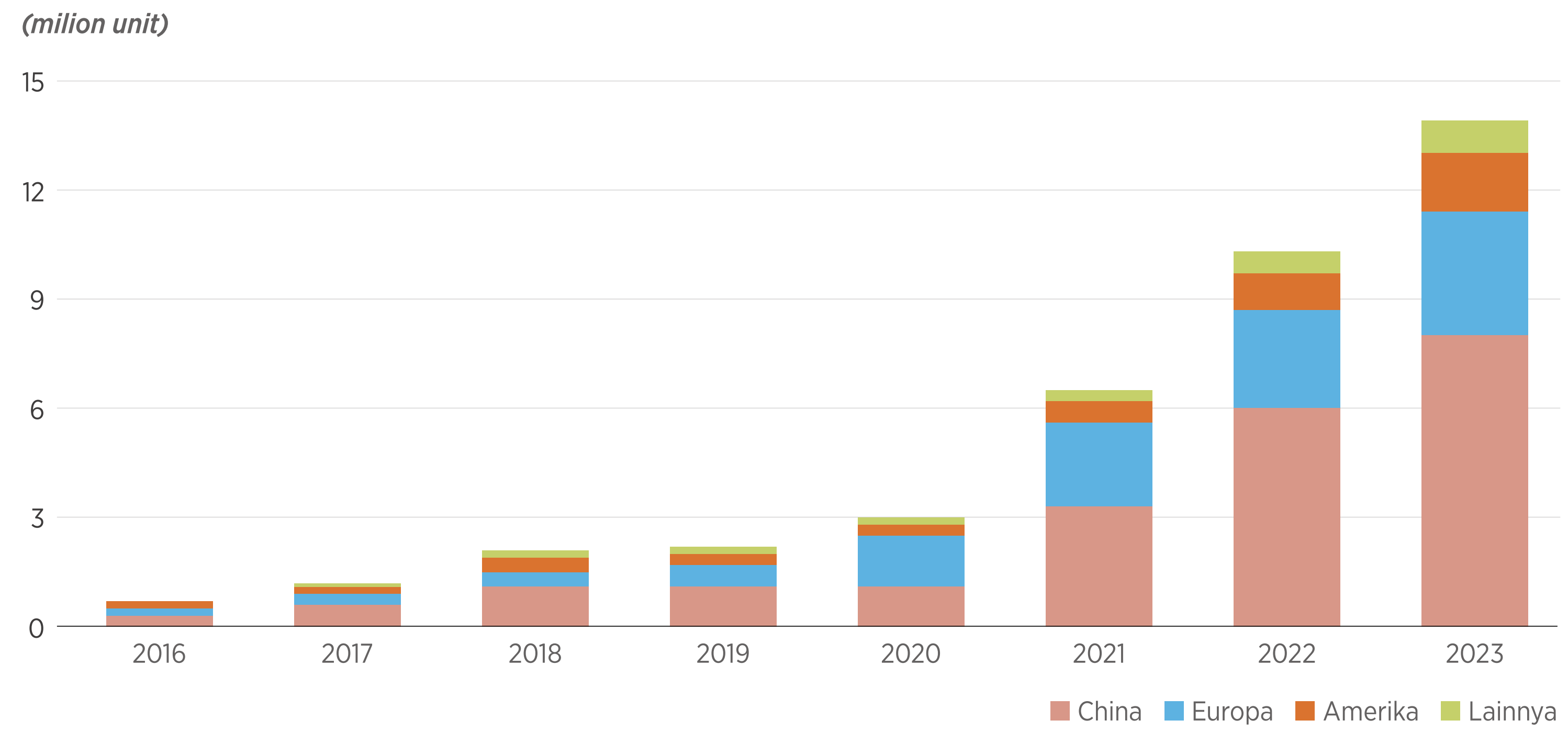
Dramatic increase occur only in Indonesia



Source: USGS

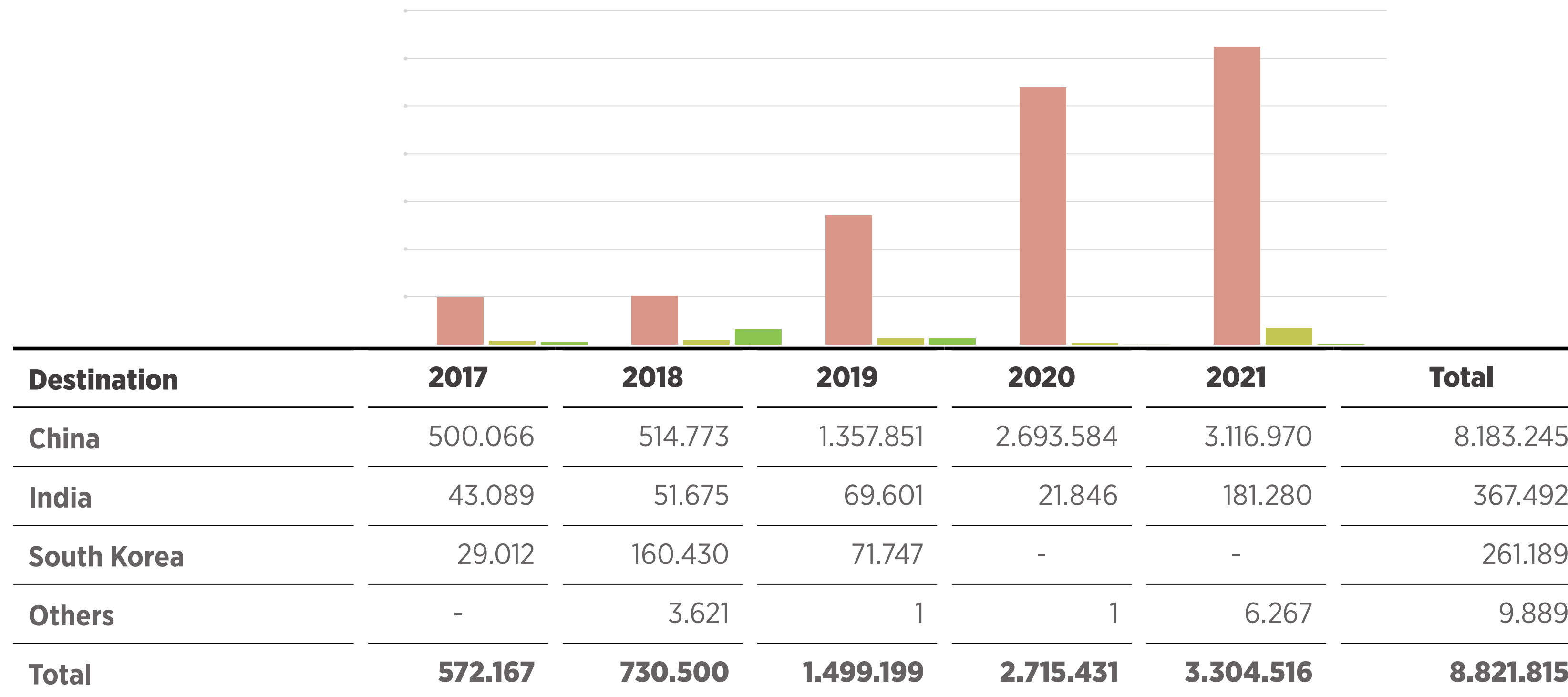
Electric car sales, 2016-2023

Meanwhile, electric car domestic sales until 2023 were 28.201 unit only.



Indonesia's feronickel export destination

More than 90% went to China



Indonesia: Nickel Mining

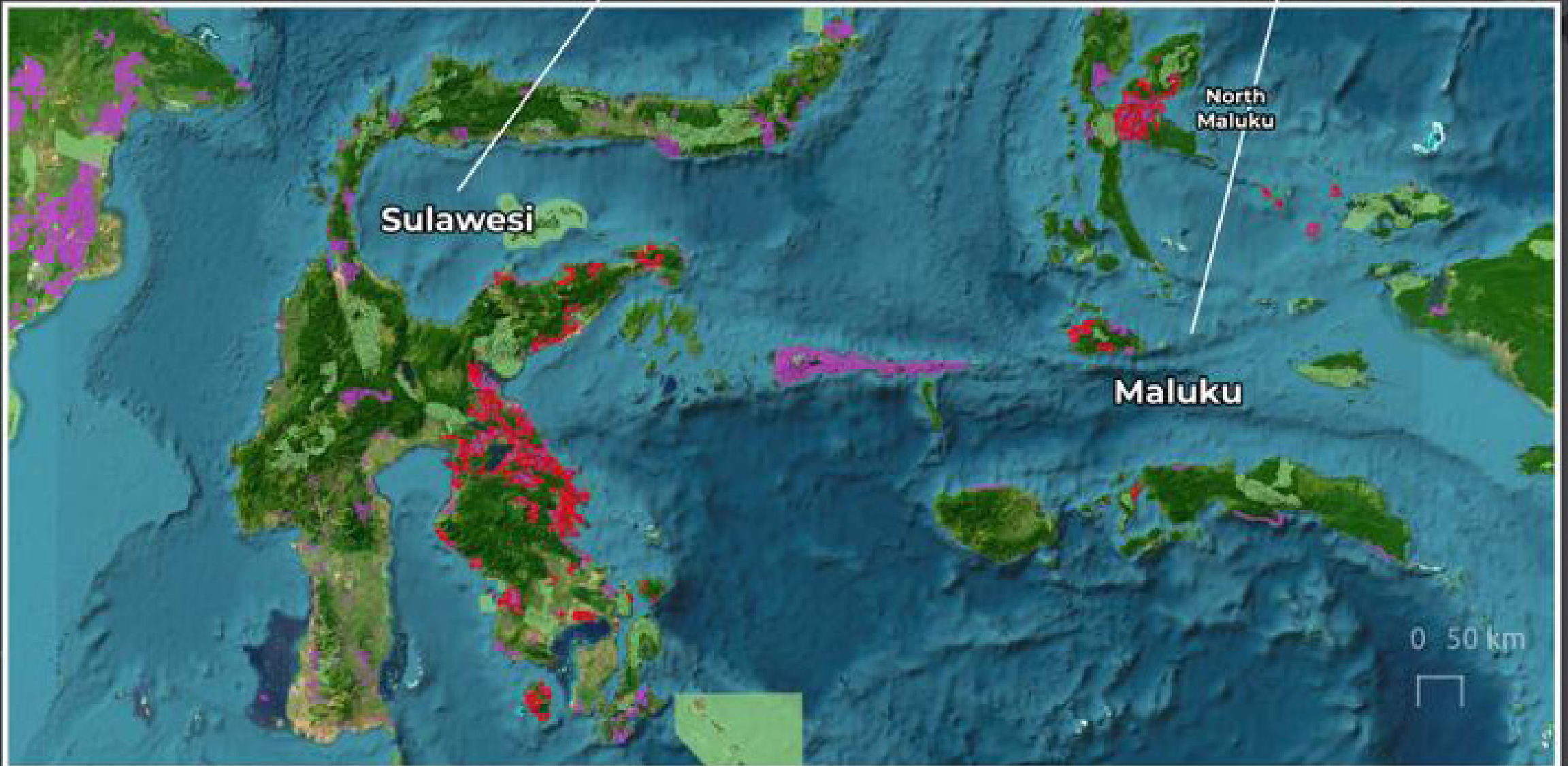


- Protected area
- Nickel concession
- Other mining concession
- Undisturbed tropical moist forest
- Degraded tropical moist forest

~ 620,000
hectares of nickel mining concessions are under forest cover

920,000+
hectares of nickel mining concession in Indonesia

Sulawesi
660,000+
hectares of nickel mining concession
59%
of all mining concessions on Sulawesi are nickel

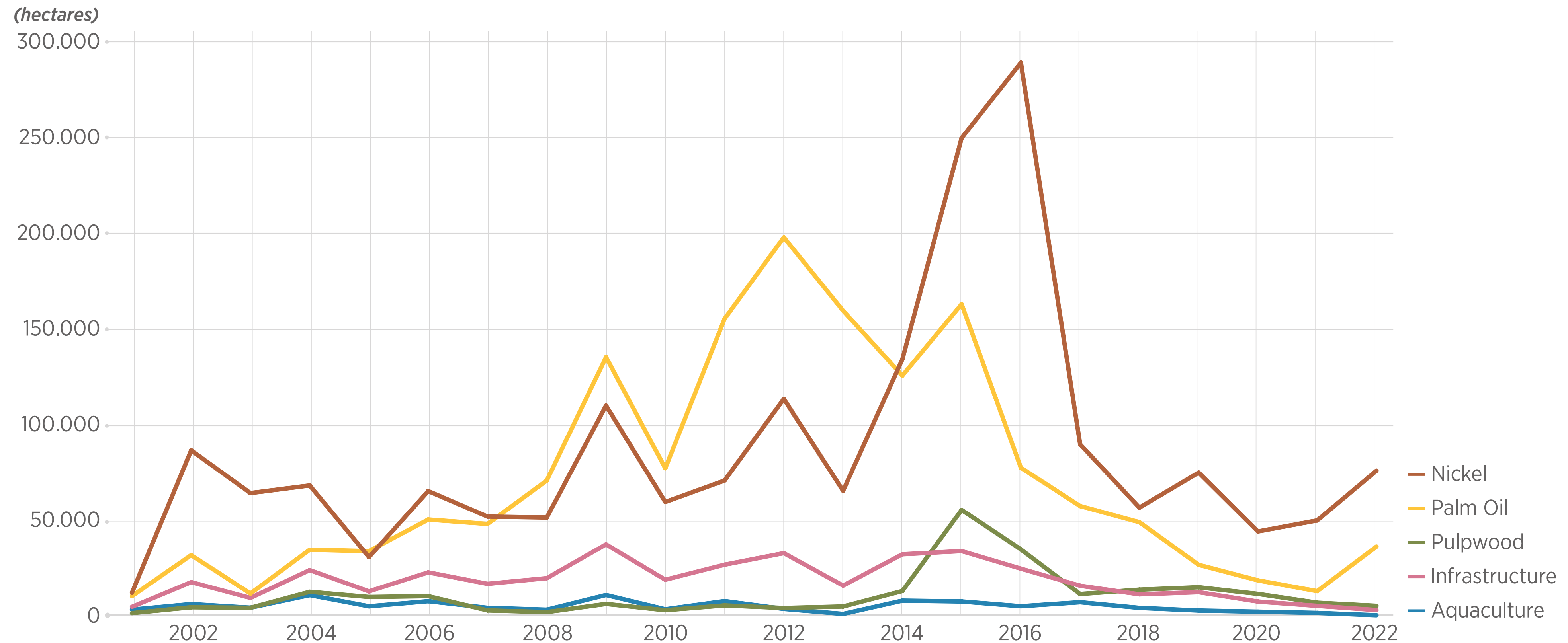


Moluccas
200,000+
hectares of nickel mining concession
34%
of all mining concessions on Moluccas are nickel

Earth Insight, April 2024
Data sources: Forest Cover: European Commission JRC, 2022; Satellite Imagery: ESRI, 2024; Mining: Auriga, 2023; Protected Area: UNEP-WCMC, 2023

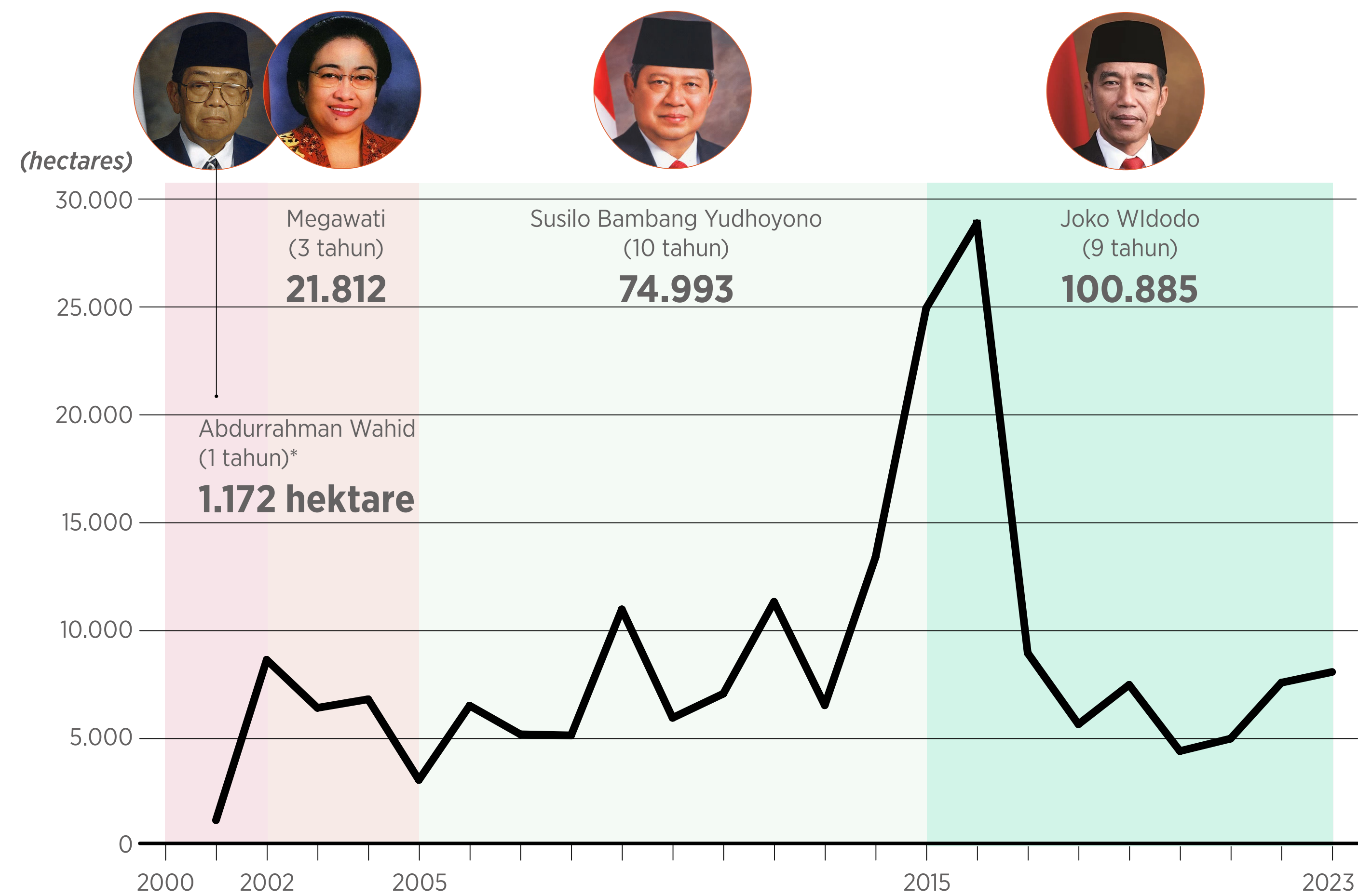
Driver of deforestation in the nickel provinces, 2001-2022

Nickel become the biggest deforestation driver in the nickel provinces (South Sulawesi, Central Sulawesi, Southeast Sulawesi, North Molucca, Southwest Papua and Papua).



Nickel deforestation by presidency, 2000-2023

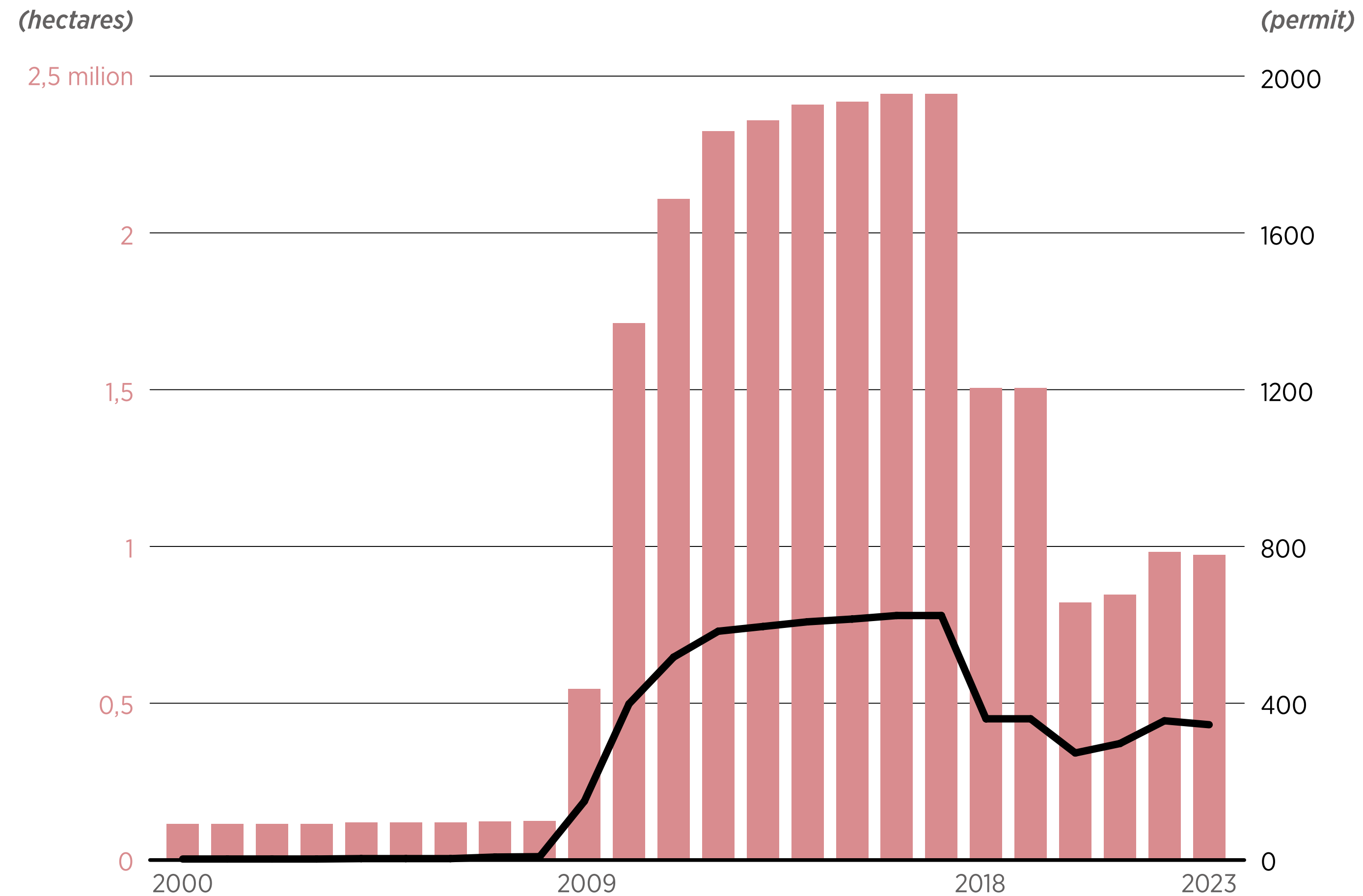
51% nickel deforestation since 2000 were in the 9 years of Jokowi era



*) Durasi deforestasi yang dihitung, karena menjabat sejak akhir tahun

Number and permit area of nickel mining

Yet, nickel permit, both in number and area, significantly decrease in the Jokowi era



New smelters drive higher deforestation

BEFORE			SMELTER IN DETAILS				AFTER					
Years	Annual deforestation	Total	Name	Province	Smelter area (ha)	Year of operation	Total	Deforestation in smelter area	Deforestation in suppliers	Years	Annual deforestation	
—	—	—	Vale Indonesia	South Sulawesi	363	1973	22,189	—	22,189	23	965	
—	—	—	Aneka Tambang - Pomala	Southeast Sulawesi	380	1974	7,434	—	7,434	23	323	
—	—	—	Bintang Smelter Indonesia	Southeast Sulawesi	76	2014	0	—	—	9	—	
15	177	2,659	Indonesia Morowali Industrial Park	Central Sulawesi	3,486	2015	12,334	2,478	9,856	8	1,232	
17	95	1,607	Central Omega Resources Industri Indonesia	Central Sulawesi	132	2017	1,585	24	1,561	6	260	
17	969	16,469	Virtue Dragon Nikcel Industry	Southeast Sulawesi	1,976	2017	7,485	44	7,441	6	1,240	
18	41	733	Huabao Industrial Park	Central Sulawesi	502	2018	573	110	463	5	93	
18	6	103	Macika Mineral Industri	Southeast Sulawesi	289	2018	87	21	66	5	13	
18	—	-	Mapan Asri Sejahtera	Southeast Sulawesi	18	2018	0	—	—	5	—	
18	50	896	Wanxian Nickel Indonesia	Central Sulawesi	210	2018	390	85	305	5	61	
20	10	208	Artha Mining Industry	Southeast Sulawesi	22	2020	19	—	19	3	6	
20	116	2,312	Arthabumi Sentra Industri	Central Sulawesi	207	2020	744	47	697	3	232	
20	—	-	Teka Mining Resources	North Molucca	38	2020	5	5	-	3	—	
20	27	532	Wanatiara Persada	North Molucca	150	2020	86	42	44	3	15	
20	387	7,739	Weda Bay Nickel	North Molucca	1,628	2020	3,887	667	3,220	3	1,073	
21	479	10,052	Gunbuster Nickel Industri	Central Sulawesi	802	2021	3,074	569	2,505	2	1,253	
21	318	6,668	Halmahera Persada Lygend	North Molucca	1,373	2021	1,428	619	809	2	404	
21	77	1,613	Sulawesi Resources	Central Sulawesi	36	2021	258	20	238	2	119	
22	21	467	Aneka Tambang - Nittera Haltim	North Molucca	49	2022	42	31	11	1	11	
22	6	136	Ang and Fang Brother	Central Sulawesi	78	2022	37	29	8	1	8	
22	55	1,211	Fajar Bhakti Lintas Nusantara	North Molucca	141	2022	282	-	282	1	282	
23	187	4,312	Aneka Tambang - Maluku Utara	North Molucca	190	2023	228	133	95	1	95	
23	—	—	MBG Nikel Indonesia	Southeast Sulawesi	4	2023	0	—	—	1	—	
24	98	2,346	Ceria Nugraha Indotama	Southeast Sulawesi	178	2024	107	107	—	1	—	
		60,062			12,329			62,273	5,031	57,242		

Average: 178 hektare

Average: 376 hektare

Deforestation in the smelter's mining supplier increase 234% after smelter operates.

Smelters to come

25 smelters are in construction; and 22 more in pipeline.
Stimulate future deforestation.

No	Companies	Province	Residence	Stage
1	Andalan Metal Industry	Maluku Utara	Halmahera Tengah	Construction
2	Aneka Tambang Nittera Halmahera Timur	Maluku Utara	Halmahera Timur	Construction
3	Aneka Tambang (P3FH)	Maluku Utara	Halmahera Timur	Construction
4	Ang and Fang Brother	Sulawesi Tengah	Morowali	Construction
5	Artha Mining Industry	Sulawesi Tenggara	Bombana	Construction
6	Arthabumi Sentra Industri	Sulawesi Tengah	Morowali	Construction
7	Ceria Nugraha Indonesia	Sulawesi Tenggara	Kolaka	Construction
8	Gunbuster Nickel Industry	Sulawesi Tengah	Morowali Utara	Construction
9	Halmahera Jaya Feronikel	Maluku Utara	Halmahera Selatan	Construction
10	Heng Tai Yuan Indonesia Steel	Banten	Cilegon	Construction
11	Langit Metal Industry	Maluku Utara	Halmahera Tengah	Construction
12	Lipe Metal Industry	Maluku Utara	Halmahera Tengah	Construction
13	Macika Mineral Industri	Sulawesi Tenggara	Konawe Selatan	Construction
14	Mahkota Konaweeha	Sulawesi Tenggara	Kendari	Construction
15	Mapan Asri Sejahtera	Sulawesi Tenggara	Kolaka	Construction
16	Mazinger Nickel Industry	Maluku Utara	Halmahera Utara	Construction
17	Perkasa Metal Industry	Sulawesi Tenggara	Konawe Selatan	Construction
18	Sinar Deli Bantaeng	Sulawesi Selatan	Bantaeng	Construction
19	Sulawesi Resources	Sulawesi Tengah	Morowali	Construction
20	Teka Mining Resources	Maluku Utara	Halmahera Tengah	Construction
21	Titan Mineral Utama	Sulawesi Selatan	Bantaeng	Construction
22	Wanxian Nickel Indoensia	Sulawesi Tengah	Morowali	Construction
23	Huaye Nickel Cobalt	Sulawesi Tengah	Morowali	Construction
24	QMB New Energy Materials	Sulawesi Tengah	Morowali	Construction
25	Smelter Nikel Indonesia	Banten	Cilegon	Construction

No	Companies	Province	Residence	Stage
1	Kolaka Nickel Industry	Sulawesi Tenggara	Kolaka	Planning
2	Fajar Bhakti Lintas Nusantara	Maluku Utara	Halmahera Tengah	Planning
3	Teluk Metal Industry	Sulawesi Tengah	Morowali	Planning
4	Harita Group	Maluku Utara	Halmahera Tengah	Planning
5	MBG Nikel Indonesia	Sulawesi Tenggara	Kendari	Planning
6	Angkasa Jaya Mulia	Sulawesi Tengah	Morowali	Planning
7	Oracle Nickel Industry	Sulawesi Tengah	Morowali	Planning
8	Indonesia Puqing Recycling Technology	Sulawesi Tengah	Morowali	Planning
9	Huabao Industrial Park	Sulawesi Tengah	Morowali	Planning
10	Emerald Ferrocium Industry	Maluku Utara	Halmahera Utara	Planning
11	Nice Nickel Indoensia	Sulawesi Tengah	Morowali Utara	Planning
1	Harita Group	Maluku Utara	Halmahera Selatan	Uknown
2	Huake Nickel Indonesia	Sulawesi Tengah	Morowali	Uknown
3	Infei Metal Industry	Maluku Utara	Halmahera Tengah	Uknown
4	Angel Nickel Industry	Maluku Utara	Halmahera Tengah	Uknown
5	Kao Rahai Smelter	Sulawesi Tengah	Morowali	Uknown
6	Maluku Utara Metal Industry	Maluku Utara	Halmahera Tengah	Uknown
7	Jiu Long Metal Industry	Maluku Utara	Halmahera Tengah	Uknown
8	Guang Tsing Halmahera Nickel	Maluku Utara	Halmahera Tengah	Uknown
9	Bahodopi Nickel Smelting Indonesia	Sulawesi Tengah	Morowali	Uknown
10	Huadi Nikel Alloy Indonesia	Sulawesi Selatan	Bantaeng	Uknown
11	Sungai Raya Nickel Alloy Indonesia	Sulawesi Tenggara	Konawe Selatan	Uknown

Recommendation

1. Annual nickel quota policy.
2. Nickel Implementing the No Go Mining Zone (NGZ).
3. Enforce the regulation over post-mining rehabilitation.
4. Smelter to pay environmental recovery costs.
5. ESG commitment by the nickel industry.

How does it look at the site?



Ex-Vale's nickel mining in Kolonodale,
North Morowali, Central Sulawesi.



Ang & Fang Brother's nickel mining in Morowali, Central Sulawesi.



A river polluted by nickel mining in North Morowali, Central Sulawesi.



Antam's nickel mining in Ge Island, East Halmahera, North Molucca.
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Antam's nickel mining in Maronopo Island,
East Halmahera, North Molucca.

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Nickel mining site near IWIP, Weda,
Central Halmahera, North Molucca.
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Deforestation to develop PT SRNAI smelter, South Konawe,
Southeast Sulawesi.
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Virtue Dragon smelter area, Konawe,
Southeast Sulawesi.
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Morowali Nature Reserve. Threatened by nickel mining expansion.



Deforestation by nickel mining next to Gunbuster smelter, North Morowali, Central Sulawesi.