Keanekaragaman Hayati

Kegiatan pertambangan pada umumnya memberi dampak terjadinya perubahan bentang alam dan perubahan ekosistem flora maupun fauna di areal eksploitasi sumber daya alam yang dilakukan. Namun demikian, Perseroan berupaya semaksimal mungkin menjaga agar kegiatan operasionalnya tidak memberikan dampak negatif signifikan terhadap keanekaragaman hayati kawasan tersebut. [F.10]

Untuk memitigasi dampak dimaksud, Perseroan menunjukan komitmen untuk menjaga keanekaragaman hayati satwa maupun tumbuhan di area kelolaannya, yang diantaranya merupakan kawasan hutan produksi, dengan mengintegrasikan upaya pengelolaanya sebagai bagian dari kegiatan operasional dan model bisnis Perseroan. Lokasi Hutan Produksi dimaksud berada di Kabupaten Bangka, Bangka Barat, Bangka Tengah, Bangka Selatan, Belitung dan Belitung Timur.

Adapun rincian luas Izin Usaha Pertambangan (IUP) yang berada di Kawasan Hutan Produksi secara rinci dapat dilihat pada tabel berikut. [GRI 304-1]

Biodiversity

Mining activities generally pose an impact on changes on the landscape, and flora and fauna ecosystems in the area of natural resource exploitation. However, the Company strives to have every effort to ensure that its operational activities will not have any adverse impact towards the surrounding biodiversity. [F.10]

To mitigate this, the Company demonstrates its commitment to maintaining the biodiversity of animals and plants in its operating areas, which also cover production forest, by integrating their management efforts as part of its operational activities and business model. These Production Forests are located in Bangka, West Bangka, Central Bangka, South Bangka, Belitung and East Belitung Regencies.

Details of the area of Mining Business Permit located in the Production Forest are shown in the following table. [GRI 304-1]

No.	Lokasi Operasional Operational Location	IUP	Kawasan Hutan Konservasi (HK) Forest Conservation (HK) Area	Kawasan Hutan Lindung (HL) Protected Forest (HL) Area	Kawasan Hutan Produksi (HP) Production Forest Area (HP)	Kawasan Hutan Produksi Konversi (HPK) Conversion Production Forest Area (HPK)	Areal Penggunaan Lain (APL) Other Use Areas (APL)
1	Bangka	62.068	-	-	19.471	-	42.597
2	Bangka Barat West Bangka	48.786	-	-	23.280	-	25.506
3	Bangka Tengah Central Bangka	21.845	-	-	7.560	-	14.285
4	Bangka Selatan South Bangka	23.907	-	79	5.858	-	17.969
5	Belitung	13.263	-	-	3.518	339	9.405
6	Belitung Timur East Belitung	30.355	-	-	5.201	-	25.168
7	Lintas Kabupaten Inter-regency	88.492	-	608	32.155	-	55.730
	Jumlah Total	**288.716**	-	**687**	**97.043**	**339**	**190.660**

Guna menjaga keanekaragaman hayati area kelolaan, Perseroan telah melakukan pemetaan untuk mengidentifikasi spesies yang ada di sekitar area operasi produksi. Identifikasi merujuk pada Daftar Merah *International Union for Conservation of Nature and Natural Resouces* (IUCN), CITES, serta Permen. LHK No. P 106 Tahun 2018 tentang Jenis Tumbuhan dan Satwa yang Dilindungi. [F.10]

In order to maintain biodiversity of the managed area, the Company has carried out mapping to identify species exist in the vicinity of production operation area. Identification refers to the International Union for Conservation of Nature and Natural Resources (IUCN) Red List, CITES, and Candy. LHK No. P 106 of 2018 concerning Types of Protected Plants and Animals. [F.10]

Berkaitan dengan status Daftar Merah IUCN tersebut, pada tahun pelaporan, Perseroan melakukan konservasi terhadap 2 jenis mamalia dengan status *Vulnerable* (VU), 1 jenis mamalia berstatus *Least Concern* (LC), 30 burung berstatus LC, 10 herpetofauna berstatus LC, 5 jenis pohon berstatus LC, 3 jenis pohon berstatus VU, 1 jenis pohon berstatus *Critically Endangered* (CR), 1 jenis pohon berstatus *Near Threatened* (NT), 1 jenis pohon berstatus *Data Deficient* (DD), 1 jenis non pohon berstatus DD, 2 jenis non pohon berstatus LC, serta 1 jenis non pohon berstatus NT. Berikut data konservasi Perseroan dimaksud. [GRI 304-4] [F.10]

In relation to IUCN Red List status, in the reporting year, the Company undertook a conservation of 2 types of mammals with Vulnerable (VU) status, 1 mammal species with Least Concern (LC) status, 30 birds with LC status, 10 herpetofauna with LC status, 5 species tree with LC status, 3 tree species with VU status, 1 tree species with Critically Endangered (CR) status, 1 tree species with Near Threatened (NT) status, 1 tree species with Data Deficient (DD) status, 1 non-tree species with DD status, 2 non-tree species tree with LC status, and 1 non-tree species with NT status. The Company's conservation data are as follows: [GRI 304-4] [F.10]

Status Konservasi Mamalia
Mammal Conservation Status

No	Nama Jenis *Species* Species Name	Nama Ilmiah Scientific Name	Status Kelangkaan Rarity Status		
			Permen No. P106 2018 Ministerial Regulation No. P106 2018	IUCN	CITES
1	Codot Krawar Lesser Short-Nosed Fruit Bat	*Cynopterus brachyotis*	-	VU	-
2	Bajing Kelapa Plantaian Squirrel	*Callosciurus notatus*	-	LC	-
3	Gavran Javan Mongoose	*Herpestes Javanicus*	-	VU	-

Status Konservasi Burung
Bird Conservatioan Status

No	Nama Jenis *Species* Species Name	Nama Ilmiah Scientific Name	Status Kelangkaan Rarity Status		
			Permen No. P106 2018 Ministerial Regulation No. P106 2018	IUCN	CITES
1	Cekakak Sungai Collared Kingfisher	*Thodirhampus santus*	-	LC	-
2	Cekakak Belukar White-breasted Kingfisher	*Halcyon smyrnesis*	-	LC	-
3	Elang Bondol Brahminy Kite	*Halastur Indus*	-	LC	Appendix II
4	Walet Linci Cave Swiftlet	*Collocalia Linchi*	-	LC	-
5	Takur Tonggeret Blue-Eared Barbet	*Megalaima duvaucelii*	-	LC	-
6	Kepudang Kuduk-Hitam Black-Naped Oriole	*Oriolus chinensis*	-	LC	-
7	Kapasan Kemiri Pied Triller	*Lalage nigra*	-	LC	-
8	Kangkong Ranting Himalayan Cuckoo	*Cuculus saturatus*	-	LC	-
9	Perkutut Jawa Zebra Dove	*Geopelia striata*	-	LC	-
10	Tekukur Biasa Spotted Dove	*Streptopelia chinensis*	-	LC	-
11	Bentet Kelabu Long-Tailed Shrike	*Lanius schach*	-	LC	-
12	Burung Madu-Kelapa Brown-Throated Sunbird	*Anthreptes malacensis*	-	LC	-
13	Burung Madu-Sriganti Copper-Throated Sunbird	*Nectarinia calcostetha*	-	LC	-
14	Burung Gereja-Erasia Eurassian Tree-Sparrow	*Passer montanus*	-	LC	-
15	Bondol Peking Scally-Headed Bulbul	*Lonchura punctulata*	-	LC	-
16	Cucak Kutilang Sooty-Headed Bulbul	*Pycnonotus aurigaster*	-	LC	-
17	Merbah Mata-Merah Asian Red-Eyed Bulbul	*Pycnonotus brunneus*	-	LC	-
18	Kareo Padi White-Breasted Waterhen	*Amaurornis phoenicurus*	-	LC	-
19	Cinenen Kelabu Ashy Tailorbird	*Orthotomus ruficeps*	-	LC	-
20	Bambangan Kuning Yellow Bittern	*Ixybrychus sinensis*	-	LC	-
21	Cabak Kota Savanna Nightjar	*Caprimulgus affinis*	-	LC	-
22	Kirik-Kirik Biru Blue-Throated Bee-Eater	*Merops viridis*	-	LC	-

No	Nama Jenis *Species* Species Name	Nama Ilmiah Scientific Name	Status Kelangkaan Rarity Status		
			Permen No. P106 2018 Ministerial Regulation No. P106 2018	IUCN	CITES
23	Bubut alang-alang Lesser Coucal	*Centropus bengalensis*	-	LC	-
24	Layang-layang batu Pacific Swallow	*Hirundo tahitica*	-	LC	-
25	Apung tanah Australasian Pipit	*Anthus novaeseelandiae*	-	LC	-
26	Pelatuk Kijang Rufous Woodpecker	*Celeus brachyurus*	-	LC	-
27	Merbah cerukcuk Yellow-Vented Bulbul	*Pycnonotus goiavier*	-	LC	-
28	Cici Padi Zitting Cisticola	*Cisticola juncidis*	-	LC	-
29	Cinenen Kelabu Ashy Tailorbird	*Orthotomus ruficeps*	-	LC	-
30	Trinil Pantai Common Sandpiper	*Tringa hypoleucos*	-	LC	-

Status Konservasi Herpetofauna
Herpetofauna Conservatioan Status

No	Nama Jenis *Species* Species Name	Nama Ilmiah Scientific Name	Status Kelangkaan Rarity Status		
			Permen No. P106 2018 Ministerial Regulation No. P106 2018	IUCN	CITES
1	Kodok Buduk Asian Common Toad	*Duttaphrynus melanostictus*	-	LC	-
2	Kodok Puru Hutan Crested Toad	*Ingerophrynus biporcatus*	-	LC	-
3	Katak Tegalan Rice Field Frog	*Fejervarya limnocharis*	-	LC	-
4	Belentung Brown Bullfrog	*Kaloula baleata*	-	LC	-
5	Lidah Ular Api Painted Bronzeback	*Dendrelaphis pictus*	-	LC	-
6	Ular Segitiga Merah Triangle Keelback	*Xenochrophis trianguligerus*	-	LC	-
7	Biawak Air Asia Asian Water Monitor	*Varanus salvator*	-	LC	Appendix II
8	Kongkang Jangkrik Cricket Frog	*Amnirana nicobariensis*	-	LC	-
9	Kongkang Gading Common Green Frog	*Hylarana erythraea*	-	LC	-
10	Cicak Rumah Common House Gecko	*Hemydactylus frenatus*	-	LC	-

Status Konservasi Jenis Pohon
Tree Conservatioan Status

No	Nama Jenis *Species* Species Name	Nama Ilmiah Scientific Name	Status Kelangkaan Rarity Status		
			Permen No. P106 2018 Ministerial Regulation No. P106 2018	IUCN	CITES
1	Akasia Daun Kecil Earleaf Acacia	*Acacia auriculiformis A.Cunn. ex Benth.*	-	LC	-
2	Akasia Krasikarpa Acacia Crassicarpa	*Acacia crasicarpa A.cunn ex Benth.*	-	VU	-
3	Gaharu Agarwood	*Aquilaria malaccensis Lamk.*	-	CR	Appendix II
4	Bunga Kupu-kupu Purple Orchid Tree	*Bauhinia purpurea L.*	-	LC	-
5	Cemara Laut Australian Pine Tree	*Casuarina equisetifolia L.*	-	LC	-
6	Lengkeng Longan	*Dimocarpus longan Lour.*	-	NT	-
7	Mangga Manggo	*Mangifera indica L.*	-	DD	-
8	Rambutan Hairy Lychee	*Nephelium lappaceum L.*	-	LC	-
9	Alpukat Avocado	*Persea americana Mill.*	-	LC	-
10	Kemiri Sunan Philippine Tung	*Hemydactylus frenatus*	-	VU	-
11	Mahoni Daun Besar Broad-Leafed Mahogany	*Swietenia macrophylla King*	-	VU	-

Daftar Status Konservasi Jenis Non Pohon
Non-Tree Conservation Status List

No.	Nama Jenis Species Species Name	Nama Ilmiah Scientific Name	Status Konserval Conservation Status		
			Permen No. P106 2018 Ministerial Regulation No. P106 2018	IUCN	CITES
1	Anggrek Bambu Bamboo Orchid	*Arundina graminifolla (D.Don) Hochr.*	-	-	Appendix. II
2	Pepaya Papaya	*Carica Papaya L.*	-	DD	-
3	Talas Taro	*Colocasia esculenta (L.) Schott*	-	LC	-
4	Palem Cyras Sago Palm	*Cycas revoluta Thunb.*	-	LC	Appendix. II
5	Trikolor Dragon Tree	*Dracaena marginata hort.*	-	-	Appendix. II
6	Palem Kuning Areca Palm	*Dypsis lutescens (H.Wendl.) Beentje & J.Dransf.*	-	NT	-

Perseroan juga melakukan observasi terhadap keanekaragaman tumbuhan, dan burung di berbagai area, meliputi: Hutan Kota dan Ekosistem Mangrove Muntok, Kampoeng Reklamasi Air Jangkang, Hutan Kehatiku dan Kawasan Mangrove Kundur, Tambang Batubesi, Kampong Reklamasi Selinsing, Unit Metalurgi Kundur, dan Ekosistem Mangrove di Unit Metalurgi Muntok. Hasilnya menunjukkan Perseroan menjumpai keberadaan 69 jenis burung yang seluruhnya berstatus konservasi LC.

The Company also observes the diversity of plants and birds in various areas, including: Muntok City Forest and Mangrove Ecosystem, Air Jangkang Reclamation Village, Kehatiku Forest and Kundur Mangrove Area, Iron Mining, Selinsing Reclamation Village, Kundur Metallurgical Unit, and Mangrove Ecosystem in Muntok Metallurgical Unit. The results show that the Company found there are 69 species of birds, all of which are under the LC conservation status.

Sementara untuk jenis tumbuhan, Perseroan menjumpai keberadaan 123 jenis tumbuhan. Dari 123 jenis tumbuhan tersebut, 4 jenis pohon berstatus VU, 5 jenis pohon berstatus NT, 12 jenis pohon berstatus DD dan 2 jenis pohon berstatus CR. Data hasil observasi dimaksud disampaikan pada 2 tabel berikut.

For plants, the Company found 123 plant species. Of those 123 species, 4 species are marked with the status under VU, 5 species under NT, 12 species under DD and 2 species under CR. Data from the observations are presented in the following 2 tables.

Tabel Hasil Observasi Keberadaan Burung dan Status Konservasi [GRI 304-4]
Table of Observation on Bird and Conservation Status [GRI 304-4]

No	Nama Jenis Species Name of Species Types	Nama Ilmiah Scientific Name	Status Konservasi Conservation Status		
			Permen No.P106 2018 Ministerial Regulation No. P106 2018	IUCN	CITES
1	Elang Bondol Bondol Eagle	*Haliastur indus*	D	LC	App II
2	Takur Tenggeret Takur Tenggeret	*Megalaima australis*	D	LC	App II
3	Elang Tikus Rat Eagle	*Haliastur indus*	-	LC	-
4	Elang-Alap Cina Chinese Falcon	*Elanus caeruleus*	-	LC	-
5	Cabai Bunga-Api Fire-Flower Chili	*Dicaeum trigonostigma*	-	LC	-
6	Cinenen Kelabu Cinenen Gray	*Cisticola juncidis*	-	LC	-
7	Cinenen Merah Red Cinema	*Orthotomus ruficeps*	-	LC	-
8	Kareo Padi Rice Kareo	*Lalage nigra*	-	LC	-
9	Kepudang Kuduk Hitam Black Neck Kepudang	*Phaenicophaeus sumatranus*	-	LC	-
10	Kokokan Laut Sea Crow	*Merops viridis*	-	LC	-
11 s/d 69 seluruh jenis burung yang dijumpai berstatus konservasi LC 11 to 69 all bird species found are of LC conservation					-

Tabel Hasil Observasi Keberadaan Tumbuhan dan Status Konservasi [GRI 304-4]
Table of Observation of Plant Presence and Conservation Status [GRI 304-4]

No	Nama Jenis Species Name of Species Types	Nama Ilmiah Scientific Name	Status Konservasi Scientific Name		
			Permen No.P106 2018 Ministerial Regulation No. P106 2018	IUCN	CITES
1	Pelangas Slimming	Aporosa aurita Baill.	-	VU	Appendix. II
2	Mahoni daun besar Big leaf mahogany	Swietenia macrophylla King	-	VU	Appendix. II
3	Kemiri sunan Candlenut sunan	Reutealis trisperma (Blanco)	-	VU	-
4	Akasia krasikarpa Acacia krasikarpa	Acacia crasicarpa A.cunn ex Benth.	-	VU	-
5	Palem kuning Yellow palm	Dypsis lutescens (H.Wendl.) Beentje & J.Dransf.	-	NT	-
6	Palem Palem	Caryota mitis Lour.	-	NT	-
7	Lengkeng Longan	Dimocarpus longan Lour	-	NT	-
8	Lamtoro/petai cina Lamtoro/chinese petai	Leucaena leucocephala (Lamk.) de Wit.	-	NT	-
9	Bogem/Pidada/Perepat Bogem/Pidada/Quickener	Sonneratia ovata	-	NT	-
10	Pepaya Pawpaw	Carica papaya L.	-	DD	-
11	Pandan laut variegata Variegata sea pandan	Pandanus tectorius Park.	-	DD	Appendix. II
12	Melinjo	Gnetum gnemon L.	-	DD	-
13	Manggis - manggisan Mangosteen - mangosteen	Palaquium sumatranum Burck	-	DD	-
14	Mangga Mango	Mangifera indica L.	-	DD	-
15	Jarak Distance	Jatropha curcas L.	-	DD	-
16	Jambu Mete Cashew	Anacardium occidentale L.	-	DD	-
17	Jambu - jambuan Guava	Syzygium pycnanthum Merr. & L.M. Perry	-	DD	-
18	Durian	Durio zibethinus Rumph.	-	DD	-
19	Cempedak	Artocarpus integer (Thunb.) Merr.	-	DD	-
20	Buah Naga Dragon fruit	Hylocereus undatus (Haw.) Britton & Rose	-	DD	Appendix. II
21	Belimbing Star fruit	Averrhoa carambola L.	-	DD	-
22	Pelepak Clapper	Hopea bilitonensis	-	CR	-
23	Gaharu Agarwood	Aquilaria malaccensis Lamk.	-	CR	Appendix. II
24	Ubar Ubar	Syzygium cerina M.R. Henderson	-	LC	-

25 s/d 123 seluruh jenis tumbuhan berstatus konservasi LC
25 to 123 all plant species are under LC conservation

Perseroan selalu berusaha memastikan untuk tetap menjaga kelestarian ekosistem dan keanekaragaman hayati dalam setiap penambangan terbuka yang mengubah bentang alam. Untuk meminimalisasi dampak kegiatan penambangan dan mempercepat kembalinya kondisi areal sesuai peruntukannya, Perseroan menjalankan program rehabilitasi dan menetapkan kawasan penyangga (*buffer zone*). Kawasan penyangga ini ditetapkan pada lokasi yang berbatasan langsung dengan areal hutan lindung dan di daerah aliran sungai serta lahan revegetasi yang telah kembali menjadi hutan tropis, lengkap dengan satwa liar yang menghuni dengan bebas. Beberapa kegiatan yang dilakukan untuk menjaga biodiversitas area kelolaan, mencakup: [GRI 304-3]

1. Memaksimalkan revegetasi menggunakan tanaman lokal, yakni berupa nyato, mahoni, gaharu, nangka, durian, mangga, rambutan, sirsak.
2. Melaksanakan program pengayaan tanaman dengan tanaman-tanaman langka maupun yang bernilai ekonomis. Antara lain, berupa tanaman mentega, batang hitam dan pelawan.
3. Melaksanakan budidaya tanaman endemik di fasilitas pembibitan dikelola. Tanaman yang dibudidayakan, antara lain, jambu-jambuan, cempedak.

Salah satu kawasan pasca tambang yang telah berhasil direstorasi oleh PT TIMAH Tbk adalah Kampoeng Reklamasi Air Jangkang, yang berada di Kecamatan Merawang, Kabupaten Bangka. Di area seluas 37 hektar tersebut, setelah ditanami dengan berbagai jenis pohon, saat ini telah menjadi taman rekreasi keluarga dan agrowisata dengan beragam fasilitas penunjang bagi wisatawan. Pada lokasi yang sama, juga disediakan tempat penangkaran buaya muara, yang sempat berkonflik atau menyerang manusia.

Perseroan juga bekerjasama dengan Badan Konservasi Sumber Daya Alam (BKSDA) sehingga pengelolaannya mengikuti standar, metodologi dan asumsi sesuai dengan kaidah-kaidah konservasi sumber daya alam di Indonesia. Selanjutnya, pengeloaan kawasan dilakukan Perseroan bekerja sama dengan masyarakat setempat. Keberhasilan pengelolaan Kampung Reklamasi Air Jangkang sudah mendapat pengakuan dari berbagai pihak.

Manajemen Pasca-Tambang dan Reklamasi

Reklamasi adalah kegiatan yang dilakukan sepanjang tahapan usaha pertambangan untuk menata, memulihkan, dan memperbaiki kualitas lingkungan dan ekosistem agar dapat berfungsi kembali sesuai dengan peruntukannya (Permen ESDM No. 26 Tahun 2018). PT TIMAH Tbk melakukan

The Company always strives to ensure the preservation of ecosystems and biodiversity in any open pit mining that changes the landscape. In order to minimize the impact of mining activities and accelerate area restoration according to its designation, the Company undertook a rehabilitation program and established a buffer zone. This buffer zone was set at a site directly adjacent to a protected forest area, and in a watershed and revegetation area that has been restored to a tropical forest, complete with wild animals that inhabit it freely. Several activities were carried out to maintain biodiversity of the managed areas, including: [GRI 304-3]

1. Maximizing revegetation using local plants, namely nyatoh (palaquium rostratum), mahogany, agarwood, jackfruit, durian, mango, rambutan, soursop.
2. Implementing enrichment planting program with rare and economically valuable plants. These include butter plants, black stems and pelawan.
3. Implement cultivation of endemic plants within the managed nursery facilities. Cultivated plants include, among others, guava, cempedak.

One of the post-mining areas that has been successfully restored by PT TIMAH Tbk is Air Jangkang Reclamation Village, located in Merawang District, Bangka Regency. The 37 hectares have been planted with various types of trees and now become family recreation park and agrotourism area with various supporting facilities for tourists. In the same location, there are also a breeding grounds for estuarine crocodiles, which was once in conflict/attacked humans.

The Company also cooperates with the Natural Resources Conservation Agency (BKSDA) hence the management follows the standards, methodologies and assumptions in accordance with the principles of natural resource conservation in Indonesia. Furthermore, managing of the area is carried out by the Company in collaboration with the local community. Managing the Air Jangkang Reclamation Village was successful and received recognitions from various parties.

Post Mining and Reclamation Management

Reclamation is an activity carried out throughout the stages in the mining business which include organizing, restoring, and improving the quality of the environment and ecosystem so that it will function again according to its designation (Permen ESDM No. 26 of 2018). PT TIMAH Tbk undertakes reclamation