



2015 Minerals Yearbook

ASIA AND THE PACIFIC [ADVANCE RELEASE]



Base modified from ESRI ArcGIS online world countries (generalized) map data, 2017
 Mercator Auxiliary Sphere projection
 World Geodetic System 1984 datum

Figure 1. Map of the Asia and the Pacific region. The countries covered in this report are labeled on the map; bordering countries are shown in gray and not labeled.

THE MINERAL INDUSTRIES OF ASIA AND THE PACIFIC

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The Asia and the Pacific region, as defined in this book, includes 30 countries and territories and was the most populous region in the world (fig. 1, facing page). The land area of the Asia and the Pacific region accounts for about 20% of the world's total land mass, and the region's total population accounted for about 55% of the world's total population in 2015. The region's total nominal gross domestic product (GDP) based on purchasing power parity was \$46.1 trillion, which accounted for about 40% of the world's GDP. The region is relatively underdeveloped, and the GDP per capita was about 73% of the world's total GDP per capita (tables 1, 2).

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- Malaysia—Ministry of Natural Resources and Environment, Minerals and Geoscience Department;
- Mongolia—Mineral Resources and Petroleum Authority of Mongolia;
- Nepal—Ministry of Industry, Commerce and Supplies, Department of Mines and Geology;
- Pakistan—Pakistan Bureau of Statistics;
- Republic of Korea—Korea Institute of Geoscience and Mineral Resources;
- Thailand—Ministry of Industry, Department of Primary Industries and Mines; and
- Vietnam—Statistician, Department of Foreign Statistics and International Cooperation, General Statistics Office of Vietnam.

General Economic Conditions

The real GDP rate of growth in the Asia and the Pacific region was 6.4% in 2015 compared with 6.3% in 2014. The GDP rate of growth for the world was 2.7% in 2015, which was same as in 2014. The economies of the region that recorded rates of growth higher than 7.0% in 2015 were India (7.9%), Laos (7.5%), and Burma (7.3%) (table 2).

The economic growth of China had been a major cause of the world's increased demand for mineral commodities during the past 15 years; however, since 2012, China had been

implementing measures to rebalance its economy and, as a result, the country's economic growth had slowed to 6.9%. The economic slowdown in China had an effect on other economies in the region, including member countries of the Association of Southeast Asian Nations (ASEAN) (Burma, Brunei, Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand, and Vietnam), whose leading trade partner was China. The region remained the leading producer of some mineral commodities, such as alumina, bauxite, cement, refined copper, iron ore, lead, magnesite, mercury, mined nickel, steel, tin, tungsten, and zinc, which together accounted for more than 50% of world production in 2015. India's economy, which benefited from low energy prices on the global market and increasing domestic demand, remained strong in 2015 (International Council on Mining and Metals, 2012, p. 3; International Monetary Fund, 2015, p. 5).

Legislation

In 2015, changes in laws in several countries of the Asia and the Pacific region had far-reaching economic effects on global mineral production and supply. In 2014, Indonesia had banned exports of unprocessed nickel and bauxite ore, instead requiring mining companies to construct smelters that would add value to mineral commodities produced in the country as a condition of continuing permission to mine. In 2015, Indonesia revised the law that prohibited exports of unprocessed ores, indicating that the country would allow certain companies to resume mineral ore exports until January 2017, provided the company commits to build processing and (or) refining facilities in Indonesia. As a result, 11 new nickel smelters were planned for development during the next 2 years, and several of the smelters were expected to be completed by 2016. Although nickel ore and bauxite exports from Indonesia continued to be curtailed, Malaysia and the Philippines had become major suppliers of bauxite and nickel to meet demand from China. Other suppliers of bauxite to China were Australia, India, and Vietnam. In 2015, India continued to undergo a series of reforms of its mineral industry, such as implementation of an amendment of the Mines and Minerals Development and Regulations Act, 1957 (MMRD) (Asmarini, 2015; Bhushan, 2015; Das, 2015; Industrial Minerals, 2015; Patel, 2015; Thomson Reuters, 2015).

Exploration

In 2015, SNL Metals & Mining (S&P Global Market Intelligence) reported that the exploration budget for the Pacific region and Southeast Asia (excluding Australia) had decreased by 28% to about \$429 million from \$600 million in 2014. As of November 2015, SNL reported a decrease in the exploration

budget of Australia to about \$1.1 billion for 2015 from \$1.3 billion for 2014. In 2015, gold exploration accounted for approximately 52% of the total exploration budget in the Pacific region, and base metals accounted for about 31% (table 3; S&P Global Market Intelligence, 2017).

Commodity Overview

This report includes a regional production table (table 4) and mineral commodity outlook tables. The estimates for the production of major mineral commodities for 2016 and beyond have been based upon supply-side assumptions, such as announced plans for increased production, new capacity construction, and bankable feasibility studies. The outlook tables (tables 5 through 20) in this summary chapter show historic and projected production trends; therefore, no indication is made about whether the historic data are estimated or reported, and revisions are not identified. Data on individual mineral commodities in tables in the individual country chapters are labeled to indicate estimates and revisions. The outlook segments of the mineral commodity tables are based on projected trends that could affect current producing facilities and on planned new facilities that operating companies, consortia, or Governments have projected to come online within the indicated timeframes.

Forward-looking information, which includes estimates of future production, exploration and mine development, the cost of capital projects, and the timing of the start of operations, is subject to a variety of risks and uncertainties that could cause actual events or results to differ significantly from expected outcomes. Projects listed in the following sections are presented as an indication of industry plans and are not a USGS prediction of what will take place.

Metals

The leading commodities produced in the Asia and the Pacific region in 2015 included, in order of the region's share of the world's total, mercury (Hg content of mine output), which accounted for 98% of the world's total production; tungsten (W content of mine output), 90%; tin (primary metal), 88%; lead (primary refined), 78%; tin (Sn content of mine output), 78%; pig iron, 75%; alumina, 73%; bauxite, 71%; iron ore (gross weight), 68%; crude steel, 65%; zinc (metal), 64%; lead (Pb content of mine output), 60%; nickel (Ni content of mine output), 55%; copper (primary refined), 53%; and zinc (Zn content of mine output), 52% (table 4).

The output of most commodities increased in 2015 compared with that of 2014. Iron ore (Fe content) production in Australia increased to 505 million metric tons (Mt) in 2015 from 464 Mt in 2014 owing to a significant investment in capacity expansions in recent years. China accounted for 36% [110,000 metric tons (t)] of the world's total tin production (Sn content of mine output); Burma, 19% (57,300 t); and Indonesia, 17% (52,195 t). The output of tin (Sn content of mine output) in Burma increased by 64% in 2015 compared with that of 2014 owing to increased demand from the Chinese electronics industry after Indonesia implemented the ban on tin exports in July 2013. Bauxite production in Australia, China, and India increased to 80.9 Mt,

65.0 Mt, and 27.8 Mt, respectively. Australia accounted for 38% of regional bauxite production; China, 31%; Malaysia, 17%; and India, 13%. The Philippines remained the leading producer of nickel (mine output) in the region, accounting for 47% of the region's total (fig. 2; tables 4, 10, 11, 13, 16; Scrap Register, 2014; Mining Journal, 2016).

Industrial Minerals

The Asia and the Pacific region produced 3.09 billion metric tons of cement in 2015. China accounted for 76% of the region's cement production, and India, 10%. Of the world's cement production, China accounted for 56%, and India, 7%. The region's share of global cement production was 74%, which reflects the large-scale infrastructure development taking place in the region (table 4). In 2015, the region produced 1.16 Mt of graphite, which accounted for 89% of the world total. China accounted for 74% of the region's graphite production, and India, 25%. Other major industrial mineral commodities produced in the region in 2015 included, in order of the region's share of the world total, fluorspar and magnesite (which accounted for 69% of the world total each), and salt (33%) (fig. 2; table 4; Liu, 2015).

Mineral Fuels

The Asia and the Pacific region's production of anthracite coal and bituminous coal accounted for about 73% and 77%, respectively, of the world's total in 2015. The region's shares of natural gas and crude petroleum production, however, were relatively low, accounting for 12% and 7% of world production, respectively (table 4).

Outlook

Global growth, as projected by the International Monetary Fund (IMF), was expected to remain modest in 2016 (3.1%), 2017 (3.5%), and 2018 (3.6%), and to increase by less than 4% by the end of 2021. According to the IMF, the average rate of growth for developing countries in the region of Asia (which, as defined by the IMF, includes several more countries than are shown in fig. 1) was projected to be 5.3% for 2016, 5.5% for 2017, and 5.4% for 2018, all of which are lower than the 5.6% rate of growth in both 2015 and 2014. From 2015 through 2021, production of lithium (Li content) was expected to increase by 67%; aluminum, by 29%; cobalt (Co content of mine output), by 21%; iron ore (Fe content), by 18%; tin metal, by 13%; nickel (Ni content of mine output), by 9%; and crude steel, by 8% (tables 5 through 20; International Monetary Fund, 2017, p. 1, 38).

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TABLE 1
ASIA AND THE PACIFIC: AREA AND POPULATION IN 2015

Country or territory	Area ¹ (square kilometers)	Estimated population ² (thousands)
Afghanistan	652,230	33,700
Australia	7,741,220	23,800
Bangladesh	143,998	161,200
Bhutan	38,394	790
Brunei	5,765	420
Burma	676,578	52,404
Cambodia	181,035	15,518
China	9,596,960	1,371,220
Fiji	18,274	892
India	3,287,263	1,309,054
Indonesia	1,904,569	258,162
Japan	377,915	127,141
Korea, North	120,538	25,244
Korea, Republic of	99,720	51,015
Laos	236,800	6,664
Malaysia	329,847	30,723
Mongolia	1,564,116	2,977
Nepal	147,181	28,656
New Caledonia	18,575	273
New Zealand	267,710	4,596
Pakistan	796,095	189,381
Papua New Guinea	462,840	7,920
Philippines	300,000	101,716
Singapore	697	5,535
Solomon Islands	28,896	587
Sri Lanka	65,610	20,966
Taiwan	35,980	23,492 ³
Thailand	143,100	68,658
Timor-Leste	14,874	1,241
Vietnam	331,210	91,713
Regional total	29,587,990	4,015,679
World total	148,940,000	7,355,220

¹Source: U.S. Central Intelligence Agency, The World Factbook.

²Source: The World Bank, 2017 World Development Indicators Database.

³Source: Statistical Bureau of the Republic of China (Taiwan).

TABLE 2
ASIA AND THE PACIFIC: GROSS DOMESTIC PRODUCT^{1,2}

Country	Gross domestic product in 2015 based on purchasing power parity		Real gross domestic product growth rate (percent)		
	Gross value (million dollars)	Per capita (dollars)	2013	2014	2015
	Afghanistan	62,009	1,937	3.9	1.3
Australia	1,143,643	47,769	2.1	2.8	2.4
Bangladesh	580,065	3,629	6.0	6.3	6.8
Bhutan	6,048	7,768	3.6	4.0	6.1
Brunei	33,165	79,494	-2.1	-2.5	-0.4
Burma	282,946	5,457	8.4	8.0	7.3
Cambodia	54,373	3,498	7.4	7.1	7.0
China	19,695,741	14,328	7.8	7.3	6.9
Fiji	8,032	9,016	4.7	5.6	3.6
India	8,003,405	6,193	6.5	7.2	7.9
Indonesia	2,849,796	11,155	5.6	5.0	4.9
Japan	5,118,682	40,312	2.0	0.3	1.2
Korea, North	17,396 ³	696 ³	1.1 ⁴	1.0 ⁴	-1.1 ⁴
Korea, Republic of	1,856,431	36,390	2.9	3.3	2.8
Laos	37,747	5,370	8.0	8.0	7.5
Malaysia	817,425	26,211	4.7	6.0	5.0
Mongolia	36,163	12,178	11.6	7.9	2.4
Nepal	70,203	2,462	4.1	6.0	2.7
New Caledonia	10,234 ³	39,392 ³	2.2 ⁴	1.3 ⁴	1.4 ⁴
New Zealand	168,055	36,162	2.1	2.8	3.1
Pakistan	931,558	4,906	3.7	4.1	4.0
Papua New Guinea	26,973	3,495	4.7	7.4	6.6
Philippines	743,898	7,282	7.1	6.2	5.9
Singapore	476,719	86,128	5.0	3.6	1.9
Solomon Islands	1,132	1,927	3.0	2.0	1.8
Sri Lanka	246,618	11,684	3.4	4.9	4.8
Taiwan	1,102,000	46,909	2.2	4.0	0.7
Thailand	1,113,830	16,180	2.7	0.9	2.9
Timor-Leste	5,507	4,718	2.9	5.9	4.3
Vietnam	553,421	6,037	5.4	6.0	6.7
Regional total	46,053,215	11,468 ⁵	6.3 ⁶	6.3 ⁶	6.4 ⁶
World total	114,870,336	15,618 ³	2.6	2.7	2.7

¹Source: International Monetary Fund, World Economic Outlook Database, April 2017.

²Gross domestic product listed may differ from that reported in individual country chapters owing to differences in the source or date of reporting.

³Source: United Nations data for 2014.

⁴Source: U.S. Central Intelligence Agency, The World Factbook.

⁵Calculated as gross domestic product divided by population.

⁶Annual change in regional gross domestic product.

TABLE 3
ASIA AND THE PACIFIC: SELECTED SIGNIFICANT EXPLORATION SITES IN 2015¹

Country	Type ²	Site	Commodity	Company	Resources ³
Australia	P	Carosue Dam	Au	Saracen Mineral Holdings Ltd.	587,000 oz Au (R).
Do.	P	Cracow	Au	Evolution Mining Ltd.	248,000 oz Au (R).
Do.	P	DeGrussa (Doolgunna)	Cu, Au	Sandfire Resources NL	376,000 t Cu, 456,000 oz Au (R).
Do.	P	Duketon area	Au	Regis Resources Ltd.	530,000 oz Au (R).
Do.	P	Fosterville	Au	Newmarket Gold Inc.	307,000 oz Au (R).
Do.	P	Jaguar	Zn, Cu, Au, Ag	Independence Group NL	88,000 t Zn, 20,000 t Cu, 27,000 oz Au, 4.7 Moz Ag (R).
Do.	P	Jundee	Au	Northern Star Resources Ltd.	595,000 oz Au (R).
Do.	P	Kanowna Belle	Au	do.	168,000 oz Au (R).
Do.	P	Long	Ni	Independence Group NL	22,000 t Ni (R).
Do.	P	Nova Bollinger	Ni, Cu, Co	do.	299,000 t Ni, 121,000 t Cu, 11,500 t Co (PR).
Do.	P	Pajingo	Au	Evolution Mining Ltd.	98,000 oz Au (R).
Do.	F	Pilgangoora	Li, Ta	Pilbara Minerals Ltd.	469,000 t Li ₂ O, 3,255 t Ta ₂ O ₅ (ID).
Do.	P	Savannah	Ni, Cu, Co	Panoramic Resources Ltd.	76,500 t Ni, 39,000 t Cu, 5,300 t Co (IF).
Do.	P	Sunrise Dam	Au	AngloGold Ashanti Ltd.	1.3 Moz Au (R).
Do.	E	Tennant Creek Mineral Field	Cu, Au	Evolution Mining Ltd.	61,000 t Cu, 134,000 oz Au (D).
Do.	D	Thunderbox	Au	Saracen Mineral Holdings Ltd.	897,000 oz Au (PR).
Do.	P	Tropicana	Au	AngloGold Ashanti Ltd.	3 Moz Au (R).
Do.	F	Yamarna belt	Au	Gold Road Resources Ltd.	4.5 Moz Au (D).
Cambodia	E	Kou Sa	Cu	Geopacific Resources Ltd.	Data not released.
China	P	Ying	Ag, Pb, Zn, Au	Silvercorp Metals Inc.	83 Moz Ag, 380,000 t Pb, 127,000 t Zn, 29,000 oz Au (R).
Philippines	P	Co-O	Au	Medusa Mining Ltd.	427,000 oz Au (R).
Do.	Ditto				

¹Abbreviations used for commodities in this table include the following: Ag, silver; Au, gold; Co, cobalt; Cu, copper; Li, lithium; Pb, lead; Ni, nickel; Ta, tantalum; Zn, zinc. Abbreviations used for units of measure include the following: Moz, million troy ounces; oz, troy ounces; t, metric tons.

²D, under development; E, active exploration; F, feasibility work ongoing or completed; P, exploration associated with producing site.

³Expressed as contained metal or element in ore based on 2015 data reported from various sources; D, demonstrated (measured + indicated); ID, indicated; IF, inferred; PR, probable; R, proven + probable. Resource data have not been verified by the U.S. Geological Survey. In cases where resource data have not been released, the site was considered noteworthy based on the level of exploration activity or regional significance.

TABLE 4
ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2015¹

(Thousand metric tons unless otherwise specified)

Country	Metals												
	Aluminum			Copper			Iron and steel			Lead			
	Alumina	Bauxite	Metal ²	Mine output, Cu content	Refined, primary	Gold, mine output, Au content (kilograms)	Ore, gross weight	Iron	Pig iron	Steel, crude	Pb content (metric tons)	Mine output, primary (metric tons)	
Afghanistan	--	--	--	--	--	--	--	--	5	3	--	--	
Australia	20,097	80,910	1,646	964	474	279,000	816,782	3,594	4,935	653,000	182,000		
Bangladesh	--	--	--	--	--	--	--	--	--	--	--	--	
Bhutan	--	--	--	--	--	--	43	--	--	--	--	--	
Brunei	--	--	--	--	--	--	--	--	--	--	--	--	
Burma	--	--	--	47	47	1,692	--	--	--	18,000	200	--	
Cambodia	--	--	--	--	--	--	NA	--	--	--	--	--	
China ^e	59,000	65,000	37,400	1,670	4,960	450,000	1,380,000	691,410 ³	803,820 ³	2,340,000	3,080,000		
Fiji ^e	--	250	--	--	--	1,368 ³	--	--	--	--	--	--	
India	5,510	27,757	2,166	30	792	--	142,500	58,393	89,026	136,000	143,000		
Indonesia	--	472	168	576	200	92,339	--	630	3,150	--	--		
Japan	--	--	191	--	1,175	7,700	--	81,011	105,134	--	85,655		
Korea, North ^e	--	--	--	20	12	2,000	5,500	250	1,080	35,000	3,000		
Korea, Republic of	--	--	--	89	78	6,893	1,200	47,639	69,670	2,921	291,000		
Laos	--	--	--	--	--	4,732	1,535	--	4,100	--	--		
Malaysia	--	35,000	350 ^e	312	3	14,556	6,173	--	44	--	--		
Mongolia	--	--	--	--	--	--	--	--	--	--	--		
Nepal	--	--	--	--	--	--	--	--	--	--	--		
New Caledonia	--	--	--	--	--	12,687	--	678 ^e	793 ^e	--	--		
New Zealand	--	--	333	--	--	--	438	163	2,500 ^e	--	--		
Pakistan	--	31	--	13	--	54,729	--	--	--	--	--		
Papua New Guinea	--	--	--	43	--	20,643	42	--	968	--	--		
Philippines	--	--	--	84	153	--	--	--	--	--	--		
Solomon Islands	--	--	--	--	--	--	--	--	--	--	--		
Sri Lanka	--	--	--	--	--	--	--	--	--	--	--		
Taiwan	--	--	--	--	--	3,305	16	14,370	21,392	3,500 ^e	--		
Thailand	--	--	--	--	--	--	--	--	--	--	--		
Thailand ^e	(4)	1,150	--	12	--	4,222 ³	1,500 ^e	1,500 ^e	4,122 ³	1,890	--		
Total	84,600	211,000	42,300	3,850	8,410	952,000	2,360,000	900,000	1,110,000	3,190,000	3,780,000		
Share of world total	72.9%	71.0%	38.8%	18.9%	53.2%	29.0%	67.8%	75.0%	65.3%	60.2%	78.4%		
United States	4,550	W	1,590	1,380	1,050	214,000	46,100	25,400	78,800	367,000	--		
Share of world total	3.9%	W	1.5%	6.8%	6.6%	6.5%	1.3%	2.1%	4.6%	6.9%	--		
World total	116,000	297,000	109,000	20,400	15,800	3,280,000	3,480,000	1,200,000	1,700,000	5,300,000	4,820,000		

See footnotes at end of table.

TABLE 4—Continued
ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2015¹

(Thousand metric tons unless otherwise specified)

Country	Metals									
	Manganese ore, mine output, Mn content (metric tons)	Mercury, Hg content (metric tons)	Nickel, Ni content	Refined metal	Tin output, Sn content	Mine output, Metal, primary (metric tons)	Tungsten, mine output, W content (metric tons)	Zinc output, Zn content	Mine output, Zn content	Metal ²
Afghanistan	--	--	--	--	--	--	--	--	--	--
Australia	3,000 ^e	--	225	120	7,158	400	348	1,583,000	--	489,000
Bangladesh	--	--	--	--	--	--	--	--	--	--
Bhutan	--	--	--	--	--	--	--	--	--	--
Brunei	--	--	--	--	--	--	--	--	--	--
Burma ^e	28	--	26 ^p	--	57,300	30	5 ³	6,100	--	--
Cambodia	--	--	--	--	--	--	--	--	--	--
China ^e	2,100	2,800	93	--	110,000	167,000	73,000	4,750,000	5,860,000	--
Fiji	--	--	--	--	--	--	--	--	--	--
India	900	--	--	--	--	17	--	821,617	838,000	--
Indonesia	38 ^e	--	75	--	52,195	58,000	--	--	--	566,619
Japan	--	--	--	64	--	1,688	--	--	--	20,000
Korea, North ^e	--	--	--	--	--	--	70	26,000	2,070	934,949
Korea, Republic of	--	--	--	NA	--	--	--	--	--	--
Laos	--	--	--	--	900 ^e	--	--	--	--	--
Malaysia	NA	--	--	--	4,158	35,000	--	44,000	--	--
Mongolia	--	--	--	--	--	--	--	--	--	--
Nepal	--	--	--	--	--	--	--	--	--	--
New Caledonia	--	--	186	56	--	--	--	--	--	--
New Zealand	--	--	--	--	--	--	--	--	--	--
Pakistan	--	--	--	--	--	--	--	--	--	--
Papua New Guinea	--	--	26	--	--	--	--	--	--	--
Philippines	--	--	554	--	--	--	--	--	--	--
Solomon Islands	--	--	--	--	--	--	--	--	--	--
Sri Lanka	--	--	--	--	--	--	--	--	--	--
Taiwan	--	--	--	--	--	--	--	--	--	--
Thailand	4	--	--	--	72	8,000 ^e	30	29,000 ^e	74,000 ^e	--
Vietnam ^e	--	--	9	--	5,400	4,000	5,600	27,000	10,000	--
Total	6,070	2,800	1,190	240	237,000	274,000	79,100 ³	7,290,000	8,790,000	--
Share of world total	35.3%	97.6%	55.1%	26.2%	78.0%	88.1%	90.0%	52.4%	64.2%	--
United States	--	--	27	--	--	--	NA	825,000	172,000	--
Share of world total	--	--	1.3%	--	--	--	NA	5.9%	1.3%	--
World total	17,200	2,870	2,160	917	305,000	311,000	87,900	13,900,000	13,700,000	--

See footnotes at end of table.

TABLE 4—Continued
 ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2015¹
 (Thousand metric tons unless otherwise specified)

Country	Industrial minerals						Mineral fuels			
	Cement, hydraulic	Fluorspar (metric tons)	Graphite (metric tons)	Magnesite	Salt	Coal	Natural gas, dry, marketed/ marketable (million cubic meters)	Petroleum, crude (thousand 42-gallon barrels)		
Afghanistan	53	20,000	--	--	67	--	132	129 ^e	64	
Australia	9,100 ^e	--	--	420 ^e	13,000	--	441,000	73,637	117,619	
Bangladesh	18,000	--	--	--	1,460	--	676	25,263	2,500	
Bhutan	791 ^e	--	--	--	--	--	85	--	--	
Brunei	380 ^e	--	--	--	--	--	--	12,450	44,400	
Burma	773	--	--	--	129	--	--	19,212	4,766	
Cambodia	1,500 ^e	--	--	--	NA	--	--	--	--	
China ^e	2,359,000 ³	3,820,000	860,000	17,000	66,655 ³	401,000	3,100,000	135,000	1,550,000	
Fiji	204 ^e	--	--	--	--	--	--	--	--	
India ^e	300,000	2,900	290,000 ³	246 ³	17,000	--	631,085 ³	20,000	27,300	
Indonesia	78,000 ^e	--	--	--	NA	NA	275,100 ⁵	83,500	287,948	
Japan	54,827	--	--	--	938 ^e	--	1,000 ^e	2,734	3,751	
Korea, North ^e	6,700	--	10,000	--	310	12,400	15,100	--	--	
Korea, Republic of	52,044	--	--	--	9	1,764	--	--	--	
Laos ^e	1,500	--	--	--	9	110	--	--	--	
Malaysia	22,000	--	--	--	--	687	1,774	63,400	240,000	
Mongolia	410	231,000	--	--	2	--	7,323	--	8,769	
Nepal	3,100 ^e	--	--	--	--	--	2	--	--	
New Caledonia	112	--	--	--	--	--	--	--	--	
New Zealand	1,200 ^e	--	--	--	100 ^e	--	2,950	5,391	15,074	
Pakistan	33,232	7,692	--	2	3,099	--	1,974	39,000 ^e	33,995	
Papua New Guinea	--	--	--	--	--	--	--	190 ^e	11,500	
Philippines ^e	24,050 ³	--	--	--	1,020 ³	--	13,000	4,000	2,500	
Solomon Islands	--	--	--	--	--	--	--	--	--	
Sri Lanka	2,287	--	4,212	--	102	--	--	--	--	
Taiwan	13,400	--	--	--	--	--	--	374	72	
Thailand	36,216	50,000 ^e	--	--	1,386	--	--	35,448	55,823	
Vietnam	67,427	166,000	NA	--	991	41,484	--	10,660 ⁶	137,419	
Total	3,090,000	4,300,000	1,160,000 ³	17,700 ³	106,000 ³	457,000	4,490,000 ⁵	530,000	2,540,000	
Share of world total	73.9%	68.9%	88.5%	68.9%	33.1%	73.0%	77.0%	11.6%	7.3%	
United States	84,200	--	--	W	45,100	2,400	1,010,000	888,000	3,160,000	
Share of world total	2.0%	--	--	W	14.1%	0.4%	17.3%	19.4%	9.0%	
World total	4,180,000	6,240,000	1,310,000	25,700	320,000	626,000	5,830,000	4,570,000	35,000,000	

See footnotes at end of table.

TABLE 4—Continued
ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2015¹

^aEstimated; estimated data, U.S. data, and world totals are rounded to no more than three significant digits. ^bPreliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; not included in world total. -- Zero or zero percent.

¹Totals may not add owing to independent rounding. Percentages are calculated on unrounded data. Table includes data available as of September 28, 2016.

²Primary and secondary production.

³Reported figure.

⁴Less than 1/2 unit.

⁵Contains small amounts of anthracite.

⁶Natural gas, gross production.

TABLE 5
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED BAUXITE MINE PRODUCTION, 2005–2021¹

(Thousand metric tons, gross weight)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	59,959	68,414	78,632	80,910	83,000	92,000	98,000
China	22,000	44,000	59,200	65,000	65,000	63,000	61,000
Fiji	--	--	640	250	300	300	300
India	12,385	12,851	22,579	27,757	21,000	22,000	25,000
Indonesia	1,442	27,410	2,555	472	670	670	670
Malaysia	5	124	3,665	35,000	4,000	15,000	15,000
Pakistan	7	9	30	31	32	32	32
Vietnam	26	80	1,090	1,150	1,200	1,200	1,200
Total	95,800	153,000	168,000	211,000	180,000	190,000	200,000

^cEstimated. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 6
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED PRIMARY AND SECONDARY
ALUMINUM METAL PRODUCTION, 2005–2021¹

(Thousand metric tons)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	2,030	1,928	1,703	1,646	1,600	1,600	1,600
China	9,740	20,200	33,950	37,400	42,000	44,000	45,000
India	942	1,586	2,100	2,166	4,100	5,100	6,100
Indonesia	252	253	211	168	240	280	340
Japan	240	177	188	191	190	190	190
Malaysia	--	--	400	350	760	760	760
New Zealand	373	343	328	333	340	340	340
Total	13,600	24,500	38,900	42,300	49,000	52,000	54,000

^cEstimated. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 7
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED COBALT MINE PRODUCTION, 2005–2021¹

(Co content in metric tons)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	5,600	3,852	5,978	6,000	6,000	6,000	6,000
China	2,100	6,380	1,600	1,600	1,700	2,000	2,500
Indonesia	1,600	1,600	329	350	350	350	3,000
New Caledonia	1,769	2,850	4,400	5,600	6,000	6,000	6,000
Papua New Guinea	--	--	2,134	2,505	2,190	2,190	3,000
Philippines	300	2,100	4,600	4,300	4,500	4,500	4,500
Vietnam	--	--	223	277	280	280	280
Total	11,400	16,800	19,300	20,600	21,000	21,000	25,000

^cEstimated. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 8
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED COPPER MINE PRODUCTION, 2005–2021¹

(Cu content in thousand metric tons)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	930	870	966	964	960	1,000	990
Burma	35	9	33	47	50	50	50
China	762	1,160	1,740	1,670	1,700	1,750	1,750
India	27	36	27	30	50	100	150
Indonesia	1,064	878	406	576	690	690	690
Korea, North	12	5	19	20	20	20	20
Korea, Republic of	4	9	--	--	--	--	--
Laos	--	68	71	78	80	80	80
Mongolia	127	125	249	312	330	330	430
Pakistan	18	19	13	13	14	14	14
Papua New Guinea	193	160	76	43	71	71	170
Philippines	16	58	92	84	80	80	80
Vietnam	3	11	12	12	12	12	12
Total	3,190	3,410	3,700	3,850	4,100	4,200	4,400

^cEstimated. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 9
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED REFINED COPPER METAL PRODUCTION, 2005–2021¹

(Thousand metric tons)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	461	417	511	474	480	480	470
Burma	35	9	33	47	50	50	50
China	2,600	4,650	7,650	7,960	8,300	8,400	8,500
India	497	664	766	792	800	840	870
Indonesia	263	279	245	200	250	250	250
Japan	1,395	1,549	1,554	1,471	1,500	1,500	1,500
Korea, North	15	12	12	12	12	12	12
Korea, Republic of	519	565	620	640	600	600	600
Laos	30	64	89	89	90	90	90
Mongolia	2	3	2	3	3	3	3
Philippines	172	172	130	153	150	150	150
Thailand	16	723	229	--	--	--	--
Total	6,010	9,110	11,600	11,800	12,000	12,000	12,000

^cEstimated. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 10
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED GOLD MINE PRODUCTION, 2005–2021¹

(Au content in kilograms)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	263,000	261,000	274,000	279,000	300,000	310,000	280,000
Burma	90	--	1,315	1,692	1,700	1,700	1,700
China	225,000	345,000	451,000	450,000	415,000	430,000	430,000
Fiji	2,793	1,903	1,187	1,368	1,400	2,000	3,000
Indonesia	130,620	106,316	69,349	92,300	92,300	92,300	92,300
Japan	8,318	8,544	7,115	7,700	8,900	8,900	8,900
Korea, North	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Korea, Republic of	266	235	284	269	200	200	200
Laos	6,232	5,061	5,265	6,893	7,000	7,000	7,000
Malaysia	4,250	3,766	4,308	4,732	5,000	5,000	5,000
Mongolia	24,120	6,037	11,504	14,556	18,400	18,400	18,400
New Zealand	10,583	13,494	11,989	12,687	13,000	13,000	13,000
Papua New Guinea	68,483	58,983	52,809	54,729	54,700	54,700	54,700
Philippines	37,490	40,847	18,423	20,643	23,000	23,000	23,000
Solomon Islands	--	130	1,403	--	--	--	--
Thailand	4,400	4,046	4,576	3,305	3,300	3,300	3,300
Vietnam	2,138	--	164	--	--	--	--
Total	790,000	857,000	917,000	952,000	950,000	970,000	940,000

^cEstimated. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 11
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED BENEFICIATED IRON ORE PRODUCTION, 2005–2021¹

(Fe content in thousand metric tons)

Country	Average iron content	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	62%	163,000	271,000	464,146	505,283	560,000	590,000	590,000
Bhutan	62%	4	--	12	27	28	28	28
China	30%	126,000	321,000	254,000	232,000	216,000	210,000	200,000
India	62%	97,500	131,677	86,614	88,350	93,000	100,000	185,000
Indonesia	32%	10	2,872	1,904	1,235	1,240	1,240	1,240
Korea, North	60%	1,400	2,500	3,200	3,200	3,200	3,200	3,200
Korea, Republic of	60%	119	287	426	249	250	250	250
Laos	62%	--	32	712	745	750	750	750
Malaysia	50%	475	1,970	6,000	770	1,800	1,800	1,800
Mongolia	60%	109	1,900	3,883	3,500	3,600	3,600	3,600
New Zealand	60%	1,324	1,390	1,850	1,820	1,800	1,800	1,800
Pakistan	32%	16	134	82	129	150	150	150
Philippines	63%	--	--	103	28	28	28	28
Thailand	50%	116	480	171	8	8	8	8
Vietnam	53%	505	1,972	2,719	2,238	2,300	2,300	2,300
Total	XX	391,000	737,000	826,000	840,000	880,000	920,000	990,000

^cEstimated. XX Not applicable. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 12
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED CRUDE STEEL PRODUCTION, 2005–2021¹

(Thousand metric tons)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Afghanistan	--	--	24	3	24	24	24
Australia	7,788	7,408	4,582	4,935	5,300	5,300	5,300
Bangladesh	20	--	--	--	--	--	--
Burma	25	--	--	--	--	--	--
China	353,240	637,230	822,300	803,820	810,000	800,000	790,000
India	45,800	68,976	87,292	89,026	100,000	110,000	150,000
Indonesia	3,675	3,664	3,000	3,150	3,150	3,150	3,150
Japan	112,471	109,599	110,666	105,134	100,000	100,000	100,000
Korea, North	1,070	1,200	1,220	1,080	1,000	1,000	1,000
Korea, Republic of	47,820	58,914	71,542	69,670	70,000	70,000	70,000
Malaysia	5,296	5,693	4,316	4,100	4,000	4,000	4,000
Mongolia	66	64	64	44	17	17	17
New Zealand	889	853	859	793	600	600	600
Pakistan	825	800	2,423	2,500	2,500	2,500	2,500
Philippines	470	1,050	1,196	968	1,000	1,000	1,000
Taiwan	18,567	18,975	23,121	21,392	22,000	22,000	22,000
Thailand	5,161	4,145	3,500	3,500	3,500	3,500	3,500
Vietnam	890	2,906	3,954	4,122	7,000	7,000	7,000
Total	604,000	921,000	1,140,000	1,110,000	1,100,000	1,100,000	1,200,000

^cEstimated. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 13
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED NICKEL MINE PRODUCTION, 2005–2021¹

(Ni content in metric tons)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	192,000	170,000	266,000	225,000	240,000	280,000	250,000
Burma	10	--	21,000	26,400	27,000	27,000	27,000
China	72,700	80,000	98,400	92,900	90,000	90,000	90,000
Indonesia	135,000	300,800	55,284	74,500	104,000	122,000	200,000
New Caledonia	111,939	131,309	178,080	186,065	186,000	186,000	186,000
Papua New Guinea	--	--	20,987	25,582	26,000	26,000	26,000
Philippines	26,636	150,000	586,000	554,000	525,000	525,000	525,000
Vietnam	--	--	6,854	8,607	9,000	9,000	9,000
Total	538,000	832,000	1,230,000	1,190,000	1,200,000	1,300,000	1,300,000

^cEstimated. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 14
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED PALLADIUM MINE PRODUCTION, 2005–2021¹

(Pd content in kilograms)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	550	650	600	600	660	780	690
China	450	850	1,600	2,300	3,000	4,500	5,500
Total	1,000	1,500	2,200	2,900	3,700	5,300	6,200

^cEstimated.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 15
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED PLATINUM MINE PRODUCTION, 2005–2021¹

(Pt content in kilograms)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	111	130	170	170	200	230	210
China	700	1,500	850	1,200	1,500	2,300	2,800
Total	811	1,630	1,020	1,370	1,700	2,500	3,000

^cEstimated.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 16
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED TIN MINE PRODUCTION, 2005–2021¹

(Sn content in metric tons)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	2,819	18,263	6,898	7,158	7,000	7,000	7,000
Burma	708	800	35,000	57,300	57,000	57,000	57,000
China	126,000	93,200	102,000	110,000	105,000	100,000	95,000
Indonesia	78,404	46,078	51,915	52,195	52,000	52,000	52,000
Laos	830	925	866	900	900	900	900
Malaysia	2,857	2,668	3,777	4,158	4,000	4,000	4,000
Thailand	158	292	156	72	50	50	50
Vietnam	5,400	5,400	5,400	5,400	5,400	5,400	5,400
Total	217,000	168,000	206,000	237,000	230,000	230,000	220,000

^cEstimated.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 17
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED TIN METAL PRODUCTION, 2005–2021¹

(Metric tons)

Country	2005	2010	2014	2015	2017 ^c	2019 ^c	2021 ^c
Australia	994	400	400	400	400	400	400
Burma	30	30	30	30	30	30	30
China	122,000	149,000	187,000	167,000	190,000	195,000	195,000
India	--	60	30	17	17	17	17
Indonesia	65,300	51,418	58,233	58,000	63,800	63,800	63,800
Japan	754	841	1,746	1,688	1,500	1,500	1,500
Malaysia	36,924	38,771	35,018	35,000	35,000	35,000	35,000
Thailand	31,600	20,000	16,929	8,000	8,000	8,000	8,000
Vietnam	1,766	3,042	4,000	4,000	4,000	4,000	4,000
Total	259,000	264,000	303,000	274,000	300,000	310,000	310,000

^cEstimated. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 18
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED DIAMOND PRODUCTION, 2005–2021¹

(Thousand carats)

Country	2005	2010	2014	2015	2017 ^e	2019 ^e	2021 ^e
Australia	34,307	10,000	9,288	13,564	14,000	14,000	14,000
Burma	5	--	--	--	--	--	--
China	100	150	200	200	200	200	200
India	58	50	76	70	50	50	50
Indonesia	30	37	37	--	--	--	--
Total	34,500	10,200	9,600	13,800	14,000	14,000	14,000

^eEstimated. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 19
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED LITHIUM PRODUCTION, 2005–2021¹

(Li content in metric tons)

Country	2005	2010	2014	2015	2017 ^e	2019 ^e	2021 ^e
Australia	4,800	8,200	13,300	13,500	13,700	19,300	22,500
China	3,600	6,000	2,650	2,680	2,500	3,300	4,100
Total	8,400	14,200	16,000	16,200	16,000	23,000	27,000

^eEstimated.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 20
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED SALABLE COAL PRODUCTION, 2005–2021¹

(Thousand metric tons)

Country	2005	2010	2014	2015	2017 ^e	2019 ^e	2021 ^e
Afghanistan	--	725	233	132	132	132	132
Australia	370,000	427,000	502,700	506,400	510,000	540,000	550,000
Bangladesh	303	667	947	676	650	650	650
Bhutan	85	88	122	85	85	85	85
Burma	230	218	387	420	420	420	420
China	2,260,000	3,240,000	3,880,000	3,750,000	3,450,000	3,350,000	3,250,000
India	360,000	507,000	576,000	675,538	700,000	900,000	1,000,000
Indonesia	192,920	224,677	435,743	406,539	430,000	430,000	430,000
Japan	1,114	1,000	1,200	1,000	600	600	600
Korea, North	23,500	41,000	27,090	27,500	27,000	27,000	27,000
Korea, Republic of	2,832	--	1,748	1,764	1,600	1,600	1,600
Laos	233	713	209	210	210	210	210
Malaysia	789	2,397	2,688	2,559	1,300	1,300	1,300
Mongolia	8,256	25,246	24,415	24,148	35,000	35,000	35,000
Nepal	9	3	7	2	5	5	5
New Zealand	5,267	5,330	3,992	3,390	2,800	2,800	2,800
Pakistan	3,367	3,367	3,085	3,275	3,400	3,500	3,500
Philippines	3,165	6,650	12,406	13,000	13,000	13,000	13,000
Thailand	21,429	18,399	17,991	17,100	17,000	17,000	17,000
Vietnam	34,093	44,835	41,086	41,484	42,000	42,000	42,000
Total	3,290,000	4,550,000	5,530,000	5,480,000	5,200,000	5,400,000	5,400,000

^eEstimated. -- Negligible or no production.

¹Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

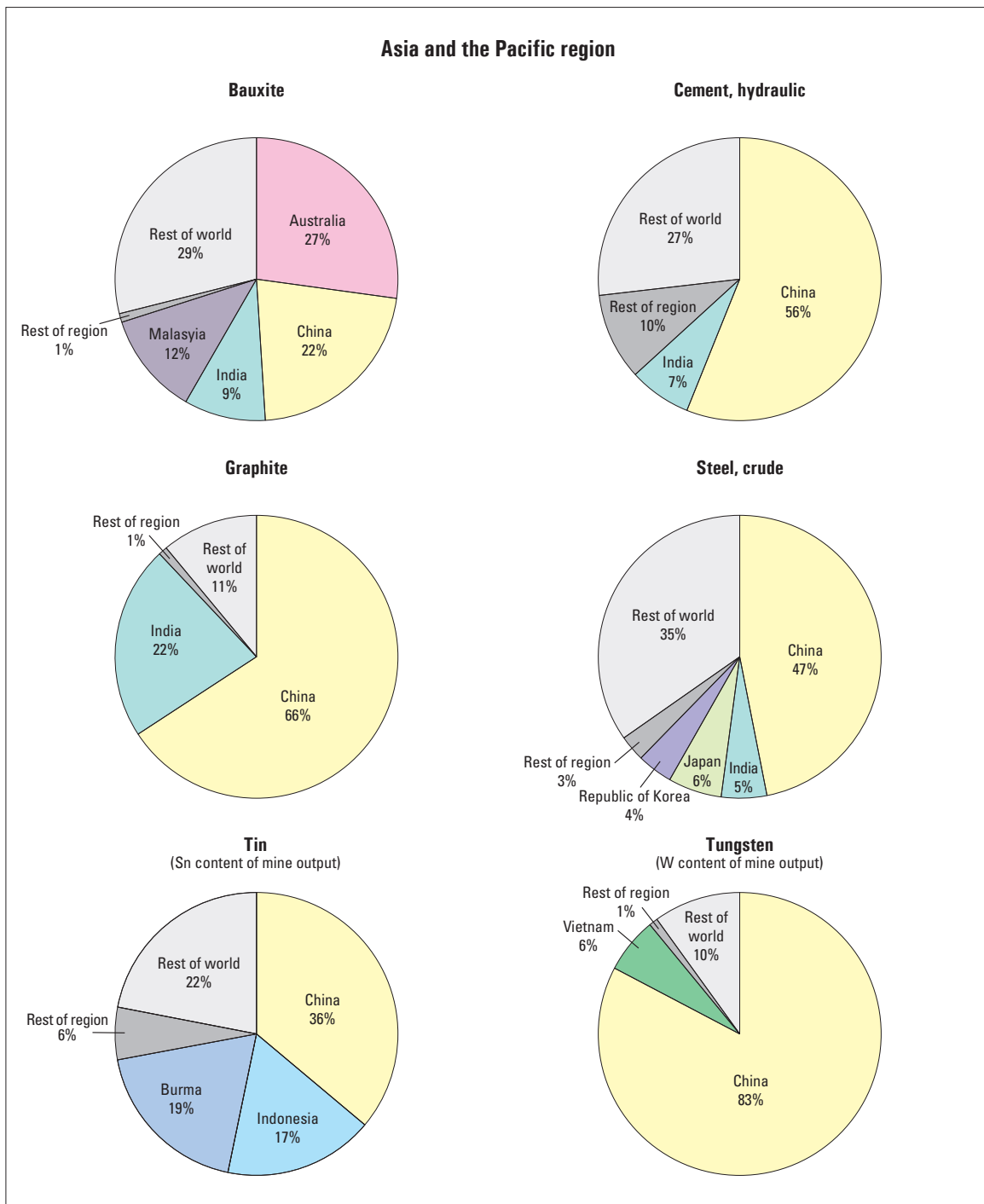


Figure 2. Pie charts showing percentage of world production of selected mineral commodities (bauxite, cement, graphite, steel, tin, and tungsten) by countries of the Asia and the Pacific region in 2015. Individual countries of the region are labeled if they accounted for at least 3% of world production. Data are from table 4. Percentages may differ slightly from those shown in table 4 because of independent rounding. Also, percentages may differ from those reported in individual country chapters owing to differences in source or date of reporting.