

# 19 Transport

**Economic development depends critically on expanding transport infrastructure. Progress can be monitored using data on cargo and passenger capacities, and on infrastructure and road safety, as well as data on energy use and environmental impact.**

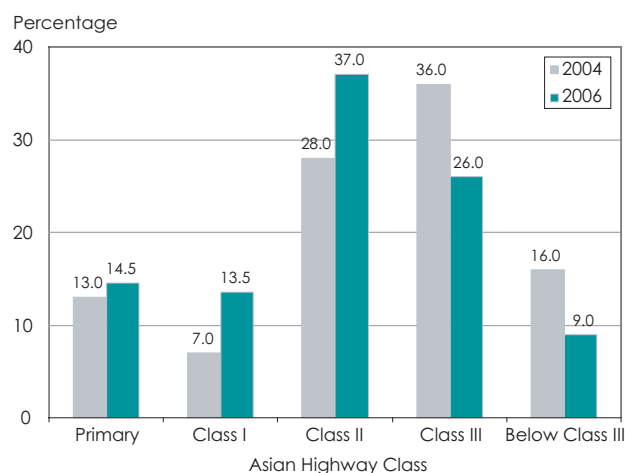
Between 2005 and 2006, the number of twenty-foot equivalent unit containers handled by the world's ports increased by 12 per cent, to 427 million. Of this throughput, more than half was in the Asia-Pacific region, which that year increased its share from 60 to 61 per cent. In 2006, of the world's top 25 container ports in terms of throughput, 17 were in Asia. The economies handling the most traffic were: China; Singapore; Hong Kong, China; Japan; and Republic of Korea.

Railway density in the Asia-Pacific region remains low in comparison with more advanced regions. Nevertheless, there has been a substantial increase in the demand for rail transport services, measured as freight ton-kilometres and passenger-kilometres. Between 2004 and 2005, total rail freight transport in Asia and the Pacific increased by 4.7 per cent, to 4,500 billion ton-kilometres, while total rail passenger transport increased by 5.1 per cent to 1,709 billion passenger-kilometres. The largest rail freight volume in 2006 was in China whose throughput in 2004 had surpassed that of the railways of the Russian Federation.

Since 2007 there has been little change in the region's road densities. However, the quality of many roads, particularly those on the Asian Highway routes has improved significantly. Between 2004 and 2006, 7 per cent, or about 10,000 kilometres, of the routes were upgraded to meet the minimum Asian Highway standards. The Asian Highway network now comprises over 141,000 kilometres of roads passing through 32 countries, extending from Tokyo in the east to Kapikule, Turkey in the west, and from Saint Petersburg, Russian Federation, in the north, to Denpasar, Indonesia, in the south.

**Figure 19.1**

**Progress in upgrading the Asian Highway, 2004 and 2006**

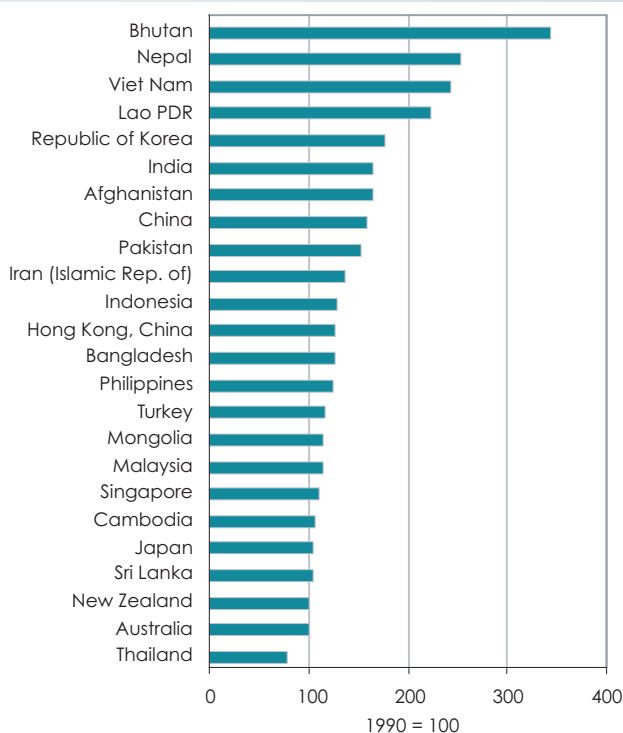


The Intergovernmental Agreement on the Asian Highway Network entered into force in 2005 and 23 States became parties to the Agreement. The Agreement classifies Asian highways into four categories: Primary refers to access-controlled highways; Class I refers to highways with four or more lanes; and Class II and Class III to highways of two lanes. Class III is regarded as the minimum desirable standard. As a result of the recent upgrades, the most typical category of Asian Highway roads is now Class II, with a 37 per cent share of the network, while the share of Class III has been reduced to 26 per cent. Between 2004 and 2006, Uzbekistan upgraded all its Asian Highway roads to meet the minimum standard while Cambodia, China and Bangladesh also achieved noticeable results in reaching the minimum standard.

Motorization continued unabated although there are few recent data. China registered 16.2 passenger cars per 1,000 people in 2005, a 22 per cent increase over 2004. The Russian Federation has also seen substantial increases: between 1990 and 2005, passenger cars per 1,000 increased from 60 to 177. However the greatest car density per person in the region was still in Brunei Darussalam: in 2005 the country had 642 cars per 1,000 people.

Figure 19.2

## Index of change in road density, Asia and the Pacific, 1990-latest available year



As motorization rates continue to rise, leading to higher vehicle densities, there has also been an increase in road traffic accidents. Worldwide, every year road accidents kill an estimated 1.2 million people and injure or disable up to 50 million. Most road traffic fatalities occur in developing countries, where they rank as a leading cause of death.

**Railway freight (100,000 ton km)**

Transport of goods by rail, expressed in hundred thousand tons over a distance of one kilometre. The distance to be considered is the distance actually run on the national network of the reporting country. **Aggregates:** Sum of individual country values. **Source:** World Bank railway database (online database, accessed on 8 June 2008).

**Railway passenger kilometres (100,000 passenger km)**

Transport of passenger by rail, expressed in hundred thousand rail passengers over a distance of one kilometre. **Aggregates:** Sum of individual country values. **Source:** World Bank railway database (online database, accessed on 8 June 2008).

**International marine container handled (TEU)**

The volume of containers landed and shipped, expressed in twenty-foot equivalent container units (TEU). The indicator covers intermodal freight containers of 20 feet minimum length, but excluding platform flats. Both international and domestic traffic, and transhipped containers are counted twice. The TEU calculation are based only on container length, not height. **Aggregates:**

Roughly half of all road fatalities in the Asia-Pacific region occur in China and India. In these countries they represent a smaller proportion of total deaths than in other parts of the region, but here too the share is rising. In China, between the early 1990s and 2003 the number of traffic deaths per 100,000 total deaths increased from 592 to 1,206. In India, between 1990 and 2003 the number increased from 618 to 885.

The transport sector is a major consumer of energy – particularly petroleum. It is also a major emitter of the carbon dioxide that is contributing to global warming. In 2006, the world transport sector consumed 2,226 million tons of oil equivalent. Of that, Asia and the Pacific was responsible for only 26.6 per cent, 593 million tons. The bulk of this, 72.9 per cent (1,624 million tons), was consumed by road transport, followed by shipping 8.2 per cent, international aviation 6 per cent, domestic aviation 5 per cent, pipeline 3.2 per cent, rail 2.6 per cent, domestic navigation 1.7 per cent and others 0.3 per cent.

In 2005, the transport sector in Asia and the Pacific was responsible for 1,505 million tons of CO<sub>2</sub> emissions, compared with 1,974 million tons in North America and 1,038 million tons in Europe. Most of this comes from road transport which in 2006 released 1,224 million tons. In contrast, railways emitted only 64.3 million tons, strong justification for a modal shift from road to rail.

Sum of individual country values. **Source:** Calculated by ESCAP from data from Containerisation International Yearbook 2008.

**Railway density (km per 1,000 km<sup>2</sup>)**

The length of rail lines divided by the land area. Rail lines are the length of railway route available for train service measured in kilometres, irrespective of the number of parallel tracks. **Aggregates:** Averages are calculated using land area as weight. **Source:** World Bank, World Development Indicators (online database, accessed in June 2008).

**Roads density (km per 1,000 km<sup>2</sup>)**

The total road network divided by the land area. Total road network includes motorways, highways, and main or national roads, secondary or regional roads, and all other roads measured in kilometres in a country. **Aggregates:** Averages are calculated using land area as weight. Missing data for roads density have been imputed. **Source:** World Bank, World Development Indicators (online database, accessed in June 2008).

**Paved roads (% of total roads)**

The share of roads surfaced with crushed stone (macadam) and hydrocarbon binder or bituminized agents, concrete, or cobblestones, expressed as a percentage of the length of all roads. **Aggregates:** Averages are calculated using land area as weight. Missing data for paved roads have been imputed. **Source:** Source: World Bank, World Development Indicators (online database, accessed in June 2008).

**Asian highway, total length (km)**

The Asian Highway is a cooperative network of highway routes of international importance within Asia, determined by an intergovernmental agreement initiated by ESCAP. The total Asian Highway Network is divided into five major classes (primary, I, II, III, below III) depending on road design standards. **Aggregates:** Sum of individual country values. **Source:** ESCAP, Transport Division.

**Asian highway, primary (km)**

The total length of primary class roads in the Asian Highway Network. Primary class refers to access-controlled highways. Access-controlled highways are used exclusively by automobiles. Access to the access-controlled highways is at grade-separated interchanges only. Mopeds, bicycles and pedestrians should not be allowed to enter the access-controlled highway in order to ensure traffic safety and the high running speed of automobiles. **Aggregates:** Sum of individual country values. **Source:** ESCAP, Transport Division.

**Asian highway, Class I (km)**

The total length of Class I roads in the Asian Highway Network. Class I refers to asphalt or cement concrete roads with 4 or more lanes. **Aggregates:** Sum of individual country values. **Source:** ESCAP, Transport Division.

**Asian highway, Class II (km)**

The total length of Class II roads in the Asian Highway Network. Class II refers to asphalt or cement concrete roads with 2 lanes. **Aggregates:** Sum of individual country values. **Source:** ESCAP, Transport Division.

**Asian highway, Class III (km)**

The total length of Class III roads in the Asian Highway Network. Class III refers to double bituminous treated roads with 2 lanes. Class III is also regarded as the minimum desirable standard. **Aggregates:** Sum of individual country values. **Source:** ESCAP, Transport Division.

**Asian highway, below Class III (km)**

The total length of Asian Highway roads that are below the minimum desirable standard. **Aggregates:** Sum of individual country values. **Source:** ESCAP, Transport Division.

**Passenger cars in use (per 1,000 population)**

The number of passenger cars, expressed per 1,000 population. Covers road motor vehicles designed for the conveyance of passengers and seating not more than nine persons including the driver. Taxis, jeep-type vehicles and station wagons are included. Special-purpose vehicles, such as two-wheeled or three-wheeled cycles or motorcycles, trams, trolley-buses, ambulances, hearses, and military vehicles operated by police or other governmental security organizations, are excluded. **Aggregates:** Averages are calculated using total population as weight. **Source:** United Nations Common database (online database, accessed on 18 June 2008).

**Traffic accidents casualties (per 100,000 deaths)**

The total number of deaths caused by traffic accidents during a given period divided by the total number of deaths from all causes during the same period, expressed per 100,000 deaths. **Aggregates:** Averages are calculated as the sum of accident casualties divided by the sum of total deaths. Missing data for traffic accident casualties have been imputed. **Source:** Asia-Pacific Road Accident Database (APRAD), ESCAP, Transport Division.

**Energy consumption transport, international and domestic aviation (thousand tons of oil equivalent)**

Total deliveries of aviation fuels for any type of aircraft used in international and domestic aviation. Excludes airline use of fuel for road transport. **Aggregates:** Sum of individual country values. **Source:** IEA (online database, accessed on 14 October 2008).

**Energy consumption in road transport (thousand tons of oil equivalent)**

Total amount of fuels used in road vehicles. Excludes military consumption as well as motor gasoline used in stationary engines and diesel oil for use in tractors that are not for highway use. **Aggregates:** Sum of individual country values. **Source:** International Energy Agency (online database, accessed in October 2008).

**Energy consumption in rail transport (thousand tons of oil equivalent)**

Total amount of energy used in rail traffic, including industrial railways. **Aggregates:** Sum of individual country values. **Source:** International Energy Agency (online database, accessed in October 2008).

**Energy consumption in transport sector (thousand tons of oil equivalent)**

Energy consumed in all transport activities (in mobile engines) regardless of the economic sector to which it is contributing [ISIC Divisions 60, 61 and 62]. **Aggregates:** Sum of individual country values. **Source:** International Energy Agency (online database, accessed in September 2008).

## 19. Transport

### 19.1 Railway and maritime freight and passenger traffic

	Railways freight				Railways passenger kilometres				International marine container handled	
	Hundred thousand ton km				Hundred thousand passenger km				Million TEU	
	1990	1995	2000	2005	1990	1995	2000	2005	2005	2006
<b>East and North-East Asia</b>	<b>1 105 654</b>	<b>1 328 796</b>	<b>1 371 015</b>	<b>1 976 209</b>	<b>531 514</b>	<b>633 337</b>	<b>711 428</b>	<b>861 509</b>		
China	1 060 100	1 287 420	1 333 606	1 934 612	263 530	354 261	441 468	583 320	67.25	84.69
DPR Korea										
Hong Kong, China									22.60	23.54
Japan	26 803	24 747	22 313	22 632	237 551	248 993	240 793	245 957	16.85	18.07
Macao, China										
Mongolia	5 088		4 293	8 857	570		1 070	1 228		
Republic of Korea	13 663	13 838	10 803	10 108	29 863	29 292	28 097	31 004	14.98	15.63
<b>South-East Asia</b>	<b>9 156</b>	<b>11 039</b>			<b>28 731</b>	<b>36 096</b>				
Brunei Darussalam										
Cambodia	24	6	92		34	39	45	45	0.21	0.22
Indonesia	3 190	4 170			9 290	15 520			3.56	3.65
Lao PDR										
Malaysia	1 404	1 416	907	1 178	1 840	1 270	1 312	1 181	11.99	13.40
Myanmar	388				3 702					
Philippines	12	5	1		341	220	171		3.35	3.40
Singapore									24.10	25.61
Thailand	3 291	3 242	3 384	4 037	11 612	12 975	9 935	9 195	5.12	5.57
Timor-Leste										
Viet Nam	847	1 751	1 902	2 928	1 913	2 133	3 200	4 558	2.50	2.96
<b>South and South-West Asia</b>	<b>259 243</b>	<b>296 778</b>	<b>333 760</b>	<b>441 568</b>	<b>333 959</b>	<b>364 846</b>	<b>469 591</b>	<b>624 646</b>		
Afghanistan										
Bangladesh	651	689	777	817	4 587	3 333	3 941	4 164	0.78	0.88
Bhutan										
India	235 785	270 489	305 201	407 398	295 644	326 197	430 666	575 702	4.97	6.17
Iran (Islamic Rep. of)	9 041	11 870	14 179	19 127	4 573	7 294	7 119	11 149	1.33	1.53
Maldives										
Nepal										
Pakistan	5 709	5 077	3 754	5 013	19 964	18 904	18 495	24 237	1.69	1.70
Sri Lanka	164	137	88	135	2 781	3 321		4 358	2.46	3.08
Turkey	7 894	8 516	9 761	9 078	6 410	5 797	5 832	5 036	3.15	3.61
<b>North and Central Asia</b>	<b>3 006 268</b>	<b>1 382 587</b>	<b>1 523 660</b>	<b>2 064 810</b>	<b>302 178</b>	<b>212 595</b>	<b>180 471</b>	<b>187 983</b>		
Armenia	4 884	403	354	654	316	165	47	27		
Azerbaijan	37 076	2 409	5 770	10 067		791	493	878		
Georgia	15 477	1 246	3 912	6 127	1 969	371	453	720	0.11	0.11
Kazakhstan	406 963		124 983	171 855	19 734		10 215	12 129		
Kyrgyzstan										
Russian Federation	2 523 000	1 214 000	1 373 200	1 858 100	274 000	192 117	167 100	172 217	1.79	2.33
Tajikistan										
Turkmenistan										
Uzbekistan		16 830	15 441	18 007		2 497	2 163	2 012		
<b>Pacific</b>										
Australia									5.15	5.65
American Samoa										
Cook Islands										
Fiji										
French Polynesia									0.07	0.07
Guam									0.15	0.15
Kiribati										
Marshall Islands										
Micronesia (F.S.)										
Nauru										
New Caledonia									0.07	0.08
New Zealand	2 744	3 202	4 078			366			1.50	1.69
Niue										
Northern Mariana Is.										
Palau										
Papua New Guinea										
Samoa										
Solomon Islands										
Tonga										
Tuvalu										
Vanuatu										
<b>Asia and the Pacific</b>	<b>4 383 065</b>	<b>3 022 401</b>	<b>3 244 208</b>	<b>4 500 309</b>	<b>1 196 751</b>	<b>1 247 240</b>	<b>1 396 288</b>	<b>1 709 395</b>	<b>195.72</b>	<b>223.77</b>
LLDC			150 841	209 440						
LDC					8 322					
ASEAN	9 156	11 039			28 731	36 096				
ECO	485 550	192 401	173 888	233 147	56 840	51 937	44 317	55 441		
SAARC	242 308	276 392	309 820	413 363	322 975	351 755	456 640	608 461		
Central Asia	483 268		150 460	206 710			13 371	15 766		
Pacific island dev. econ.										
Low-income	26 486	24 802	22 415	27 306	35 567	30 845	31 783	38 955		
Middle-income	4 313 368	2 955 813	3 184 599	4 436 185	893 401	937 744	1 095 615	1 393 479		
High-income	43 210	41 787	37 194	36 818	267 784	278 651	268 890	276 961		
<b>Other world regions</b>										
Africa									10.59	12.18
Europe									74.53	80.71
Latin America & Carib.									25.29	29.75
North America									42.43	44.99
Other countries/areas									33.72	35.68
<b>World</b>									<b>382.28</b>	<b>427.10</b>

## 19.2 Railways and roads infrastructure

	Railway density			Roads density				Paved roads				
	Km per 1,000 km <sup>2</sup>			Km per 1,000 km <sup>2</sup>				% of total roads				
	1990	2000	2005	1990	2000	2003	2004	1990	2000	2003	2004	2005
<b>East and North-East Asia</b>	<b>7</b>	<b>7</b>	<b>8</b>	<b>211</b>	<b>239</b>	<b>276</b>	<b>281</b>			<b>68</b>	<b>70</b>	<b>70</b>
China	6	6	7	127	150	194	201			79	81	82
DPR Korea				231	259			6	6			
Hong Kong, China				1 374		1 742	1 750	100		100	100	100
Japan	56	55	55	3 057	3 200			69	77			
Macao, China					12 756	12 637	13 164	100	100	100	100	
Mongolia	1	1	1	27	31			10	4			
Republic of Korea	31	32	34	574	881	985	1 016	72	75	77	87	77
<b>South-East Asia</b>				<b>180</b>	<b>224</b>			<b>37</b>				
Brunei Darussalam				192	218			31	35			77
Cambodia	3	3	4	203			217	8			6	
Indonesia				159	196	205	206	45	57	58	55	
Lao PDR				61	94	135		24		14		
Malaysia	5	5	5	262	201	281	300	70	75	81	81	
Myanmar	5			38	43			11	11			
Philippines	2	2	2	538	676	671				10		
Singapore				4 176	4 584	4 606	4 627	97	100	100	100	100
Thailand	8	8	8	141	112			55	99			
Timor-Leste												
Viet Nam	9	10	9	295	693		717	24				
<b>South and South-West Asia</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>415</b>	<b>622</b>				<b>46</b>			
Afghanistan				32	32		53	13	13		24	
Bangladesh	21	21	22	1 444	1 594	1 838			10	10		
Bhutan				50		171		77		62		
India	21	21	21	673	1 115				47			
Iran (Islamic Rep. of)	3	4	4	80		110				67		
Maldives												
Nepal			0	48	92	111	121	38	31	54	57	
Pakistan	11	10	10	219	311	330	335	54	56	60	65	
Sri Lanka	22		19	1 439		1 505				81		
Turkey	11	11	11	477		554	555					
<b>North and Central Asia</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>61</b>	<b>41</b>			<b>72</b>				
Armenia	29	30	25	267		271	271	99		91	90	90
Azerbaijan		26	26	617	332		715				49	
Georgia	22	22	22	305	293	291	291	94		39	39	
Kazakhstan	5	5	5	57		33	33	55		94	93	83
Kyrgyzstan			2	97	96			90	91			
Russian Federation	5	5	5	53	32			74				
Tajikistan			4	209	198			72				
Turkmenistan			5	44	51			74	81			
Uzbekistan		9	9	167	192			79	87			
<b>Pacific</b>	<b>1</b>			<b>110</b>	<b>110</b>	<b>110</b>		<b>34</b>				
Australia	1	1	1	105	106	106		35				
American Samoa												
Cook Islands												
Fiji			33	167	188			45	49			
French Polynesia												
Guam												
Kiribati					827							
Marshall Islands												
Micronesia (F.S.)					343			16	18			
Nauru												
New Caledonia												
New Zealand	15			346	344	347	348	57	63	64	65	65
Niue												
Northern Mariana Is.												
Palau												
Papua New Guinea				41	43			3	4			
Samoa												
Solomon Islands				43	50			2	2			
Tonga					944				27			
Tuvalu												
Vanuatu					88			22	24			
<b>Asia and the Pacific</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>160</b>	<b>191</b>							
LLDC			5	66	59			44	58			
LDC	7		8	143	155	189			17	18		
ASEAN				180	224			37	48			
ECO	6	7	7	132		151	153					
SAARC	19	19	18	519	815				43			
Central Asia		7	6	91	74			64				
Pacific island dev. econ.				51	56			5	6			
Low-income	9	10	8	162	214			32	34			
Middle-income	7	7	7	141	175							
High-income	4	4	4	247	257			38	42			
<b>Other world regions</b>												
Africa		4	4	54	62			26				
Europe	46	49	45	964	1 063	1 095		83	84	81		
Latin America & Carib.	6			141	156	159	160	18	17			
North America	21	17	12	387	412	429	430			53	52	53
Other countries/areas				89	107			44	38			
<b>World</b>				<b>189</b>	<b>141</b>	<b>67</b>	<b>2</b>	<b>36</b>	<b>36</b>			

## 19. Transport

### 19.3 Asian highway

	Primary		Class I		Class II		Class III		Below Class III and other		Total	
	Km											
	2004	2006	2004	2006	2004	2006	2004	2006	2004	2006	2004	2006
<b>East and North-East Asia</b>												
China	12 940	14 859	1 719	2 255	7 599	5 788	2 228	3 237	1 443	42	25 929	26 181
DPR Korea	0	0	0	492	0	0	0	15	1 320	955	1 320	1 462
Hong Kong, China									0	0		
Japan	1 111	1 111	0	0	0	0	0	0	0	0	1 111	1 111
Macao, China									0	0		
Mongolia	0	0	0	16	440	432	345	595	3 501	3 243	4 286	4 286
Republic of Korea	466	466	197	255	244	186	0	0	0	0	907	907
									<b>0</b>	<b>0</b>		
<b>South-East Asia</b>												
Brunei Darussalam									0	0		
Cambodia	0	0	0	0	398	453	743	879	199	3	1 340	1 335
Indonesia	335	409	18	188	1 600	1 734	1 965	1 550	34	89	3 952	3 970
Lao PDR	0	0	0	0	0	0	2 375	2 032	3	285	2 378	2 317
Malaysia	795	795	67	67	733	733	0	0	0	0	1 595	1 595
Myanmar	0	0	147	147	144	0	983	1 585	1 729	1 271	3 003	3 003
Philippines	0	0	17	134	27	928	2 872	1 917	601	538	3 517	3 517
Singapore	11	11	8	8	0	0	0	0	0	0	19	19
Thailand	182	182	2 572	2 926	1 226	1 187	1 128	813	4	2	5 112	5 110
Timor-Leste									0	0		
Viet Nam	0	0	408	338	1 915	2 018	104	85	251	190	2 678	2 631
									<b>0</b>	<b>0</b>		
<b>South and South-West Asia</b>												
Afghanistan	0	0	0	10	621	2 314	77	77	3 549	1 846	4 247	4 247
Bangladesh	0	0	20	20	441	1 718	476	0	868	30	1 805	1 768
Bhutan	0	0	0	6	6	0	0	0	161	161	167	167
India	0	90	484	3 787	0	1 962	10 869	5 690	105	121	11 458	11 650
Iran (Islamic Rep. of)	752	752	1 067	2 468	9 334	7 933	0	0	0	0	11 153	11 153
Maldives									0	0		
Nepal	0	0	0	0	311	208	1 003	1 098	12	8	1 326	1 314
Pakistan	358	358	1 116	1 272	160	349	2 569	2 224	1 174	1 174	5 377	5 377
Sri Lanka	0	0	0	49	269	337	190	151	191	113	650	650
Turkey	1 212	1 251	155	885	1 219	797	2 685	2 312	0	0	5 271	5 245
									<b>0</b>	<b>0</b>		
<b>North and Central Asia</b>												
Armenia	0	0	142	147	377	710	479	109	0	0	998	966
Azerbaijan	0	0	82	97	1 012	1 017	348	348	228	0	1 670	1 462
Georgia	0	0	8	17	788	924	358	160	0	0	1 154	1 101
Kazakhstan	0	0	72	557	767	4 671	10 004	6 835	2 346	793	13 189	12 856
Kyrgyzstan	0	0	0	60	464	981	511	338	720	316	1 695	1 695
Russian Federation	0	0	1 147	1 532	8 334	13 085	3 210	670	4 178	1 759	16 869	17 046
Tajikistan	0	0	0	20	289	707	603	977	1 033	221	1 925	1 925
Turkmenistan	0	0	0	60	0	0	2 180	2 120	24	24	2 204	2 204
Uzbekistan	0	0	255	1 185	765	1 111	1 618	670	328	0	2 966	2 966
<b>Pacific</b>												
Australia												
American Samoa												
Cook Islands												
Fiji												
French Polynesia												
Guam												
Kiribati												
Marshall Islands												
Micronesia (F.S.)												
Nauru												
New Caledonia												
New Zealand												
Niue												
Northern Mariana Is.												
Palau												
Papua New Guinea												
Samoa												
Solomon Islands												
Tonga												
Tuvalu												
Vanuatu												
<b>Asia and the Pacific</b>	<b>18 162</b>	<b>20 284</b>	<b>9 701</b>	<b>18 998</b>	<b>39 483</b>	<b>52 283</b>	<b>49 923</b>	<b>36 487</b>	<b>24 002</b>	<b>13 184</b>	<b>141 271</b>	<b>141 236</b>
LLDC												
LDC												
ASEAN												
ECO												
SAARC												
Central Asia												
Pacific island dev. econ.												
Low-income												
Middle-income												
High-income												
<b>Other world regions</b>												
Africa												
Europe												
Latin America & Carib.												
North America												
Other countries/areas												
<b>World</b>												

## 19.4 Passenger cars and traffic casualties

	Passenger cars in use					Traffic accidents casualties				
	Per 1,000 population					Per 100,000 deaths				
	1990	1995	2000	2003	2004	1990	1995	2000	2003	2004
<b>East and North-East Asia</b>	<b>40</b>	<b>47</b>	<b>53</b>	<b>56</b>	<b>58</b>	<b>778</b>	<b>974</b>	<b>1 188</b>	<b>1 204</b>	
China	1	3	7	11	13	592	857	1 118	1 206	
DPR Korea										
Hong Kong, China	38	49	53	52	52	1 056	780	503	548	
Japan	362	420	449			1 367	1 165	1 061		
Macao, China	67	85	111	124	130		1 188	860	853	
Mongolia						1 805				
Republic of Korea	140	180				4 893	4 163	4 057	2 778	2 403
<b>South-East Asia</b>	<b>14</b>	<b>19</b>	<b>27</b>			<b>675</b>			<b>1 201</b>	
Brunei Darussalam	415	480	548	592	616	5 384	6 569	4 409	2 840	
Cambodia	1	1	1				74	307	617	
Indonesia	12	15	26			687			606	
Lao PDR						183	600		941	
Malaysia	14	17				3 495	5 758	5 701	5 666	
Myanmar	2	3	4	4	4	130	209	235	273	
Philippines	17	24	28	30	31	345			244	
Singapore	95	105	103	101	103	1 550	1 338	1 118	1 043	
Thailand	23	33	44	55	48	1 451	3 758	2 363	2 480	
Timor-Leste										
Viet Nam						395			2 622	
<b>South and South-West Asia</b>	<b>5</b>	<b>8</b>				<b>580</b>	<b>694</b>	<b>783</b>	<b>781</b>	
Afghanistan	2			2	2					
Bangladesh	0	0				135		253		
Bhutan						96				
India	4	6				618	764	871	885	
Iran (Islamic Rep. of)										
Maldives	1	7	15							
Nepal	1	2	2			212	336	412		
Pakistan	5	6	7	8	9	396	472	431	414	449
Sri Lanka	10	13	18	23	27	1 613	1 393	1 603		
Turkey	29	49	65	66	75		1 442	1 372	957	
<b>North and Central Asia</b>	<b>59</b>	<b>85</b>	<b>121</b>	<b>139</b>	<b>144</b>	<b>2 021</b>	<b>1 555</b>	<b>1 302</b>	<b>1 512</b>	
Armenia						2 749	1 079	807	926	
Azerbaijan	36	36	41	48	53	2 463	1 760	1 088	1 261	1 382
Georgia	66	49					887	998	1 121	
Kazakhstan	63	63	94			2 842	1 714	1 196	1 710	
Kyrgyzstan	45	41	41			193	1 675	1 545	2 211	
Russian Federation	60	95	137	160	166	1 967	1 602	1 330	1 540	
Tajikistan		29	19			1 919	1 110	936	992	986
Turkmenistan						2 248	1 261		1 368	
Uzbekistan						2 116	1 184	1 290		
<b>Pacific</b>	<b>433</b>	<b>454</b>		<b>498</b>	<b>508</b>	<b>1 751</b>	<b>1 431</b>	<b>1 221</b>	<b>1 097</b>	
Australia	455	479		522	529	1 951	1 600	1 376	1 191	
American Samoa	91	89	128	110	104					
Cook Islands										
Fiji	56	65	76	92	98	1 947	1 734			
French Polynesia										
Guam	596	443								
Kiribati										
Marshall Islands										
Micronesia (F.S.)										
Nauru										
New Caledonia	316	273	405	425	443					
New Zealand	440	453	494	510	530	2 686	2 125	1 647	1 627	
Niue										
Northern Mariana Is.										
Palau										
Papua New Guinea						655				
Samoa	27	37	29	38	49	1 626				
Solomon Islands										
Tonga	21	82	51	71		1 961				
Tuvalu										
Vanuatu										
<b>Asia and the Pacific</b>	<b>27</b>	<b>33</b>				<b>786</b>	<b>931</b>	<b>1 014</b>	<b>1 048</b>	
LLDC						1 454	1 086	990		
LDC	1	1				142		282		
ASEAN	14	19	27			675			1 201	
ECO	18	23	28	29	31		878	802	774	
SAARC	4	6				539	665	764	776	
Central Asia						2 258	1 393	1 181		
Pacific island dev. econ.						802				
Low-income	3	4				308		505		
Middle-income	9	13	19	22	23	792	965	1 045	1 103	
High-income	309	355	386			2 143	1 758	1 602		
<b>Other world regions</b>										
Africa	18									
Europe	319	354	397							
Latin America & Carib.										
North America	700	691	727	739						
Other countries/areas	126	131								
<b>World</b>	<b>105</b>	<b>110</b>								

## 19. Transport

### 19.5 Energy consumption by type of transport

	International and domestic aviation			Road			Railway			Total		
	Thousand tons of oil equivalent											
	1990	2000	2006	1990	2000	2006	1990	2000	2006	1990	2000	2006
<b>East and North-East Asia</b>	<b>11 905</b>	<b>21 251</b>	<b>30 215</b>	<b>98 435</b>	<b>151 337</b>	<b>188 324</b>	<b>14 750</b>	<b>16 976</b>	<b>17 843</b>	<b>133 726</b>	<b>205 809</b>	<b>256 824</b>
China	863	5 551	11 013	21 008	46 628	84 580	12 489	14 588	15 415	37 167	73 787	126 484
DPR Korea				1 560	563	331				1 560	563	331
Hong Kong, China	1 897	2 803	4 732	1 470	3 721	1 459				3 369	6 524	6 191
Japan	6 931	10 213	10 471	63 381	77 952	74 818	1 751	1 828	1 849	76 244	94 582	91 129
Macao, China												
Mongolia	4	19	44	383	259	316	138	69	122	526	347	482
Republic of Korea	2 209	2 666	3 955	10 633	22 214	26 821	372	491	457	14 860	30 006	32 208
<b>South-East Asia</b>	<b>5 774</b>	<b>9 685</b>	<b>12 217</b>	<b>28 061</b>	<b>57 699</b>	<b>69 444</b>	<b>140</b>	<b>152</b>	<b>605</b>	<b>35 454</b>	<b>70 133</b>	<b>85 175</b>
Brunei Darussalam	38	69	79	188	274	346				226	343	425
Cambodia		19	27		286	391					305	420
Indonesia	625	1 143	1 341	9 639	18 880	22 243				11 037	21 779	25 223
Lao PDR												
Malaysia	654	1 576	2 010	4 845	10 489	13 055		4	7	5 499	12 075	15 198
Myanmar	30	66	80	420	1 104	1 201				451	1 175	1 313
Philippines	539	901	1 109	1 811	6 898	6 037		3	424	2 655	8 394	8 327
Singapore	1 900	2 903	3 557	1 342	1 968	2 273	16	25	33	3 258	4 896	5 862
Thailand	1 887	2 791	3 610	8 558	14 452	17 689	105	99	104	10 916	17 402	21 473
Timor-Leste												
Viet Nam	100	217	405	1 259	3 348	6 208	19	21	37	1 412	3 764	6 933
<b>South and South-West Asia</b>	<b>3 406</b>	<b>5 793</b>	<b>8 650</b>	<b>48 557</b>	<b>73 639</b>	<b>90 602</b>	<b>4 932</b>	<b>2 902</b>	<b>3 545</b>	<b>57 833</b>	<b>83 376</b>	<b>105 682</b>
Afghanistan												
Bangladesh	92	127	283	394	741	1 119	52	109	168	636	1 125	1 801
Bhutan												
India	1 786	2 396	4 234	21 667	28 500	31 222	4 308	2 209	2 845	28 347	33 663	39 045
Iran (Islamic Rep. of)	501	910	1 060	13 030	24 220	36 447				13 531	25 129	37 507
Maldives												
Nepal	17	57	66	110	269	281	0	1	1	127	327	347
Pakistan	470	769	917	4 212	7 839	7 622	286	292	267	4 970	8 999	10 061
Sri Lanka	61	273	320	729	1 552	1 547	27	22	27	819	1 854	1 931
Turkey	480	1 261	1 770	8 413	10 518	12 365	259	270	237	9 404	12 279	14 990
<b>North and Central Asia</b>	<b>20 167</b>	<b>9 823</b>	<b>12 222</b>	<b>63 752</b>	<b>41 881</b>	<b>50 454</b>	<b>7 222</b>	<b>5 564</b>	<b>6 975</b>	<b>140 192</b>	<b>89 396</b>	<b>110 018</b>
Armenia	199	63	40	1 016	197	181		6	7	1 249	270	231
Azerbaijan	239	120	498	1 103	666	1 519		33	30	1 576	857	2 186
Georgia	202	15	38	1 168	310	524	127	49	28	1 537	374	597
Kazakhstan	1 205	291	347	4 130	2 722	3 138	1 014	385	392	6 356	3 428	3 986
Kyrgyzstan	88	39	132	1 040	168	242		4	7	1 141	216	385
Russian Federation	18 155	8 988	10 928	52 020	34 380	40 965	6 081	4 957	6 402	124 769	78 952	96 974
Tajikistan		3	4	541	707	1 342		3	2	558	714	1 348
Turkmenistan				841	675	949		13	17	930	688	966
Uzbekistan	78	303	234	1 892	2 057	1 595		114	89	2 076	3 898	3 345
<b>Pacific</b>	<b>3 224</b>	<b>5 172</b>	<b>5 827</b>	<b>21 316</b>	<b>26 051</b>	<b>27 646</b>	<b>719</b>	<b>758</b>	<b>806</b>	<b>25 976</b>	<b>32 850</b>	<b>35 252</b>
Australia	2 495	4 269	4 613	18 710	22 330	23 247	714	750	798	22 559	28 070	29 496
American Samoa												
Cook Islands												
Fiji												
French Polynesia												
Guam												
Kiribati												
Marshall Islands												
Micronesia (F.S.)												
Nauru												
New Caledonia												
New Zealand	729	903	1 214	2 607	3 721	4 398	5	8	8	3 417	4 780	5 755
Niue												
Northern Mariana Is.												
Palau												
Papua New Guinea												
Samoa												
Solomon Islands												
Tonga												
Tuvalu												
Vanuatu												
<b>Asia and the Pacific</b>	<b>44 476</b>	<b>51 724</b>	<b>69 131</b>	<b>260 121</b>	<b>350 607</b>	<b>426 471</b>	<b>27 763</b>	<b>26 351</b>	<b>29 773</b>	<b>393 181</b>	<b>481 564</b>	<b>592 951</b>
LLDC	1 831	895	1 365	11 057	7 720	9 562	1 152	627	667	14 540	10 744	13 277
LDC	138	269	456	925	2 400	2 992	52	109	168	1 214	2 932	3 882
ASEAN	5 774	9 685	12 217	28 061	57 699	69 444	140	152	605	35 454	70 133	85 175
ECO	3 061	3 696	4 963	35 203	49 572	65 218	1 559	1 114	1 041	40 542	56 208	74 775
SAARC	2 426	3 622	5 821	27 113	38 902	41 790	4 673	2 632	3 307	34 898	45 967	53 185
Central Asia	2 012	834	1 294	11 731	7 502	9 489	1 141	606	573	15 424	10 444	13 045
Pacific island dev. econ.												
Low-income	875	1 600	2 148	11 430	17 083	20 331	357	543	570	12 931	21 086	26 283
Middle-income	27 401	26 298	38 362	150 362	201 345	272 777	24 548	22 706	26 059	256 316	291 278	395 601
High-income	16 200	23 826	28 621	98 330	132 180	133 363	2 858	3 102	3 144	123 934	169 200	171 067
<b>Other world regions</b>												
Africa	4 778	7 756	8 239	33 624	45 868	57 093	788	728	708	39 663	56 427	68 581
Europe	33 409	48 054	54 325	265 790	298 736	326 820	10 396	9 943	9 766	321 436	367 793	404 491
Latin America & Carib.	7 940	12 389	12 438	96 178	131 464	157 500	1 512	1 298	1 622	108 263	149 367	178 160
North America	81 045	92 838	87 458	424 366	529 978	576 934	12 826	12 205	15 911	544 690	660 691	705 126
Other countries/areas	10 917	12 299	14 479	43 976	60 056	78 992	75	65	123	55 244	72 854	94 159
<b>World</b>	<b>182 565</b>	<b>225 060</b>	<b>246 070</b>	<b>1 124 056</b>	<b>1 416 710</b>	<b>1 623 809</b>	<b>53 360</b>	<b>50 590</b>	<b>57 904</b>	<b>1 462 476</b>	<b>1 788 697</b>	<b>2 043 469</b>