

# Global crude oil demand, refinery capacity and main World oil flows in the last decade

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REVIEW

The article describes intensity of global crude oil demand during the last decade, volumes of refined products processed in available refinery capacities and volumes of crude transported by sea between places of crude production and its consumption as an indicator of the share of this important primary energy source in total exchange of goods. The data are presented on the world maps by region in order to provide better overview and to make the relationships more transparent. The data are updated according to the comprehensive 2010 balances and include historical data from 2000 and 2005 to reflect trends in all significant world oil regions.

Key words: global oil demand, refinery capacity, world flow of oil

## TOTAL GLOBAL OIL DEMAND IN 2000, 2005 AND 2010

Total global demand figures comprise all commercial types of crude presented in demand and refinery bal-

ances (excluding refining of secondary feedstock). Data on global demand (figures 1,2,3,4,5,6) are presented both in metric system (million tonnes) and in barrels/day so as to ensure easier comparison for readers in both systems (M t/y or mil t/y) and (M bbl/day or mil bbl/d).

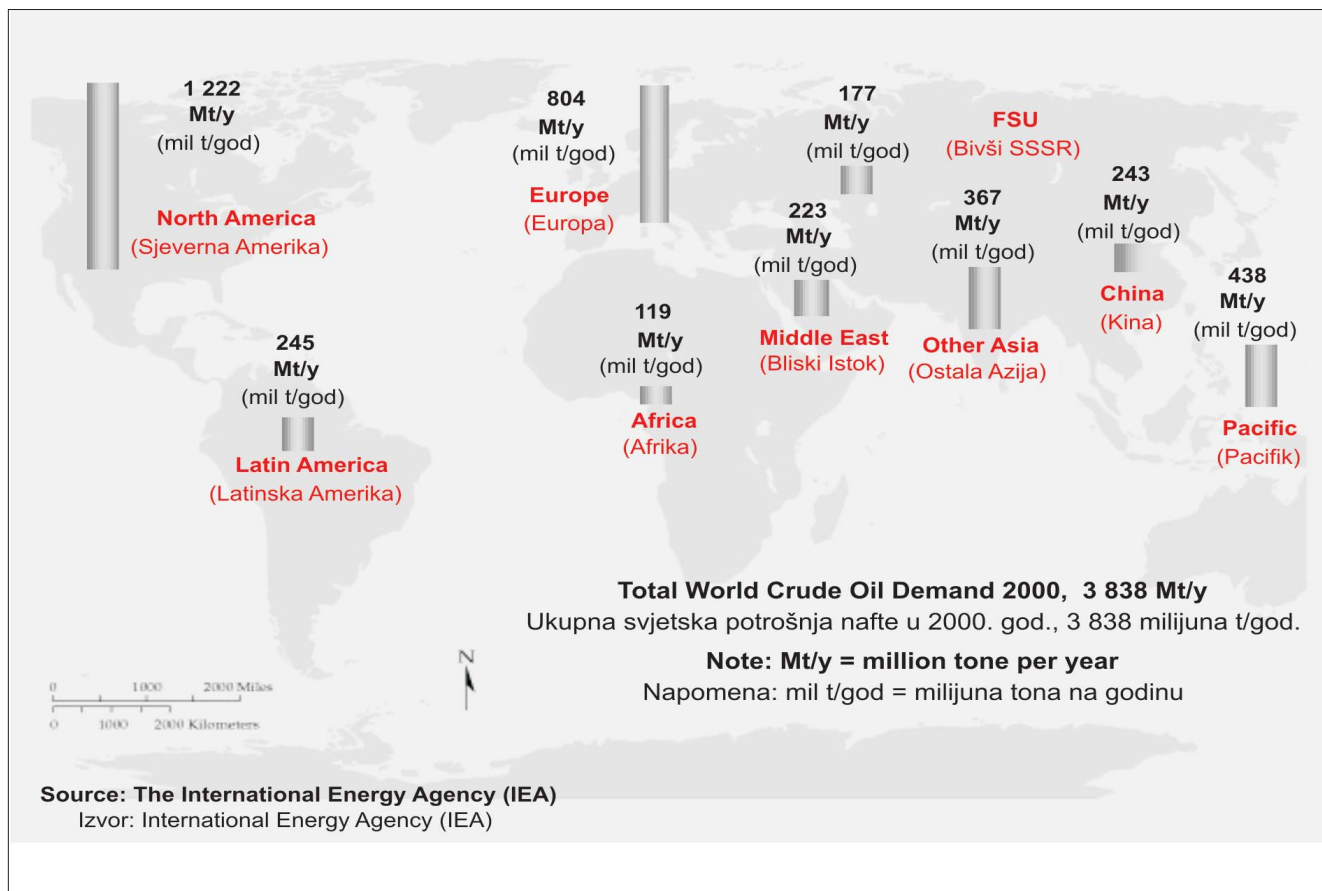
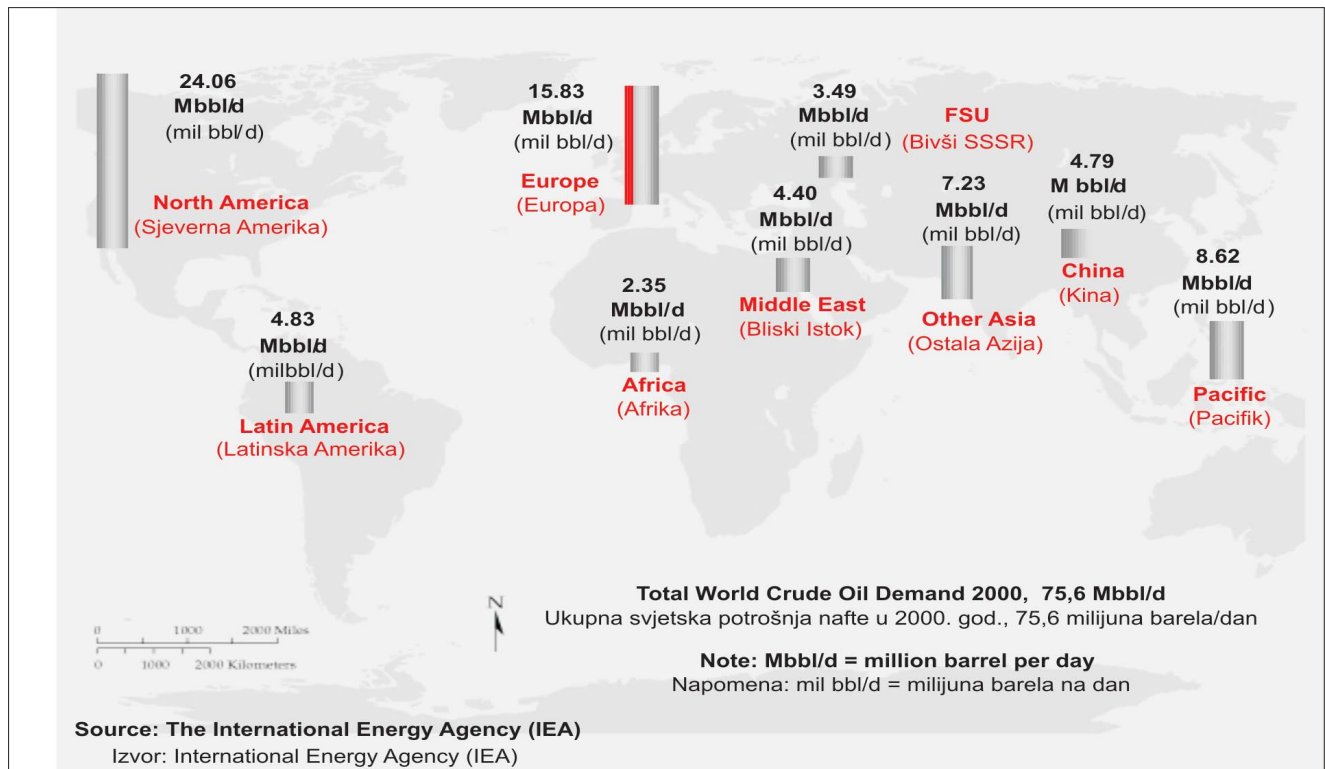
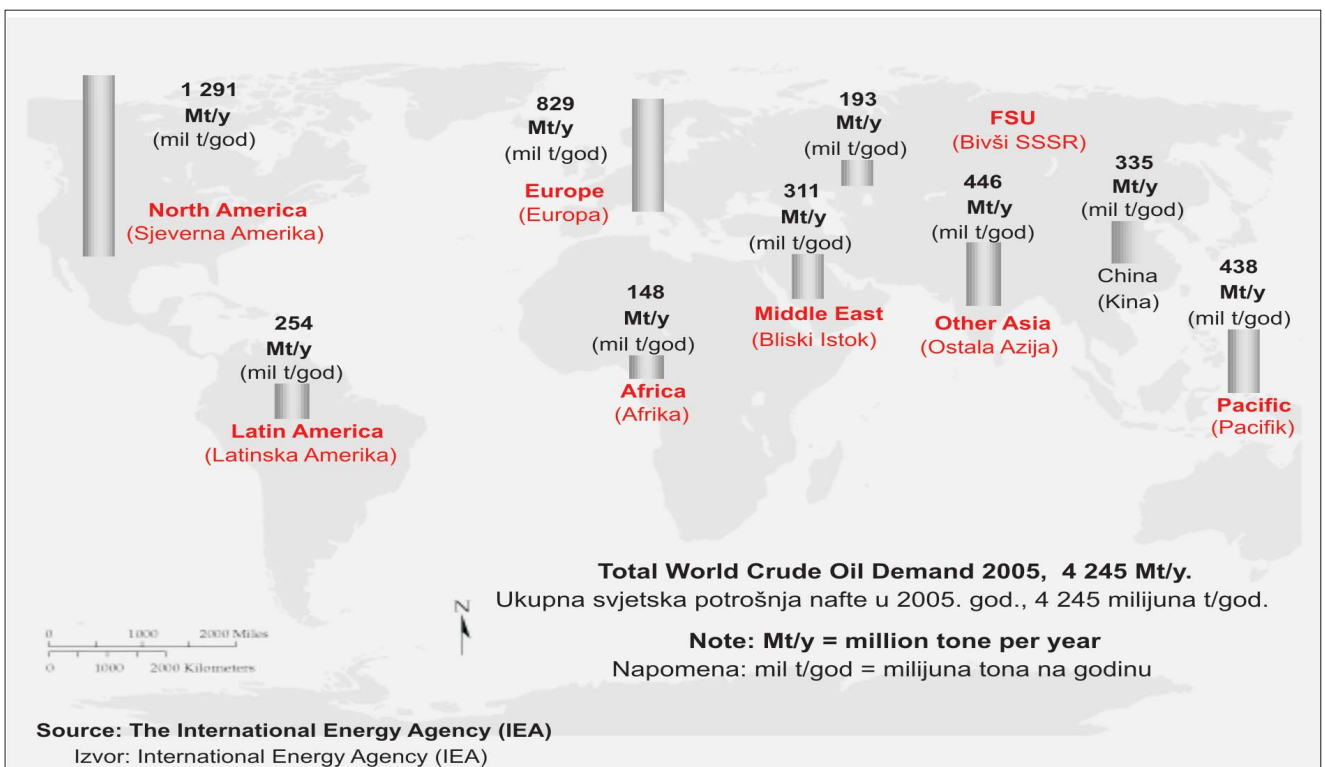


Fig. 1. Global oil demand by region 2000, Mt/y  
 Sl. 1. Ukupna potrošnja nafte u svijetu 2000., milijuna t/god



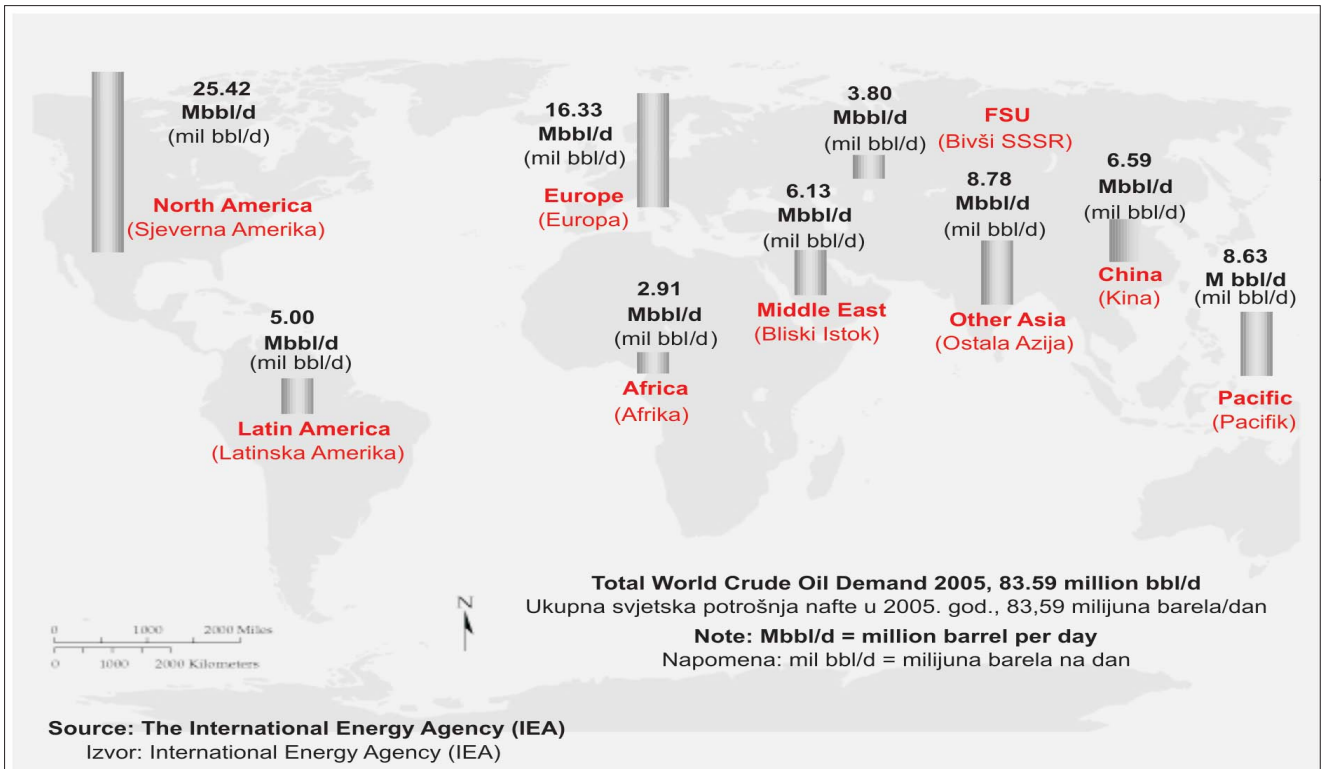
**Fig. 2. Global oil demand by region 2000, Mbbbl/d**

Sl. 2. Ukupna potrošnja nafte u svijetu 2000., milijuna bbl/d

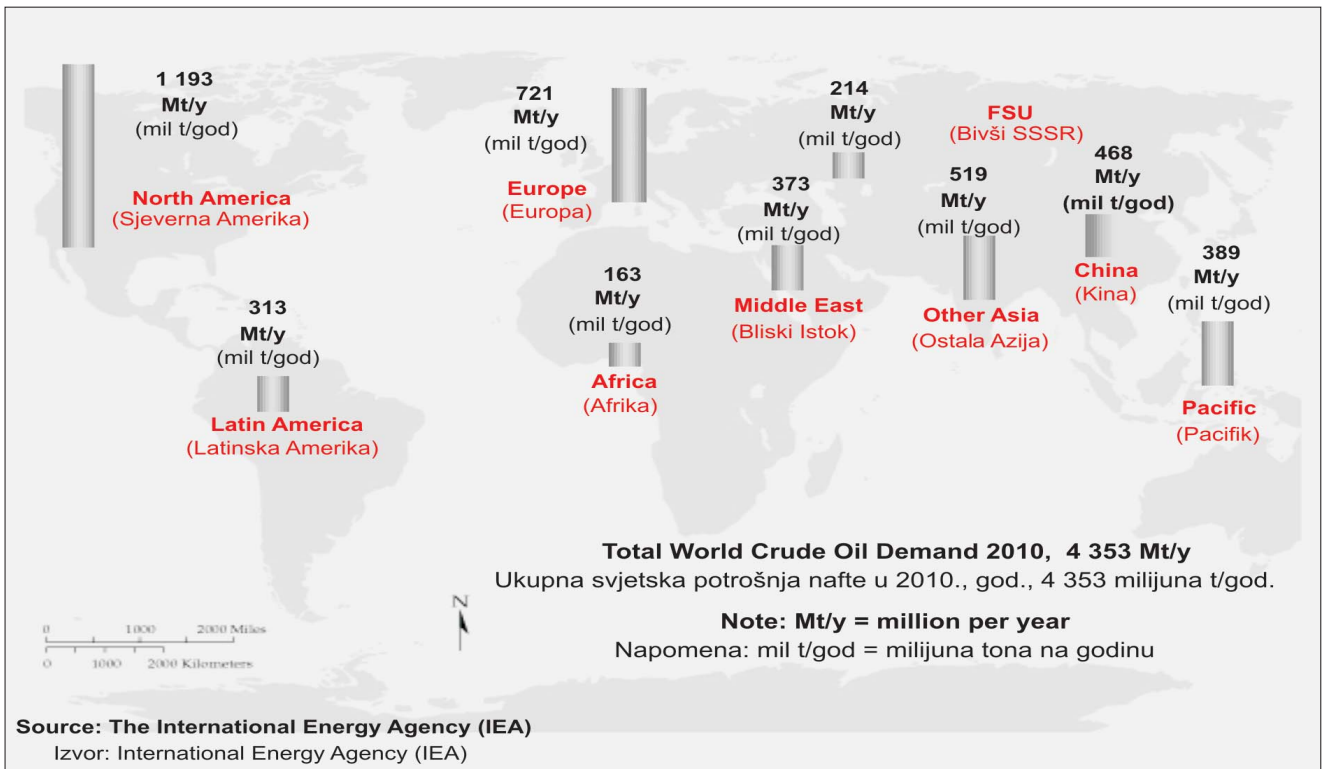


**Fig. 3. Global oil demand by region 2005, Mt/y**

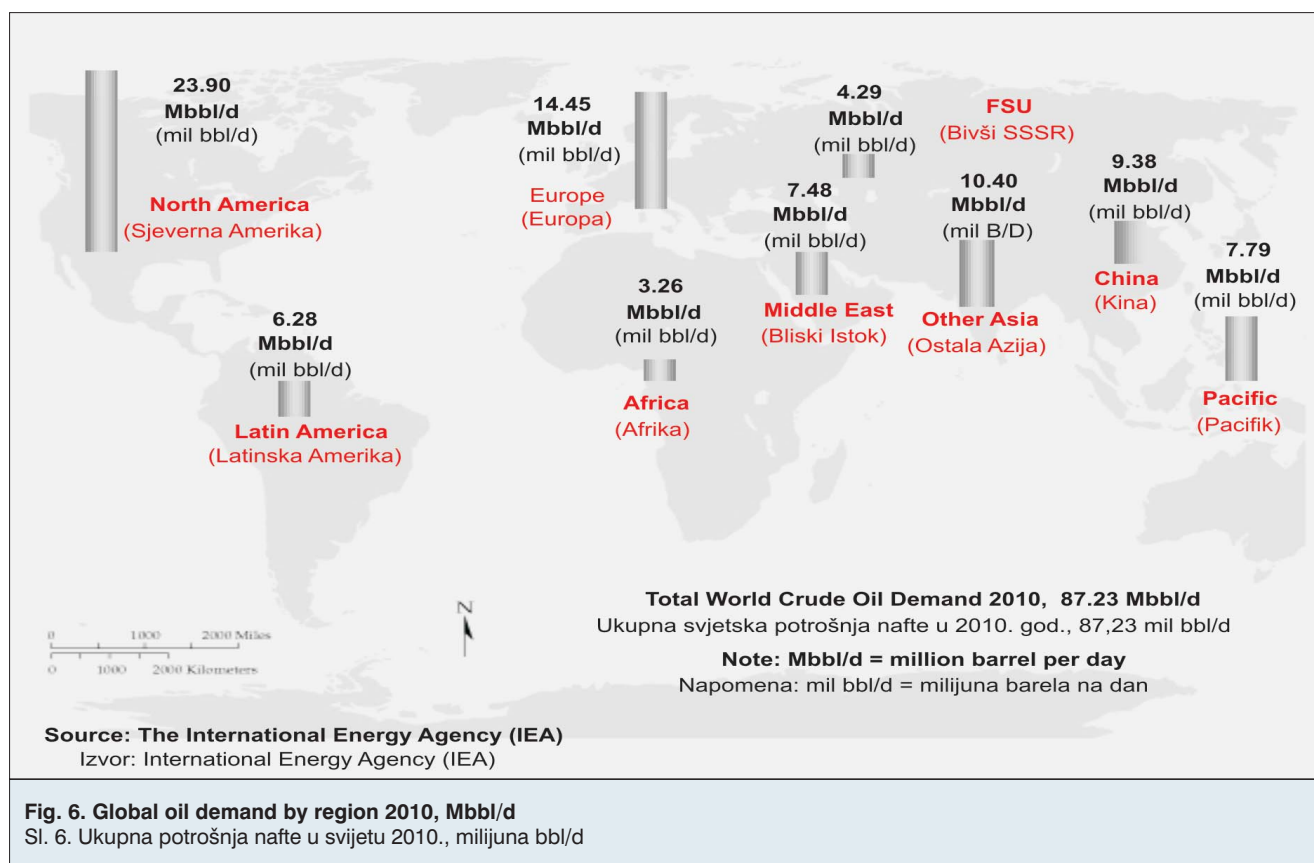
Sl. 3. Ukupna potrošnja nafte u svijetu 2005., milijuna t/god



**Fig. 4. Global oil demand by region 2005, Mbbbl/d**  
 Sl. 4. Ukupna potrošnja nafte u svijetu 2005., milijuna bbl/d



**Fig. 5. Global oil demand by region 2010, Mt/y**  
 Sl. 5. Ukupna potrošnja nafte u svijetu 2010., milijuna t/god



**Fig. 6. Global oil demand by region 2010, Mbb/d**

Sl. 6. Ukupna potrošnja nafte u svijetu 2010., milijuna bbl/d

The text that follows brings table presentation of world oil consumption typical in 2000, 2005 and 2010 (tables 1,2), again both in million tonnes per year (Mt/y) and million barrels per day (Mbb/d).

In the last 5 years total world oil consumption grew by 4,4%. Latin America had high growth rate of 25,6% while China had even higher growth of 42,3%, Middle East 22%, former USSR 12,9% and Africa 12%, but some regions had a decline in consumption: Europe -11,5%, Pacific -9,7 % and North America -6%.

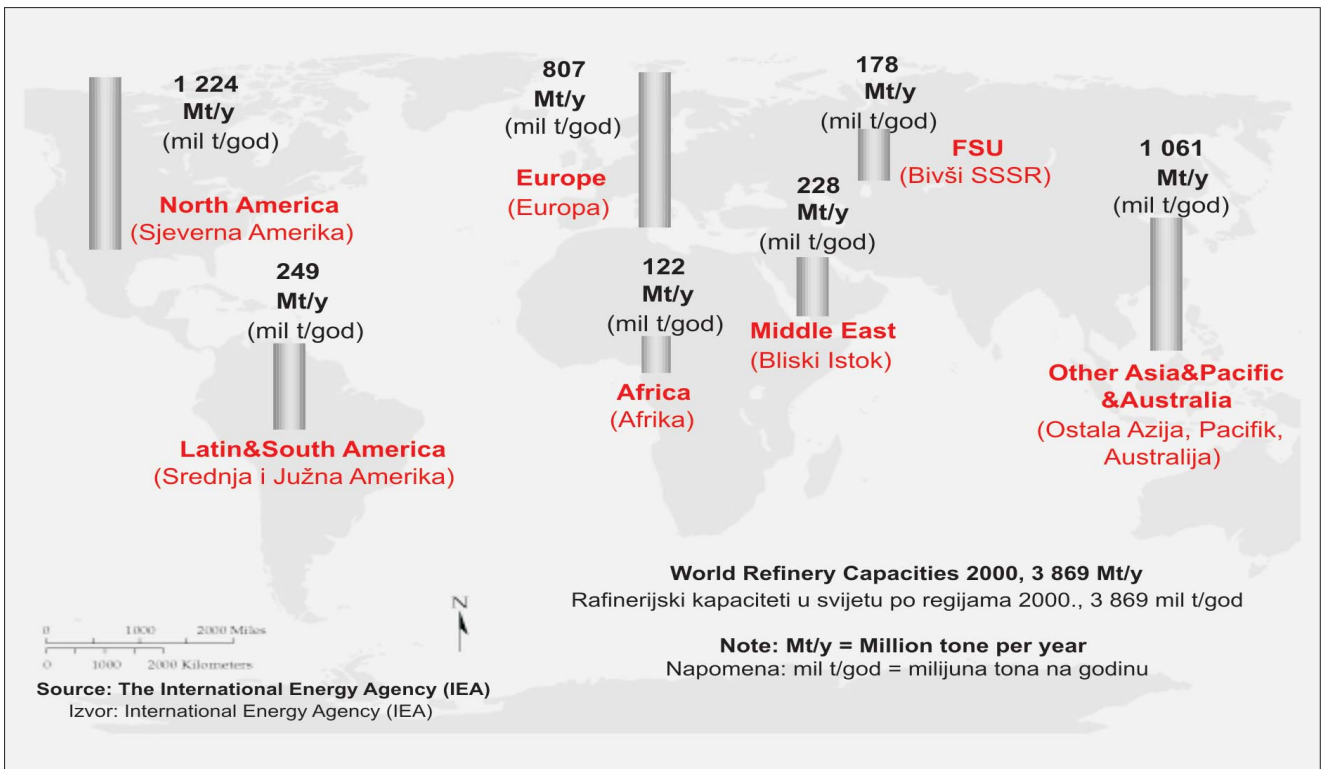
## WORLD REFINING IN 2000 and 2010

Total refining comprises processing in about 700 refineries with capacities presented in the figures 7,8,9,10, that follow by region, both in metric system in million tonnes per year (mil t/y or Mt/y) and in million barrels per day (mil bbl/d or Mbb/d) in 2000 and 2010.

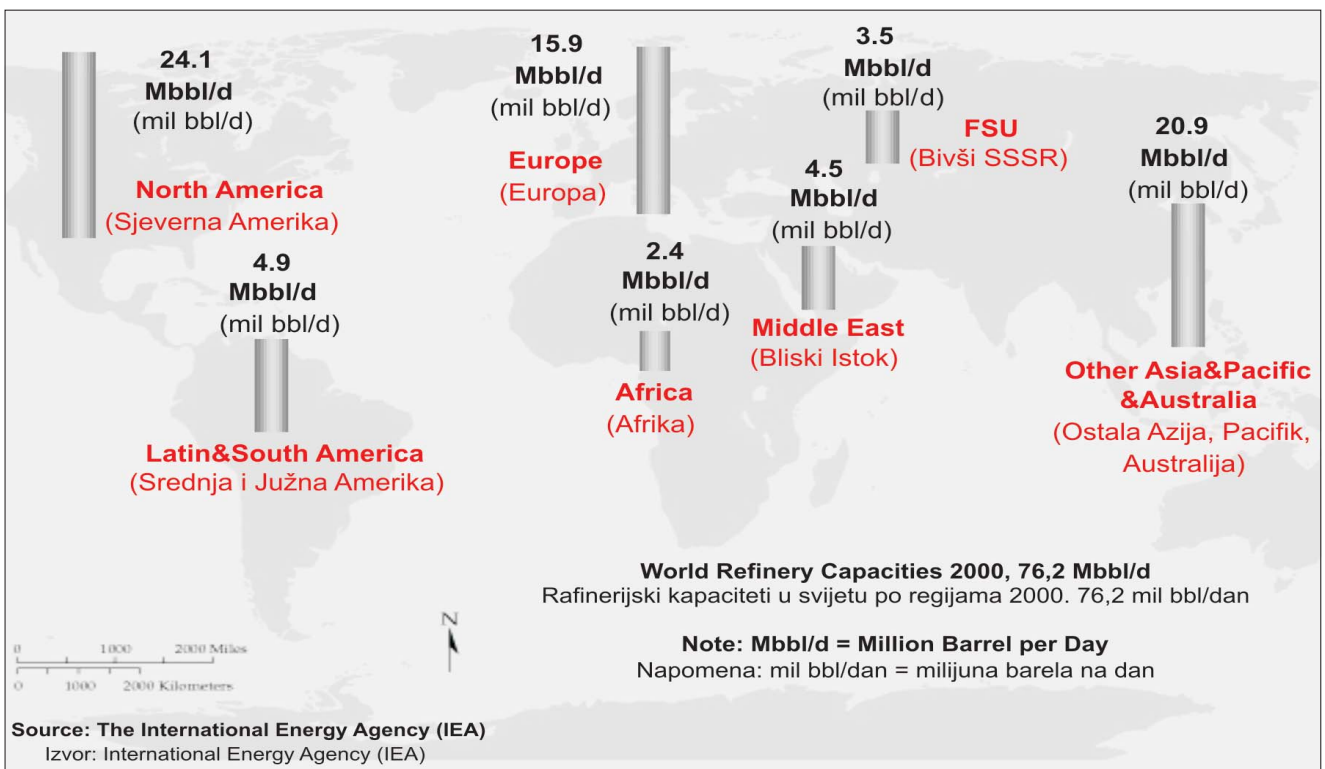
The text that follows brings table presentation of world refinery capacities in 2000 and 2010 (tables 3,4), both in million tonnes per year (mil t/y or Mt/y) and million barrels per day (mil bbl/d or Mbb/d).

World region	Oil Consumption in Mt/y		
	2000	2005	2010
North America	1 222	1 291	1 193
Latin America	245	254	313
Europe	804	829	721
Former USSR	177	193	214
Middle East	223	311	373
Africa	119	148	163
China	243	335	468
Other Asia	367	446	519
Pacific	438	438	389
Total	3 838	4 245	4 353

World region	Oil Consumption in Mbb/d		
	2000	2005	2010
North America	24.06	25.42	23.90
Latin America	4.83	5.00	6.28
Europe	15.83	16.33	14.45
Former USSR	3.49	3.80	4.29
Middle East	4.40	6.13	7.48
Africa	2.35	2.91	3.26
China	4.79	6.59	9.38
Other Asia	7.23	8.78	10.40
Pacific	8.62	8.63	7.79
TOTAL	75.60	83.59	87.23

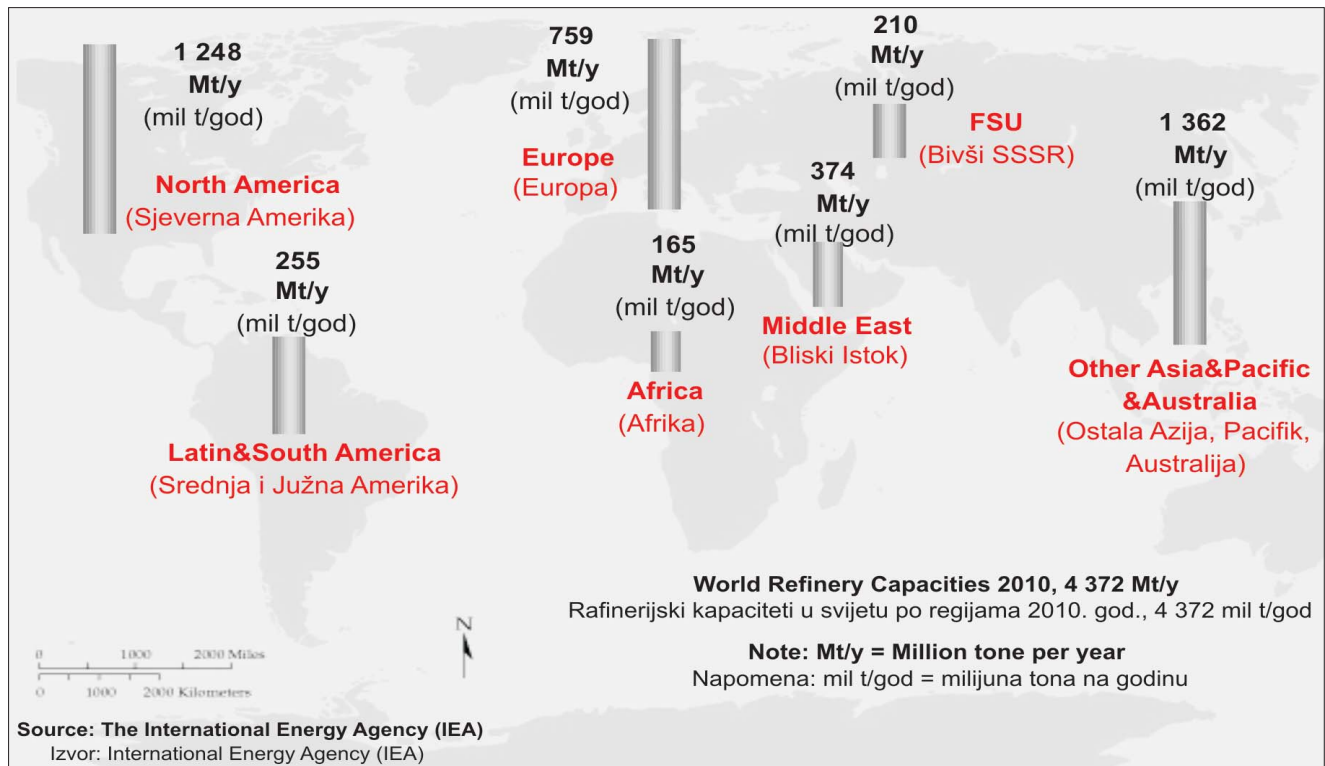


**Fig. 7. World refinery capacities by region 2000, Mt/y**  
 Sl. 7. Rafinerijski kapaciteti u svijetu po regijama 2000., milijuna t/god.

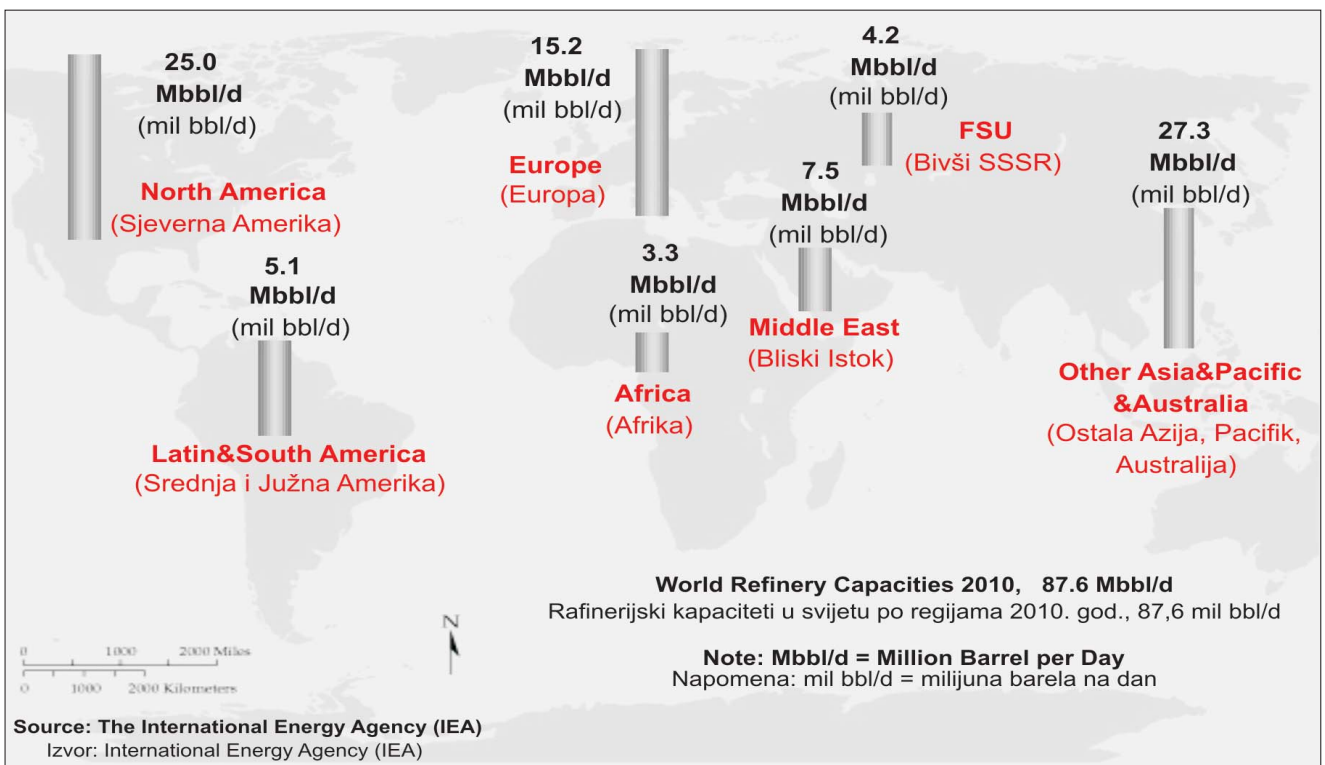


**Fig. 8. World refinery capacities by region 2000, M bbl/y**  
 Sl. 8. Rafinerijski kapaciteti u svijetu po regijama 2000., milijuna bbl/god.





**Fig. 9. World refinery capacities by region 2010, Mt/y**  
Sl. 9. Rafinerijski kapaciteti u svijetu po regijama 2010., milijuna t/god.



**Fig.10. World refinery capacities by region 2010, Mbbl/d**  
Sl. 10. Rafinerijski kapaciteti u svijetu po regijama 2010., milijuna bbl/god.

**Table 3. World Refinery Capacities, 2000 and 2010**

World region	Refinery capacity Mt/y	
	2000	2010
North America	1 224	1 248
Latin America	249	255
Europe	807	759
Former USSR	178	210
Middle East	228	374
Africa	122	165
Asia, Pacific, Australia	1 061	1 362
TOTAL	3 869	4 372

**Table 4. World Refinery Capacities, 2000 and 2010**

World region	Refinery capacity Mbbl/d	
	2000	2010
World region	24.10	25.00
Latin America	4.90	5.10
Europe	15.90	15.20
Former USSR	3.50	4.20
Middle East	4.50	7.50
Africa	2.40	3.30
Asia, Pacific, Australia	2.90	27.30
TOTAL	76.20	87.60

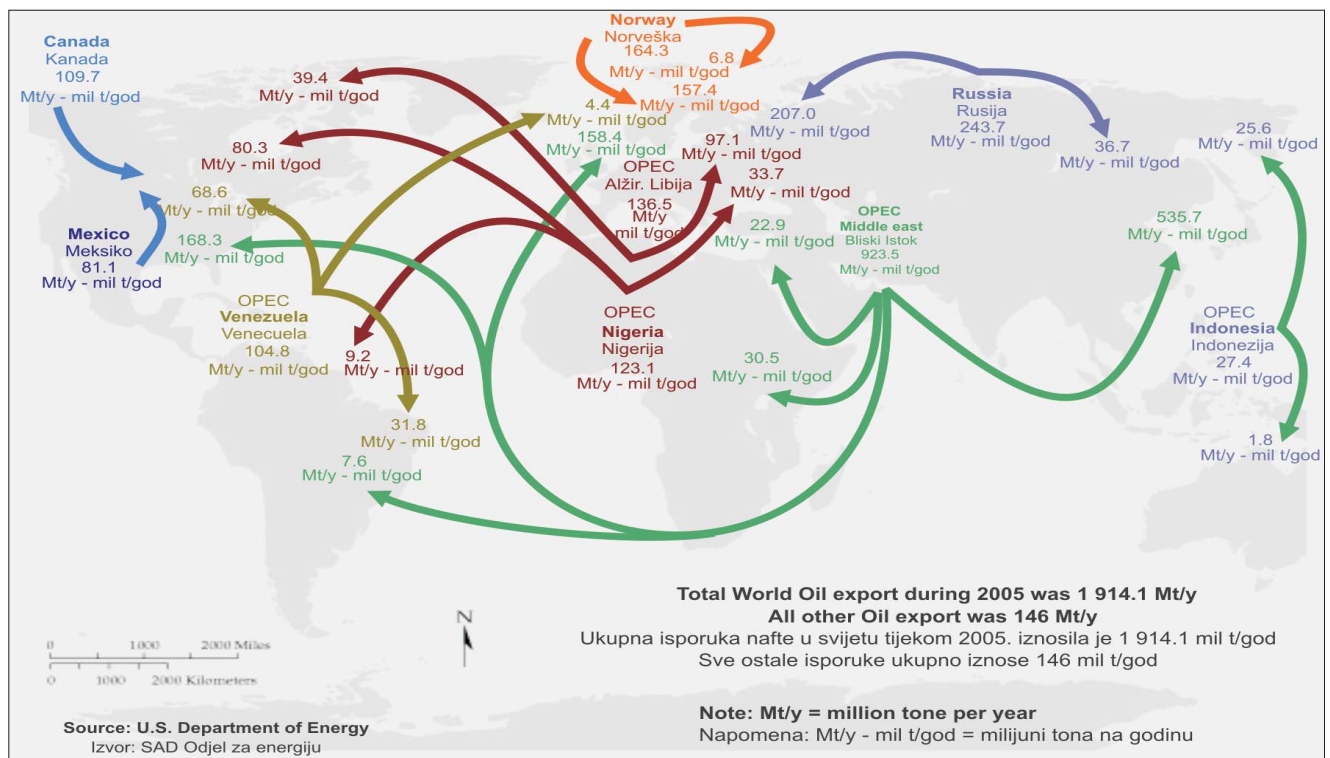
In the last decade, the world refinery capacity increased by 15%. North and Latin America had relatively modest growth of 4% while Europe had a decline of 4.5%. Other world regions had rather high growth of refinery capacity above average 15%, with highest growth in Middle East thanks to intensive construction of primary and secondary refining and petrochemical industry.

**SEA AND LAND TRANSPORT ROUTES – WORLD FLOW OF CRUDE OIL IN 2005 AND 2010**

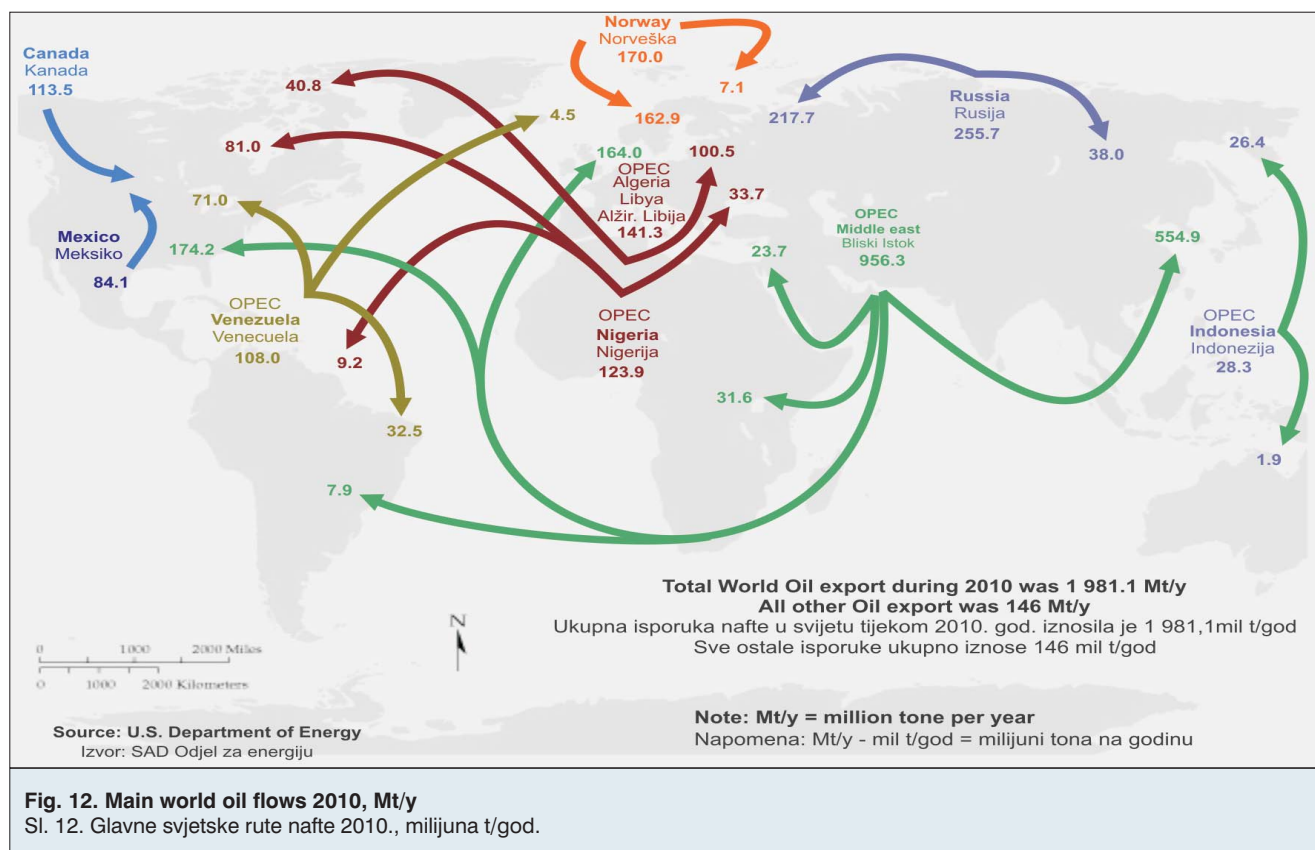
Main world oil flows comprise commercially available types of oil that are surplus in some regions of the world

and are distributed to the regions and countries that have deficit (figures 11, 12). The direction of transport routes from their start in certain region to the point of distribution are illustrated by typical colours and the width of arrow on the world map indicates the volume of transported oil. Respective numerical values denoting intensity of transport are expressed in million tonnes per year (mil t/year or Mt/y) and are marked in the same colour as arrows (routes).

The arrows, i.e. routes on the map cover over 93% of total world flow, while somewhat less than 7% of the flow is not included due to the lack of regional data (about 146



**Fig. 11. Main world oil flows 2005, Mt/y**  
 Sl. 11. Glavne svjetske rute nafte 2005., milijuna t/god.



**Fig. 12. Main world oil flows 2010, Mt/y**  
 Sl. 12. Glavne svjetske rute nafte 2010., milijuna t/god.

million t/y or 146 Mt/y) which are not balanced for the concrete region but only on global level.

It can be concluded that out of 4 438 million t/year of world oil production only 44.3% or

1 981.1 million t/year were distributed from oil rich regions to those with oil deficit.

The highest export of oil comes from the Middle East OPEC countries which in 2010 accounted for 48.3% of total export (1 981.1 million t/year), then follows Russia with 12.9%, Norway 8.6%, North African OPEC countries 7.1, Nigeria (also OPEC member) 6.3%, Canada 5.7%, Venezuela (OPEC member) 5.5%, Mexico 4.2% and Indonesia (OPEC member) 1.4%.

The largest import of oil goes to Europe which in 2010 accounted for 36.0% of world import, then Asia Pacific 31.3%, USA 28.5%, Africa 1.6%, Latin America 2.5% and Australia 0.1%.

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