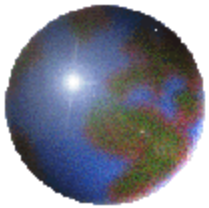
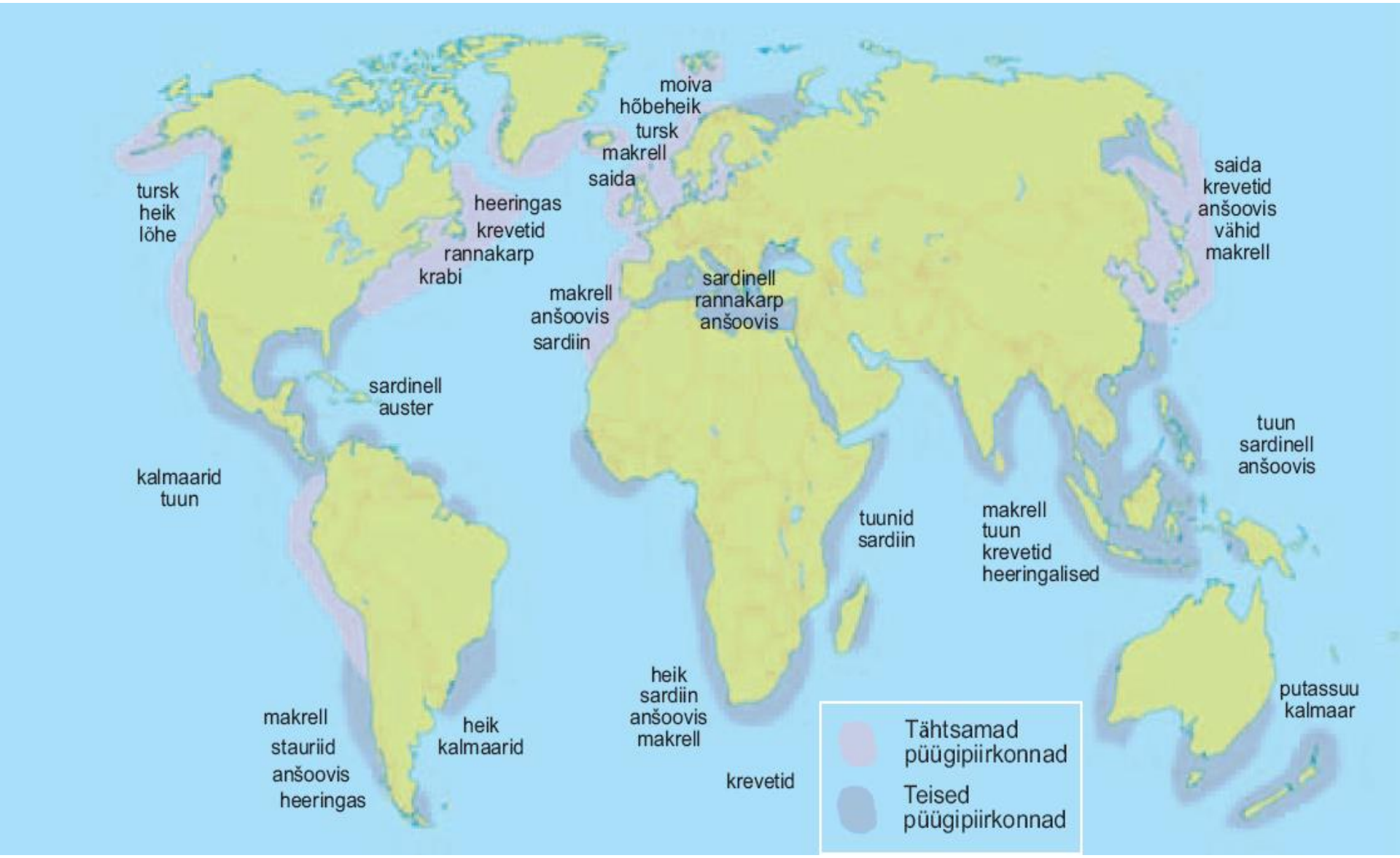
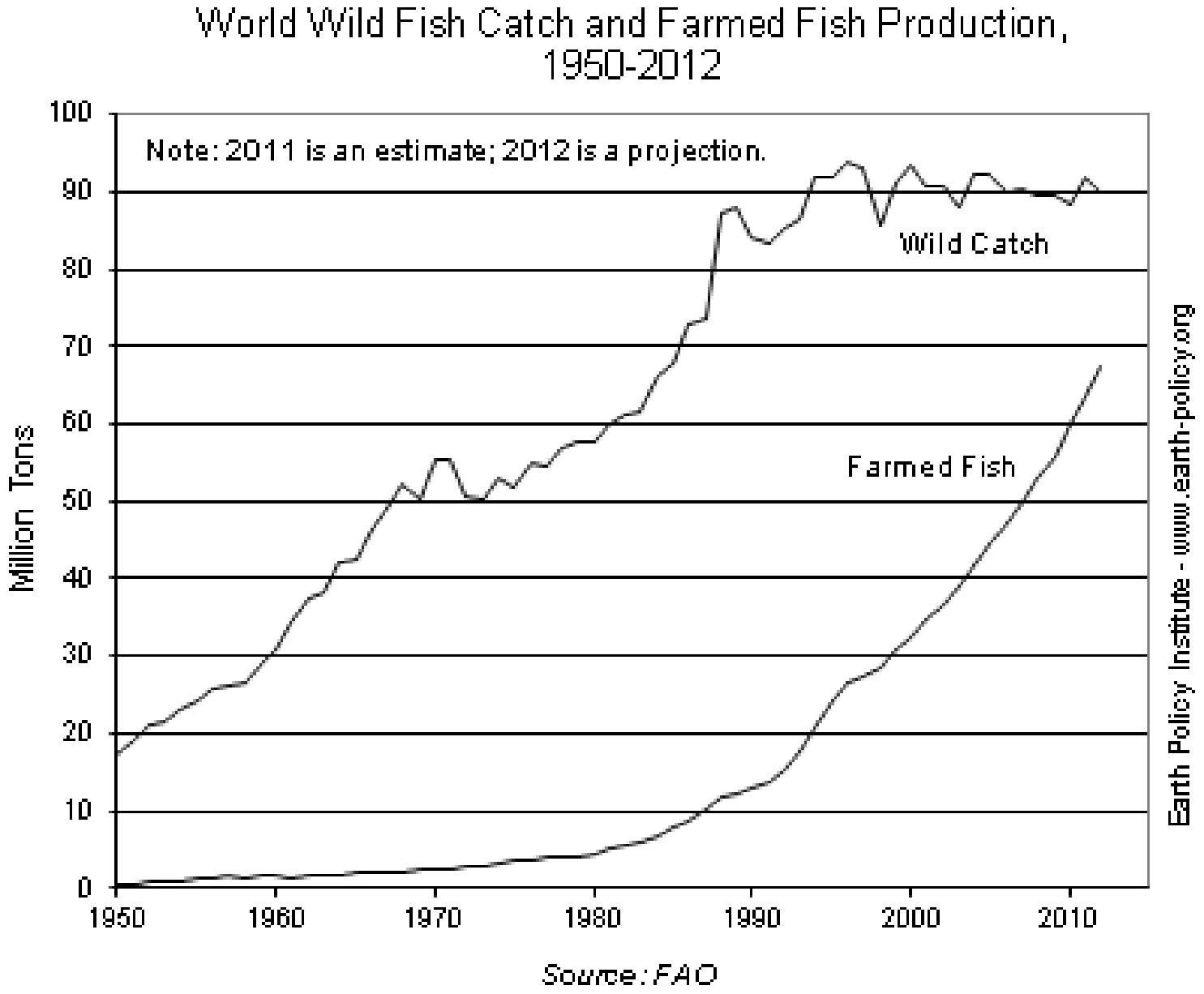


Kalandus


moiva
hõbeheik
tursk
makrell
saida
tursk
heik
lõhe
heeringas
krevetid
rannakarp
krabi
saida
krevetid
anšoovis
vähid
makrell
makrell
anšoovis
sardiin
sardinell
rannakarp
anšoovis
sardinell
auster
kalmaarid
tuun
tuun
sardinell
anšoovis
tuunid
sardiin
makrell
tuun
krevetid
heeringalised
heik
sardiin
anšoovis
makrell
putassuu
kalmaar
makrell
stauriid
anšoovis
heeringas
heik
kalmaarid
krevetid
Tähtsamad püügipiirkonnad
Teised püügipiirkonnad

Kalatoodang



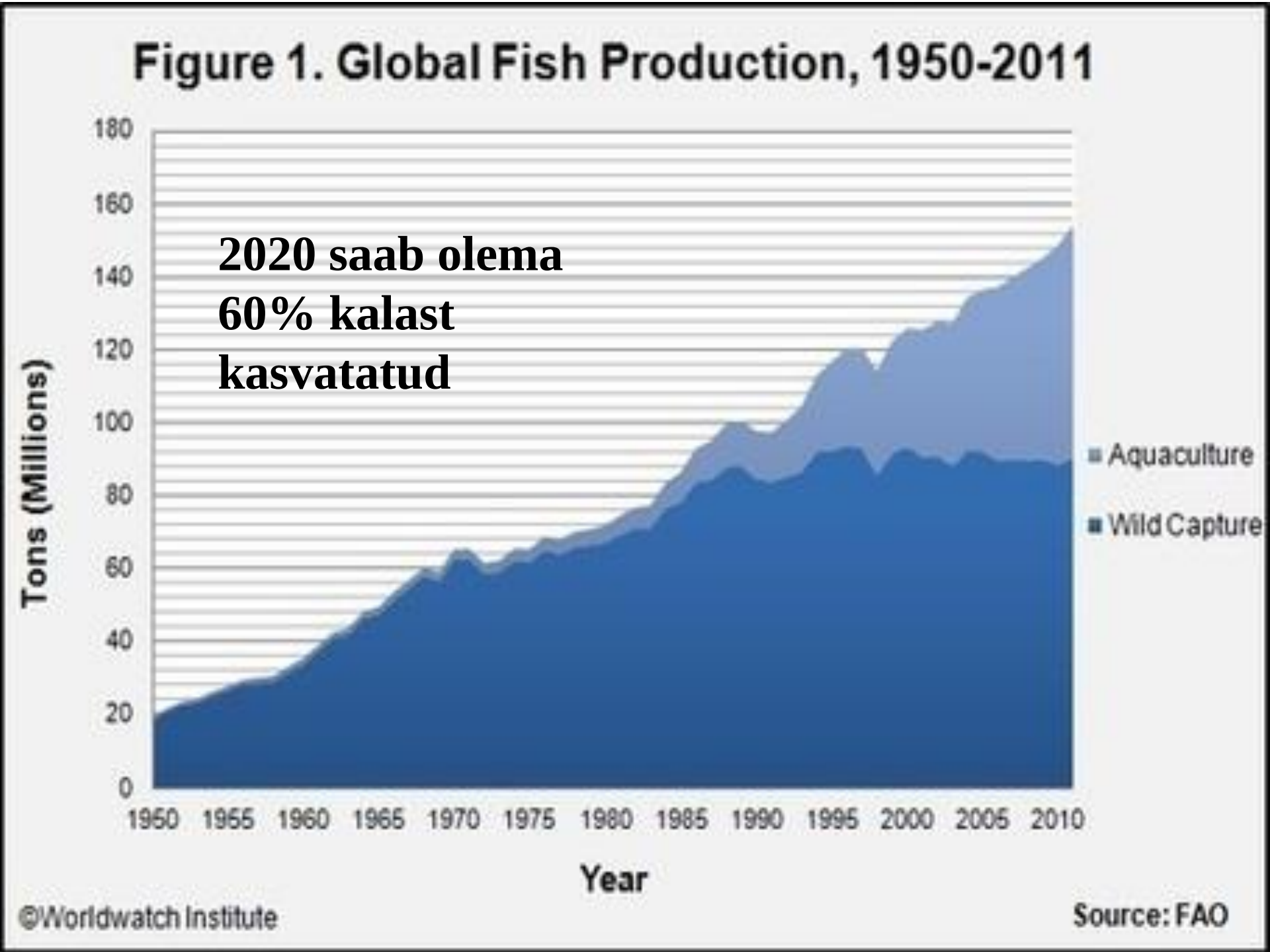
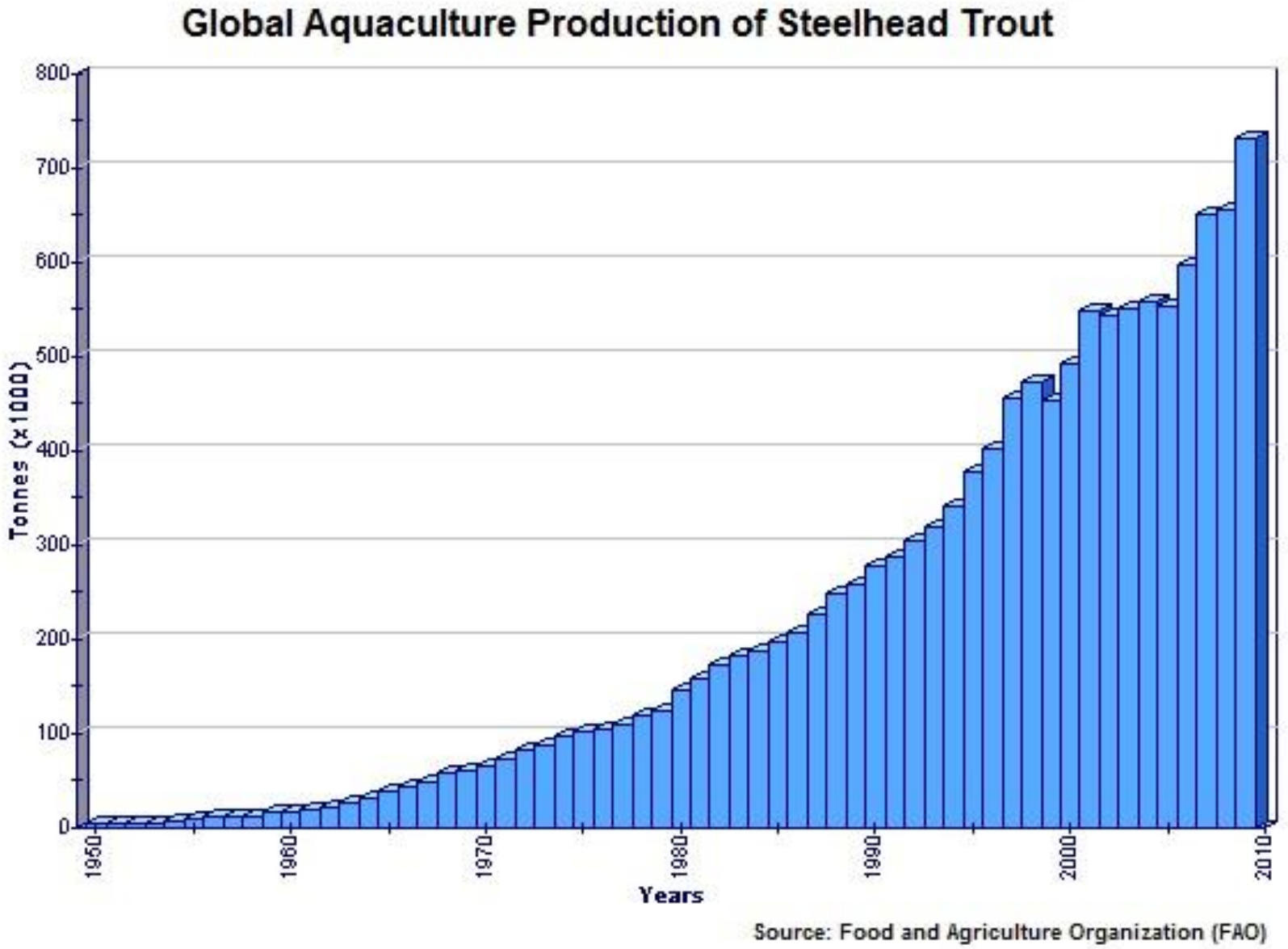


Figure 1. Global Fish Production, 1950-2011
2020 saab olema
60% kalast
kasvatatud
Tons (Millions)
180
160
140
120
100
80
60
40
20
0
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
Year
Aquaculture
Wild Capture
©Worldwatch Institute
Source: FAO

Kalakasvatus



Kala hind


1,600
1,400
1,200
1,000
800
600
400
200
0
USD/ton
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
Year

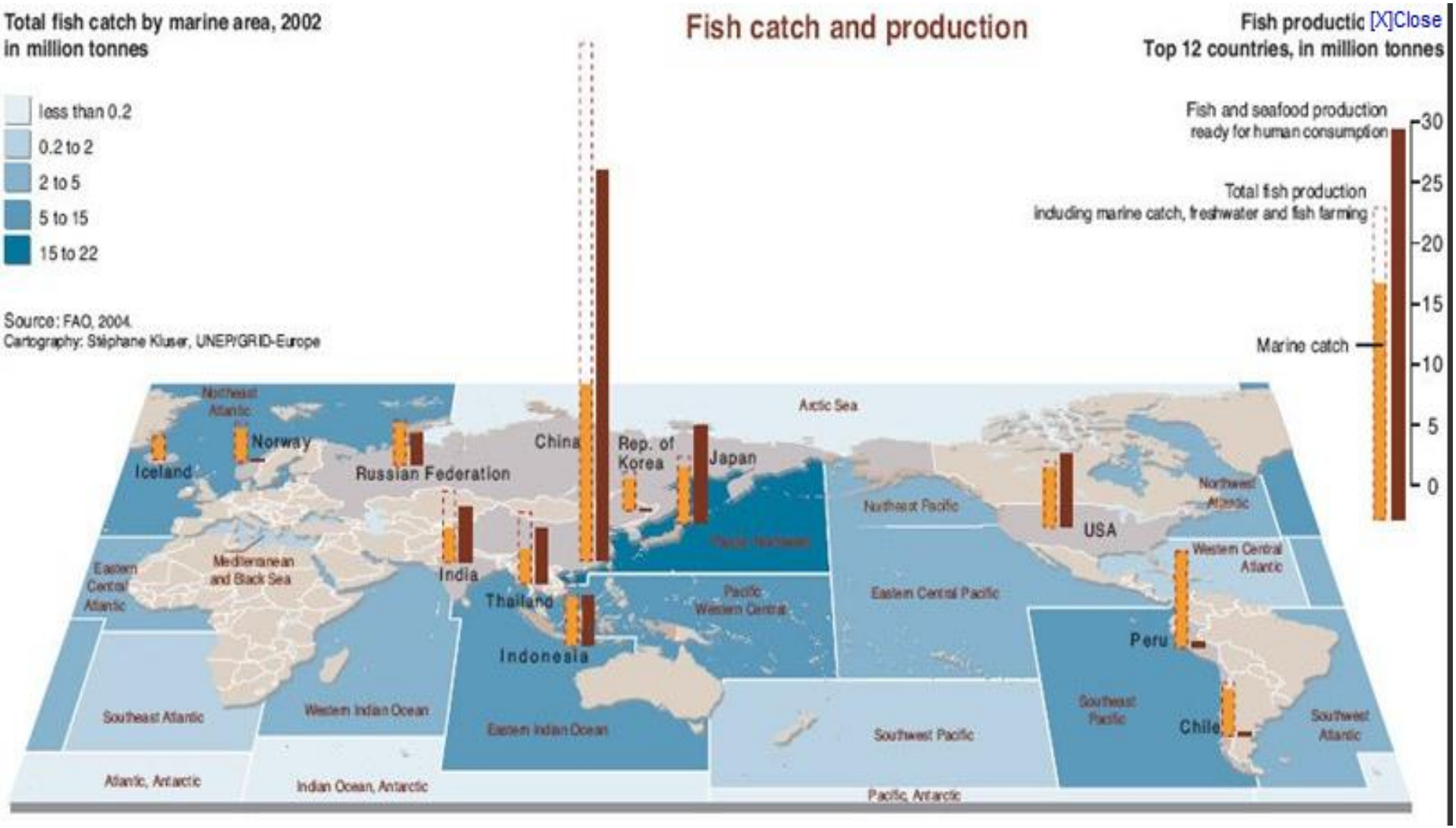

Fish catch and production
Total fish catch by marine area, 2002
in million tonnes
less than 0.2
0.2 to 2
2 to 5
5 to 15
15 to 22
Source: FAO, 2004.
Cartography: Stéphane Kluser, UNEP/GRID-Europe
Fish productic [X]Close
Top 12 countries, in million tonnes
Fish and seafood production
ready for human consumption
Total fish production
including marine catch, freshwater and fish farming
Marine catch
30
25
20
15
10
5
0
Northeast Atlantic
Norway
Iceland
Russian Federation
China
Rep. of Korea
Japan
Arctic Sea
Northeast Pacific
USA
Northwest Atlantic
Western Central Atlantic
Eastern Central Atlantic
Mediterranean and Black Sea
India
Thailand
Indonesia
Pacific Western Central
Eastern Central Pacific
Peru
Southeast Atlantic
Western Indian Ocean
Eastern Indian Ocean
Southwest Pacific
Southeast Pacific
Chile
Southwest Atlantic
Atlantic, Antarctic
Indian Ocean, Antarctic
Pacific, Antarctic

Table 1: World capture production in 2010 and 2011

	2010	2011	Variation
	million tonnes	million tonnes	
Inland capture	11.2	11.1	-1.6%
Marine capture	77.7	82.4	6.1%
Anchoveta	4.2	8.3	97.8%
Marine capture (excluding anchoveta)	73.5	74.1	0.8%
World total	**89.0**	**93.5**	**5.1%**

Country	2010	2011	Variation
China	15,417,011	15,772,054	2.3%
Peru	4,261,091	8,248,482	93.6%
Indonesia	5,380,196	5,707,684	6.1%
United States of America	4,425,961	5,153,452	16.4%
India	4,689,316	4,301,534	-8.3%
Russian Federation	4,069,624	4,254,864	4.6%
Japan	4,069,135	3,761,176	-7.6%
Myanmar	3,063,210	3,332,979	8.8%
Chile	2,679,742	3,063,449	14.3%
Viet Nam	2,414,400	2,502,500	3.6%
Philippines	2,611,762	2,363,221	-9.5%
Norway	2,680,187	2,281,429	-14.9%
Thailand	1,810,620	1,862,151	2.8%
Korea, Republic of	1,733,310	1,746,998	0.8%
Bangladesh	1,726,586	1,600,918	-7.3%
Mexico	1,528,945	1,566,365	2.4%
Malaysia	1,433,426	1,378,799	-3.8%
Iceland	1,060,641	1,138,462	7.3%
Spain	971,511	993,457	2.3%
Morocco	1,136,240	958,907	-15.6%

Scientific name	FAO English name	2010	2011	Variation
Engraulis ringens	Anchoveta(=Peruvian anchovy)	4,205,979	8,319,597	97.8%
Theragra chalcogramma	Alaska pollock(=Walleye poll.)	2,829,570	3,206,513	13.3%
Katsuwonus pelamis	Skipjack tuna	2,609,920	2,608,578	-0.1%
Clupea harengus	Atlantic herring	2,203,687	1,778,488	-19.3%
Scomber japonicus	Chub mackerel	1,633,113	1,714,896	5.0%
Engraulis japonicus	Japanese anchovy	1,199,195	1,321,662	10.2%
Trichiurus lepturus	Largehead hairtail	1,341,685	1,258,628	-6.2%
Decapterus spp	Scads nei	1,207,061	1,231,816	2.1%
Thunnus albacares	Yellowfin tuna	1,220,812	1,223,907	0.3%
Gadus morhua	Atlantic cod	951,934	1,049,666	10.3%
Sardina pilchardus	European pilchard(=Sardine)	1,245,956	1,036,708	-16.8%
Sardinella spp	Sardinellas nei	1,034,776	965,431	-6.7%
Scomber scombrus	Atlantic mackerel	887,444	944,748	6.5%
Dosidicus gigas	Jumbo flying squid	815,978	906,310	11.1%
Strangomera bentincki	Araucanian herring	750,750	887,272	18.2%
Sciaenidae	Croakers, drums nei	770,868	860,812	11.7%
Mallotus villosus	Capelin	506,897	851,472	68.0%
Sardinops caeruleus	California pilchard	696,585	639,235	-8.2%
Trachurus murphyi	Chilean jack mackerel	686,407	634,173	-7.6%
Brevoortia patronus	Gulf menhaden	438,640	623,369	42.1%

Maailma kalatootmine

Table 1 - World aquaculture production of food fish* by continent (million tonnes)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Share in 2011
Africa	0.4	0.5	0.5	0.6	0.6	0.8	0.8	0.9	1.0	1.3	1.4	2.2%
Americas	1.7	1.8	1.9	2.1	2.2	2.4	2.4	2.5	2.5	2.6	2.9	4.7%
Asia	30.3	32.4	34.2	36.9	39.2	41.8	44.2	47.0	49.5	52.4	55.5	88.5%
Europe	2.1	2.0	2.2	2.2	2.1	2.2	2.4	2.3	2.5	2.5	2.7	4.3%
Oceania	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3%
Total	**34.6**	**36.8**	**38.9**	**41.9**	**44.3**	**47.3**	**49.9**	**52.9**	**55.7**	**59.0**	**62.7**	
Annual growth rate	6.8%	6.3%	5.8%	7.7%	5.7%	6.8%	5.6%	6.0%	5.2%	5.9%	6.2%	

*Food fish = fishes, crustaceans, molluscs, amphibians, reptiles (excluding crocodiles) and other aquatic animals (such as sea cucumber, sea urchin, etc.) for human consumption.

Table 5 - World aquaculture production of food fish* by main groups of species (million tonnes)

	1970	1975	1980	1985	1990	1995	2000	2005	2010	2011
Fin fish	1.5	2.1	2.8	5.2	8.7	15.0	20.8	28.0	38.3	41.6
Molluscs	1.1	1.5	1.8	2.5	3.6	8.2	9.8	12.1	14.2	14.4
Crustaceans	0.0	0.0	0.1	0.3	0.8	1.1	1.7	3.8	5.7	5.9
Others	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.8	0.8
Total	**2.6**	**3.6**	**4.7**	**8.0**	**13.1**	**24.4**	**32.4**	**44.3**	**59.0**	**62.7**

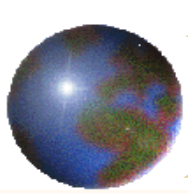
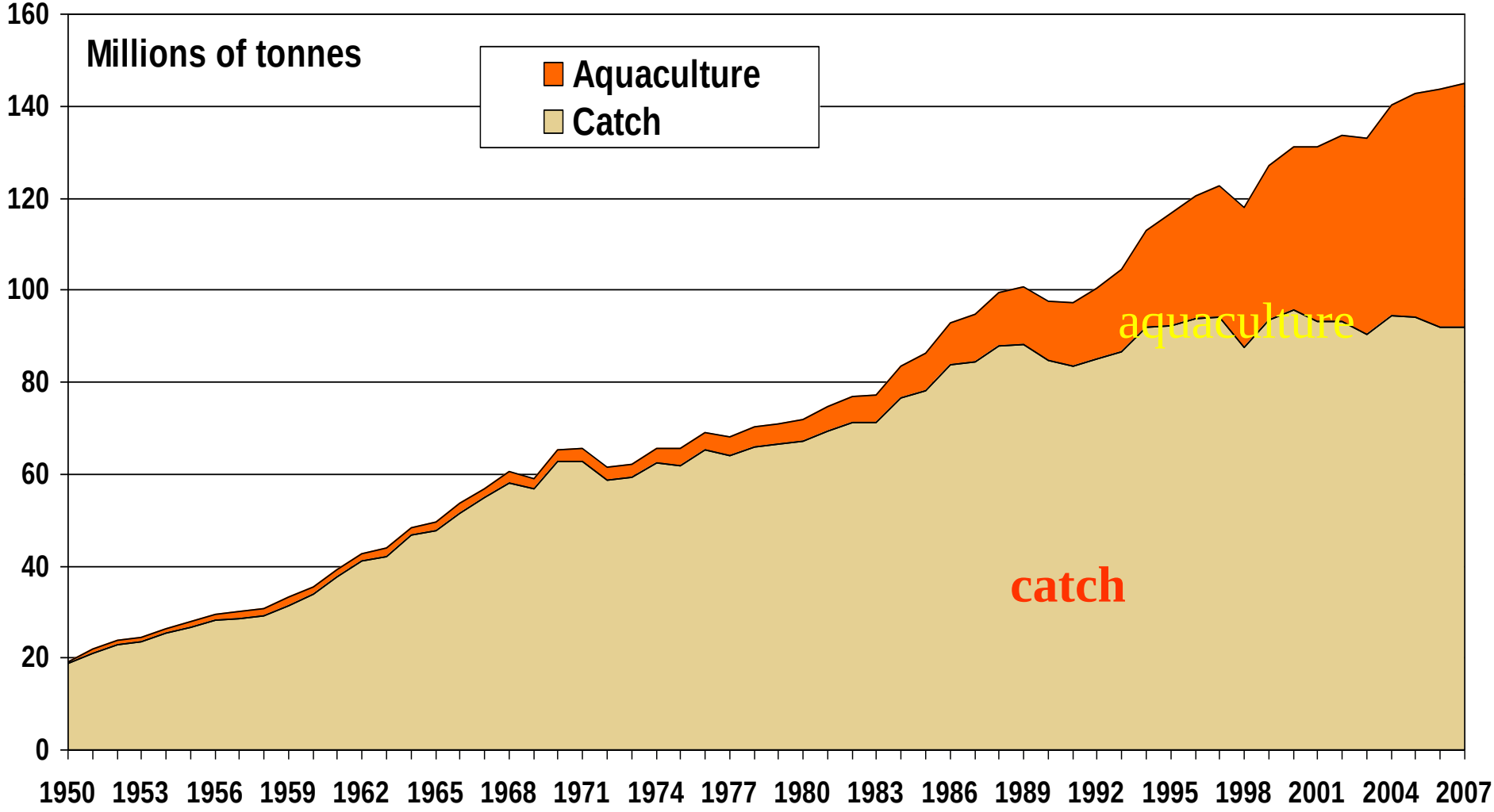


Table 4 – World top-20 aquaculture producers of food fish* in 2010 and 2011

Top producers in 2010		Quantity (tonnes)	Top producers in 2011		Quantity (tonnes)
1	China	36 734 215	1	China	38 621 269
2	India	3 785 779	2	India	4 573 465
3	Viet Nam	2 671 800	3	Viet Nam	2 845 600
4	Indonesia	2 304 828	4	Indonesia	2 718 421
5	Bangladesh	1 308 515	5	Bangladesh	1 523 759
6	Thailand	1 286 122	6	Norway	1 138 797
7	Norway	1 008 010	7	Thailand	1 008 049
8	Egypt	919 585	8	Egypt	986 820
9	Myanmar	850 697	9	Chile	954 845
10	Philippines	744 695	10	Myanmar	816 820
11	Japan	718 284	11	Philippines	767 287
12	Chile	701 062	12	Brazil	629 309
13	USA	496 699	13	Japan	556 761
14	Brazil	479 399	14	Korea, RO	507 052
15	Korea, RO	475 561	15	USA	396 841
16	Malaysia	373 151	16	Taiwan, POC	314 363
17	Taiwan, POC	310 338	17	Ecuador	308 900
18	Ecuador	271 919	18	Malaysia	287 076
19	Spain	252 351	19	Spain	271 961
20	France	224 400	20	Iran	247 262
Total of top-20 producers		***55 917 410***	***Total of top-20 producers***		***59 474 657***
Others		3 104 775	Others		3 225 644
World total		**59 022 185**	**World total**		**62 700 300**

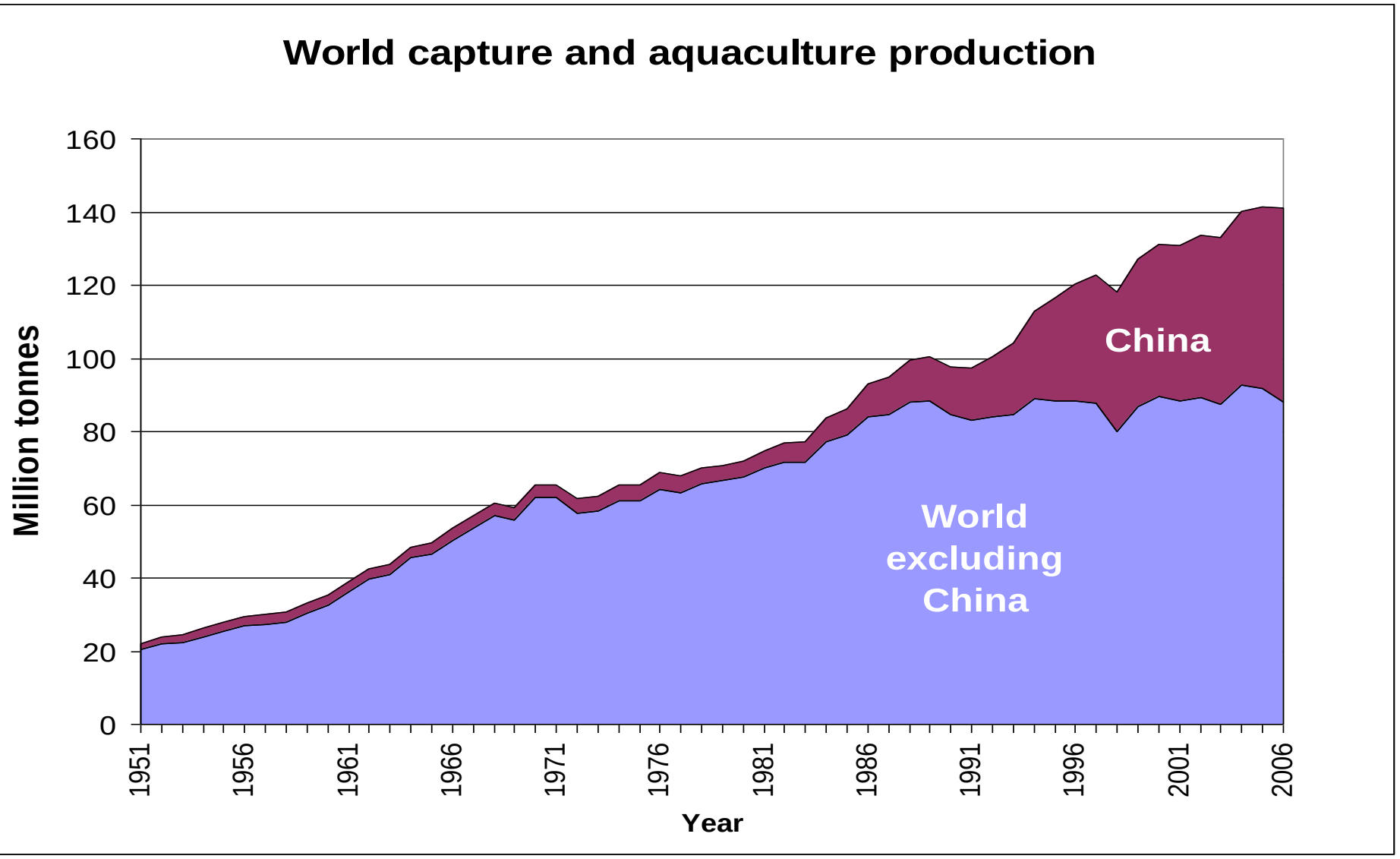
*Food fish = fishes, crustaceans, molluscs, amphibians, reptiles (excluding crocodiles) and other aquatic animals (such as sea cucumber, sea urchin, etc.) for human consumption.

World Fish Production

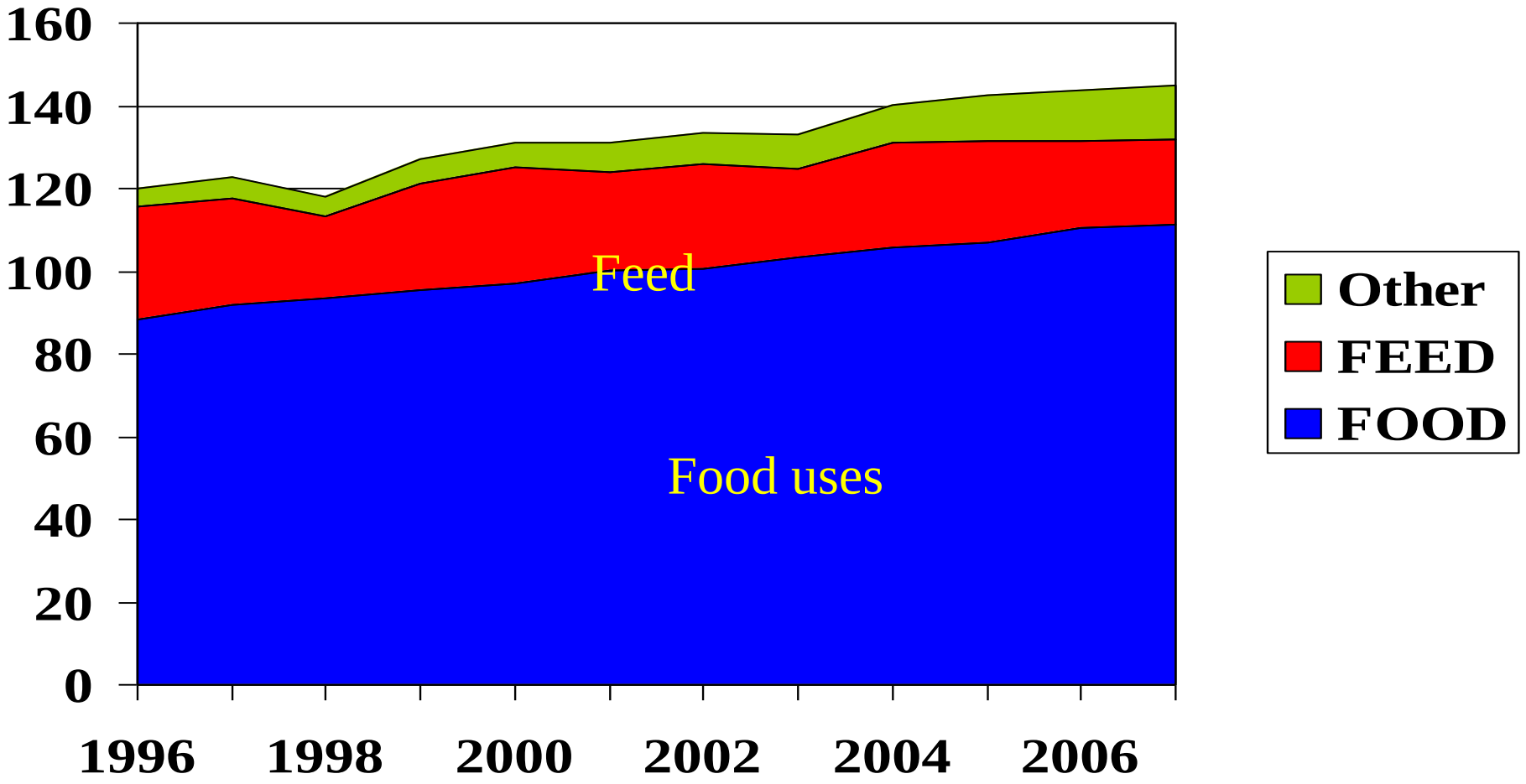


FISHSTAT 2007

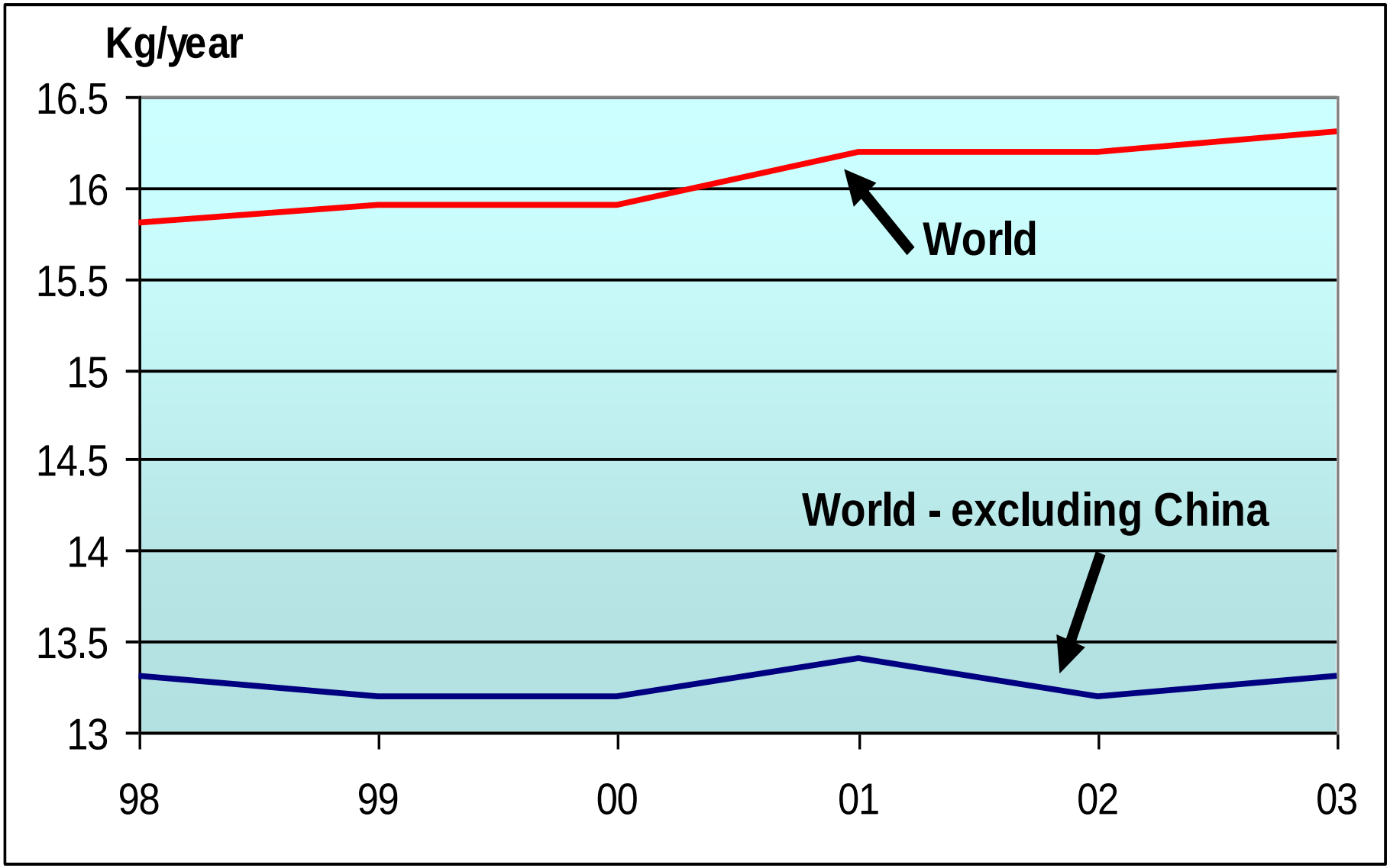
Role of China in production



Fish Utilization



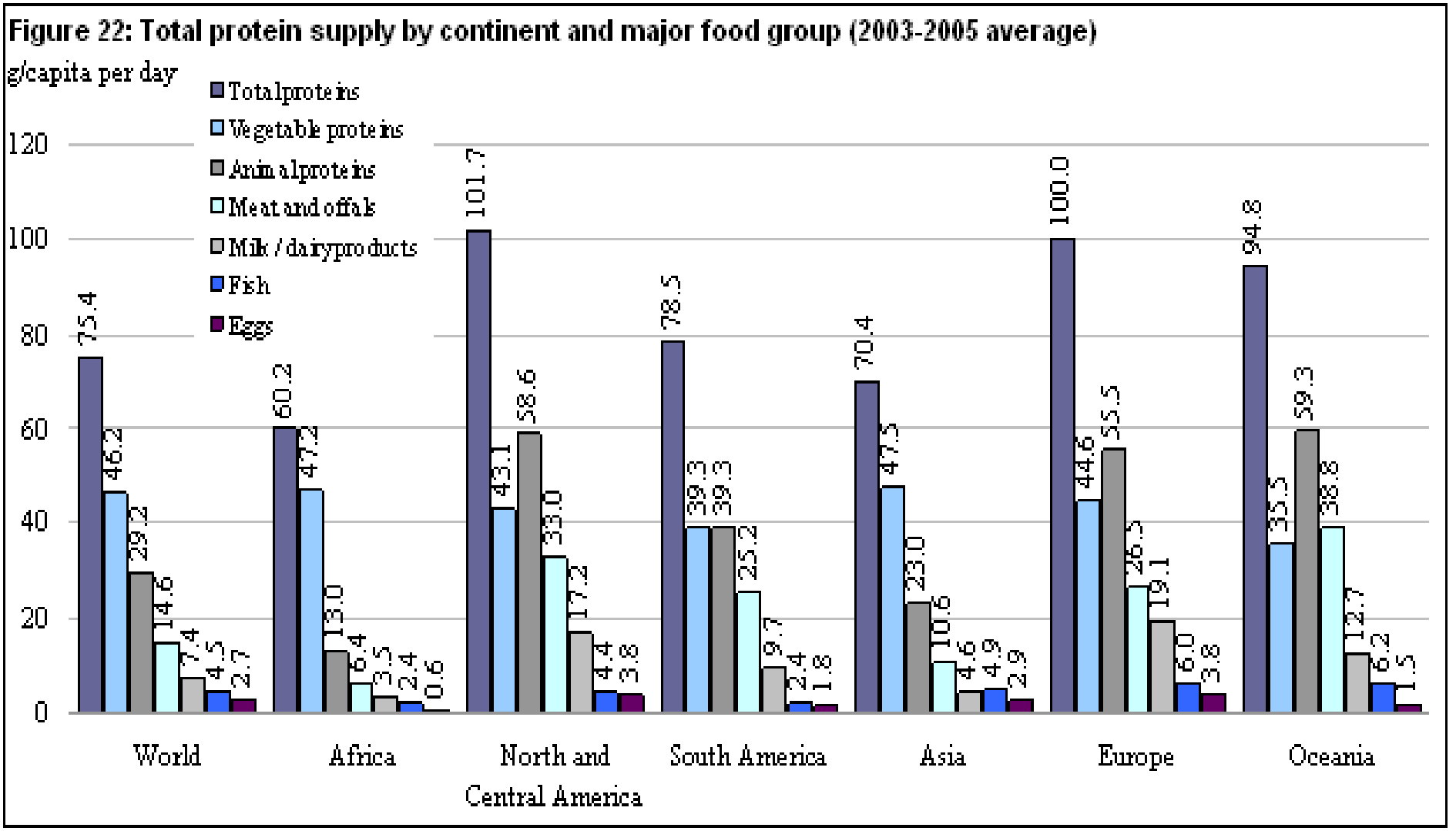
Per capita food fish supply (kg)



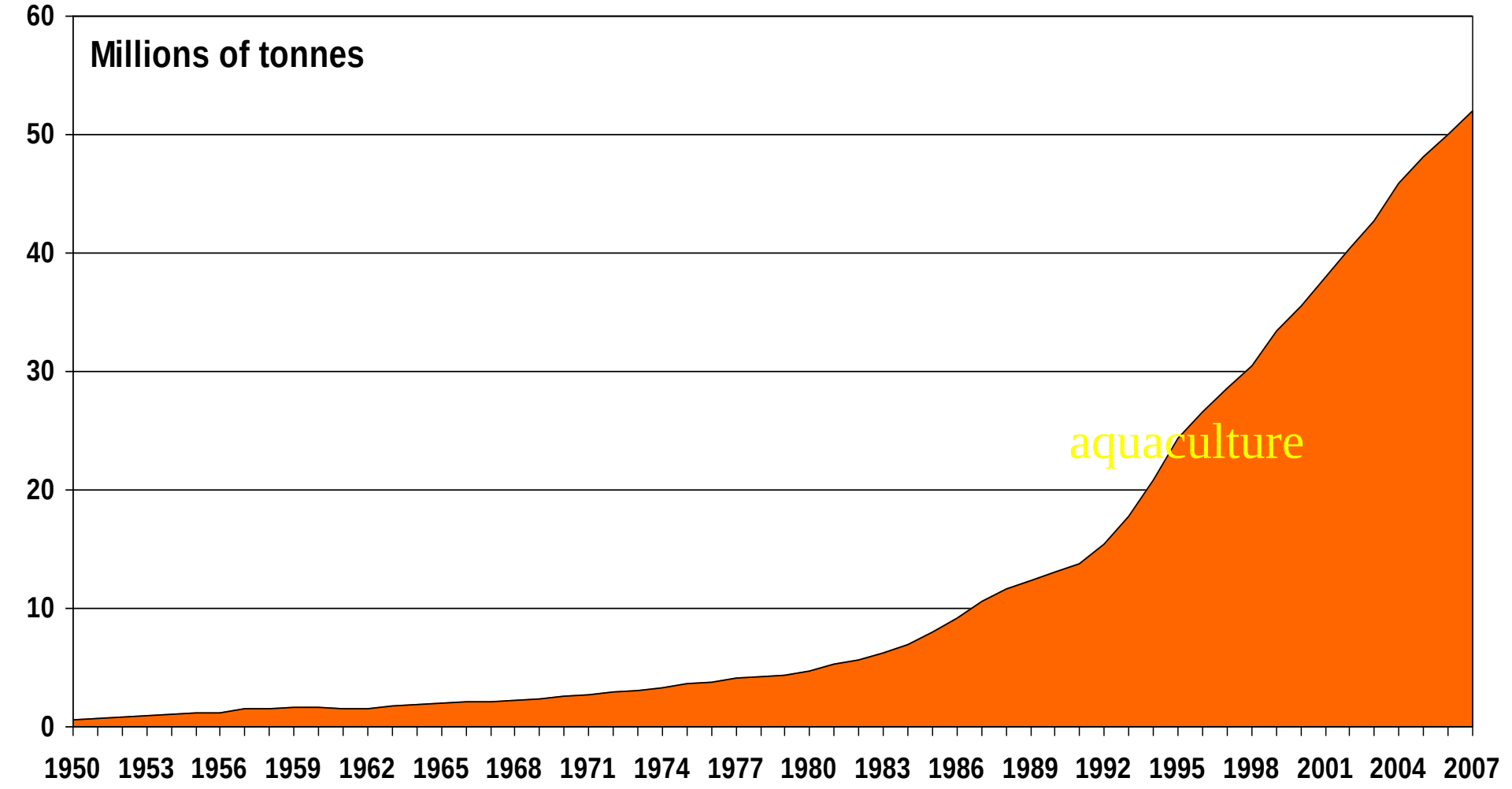
Per capita supply

Kg/year	2005	2006	2007	2007/06
Food fish	16.4	16.7	16.7	0
Capture	9.0	8.9	8.5	-4.3%
Farmed	7.4	7.8	8.1	3.3%

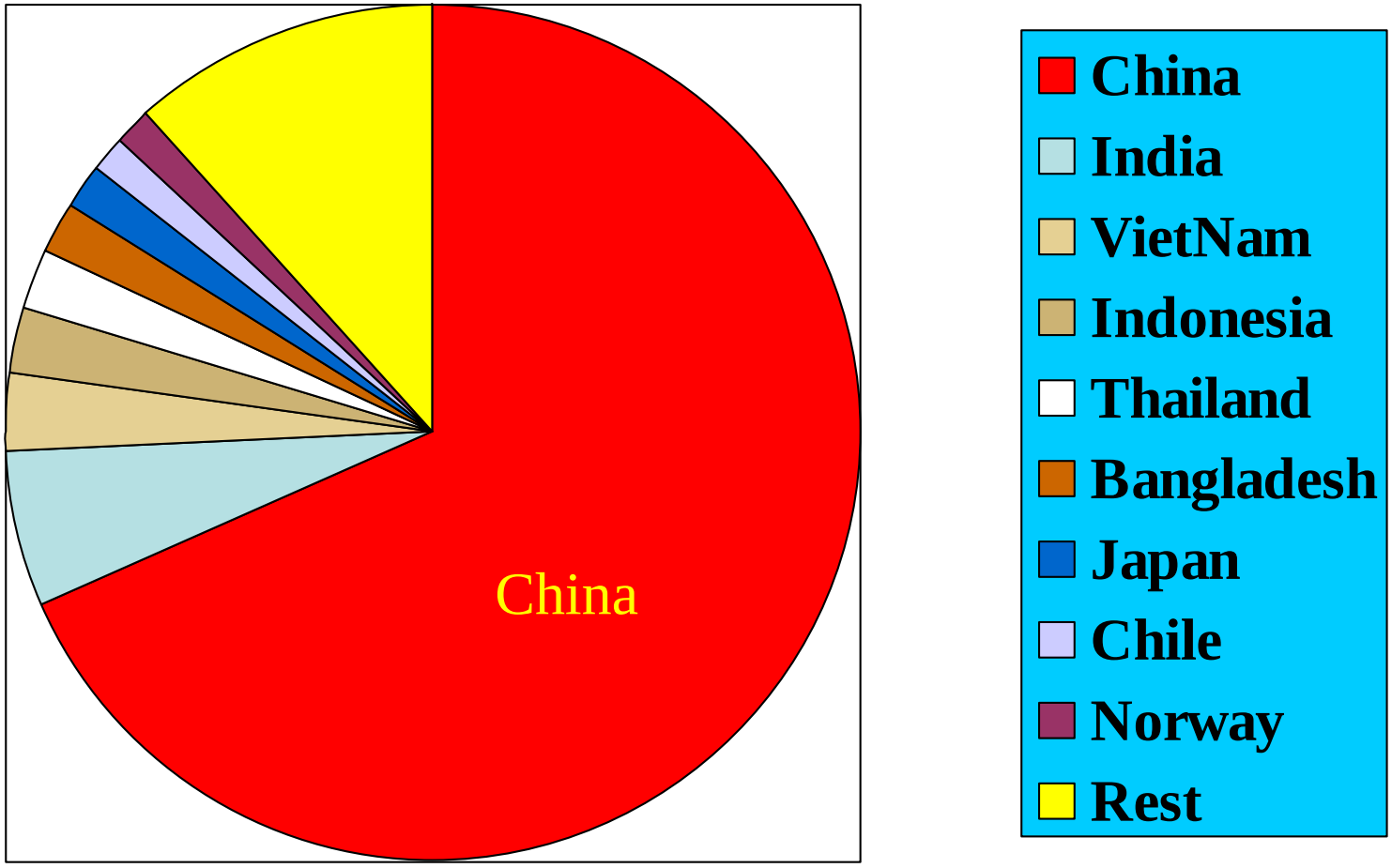
Fish in overall protein supply



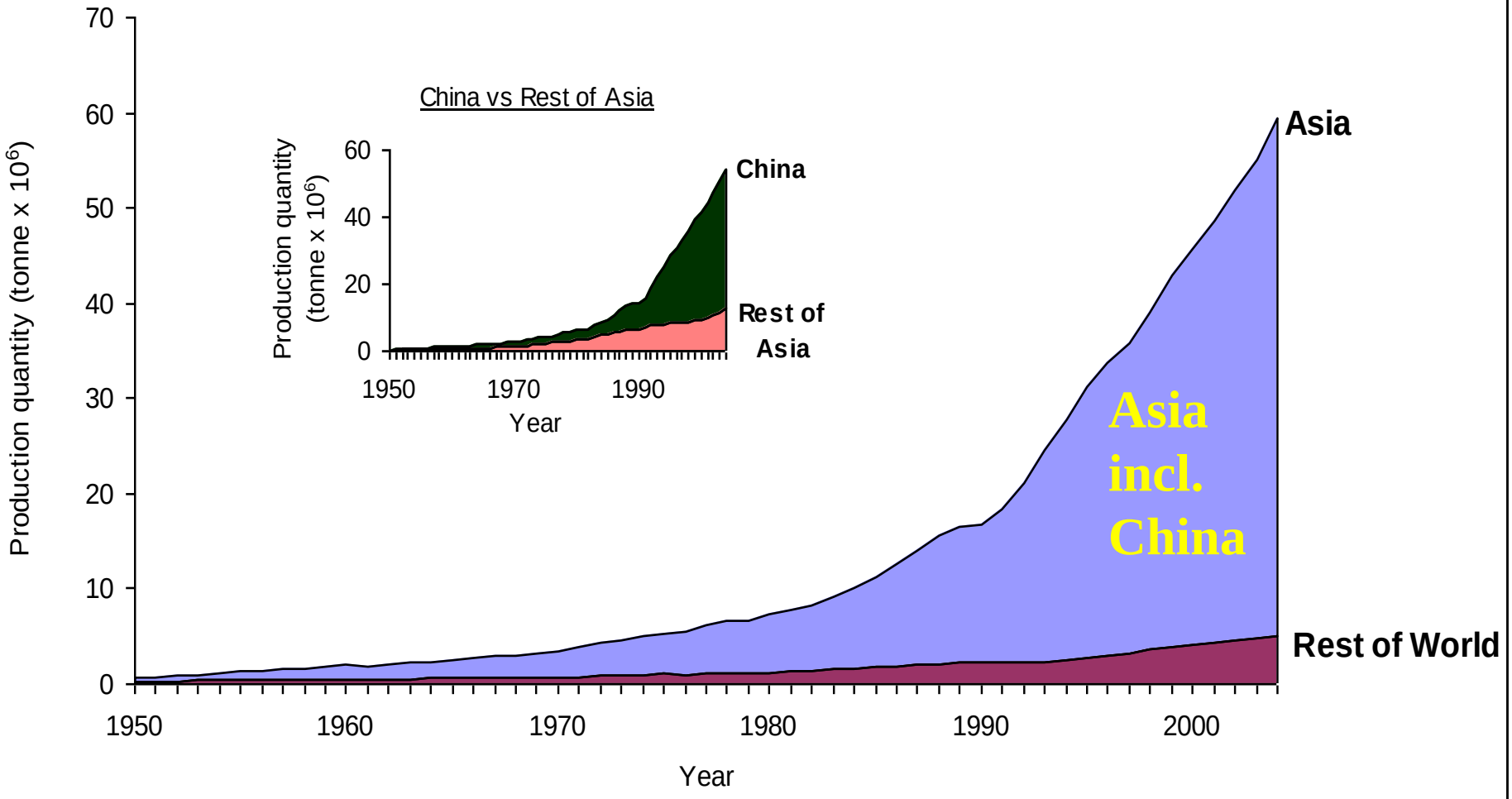
World aquaculture production



Aquaculture producers

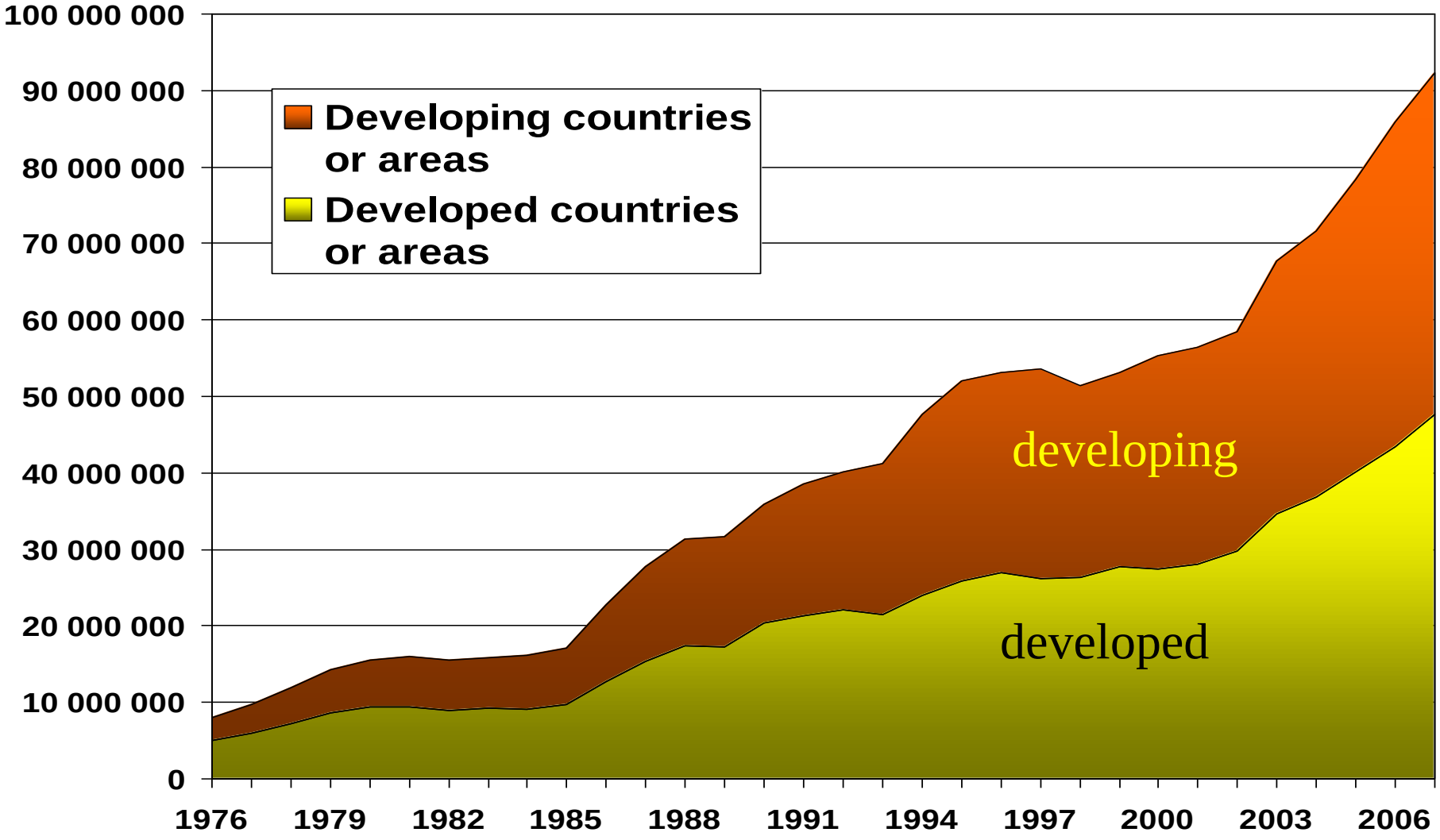


Global Aquaculture Production



World Fish Trade: Export Value

- in 1000 US$ -

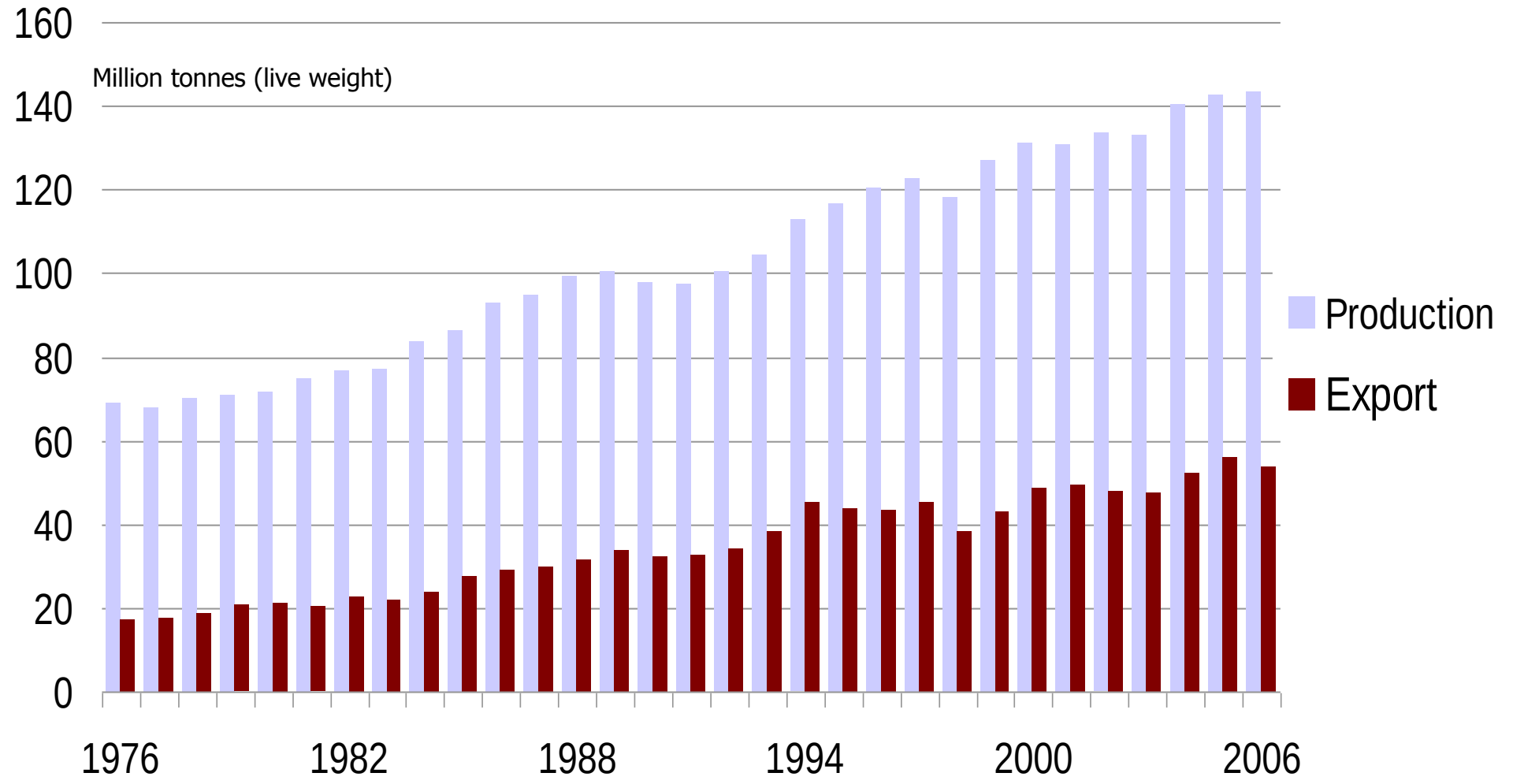


WORLD FISH EXPORTS

US$ 92 BILLION (2007)

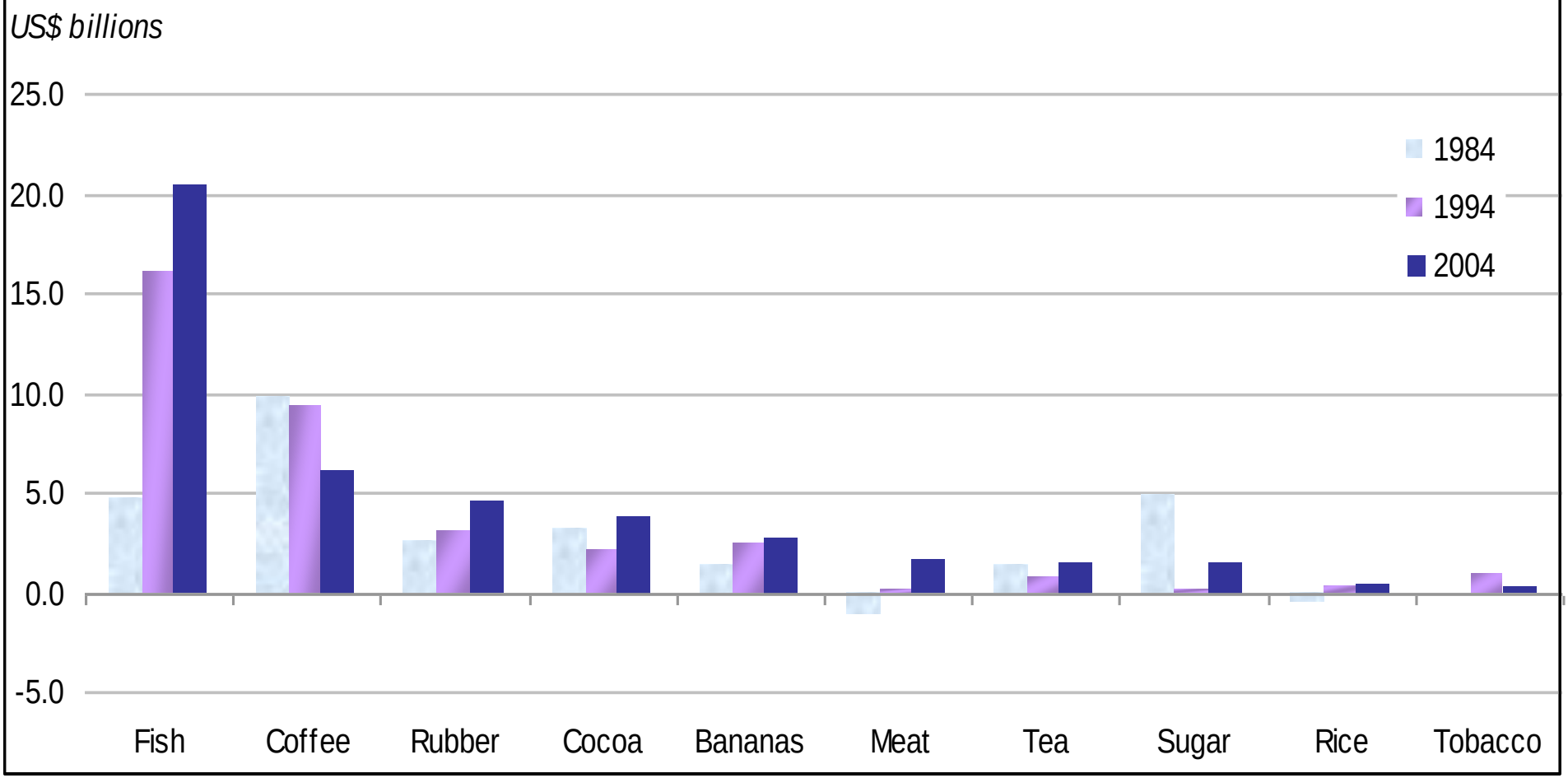
- **Trade is growing**
  - **+ 8 % (2007/06)**
- **Developing countries**
  - **50 % of world exports**
- **Net export revenues from fisheries crucial for many developing countries**
  - **Us$ 25 billion**

Share of world fisheries exports

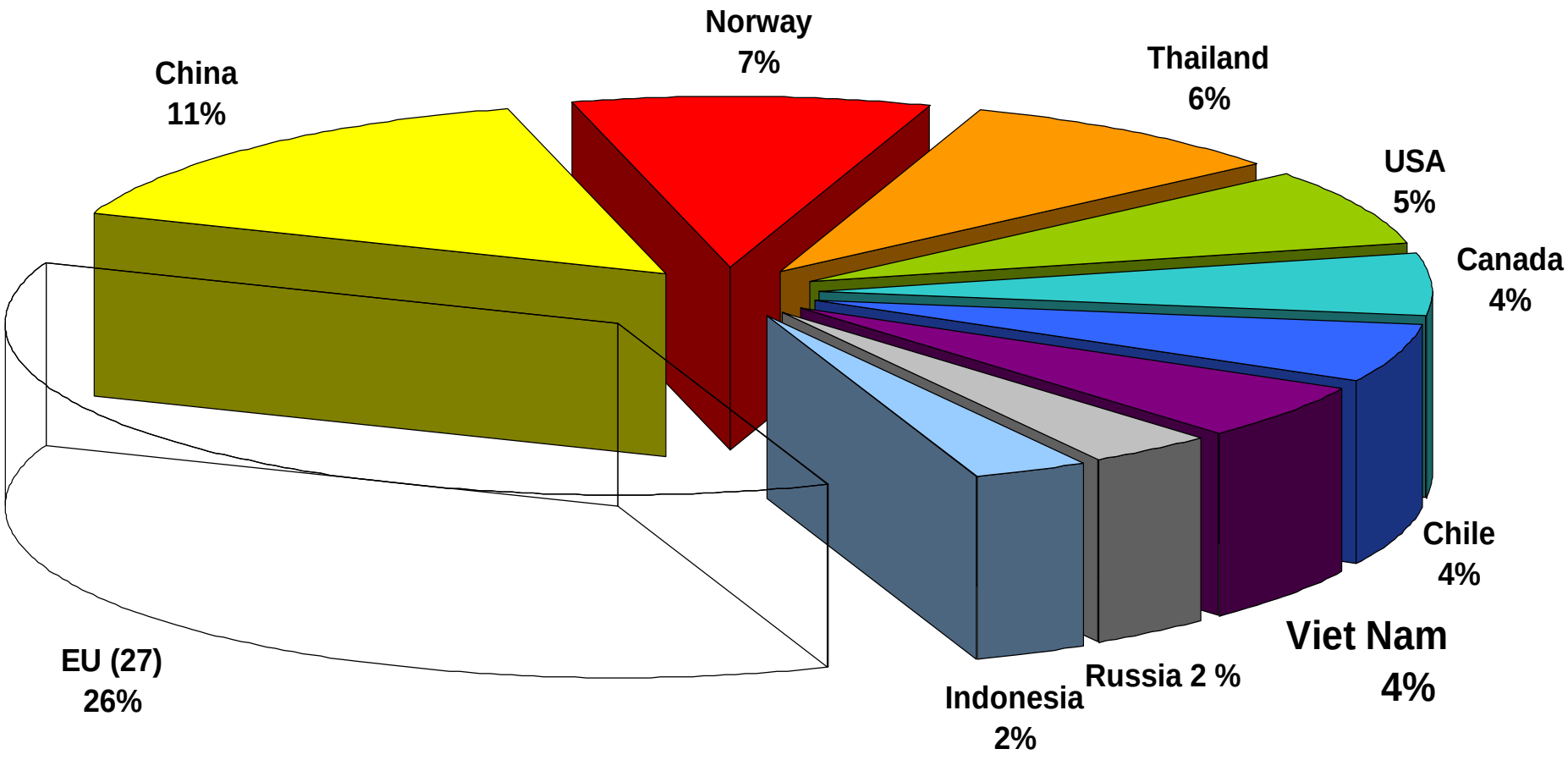


Developing countries exports

Figure 28: Net exports of selected agricultural commodities by developing countries



Main fish exporters 2007 (value)



Main fish importers (2007)

Japan	US$ 12.9 bill.	13.4 %
US	US$ 13.6 bill.	14.2 %
EU	US$ 41.8 bill.	43.5 %
Total big 3	US$ 68.3 bill.	71.1 %
Total world	**US$ 96.0 bill.**	**100 %**

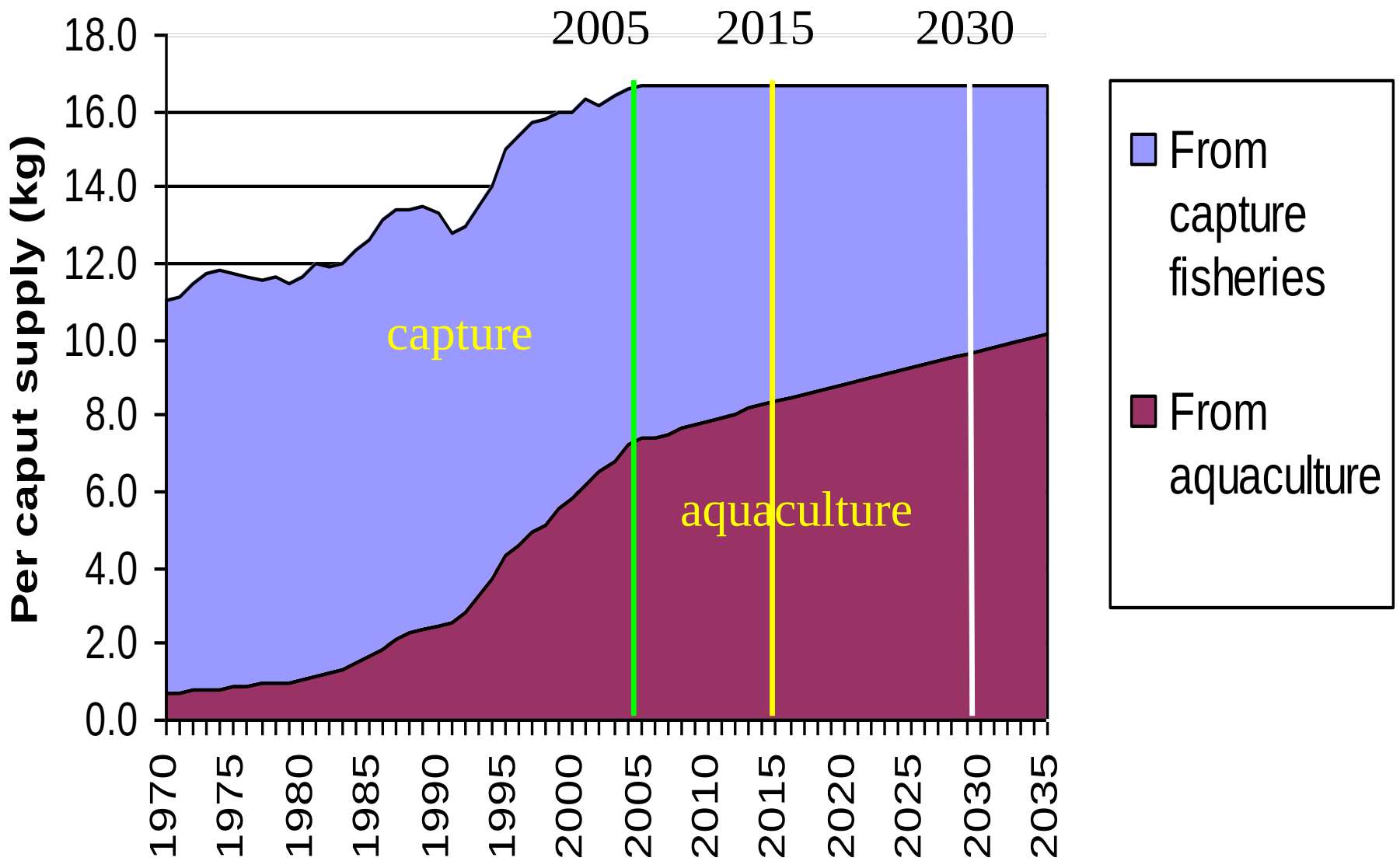
Fish market trends

- Japan: long-term decline
  - high consumption: 65 kg/kaput
  - imports below 3 million tons in 2007
- USA: long-term growth, soon # 1 country
  - rising population and consumption /kaput 24 kg
    - but weak dollar
    - consumer confidence falling 2008
- EU: long-term growth: # 1 market
  - expanding population, stable consumption at 20 kg
  - rising imports: e.g. catfish from Viet Nam, mussels from Chile
- Latin America
  - low average consumption, 9 kg per kaput, slow increase
  - large potential for increase
  - supply increase must come from aquaculture
  - growing markets in Brazil, Mexico.
  - for Chile's salmon exports, Latin America is now a larger market than the EU

AQUACULTURE FUTURE

- fastest growing food producing sector in the world
- accounts for almost 50% of the global food fish
- 53 million tons of fish produced worth US$ 75 billion (2007)
- Given the projected population growth, an additional 40 million tons of aquatic food needed by 2030 to maintain current per capita consumption.

Akvakultuuri prognoos



Conclusions

- Fish has always been a globalised commodity
  - but of higher importance for developing countries than most other commodities
- Fish production is increasing, but only thanks to aquaculture: 50% share in 2008 in food fish
- Fish trade is increasing
- Fish trade: big 3 import 71 % but in decline
- Outsourcing of production and of processing
- Rise of China and Viet Nam, and Russia
- Future: India ?