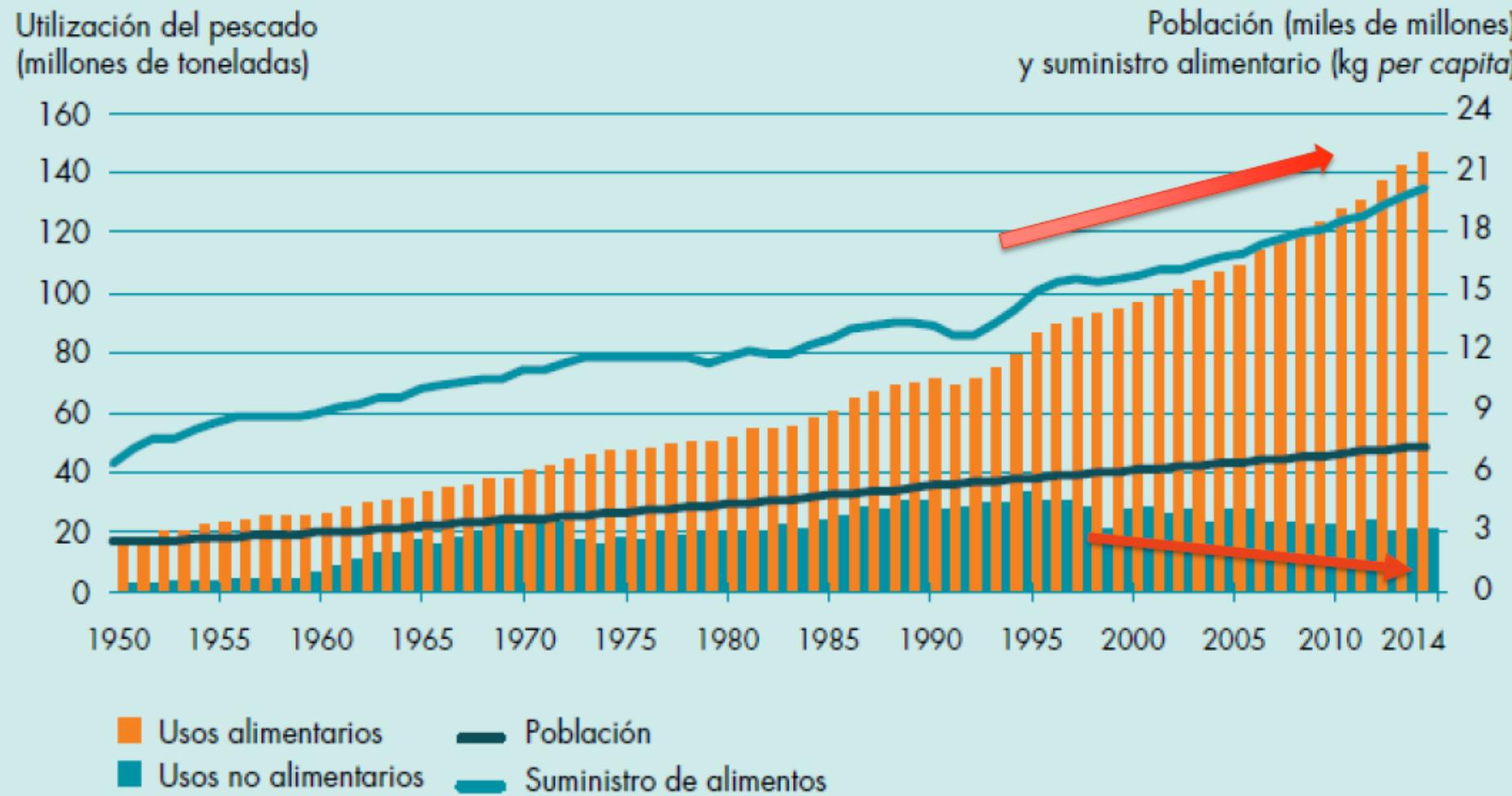


I CONGRESO INTERNACIONAL DE ACUICULTURA Y DESARROLLO RURAL

**Situación Actual de la Acuicultura en América Latina,
retos y oportunidades.**

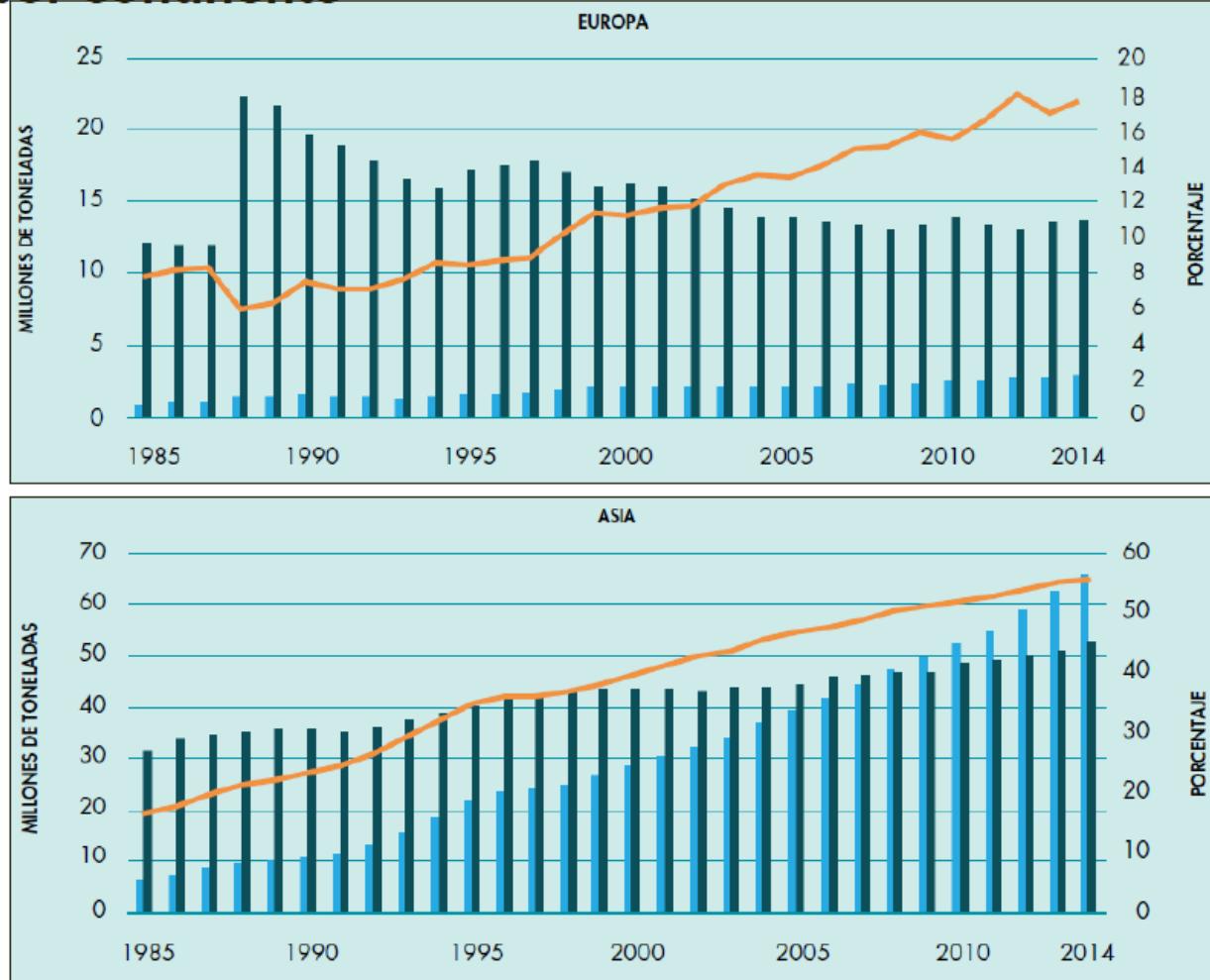
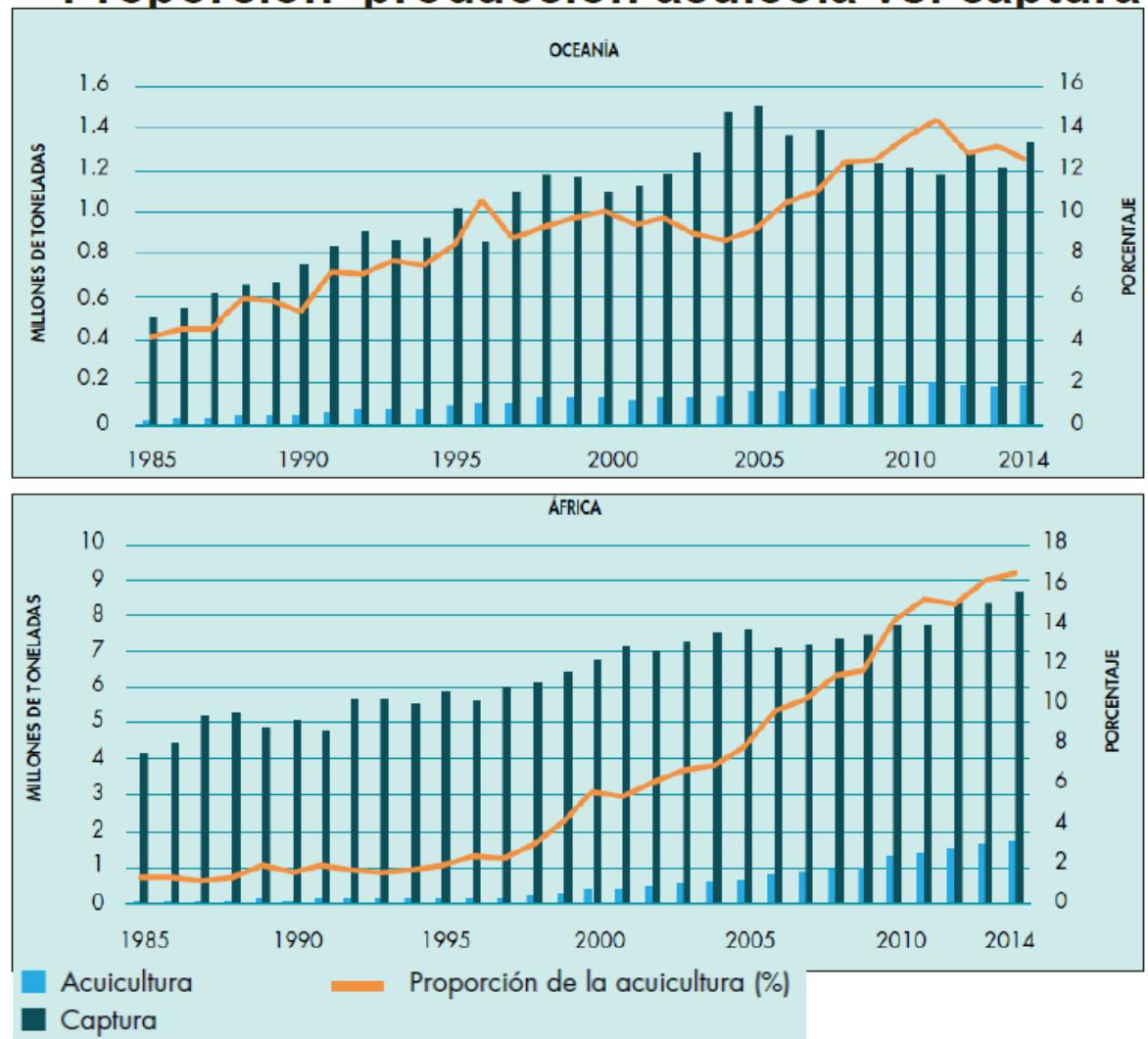
**Carlos E Pulgarín
Consultor International para la Acuicultura
FAO**

UTILIZACIÓN Y SUMINISTRO MUNDIALES DE PESCADO

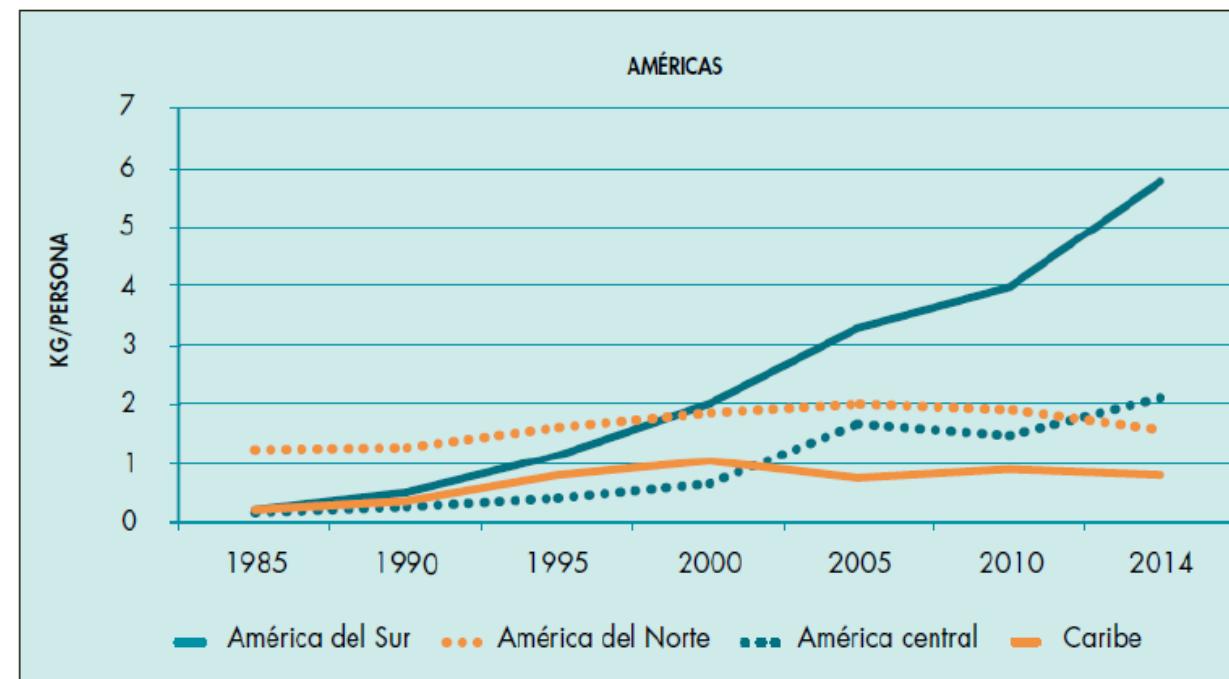
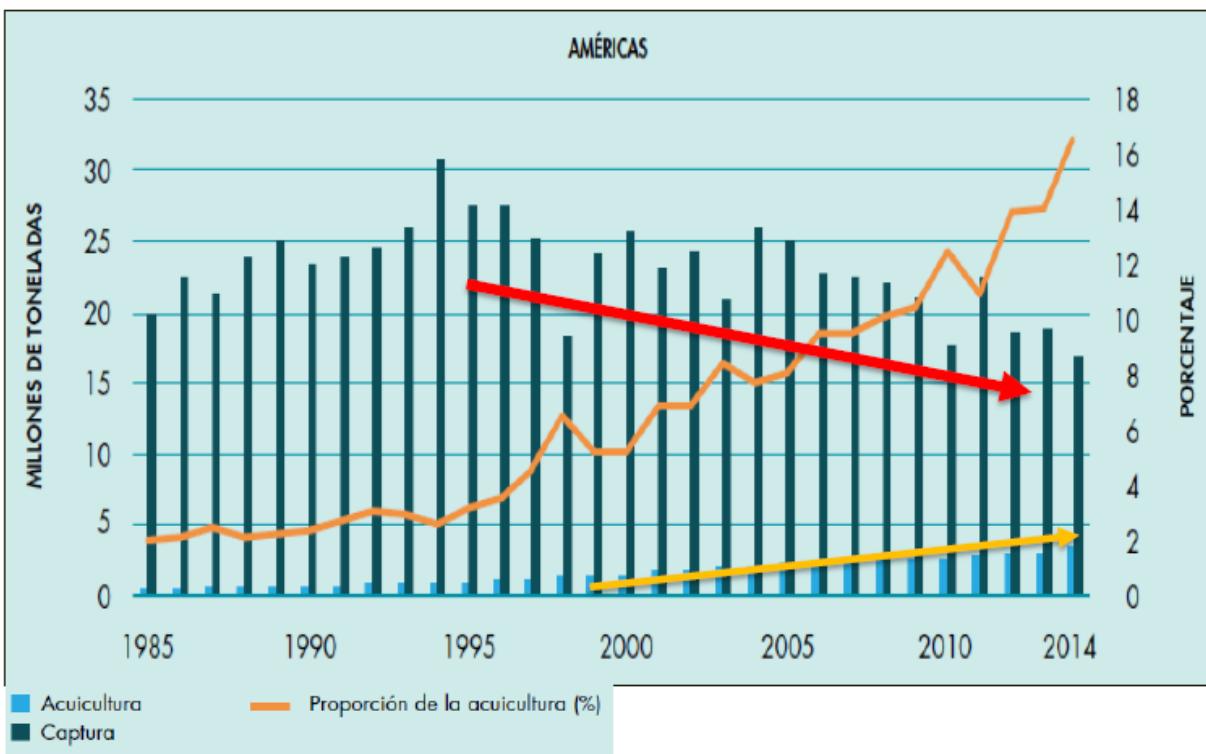


Capture: 58'
Aquaculture: 93'
Global: 151'

Proporción producción acuícola vs. captura por continente



Producción acuícola en América



Región	Tipo	DATA (000 TONS)	Projection (000 Tons)				%CHANGE
			2008	2010	2020	2030	
LAC	Acuicultura	1,805	1,805	1,642	2,770	3,608	119.70%
LAC	Captura	15,621	15,621	18,101	18,187	18,221	0.70%

Producción acuícola proyectada por región

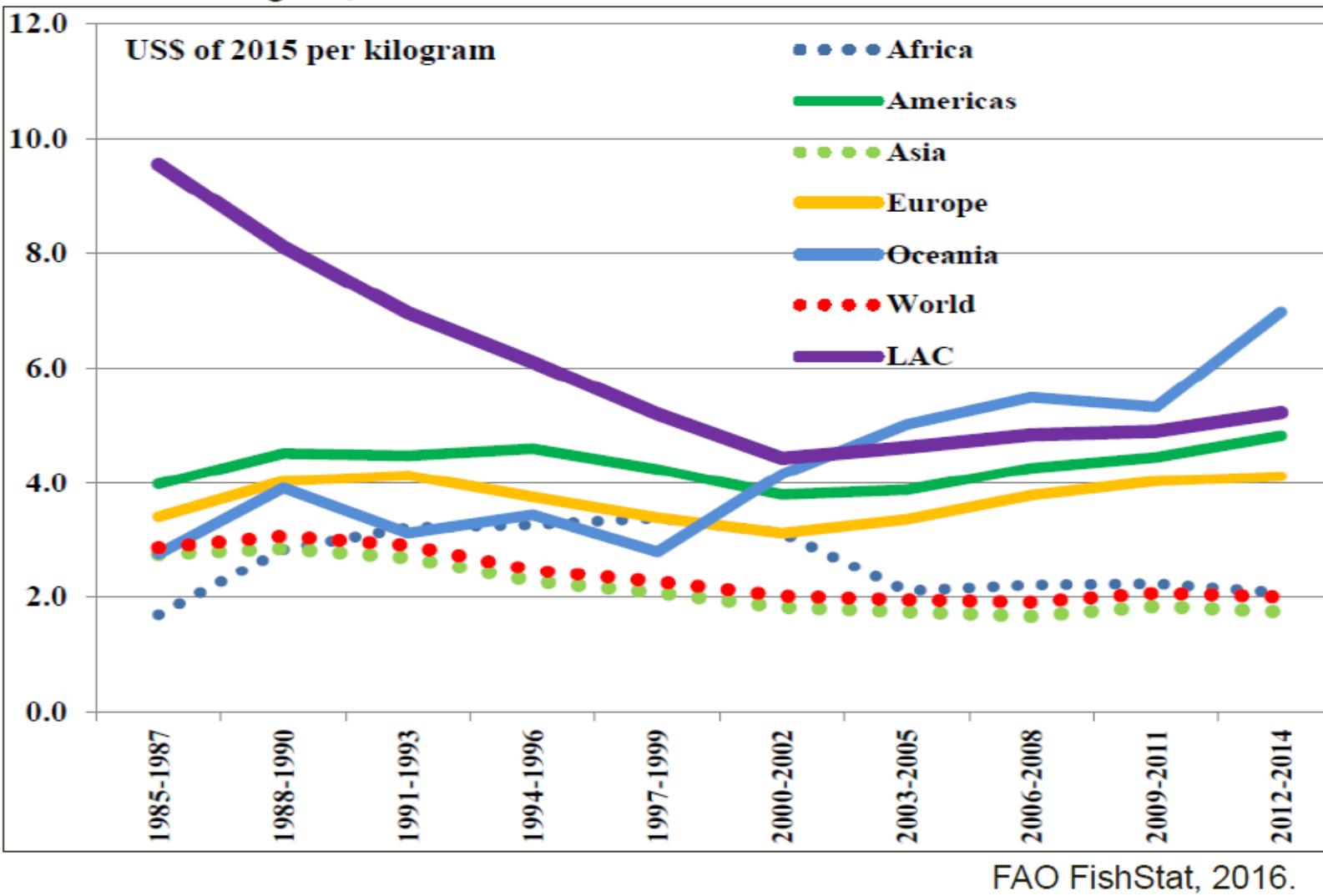
Producción acuícola proyectada por región

	DATA (MILLIONS)	PROJECTION (MILLIONS)	SHARE IN GLOBAL TOTAL		% CHANGE		
	2008	2010	2020	2030	2010 (PROJECTION)	2030 (PROJECTION)	2010-30
Global total	52,843	57,814	78,625	93,612	100.0%	100.0%	61.9%
ECA	2,492	2,734	3,270	3,761	4.7%	4.0%	37.5%
NAM	655	631	728	883	1.1%	0.9%	40.0%
LAC	1,805	1,642	2,770	3,608	2.8%	3.9%	119.7%
EAP	751	795	936	1,066	1.4%	1.1%	34.0%
CHN	33,289	36,562	46,790	53,264	63.2%	56.9%	45.7%
JAP	763	765	861	985	1.3%	1.1%	28.7%
SEA	6,433	7,171	11,384	14,848	12.4%	15.9%	107.1%
SAR	1,860	2,185	3,493	4,163	3.8%	4.4%	90.5%
IND	3,585	3,885	6,232	8,588	6.7%	9.2%	121.1%
MNA	921	1,086	1,679	1,911	1.9%	2.0%	75.9%
AFR	231	302	418	464	0.5%	0.5%	53.6%
ROW	57	55	64	72	0.1%	0.1%	29.5%

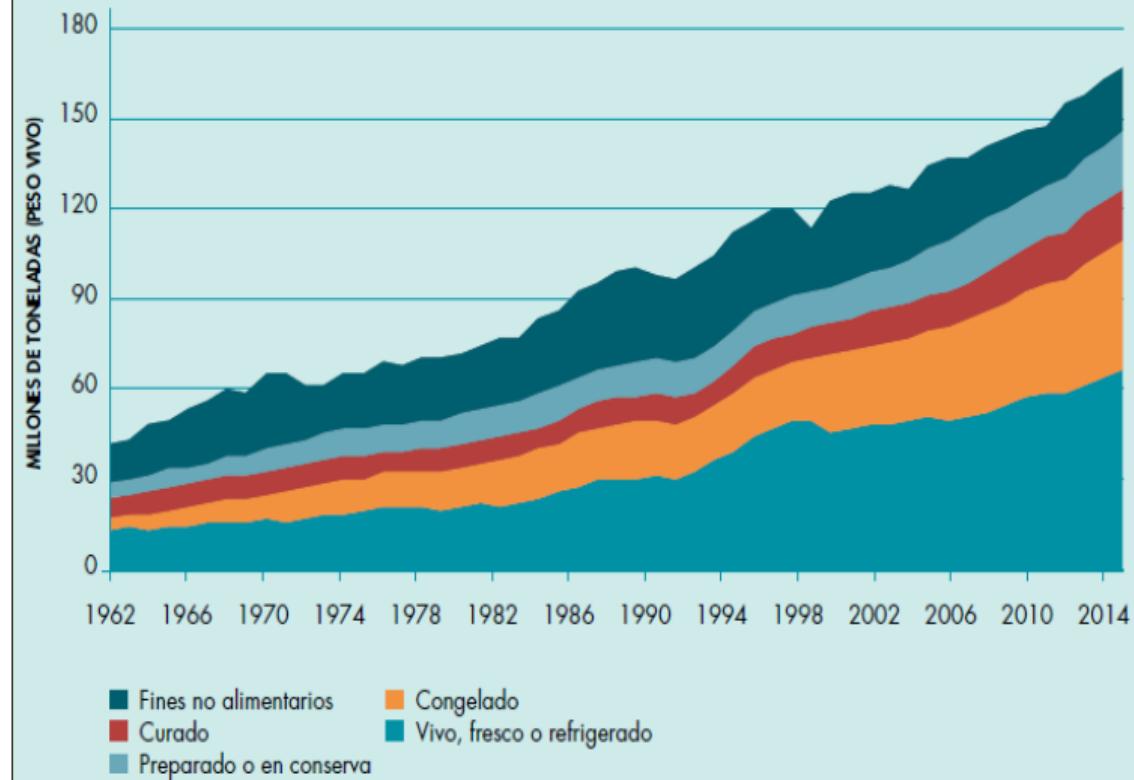
Sources: FishStat and IMPACT model projections.

Note: ECA = Europe and Central Asia; NAM = North America; LAC = Latin America and Caribbean; CHN = China; JAP = Japan; EAP = other East Asia and the Pacific; SEA = Southeast Asia; IND = India; SAR = other South Asia; MNA = Middle East and North Africa; AFR = Sub-Saharan Africa; ROW = rest of the world.

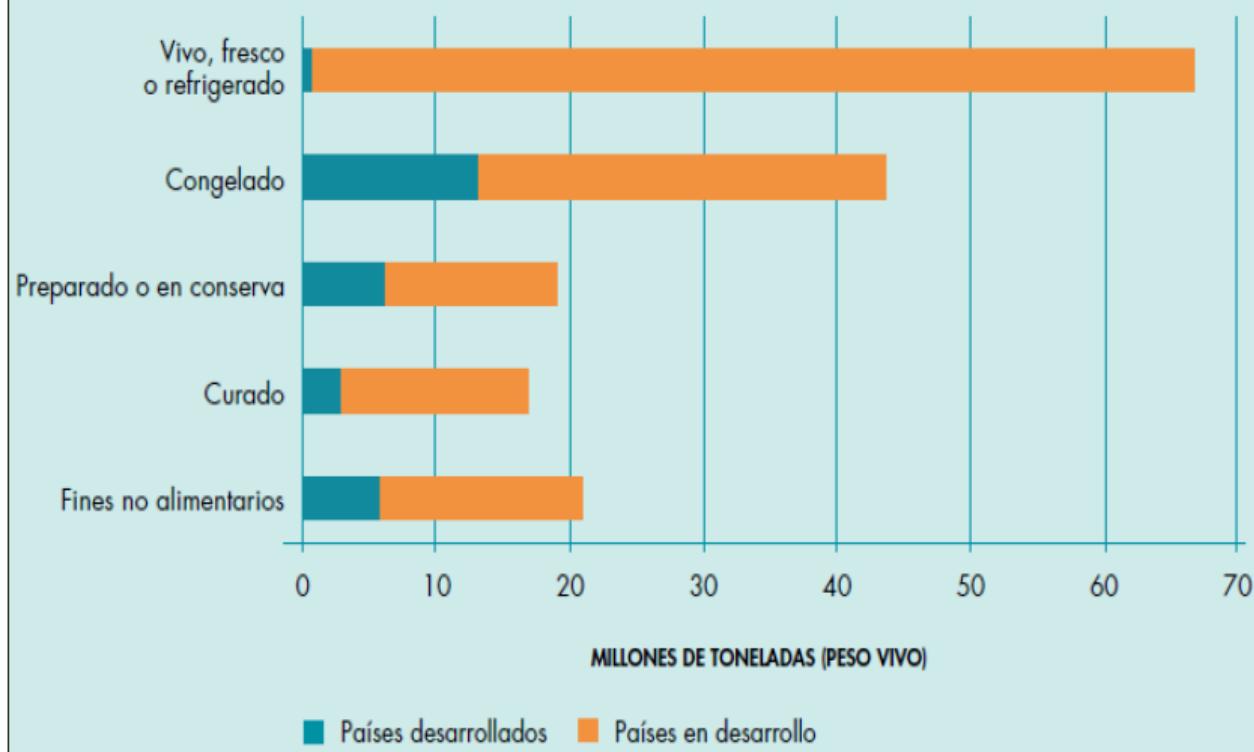
Promedio anual de los precios (kg) de la producción acuícola, por continente/región, 1985-2014



UTILIZACIÓN DE LA PRODUCCIÓN MUNDIAL DE PESCADO (DESGLOSADA POR CANTIDAD), 1962-2014



UTILIZACIÓN DE LA PRODUCCIÓN MUNDIAL DE PESCADO (DESGLOSADA POR CANTIDAD), 2014

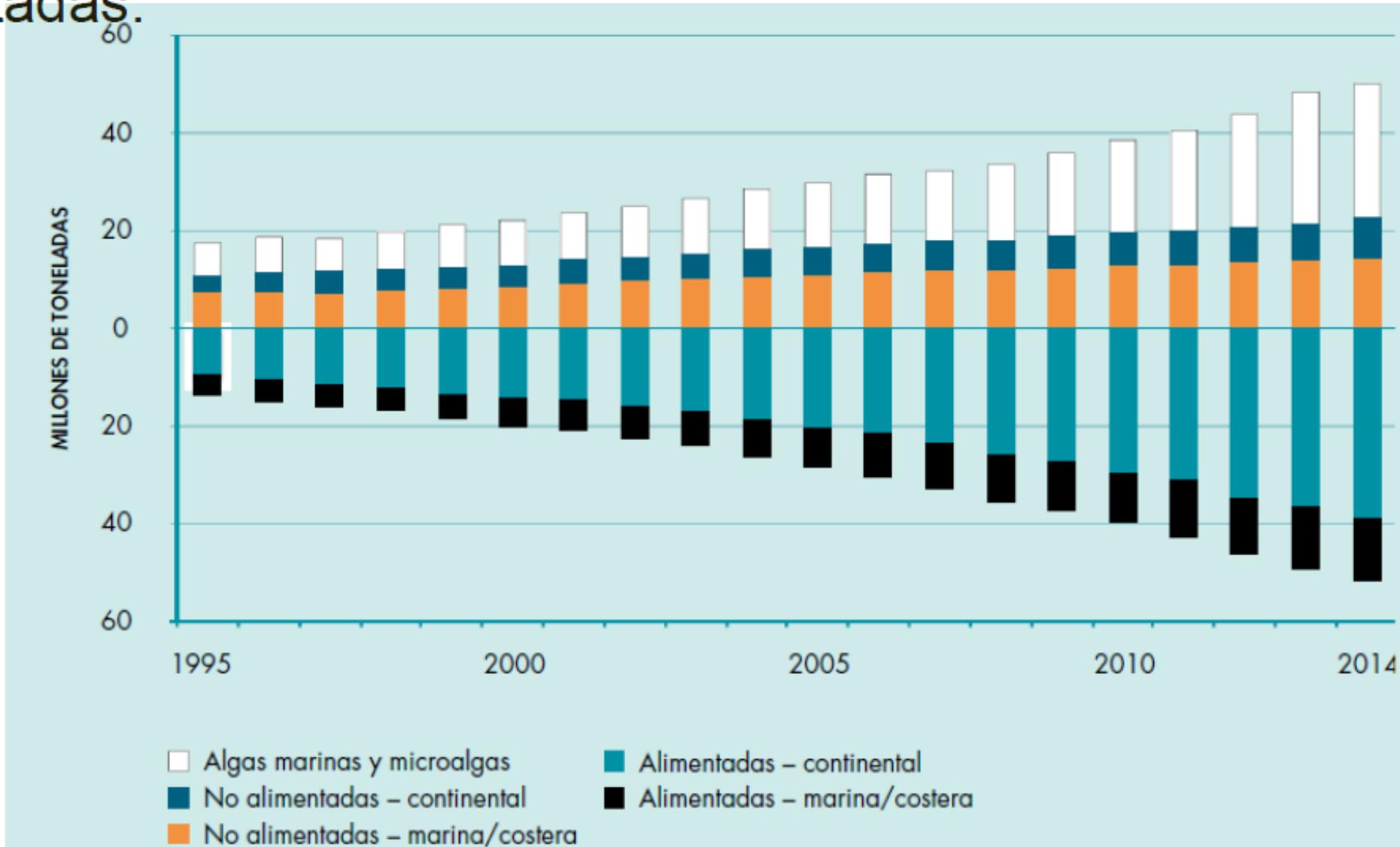


25 PRIMEROS PRODUCTORES Y PRINCIPALES GRUPOS DE ESPECIES CULTIVADAS EN 2014

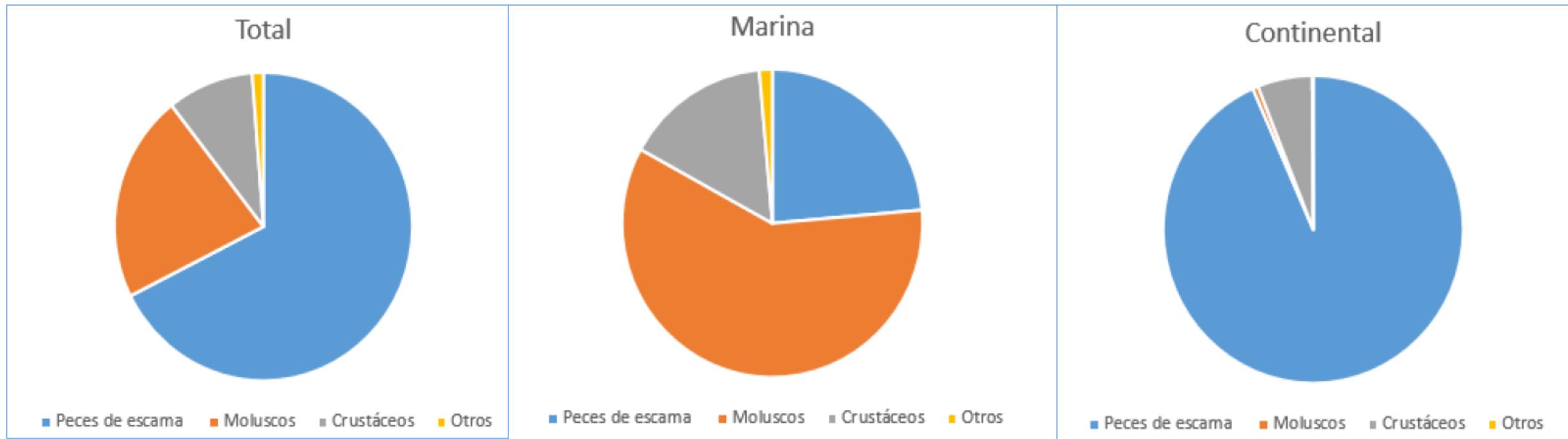
PRODUCTORES PRINCIPALES	PECES DE ESCAMA		ACUICULTURA MARINA/ COSTERA	ACUICULTURA CONTINENTAL	ACUICULTURA MARINA/ COSTERA	OTROS ANIMALES ACUÁTICOS	TOTAL DE PECES	PLANTAS ACUÁTICAS	PRODUCCIÓN ACUÍCOLA TOTAL
	ACUICULTURA CONTINENTAL	ACUICULTURA MARINA/ COSTERA							
(Miles de toneladas)									
China	26.029,7	1.189,7	13.418,7	3.993,5	839,5	45.469,0	13.326,3	58.795,3	
Indonesia	2.857,6	782,3	44,4	613,9	0,1	4.253,9	10.077,0	14.330,9	
India	4.391,1	90,0	14,2	385,7	...	4.881,0	3,0	4.884,0	
Viet Nam	2.478,5	208,5	198,9	506,2	4,9	3.397,1	14,3	3.411,4	
Filipinas	299,3	373,0	41,1	74,6	...	788,0	1.549,6	2.337,6	
Bangladesh	1.733,1	93,7	...	130,2	...	1.956,9	...	1.956,9	
República de Corea	17,2	83,4	359,3	4,5	15,9	480,4	1.087,0	1.567,4	
Noruega	0,1	1.330,4	2,0	...	...	1.332,5	...	1.332,5	
Chile	68,7	899,4	246,4	...	...	1.214,5	12,8	1.227,4	
Egipto	1.129,9	...	...	7,2	...	1.137,1	...	1.137,1	
Japón	33,8	238,7	376,8	1,6	6,1	657,0	363,4	1.020,4	
Myanmar	901,9	1,8	...	42,8	15,6	962,2	2,1	964,3	
Tailandia	401,0	19,6	209,6	300,4	4,1	934,8	...	934,8	
Brasil	474,3	...	22,1	65,1	0,3	561,8	0,7	562,5	
Malasia	106,3	64,3	42,6	61,9	0,6	275,7	245,3	521,0	

Country/Region	Aquaculture volumes metric tonnes				Aquaculture values Million US\$ 2015			
	2006–2008	2009–2011	2012–2014	% total 2012–2014	2006–2008	2009–2011	2012–2014	% total 2012–2014
Caribbean	41.8	36.2	31.6	1.2	87.7	68.7	45.7	0.3
Cuba	33.8	30.7	28.4	1.1	47.9	39.3	35.3	0.3
Dominican Republic	1.0	1.6	1.5	0.1	7.9	9.4	5.5	0.0
Haiti	0.1	0.4	0.7	0.0	0.3	0.8	1.3	0.0
Jamaica	6.5	3.4	0.7	0.0	28.1	17.6	2.2	0.0
Other	0.3	0.2	0.1	0.0	3.5	1.7	1.4	0.0
Central America	275.3	257.0	328.3	12.9	1 066.6	953.8	1 240.4	9.3
Mexico	151.3	140.1	169.916	6.7	568.7	445.0	620.7	4.7
Honduras	52.4	35.6	66.6	2.6	205.9	153.0	281.4	2.1
Costa Rica	24.3	26.4	27.3	1.1	54.1	60.5	57.6	0.4
Nicaragua	12.9	17.2	27.1	1.1	54.1	60.5	57.6	0.4
Guatemala	17.1	20.3	18.5	0.7	78.8	104.5	84.1	0.6
Panama	8.6	6.7	8.7	0.3	40.4	31.6	38.5	0.3
Belize	5.1	6.1	6.7	0.3	23.8	22.7	23.1	0.2
El Salvador	3.5	4.6	3.4	0.1	8.0	10.6	10.1	0.1
South America	1 406.6	1 670.5	2 188.0	85.9	7 180.4	8 591.8	12 007.3	90.3
Chile	805.7	816.3	1 106.4	43.4	4 971.3	4 996.7	7 407.3	55.7
Brazil	297.3	403.7	506.3	19.9	684.0	1 307.7	1 341.0	10.1
Ecuador	171.2	267.1	340.9	13.4	829.5	1 253.4	1 631.7	12.3
Peru	37.0	75.2	104.4	4.1	267.0	340.5	603.2	5.0
Colombia	68.3	81.6	90.4	3.5	329.8	297.3	267.5	2.0
Venezuela	20.7	19.0	27.9	1.1	73.0	157.6	637.0	4.8
Paraguay	2.4	3.5	6.5	0.3	3.9	7.1	23.0	0.2
Argentina	2.7	2.8	3.6	0.1	16.8	14.1	23.2	0.2
Bolivia	0.6	0.9	1.2	0.0	1.9	3.6	5.6	0.0
Guyana	0.5	0.4	0.3	0.0	1.3	1.8	1.2	0.0
Uruguay	0.0	0.1	0.2	0.0	1.1	5.6	5.2	0.0
Other	0.2	0.1	0.1	0.0	0.9	0.5	0.6	0.0
Totals	1 723.7	1 963.7	2 547.9	100.0	8 334.8	9 614.3	13 293.4	100.0

Especies acuícolas alimentadas y no alimentadas:

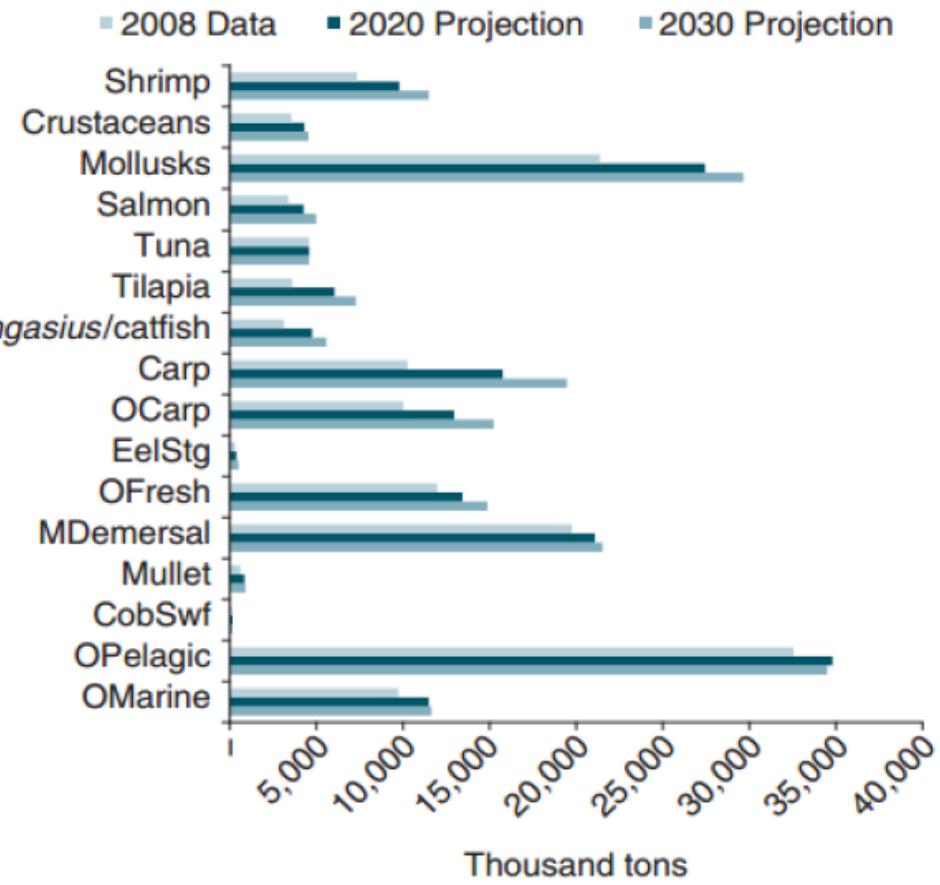


Producción por los principales grupos de especies Marino y continental: Peces de escama; moluscos; crustáceos; otros.

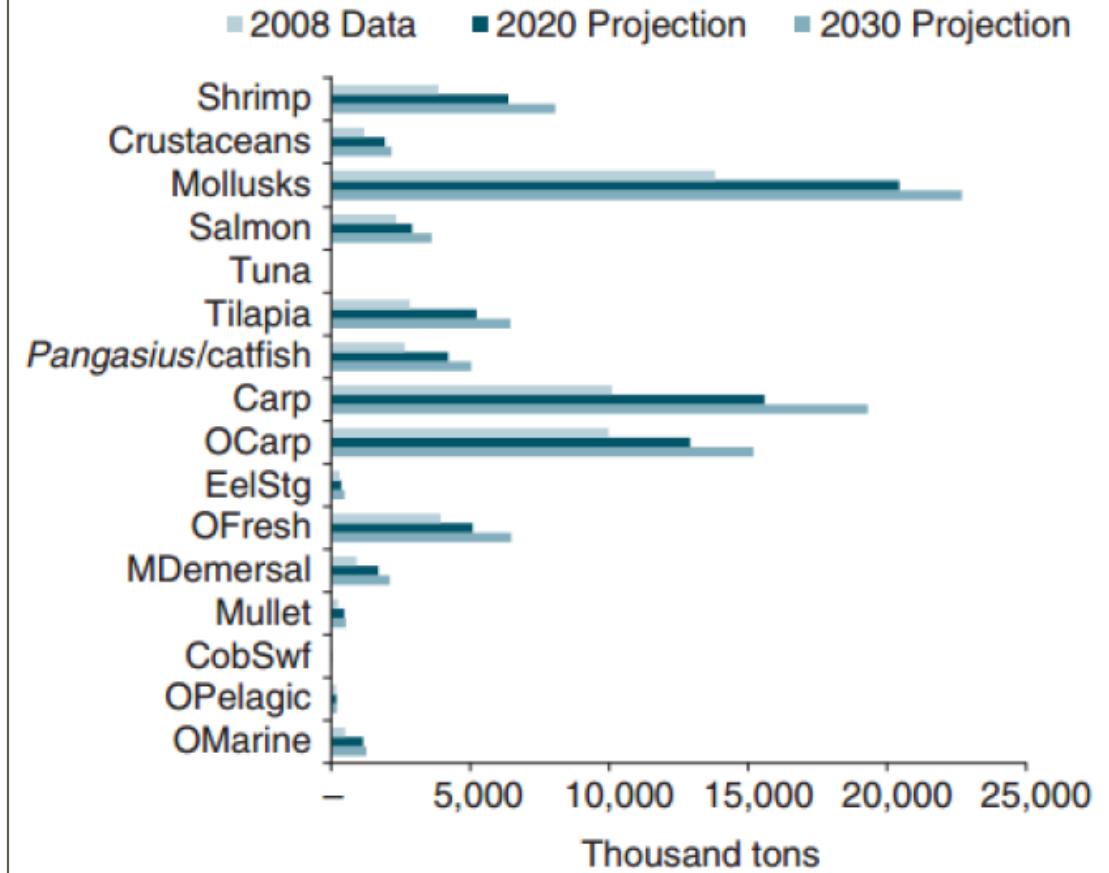


	Continental	Marino	Total
Peces de escama	43.559.260	6.302.631	49.861.891
Moluscos	277.744	15.835.450	16.113.194
Crustáceos	2.744.537	4.170.536	6.915.073
Otros	520.85	372.718	893.568 *(Toneladas/2014)

Proyección del suministro global de pescado por especie



Proyección del suministro global de pescado cultivado por especie



Principales especies cultivadas en LAC

Rank	Species	Scientific name	Volumes, Thousand tonnes and percentages						Values, Million US\$ of 2015 and per			
			2000–2002	2006–2008	2009–2011	2012–2014	% of Totals 2012–2014	%, cumulative	2000–2002	2006–2008	2009–2011	2012–2014
1	Whiteleg shrimp	<i>Penaeus vannamei</i>	186.9	459.4	514.5	627.4	24.62	24.62	1 331.9	2 171.2	2 524.3	3 460.4
2	Atlantic salmon	<i>Salmo salar</i>	228.8	365.5	207.0	512.2	20.10	44.73	1 105.4	2 757.3	1 561.4	3 492.6
3	Tilapias nei	<i>Oreochromis (=Tilapia) spp</i>	70.3	125.2	203.2	271.4	10.65	55.38	230.8	303.9	540.5	588.5
4	Chilean mussel	<i>Mytilus chilensis</i>	33.3	155.8	225.7	241.4	9.47	64.85	52.9	470.7	723.1	1 750.0
5	Rainbow trout	<i>Oncorhynchus mykiss</i>	116.9	175.2	253.3	236.0	9.26	74.11	496.1	1 092.7	1 786.1	1 461.5
6	Coho(=Silver) salmon	<i>Oncorhynchus kisutch</i>	110.9	105.3	146.4	155.2	6.09	80.20	500.9	457.3	888.3	721.1
7	Cachama	<i>Colossoma macropomum</i>	23.0	47.5	65.8	113.5	4.46	84.66	70.0	121.5	193.6	306.4
8	Nile tilapia	<i>Oreochromis niloticus</i>	35.2	82.0	105.2	99.0	3.88	88.54	108.1	209.2	349.0	308.5
9	Peruvian calico scallop	<i>Argopecten purpuratus</i>	22.1	34.4	54.4	54.2	2.13	90.67	169.3	380.0	516.3	508.8
10	Tambacu, hybrid	<i>P. mesopotamicus x C. macropomum</i>	12.4	12.4	22.3	36.2	1.42	92.09	35.6	28.5	59.0	81.0
11	Pirapatinga	<i>Piaractus brachypomus</i>	10.1	2.9	13.8	22.8	0.89	92.98	37.6	8.1	41.9	64.7
12	Cyprinids nei	<i>Cyprinidae</i>	0.0	11.3	27.5	22.0	0.87	93.85	0.0	31.2	78.2	51.5
13	South American rock mussel	<i>Perna perna</i>	10.6	11.7	13.6	18.9	0.74	94.59	7.6	9.5	20.8	27.3
14	Pacu	<i>Piaractus mesopotamicus</i>	6.1	13.4	18.1	16.1	0.63	95.23	21.5	38.2	59.5	48.4
15	Freshwater siluroids nei	<i>Siluroidae</i>			3.3	15.7	0.62	95.84			14.5	56.6
16	Silver carp	<i>Hypophthalmichthys molitrix</i>	14.4	17.4	16.1	15.6	0.61	96.46	15.1	18.8	16.6	14.6
17	Tambatinga, hybrid	<i>C. macropomum x P. brachypomus</i>	0.1	2.9	6.2	10.7	0.42	96.88	0.4	6.7	16.4	30.2
18	Brycon amazonicus	<i>Brycon amazonicus</i>			2.1	8.1	0.32	97.19			7.4	24.7
19	Freshwater fishes nei	<i>Osteichthyes</i>	21.1	14.0	13.0	7.7	0.30	97.50	24.8	15.7	28.2	28.6
20	North African catfish	<i>Clarias gariepinus</i>	0.4	1.8	5.7	6.6	0.26	97.76	1.3	2.4	6.4	6.2
21	Arapaima	<i>Arapaima gigas</i>		0.0	0.9	5.8	0.23	97.98		0.1	5.9	25.8
22	Pacific bluefin tuna	<i>Thunnus orientalis</i>	0.3	2.4	2.9	5.4	0.21	98.20	6.8	21.0	17.3	38.6
23	Cortez oyster	<i>Crassostrea corteziensis</i>	0.4	0.6	0.9	4.8	0.19	98.39	0.6	0.9	1.3	2.3
24	Common carp	<i>Cyprinus carpio</i>	67.4	39.1	3.5	4.6	0.18	98.56	97.6	46.3	5.8	7.6
25	Leporinus spp	<i>Leporinus spp</i>			0.0	3.0	0.12	98.68			0.1	9.0
26	Cupped oysters nei	<i>Crassostrea spp</i>	1.6	2.3	2.1	2.7	0.11	98.79	3.4	5.1	4.9	3.9
27	Prochilods nei	<i>Prochilodus spp</i>	2.9	3.2	4.1	2.7	0.11	98.90	6.7	4.6	13.1	8.2
28	Pacific cupped oyster	<i>Crassostrea gigas</i>	6.4	2.9	2.3	2.7	0.11	99.00	12.0	6.6	3.6	2.9
29	Netted prochilod	<i>Prochilodus reticulatus</i>	1.0	4.1	2.0	2.5	0.10	99.10	3.7	11.5	5.9	6.9
30	Cholga mussel	<i>Aulacomya ater</i>	0.8	1.1	2.3	2.3	0.09	99.19	1.8	2.6	7.5	2.0
31	Other	<i>Other</i>	28.3	29.8	25.4	20.6	0.81	100.00	141.6	113.5	117.5	154.4
	Totals		1 011.9	1 723.7	1 963.7	2 547.9	100.00		4 483.7	8 334.8	9 614.3	13 293.4

Comercio

Exportadores

	2006 – DATA			2030 – PROJECTION		
	1ST (SHARE)	2ND (SHARE)	3RD (SHARE)	1ST (SHARE)	2ND (SHARE)	3RD (SHARE)
Shrimp	SEA	CHN	LAC	SEA	LAC	CHN
	45%	17%	14%	55%	25%	7%
Crustaceans	CHN	SEA	LAC	CHN	SAR	EAP
	72%	17%	5%	89%	9%	2%
Mollusks	CHN	LAC	SEA	CHN	LAC	EAP
	58%	23%	15%	59%	29%	5%
Salmon	LAC	ECA	ROW	LAC	ECA	ROW
	85%	11%	4%	82%	15%	2%
Tuna	CHN	SEA	ROW	ROW	CHN	EAP
	35%	23%	21%	29%	27%	24%
Freshwater and diadromous	SEA	CHN	AFR	SEA	CHN	IND
	49%	35%	14%	79%	17%	4%
Demersals	ROW	LAC	IND	IND	LAC	SEA
	49%	31%	7%	26%	25%	23%
Pelagics	LAC	NAM	MNA	SEA	ECA	EAP
	34%	17%	17%	56%	16%	11%
Other marine	CHN	SEA	SAR	CHN	IND	ROW
	69%	20%	8%	70%	27%	3%

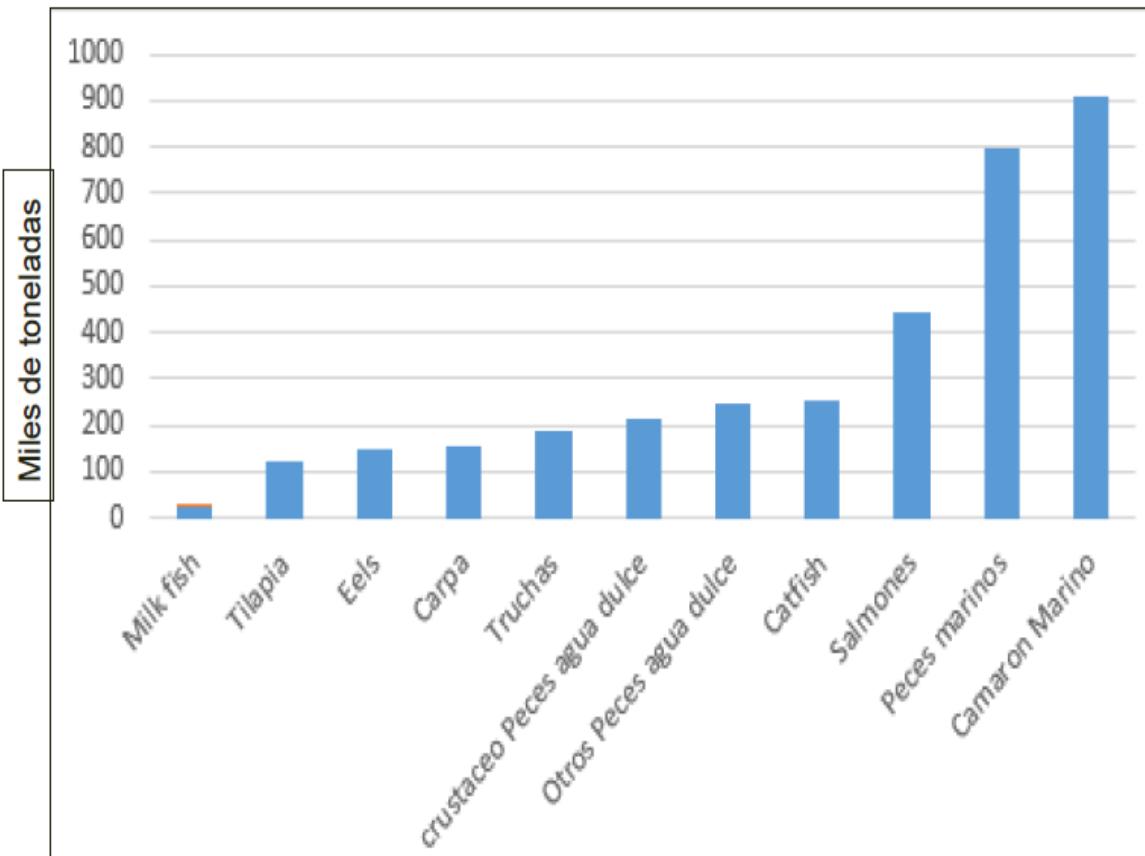
ECA = Europe and Central Asia;
 NAM = North America;
 LAC = Latin America and Caribbean;
 CHN = China;
 JAP = Japan;
 EAP = other East Asia and the Pacific;
 SEA = Southeast Asia;
 IND = India;
 SAR = other South Asia;
 MNA = Middle East and North Africa;
 AFR = Sub-Saharan Africa;
 ROW = rest of the world

Importadores

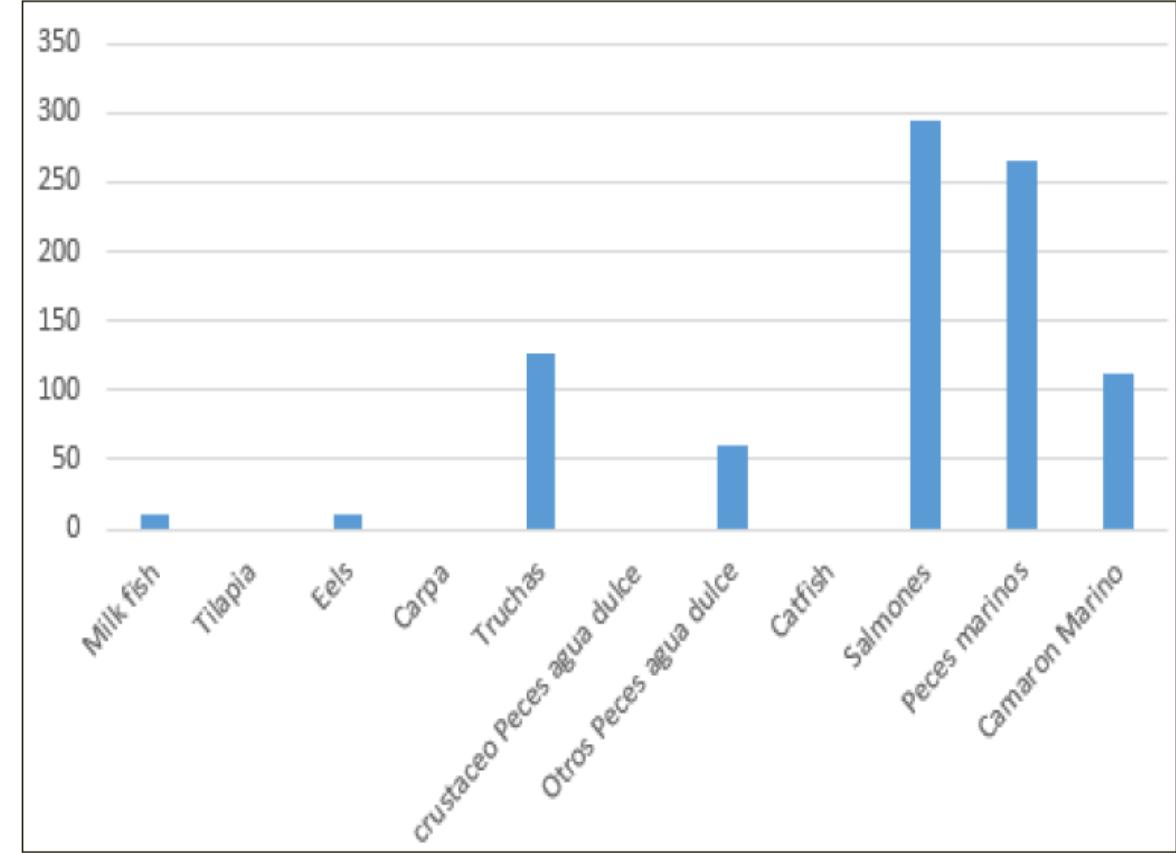
	2006 – DATA			2030 – PROJECTION		
	1ST (SHARE)	2ND (SHARE)	3RD (SHARE)	1ST (SHARE)	2ND (SHARE)	3RD (SHARE)
Shrimp	NAM	ECA	JAP	NAM	ECA	JAP
	46%	29%	16%	60%	21%	11%
Crustaceans	JAP	NAM	ECA	JAP	NAM	ECA
	61%	20%	19%	45%	28%	17%
Mollusks	ECA	JAP	NAM	NAM	ECA	SEA
	43%	33%	18%	39%	30%	11%
Salmon	CHN	JAP	NAM	CHN	NAM	JAP
	33%	30%	19%	55%	19%	18%
Tuna	ECA	NAM	JAP	ECA	NAM	JAP
	46%	24%	17%	42%	24%	17%
Freshwater and diadromous	ECA	NAM	JAP	AFR	ECA	NAM
	42%	41%	8%	50%	21%	13%
Demersals	CHN	ECA	EAP	ECA	CHN	JAP
	31%	31%	21%	43%	32%	15%
Pelagics	AFR	SEA	EAP	ROW	CHN	NAM
	45%	28%	14%	34%	24%	23%
Other marine	JAP	ECA	AFR	JAP	ECA	LAC
	46%	19%	13%	45%	17%	11%



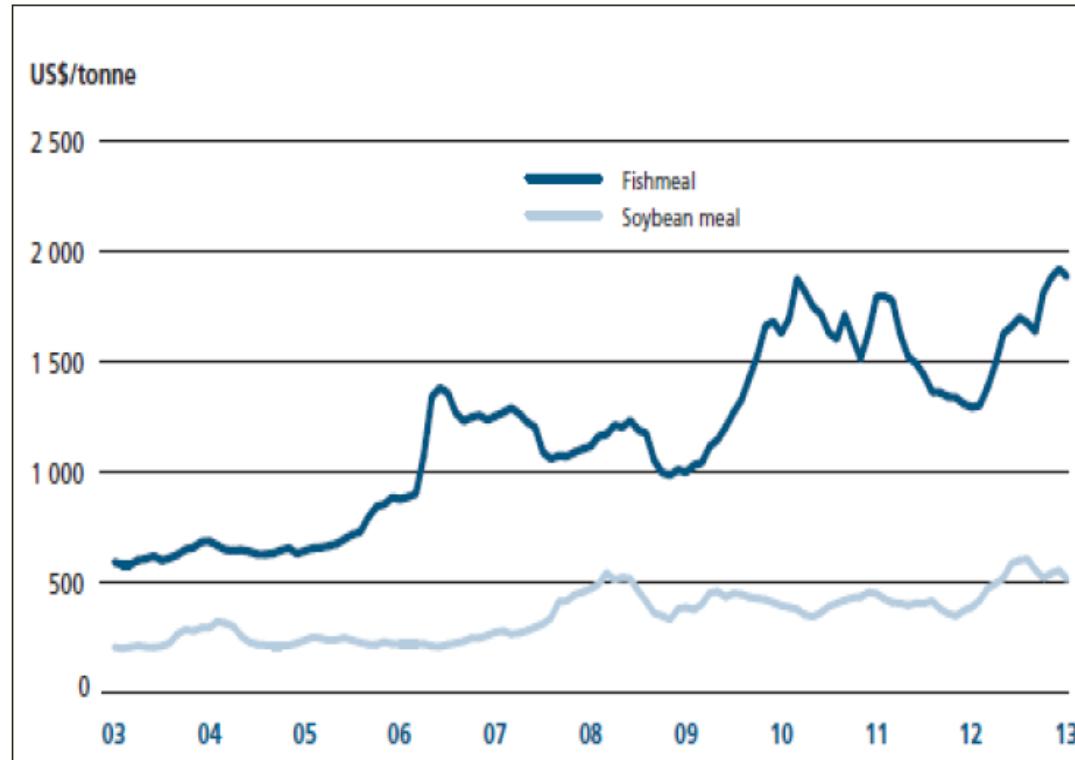
Uso estimado de harina de pescado a nivel global 2020



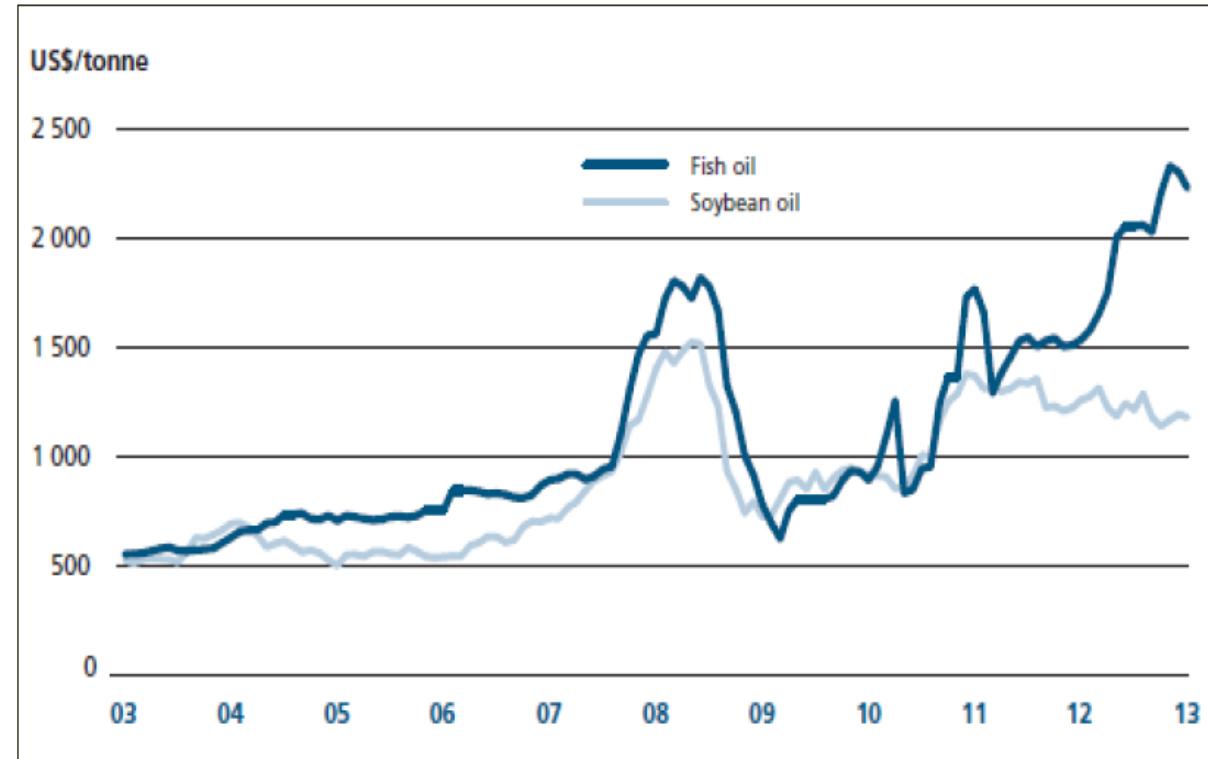
Uso estimado de aceite de pescado a nivel global 2020



Tendencia en el precio de la harina de soya y pescado



Tendencia en el precio del aceite de soya y pescado



Consumo productos pesqueros:

Se espera que la población mundial continúe un crecimiento de ±2.2-2.8/año (0.72 % LAC)

El Producto interno bruto de China se triplicara para el 2030 (2010)

El 80 % de los productos pesqueros (Captura y acuicultura) son consumidos por el humano (sin cambio)

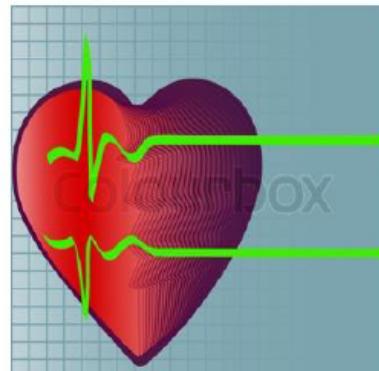
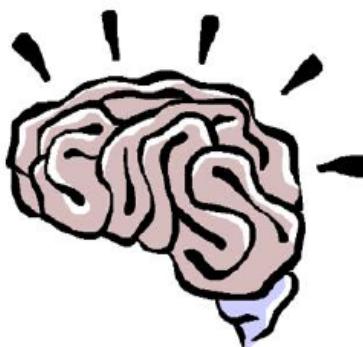
TABLE 3.7: Projected Per Capita Fish Consumption by Region

	DATA (KG/PERSON/YEAR)		PROJECTION (KG/PERSON/YEAR)			ANNUAL GROWTH RATE	
	2000	2006	2010	2020	2030	2000–06 ^a	2010–30 ^b
Global average	15.7	16.8	17.2	18.0	18.2	1.1%	0.3%

Omega-3 (DHA/EPA)

IQ +6

CHD -36%



Pescado, una fuente excelente de nutrientes	Nutriente por 100 g	Necesidad diaria (RDI) para niños:
Proteína; >20% proteína animal para 3 mil millones de personas	Carpa, filete: 18 g Salmón, filete: 19 g	1 g/kg peso corporal (incl. proteína vegetal)
DHA+EPA (Ω-3)	Carpa, filete: 350 mg Salmón, filete: 2000 mg	150 (250) µg
Vitamina A; 250 millones niños de edad pre-escolar con deficiencia	Bacalao, hígado: 5000 µg Mola (entero): 2500 µg	500 µg RAE
Hierro; 1.6 mil millones de personas con deficiencia	Espina/columna de atún: 35 mg Chanwa pileng (entero): 45 mg	8.9 mg (biodisponibilidad 10%)
Yodo; 2 mil millones de personas con deficiencia	Bacalao, filete: 250 µg Alga marina: >2000 µg	120 µg
Zinc; 800 000 muertes infantiles por año	Arrenque, espinas: 19 mg Chanwa pileng (entero): 20 mg	5.6 mg (biodisponibilidad moderada)

Cambios bio-fisicos debidos al Cambio climatico



Ocean currents
ENSO
Sea level rise
Rainfall
River flows
Lake levels
Thermal structure
Storm frequency
Acidification

Effects on:

Production
Ecology

Fishing &
Aquaculture
operations

Communities
Livelihoods

Wider society &
Economy

Impacts on:

Species composition
Production & yield
Distribution
Diseases
Coral bleaching
Calcification

Safety & efficiency
Infrastructure

Loss/damage to assets
Risk to health & life
Displacement & conflict
Increase of diseases

Adaptation & mitigation costs
Market impacts
Water allocation

Modificado de Badjeck et al, 2010

1 FIN
DE LA POBREZA



2 HAMBRE
CERO



3 SALUD
Y BIENESTAR



4 EDUCACIÓN
DE CALIDAD



5 IGUALDAD
DE GÉNERO



6 AGUA LIMPIA
Y SANEAMIENTO



7 ENERGÍA ASEQUIBLE
Y NO CONTAMINANTE



8 TRABAJO DECENTE
Y CRECIMIENTO
ECONÓMICO



9 INDUSTRIA,
INNOVACIÓN E
INFRAESTRUCTURA



10 REDUCCIÓN DE LAS
DESIGUALDADES



11 CIUDADES Y
COMUNIDADES
SOSTENIBLES



12 PRODUCCIÓN
Y CONSUMO
RESPONSABLES



13 ACCIÓN
POR EL CLIMA



14 VIDA
SUBMARINA



15 VIDA
DE ECOSISTEMAS
TERRESTRES



16 PAZ, JUSTICIA
E INSTITUCIONES
SÓLIDAS



17 ALIANZAS PARA
LOGRAR
LOS OBJETIVOS



OBJETIVOS
DE DESARROLLO
SOSTENIBLE

- GRACIAS