

# Global Overview of Aquaculture in 2024

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# The FAO's 2024 The State of World Fisheries and Aquaculture (SOFIA) report

published 10 June 2024 (2022 data)

**~735 million people suffering from hunger**

\*\*fisheries production has remained globally stable for  
~30 years

\*\*aquaculture has been growing at 5%/year since 2000

# Aquaculture remains a minor food producer in most countries

## THE HYPE, FANTASIES AND REALITIES OF AQUACULTURE DEVELOPMENT GLOBALLY AND IN ITS NEW GEOGRAPHIES

BARRY ANTONIO COSTA-PIERCE AND THIERRY CHOPIN

### INTRODUCTION

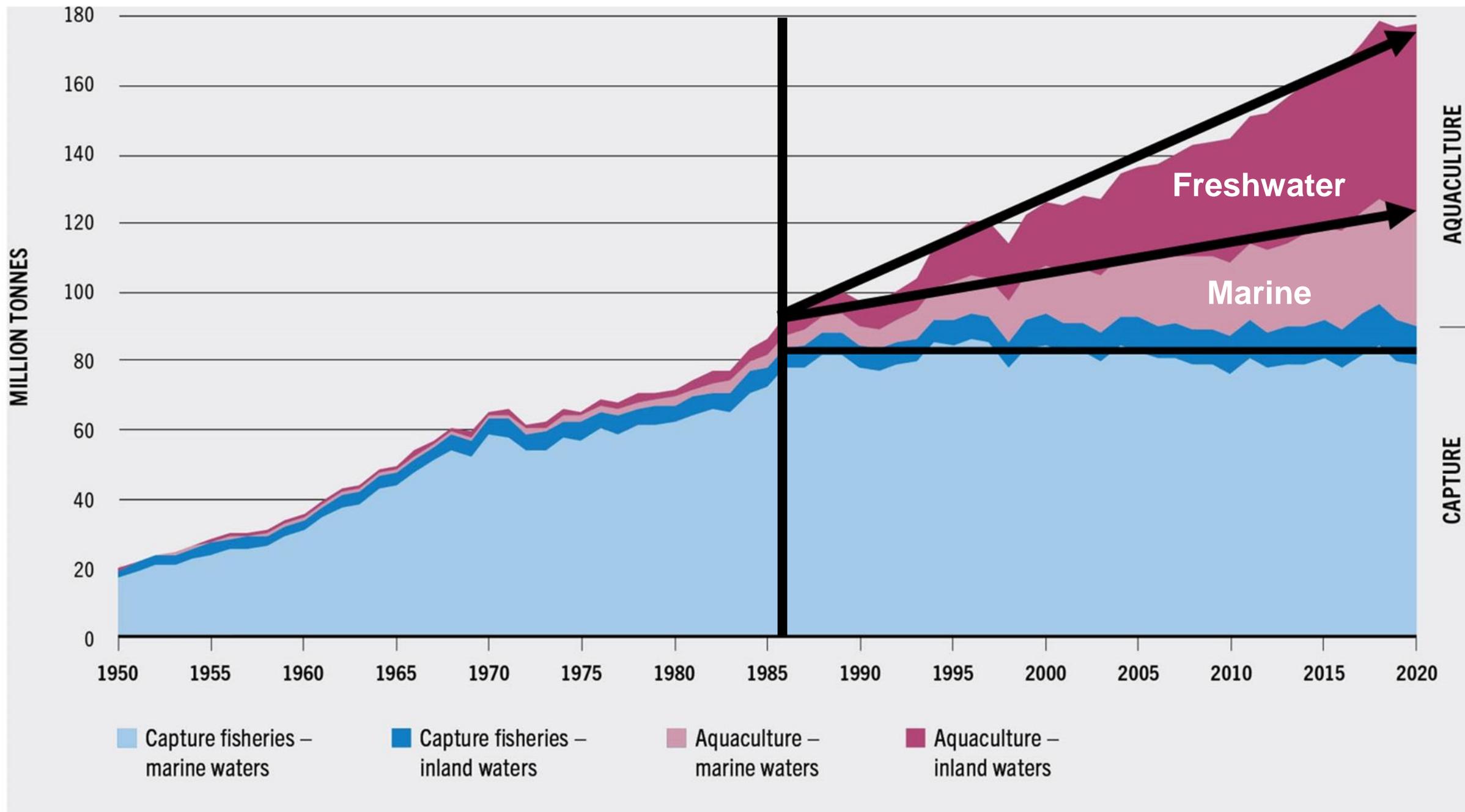
We have been following the acceleration of the formation of non-traditional aquaculture groups and organizations and their more frequent messaging about aquaculture in the era of COVID-19. We are concerned that some of what we are reading and listening to is returning to failed parts of our past decades and is fanciful — more hype than

WE BOTH SUPPORT SUSTAINABLE AQUACULTURE PRACTICES. HOWEVER, WE SHOULD BE CAUTIOUS WITH THE HYPE WE ARE SUBJECTED TO DAILY. WE HAVE A COLLECTIVE RESPONSIBILITY TO IDENTIFY, AND DENOUNCE, THE SILVER BULLET SOLUTION SALESPERSONS, REMEMBERING THAT IN BETWEEN PERIODS OF PROMISING THE MOON, THERE ARE PAINFUL “PURGATORY” PERIODS OF NON-CONSTRUCTIVE REGRESSIONS.

2020), that “Aquaculture now produces nearly half of the seafood consumed globally.”

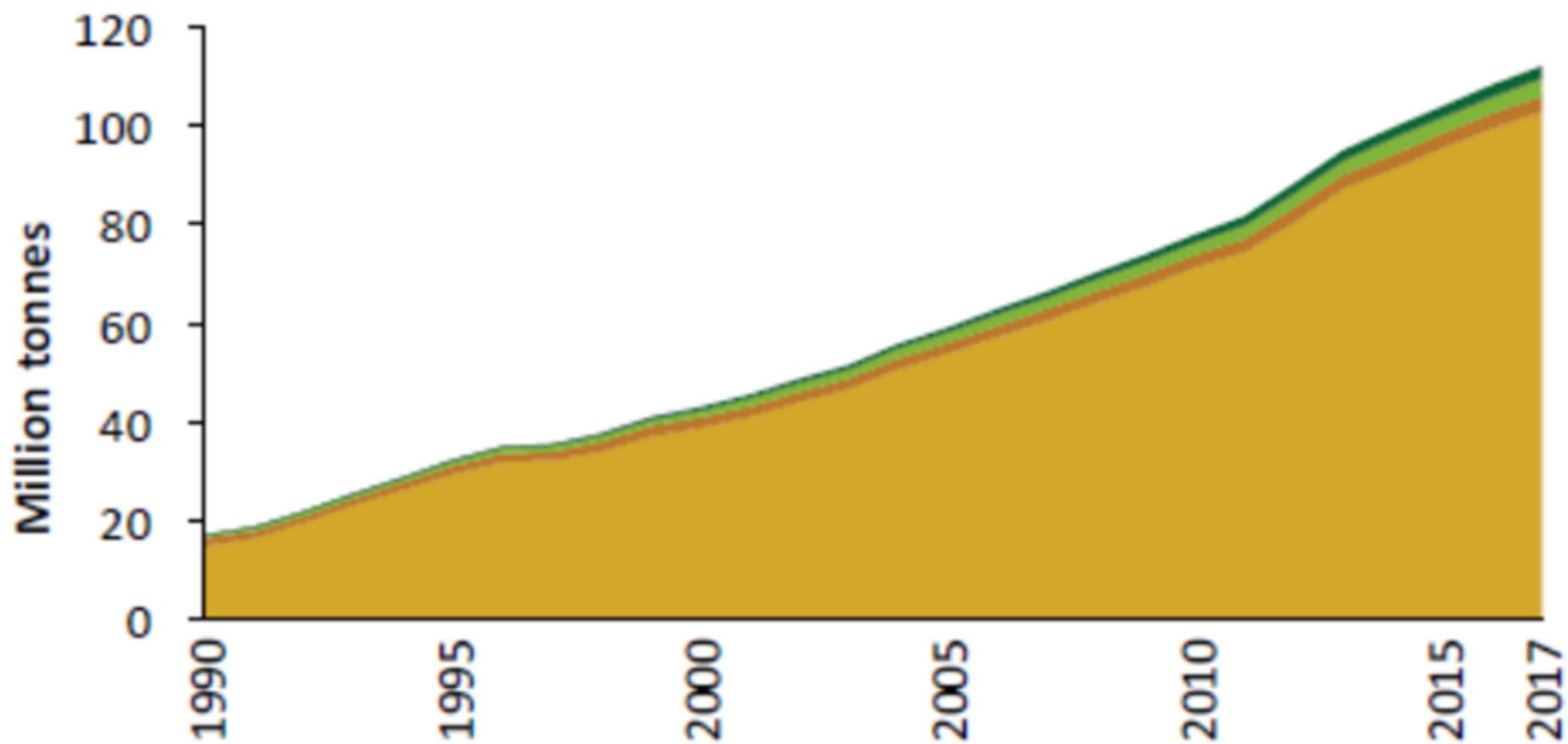
announce a new, usually large-scale aquaculture development planned for a community near us, especially if we live on the world’s freshwater or marine coasts. Academics routinely state in the first line of abstracts on many papers (choosing just one recent one here, Love *et al.*

Costa-Pierce, B.A. and T. Chopin. 2021. The hype, fantasies and realities of aquaculture development globally and in its **new geographies**. *World Aquaculture* 52 (2): 23-35.



## Aquaculture production

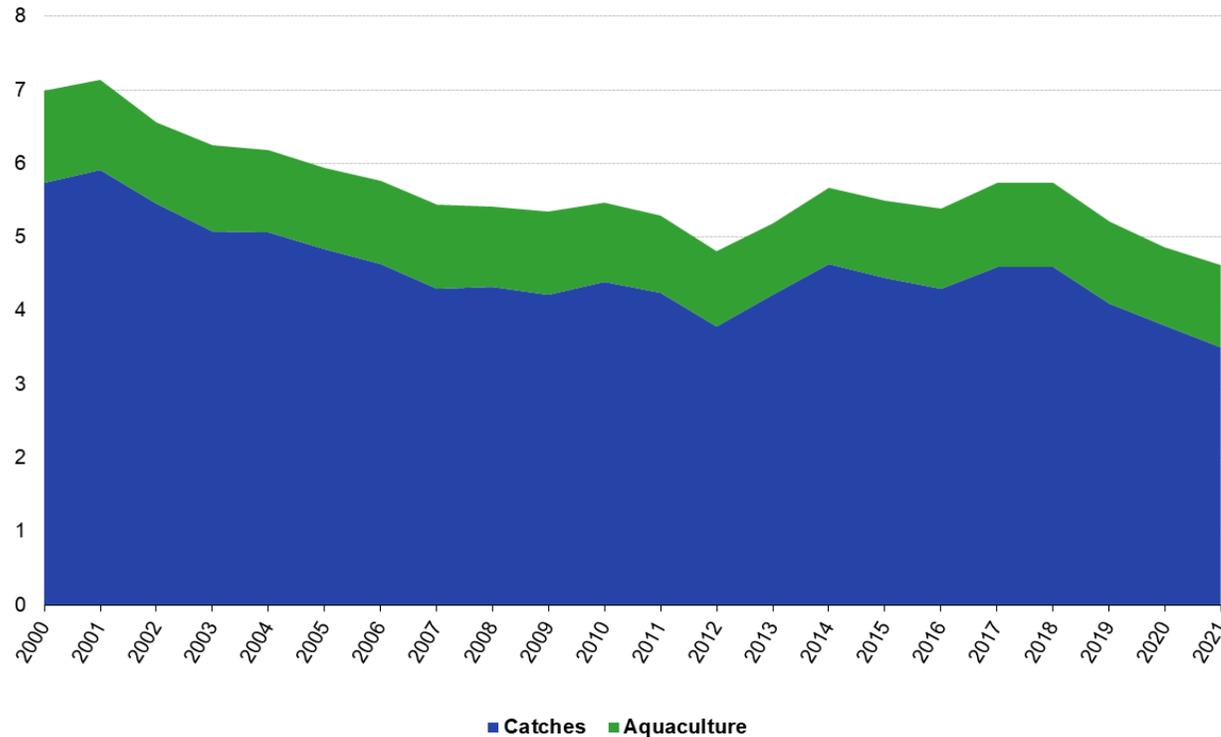
By Continent



# EU aquaculture policy

Stagnating production and unclear results despite increased EU funding

**Total production of fishery products**  
(million tonnes of live weight, EU, 2000-2021)



Note: Substitute years have been used where there are a limited number of confidential data for catches and aquaculture.

Source: Eurostat (online data code: fish\_ca\_main, fish\_aq\_q and fish\_aq2a)

Years	EU Production	North American Production
1995	1.2	0.5
2000	1.4	0.6
2005	1.3	0.7
2010	1.3	0.7
2015	1.3	0.6
2018	1.4	0.7
2021	1.1	1.4 (1.0 Mexico)

## The “New Geographies for Aquaculture”

	World	Asia	Africa	Americas	Europe	Oceania
<b>Inland</b>	51.3	47.7	1.9	1.2	0.5	0.0
<b>Marine</b>	30.8	25.1	0.3	2.6	2.6	0.2
<b>Total</b>	82.1	72.8	2.2	3.8	3.1	0.2
		China (47.6)	Egypt (1.6)	Chile (1.3)	Norway (1.4)	

**TOTAL 9.3 MMT**

TABLE 3. TOP SIXTEEN SPECIES GROUPS IN GLOBAL ANIMAL AQUACULTURE IN MILLION METRIC TONS (MMT) (FAO 2020).

<i>Ranks</i>	<i>Groups of Species</i>	<i>Total Production (MMT)</i>
1	Oysters	5.8
2	Grass carp 	5.7
3 tie	Indian major carps 	5.0
3 tie	White legged shrimp	5.0
5	Silver carp 	4.8
6	Tilapia	4.5
7	Common carp 	4.2
8	Manila clams	4.1
9	Bighead carp 	3.1
10	Goldfish carp 	2.8
11	Other freshwater fish	2.5
12	Atlantic salmon	2.4
13	Asian catfish	2.3
14	Scallops	1.9
15	Freshwater crayfish	1.7
16	Mussels	1.6



# The FAO's 2024 The State of World Fisheries and Aquaculture (SOFIA) report

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**~735 million people suffering from hunger**

**\*\*10 ten countries account for ~90% of global aquaculture production**

**ASIA**

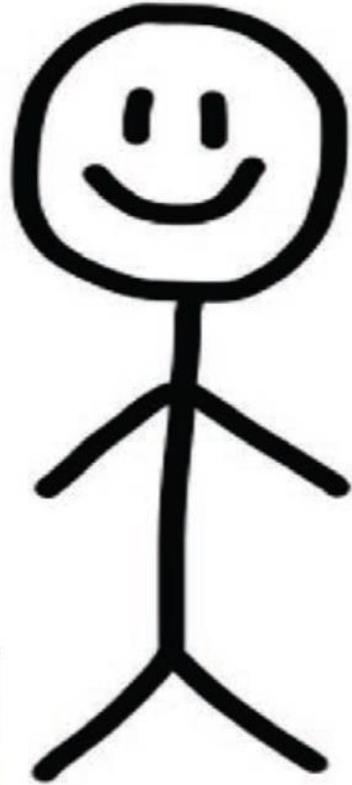
**China, Indonesia, India, Vietnam, Bangladesh, the Philippines, Republic of Korea**

**THE REST OF THE WORLD**

**Norway, Egypt, Chile**

# Inconvenient blue foods facts?

- I. Asia dominates in every way...STILL 89%
- II. China is the world's leader.... STILL 58%
- III. Most is freshwater..... STILL 62%



Half of Your Seafood  
from Aquaculture?

100%

Aquaculture in Asia



0%

Rest of the World



In a skewed distribution...  
***the mean is pulled in the  
direction of the tail...***

**50%??**

For skewed data, the  
**median** is often the  
preferred choice...a more  
robust estimate of central  
tendency...**25%**

The **mode**...is the most  
frequent value in the  
dataset...***most have little  
to no aquaculture***

# Asia





**>100 species**

Carps, tilapia, shrimp,  
shellfish, seaweeds

**Applied academia**

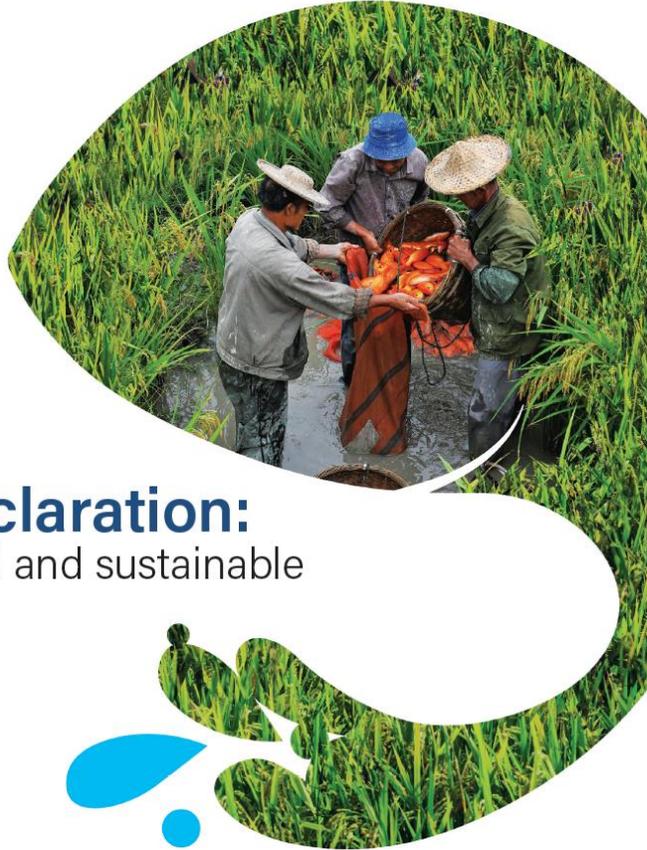


Food and Agriculture  
Organization of the  
United Nations

中华人民共和国农业农村部  
Ministry of Agriculture and Rural Affairs of the People's Republic of China



Network of  
Aquaculture  
Centres in  
Asia-Pacific



## Shanghai Declaration:

Aquaculture for food and sustainable  
development



水产生态养殖中心 | 联合国粮食及农业组织  
Center for Ecological Aquaculture | FAO



GLOBAL CONFERENCE  
ON **AQUACULTURE**  
AQUACULTURE FOR FOOD AND  
SUSTAINABLE DEVELOPMENT

22–25 September 2021  
Shanghai, China

# White legged shrimp, Common carp, Tilapia, Seaweeds





**White legged shrimp**  
**Indian major carps**  
**Tilapia**

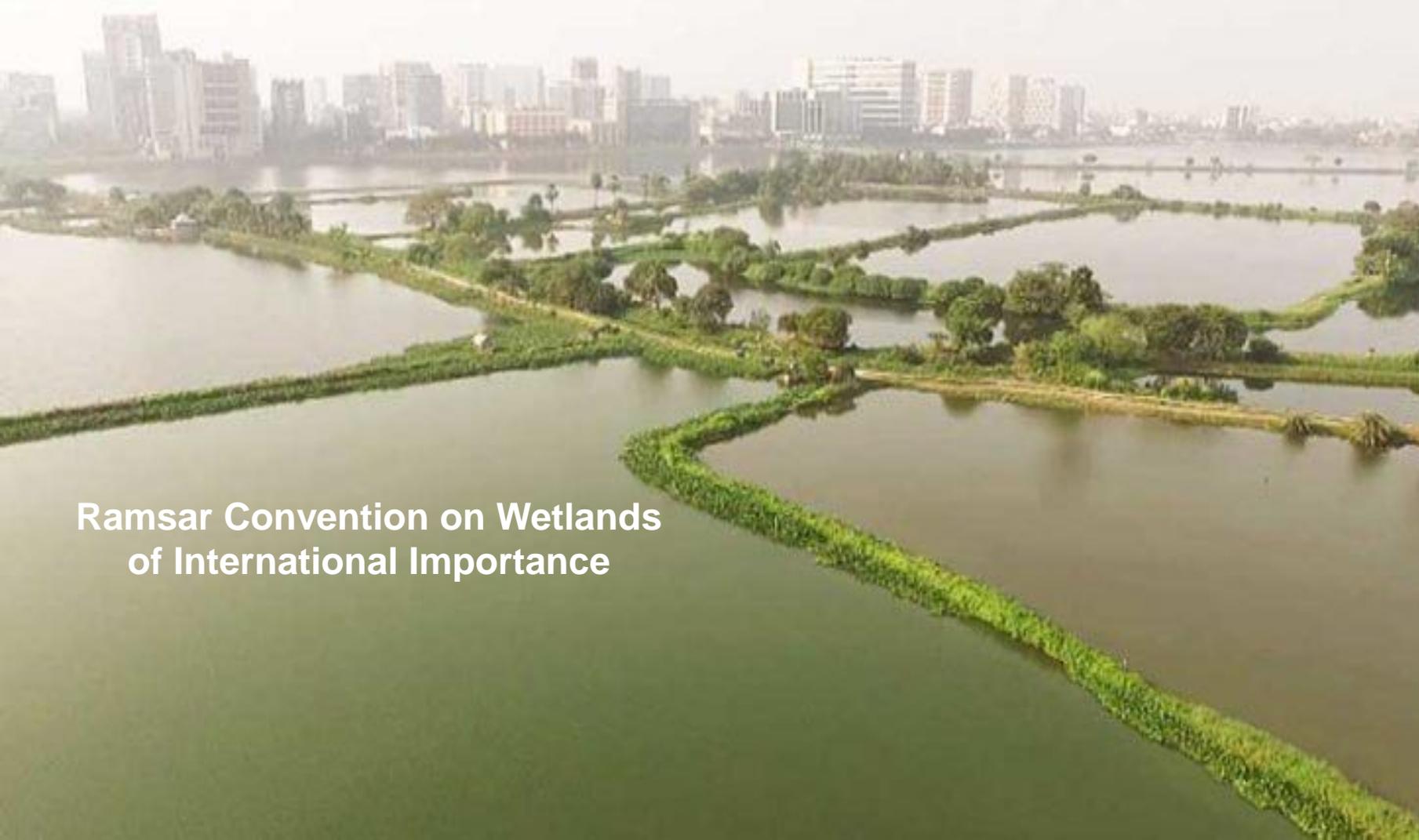


Indian Council of Agricultural Research  
**CENTRAL MARINE FISHERIES RESEARCH INSTITUTE**

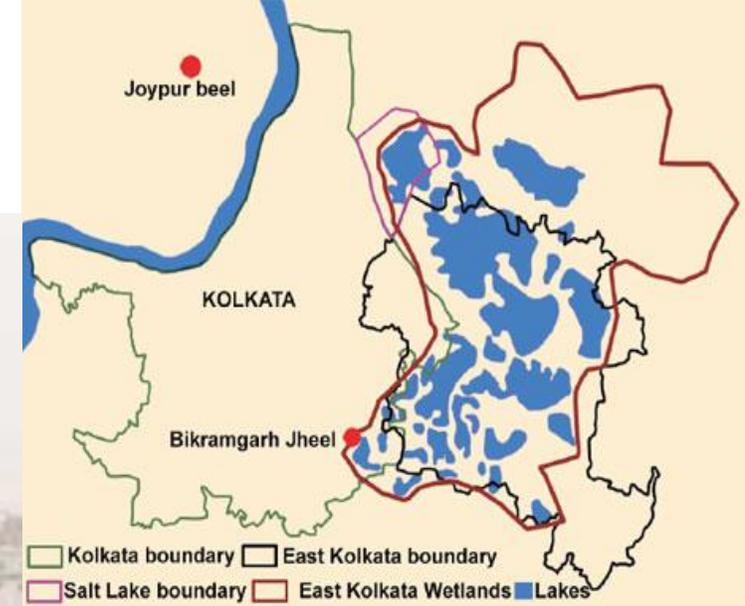
**INDIA POLITICAL MAP**

# East Kolkata (Calcutta) Aquaculture Wetlands

4000 ha ~8,000 MT fish (carps)/year



Ramsar Convention on Wetlands  
of International Importance





# Pangasius catfish

Barramundi

Groupers

Lobsters

White legged shrimp



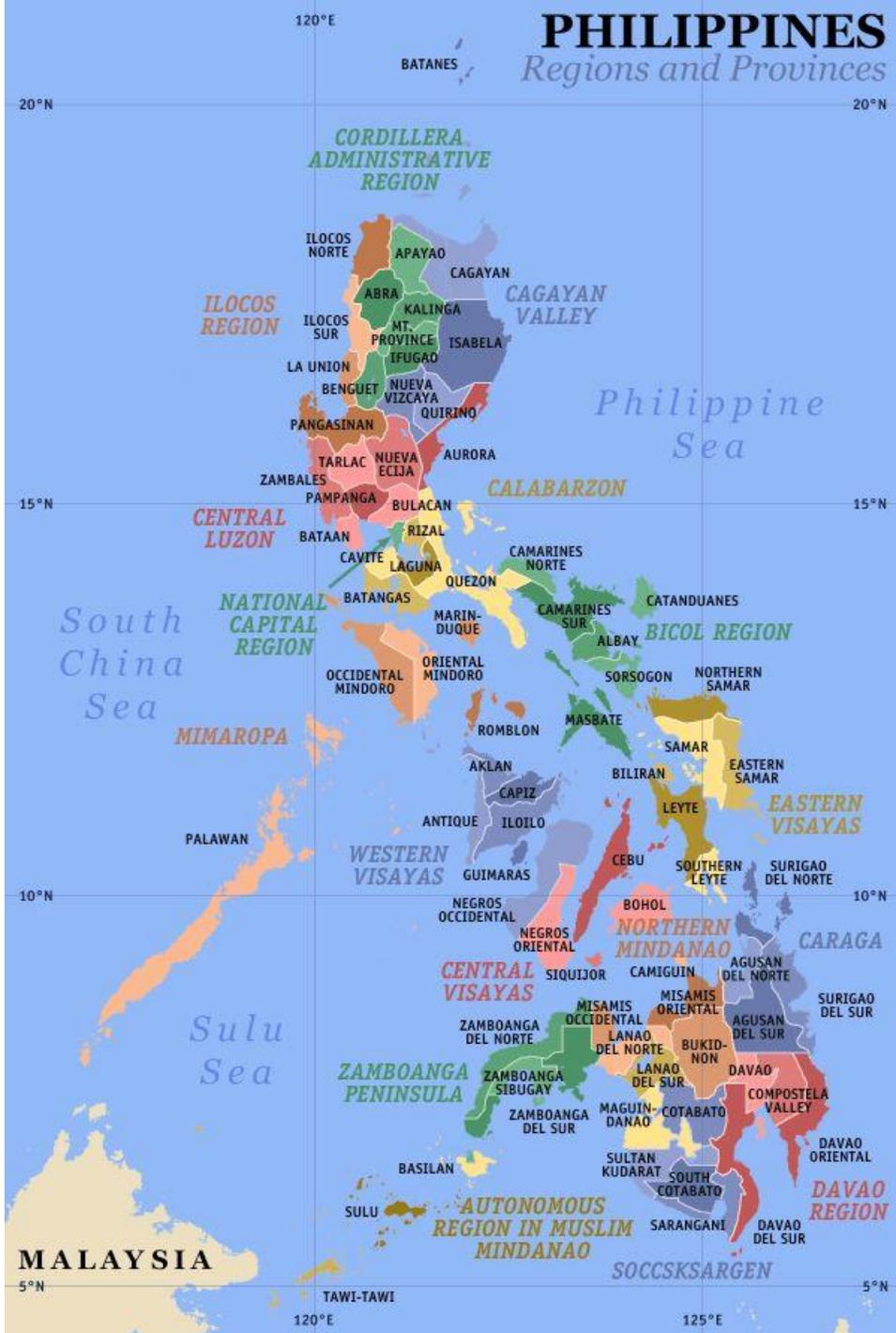


# Tilapia

## Carps

### White legged shrimp





# Tilapia Milkfish Seaweeds



Envision to promote "Sustainable management and development of fisheries and aquaculture to contribute to food security, poverty alleviation and livelihood of people in the Southeast Asian Region"





**Seaweeds**

**Shellfish**

**Marine fish**

**Applied academia**





# Tilapia Rice-fish culture



# AIT

Asian Institute of Technology  
Thailand







# Norway – Salmon trout



Turkey – sea bass & bream, trout

Iceland – Char, salmon

Greece – sea bass & bream

Portugal, Spain – shellfish, turbot, bream



Denmark – trout; RAS

Ireland, Scotland - Salmon



# Tilapia

Mullet

White legged shrimp



# Ecuador

White legged shrimp

# Peru

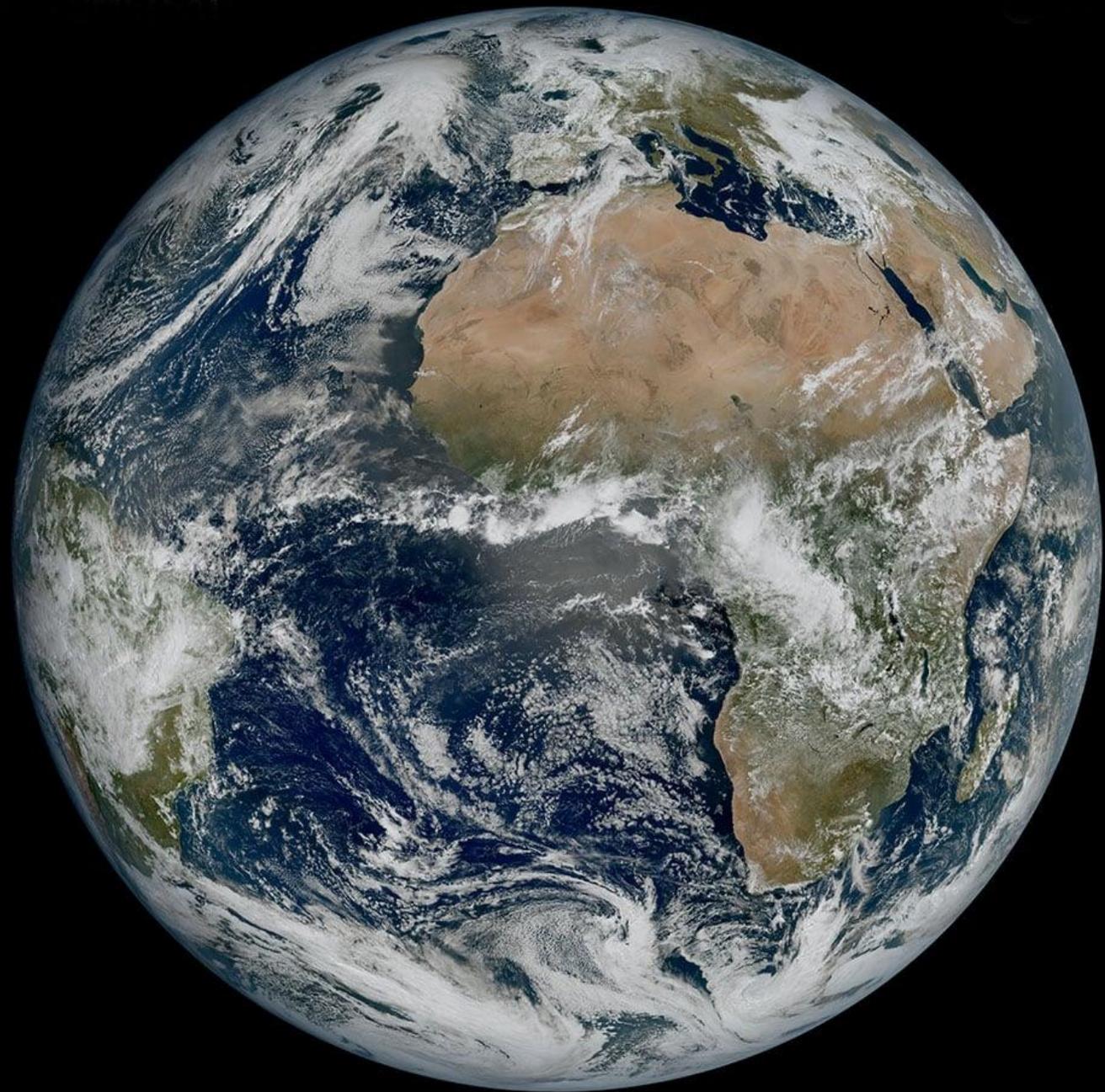
Fish meals, oils

# Chile

Salmon

Brazil – Tilapia  
Pacu







**Saudi Arabia**

**White legged shrimp  
Sea cucumbers**



**UAE – salmon**

**Iran & Iraq – common carp**

# North America



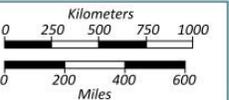
**Mexico – Tilapia, Marine Fish**



**USA – Catfish, shellfish**  
**Canada – Salmon, shellfish**



**Panama – Marine Fish**  
**Costa Rica - Tilapia**  
**Guatemala – White legged shrimp**







**African Colonies after  
the Berlin Conference of 1884**

# The True Size of Africa

A small contribution in the fight against rampant innuery by Kai Krause

Graphic layout for visualization only (some countries are cut and rotated)  
But the conclusions are very accurate: refer to table below for exact data

COUNTRY	AREA x 1000 km <sup>2</sup>
China	9.587
USA	9.629
India	3.287
Mexico	1.964
Peru	1.285
France	633
Spain	506
Papua New Guinea	462
Sweden	441
Japan	378
Germany	357
Norway	324
Italy	301
New Zealand	270
United Kingdom	243
Nepal	147
Bangladesh	144
Greece	132
<b>TOTAL</b>	<b>30.102</b>
<b>AFRICA</b>	<b>30.221</b>

In addition to the well known social issues of illiteracy and innuery, there also should be such a concept as "innuery", meaning insufficient geographical knowledge.

A survey with random American schoolkids let them guess the population and land area of their country. Not entirely unexpected, but still rather unsettling, the majority chose "1-2 billion" and "largest in the world", respectively.

Even with Asian and European college students, geographical estimates were often off by factors of 2-3. This is partly due to the highly distorted nature of the predominantly used mapping projections (such as Mercator).

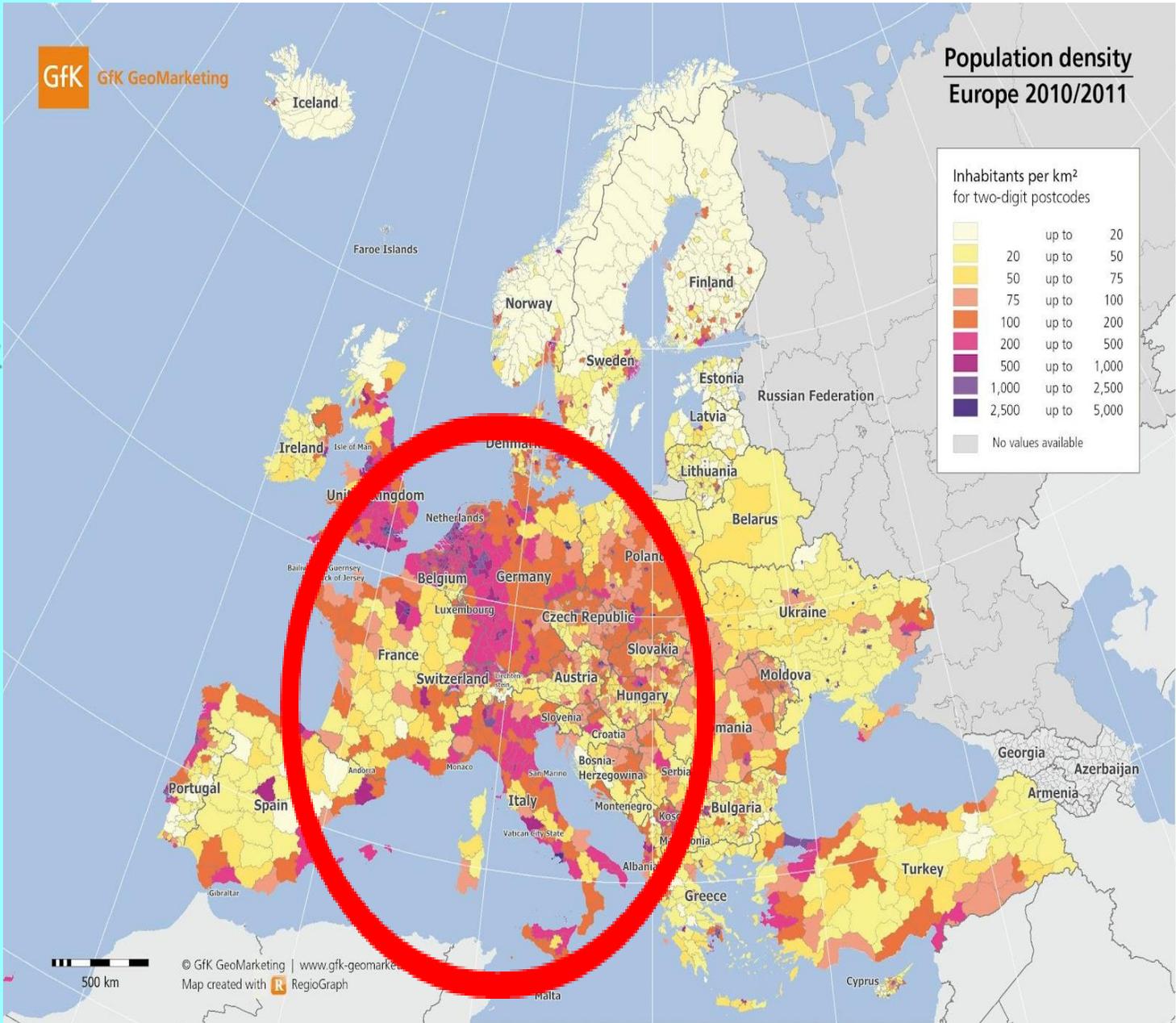
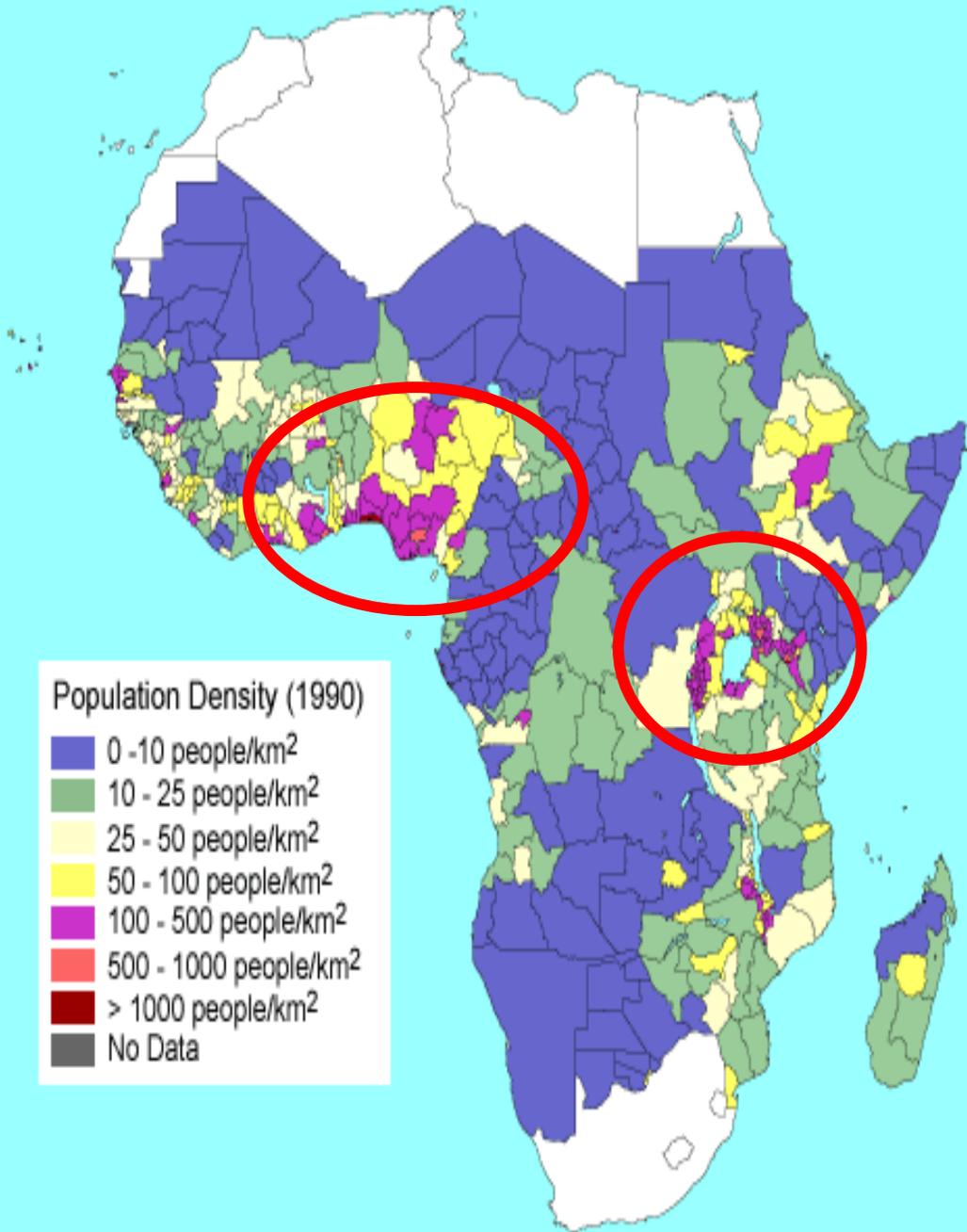
A particularly extreme example is the worldwide misjudgment of the true size of Africa. This single image tries to embody the massive scale, which is larger than the USA, China, India, Japan and all of Europe..... combined!



## Top 100 Countries

Area in square kilometers, Percentage of World Total  
Sources: Britannica, Wikipedia, Annual 2010

1	Russia	17.098.260	6,36
2	Canada	9.984.670	3,75
3	China	9.833.517	3,72
4	United States	9.629.000	3,63
5	Brazil	8.511.977	3,26
6	Australia	7.688.284	2,92
7	India	3.287.263	1,26
8	Argentina	2.780.900	1,06
9	Kazakhstan	2.124.800	0,81
10	Sudan	2.505.810	0,97
11	Algeria	2.381.741	0,92
12	Egypt	2.330.908	0,90
13	Kazakhstan	2.124.800	0,81
14	South Africa	2.109.000	0,80
15	Mexico	1.964.374	0,75
16	Indonesia	1.904.569	0,73
17	Libya	1.759.540	0,68
18	Iran	1.648.190	0,63
19	Mongolia	1.564.110	0,60
20	Peru	1.285.270	0,49
21	Czech	1.284.000	0,49
22	Niger	1.267.000	0,48
23	Angola	1.246.700	0,48
24	Mali	1.230.100	0,47
25	South Africa	1.217.200	0,46
26	Colombia	1.101.700	0,42
27	Ethiopia	1.100.000	0,42
28	Bolivia	1.098.000	0,42
29	Myanmar	1.025.000	0,39
30	Egypt	1.020.000	0,39
31	Tanzania	945.300	0,36
32	Nigeria	923.700	0,35
33	Venezuela	912.000	0,35
34	Jordan	893.710	0,34
35	West Bank	891.000	0,34
36	Pakistan	796.000	0,30
37	Turkey	780.000	0,30
38	Chile	756.700	0,29
39	Pakistan	752.000	0,29
40	Pakistan	676.000	0,26
41	Afghanistan	652.000	0,25
42	Iceland	607.000	0,23
43	Russia	602.000	0,23
44	E. African Rep	600.000	0,23
45	Sweden	449.000	0,17
46	Bangladesh	147.000	0,05
47	Norway	387.000	0,15
48	Norway	387.000	0,15
49	Norway	387.000	0,15
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98	Norway	387.000	0,15
99	Norway	387.000	0,15
100	Norway	387.000	0,15





# African catfish tilapia



# Tilapia

# Tilapia





# Seaweeds



Morocco  
Sea bream  
Shellfish

South Africa  
Abalone

**Aquaculture remains a minor food producer  
in most countries**

**Why?**

**What Can We Do?**

**Governance**

**Scale**

**Rural Development**

**Aquaculture  
Priority Concerns**

**POLLUTION**