

Monitoring the trade in marine ornamental fishes in Europe



- The **trade is 100 years old** and effect on targeted species remains largely unknown.
- Trade consists **almost exclusively of wild species**; a very low number of captive breeding.
- **Coral reefs host over 4,000 species** of coral fishes (potential marine ornamental fishes), **today over 2,300 species are already in trade**.
- **24 species in commercial numbers in trade in the US**, 338 species at research stage (Pouil et al., 2020).
- **Globally: 15-30 million specimens/year**.
- **High mortality** can occur in supply chain depending on species.

Coral reefs are endangered



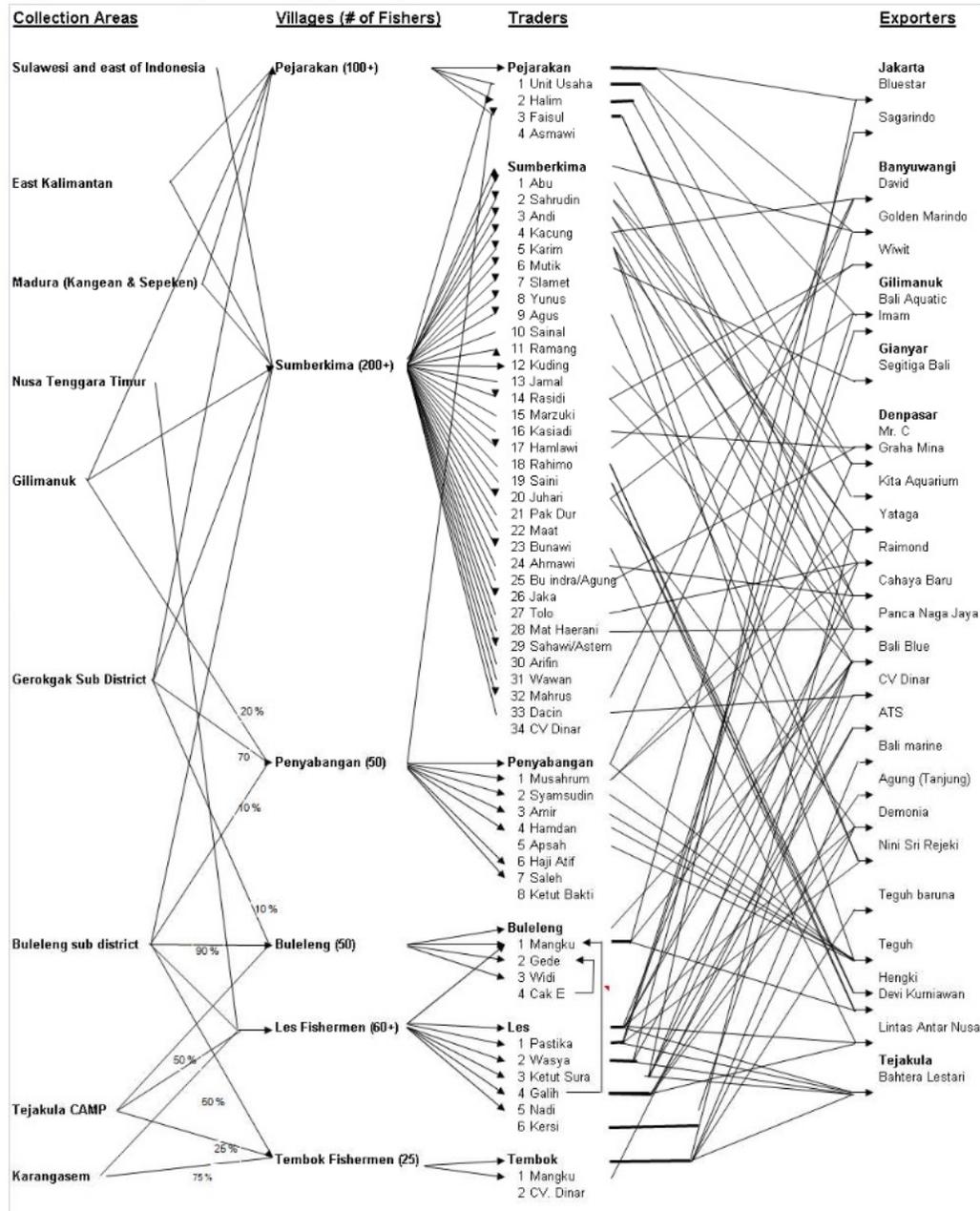
- Coral reefs cover **only <0.1%** of ocean floors; important habitat as nursery ground for food fishes.
- **50% died in last 30 years** (climate change causing coral bleaching and acidification)*. IPCC, 2018: decline by 70-90% at 1.5°C, virtually all at 2°C; UN report, 2023: headed for 2.5-2.9°C.
- **As the habitat is endangered, coral reef fishes** (marine ornamental fishes) **are per se also threatened.**
- Coral fish species can be brought to the brink of extinction through trade: For example, the **Banggai cardinalfish** (*Pterapogon kauderni*). Possible import/export ban in USA.
- A lot of species are still **not assessed** through the IUCN Red List. 15 of the 20 most traded species listed had been last evaluated ≥ 10 years ago. Populations declining.

*Souter et al. 2021. Status of coral reefs of the world: 2020 executive summary international coral reef initiative.

The supply chain

Example from Northern Bali:

- The supply chain is **extremely fragmented, and diffuse**.
- The many **players are disorganized** and informally linked between **thousands of collectors, traders, exporters, importers and retail dealers**.



Amos & Clausen, 2009: Certification as a Conservation Tool in the Marine Aquarium Trade: Challenges to Effectiveness

The EU monitors the trade in marine ornamental fishes through TRACES



- **Europe is the largest importer by value**, followed by the USA, China and East Asia & Pacific.
- The **USA is the largest importer by numbers**, followed by the EU. It is unclear how big the trade is in Asian, South American or in African markets are.
- Marine ornamental fishes imported are **shipped by air freight**, mostly from southeast Asia (Indonesia, the Philippines, Sri Lanka).
- All imported marine ornamental fishes **must clear customs** once landed in the EU.
- The EU has a **monitoring system, TRACES**, for the import of live animals (90 countries, 55,000 users, 39 languages). For other regions, the monitoring system is unknown. TRACES is similar to LEMIS in USA.
- **All traders have to be registered with TRACES and record all imports.**

Paper documents

EUROPÄISCHE GEMEINSCHAFT Gemeinsames Veterinärdocument für die Einfuhr (GVDE Tiere)

1. Versender/Ausführer
 Name: [Redacted]
 Anschrift: [Redacted]
 Land: Singapur Singapore + ISO code SG

2. GVDE-Referenznummer: CVEDA.CH.2009.0001279- V1
 Lokale Referenznummer: IP3/906111303

3. Empfänger
 Name: [Redacted]
 Anschrift: [Redacted]
 Postleitzahl: [Redacted]
 Land: Schweiz + ISO code CH

4. Für die Sendung verantwortliche Person
 Name: [Redacted]
 Anschrift: 8058 Zürich, Schweiz (CH)

5. Herkunftsländ: Singapur + ISO code SG

6. Bestimmungsort
 Name: [Redacted]
 Zulassungsummer: [Redacted]
 Anschrift: [Redacted]
 Postleitzahl: [Redacted]
 Land: Schweiz + ISO code CH

7. Einführer
 Name: [Redacted]
 Anschrift: [Redacted]
 Postleitzahl: [Redacted]
 Land: Schweiz + ISO code CH

8. Veterinärdocumente
 Nummer(n): HO0907243AM
 Ausstellungsdatum: 09.06.2009

9. Vorwändige Ankunftszeit an der GKS
 Datum: 11.06.2009 Uhrzeit: 08:00

10. Transportmittel
 Flugges: Schiff Seilbahn/Straßenbahn Straßenfahrzeug Andere
 Kennzeichen: SQ 346
 Begleitscheine: 618-6900 6571

11. Tierartennummer
 Zierfische

12. Bruttogewicht (Zollcode)
 0301 10

13. Anzahl Tiere
 3721

14. Anzahl Packstücke
 8

15. Tiere zertifiziert für folgenden Zweck:
 Zucht/Nutzung Mast Schlachtung Zugelassene Einrichtungen Heimtiere Sonstige
 Quarantäne Eintragung in Epizootie Umsetzung Zirkus/Ausstellung

16. Bei Umladung
 GKS Nummer: [Redacted]
 Drittländ ISO-Code: [Redacted]

17. Bei Durchfuhr in Drittländer
 Drittland: [Redacted]
 Ausgangs-GKS Nummer: [Redacted]

18. Bei Einfuhr oder zeitweiliger Zulassung
 Endgültige Einfuhr
 Wiedereinfuhr von Pferden nach vorübergehender Ausfuhr
 Zeitweilige Zulassung von Pferden
 Ausgangsdatum: [Redacted]
 Ausgangs-GKS: [Redacted]

19. Durchfuhrmitteldaten
 Mitgliedstaat: [Redacted]
 Mitgliedstaat: [Redacted]
 Mitgliedstaat: [Redacted]

20. Transportmittel nach Grenzkontrollstelle
 Eisenbahnwagen Registrierte Nummer: [Redacted]
 Flugges Fluggesnummer: [Redacted]
 Schiff Name: [Redacted]
 Straßenfahrzeug Amtliches Kennzeichen: SG
 Andere

21. Transportmittelnachweise
 Name: [Redacted]
 Anschrift: [Redacted]
 Postleitzahl: [Redacted]
 Land: Schweiz (CH)
 Zulassungsummer: SG 83126

22. Transportplan
 Ja Nein

23. Ort und Datum der Erklärung
 10.06.2009
 Name des/der Unterzeichnenden: [Redacted]
 Unterschrift: [Redacted]

- Import documents for HS 03011900 (Live ornamental fish [excl. freshwater])

Example of accompanying document, list of species:

ORDER & ACCOUNT OF MESSRS: [Redacted]

EXPORTER OF TROPICAL FRESHWATER & MARINE FISHES, INVERTEBRATES, SOFT CORALS & AQUATIC PLANTS

SHIP VIA	FROM	DESTINATION	AIR WAY BILL NO.	DATE	CURRENCY	TERMS OF PAYMENT
(LX) SWISS INTER.	SINGAPORE	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

BOX	CODE	LATIN NAME	DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT
SUB: VIVI TYPE: WM - MARINE FISH						
#01-#02	0210	Chrysiptera parasema	Yellow-tailed Blue Damsel	6	2.310	13.86
#01-#02	0207	Chrysiptera hemicyanea	Azure Half Blue Damsel	6	2.475	14.85
#01-#02	0220	Chromis viridis	Green Chromis	6	1.980	11.88
#01-#02	0075	Amphiprion ocellaris	Clown Fish (Local)	6	1.240	7.44
#01-#02	0125	Amphiprion akallopisos	Orange Skunk Clown	4	3.300	13.20
#01-#02	3270	Synchiropus ocellatus	Scooter Dragonet	2	3.300	6.60
#01-#02	2655	Ptereleotris evides	Scissortail Goby	2	5.280	10.56
#01-#02	2085	Meiacanthus grammistes	Yellow-striped Blenny	3	1.650	4.95
#01-#02	2685	Valenciennea strigata	Goldenhead Goby	2	5.775	11.55
#01-#02	2476	Amblygobius bynoensis	Spottyhead Goby	2	3.960	7.92
#01-#02	1905	Halichoeres chrysus	Golden Wrasse	2	4.950	9.90
#01-#02	2325	Zebrasoma scopas	Brown Sailfin Tang	2	7.920	15.84
#01-#02	1285	Canthigaster valentini	Black-saddled Toby	2	6.600	13.20
#01-#02	0945	Centropyge bicolor	Bicolor Angel	2	11.550	23.10
#01-#02	0955	Centropyge bispinosa	Coral Beauty Angel	1	10.725	10.73
#01-#02	0725	Chelmon rostratus	Copperband Butterfly	2	3.300	6.60
#01-#02	2250	Dtenochaetus striatus	Striped Bristletooth	2	5.775	11.55
				SUB/TOTAL		193.73
2.00 Boxes				PACKING CHARGES		20.30
				TOTAL		214.03

Ricardo Calado, PhD, University Aveiro, Portugal
 Francisco Aguayo, economist, Universidad Nacional Autónoma de México
 Monica Biondo, PhD, Fondation Franz Weber



PRO CORAL FISH



TRACES interface from 2014-2019

▼ Consignment
▶ References ▶ Traders ▶ Animals ▶ Transport ▶ Route ▶ Purpose

Details of Consignment Presented: Select Species

Type ▼
Family ▼

▶Cancel ▶Assign and Add New Code ▶Assign

<input type="checkbox"/> Abalistes stellatus	<input type="checkbox"/> Ablabys taenianotus	<input type="checkbox"/> Abudegduf abdominalis
<input type="checkbox"/> Abudegduf bengalensis	<input type="checkbox"/> Abudegduf hoefleri	<input type="checkbox"/> Abudegduf luridus
<input type="checkbox"/> Abudegduf margariteus	<input type="checkbox"/> Abudegduf natalensis	<input type="checkbox"/> Abudegduf saxatilis
<input type="checkbox"/> Abudegduf septemfasciatus	<input type="checkbox"/> Abudegduf sexfasciatus	<input type="checkbox"/> Abudegduf sordidus
<input type="checkbox"/> Abudegduf sparoides	<input type="checkbox"/> Abudegduf taurus	<input type="checkbox"/> Abudegduf troschelii
<input type="checkbox"/> Abudegduf vaigiensis	<input type="checkbox"/> Abudegduf whitleyi	<input type="checkbox"/> Acanthemblemaria aspera
<input type="checkbox"/> Acanthemblemaria spinosa	<input type="checkbox"/> Acanthochromis polyacanthus	<input type="checkbox"/> Acanthostracion polygonia
<input type="checkbox"/> Acanthostracion quadricornis	<input type="checkbox"/> Acanthuridae	<input type="checkbox"/> Acanthurus achilles
<input type="checkbox"/> Acanthurus albipectoralis	<input type="checkbox"/> Acanthurus bahianus	<input type="checkbox"/> Acanthurus barieni
<input type="checkbox"/> Acanthurus blochii	<input type="checkbox"/> Acanthurus chirurgus	<input type="checkbox"/> Acanthurus coeruleus
<input type="checkbox"/> Acanthurus dussumieri	<input type="checkbox"/> Acanthurus fowleri	<input type="checkbox"/> Acanthurus gahhm
<input type="checkbox"/> Acanthurus guttatus	<input type="checkbox"/> Acanthurus japonicus	<input type="checkbox"/> Acanthurus leucocheilus
<input type="checkbox"/> Acanthurus leucopareus	<input type="checkbox"/> Acanthurus leucosternon	<input type="checkbox"/> Acanthurus lineatus
<input type="checkbox"/> Acanthurus maculiceps	<input type="checkbox"/> Acanthurus mata	<input type="checkbox"/> Acanthurus monroviae
<input type="checkbox"/> Acanthurus nigricans	<input type="checkbox"/> Acanthurus nigricauda	<input type="checkbox"/> Acanthurus nigrofuscus
<input type="checkbox"/> Acanthurus nigroris	<input type="checkbox"/> Acanthurus nubilus	<input type="checkbox"/> Acanthurus olivaceus

Until December 2019

Positive:

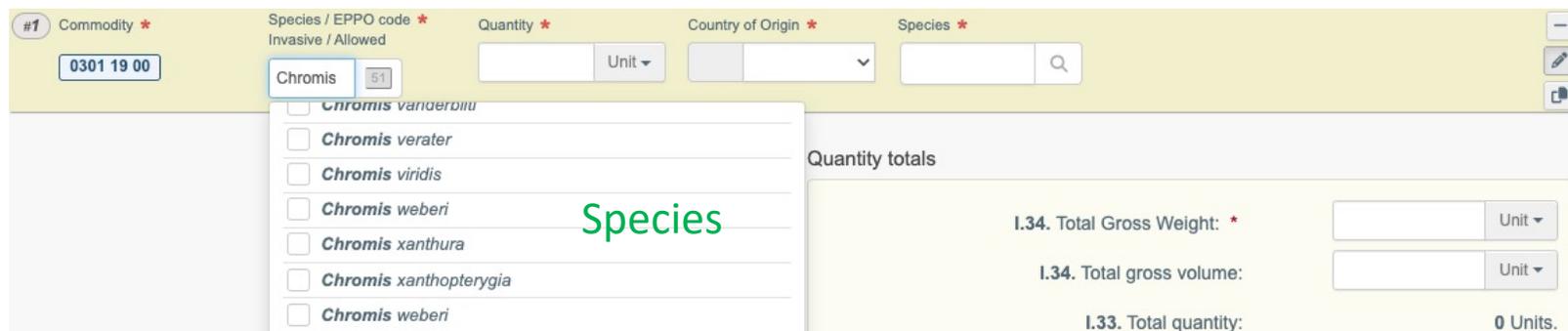
- > 1,800 species

Negative:

- Selectable at family or species level

Family
Species

New TRACES interface since 2019



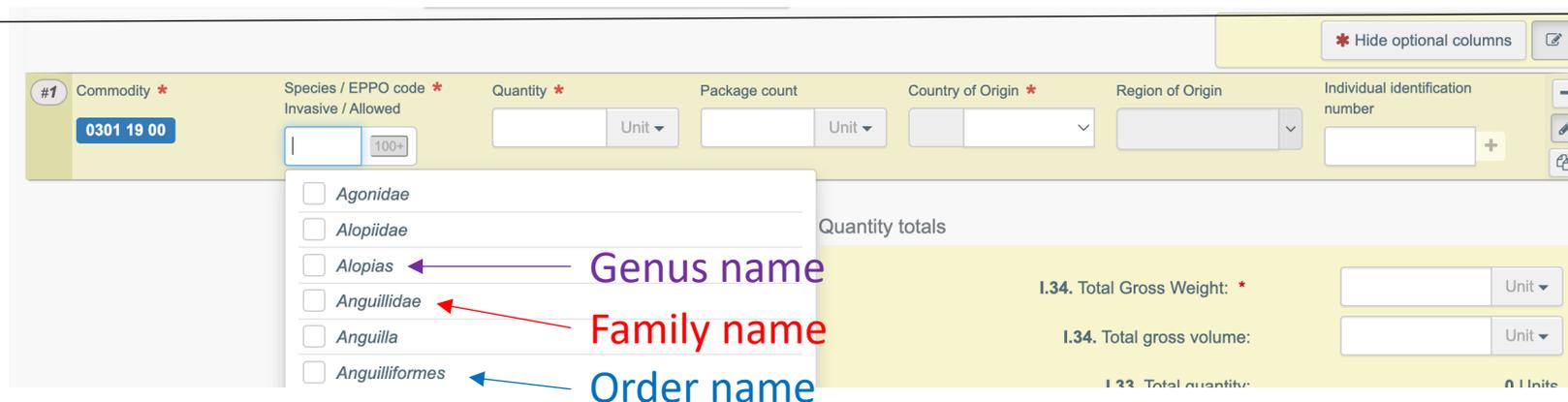
Beginning in 2019

Positive:

- **Pull-down** menu
- **Import** as excel files possible

Negative:

- Selectable at **species**, **genus**, **family** and even **order** level



Other (small) problems:

- > freshwater fish, even amphibians
- > double names of country: UK and UK (Northern Ireland), The Netherlands and Netherlands
- > possibility to use '-', '/'

TRACES data quality

	2014-2021			
	Rows		Specimens	
	#	%	#	%
Marine ornamental fishes	282,226	94.9	25,503,345	59.9
Not marine ornamental fishes*	15,186	5.1	17,094,782	40.2
Total	297,412	100.0	42,573,041	100.0

- Data quality 'deminshed' with the new interface.
- Over 40 % were not marine ornamental fishes.
- Positive: Possibility to import excel files.

Two easy ways to adapt TRACES

IMSOC
TRACES · ADIS · EUROPHYT · IRASFF

TRAINING
6.6.15
12/04/2023 06:38:04

Welcome Monica Biondo

Last login: 06/04/2023 10:30:05 +0200 CEST .

You are on environment: **Training**
This environment is dedicated to the training of TRACES NT stakeholders.

Latest News

No latest news so far...

Receive Latest News by Email

My pending certificates

Reference number	Action	Countries of origin	Commodities
∅ No pending certificates found			

Last update: 2023 | [Report a Problem](#) | [Legal Notice](#) | [Terms of Use](#) | [Cookies](#) | [Privacy statement](#) | [Credits](#) | [Contact](#) | [Top Page](#)

1. Scientific names

- Only allow the use of **genus species (two words)**; i.e. eliminate all one-word-words.
- Only allow **marine ornamental fishes**, i. e. coral reef fishes according to www.marinespecies.org

#1 Commodity * 0301 19 00

Species / EPPO code * Invasive / Allowed Chromis 55

Quantity * Unit Country of Origin *

- Chromis tematensis*
- Chromis margaritifer*
- Chromis analis*
- Chromis cadenati*
- Chromis crusma*
- Chromis weberi*
- Chromis flavaxilla*
- Chromis xanthopterygia*
- Chromis intercrusma*

Quantity totals

Chromis analis

Two easy ways to adapt TRACES

The screenshot shows the IMSOC (International Monitoring System for Oceans and Coasts) user interface. At the top, there is a navigation bar with the European Commission logo, the IMSOC logo, and links to TRACES, ADIS, EUROPHYT, and iRASFF. A 'TRAINING' badge indicates the current environment, dated 6.6.15 (12/04/2023 06:38:04). Below the navigation bar, there is a user profile section for Monica Biondo, showing her last login time and a notification that the environment is dedicated to training TRACES NT stakeholders. A 'Latest News' section shows no news and an option to receive news by email. Below that, a 'My pending certificates' section contains a table with columns for Reference number, Action, Countries of origin, and Comments. The table is currently empty, displaying 'No pending certificates found'. At the bottom of the page, there is a footer with links for 'Last update: 2023', 'Report a Problem', 'Legal Notice', 'Terms of Use', 'Cookies', 'Privacy statement', 'Credits', 'Contact', and 'Top Page'.

2. Specify source

- Exact source: **origin of capture** (not hub such as Singapore).
- Specify **wild sourced or captive bred** (facility name, country).

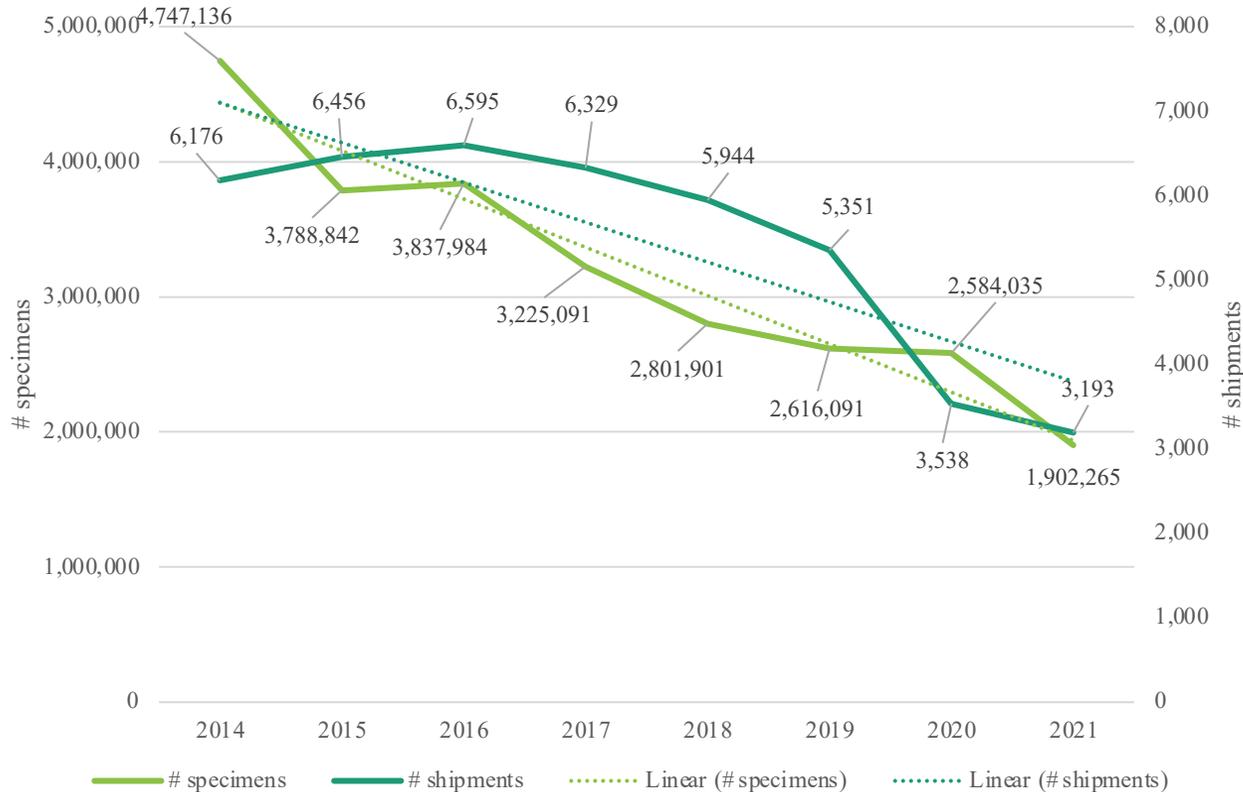


wild-caught (www.fishbase.org)



captive-bred (dejongmarinelife.nl)

An updated review of the marine ornamental fish trade in the European Union: 2014 - 2021



- From 2014-2021 an average of **3.25 million specimens annually** from **1,452 species**.
- **30 % of shipments are NOT at species-level, but at family-level.**

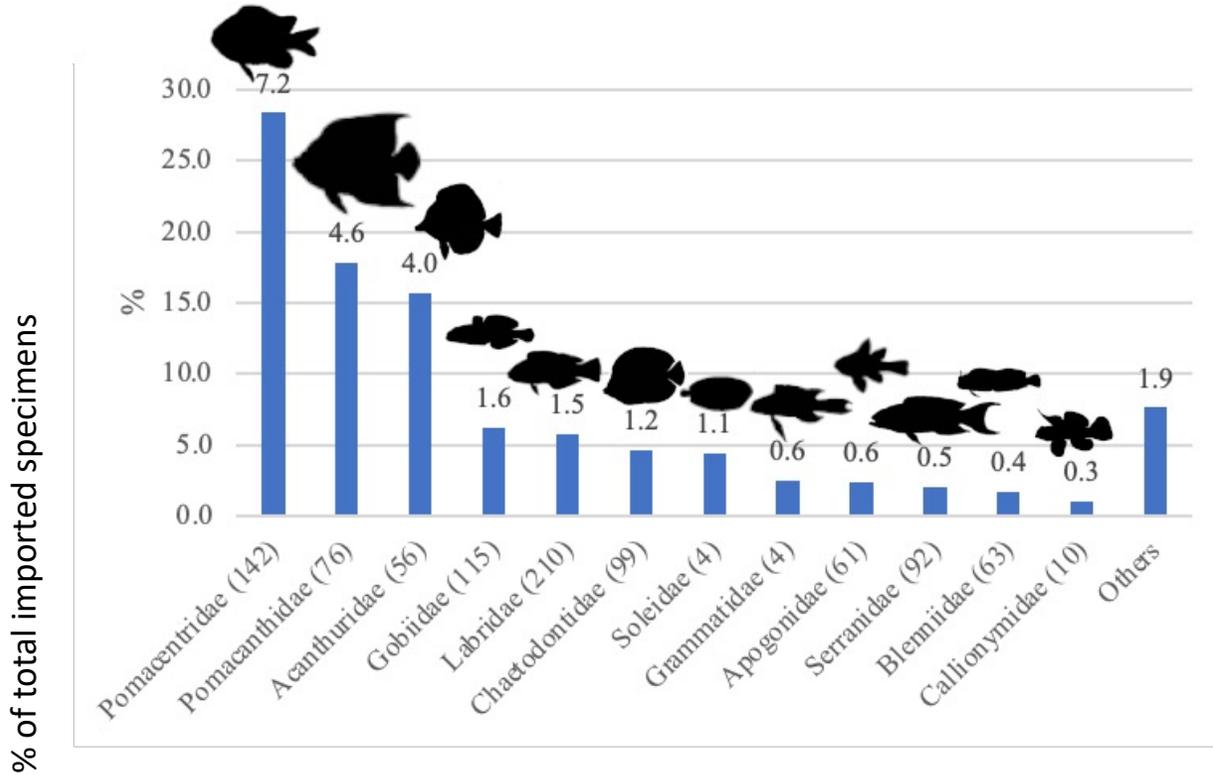
Ricardo Calado, PhD, University Aveiro, Portugal
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 Monica Biondo, PhD, Fondation Franz Weber



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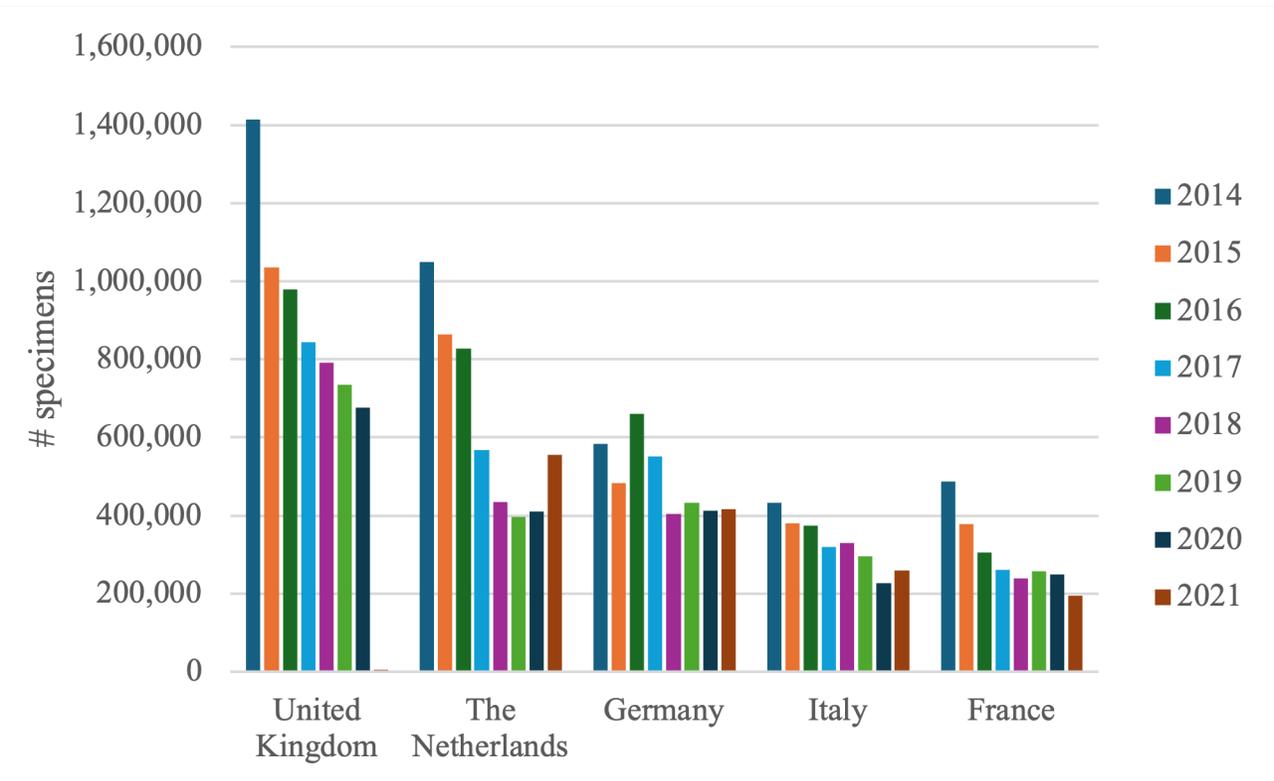
Marine ornamental fishes in trade in Europe



- From 2014-2021 an average **120 families** (between 2014-2017 imports came from 86, between 2018-2021 from 119 families).
- The top **2 families accounted for 92.4%** of all traded marine ornamental fishes in Europe (specimens).
- Family **Labridae** featured the highest number of imported species: **210 species**.
- **Pomacentridae** was the most traded family in number of specimens : **7.2 million**.

imported species per family in parentheses
 # on top of the bar representing millions of specimens

Marine ornamental fishes in trade in Europe



- **30 European countries** imported marine ornamental fishes between 2014-2021 including Iceland, Norway and Switzerland which are not part of the EU.
- Between 2014-2020 the **United Kingdom** was the primary importer of marine ornamental fishes; except for 2021 (left EU),
- followed by The Netherlands, Germany, Italy and France.
- These **five countries** imported **80.5%** of all marine ornamental fishes.

Marine ornamental fishes in trade in Europe

Country of origin	Shipments			Specimens			Value of imports (€)		
	AVG	SD	%	AVG	SD	%	AVG	SD	%
Indonesia	1,823.6	436.8	33.5	1,394,208	393,487	43.7	3,621,793	527,884	38.1
Philippines	663.5	183.6	12.2	529,076	100,105	16.6	888,489	133,226	9.3
Sri Lanka	883.3	175.6	16.2	266,945	62,842	8.4	863,273	80,583	9.1
United States	441.8	162.6	8.1	221,012	131,618	6.9	1,235,212	384,862	13.0
Kenya	391.0	74.7	7.2	197,073	21,001	6.2	791,417	300,613	8.3
Maldives	198.8	66.9	3.6	118,709	26,912	3.7	234,698	50,275	2.5
Singapore	356.8	123.4	6.5	107,222	103,373	3.4	118,618	44,016	1.3
Israel	236.6	91.8	4.3	86,151	31,104	2.7	146,374	43,452	1.5
Fiji	58.3	23.9	1.1	46,633	21,231	1.5	51,124	15,433	0.5
Dominican Republic	57.5	28.1	1.1	37,638	31,289	1.2	26,789	18,208	0.3
Other	12.4		6.2	6,756		5.7	1,531,137		16.1
Total			100.0			100.0			100.0

- **61 countries exported** marine ornamental fishes to Europe.
- Three main exporting countries: **Indonesia, the Philippines and Sri Lanka**. They accounted for **61.9% of shipments** and **68.7% of species**.
- Together with the **United States, Kenya, the Maldives, Singapore and Israel** they summed up **91.7% of all shipments** and **91.6% of all specimens** of marine ornamental fishes entering.
- These eight countries represented **83.1% of the import value: Indonesia followed by the USA**.

Watchlist and Watchlist+

Rank	Species	Common name	Family	IUCN Red List status	Overall score	Median volume score	Slope score	IUCN score	Vulnerability score
1	<i>Chromis viridis</i>	Blue green damselfish	Pomacentridae	LC	210	100	100	0	10
2	<i>Amphiprion ocellaris</i>	Clown anemonefish	Pomacentridae	LC	157	62	84	0	10
3	<i>Chelmon rostratus</i>	Copperband butterflyfish	Chaetodontidae	LC	67	23	34	0	10
4	<i>Acanthurus achilles</i>	Achilles tang	Acanthuridae	LC	68	14	41	0	14
5	<i>Zebrasoma flavescens</i>	Yellow tang	Acanthuridae	LC	88	13	18	0	57
6	<i>Chrysiptera parasema</i>	Goldtail demoiselle	Pomacentridae	LC	42	9	23	0	10
7	<i>Chrysiptera cyanea</i>	Sapphire devil	Pomacentridae	LC	28	6	13	0	10
8	<i>Nemateleotris magnifica</i>	Fire goby	Gobiidae	LC	21	5	6	0	10
9	<i>Centropyge loriculus</i>	Flame angel	Pomacanthidae	LC	25	5	10	0	10
10	<i>Zebrasoma velifer</i>	Sailfin tang	Acanthuridae	LC	59	4	19	0	37
11	<i>Centropyge acanthops</i>	Orangeback angelfish	Pomacanthidae	LC	28	4	14	0	10
12	<i>Acanthurus japonicus</i>	Japan surgeonfish	Acanthuridae	LC	27	3	13	0	11
13	<i>Pomacanthus annularis</i>	Bluering angelfish	Pomacanthidae	LC	44	3	6	0	35
14	<i>Naso lituratus</i>	Orangespine unicornfish	Acanthuridae	LC	39	2	3	0	34
15	<i>Pomacentrus alleni</i>	Adaman damsel	Pomacentridae	LC	16	2	4	0	10
16	<i>Pseudochromis fridmani</i>	Orchid dottyback	Pseudochromidae	LC	15	2	3	0	10
17	<i>Centropyge tibicen</i>	Keyhole angelfish	Pomacanthidae	LC	17	2	5	0	10
18	<i>Centropyge potteri</i>	Russet angelfish	Pomacanthidae	LC	17	2	5	0	10
19	<i>Halichoeres chrysus</i>	Canary wrasse	Labridae	LC	14	2	2	0	10
20	<i>Dascyllus aruanus</i>	Whitetail dascyllus	Pomacentridae	LC	31	1	3	0	26
21	<i>Amphiprion polymnus</i>	Saddleback clownfish	Pomacentridae	LC	16	1	4	0	10
22	<i>Dascyllus trimaculatus</i>	Treespot dascyllus	Pomacentridae	LC	16	1	5	0	10
23	<i>Ecsenius bicolor</i>	Bicolor blenny	Blenniidae	LC	13	1	2	0	10
24	<i>Chaetodon auriga</i>	Threadfin butterflyfish	Chaetodontidae	LC	32	1	7	0	23
25	<i>Dascyllus melanurus</i>	Blacktail humbug	Pomacentridae	LC	15	1	4	0	10
26	<i>Pomacentrus coelestis</i>	Neon damselfish	Pomacentridae	LC	13	1	2	0	10
27	<i>Neosynchiropus ocellatus</i>	Ocellated dragonet	Callionymidae	N.E.	54	1	2	40	10
28	<i>Synchiropus picturatus</i>	Picturesque dragonet	Callionymidae	LC	13	1	2	0	10
29	<i>Heniochus acuminatus</i>	Pennant coral fish	Chaetodontidae	LC	20	1	4	0	15
30	<i>Acanthurus olivaceus</i>	Orangespot surgeonfish	Acanthuridae	LC	20	1	1	0	18
31	<i>Amblygobius phalaena</i>	Whitebarred goby	Gobiidae	LC	13	1	2	0	10
32	<i>Canthigaster valentini</i>	Valentin's sharpnose puffer	Tetraodontidae	LC	12	1	1	0	10
33	<i>Haemulon flavolineatum</i>	Frenchg grunt	Haemulidae	LC	44	1	12	0	32
34	<i>Pterois volitans</i>	Red lionfish	Scorpaenidae	LC	37	1	2	0	34
35	<i>Odonus niger</i>	Red-toothed triggerfish	Balistidae	LC	42	1	1	0	40
36	<i>Holocanthus ciliaris</i>	Queen angelfish	Pomacanthidae	LC	38	0	2	0	35

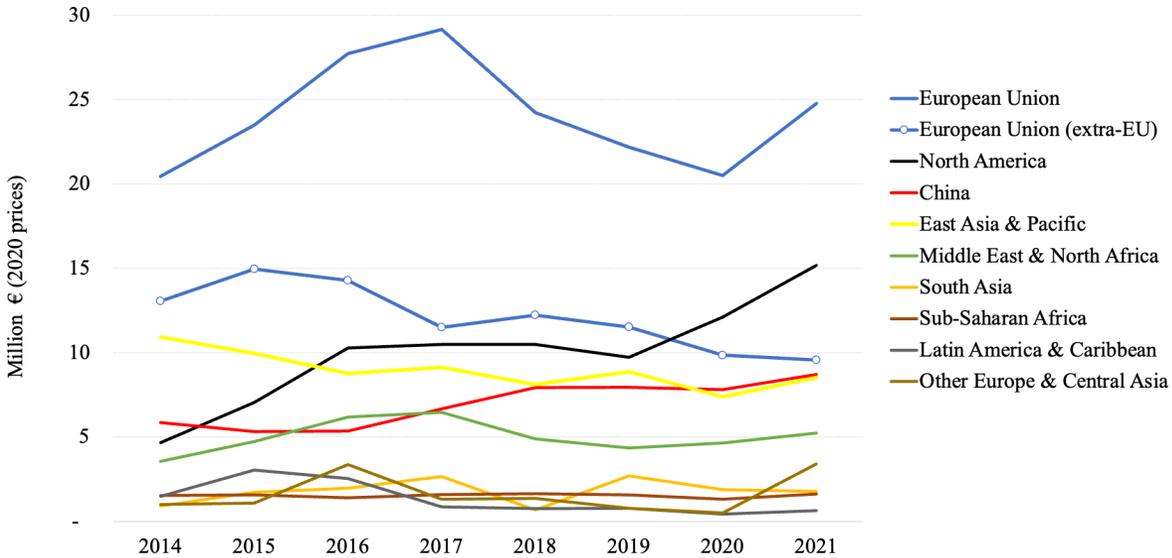
- Watchlist based on number of specimens traded, import trends, and vulnerability index (FishBase) and conservation status (IUCN Red List) and Watchlist+ including linear regression.

➤ One example: The blue green damselfish *Chromis viridis* tops the rankings in the Watchlist+ with 70% decline in trade numbers. It was evaluated and listed by the IUCN Red List in 2022 as 'least concern'. Its populations are declining.

In numbers:

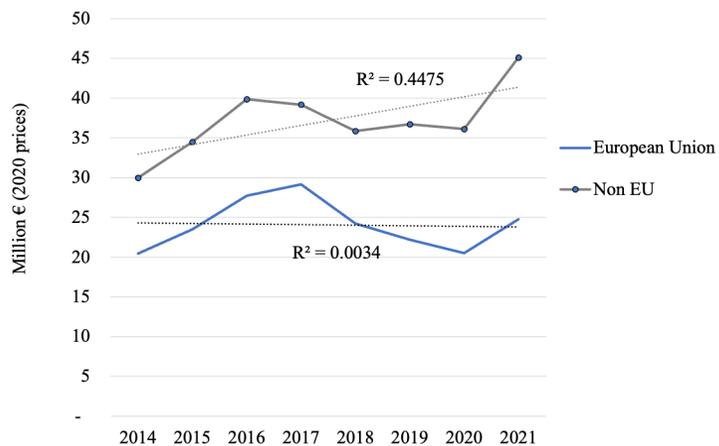
- Blue green damselfish *Chromis viridis* is the most imported species, comprising 12.4%, the Clown anemonefish *Amphiprion ocellaris* 10% and Bicolor angelfish *Centropyge bicolor* makes up 9.4% of the total number of specimens.

Data on value



UN Comtrade data to assess the annual import by region of the global trade in marine ornamental fishes:

- **Global value: 70 million Euros**
 - **European trade: 25 million Euro**
- > Globally increasing**



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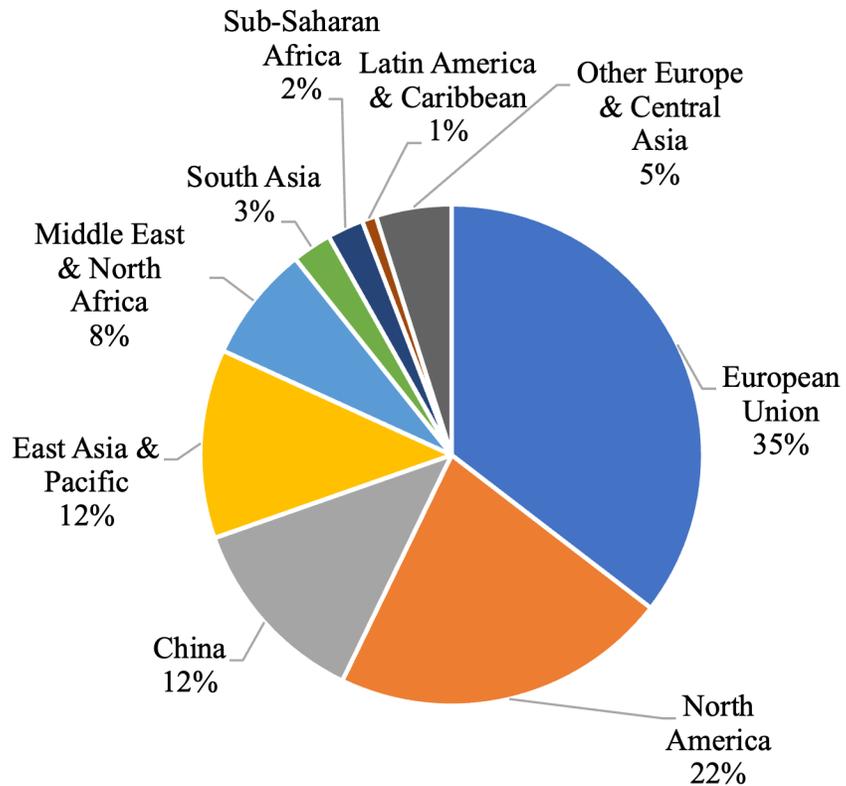


**PRO
CORAL
FISH**



**FONDATION
FRANZ
WEBER**

Data on value

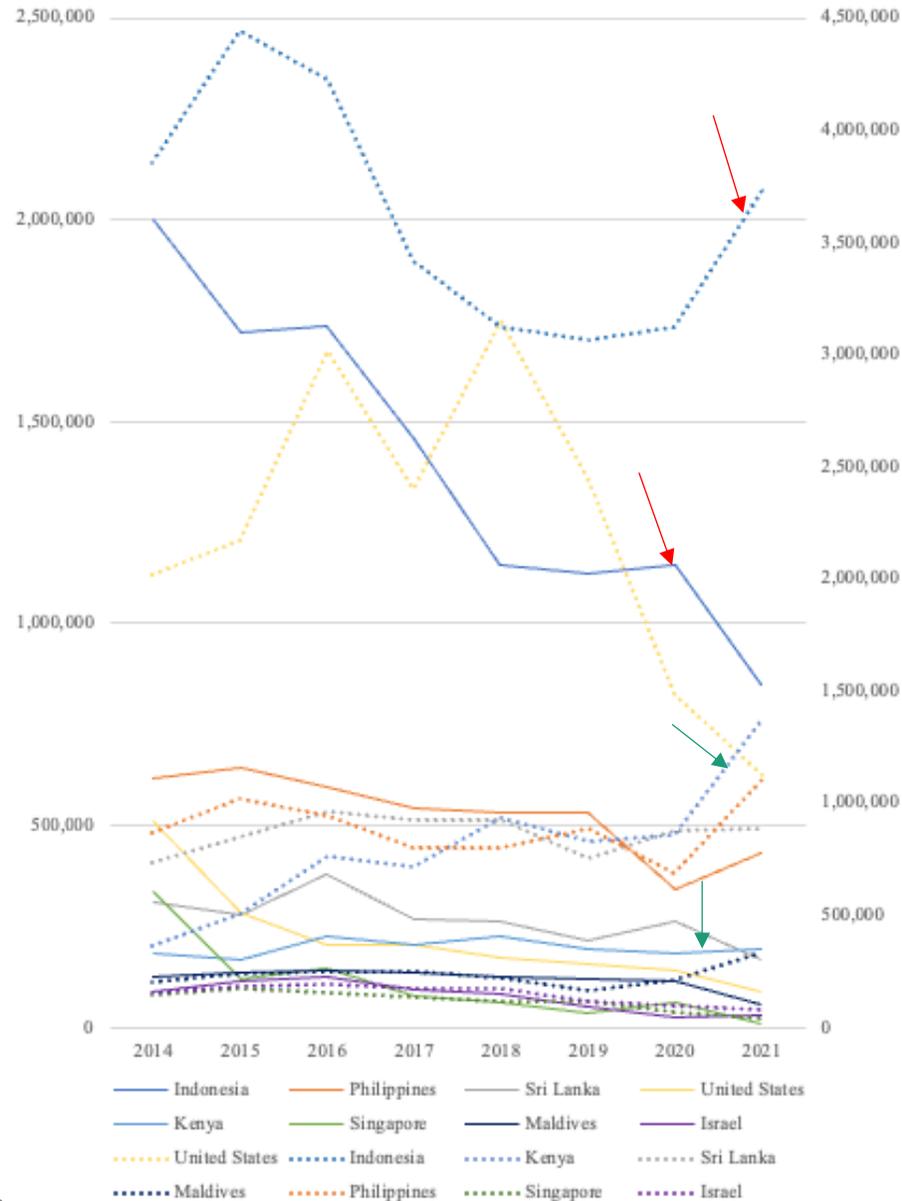


Europe is the largest player:

Share (%) of import value by region in 2021:

- The EU accounted for 35% (25 million Euro)
- USA, China and East Asia and Pacific

Value and number of specimens



- For example: Although the number of specimens from **Indonesia** has decreased between 2018 and 2021, their overall value increased.
- For **Kenya**, the number of specimens exported increased but not in the same proportion as their value.

_____ specimens, value

Value, number of specimens/shipment

Country of origin	Specimens/shipment	€/specimen
Indonesia	765	2.6
Philippines	797	1.7
Sri Lanka	302	3.2
United States	333	5.6
Kenya	504	4.0
Maldives	597	2.0
Singapore	301	1.1
Israel	364	1.7
Fiji	801	1.1
Dominican Republic	655	0.7

- Average number of specimens per shipment and average price per specimen in € (2020 prices) of the top eight exporting countries between 2014 and 2021; EuroStat.

Example:



Fishermen receives pro Banggai cardinalfish arriving alive in Bali **5 US cents**



In Europe the same fish fetches **50 US\$**

➤ This is a **1000-fold gain**.

In summary



TRACES is a good monitoring tool with regards to the import of marine ornamental fishes to Europe. TRACES supplies **number of specimens** (we supply trends), species and origin. But

TRACES needs a few tweaks:

- Compulsory requirement for species-level information (genus, species).
- Source country (geographical origin).
- Clarification if fishes are captive-bred (breeding facility name) or wild-caught.
- The aquarium industry has clearly stated its interest in using a tool such as TRACES (EU Consultation paper, 2008).
- **All data from the industry has already been registered with TRACES.**

In summary



All species of coral reef fishes need to be (re-) evaluated by the **IUCN Red List**.

- Using parameters from TRACES, FishBase and IUCN Red List, the Watchlists could determine whether a species requires monitoring through the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

For example: The most trade species in Europe and United States: ***Chromis viridis***:

- Its strong decline in the European trade of 70% between 2014 to 2021, may warrant monitoring through CITES.

Inputs with regards to WCMC and Species 360

INTERNATIONAL TRADE IN NON-CITES LISTED MARINE ORNAMENTAL FISH

International trade, conservation status, management and legislation for non-CITES marine ornamental fish in support of the implementation of Decision 18.296

CoP19, Inf. Doc. 99, WCMC

Marine Ornamental Fish SKI

Providing Data to Inform CITES Decisions and Recommendations to Manage the International Trade of Marine Ornamental Fish

SKI Species360

CoP19, Inf. Doc. 99, WCMC:

- The number of fishes is calculated by **weight**. This **includes the water!**
- Only found 33 species in TRACES?

Species360, Species Knowledge Initiative SKI

- Quality data with number of specimens **for the US**, but newest data from 2011.
- Species come from different databases (not only US data), illicit trade & confiscation which do not give numbers of specimens.

Consolidated species lists:

TRACES: 1,452

WCMC: 2,106

(Unique: TRACES + WCMC = 2,338)

Species360: 2,622

TOTAL: 3,066