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6th Forum
of the EU Strategy for the Adriatic and Ionian Region
Along the coasts of the shared sea
Izola, 11–12 May 2021

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Aquaponics in Albania

A tool for promoting biological farming and future youth education

Prof. assoc. Dr. Rigers Bakiu and Prof. assoc. Dr. Edmond Hala

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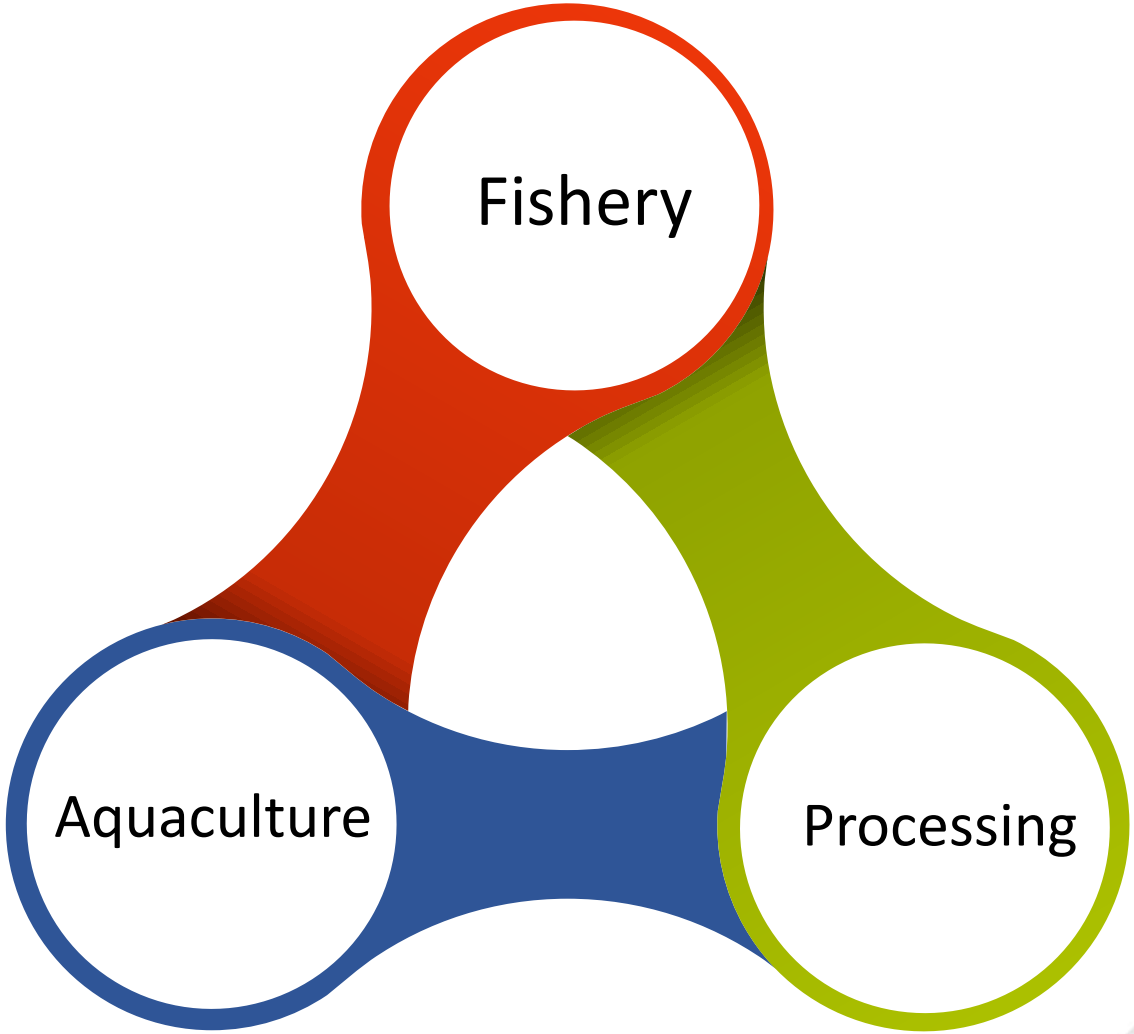
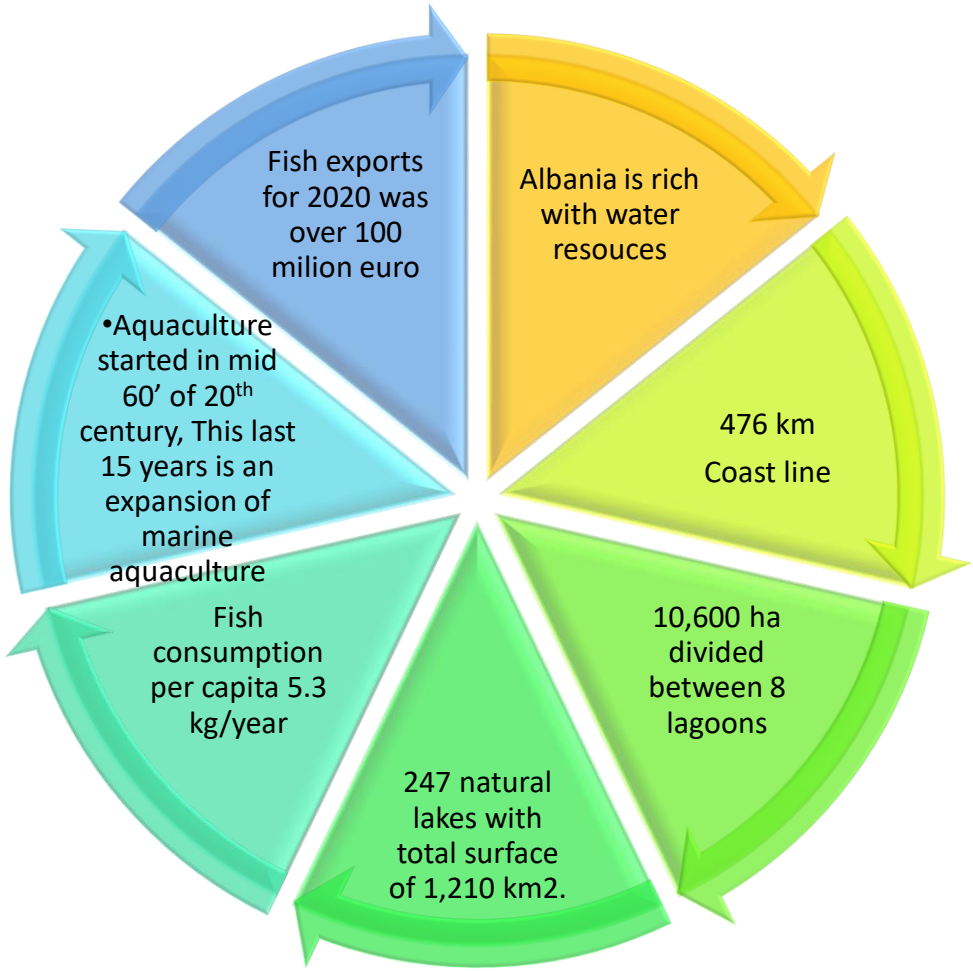
Overview of Fisheries sector in Albania

Prof. assoc. Dr. Rigers Bakiu and Prof. assoc. Dr. Edmond Hala

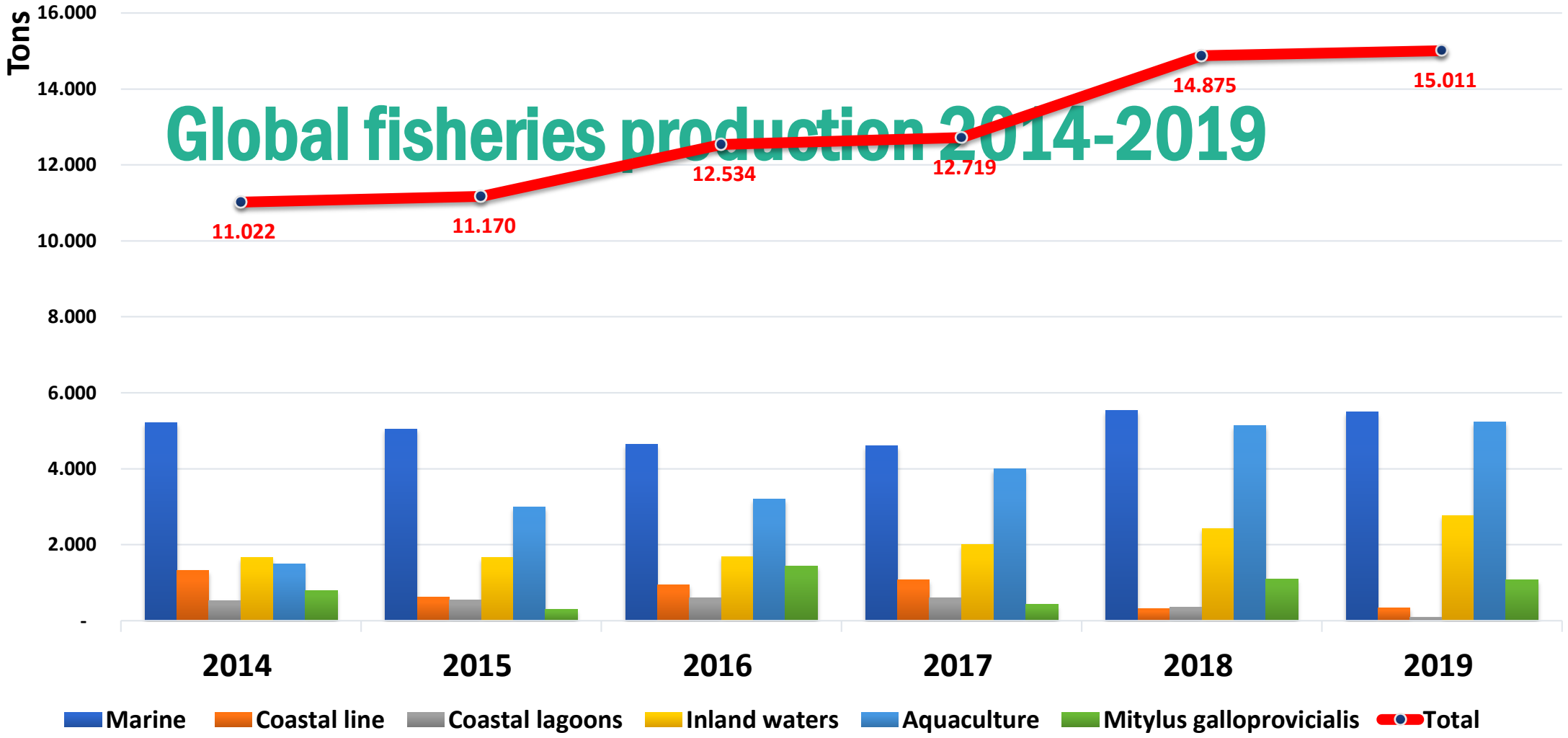
Fisheries sub-sectors in Albania

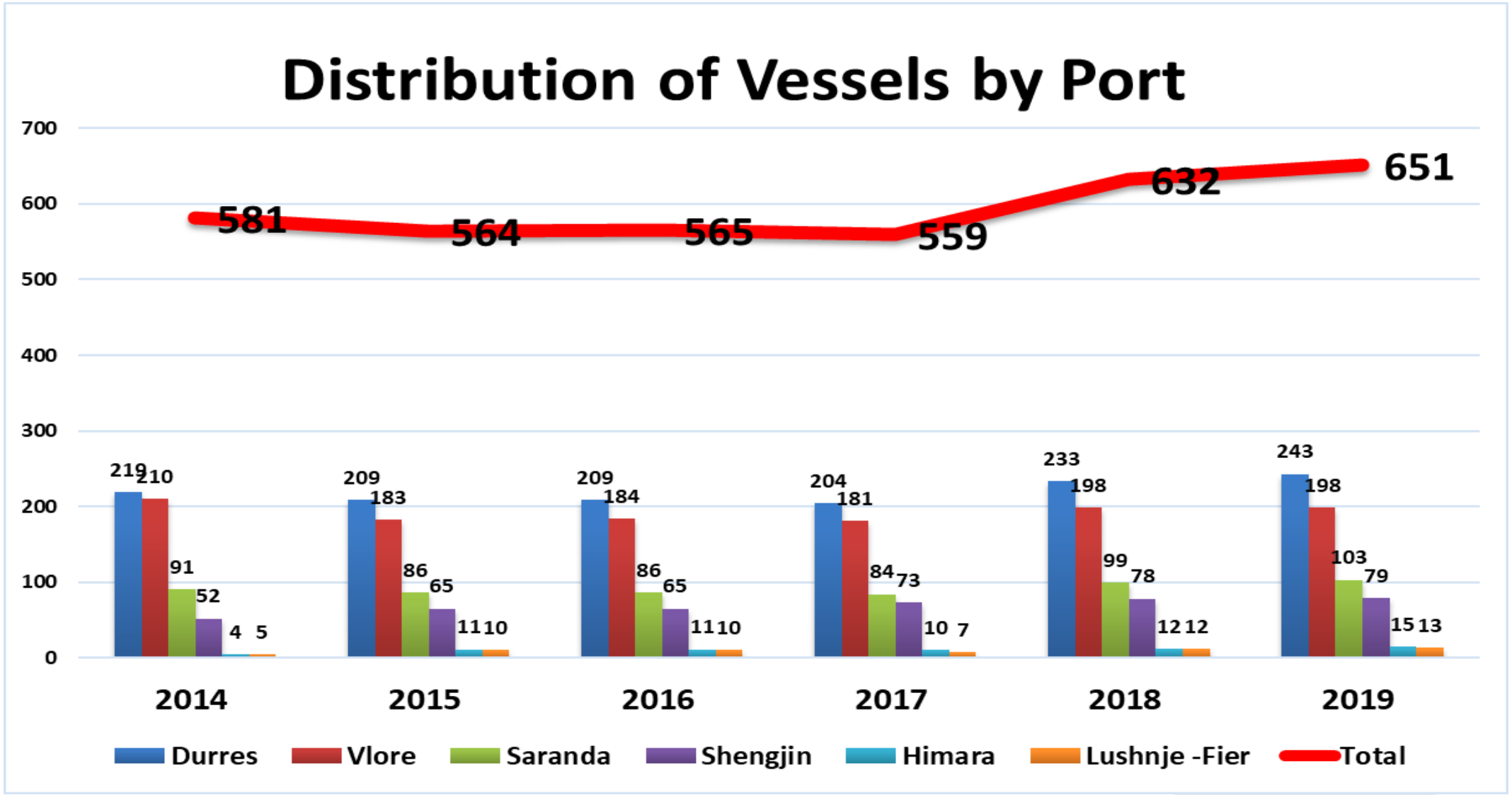


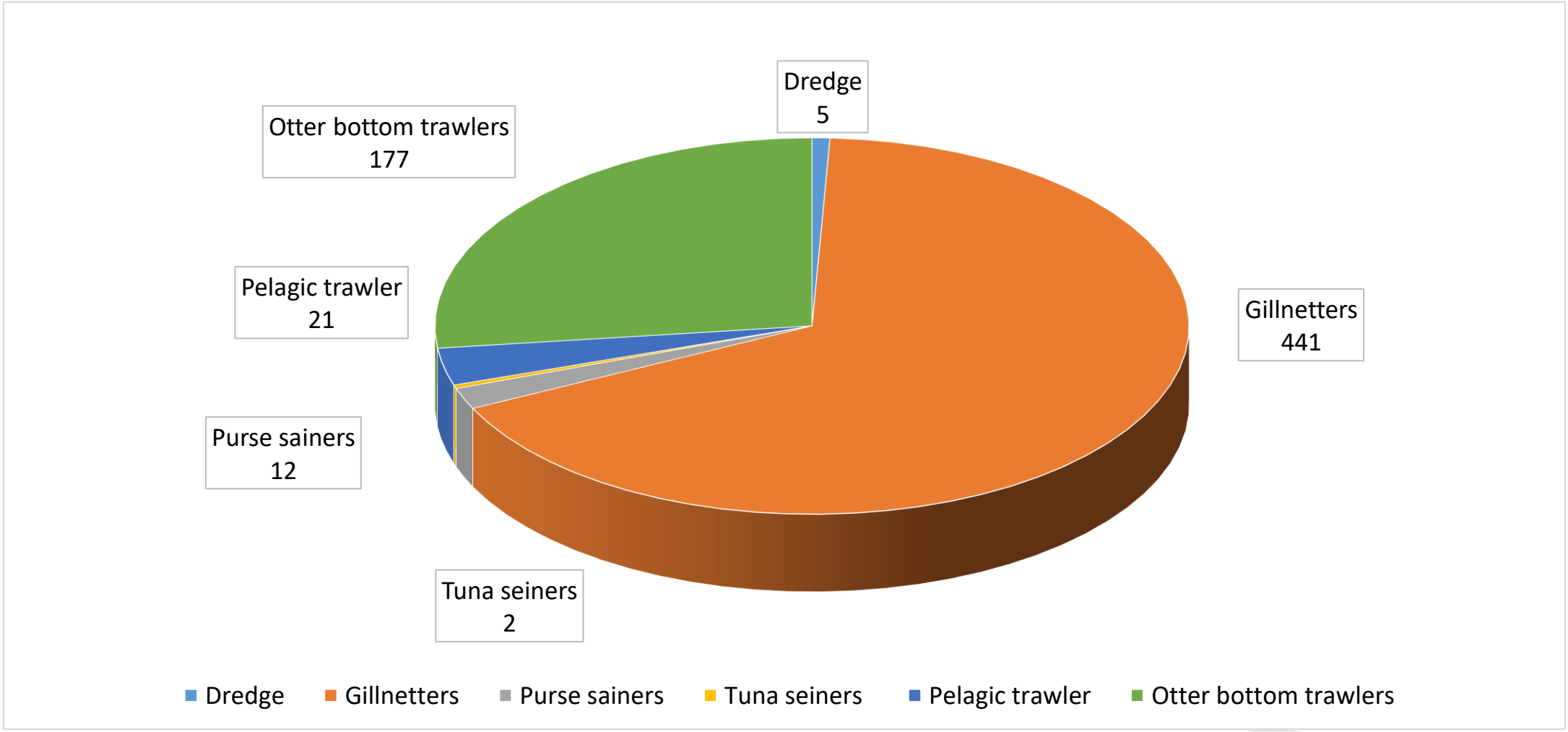
General overview of the fisheries sector



Global fisheries production 2014-2019

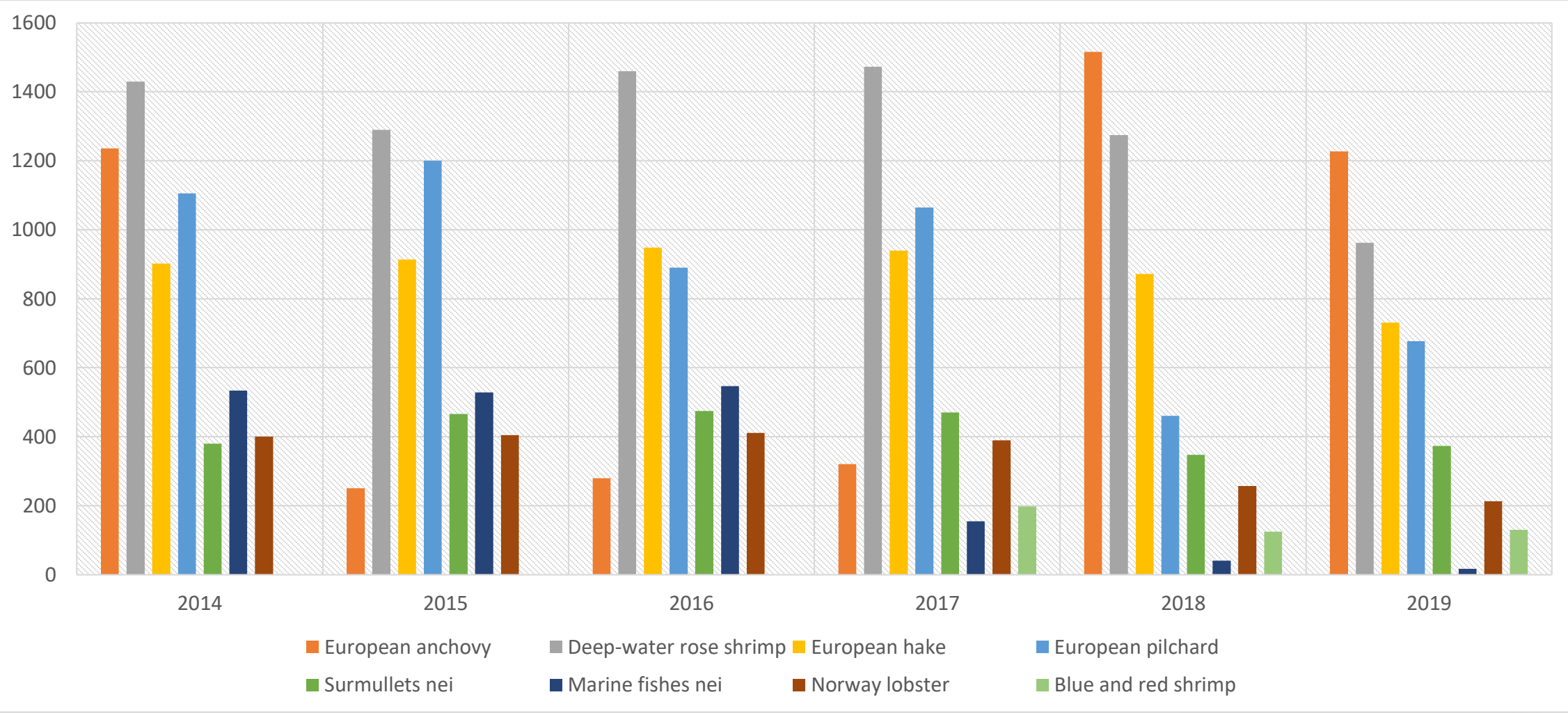



Distribution of Vessels by Port
700
600
500
400
300
200
100
0
581
564
565
559
632
651
219 210 91 52 4 5
209 183 86 65 11 10
209 184 86 65 11 10
204 181 84 73 10 7
233 198 99 78 12 12
243 198 103 79 15 13
2014
2015
2016
2017
2018
2019
Durres
Vlore
Saranda
Shengjin
Himara
Lushnje -Fier
Total

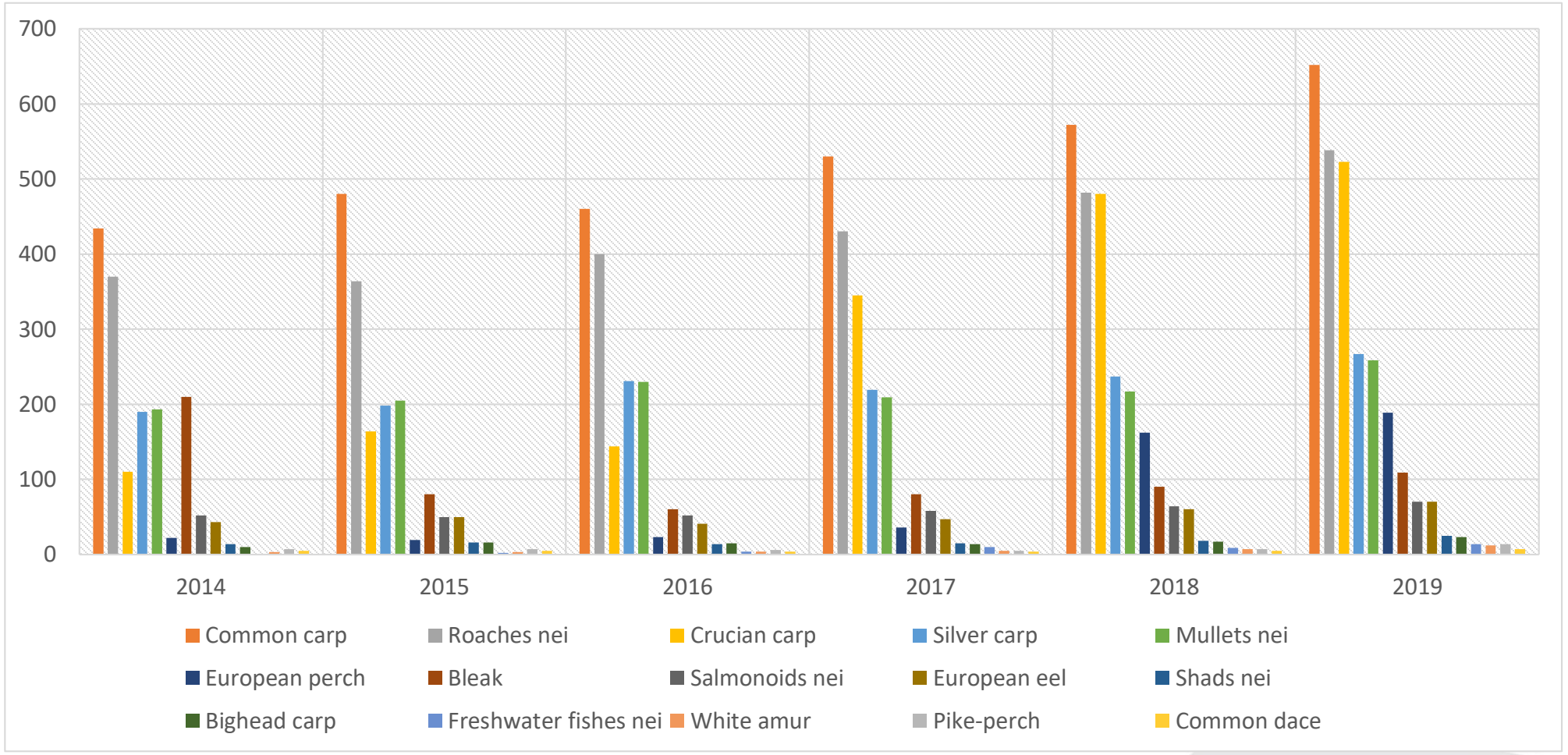

Dredge
5
Otter bottom trawlers
177
Pelagic trawler
21
Gillnetters
441
Purse sainers
12
Tuna seiners
2
Dredge
Gillnetters
Purse sainers
Tuna seiners
Pelagic trawler
Otter bottom trawlers

Catches by species from marine fisheries

Source: FAO – Fishstat J.



Catches by species in inland water, 2014 - 2019



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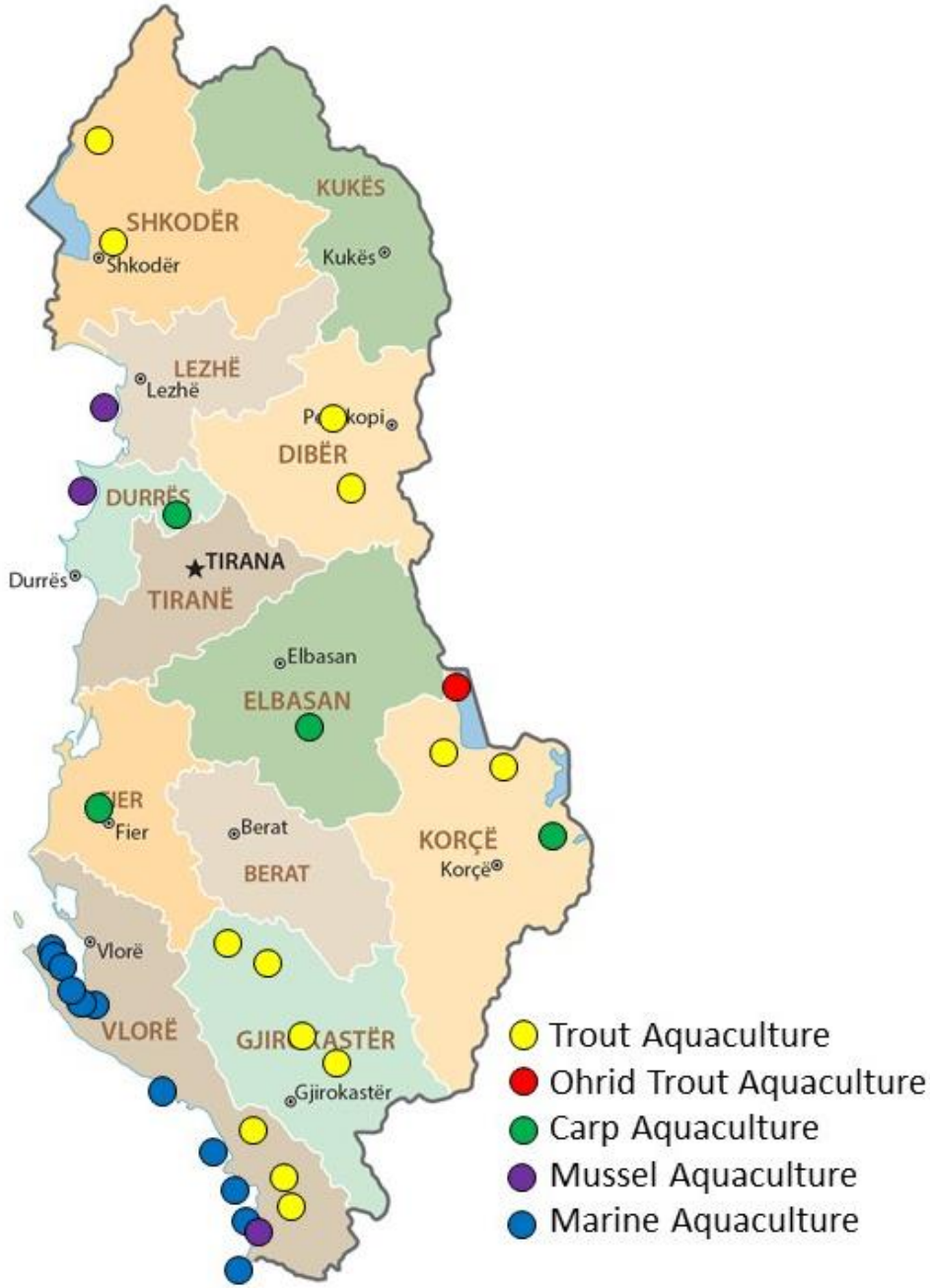
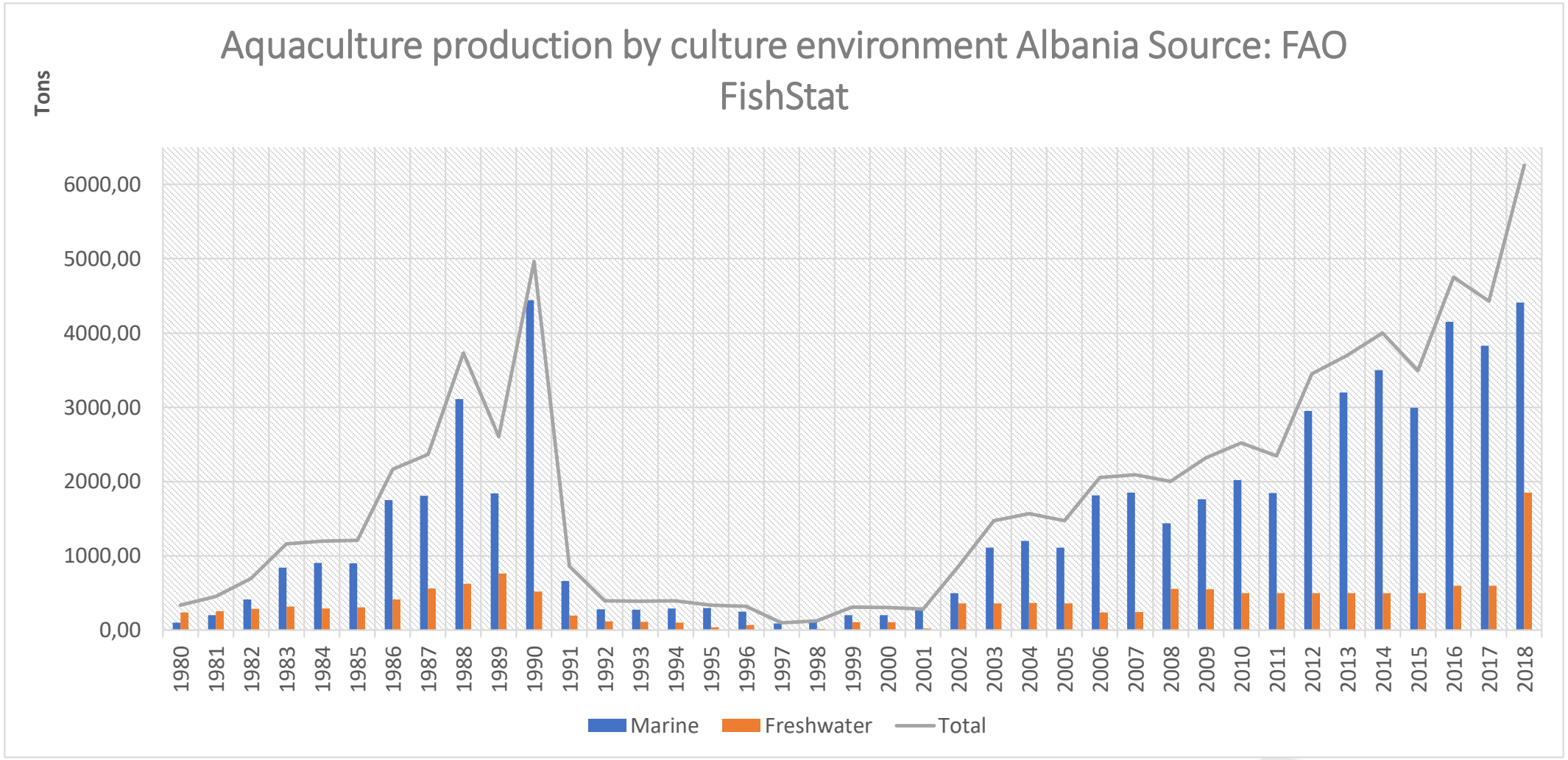
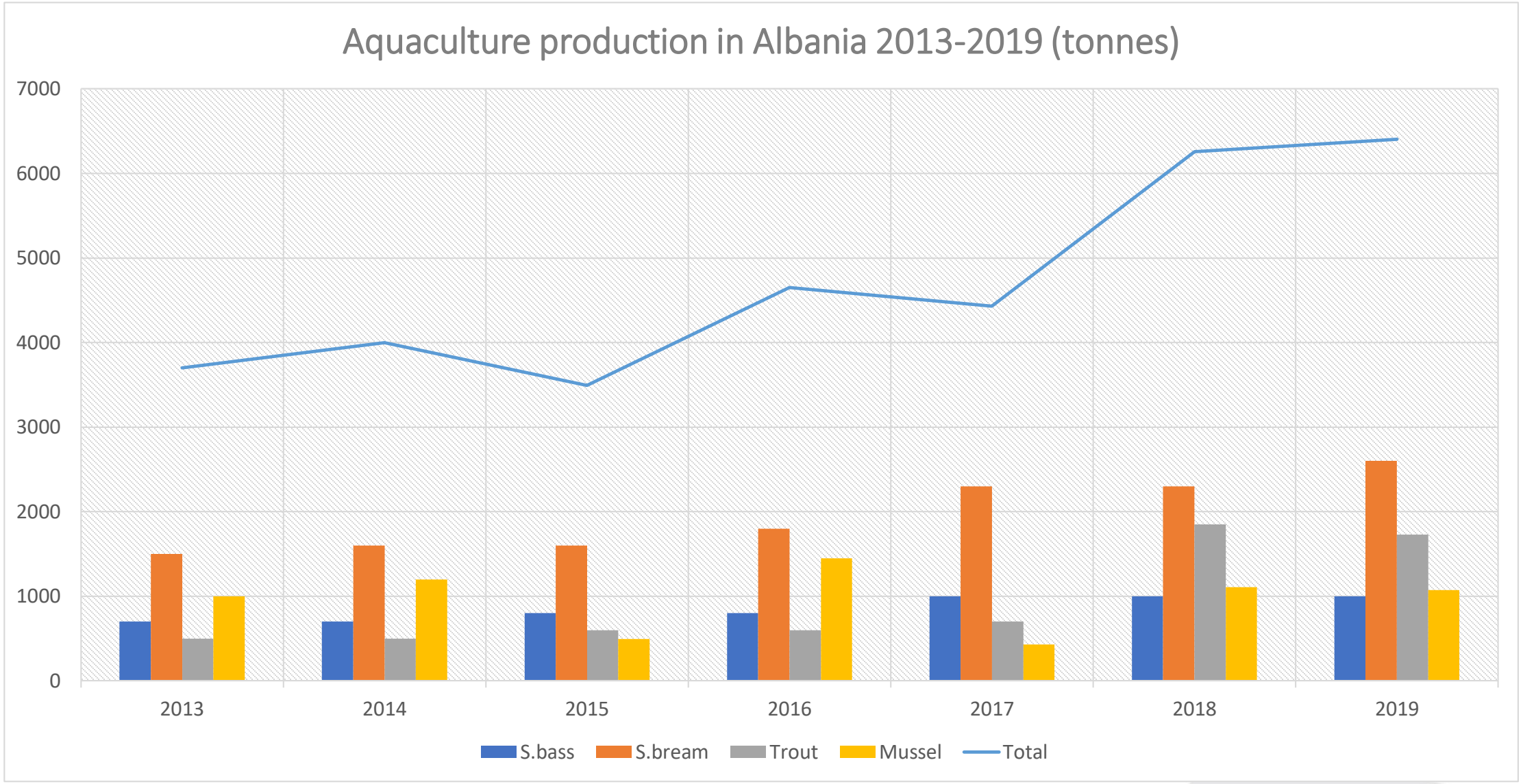
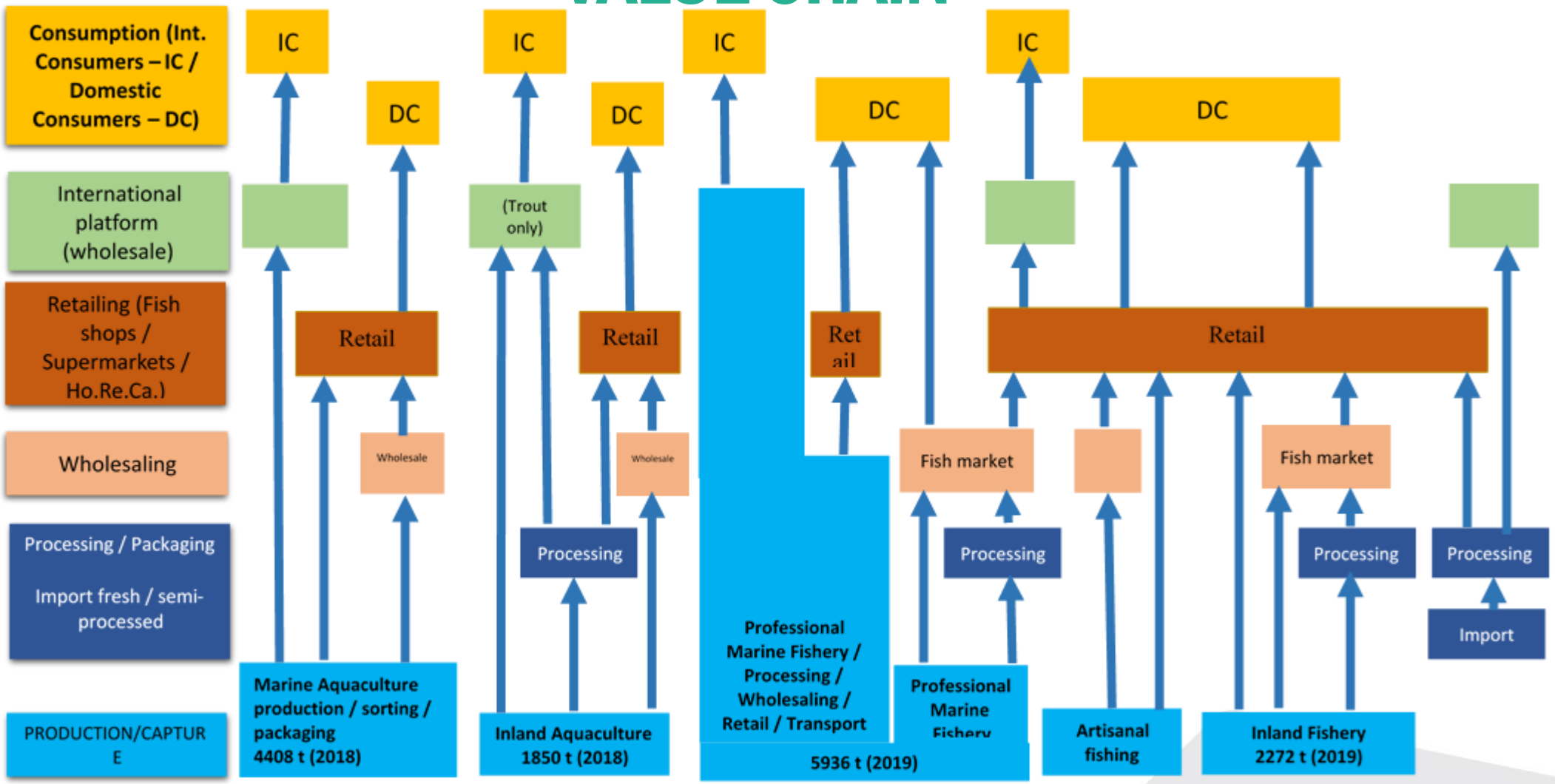



Aquaculture production by culture environment Albania Source: FAO FishStat
Tons
6000,00
5000,00
4000,00
3000,00
2000,00
1000,00
0,00
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Marine
Freshwater
Total


Aquaculture production in Albania 2013-2019 (tonnes)
7000
6000
5000
4000
3000
2000
1000
0
2013
2014
2015
2016
2017
2018
2019
S.bass
S.bream
Trout
Mussel
Total

VALUE CHAIN


Consumption (Int. Consumers – IC / Domestic Consumers – DC)
International platform (wholesale)
Retailing (Fish shops / Supermarkets / Ho.Re.Ca.)
Wholesaling
Processing / Packaging
Import fresh / semi-processed
PRODUCTION/CAPTURE
IC
DC
Retail
Wholesale
Processing
(Trout only)
Ret ail
Fish market
Import
Marine Aquaculture production / sorting / packaging 4408 t (2018)
Inland Aquaculture 1850 t (2018)
Professional Marine Fishery / Processing / Wholesaling / Retail / Transport
5936 t (2019)
Professional Marine Fishery
Artisanal fishing
Inland Fishery 2272 t (2019)

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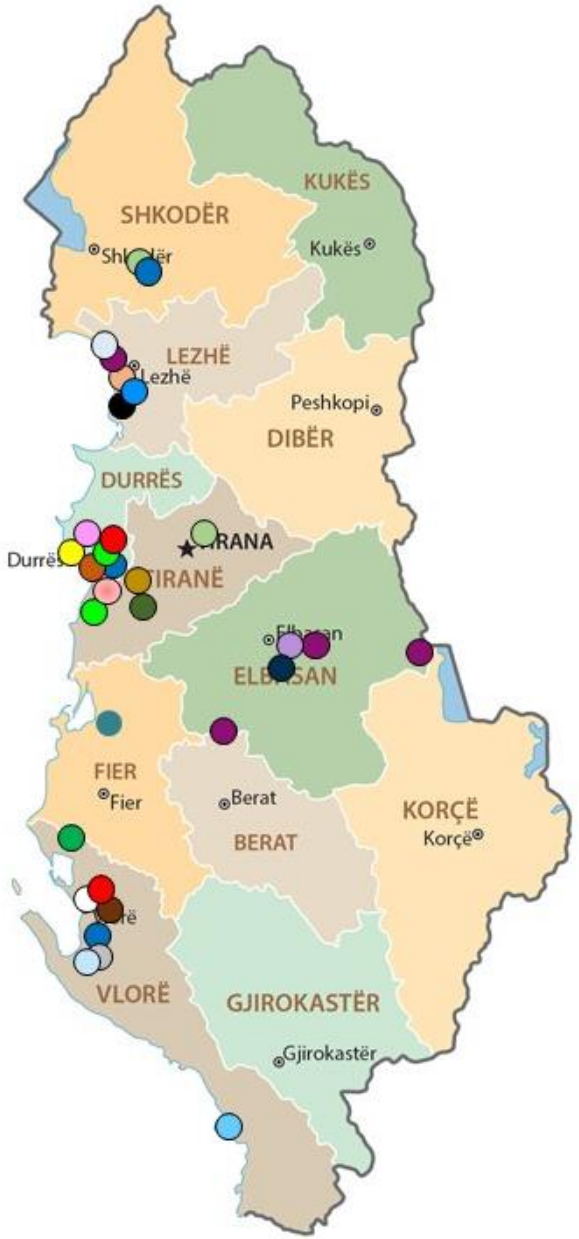

- Konservimi Adriatik
- Aquario Sali peshk
- Vival Shpk
- Orik Peshk
- Rozafa
- Poseidon
- Mare Adriatik
- Eurofish
- Ittica San Giovanni
- Sea fish
- Albamar
- Koral
- Fama
- Drinfish shpk
- Albafish
- Fenix I.C.
- Kiara fish
- Turturici all stars Vlora
- Artik Group shpk.
- Lakber
- Sofish
- Vivimpex
- Occhio vivo
- Nettuno

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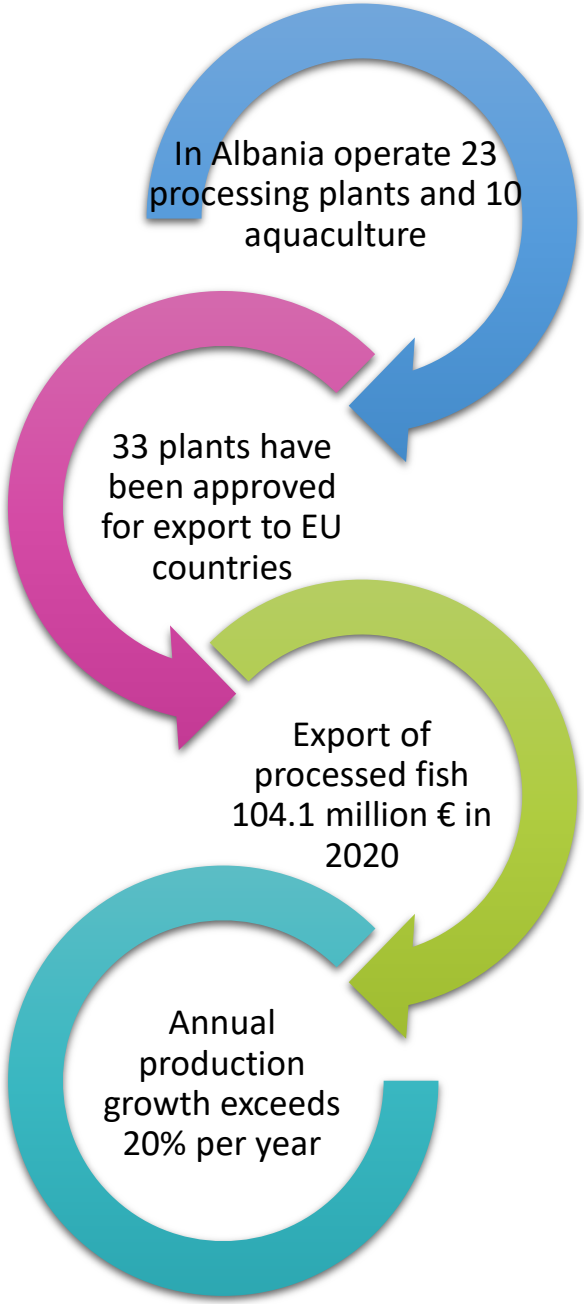
Processing sector



Category	Company	Opening date (year)	Production (ton/year)	Capacity (ton/year)	Capacity saturation (%)	No. of employees
Big	Euro Fish	1997	1350	2000	68	700
	Koral Fish	1994	700	1500	47	400
	Mare Adriatik	1995	740	1000	74	370
	Nettuno	2014	480	960	50	350
	Poseidon	1996	900	1000	90	400
	Rozafa	1992	3800	15550	24	1300
Medium	Acquario, Sali Peshk	1994	90	500	18	100
	Konservimi Adriatik	1988	320	640	50	250

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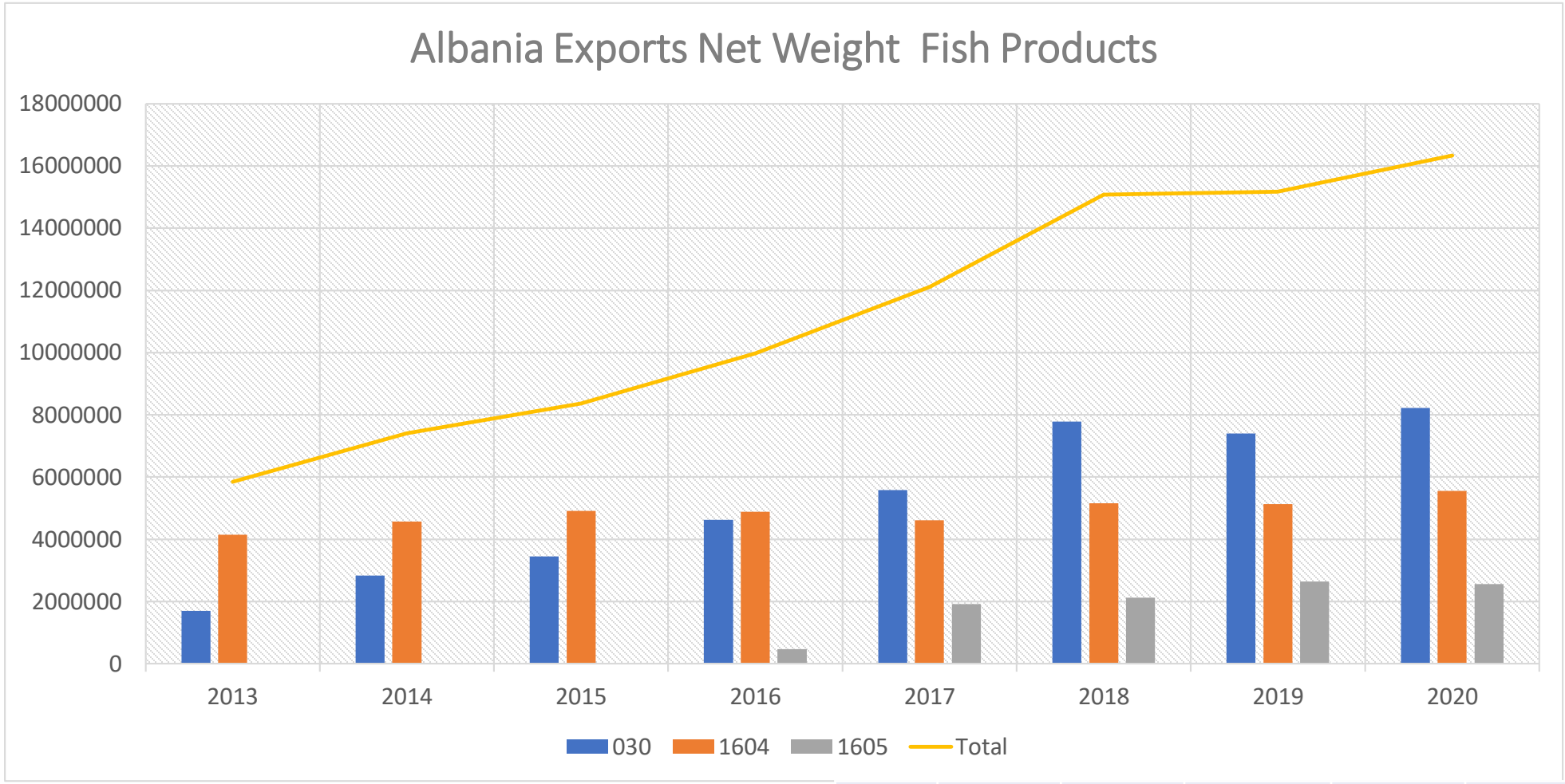
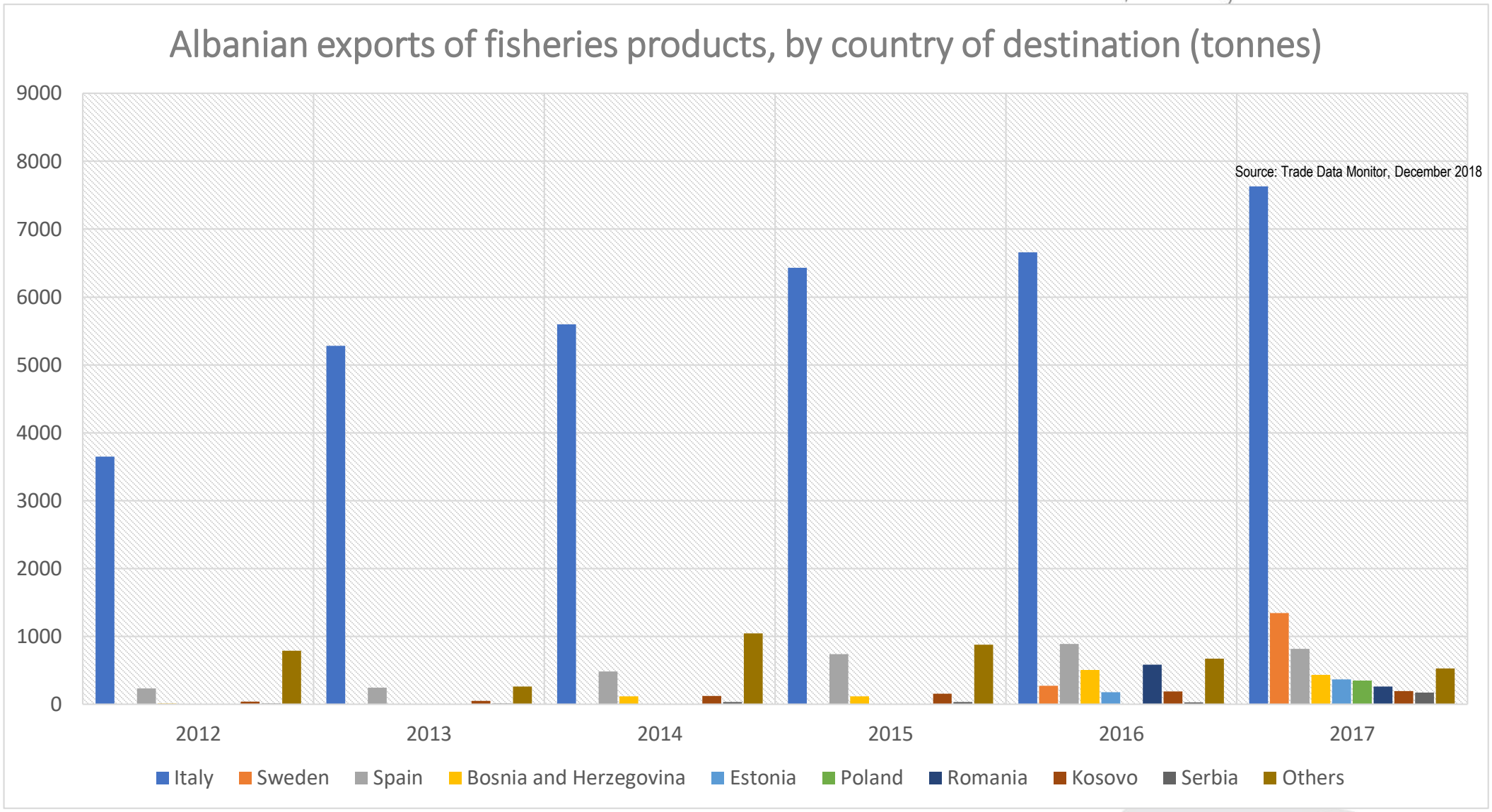


0301	Live fish
0302	Fresh or cold fish
0303	Frozen fish
0304	Fish fillets and other fish meat
0305	Fish, dried, salted, smoked, flours, grains not for consumption
0306	Underwater shellfish
0307	Mollusks, whether or not in the shell
0308	Aquatic invertebrates, unlike underwater shellfish and mollusks
1604	Prepared, canned fish; caviar and its substitutes
1605	Crustaceans, molluscs, other aquatic invertebrates, prepared or preserved


Albanian exports of fisheries products, by country of destination (tonnes)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Source: Trade Data Monitor, December 2018
2012
2013
2014
2015
2016
2017
Italy
Sweden
Spain
Bosnia and Herzegovina
Estonia
Poland
Romania
Kosovo
Serbia
Others

Findings of this technology implementation in Albania

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First Study about Aquaponic Systems in Albania

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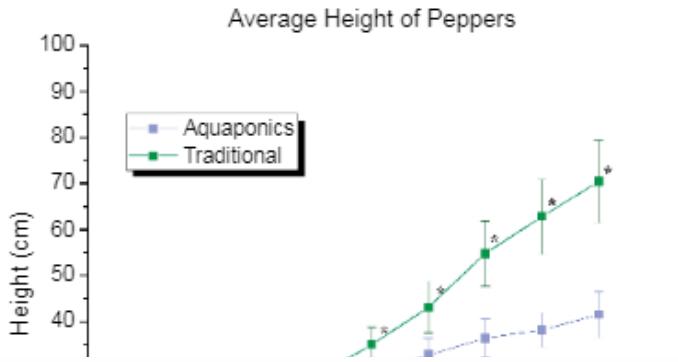
[2]N.S.P, Tirana, Albania

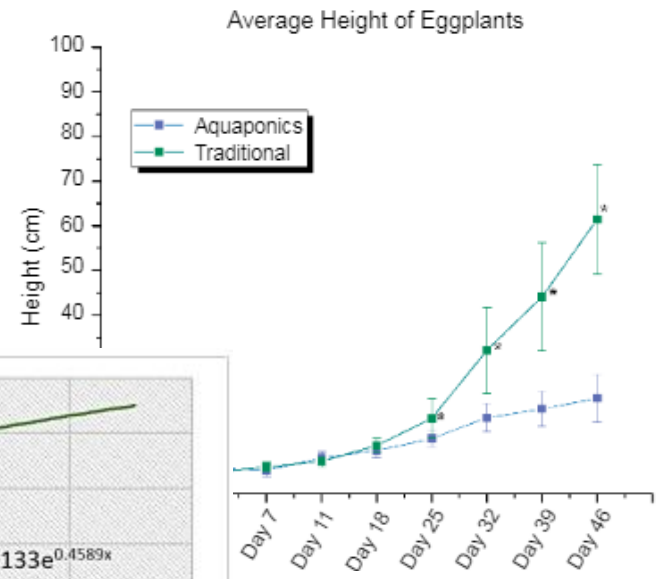
Abstract

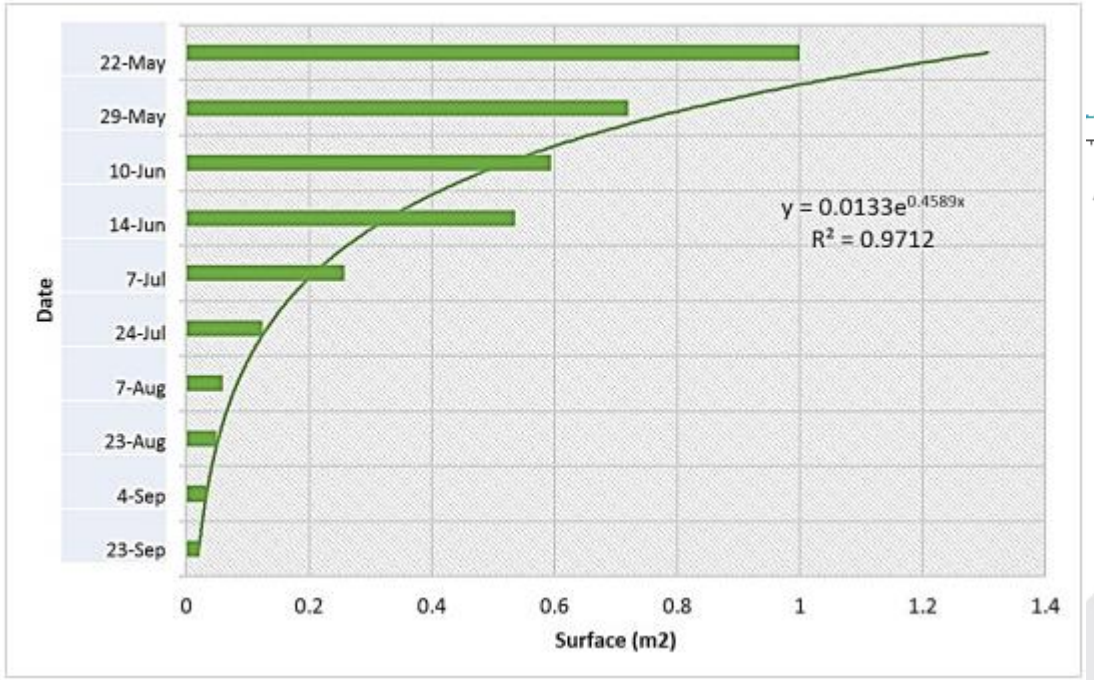
There is an increasing demand from the domestic market of Albania and Eastern Europe countries for pesticide-free produce. Since aquaponic systems can produce fish and vegetables intensively throughout the year outdoors in suitable climates or in environmentally controlled greenhouses and land requirements are minimal, systems can be located near urban markets, thereby reducing transportation costs and providing fresh, high quality fish and plants for people living in Albania and other countries of similar climatic conditions. In order to evaluate the performance of the first aquaponics system in Albania and Balkans, we performed a comparison related to plants average growth between the traditional and aquaponics systems, respectively. We found that there were significant growth differences by height of peppers, eggplants, melons and cucumbers, when growing between aquaponic vs. traditional soil. However, this is one of the first efforts in Europe to provide information that can better inform research and education regarding aquaponics as it matures and possibly evolves into a mainstream form of agriculture.

Keywords

Aquaponics, Carassus auratus, Growth koi carp, Plant height







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Findings of this technology implementation in Albania

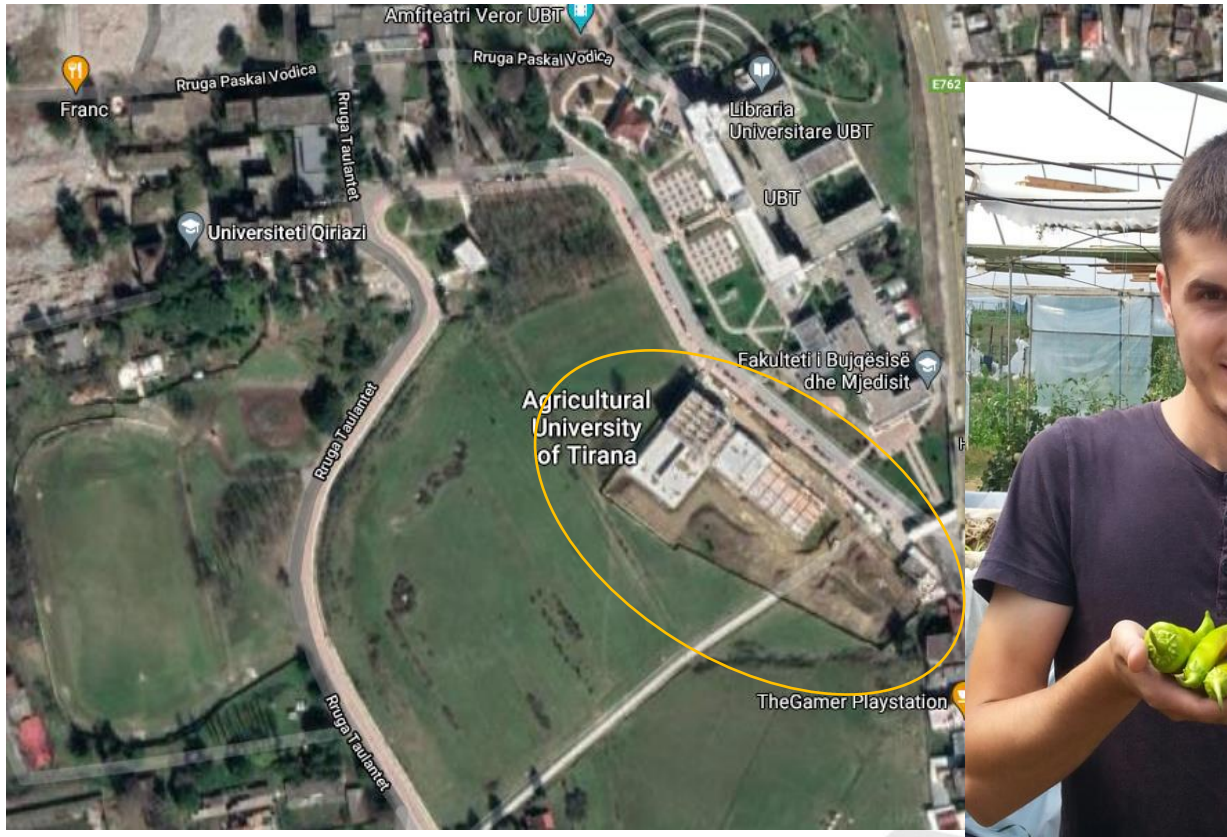
- Direct selling to consumers never resulted successful
- Selling of herbs and lettuces to restaurants in Tirana and Durres have shown to be successful
- Needs promotion and support by the government as technology for biological production

Promotion as a tool for youth education

- Half of the Master Thesis students were surprised and aimed to build a similar system with the support of the government;
- Shared knowledge by the supervisor and practical training by the Engineer/owner of the company provided them:
  - Communication skills
  - Managerial skills
  - Technical skills

Promotion as a tool for youth education

- Building of Aquaponic systems will provide knowledge for
  - students of AUT
  - VET learners
- Improve the research on integrated technology



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