UNITED NATIONS UNIVERSITY
Fisheries Training Programme
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"Evaluating and developing a market-driven value chain that provide high quality fresh fish products for the local Market in Antigua and Barbuda."

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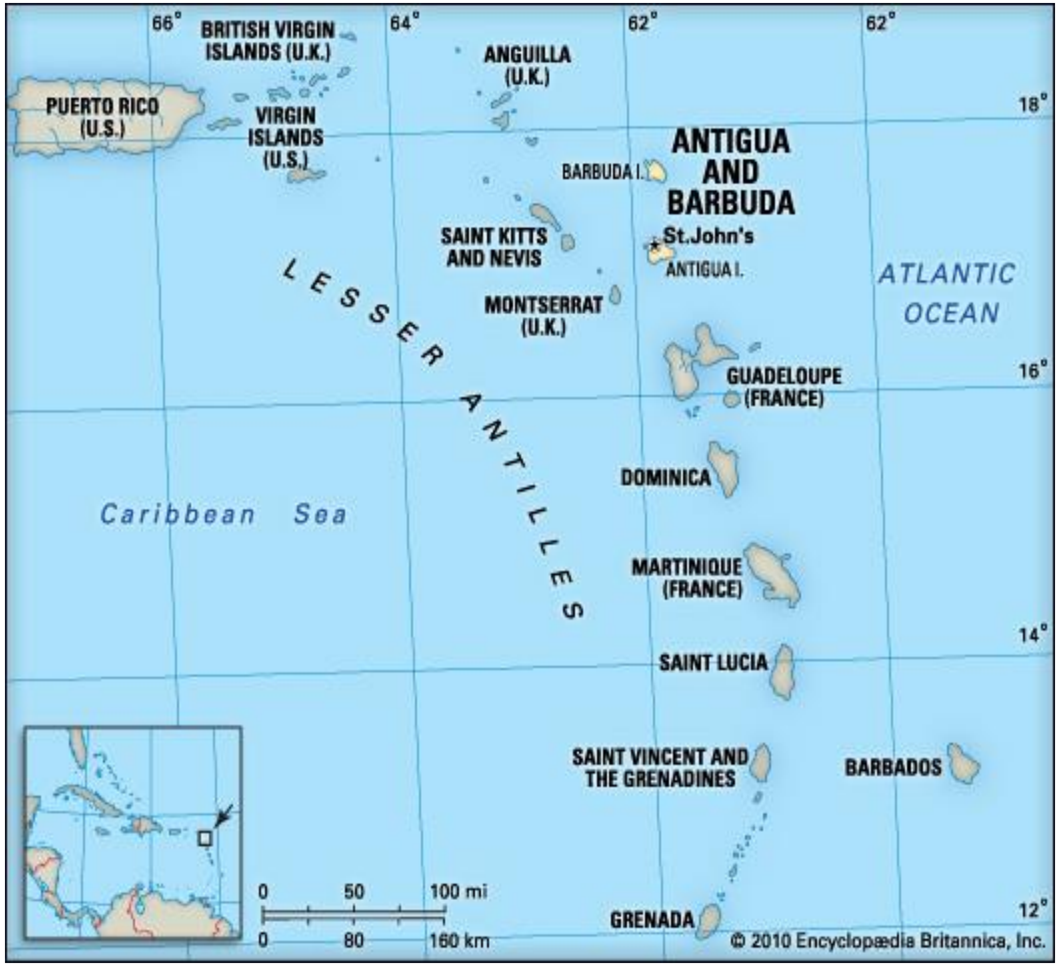
Introduction

Location of Antigua and Barbuda

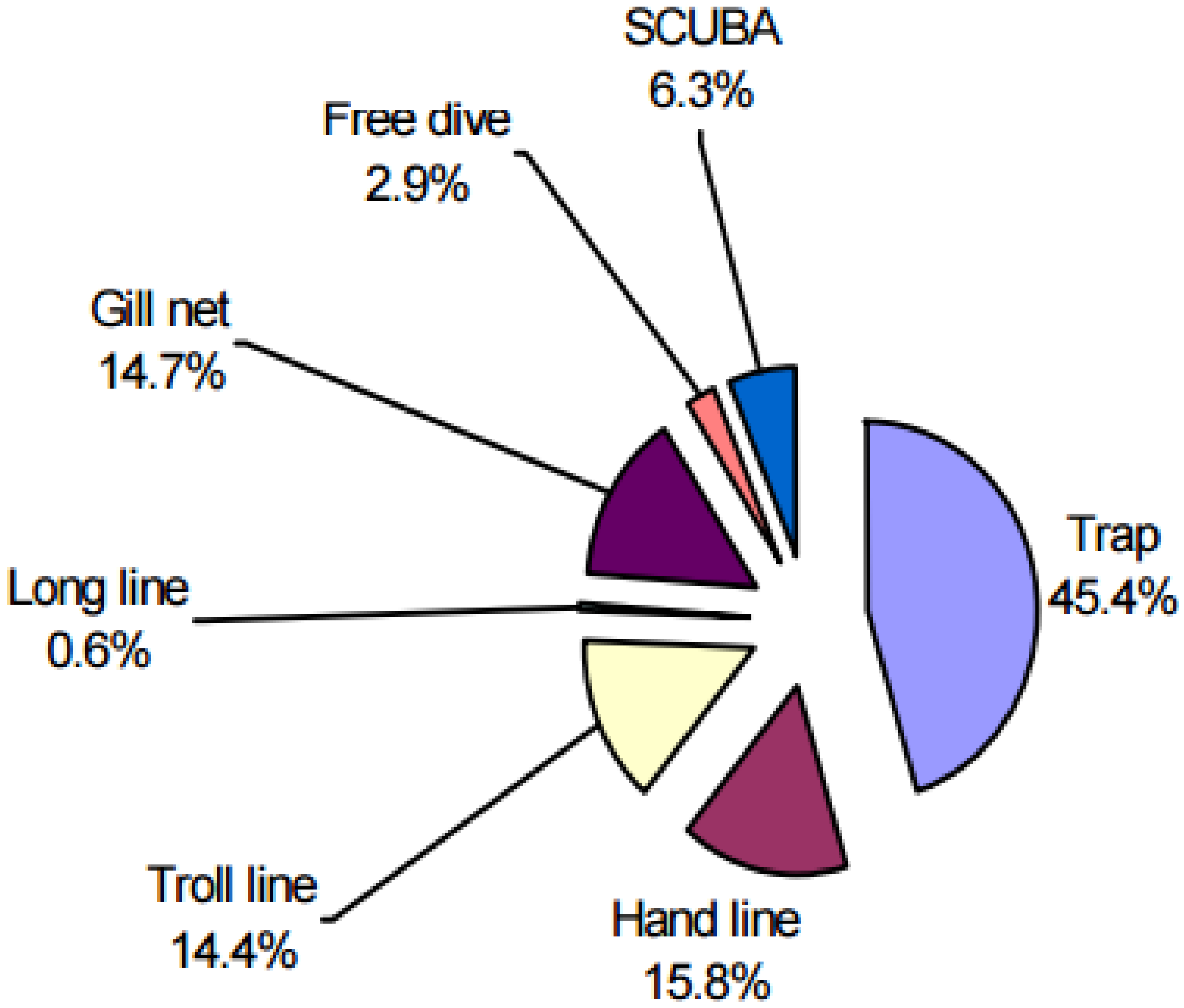


- The State of Antigua and Barbuda is an archipelagic state made up of three main islands, with a combined land area of 442 km^2.
- It lies in the eastern arc of the Leeward Islands of the Lesser Antilles separating the Atlantic Ocean from the Caribbean Sea.
- It has a population of approximately 91,000.
- Capital city is St. John's
- Its primary industry is Tourism which accounts for over sixty percent of national GDP.

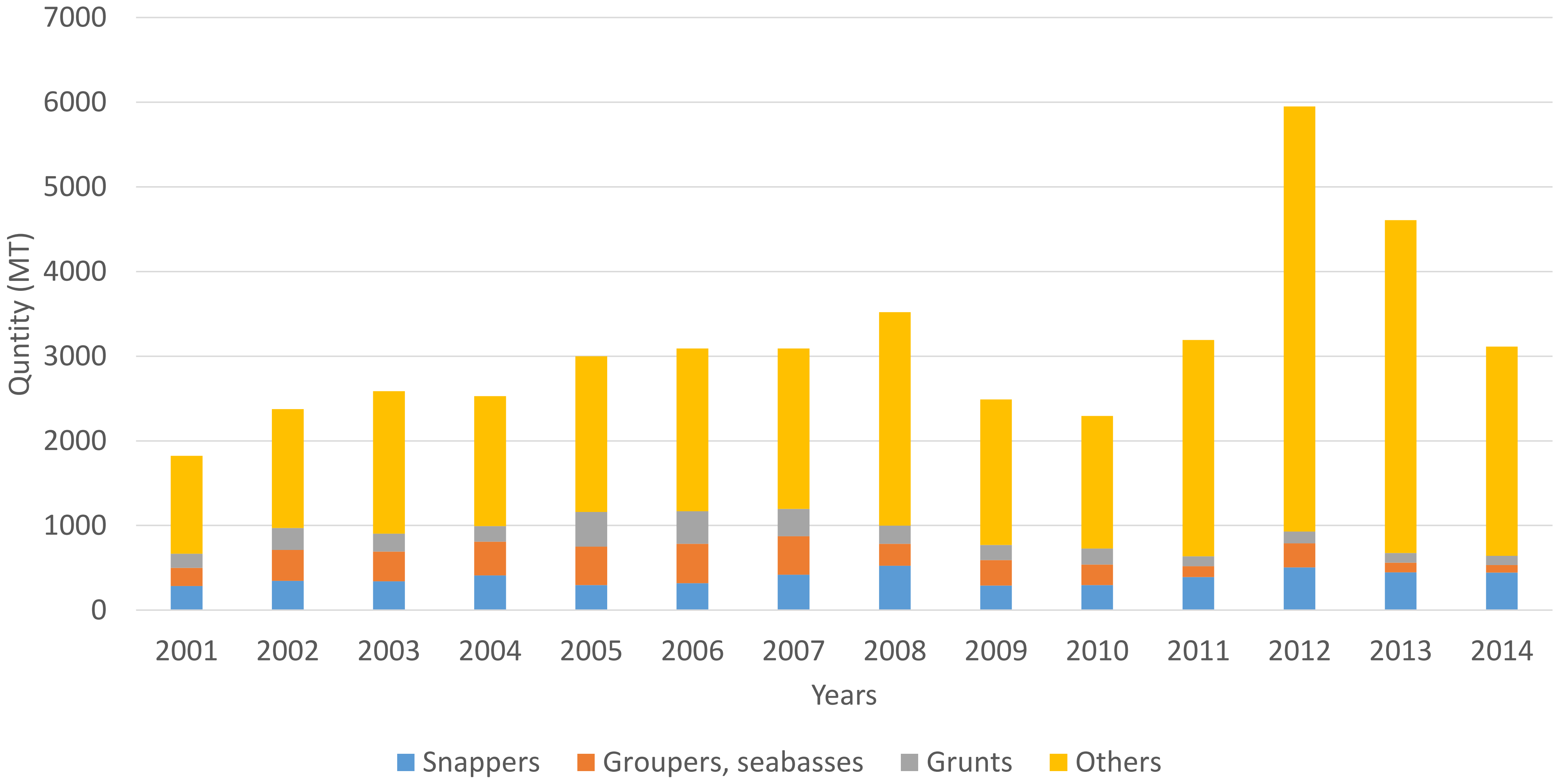
Fisheries sector

- Antigua and Barbuda Fisheries is classified as Small-Scale/Artisanal in nature
- The Fisheries Sector contributes 2% of the national GDP. This represents 52% of the overall agricultural GDP and the sector is a key component in the national food security.
- The fishery is mainly demersal based with the most commercially important species being the Caribbean Spiny lobster (*panulirus argus*) followed by the queen conch (*strombus gigas*).
- Employs 939 active fishers and with 338 active vessels. This represent 2 percent of the labour force.
- There major type of vessels used: Launch, Pirogue and open vessel
- The main fishing method include passive gear such as hand-ling, fish-pot and gill-net

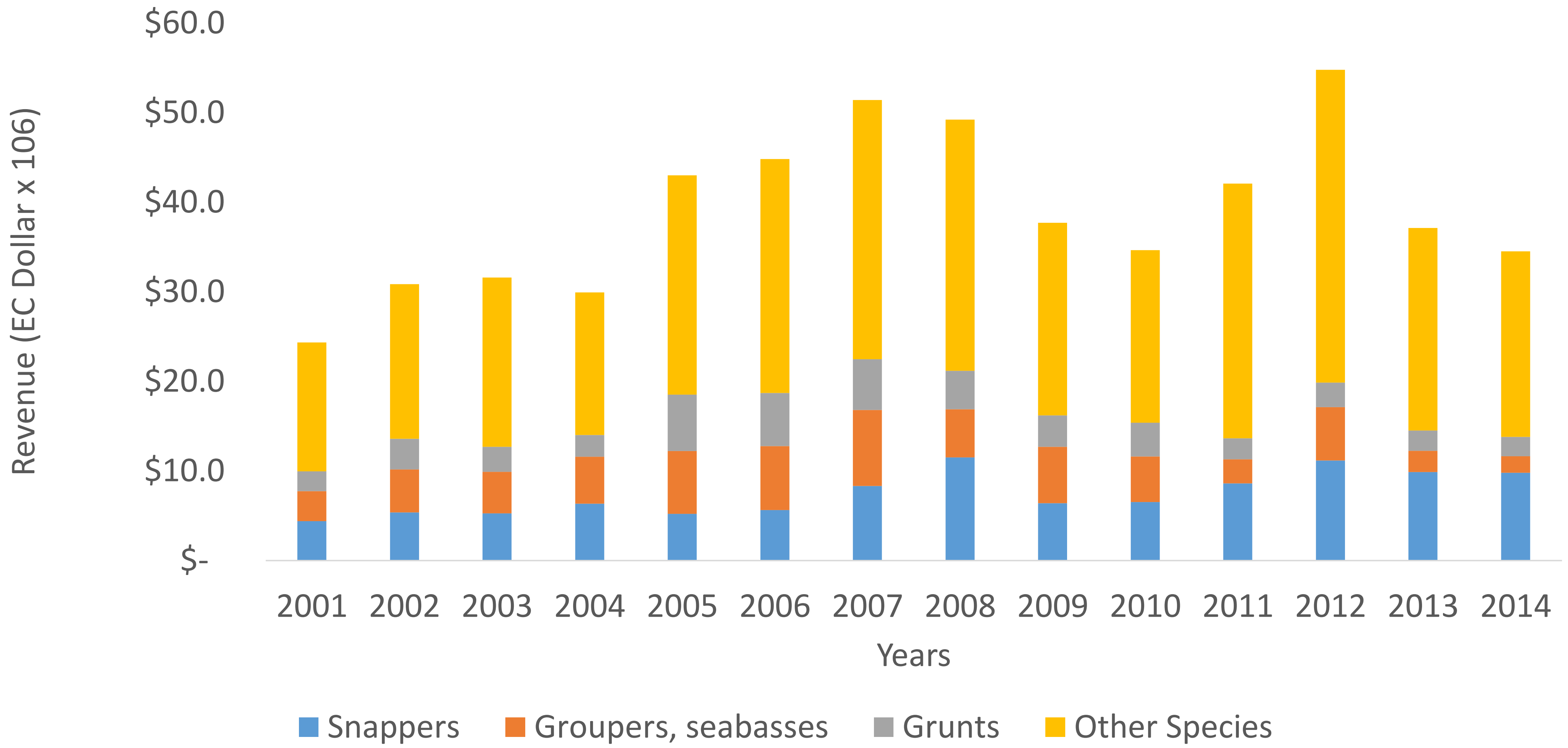
Primary gear composition in Antigua and Barbuda
(Fisheries Division,2010)



Capture Fisheries Production (MT) for the period 2001 to 2015 (Fisheries Division, 2014)

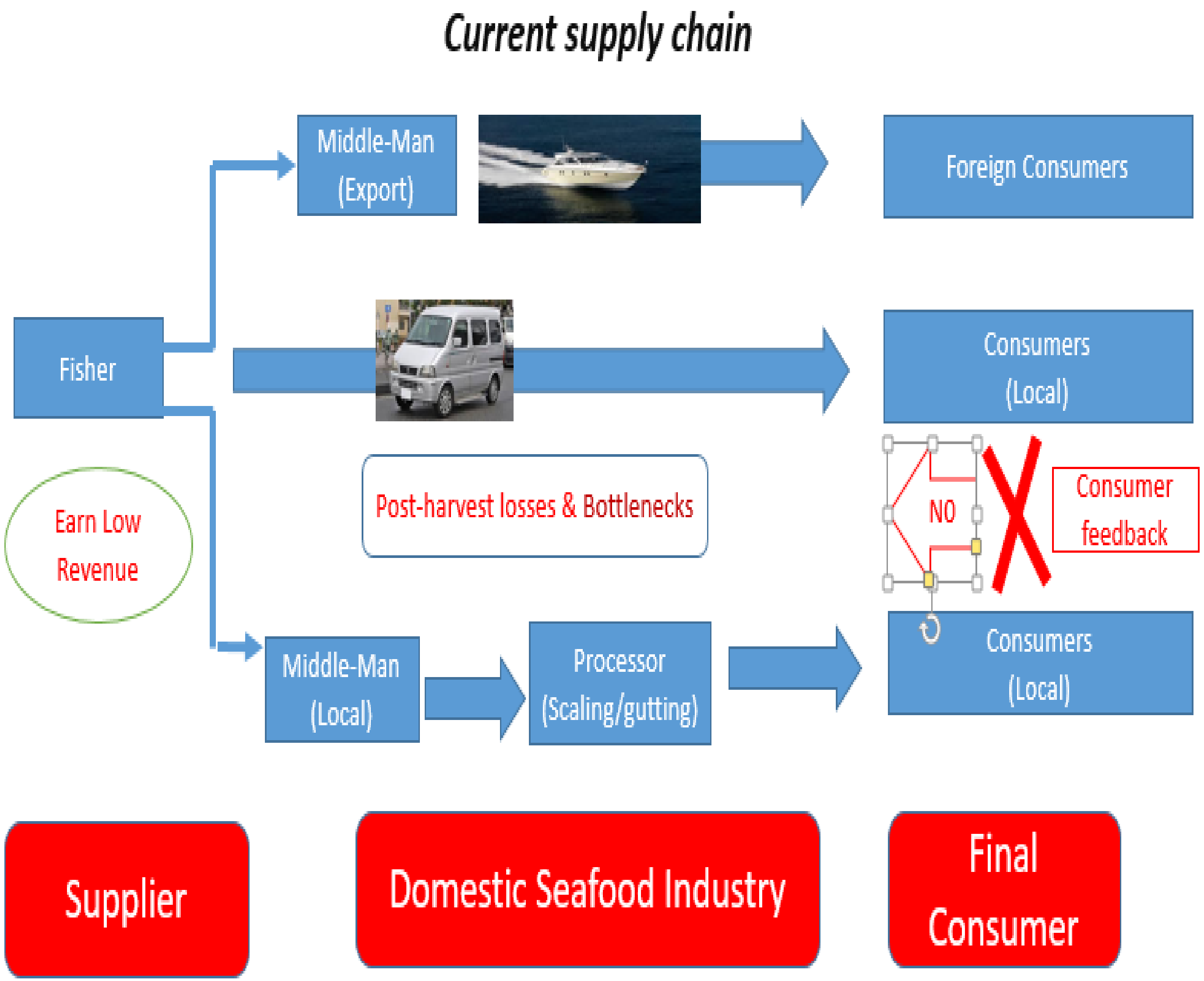


Revenue earned from 2001 to 2015 (Fisheries Division, 2015)



Problem Statement

- The domestic trading of fisheries products is still traditionally ***harvest-driven*** and as a result fishers earn **low revenue** coupled with overall **low quality** of fisheries products as little emphasis is invested into value creation or adding activities.
- This exclusion of consumer demand leads to alarming high levels *of **post-harvest losses*** and ***bottlenecks*** of poor quality products being circulating on the market. This is due to little or no consumer feedback from the market. In other words, '***the voice of the consumer***' is ignored.
- There is strong **absence** of ***information sharing*** and ***transparency*** in the marketplace.
- Ultimately, this stifles any opportunity for fishers adopt ***product differentiation*** practices and gain ***competitive advantage*** within the market.

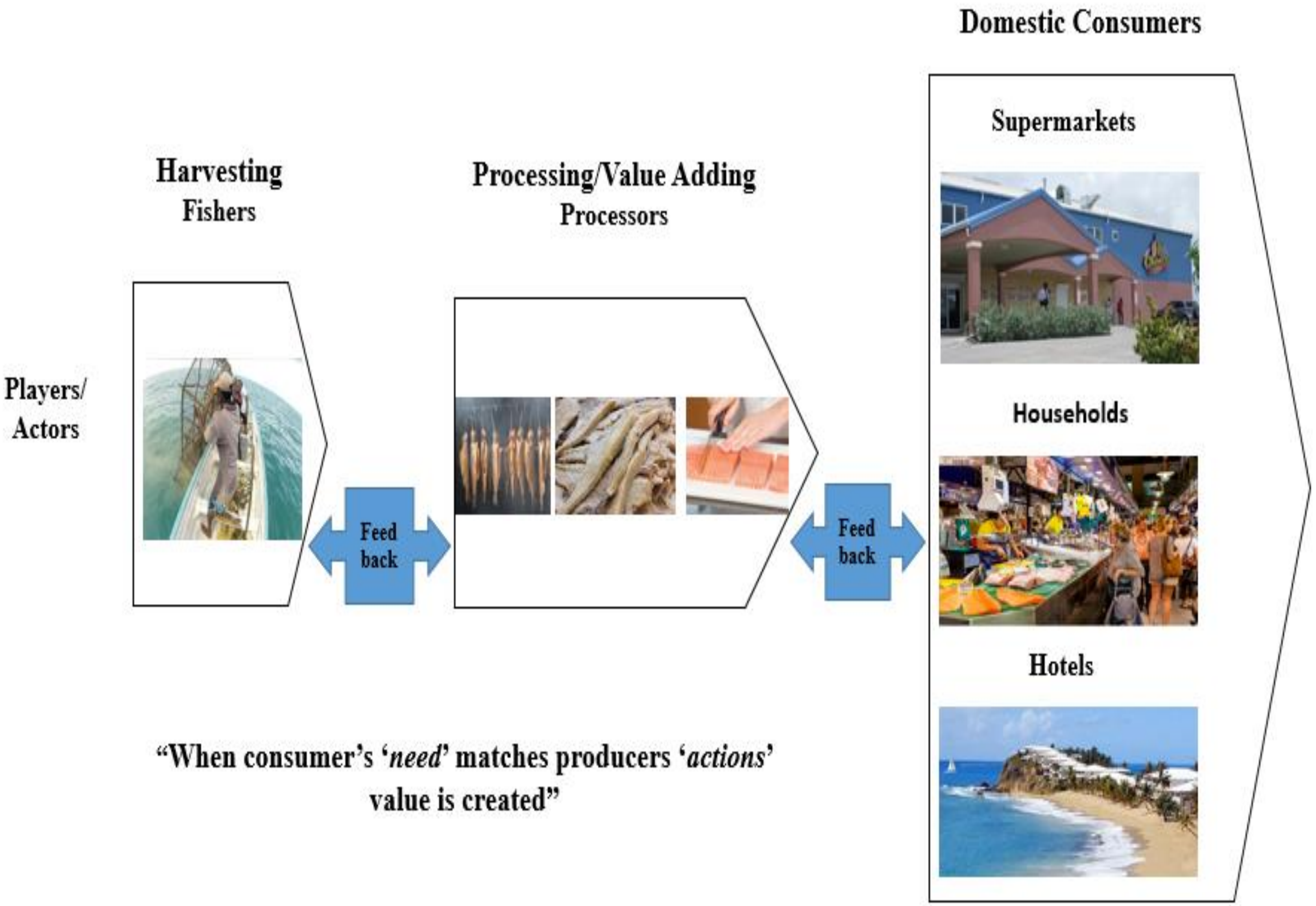


Justification

- There is *no current nor relevant data available* on fisheries marketing and value chain studies in Antigua and Barbuda. The last known market research was conducted by Ann Simon and funded by Canadian International Development Agency (CIDA) in July – September 1983 under the Mission Administration Funds (MAF) project through the Caribbean Conservation Association (CCA).
- Adopting a Market-drive value chain is seen as a avenue to combat the loss of foreign earnings brought about by the implementation of the European Union *HACCP System*.
- This approach has the potential to generate much need employment opportunities through *upstream* and *downstream* activities such as fish processing, selling, net-making and boat building.
- It can contribute greatly to *food security* as direct consumption becomes more accessible.

Expected value chain

- The utilization of a market-driven approach brings forth the added benefit of ***vertical coordination***. This would guarantee that each successive stage in the production, processing, and marketing of a product is appropriately managed.
- Under a market-driven value chain ***quantities*** and ***qualities*** of the fisheries product supply *match* ***market demand***.
- Therefore decisions about ***what to produce***, with ***the right specifications*** in sufficient quantities and at ***the right time****s* are communicated as efficiently as possible from the consumer to the producer.
- Benito et al (1993) observed that information from customers, partners and sales subsidiaries by far outweighs information from other sources.
- It shows that all the various elements of the value chain are in ***constant communication and receiving market signals*** that relate to offering the right quantity, the right species, in the right quality and qualitative attributes at the right time.



Overall objective

The sole driving force governing this **investigation** is to **analys**e and **evaluate** the seemingly **unstructured**, **uncontrolled** and **unregulated** supply chain and providing adoptable **recommendations** that will tend towards developing a more **market-driven value chain** which seek to offer satisfactory returns for the various stakeholders.

Specific Objectives

- To identify the current challenges faced by the existing supply chain
- To establish a feasible **financial** path to develop a market-driven value chain
- To **estimat**e local demand for value added products and **higher processing** that could help reduce the **unfavourable import- export deficit**
- To prescribe recommendations that will enhance **communication** and **traceability** along the value chain among the various actors.

Methodology

Primary Data

The central mechanism used to extra the relevant primary data was questionnaires with the aid of structured and semi-structure interviews with:

- Fishermen (Owners/Boat Captains), 51
- Random Consumers, 500
- Hotels (Managers), 25
- Supermarkets (Managers), 5

Secondary Data

- Relevant information was taken from existing lectures, articles and research done in related fields to supplement the primary objective of this research project.

Data Analysis

- This information was analysed using excel and presented through Graphs, charts and tables. Conclusions were extracted and compared to the ‘The theory behind value chain ’ to assess its relevance and functional suitability.
- Porter’s Five Force Model

Methodology

Primary Data

The central mechanism used to extra the relevant primary data was questionnaires with the aid of structured and semi-structure interviews with:

❑ **Fishermen (Owners/Boat Captains)**

- A cross section of a 100 fishers were surveyed from the various landing sites.
- These fishers were taken from the active fishers registry at the fisheries division
- Questions were focused on fishers attention to the market mix, delivery logistics, product quality and consume safety.

❑ **Random Consumers**

- 500 participants were sampled via telephone, on the streets, outside seafood establishment, supermarkets etc to procure an understanding of consumer demand and their purchasing behaviour.
- These questions in-cooperate the level of processing customer would like to receive as well as how they would like to access their fish products.
- The role played by quality, reliable, quantity, location and delivery time were examined.

❑ **Hotels (Managers**)

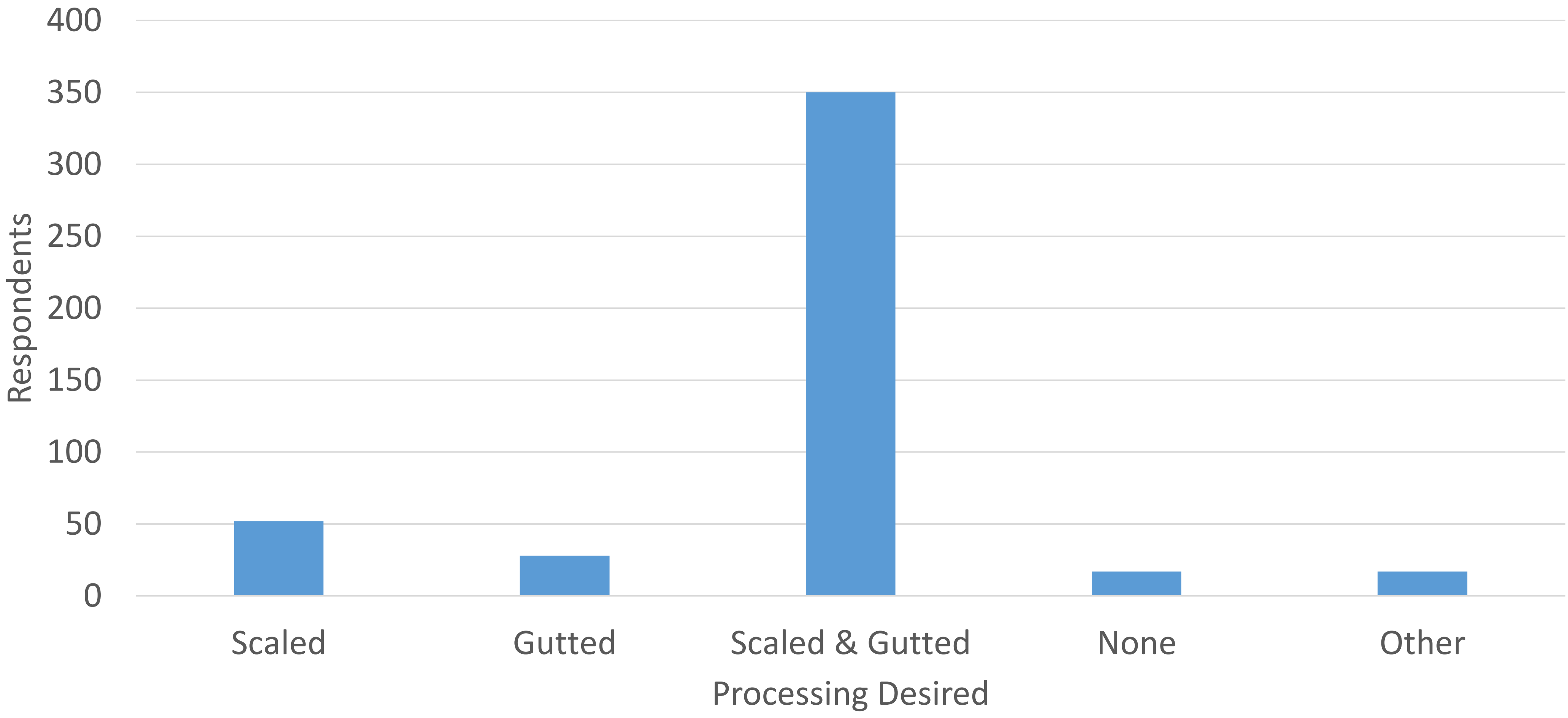
- The top 10 domestic hotel branches were surveyed.
- These interviews were conducted face to face and via telephone
- Questions focused demanded for processed products as well as willingness to pay.
- Factors that hinder demand as well as ideal product specification were explored.

- **Supermarkets (Managers) (5)**

Consumers

(500)

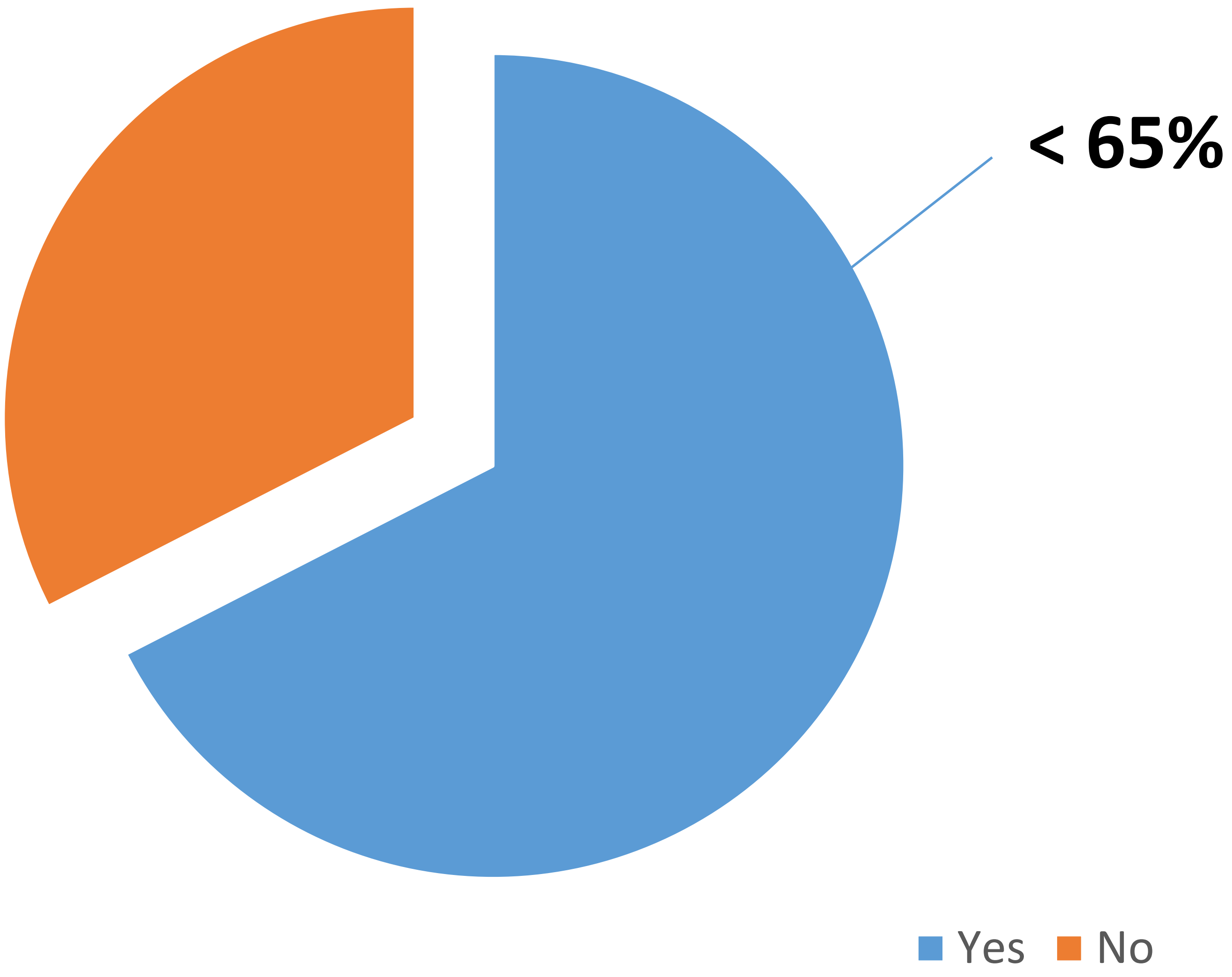
Level of Processing required (consumers 500)



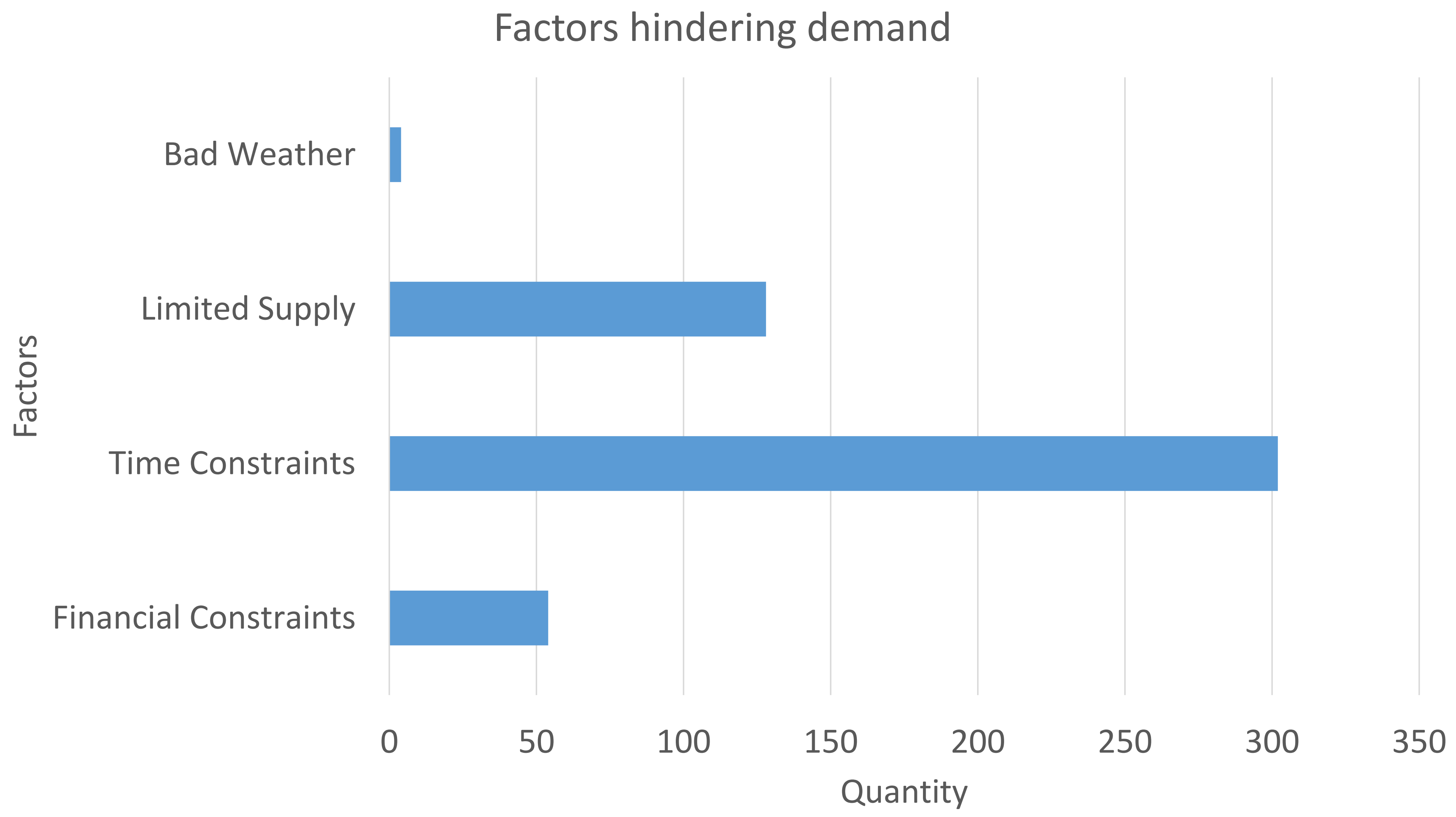
Species demanded in preferential Order (consumers 500)

Species	1st Preference	2nd Preference	3rd Preference	4th Preference	5th Preference	Total
Angelfish	10%	23%	8%	34%	24%	147
Barracuda	47%	26%	0%	21%	5%	19
Doctorfish	38%	15%	11%	25%	11%	307
Grouper	7%	20%	29%	29%	15%	490
Grunt	8%	13%	23%	27%	30%	240
Lionfish	15%	27%	23%	35%	0%	26
MahiMahi	63%	38%	0%	0%	0%	8
OldWife	30%	23%	12%	12%	23%	83
Parrotfish	12%	16%	23%	13%	37%	293
Salmon	30%	21%	8%	32%	9%	53
Silver	61%	0%	17%	6%	17%	18
Snapper	34%	29%	25%	10%	2%	487
Tilapia	13%	28%	11%	19%	30%	47
Triggerfish	10%	27%	27%	12%	24%	51
Tuna	60%	10%	10%	0%	20%	20
Marlin	0%	44%	0%	0%	56%	9
BangaMary	19%	49%	26%	0%	6%	47
Goatfish	50%	0%	0%	25%	25%	4
Butterfish	50%	0%	50%	0%	0%	4
saltfish	0%	0%	0%	100%	0%	4
Mackerel	0%	0%	0%	0%	100%	14

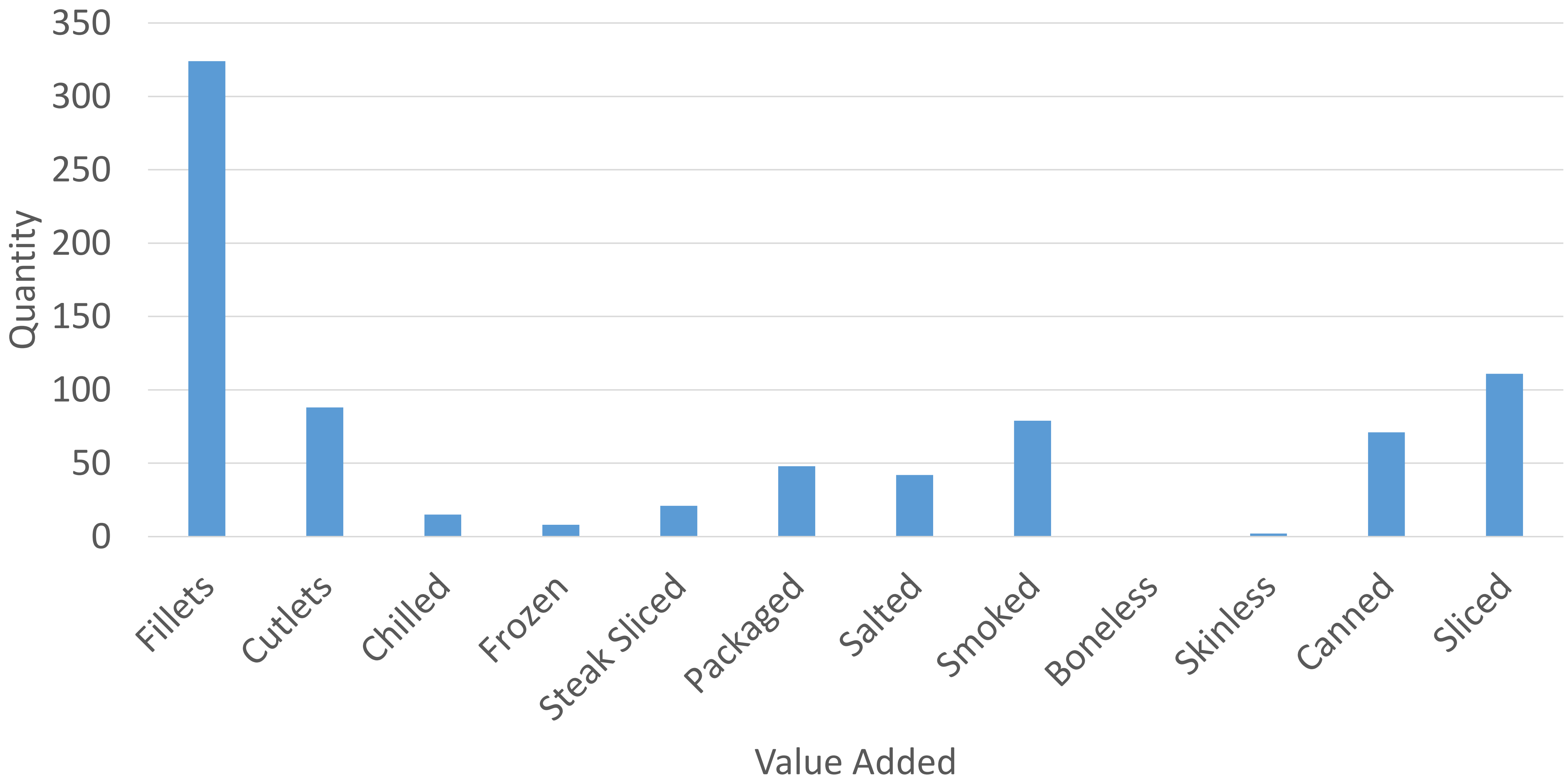
Consumer willingness to additional premium



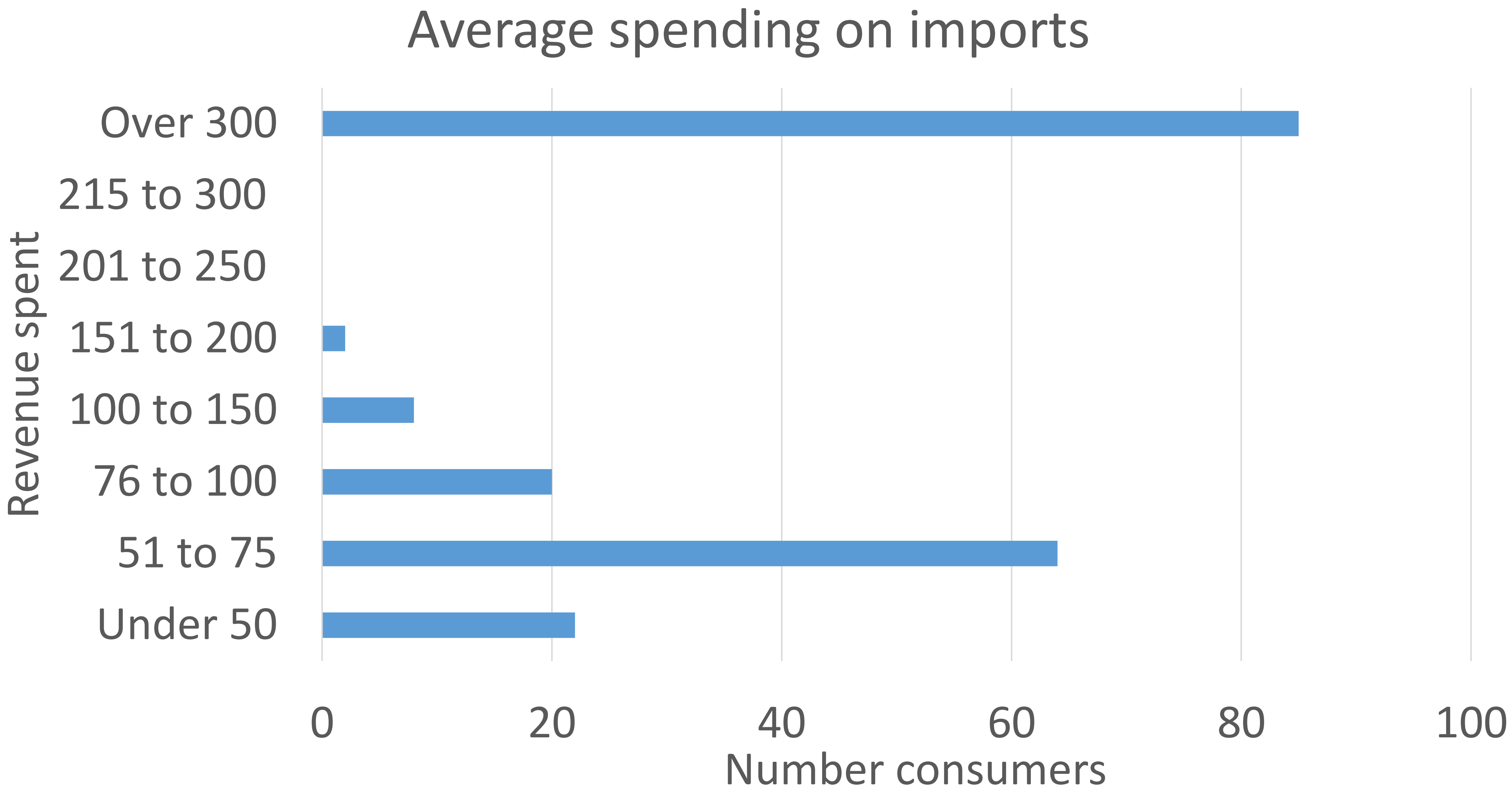
Factors preventing consumers from acquiring seafood



How consumers would like seafood to be sold

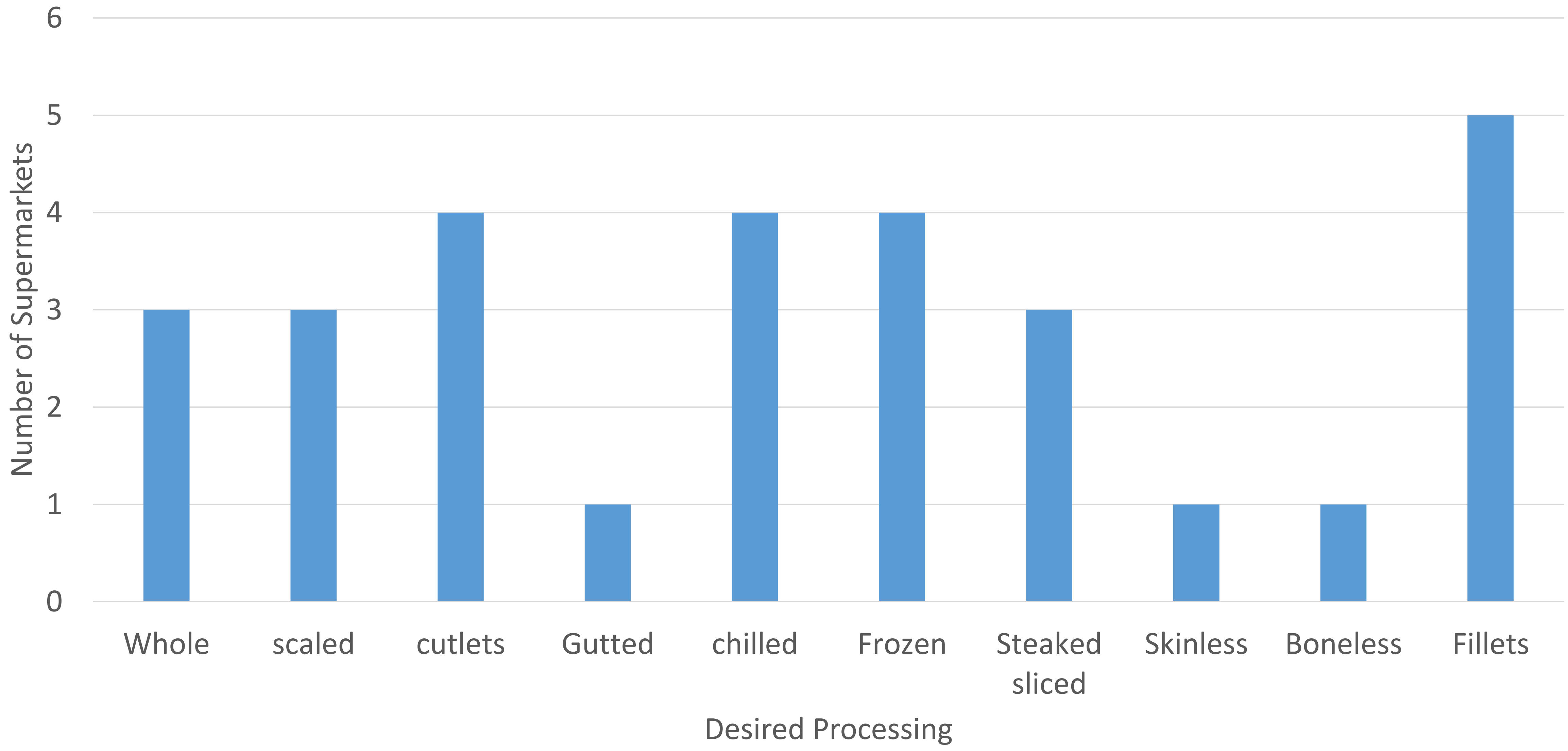


Average spending on import seafood

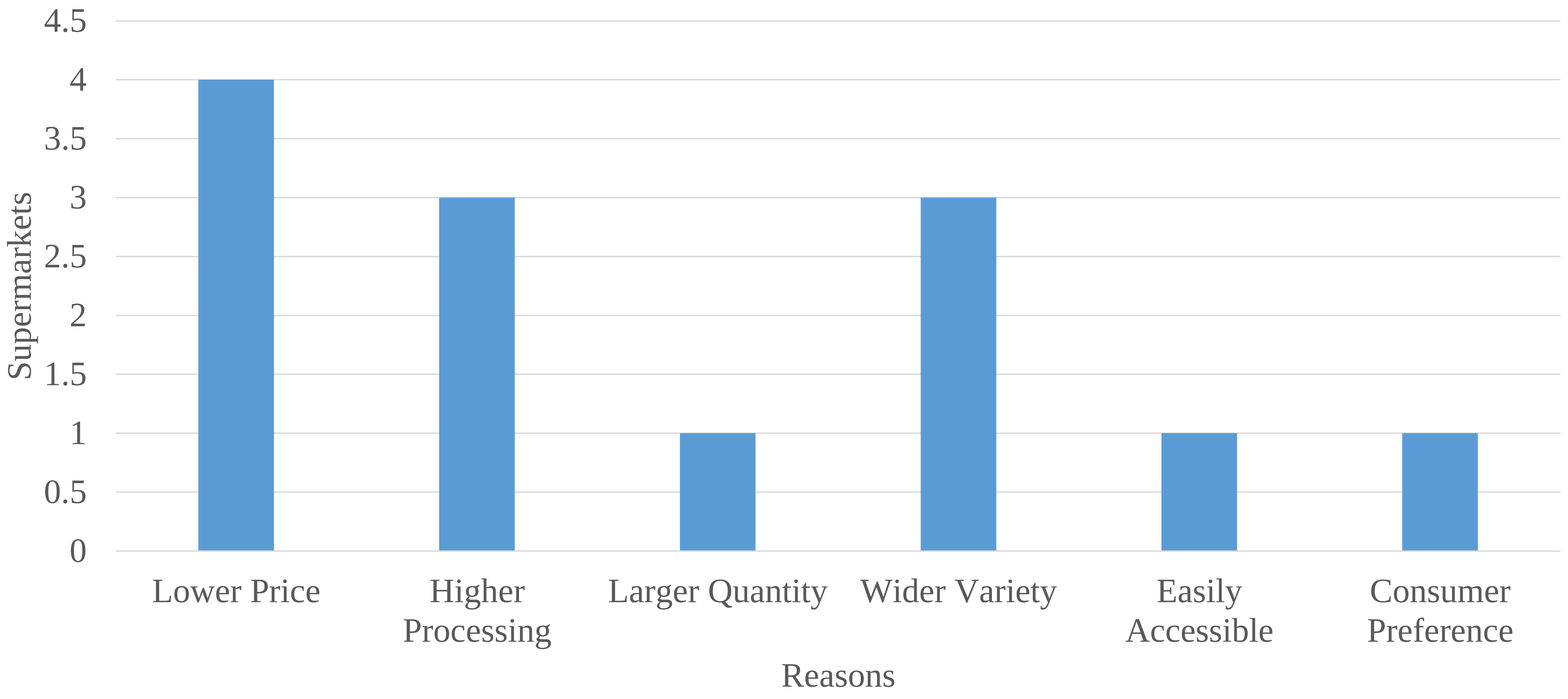


Supermarkets (5)

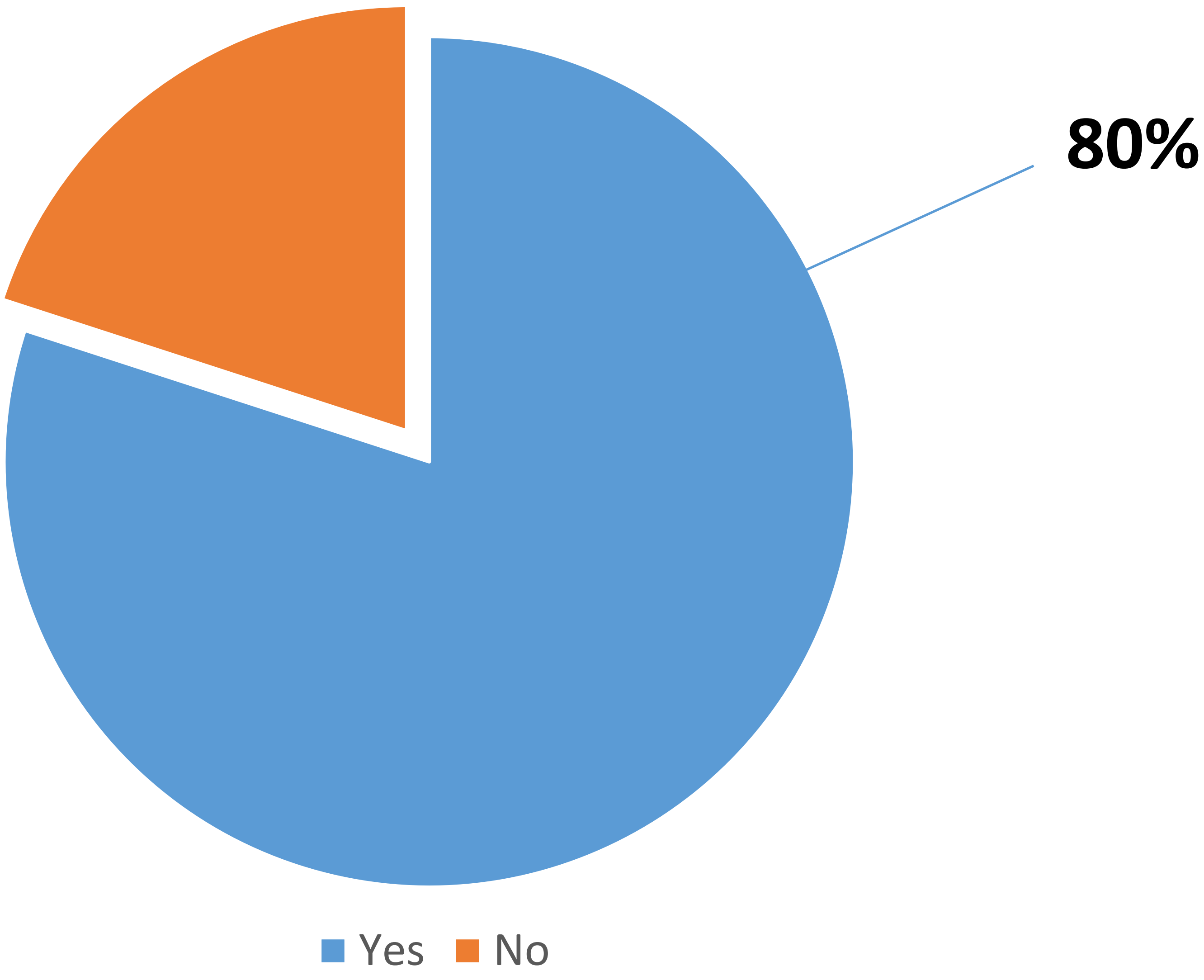
Level of processing demanded by supermarket



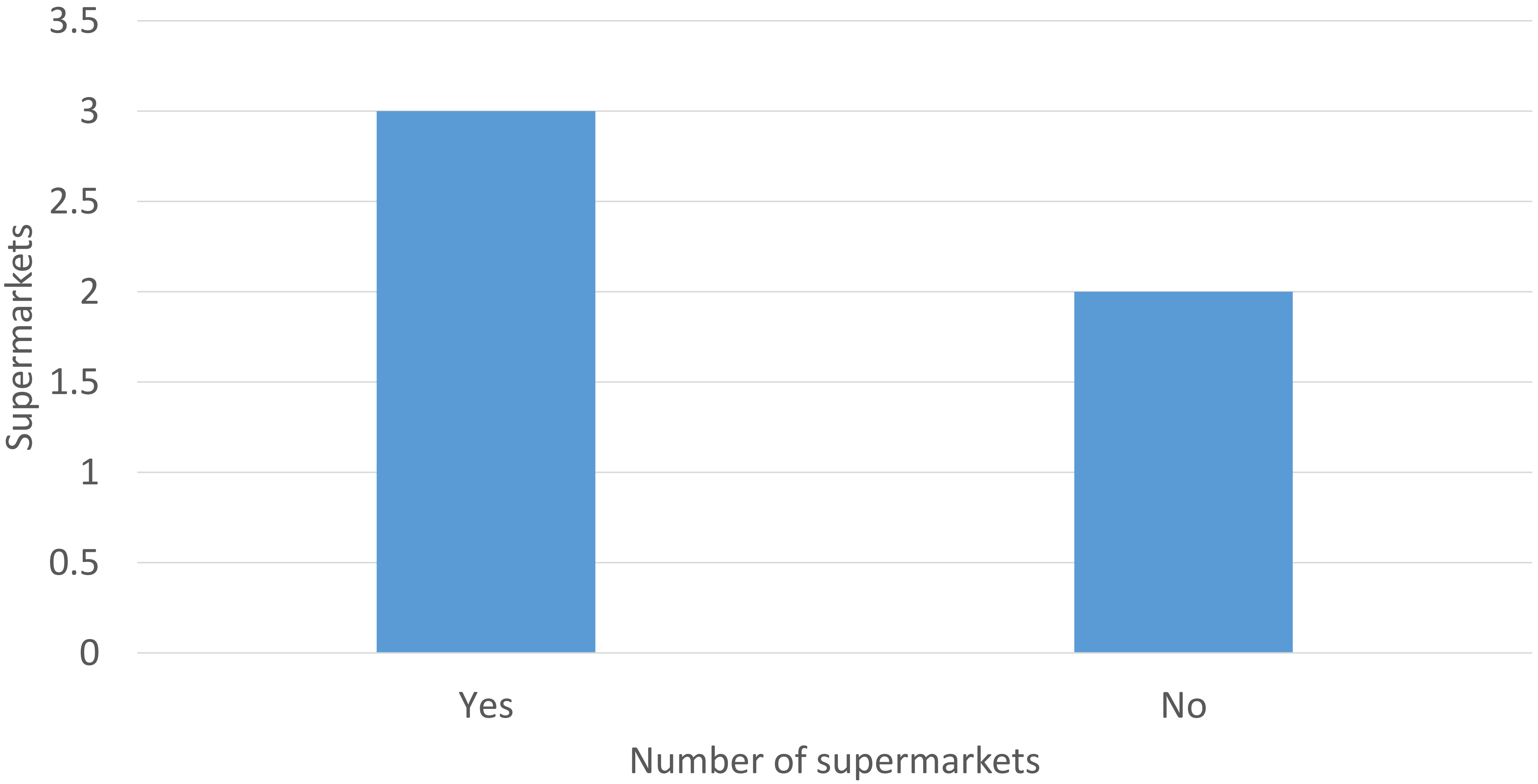
Supermarkets reason for import seafood



Central location to acquire seafood

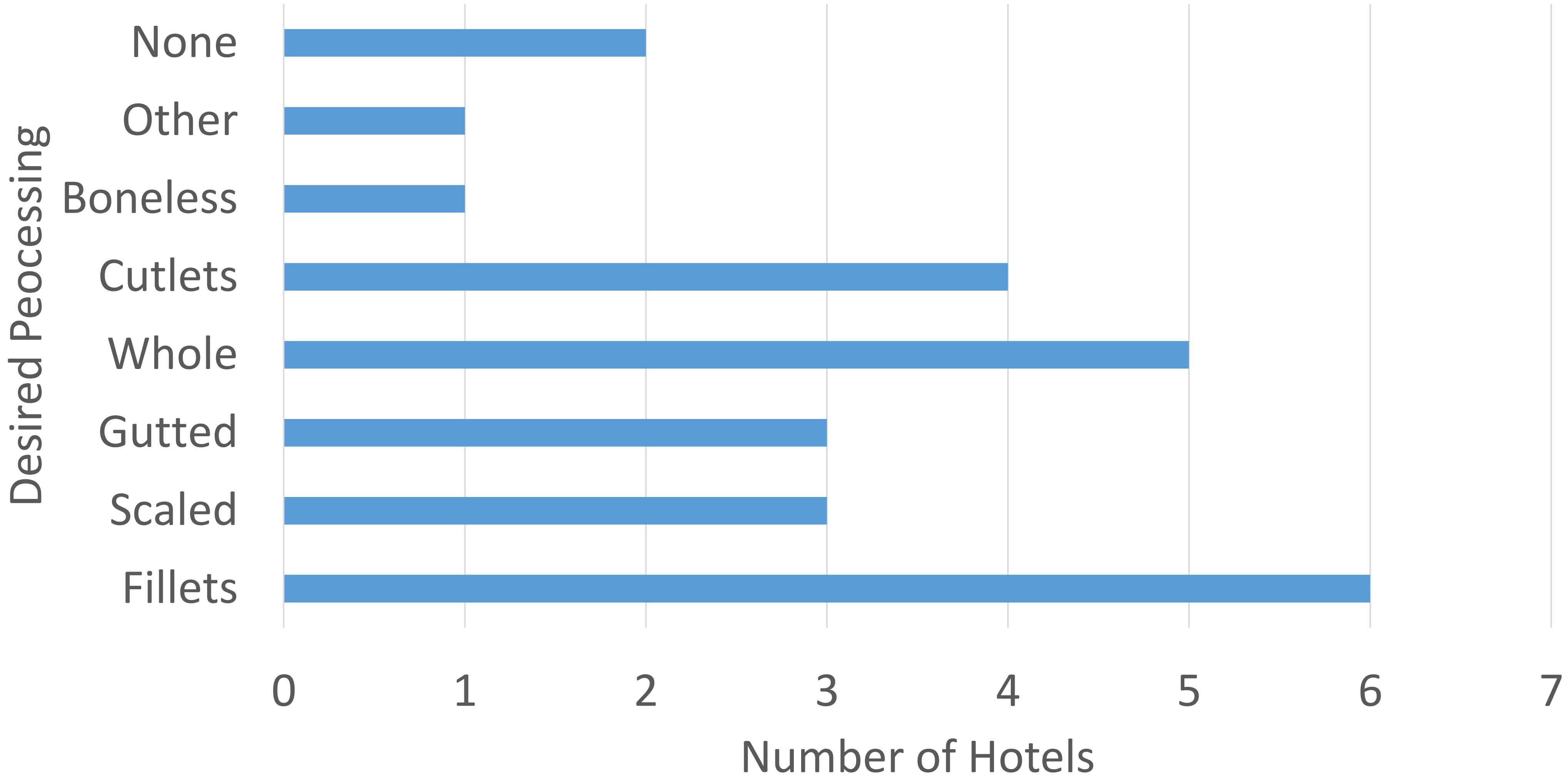


Online Ordering of local fresh seafood



Hotels (25)

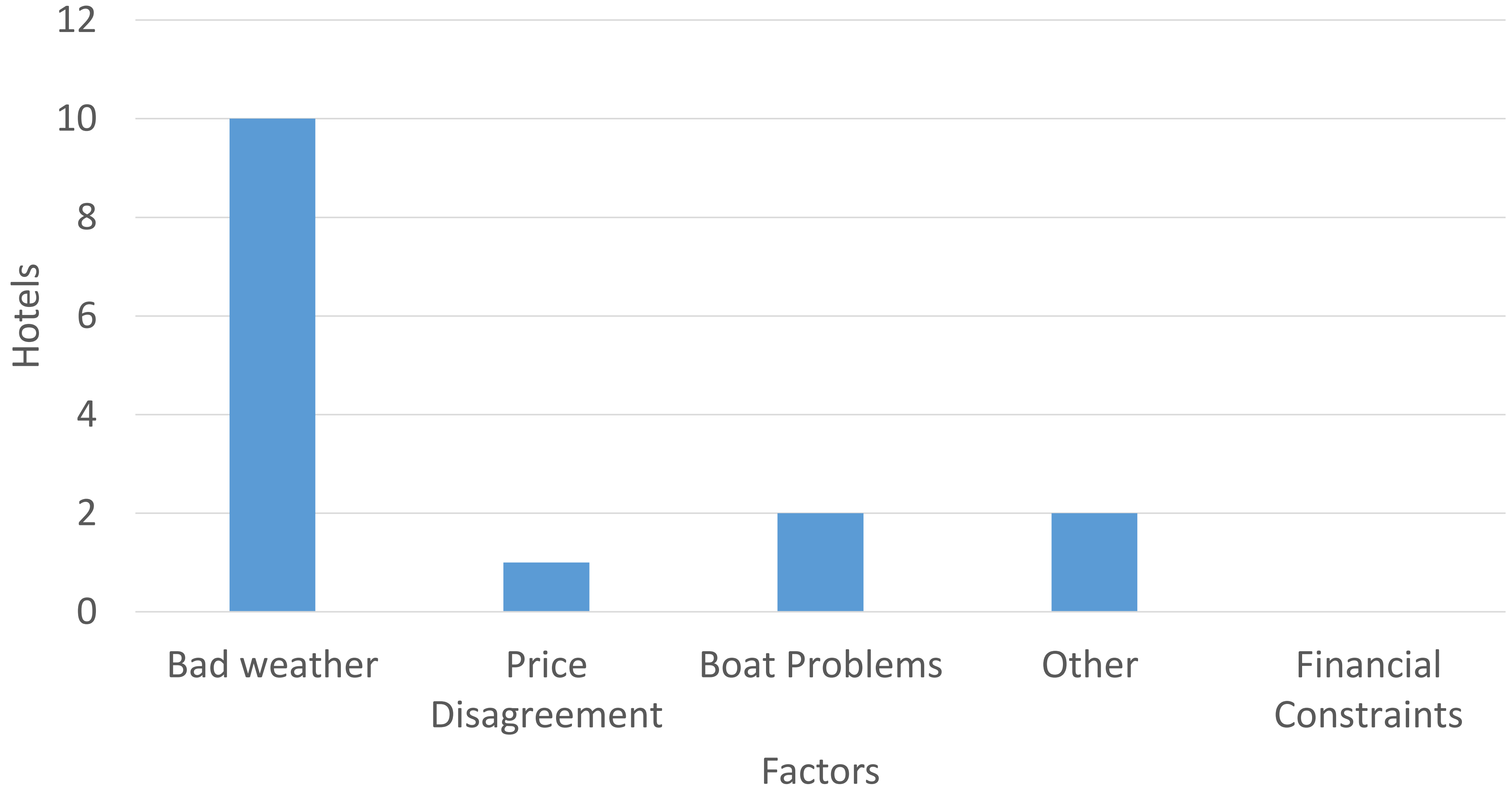
Level of Processing demanded by hotels



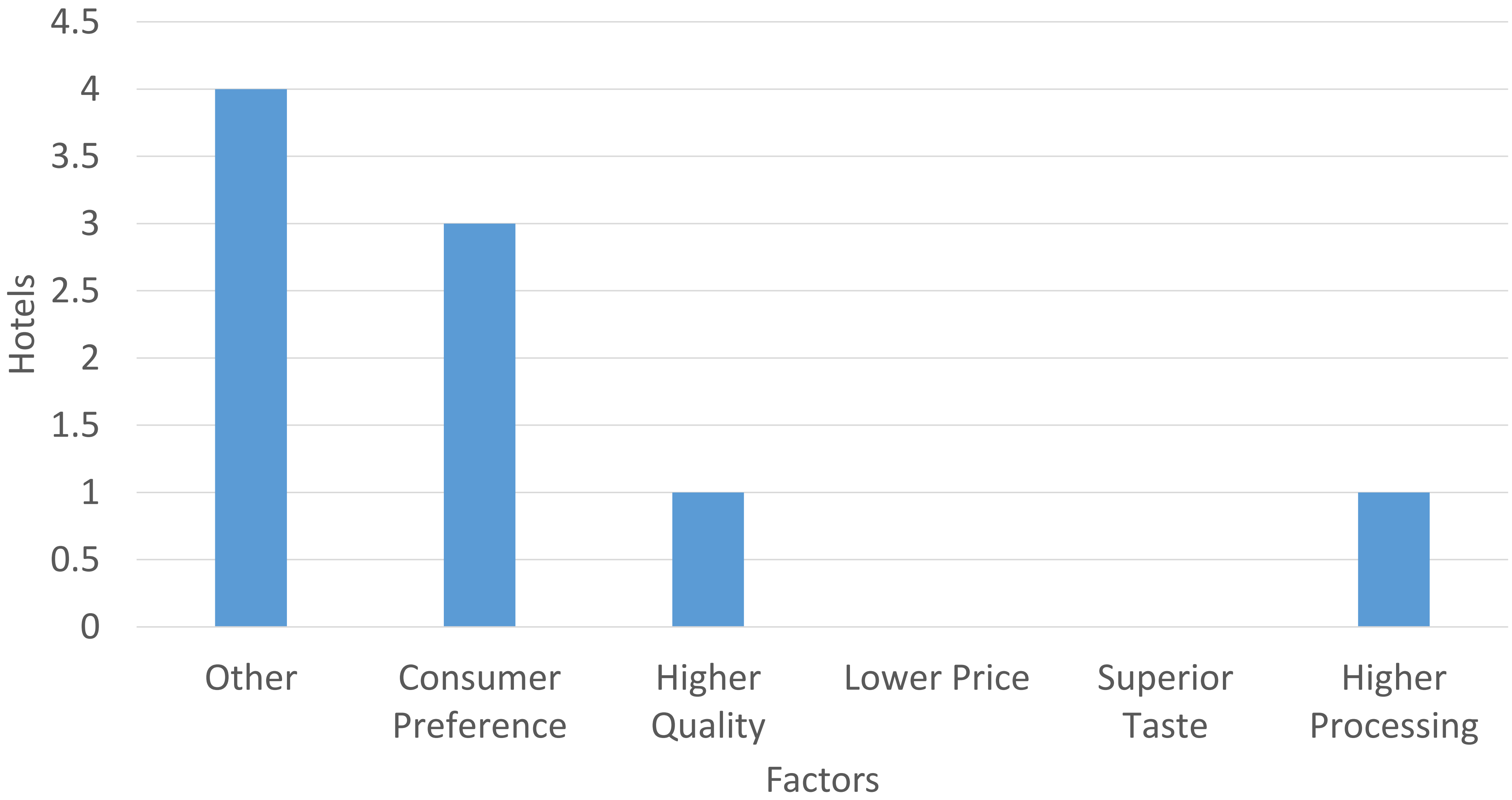
Hotel Willingness to pay additional Premium for added processing

Respondent Position	Number of Hotels willing to pay for Additional Premium
Yes	6
No	4

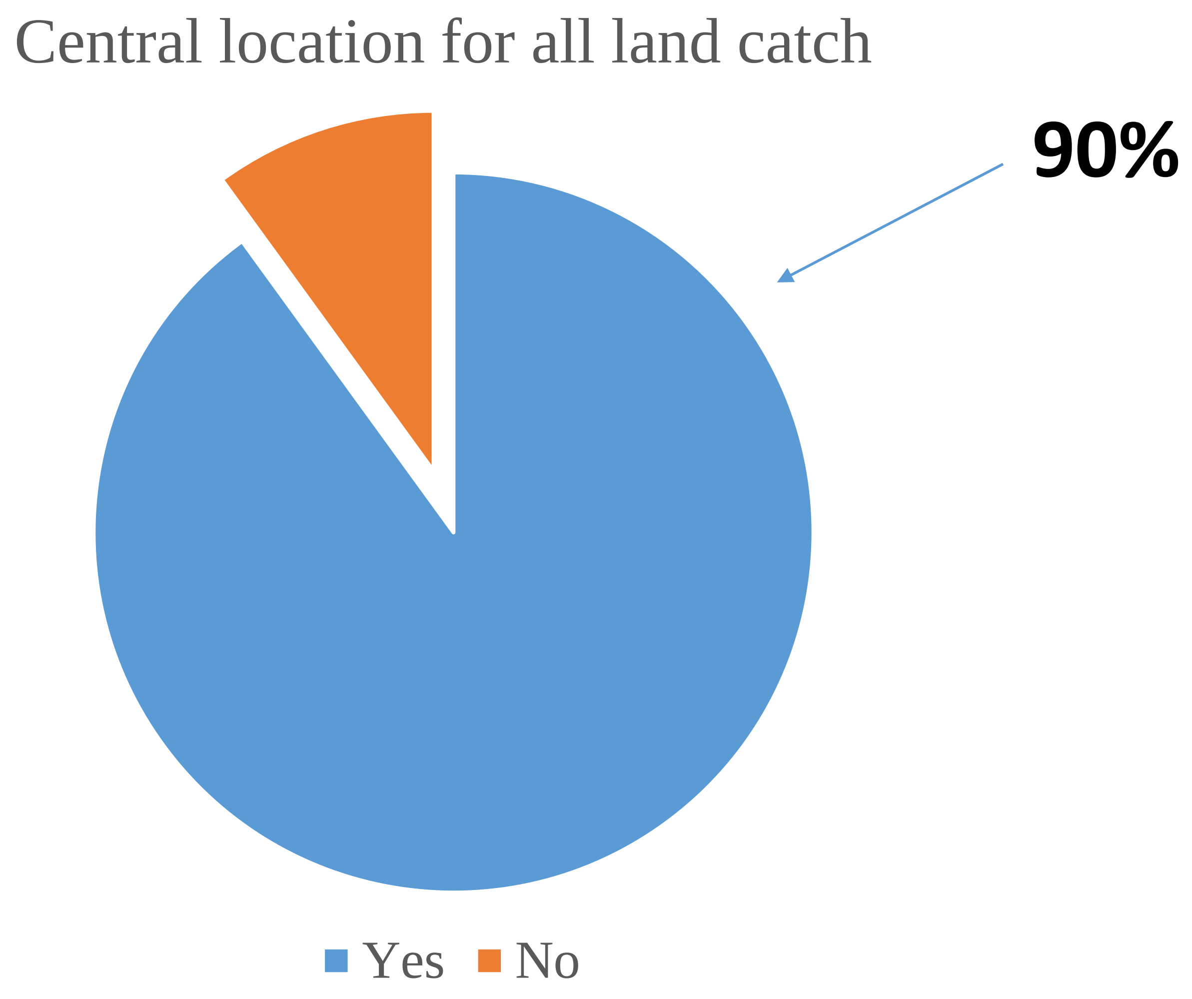
Factors preventing hotels from acquiring seafood



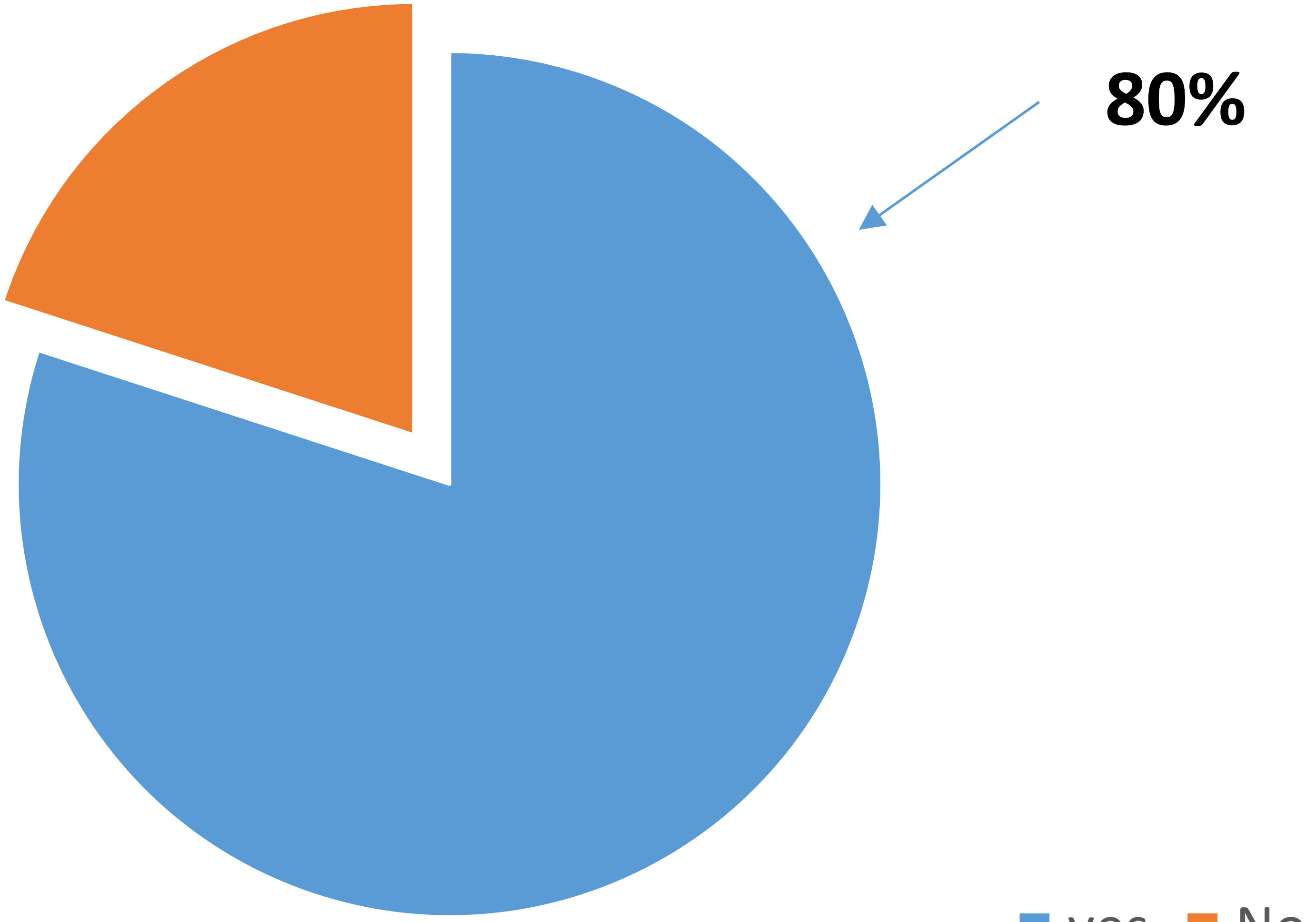
Factors that prompt import of seafood



Hotels purchasing seafood from a local central location

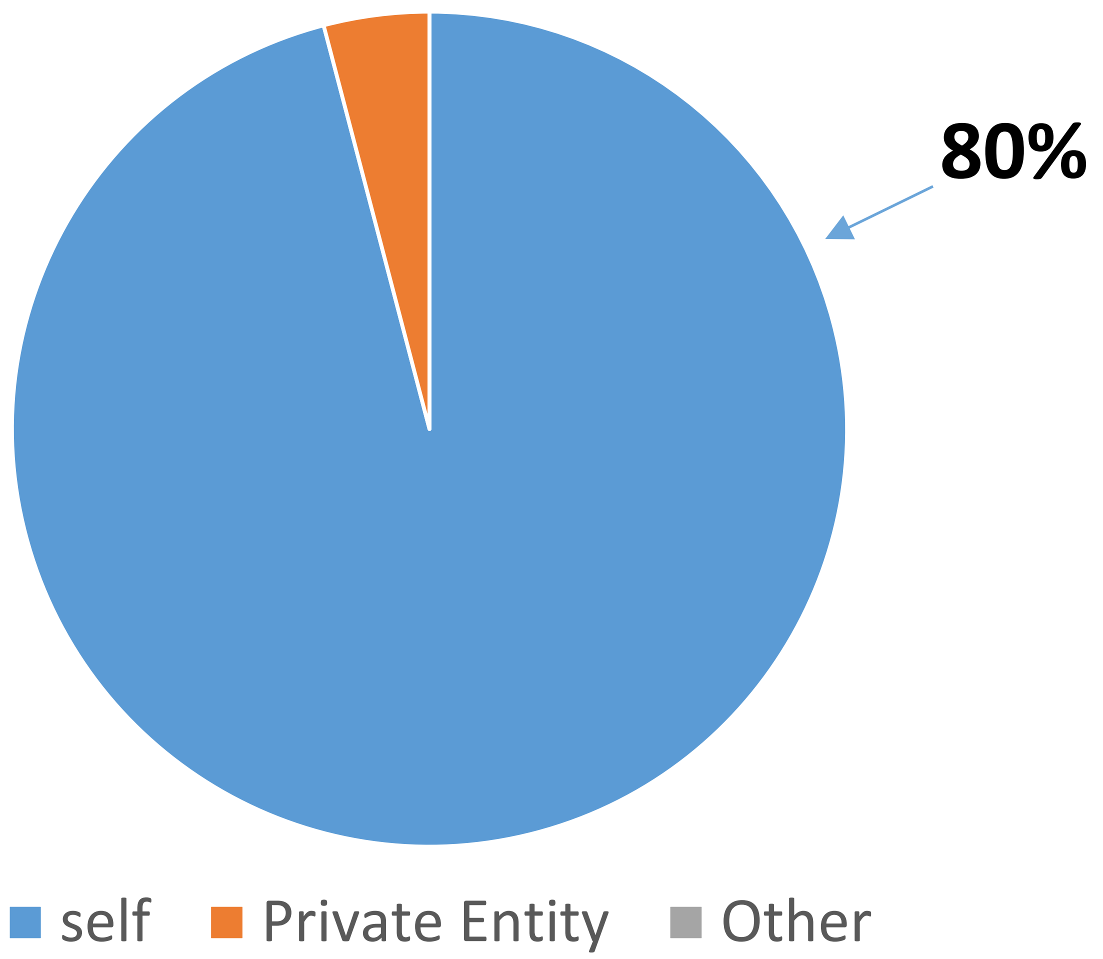


Hotels purchasing seafood online

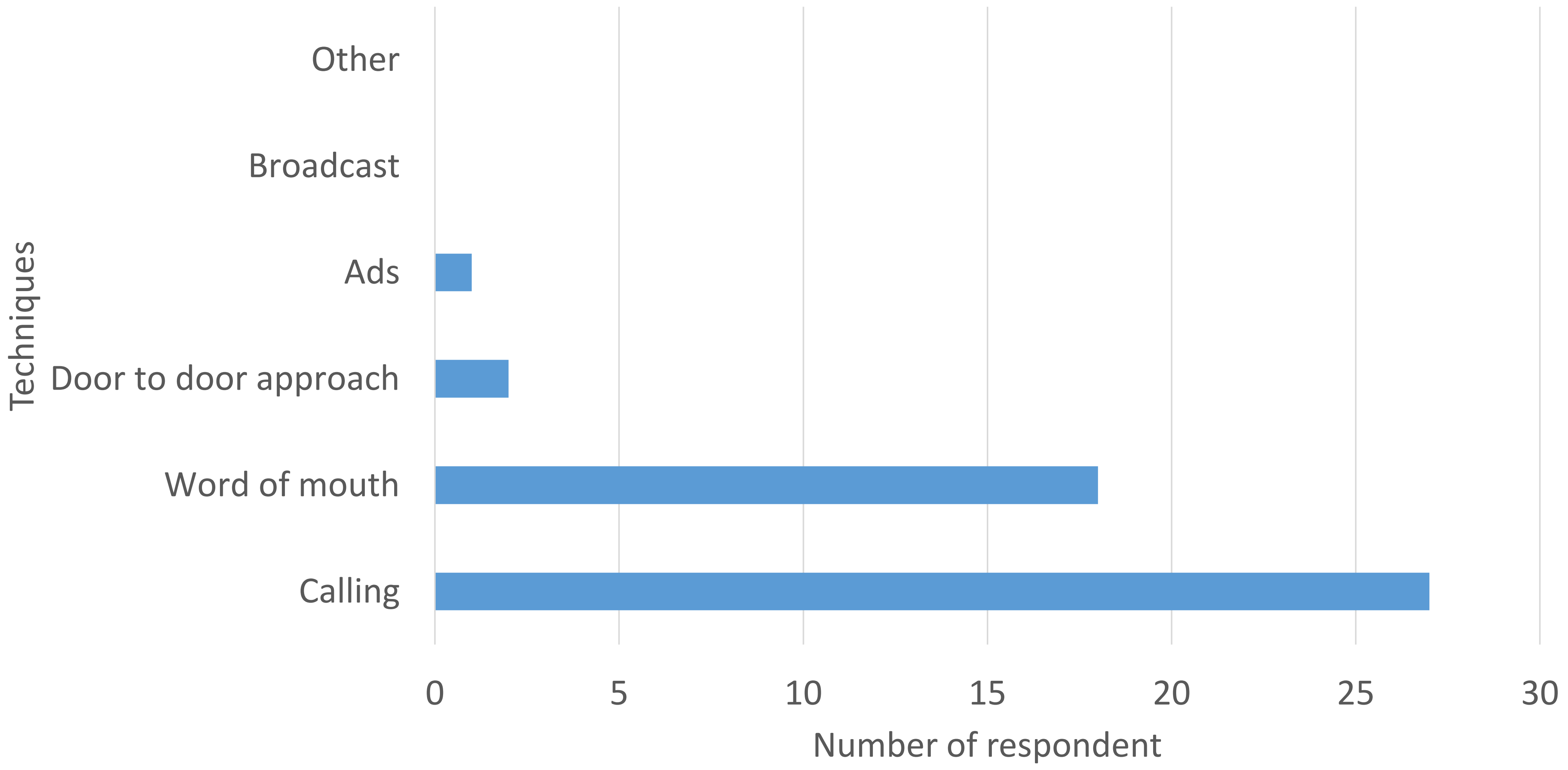


Fisherman (51)

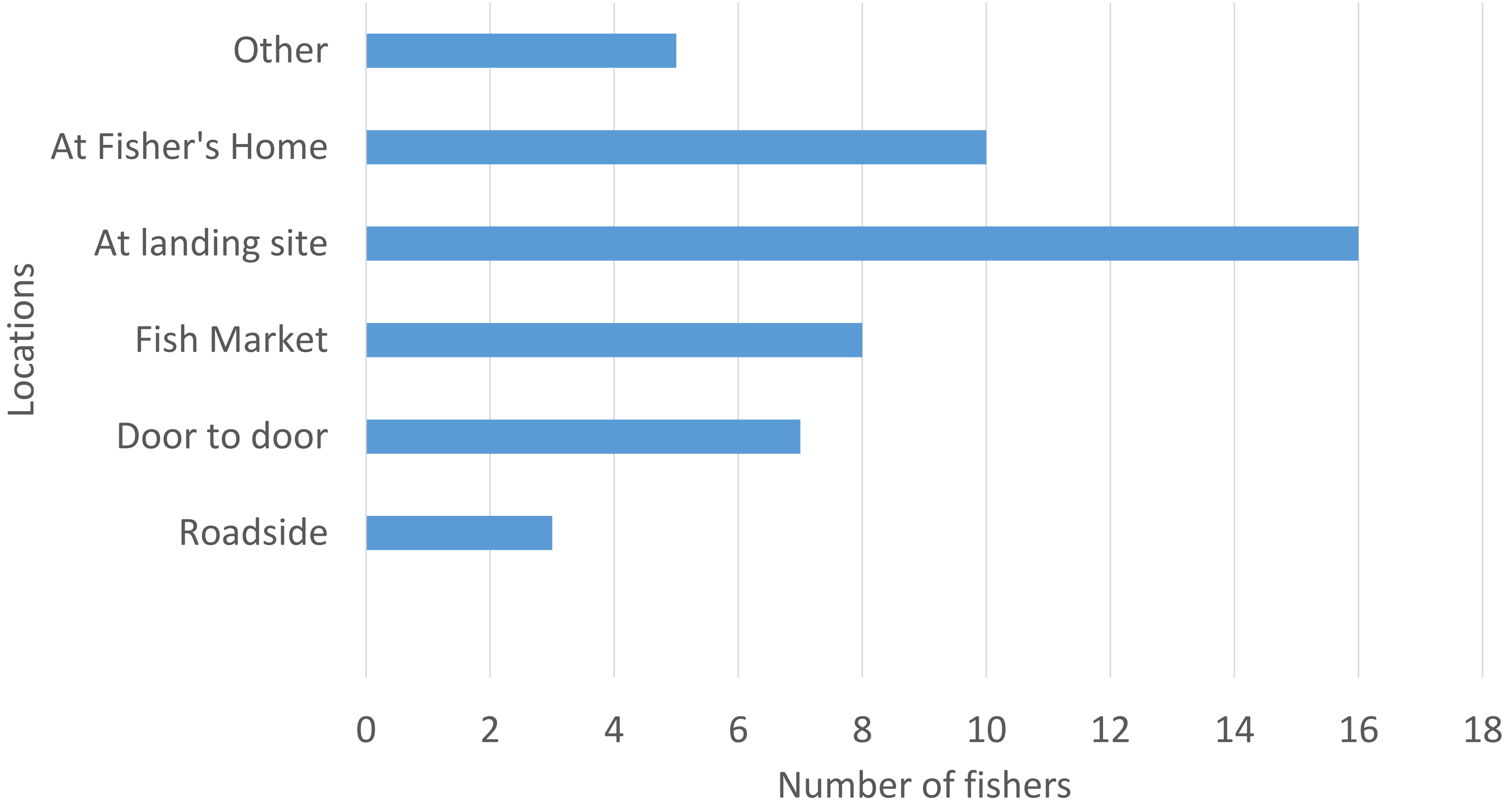
Who is responsible for marketing fishers catch



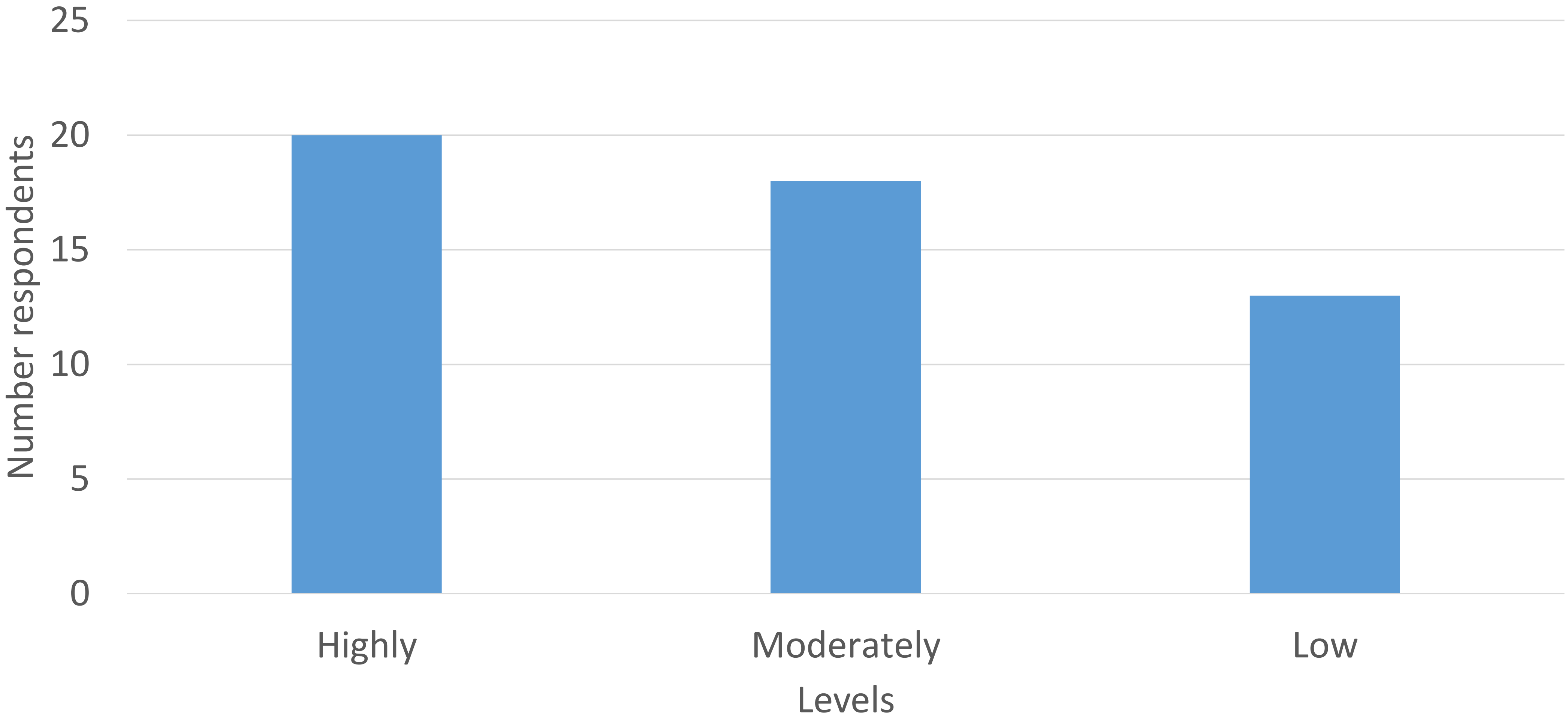
Marketing Techniques Utilized



Location of point of sale



Level of competition



Results

- The demand for **higher levels processing** was reinforce among all three segments of the consumer markets researched.

- At the point of sale the highest domestically available form of processing "**scaling and gutting**" was requested of the sampled consumers while the majority of the sample (over 80 percent) desired seafood to be sold as **fillets, sliced, smoked, cutlets, salted and packaged.**

- Moreover, the survey revealed **snapper, grouper and grunt** were ranked among the most preferred demanded domestically harvested species as they dominated 1st, 2nd, 3rd and 4th order preference.

Results

- The survey outline that the different fragments of the consumer market are ***willing*** to ***pay*** for ***higher a premium*** for ***valued added products***.

- Consumers allocate a relatively **large portions** of their **disposable income** towards acquiring imported seafood products.

- More importantly, it was interesting to note that the most crucial factor that prevent household from acquiring seafood is not financial constraint but ***time constraints***.

Results

- The research reveals that **market signals** concerning what product to produce, in what quantity, what format and what time **are not being taken** into consideration as result of:
  - Self-Marketing
  - Utilization of poor Marketing techniques (i.e Word of mouth and door to door approach)
  - Level of competition range from **moderate** to **highly** competitive
- The concept of acquiring seafood from one **central location** was well received across the entity sampled population.
- Having this **centralized system** be done online was also welcome among **hotels** and **supermarkets**.

Conclusion

- There is a great **demand** for **higher processing** and **value added** initiative among the different market segments.
- Snapper, grouper and grunts are among the most preferred species domestically.
- There is supportive evidence of **financial feasibility** towards establishing a **market driven value** chain that seek to gain competitive advantage through the application of value added mechanisms.
- **Consumers** display **strong willingness to pay addition premium** to acquire value added products.
- The root causes of the **current challenges are little to no marketing** and **poor marketing techniques** coupled with **no market research** to transform landed inputs to a finish products that resemble final consumer feedback.

Recommendations

- Information Phase
  - Information Gathering (i.e Stock size; general fisheries data as well as market and consumer data)
  - Information sharing (i.e Food safety and harzards)
- Proactive Phase
  - Training on marketing principles and business management.
  - Provision of training in the preparation of value added products (i.e salted, smoked and fillets)
  - Establish an auction mechanism that fits to domestic needs.
  - Online variation of Auction system
  - Implementation of an e-market website
  - Adaptation and utilization of cost effective Apps such as What’sapp