



CONSUMER ATTITUDES & ACCEPTANCE OF NEW FISH PRODUCTS: THE CASE OF GREATER AMBERJACK

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Workshop on Greater Amberjack (*Seriola dumerili*) aquaculture:
Results from the DIVERSIFY project
18th September 2018, Electra Metropolis Hotel, Athens (Greece)

FISH FOR THE FUTURE



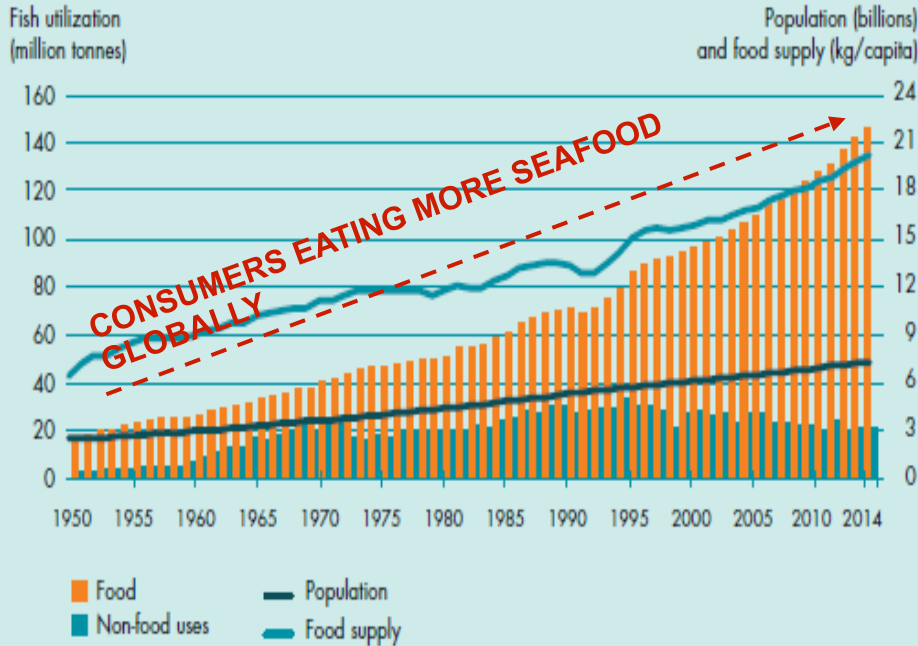
Scientific American, March 1956, Magazine ad showing the quick-freezing seafood of the future

Workshop on greater amberjack (*Seriola dumerili*) aquaculture:
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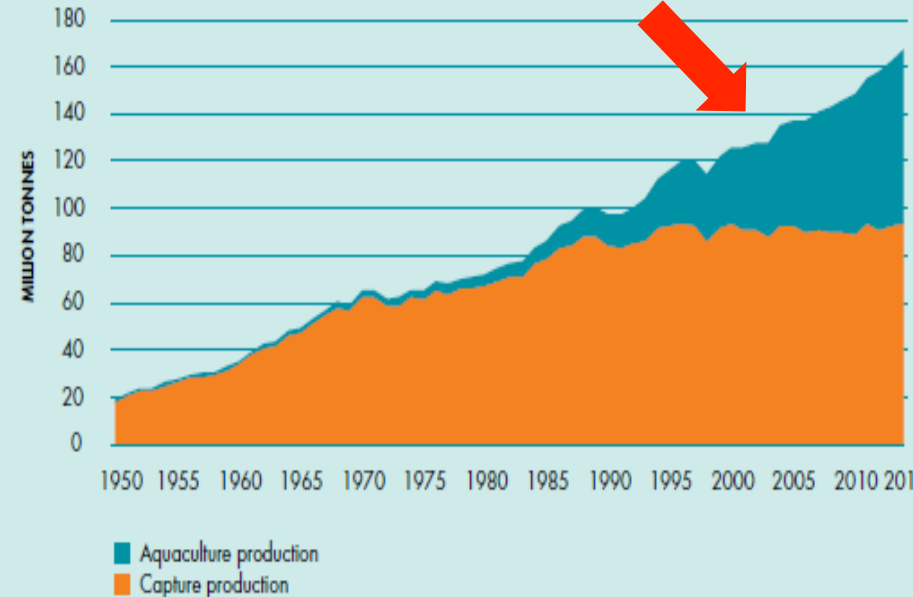
FISH ON DEMAND?

WORLD FISH UTILIZATION AND SUPPLY

↑EU28~25kg/capita



WORLD CAPTURE FISHERIES AND AQUACULTURE PRODUCTION

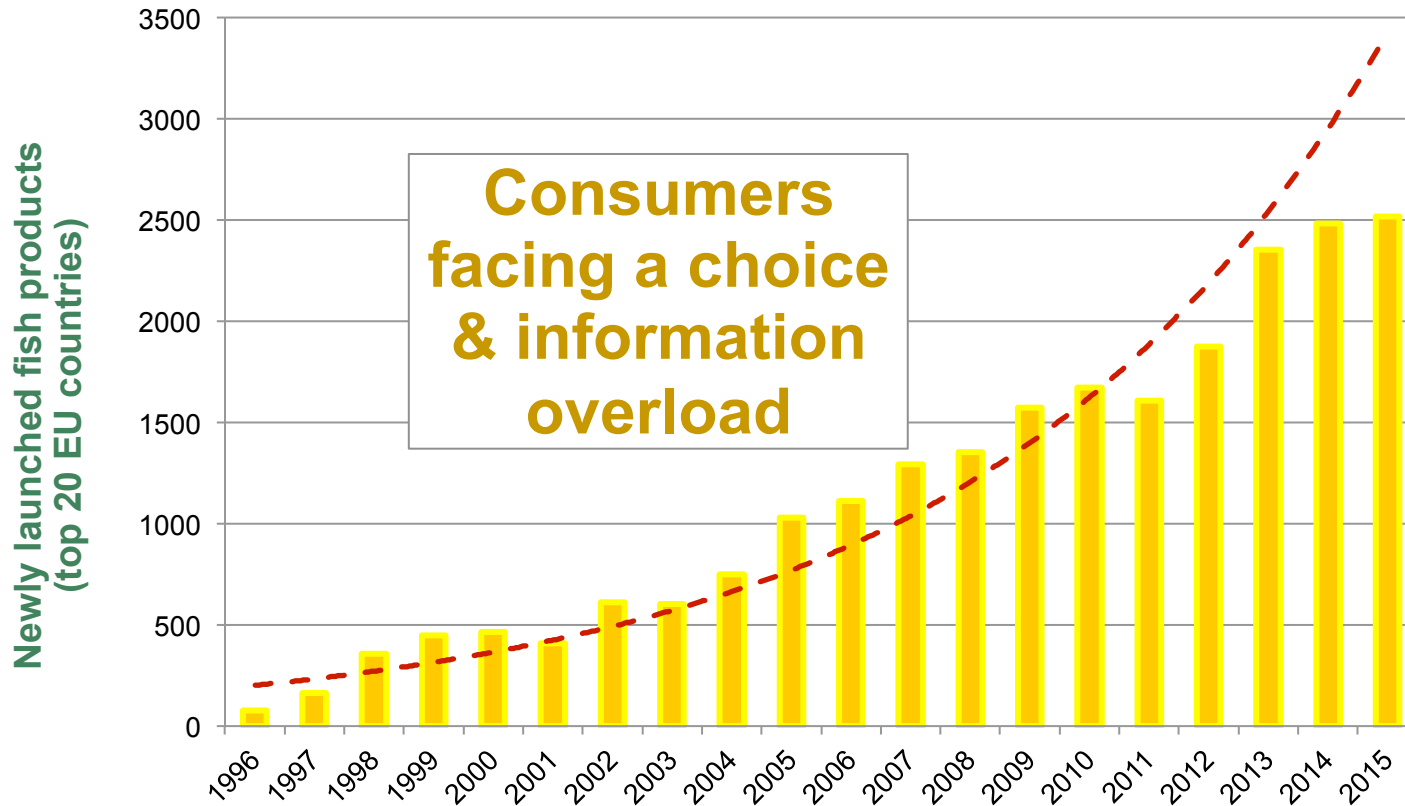


The State of World Fisheries and Aquaculture, FAO

Source: M. Banovij and A. Krystallis,
2017

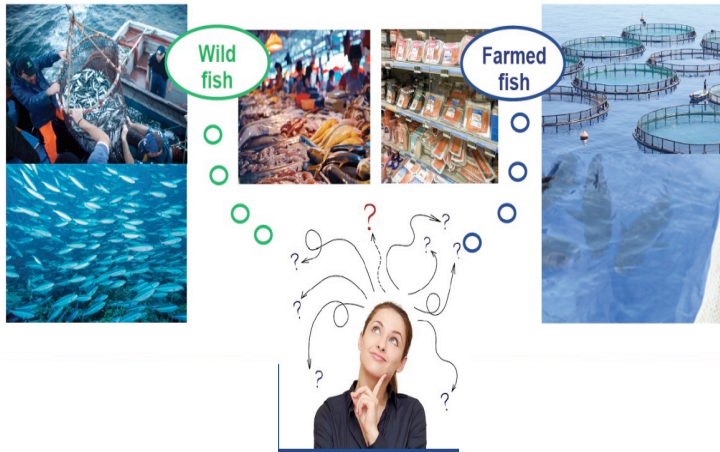
(2016)

FISH TODAY: DO CONSUMERS **RECOGNIZE** AQUACULTURE PRODUCTS?

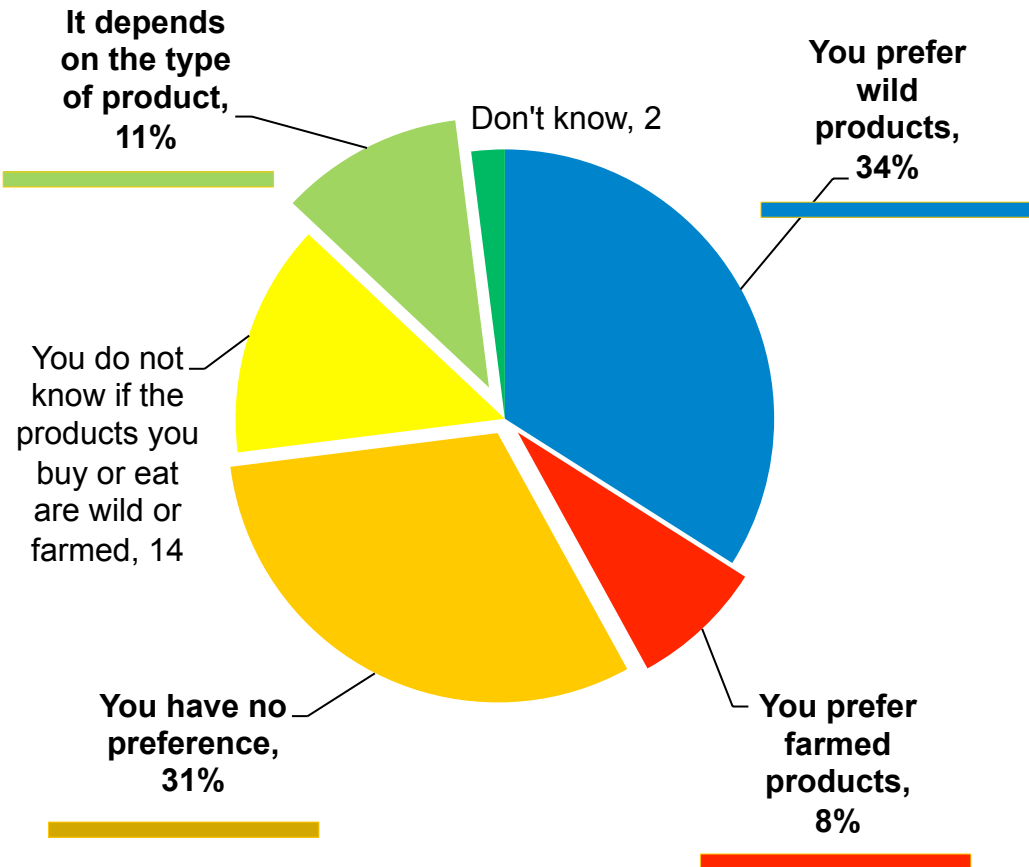


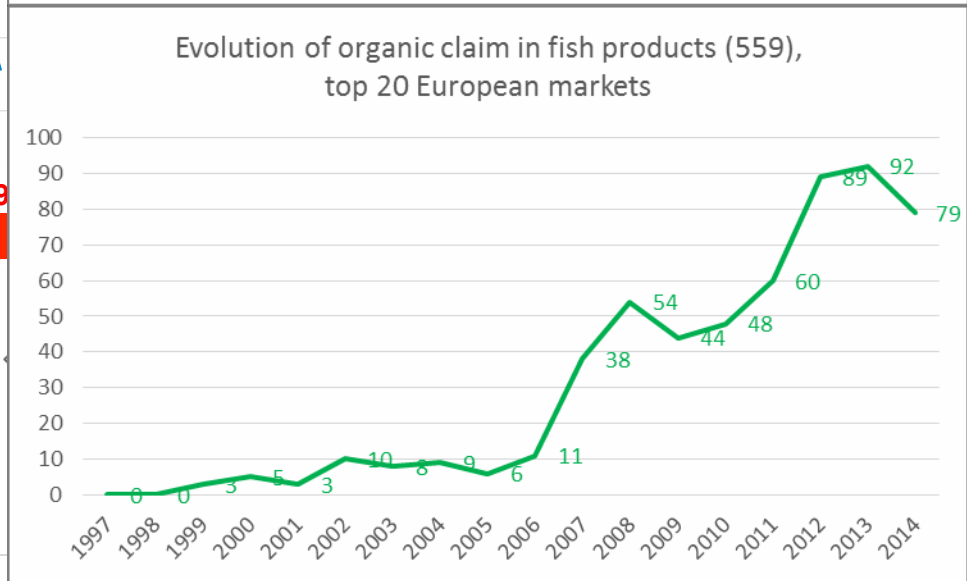
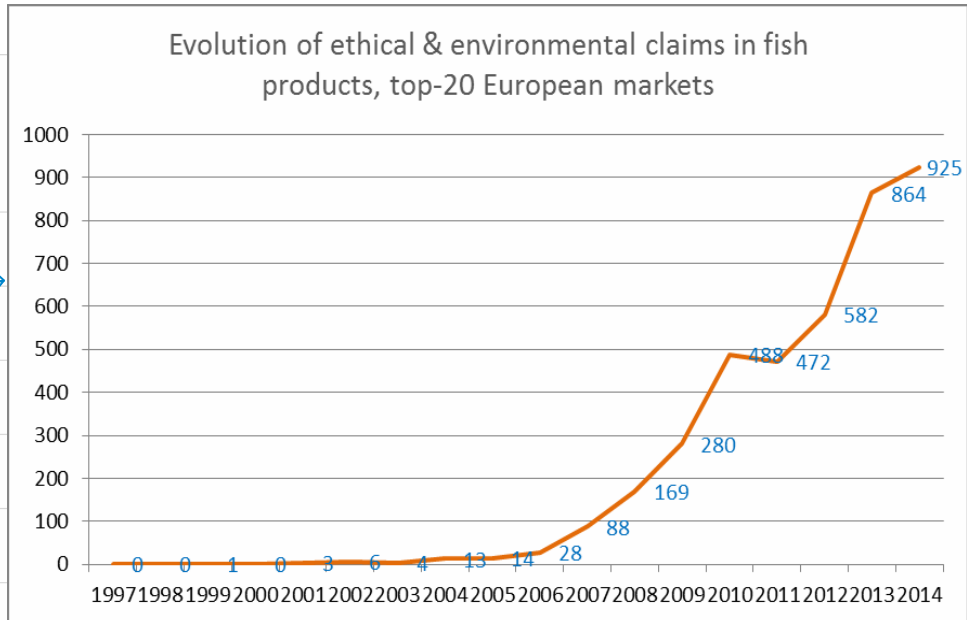
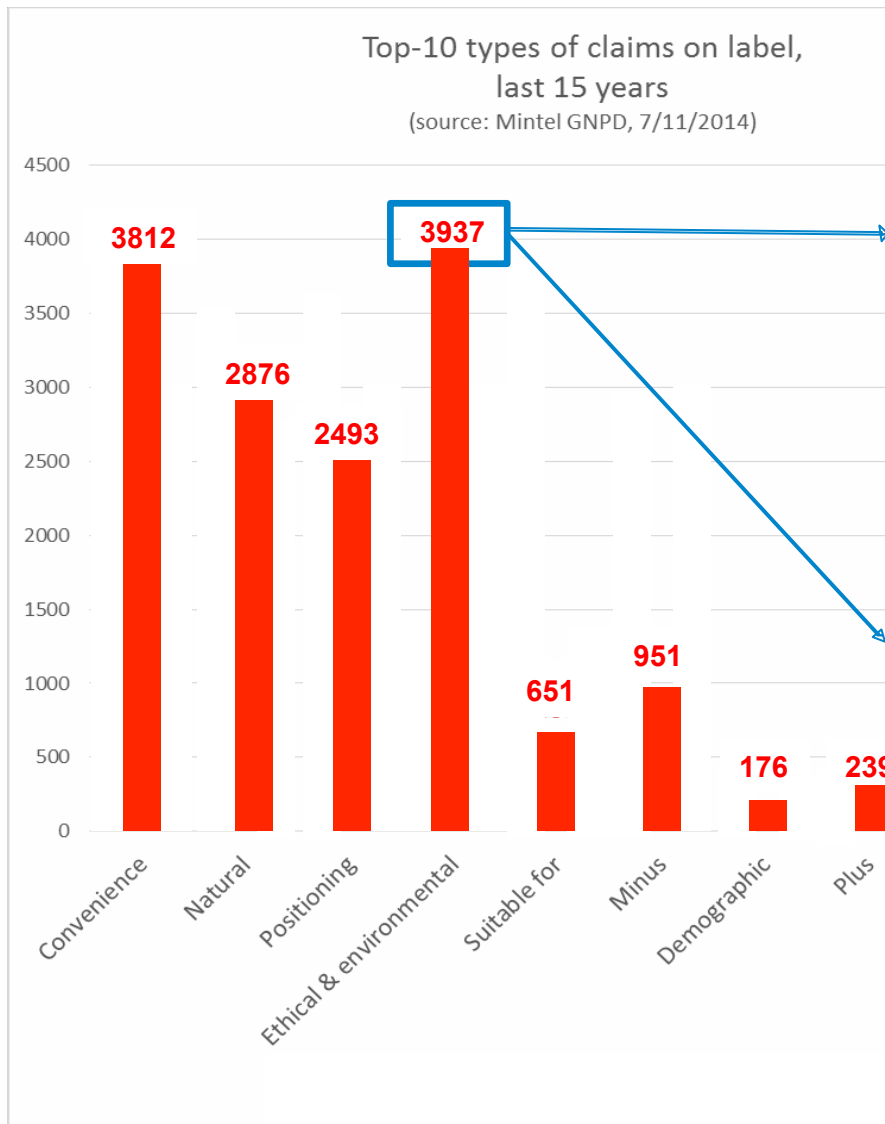
(Mintel, 2016)

AQUACULTURE PRODUCTS (IN)VISIBLE?

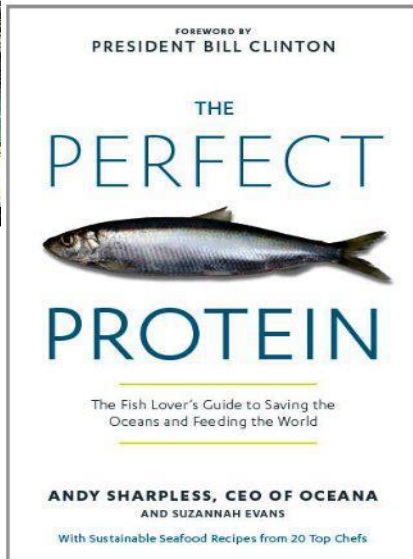
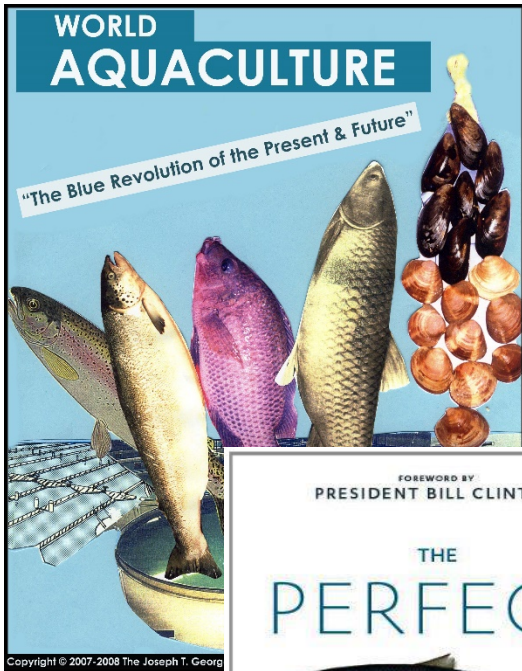


Special Eurobarometer 450
EU28, N=24,452; 2017





MIXED MESSAGES



BACKGROUND TO THIS RESEARCH

choose sustainable seafood
 invest in sustainable aquaculture
 eat more seafood
 choose certified seafood
 learn about aquaculture

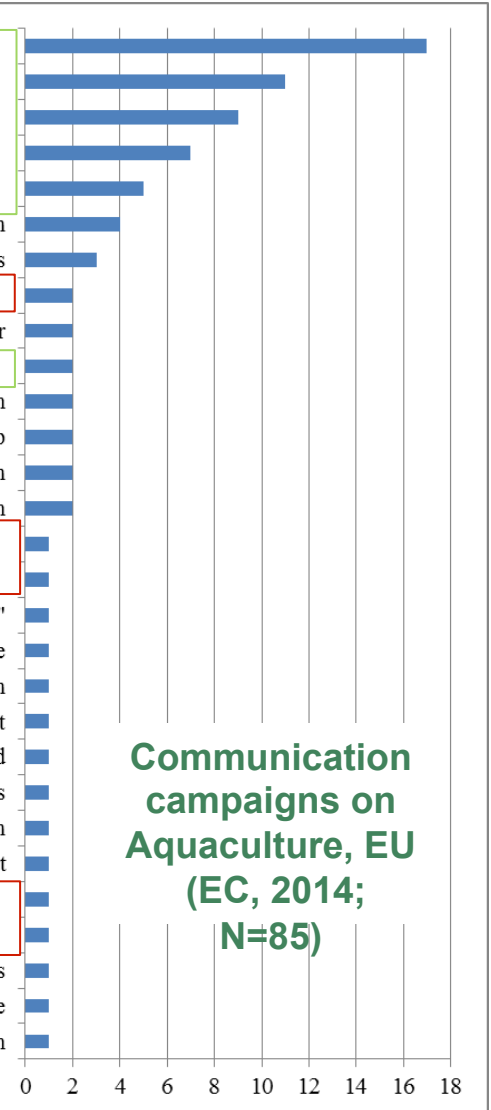
aquaculture is negative

eat more aquaculture products

beware of unsustainable aquaculture
 boycott unsustainable salmon

stop industrial aquaculture
 stop local aquaculture expansion

- eat more local freshwater fish
- eat more mussels
- ask your fishmonger
- eat more farmed salmon
- eat more local carp
- eat more local fish
- invest in communication
- discover "Ombrine mascarine"
- discover aquaculture
- discover fish
- eat more trout
- eat more certified seafood
- eat more European products
- eat more local farmed fish
- eat more local trout
- read the labels
- stop industrial aquaculture
- stop local aquaculture expansion



Communication campaigns on Aquaculture, EU (EC, 2014; N=85)

'FIELD OF DREAMS': TAILORING FISH COMMUNICATION?



(Images courtesy of M. Banovij,

- Under new Common Market Organisation in Fishery and Aquaculture products (FAPs), consumers play a pivotal role:

*“Consumers should be enabled to make **informed choices** but also a more **responsible-sustainable consumption.**”*
- Aquaculture is on the stage in life when it is **already too mature and diverse** to have a generic approach to all its products

CONSUMER-CENTRIC OBJECTIVES



BACKGROUND TO THIS RESEARCH

Road map for **consumer-oriented**
high added-value

New End-Product Development &
Marketing Communication



STEP 1. Segment fish consumers and
select **target-segments**

STEP 2. Eliciting new **product ideas**
from target consumers

STEP 3. Turn new ideas into new
product concepts and evaluate
consumer acceptance

STEP 4. Turn product concepts into
“realistic” **end-products**

STEP 5. Develop a “**story**” to tell
about the new products and test the
story’s effectiveness

<p>The “traditional” fish eaters (30%)</p>	<p>The “innovators” (36%)</p>	<p>Ambiguous indifferent (34%)</p>
		
<p>PSYCHOGRAPHICS -Involved, knowledgeable</p> <p>BEHAVIOUR -Highest number of regular fish consumers across all fish types (farmed, wild, etc.)</p> <p>PERCEPTIONS OF VALUE & COST -Average perceived value of the new species, highest perceived cost (i.e. price, safety, effort), high WTP and PI</p> <p>BELIEFS -Overall strongest beliefs: farmed fish is handled, guaranteed, safe, tasty; wild fish suffers pollution, heavy metals, parasites</p>	<p>-Involved, knowledgeable, innovative when it comes to new fish</p> <p>-Highest number of regular farmed fish consumers, highest number of occasional wild fish consumers</p> <p>-Highest perceived value (i.e. functional, hedonic, ethical), lowest perceived cost, highest expected outcomes (i.e. satisfaction, trust, WOM), high WTP and PI</p> <p>-Stronger beliefs about farmed fish: easier to find, cheaper, more controlled</p>	<p>-Non-involved, non-knowledgeable</p> <p>-Highest number of occasional or non-consumers of all fish types</p> <p>-Lowest value perceptions and outcomes, average cost perceptions</p> <p>-Neutral, low-strength beliefs</p>

60 NEW PRODUCT IDEAS, 10 OF WHICH TO BE TURNED INTO PHYSICAL PRODUCTS:

MEAGRE	<p>Idea 1*: Frozen fish fillets with different recipes</p> <p>Idea 6: Fish burgers shaped as fish (H)</p> <p>Idea 4: Ready to eat meal: salad with fish (L)</p>
PICKEPERCH	<p>Idea 21: Fresh fish fillet with different 'healthy' seasoning and marinades</p> <p>Idea 30: Ready-made fish tartar with additional soy sauce</p> <p>Idea 9: Fish spreads/pate (H)</p>
GREY MULLET	<p>Idea 2: Thin smoked fillets (M)</p> <p>Idea 33: Ready-made fish fillets in olive oil (M)</p> <p>Idea 21: Fresh fish fillet with different "healthy" seasoning and marinades</p>
GREATER AMBERJAC K	<p>Idea 13: Frozen fish fillet that is seasoned or marinated</p> <p>Idea 30: Ready-made fish tartar with additional say sauce</p> <p>Idea 34: Fresh fish steak for grilling or in the pan (L)</p>

L: low processing; M: mid processing; H: high processing.

Examples of physical products' preparation & presentation



Contact: Roccio Robles, CTAqua
M: r.robles@ctagua.es

Example of the production of some of the products. a) Grey mullet fillets in salting mixture before smoking; b) Grey mullet fillets on smoking trays; c) Glass pots with clean and homogenous pieces of mullet fillets; d) Filling the glass containers with olive oil; e) Bottles with grey mullet fillet and olive oil ready to go under cooking process.

FOR

Fish species	Developed DIVERSIFY prototypes
Meagre	Idea 6: Fish burgers shaped as fish (High processing)
	Idea 4: Ready to eat meal: salad with fish (Low processing)
Pikeperch	Idea 9: Fish spreads/pate (High processing)
Grey mullet	Idea 2: Thin smoked fillets (High processing)
	Idea 33: Ready-made fish fillets (Low processing)
Greater Amberjack	Idea 34: Fresh fish steak for grilling in the pan (Low processing)



Idea 6: Fish burgers shaped as fish



Idea 9: Fish spreads/pate



Idea 2: Thin smoked fillets



Idea 33: Ready-made fish fillets in olive oil



Idea 34: Fresh fish steak for grilling in the pan

Contact: IRTA
 M: Lluis.Guerrero@irta.cat

Greater Amberjack

Idea 34: Fresh fish steak for grilling in the pan (Low processing)





4. TURN PRODUCT CONCEPTS INTO “REALISTIC” END-PRODUCTS & EVALUATE CONSUMER ACCEPTANCE

› Examples of product mock-ups created from Greater amberjack



Unprocessed

- › Based on the **literature review and secondary data analysis**, the suggested **LABEL INFORMATION** for **product mock-ups**, are as follows:

Attribute	Attribute version
Country of origin - COR	EU-made 
	Own country-made     
	None

Nutrition claim

Health claim



Certification logo

Country of Origin

Price

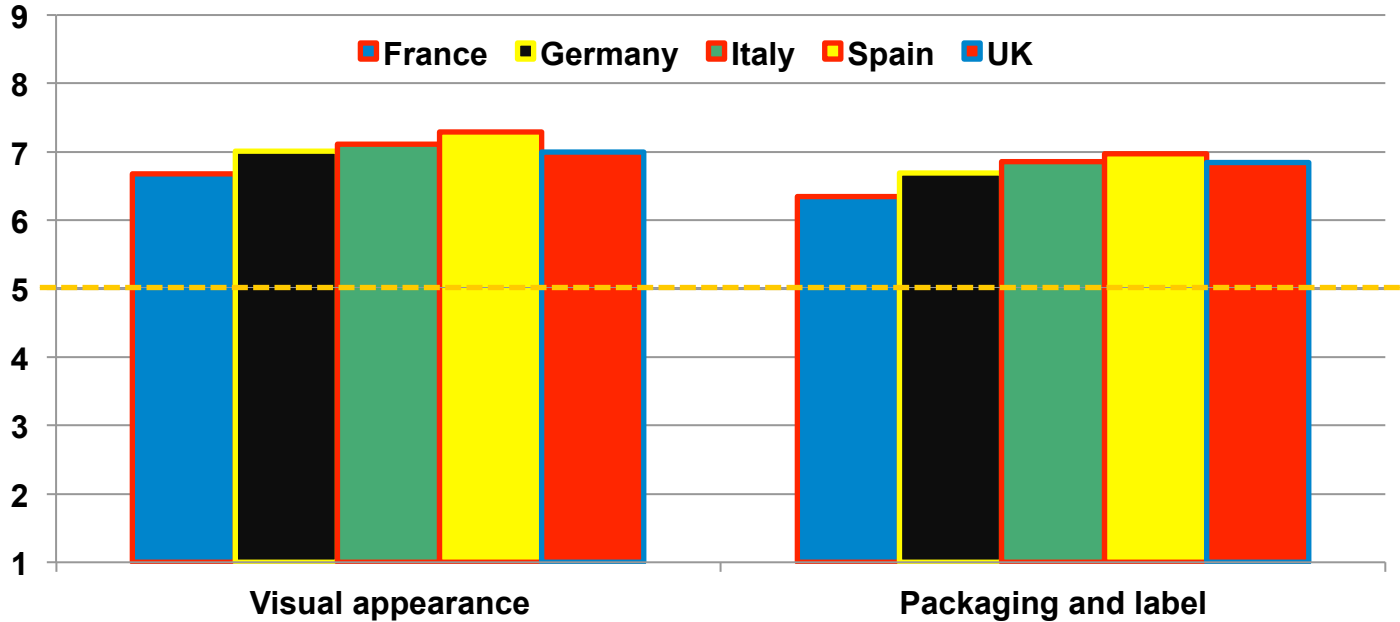
You are standing in front of the supermarket shelf.
Which one of the following three products would you MOST LIKELY CHOOSE and LEAST LIKELY BUY
 to purchase for dinner on a typical day?



Most likely to buy
 Least likely to buy

Likeness: intrinsic & extrinsic quality

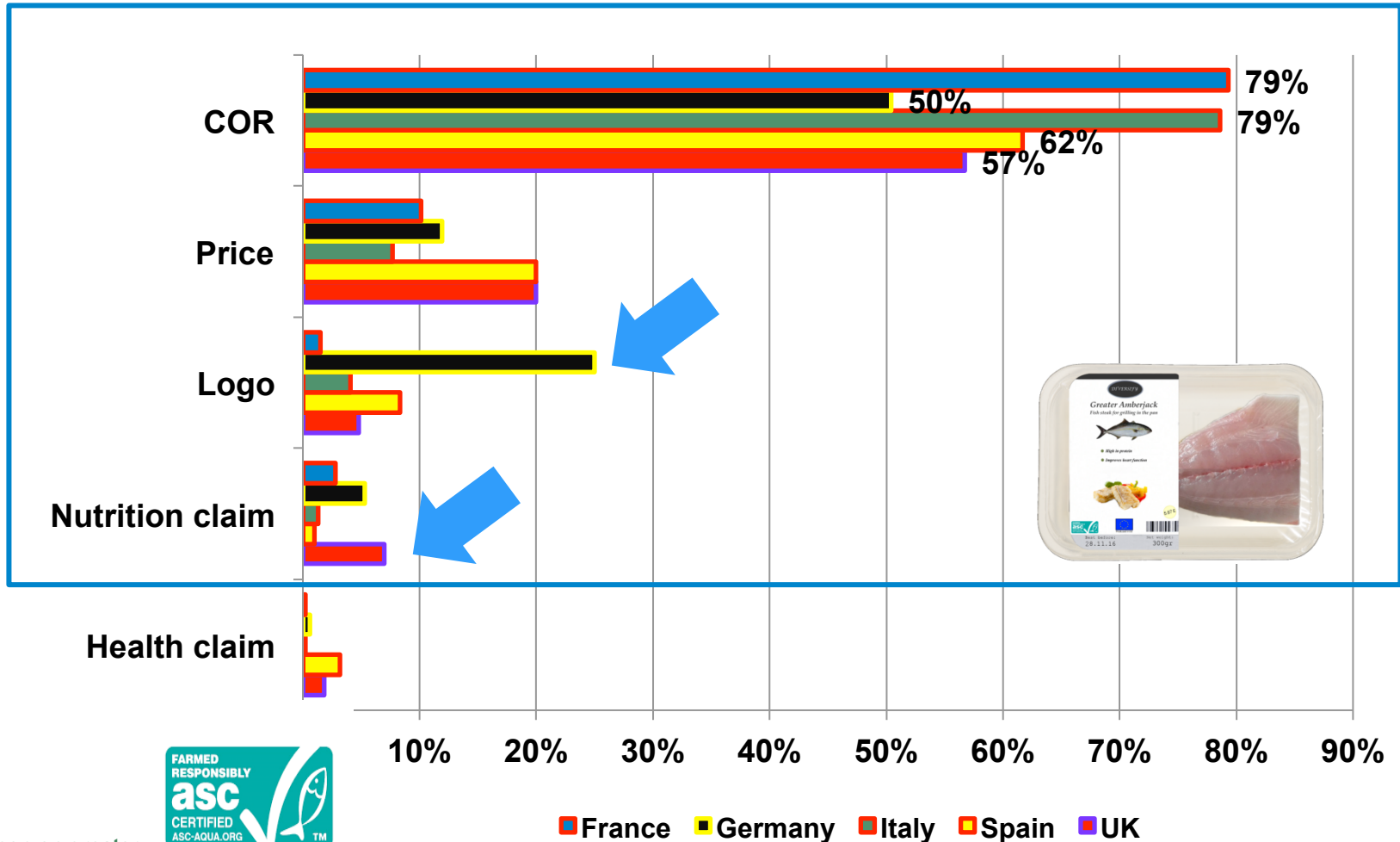
Like
very much



Dislike
completely

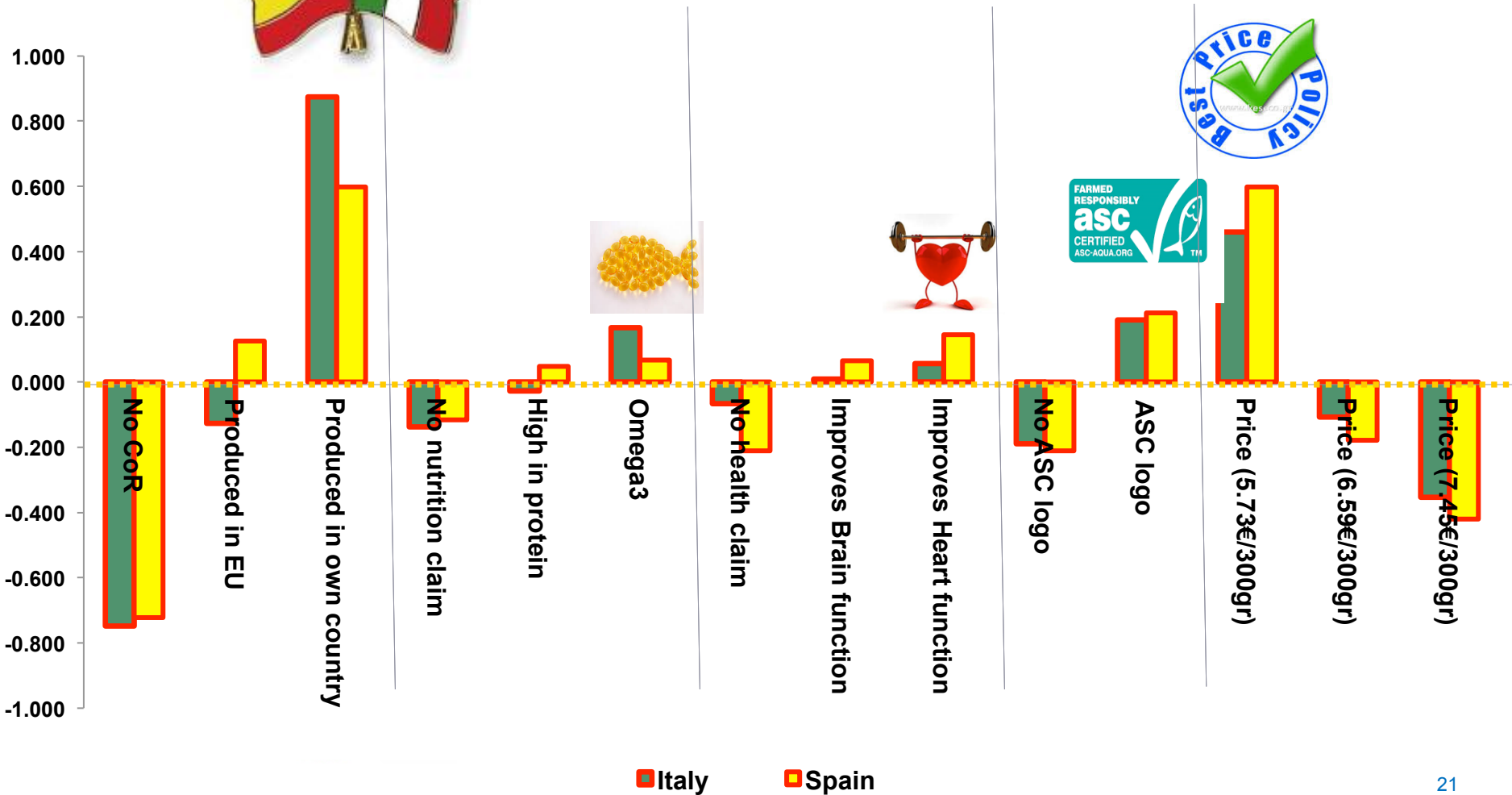


Label information importance, %









Preference for specific labels



Willingness to pay (WTP) IN €

› **Baseline:** reference price for smoked fish fillet (5.73€/300g.)

	France	Germany	Italy	Spain	UK
COR					
None	-1.56	-1.10	-1.75	-1.29	-1.02
Produced in EU	-0.51	-0.40	-0.33	+0.21	-0.19
Produced in own Country 	+2.07	+1.49	+2.08	+1.08	+1.21
Nutrition claim					
None	-0.35	-0.38	-0.33	-0.19	-0.49
Omega3 	+0.46	+0.56	+0.46	+0.12	+0.26
High in protein	-0.11	-0.19	-0.13	+0.07	+0.23
Health claim					
None	-0.08	+0.02	-0.14	-0.35	-0.31
Improves Heart function 	+0.13	+0.20	+0.15	+0.25	+0.22
Improves Brain function	-0.06	-0.22	-0.01	+0.10	+0.09
ASC logo					
No ASC certified	-0.27	-0.80	-0.44	-0.38	-0.30
ASC certified 	+0.27	+0.80	+0.44	+0.38	+0.30



5. DEVELOP A “STORY” TO TELL ABOUT THE NEW PRODUCTS AND TEST THE STORY’S EFFECTIVENESS

FISH FOR THOUGHT...



- How can we convince consumers **mitigate** from habitual aquaculture products to **DIVERSIFIED** products with specific key-features and corresponding benefits?
- Can we **promote** production systems -such as Diversify- as “**brands**”, **emphasising on specific properties** the products depict from the system?

THE SURVEY

10 groups of 30 consumers each, in the top-5 EU fish markets (F, G, I, ES, UK) (N=1,500)

[1 (promo about Diversify) x 3 (processing level) x 3 (goal message)]

GOAL MESSAGE DESCRIPTION:

Traceability goal “GET TRACEABLE PRODUCTS FROM DIVERSIFY AQUACULTURE!

Transparent journey of product from Diversify aquaculture for a responsible tomorrow*

Diversify aquaculture refers to the cultivation of fish species, such as Greater Amberjack, in a production method where is all clear and transparent.

The product from Diversify aquaculture is a traceable meal choice that you can track to its roots, with the carefully selected product's history from the fish species, including the rearing site, the rearing technique and the processing method of the final product. Eating this product is a clear and transparent journey where even the smallest detail is accessible to you. The product* from Diversify aquaculture that comes to your table has always a calling address, its name and surname!*

We are proud to say that products from Diversify aquaculture meet the very highest standards of responsible production practices.

The high standards that you demand and deserve!”

Health goal “GET HEALTHY PRODUCTS FROM DIVERSIFY AQUACULTURE!

Super-healthy product from Diversify aquaculture for a healthier-happier day.*

Diversify aquaculture refers to the cultivation of fish species, such as Greater Amberjack, that is beneficial to your everyday health and wellness.

The product from Diversify aquaculture is a healthy meal choice due to the high amount of Omega-3 fatty acids that contributes to the normal function of your heart and maintenance of normal blood cholesterol. Eating this product is an easy way to protect and improve your cardiovascular health. The product* from Diversify aquaculture that comes to your table always brings wellness!*

We are proud to say that products from Diversify aquaculture meet the very highest standards of healthiness.

The high standards that you demand and deserve!”

Taste goal “GET TASTY PRODUCTS FROM DIVERSIFY AQUACULTURE!

Super-tasty product from Diversify aquaculture for a great moment.*

Diversify aquaculture refers to the cultivation of fish species, such as Greater Amberjack, that will please your taste buds, whether it is an everyday enjoyment or a special occasion.

The fish burger [adapt to a product] from Diversify aquaculture is a tasty meal choice from a carefully chosen fish species that have firm texture and delicious flavour. Eating this product offers original and gourmet experiences for a great moment. The fish burger [adapt to a product] from Diversify aquaculture that comes to your table is packed-full of goodness!

We are proud to say that products from Diversify aquaculture meet the very highest standards for a great taste.

The high standards that you demand and deserve!”

STEP 5. Develop a “story” to tell about the new products

EXPERIMENTAL STIMULI: PRODUCTS AT DIFFERENT LEVEL OF PROCESSING



Low processed

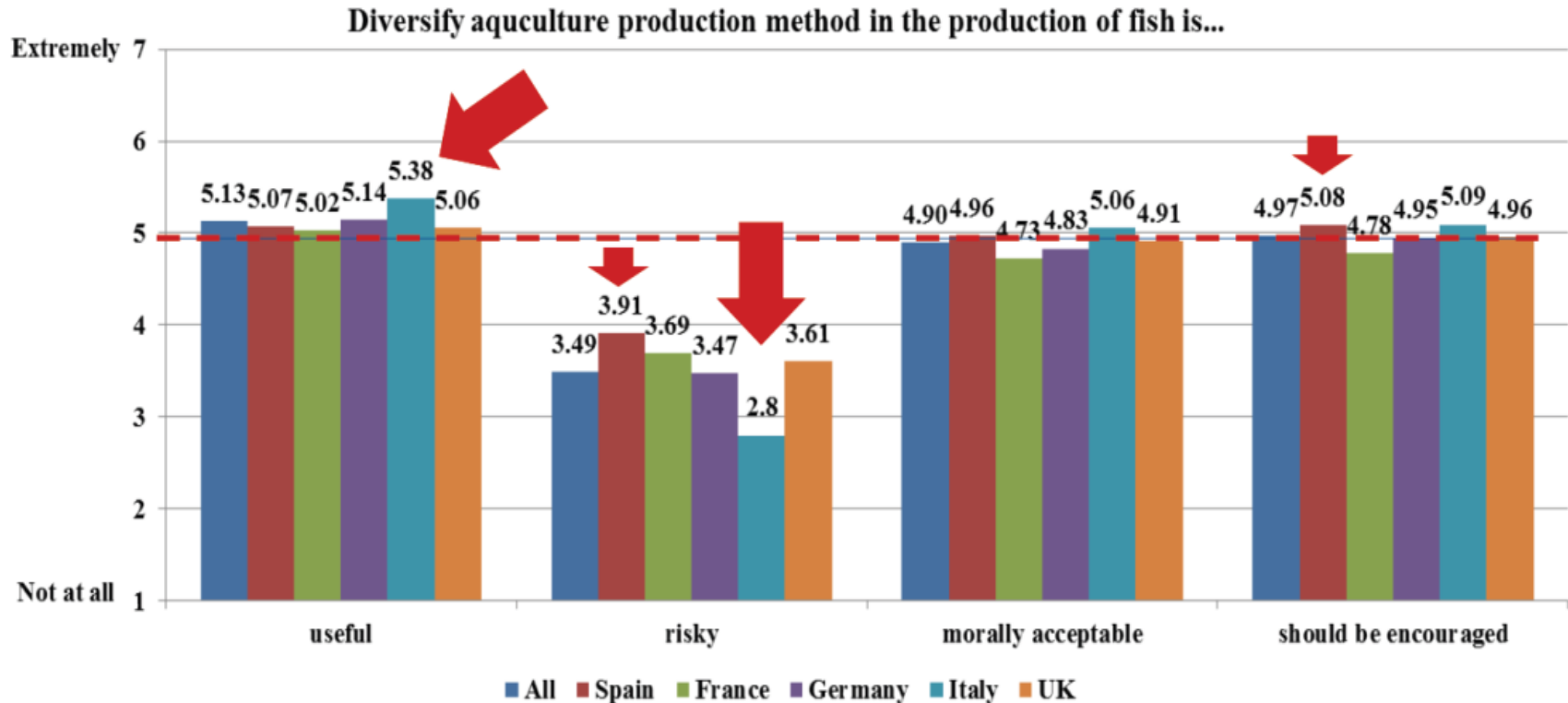


Medium processed

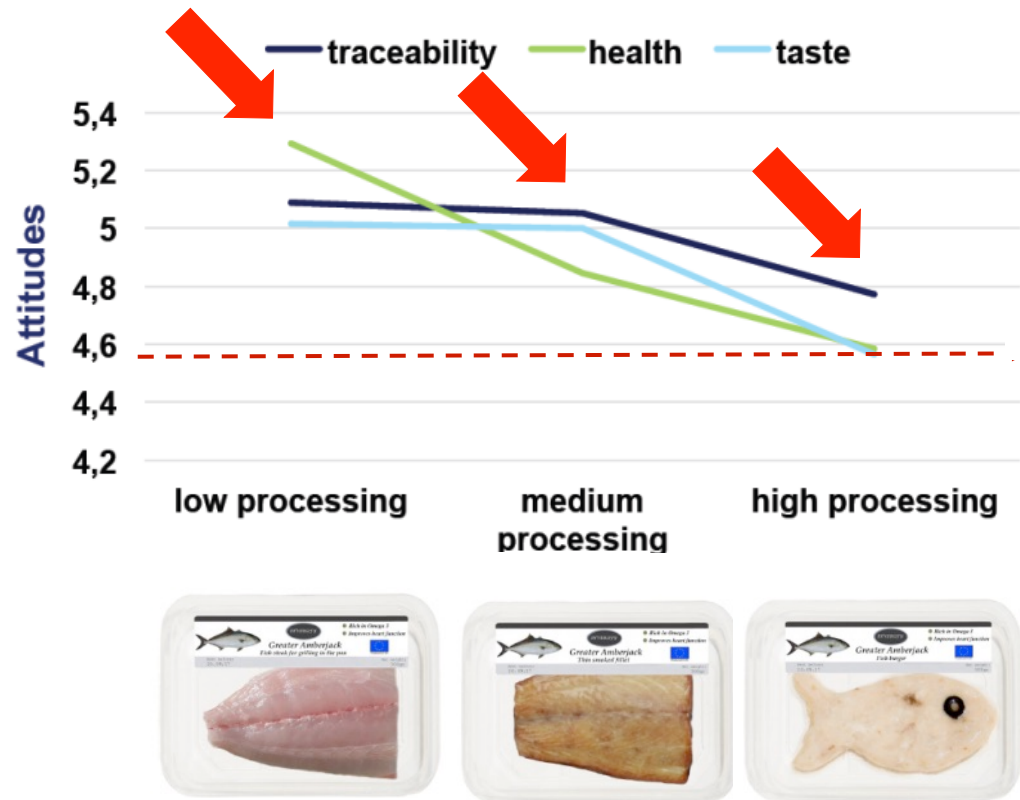
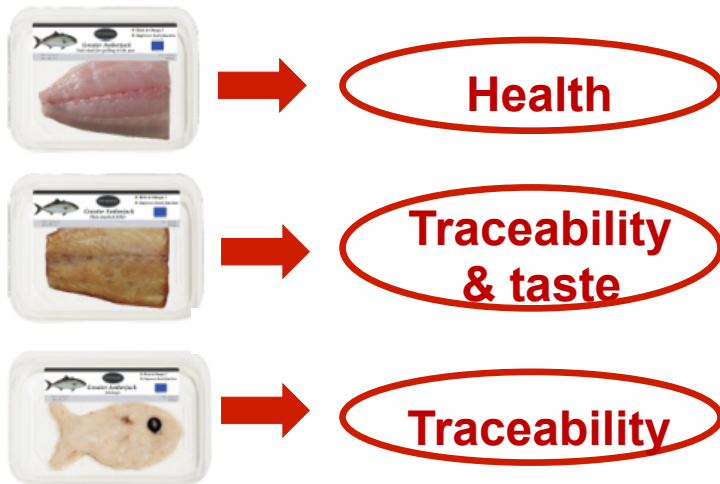


Heavy processed

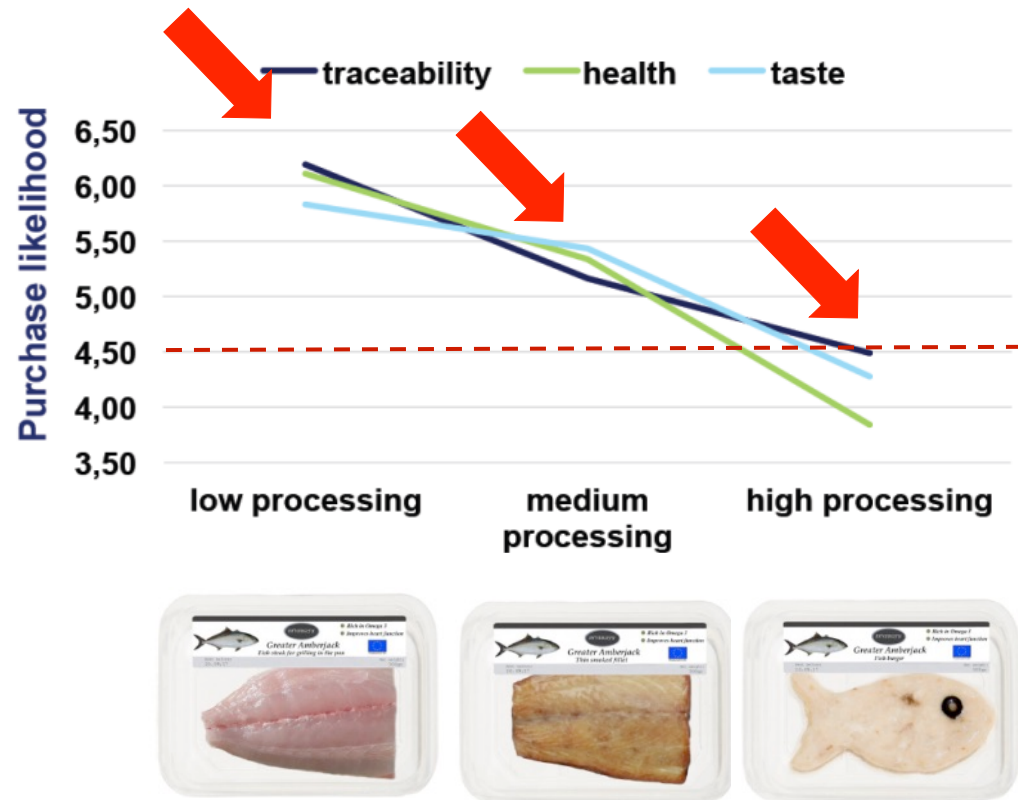
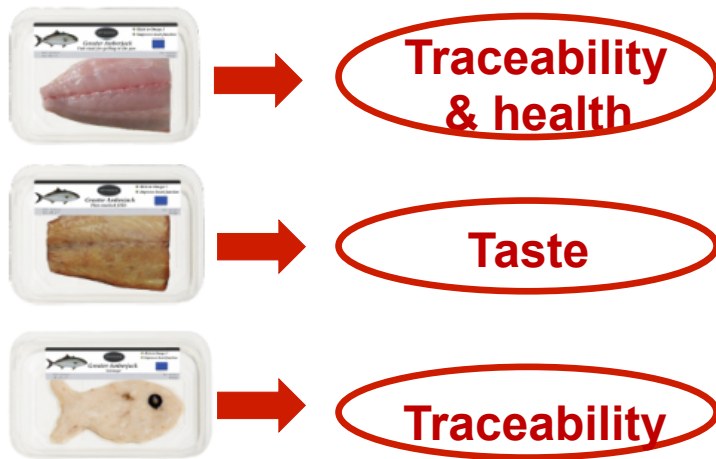
ATTITUDE TOWARDS ‘DIVERSIFY’ PROMO MESSAGE



EFFECT OF MESSAGE ON ATTITUDE TOWARDS DIVERSIFY PRODUCTS



EFFECT OF MESSAGE ON PURCHASE LIKELIHOOD OF THE DIVERSIFY PRODUCTS





IMPLICATIONS & KEY MESSAGES for HIGH ADDED-VALUE NEW (**Greater amberjack**) PRODUCT DEVELOPMENT

MANAGERIAL IMPLICATIONS (1)

GOOD NEWS!

It is possible to create new fish end-products targeting similar high-profile segments **ACROSS** all big EU markets

› Same pattern in consumer choice-drivers, i.e.

› **COR** and **price** come first  

› followed by **quality certification** 

› while **nutrition/health claims** have much less impact 

MANAGERIAL IMPLICATIONS (2)

HOWEVER...

A certain degree of **customisation** needed across countries

- › Results are **country-dependended**, i.e.
 - › in the UK, all attribute versions selected do add something to the product, being noticed by the UK consumes
 - › in GE, FR & IT, health claims are adding nothing to consumer choice
- › Results are **product-dependended**, based on the way processing is perceived by consumers,
 - › i.e. in SP, nutrition and health claims are important in smoked fillet (mild-processing product), but not in fresh fish steaks.

MANAGERIAL IMPLICATIONS (3)

- › There is a clear need for aquaculture to **promote new products & their beneficial features** coming out from **new/enhanced production systems**, like **Diversify**, which constitute **excellent source of SUSTAINABLE, HEALTHY & TASTY proteins**

KEY MESSAGE

New/enhanced aquaculture production systems....:

- › Should **be promoted using tailor-made messages and not generic ones**, to persuade consumers convincingly and provide insulation against bad world of mouth
- › Should **promote unique production process features that increase products' VISIBILITY as traceable, healthy and tasty alternatives** for modern protein diets and responsible consumption.

FUTURE STEPS: PRODUCT TEST IN “REALISTIC” RETAIL ENVIRONMENT (e-SHOP)

diversify.dim.terrabites.gr/eshopPurchase

Welcome to The Market [Register](#) or [Login](#)

My Account My Wishlist Check Out

Search...

Categories HOME NEW ARRIVAL DEALS SHOP

On Sale Today -15% Lower prices up to 40% [See all products on sale](#)

New NEW! New farmed fish similar to tuna [See all new products](#)

Traceability New label informing you about origin of production and supply [Read more info](#)

FILTER PRODUCTS

CLEAR FILTER

ON SALE NEW!

SHOP BY

Greater Amberjack

FUTURE STEPS: DEVELOPMENT OF A BUSINESS MODEL - Greater Amberjack



THE “GOOD FELLAS”

ROCIO ROBLES – CT-AQUA, ES



LLUIS GUERRERO – IRTA, ES



GEMMA TAKEN – LEI/WUR, NL



MACHIEL REINDERS – LEI/WUR, NL

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THANK YOU!

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