BLUE REVOLUTION: 
Uncovering solutions that drive commercially viable aquaculture products for European market

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DIVERSIFY


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FISH FOR THOUGHT

- How will consumers eat fish in the future?
- How to uncover solutions to address the needs of future consumers and migrate existing ones from the wild-fish products?
‘SO LONG AND THANKS FOR ALL THE FISH’

The State of World Fisheries and Aquaculture, FAO (2016)
WHY BLUE REVOLUTION MATTERS?

WORLD FISH UTILIZATION AND SUPPLY

- Spain ~ 46 kg/capita
- EU28 ~ 25 kg/capita

Consumers eating more seafood globally

FAO (2016)
FOOD FROM DEEP BLUE TO FEED THE WORLD

<table>
<thead>
<tr>
<th>Type of food</th>
<th>Live weight (kg)</th>
<th>Edible portion (kg)</th>
<th>Yield</th>
<th>Spatial footprint (ha)</th>
<th>Remediation time (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantic salmon</td>
<td>2,500,000</td>
<td>1,250,000</td>
<td>0.50</td>
<td>1.6</td>
<td>2</td>
</tr>
<tr>
<td>Angus beef cattle</td>
<td>2,976,190</td>
<td>1,250,000</td>
<td>0.42</td>
<td>6,982</td>
<td>&gt;200 (Hartleb, 2014)</td>
</tr>
</tbody>
</table>

WORLD CAPTURE FISHERIES AND AQUACULTURE PRODUCTION

Aquaculture

FAO (2016)
MIXED MESSAGES

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

- Choose sustainable seafood
- Invest in sustainable aquaculture
- Eat more seafood
- Choose certified seafood
- Learn about aquaculture
- Eat more local freshwater fish
- Eat more mussels

Aquaculture is negative
- Ask your fishmonger

Eat more aquaculture products
- Eat more farmed salmon
- Eat more local carp
- Eat more local fish
- Invest in communication

Beware of unsustainable aquaculture
- Boycott farmed salmon
- Discover "Ombrine mascaraire"
- Discover aquaculture
- Discover fish
- Eat more trout
- Eat more certified seafood
- Eat more European products
- Eat more local farmed fish
- Eat more local trout
- Eat more oysters
- Eat more sustainable seafood
- Read the labels
- Stop industrial aquaculture
- Stop local aquaculture expansion
FISHING FOR...

(Mintel, 2016)
EVERYTHING CONSUMER NEED TO KNOW…

Do consumers recognize aquaculture products at all?

(Mintel, 2016)
AQUACULTURE PRODUCTS (IN)VISIBLE?

WHAT ADS SAY

FAST AND TASTY FARMED FISH! A LEAP FORWARD IN PRICES YOU CAN'T IGNORE!

WHAT CONSUMERS HEAR

FAST blah blah blah blah blah blah blah FARMED FORWARD blah blah blah blah blah IGNORE!

Adapted from @marketoonist.com

You prefer wild products; 34
You prefer farmed products; 8
You have no preference; 31
You do not know if the products you buy or eat are wild or farmed; 14
It depends on the type of product; 11
Don't know; 2

(Special Eurobarometer 450: EU28, N=24452; year 2017)
LIKELY TO IGNORE YOUR PRODUCT TOO...IF IT DOESN'T...

Stand out in a crowd and...

Feel familiar
(Gigerenzer & Gaissmaier, 2011)

Feel true
(Oppenheimer, 2005)

Feel good
(Stepper & Strack, 1993)

Feel effortless
(Gigerenzer & Goldstein, 1996)

Provide if...then plan
(Gollwitzer, 1999)

How can aquaculture products make a difference and tell consumers....

(Kahneman, 2003)
INVOLVE THE RIGHT CONSUMERS (consumer as resource)
- Segments
- Early adopters

CONTINUE WORKING WITH CONSUMERS (consumer as user)
- Product testing & support

STRUCTURE THE CREATIVE PROCESS (consumer as co-creator)
- Design & development of product ideas

Experts
- Monitoring & control of design and development
- Building product prototypes

Persuasion

(Banovic et al, 2017a; Banovic et al., 2016a)
CONSUMERS AS RESOURCE

- Involving the right consumer - Online survey in five focal EU fish markets (i.e. FR, GER, IT, SP & UK; N=2500)

Early adopters: Consumers who count

- Involved traditional (N=728; 30%)
- Involved innovators (N=911; 36%)
- Ambiguous indifferent (N=872; 34%)

(Banovic et al., 2016b,c; Reinders et al., 2016; D29.2)
CONSUMER AS CO-CREATOR

- Ten focus groups in five EU fish markets with early adopters (i.e. FR, GER, IT, SP & UK; N=60)

STARTER IDEAS EXPRESSED SIMPLY AND CLEARLY

CREATIVE STIMULUS TO DRAW INSPIRATION

STRUCTURES THAT GIVE THEM CLEAR PROBLEMS TO SOLVE

First task:
Consumer perceptions of new food product ideas
- Identifying new ideas: Group discussion task

New ideas for aquaculture product development

Second task:
Consumer perceptions and modification of new aquaculture product ideas
- Defining product personality: Personification association task
- Defining the product: Word association task
- Modifying existing product ideas: Role playing task

Third task:
Consumer creation of new ideas for aquaculture products
- Profiling the consumer: Empathy design task
- Creating new product ideas: Storyboarding task
- Selecting the best product ideas: Voting task

(Banovic et al, 2016a)
‘ALL THE PLEASURE WITH LITTLE EFFORT’

Profiling the aquaculture consumer

- preference for products that are quick and easy to cook
- aquaculture products need to be natural, respect the environment and provide good eating experience
- benefits of the aquaculture products linked to the overall feeling of health and well-being

(Banovic et al., 2016a)
<table>
<thead>
<tr>
<th>Fish species</th>
<th>Developed DIVERSIFY product prototypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meagre</td>
<td>Idea 6: Fish burgers shaped as fish (High processing)</td>
</tr>
<tr>
<td></td>
<td>Idea 4: Ready to eat meal: salad with fish (Low processing)</td>
</tr>
<tr>
<td>Pikeperch</td>
<td>Idea 9: Fish spreads/pate (High processing)</td>
</tr>
<tr>
<td>Grey mullet</td>
<td>Idea 2: Thin smoked fillets (Medium processing)</td>
</tr>
<tr>
<td></td>
<td>Idea 33: Ready-made fish fillets in olive oil (Medium processing)</td>
</tr>
<tr>
<td>Greater Amberjack</td>
<td>Idea 34: Fresh fish steak for grilling in the pan (Low processing)</td>
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</table>

**BUILDING PRODUCT PROTOTYPES**

(Diversify - D28.4, D29.4, CTAQUA, IRTA, HCMR)
CONSUMER AS USER

- Continue working with consumer – Choice experiments in five EU fish markets, 3 products (i.e. FR, GER, IT, SP & UK; N=1500)

PRODUCT MOCK-UPS

ATTRIBUTE MANIPULATION

- Medium processed
- Low processed

Nutrition claim
Health claim
Certification logo
Price
Country of Origin

(Banovic et al., 2017b; D29.6, AU)
LIKELIHOOD OF CHOICES FOR NEWLY DEVELOPED MOCK-UPS

Produced in own country
ASC logo
Price
Omega 3 & heart function claim
PERSUADING THE CONSUMER... MAKING ‘PLEASANT’ GOAL PURSUITS

- Communication experiments in five EU fish markets, 3 products – 9 experimental groups + control (i.e. FR, GER, IT, SP & UK; N=1565)

**CHOOSE PRODUCTS FROM DIVERSIFY AQUACULTURE!**

All products are made with the same attention to quality

Diversify aquaculture fish products come from a carefully selected group of finfish species and a production method that allows for both greater diversity of fish species and new value-added products. The fish species, such as Greater Amberjack, is selected based on its growth, size and excellent product quality. Fish are grown in large cylinder-shaped pools that float on the sea surface and reach down up to 20 meters depth. This sustainable method is used for rearing finfish species in coastal and open waters, within areas sheltered from excessive wave action, but with sufficiently deep water and fast current speeds where the water flows freely through the pools, and allows the fish to grow in clean and highly oxygenated water.

Diversify aquaculture is renowned for its high quality, sustainability and consumer protection standards.

With Diversify aquaculture imagine the benefits for you and your family!

GET HEALTHY PRODUCTS FROM DIVERSIFY AQUACULTURE!

Super-healthy fresh fish steak from Diversify aquaculture for a healthier-happier day

GET TRACEABLE PRODUCTS FROM DIVERSIFY AQUACULTURE!

Transparent journey of smoked fish fillet from Diversify aquaculture for a responsible tomorrow

GET TASTY PRODUCTS FROM DIVERSIFY AQUACULTURE!

Super-tasty fish burger from Diversify aquaculture for a great moment

(Banovic et al., 2017c; D29.7; D29.8, AU)
DIVERSIFY AQUACULTURE...

All Spain France Germany Italy UK

Note: *reverse scale

(Banovic et al., 2017c; D29.8, AU)
AFTER READING THE MESSAGE...

(Banovic et al., 2017c; D29.8, AU)
ATTITUDES TOWARDS THE PRODUCT...

(Banovic et al., 2017c; D29.8, AU)
MANAGERIAL IMPLICATIONS

GOOD NEWS!
It is possible to create new aquaculture products targeting early adopters ACROSS all big EU markets

- Homogeneous, converging fish-related culture, opportunity to fashion new product concepts at the cross-boarder European level
- Similar pattern in consumer choice-drivers, i.e.
  - COR and price come first, followed by quality certification, while nutrition/health claims appear to have varying and minimal impact and are highly depend on the type of product (e.g. level of processing) and EU country
- Although...
  - A certain degree of customisation needed for certain products and countries
WHAT DID WE LEARN FROM DIVERSIFY?

Need to feel familiar
(e.g. ‘EU aquaculture is fresh’, local and healthy.)
- Adapt information to the type of aquaculture, highlight the most valuable benefits and attributes (e.g. ASC logo)

Need to feel true (aquaculture overshadowed by legitimate doubts)
- Better link between environmental concerns, responsible consumption and aquaculture

Need to feel effortless
(‘Less is more, more is less’; ‘All the pleasure with little effort’)
- Less clutter - convenience at the purchase point and at home - branding, storytelling, recipes essential

Need to feel good
- Associations to responsible consumption and healthy diet, invoking different emotional states

Need to have if...then plan – goal directed action
- Facilitate product implementation – communicate what consumer should do (‘where’, ‘when’ and ‘how’)
BLUE REVOLUTION PROSPECTS

- Explore consumers romantic notion of the nature as potential for further development and growth of aquaculture production highly influenced by ethical concerns related to environmental and fish welfare issues.

- The more we provide solutions for these consumers’ concerns, the more positive value perceptions they will have towards aquaculture products, and the more likely it is that they will trust and buy these products (Banovic et al., 2016a,b,c).

- However, never neglect the effect of functional value and sensory aspects on consumer value perception and its impact on final acceptance of aquaculture products.

“[…] the wilderness is the salvation of the world.”
(Walden by Henry David Thoreau, 1817-1862)

"Happiness can be complete […]"
(male/female group, Spain, Banovic et al., 2016a)
THANK YOU FOR YOUR ATTENTION!

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