CURRENT OPPORTUNITIES & CHALLENGES FOR CONSUMER ACCEPTANCE OF AQUACULTURE PRODUCTS

Marija Banovic

e-mail: maba@mgmt.au.dk

MAPP Centre, Department of Management, Aarhus University, Denmark
FIND THE FISH...

- How can we persuade consumers to migrate from wild-fish products to aquaculture products and address the needs of future consumers?

- How can we influence consumer’s existing attitude and what would be the ‘line of attack’?

Puzzle by cartoonist Gergely Dudás (2016).
‘FISH IS OUR WORLD’

CONSUMER MAIN REASONS FOR BUYING AND EATING FISHERY AND AQUACULTURE PRODUCTS...

- They are healthy
- They taste good
- They contain little fat
- They are easy to digest
- They are quick to prepare
- They are easy to prepare
- They are products for special...
- No specific reason
- They look good on the table
- Other reason
- Don’t know

(Special Eurobarometer 450: EU28, N= 24452; Greece, N=946; year 2017)
FISH FUTURE: ‘RAISING MORE FISH TO MEET RISING DEMAND’


WORLD FISH UTILIZATION AND SUPPLY

- EU28 ~25kg/capita
- Greece ~20kg/capita

FAO (2016)
‘SO LONG AND THANKS FOR ALL THE FISH’

Adapted from http://www.fishisthedish.co.uk/seafood-stories/kitchen-talk/fish-is-the-dish-school-success

The State of World Fisheries and Aquaculture, FAO (2016)
‘FISH WASTE NOT, WANT NOT…’

Part of the initial wild-fish catchings (fish and seafood harvested) discarded, lost and wasted in the food supply chain

(FAO, 2011. Global food losses and food waste)
BLUE REVOLUTION: AQUACULTURE WITH POTENTIAL TO FEED THE WORLD?

(Hartleb, 2014) | Live weight (kg) | Edible portion (kg) | Yield | Spatial footprint (ha) | Remediation time (years) |
---|---|---|---|---|---|
Atlantic salmon | 2,500,000 | 1,250,000 | 0.50 | 1.6 | 2 |
Angus beef cattle | 2,976,190 | 1,250,000 | 0.42 | 6982.0 | >200 |

(Smil, 2001; Hall et al., 2011) | Feed conversion (kg of feed/kg live weight) | Feed conversion (kg of feed/kg edible weight) | Protein content (% of edible weight) | Protein conversion efficiency (%) |
---|---|---|---|---|
Carp | 1.5 | 2.3 | 18.0 | 30.0 |
Chicken | 2.3 | 4.2 | 20.0 | 25.0 |
Pork | 5.9 | 10.7 | 14.0 | 13.0 |
Beef | 12.7 | 31.7 | 15.0 | 5.0 |

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
- eat more local freshwater fish
- eat more mussels

- beware of unsustainable aquaculture
- ask your fishmonger
- eat more aquaculture products
- eat more farmed salmon
- eat more local carp
- eat more local fish
- invest in communication

‘NOWHERE TO RUN, NOWHERE TO HIDE’

CONSUMER MAIN REASONS TO NEVER EAT ANY FISHERY OR AQUACULTURE PRODUCTS

(Special Eurobarometer 450: EU28, N= 24452; Greece, N=946; year 2017)
AQUACULTURE PRODUCTS (IN)VISIBLE?

Do consumers recognize aquaculture products?

(Mintel, 2016)

2011-2015
EU 20, N=12,508

Do consumers recognize aquaculture products?

- You prefer wild products
- You have no preference
- You do not know if the products you buy or eat are wild or farmed
- It depends on the type of product
- You prefer farmed products
- Do not know

(Greece, 3%
EU28, 8%)

(Special Eurobarometer 450: EU28, N=24452; Greece, N=946; year 2017)
‘IF YOU BUILD IT THEY WILL COME’

Adapted from http://diversifyfish.eu
Adapted from https://supermarketsinyourpocket.com
Adapted from http://www.clipartpanda.com/
Adapted from https://serc.carleton.edu/eslabs/fisheries/1.html
How can aquaculture products make a difference and persuade consumers?

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)

Adapted from @marketoonist.com
ADDING VALUE TO AQUACULTURE PRODUCTS

Consumer as resource (ideation)
- Consumer segments
- Early adopters

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

Consumer as user
- Product testing & support

Consumer as co-creator
- Design & development of product ideas

Adapted from AboutLifez.com & MarkInternational.info
CONSUMER AS RESOURCE & CO-CREATOR: ‘IT ALL STARTED WITH THE CONSUMER’

Early adopters - Online survey (i.e. FR, GER, IT, SP & UK; N=2500)
involved innovators (30%), involved traditional (36%), ambiguous indifferent (34%)

Consumer preferences & product ideas
Ten focus groups with early adopters (i.e. FR, GER, IT, SP & UK; N=60)
  ▪ 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
  ▪ preference for products that are quick and easy to cook

(Reinders et al, 2016; Banovic et al., 2016)
# Diversifying Fish Species in the Food Sector

<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>
</tr>
</tbody>
</table>

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

PRODUCT MOCK-UPS

ATTRIBUTE MANIPULATION

Medium processed

Low processed

Nutrition claim

Health claim

Certification logo

Price

Country of Origin

(Banovic et al., 2018a; D29.6, AU)
CONSUMER AS USER: COUNTRY OF ORIGIN INCREASES WTP FOR A PRODUCT

N = 1500,
France
Germany
Italy
Spain
UK

Attribute importance

Low processed
Medium processed

<table>
<thead>
<tr>
<th>Attribute importance</th>
<th>Fresh Fish Steak</th>
<th>Fillets in Olive Oil</th>
<th>Thin Smoked Fillet</th>
</tr>
</thead>
<tbody>
<tr>
<td>COO</td>
<td>45%</td>
<td>45%</td>
<td>45%</td>
</tr>
<tr>
<td>Price</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>ASCLogo</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Nutrition claims</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Health claims</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
</tbody>
</table>

(Banovic et al., 2018a)
CONSUMER AS USER: COMMUNICATION EXPERIMENTS

Between-subjects design; N = 1565 (France, Germany, Italy, Spain, UK)

1 (promotion - sustainability) x 3 (product processing) x 3 (goal message)

### 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!

---

**Low processed**

**GET HEALTHY PRODUCTS FROM DIVERSIFY AQUACULTURE!**

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

**Medium processed**

**GET TASTY PRODUCTS FROM DIVERSIFY AQUACULTURE!**

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

**High processed**

**GET TRACEABLE PRODUCTS FROM DIVERSIFY AQUACULTURE!**

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

---

(Banovic et al., 2018b; D29.7; D29.8, AU)
CONSUMER AS USER: PERSUADING THE CONSUMER

(Banovic et al., 2018b; D29.7; D29.8, AU)
WHAT DID WE LEARN FROM DIVERSIFY?

Need to feel familiar
- Adapt information to the type of aquaculture (e.g. ‘...The fish species, as Greater Amberjack, is selected based on its growth, size...’) and...
- Highlight the most valuable benefits and attributes (i.e. Country of Origin)

Need to feel true (aquaculture overshadowed by legitimate doubts)
- Better link between production method, environmental concerns, responsible consumption and aquaculture (i.e. traceability, ASC logo)

Need to feel effortless
- Less clutter - convenience at the purchase point and at home - branding, storytelling, recipes essential (e.g. Diversify, ‘All the pleasure with little effort’)

Need to feel good
- Associations to healthy and tasty diet - invoking positive emotional states (e.g. ‘Super-healthy fresh fish fillet from Diversify aquaculture for a healthier-happier day.’)

Need to provide if...then plan – goal directed action
- Facilitate product implementation - communicate what consumer should do (‘where’, ‘when’ and ‘how’) (e.g. ‘Eating this product is an easy way to protect and improve your cardiovascular health.’)
KEY TAKEAWAYS

Aquaculture needs to engage/persuade consumers that their products can constitute an excellent source of sustainable, healthy and quality food...

Legitimate doubts and mixed messages about aquaculture intensification and its concerns, should be overcome by...

- promotion through use of specific messages (not generic), that can stand competition/defend against bad word of mouth
- promoting unique production process and increasing product visibility as traceable, healthy, but also tasty alternatives for modern (protein) diets and responsible consumption

Puzzle by cartoonist Gergely Dudás (2016).
THE WAY FORWARD? FROM FISH SKIN TO A HANDBAG....

Technologies and promotion to use not only fillets but also other parts of fish...

- **Learn from** ocean’s hot dog – **fish stick**, Josephson (2008)

- **Decrease the fish waste** at production-processing and consumer level...not only as fishmeal, fish oil... but **new consumer products** ... biofuel... composting... **handbags**...

- Processed -- low cost -- stable **fish by products** could **boost** aquaculture production/ decrease fish waste...

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

Van zalmhuid tot handtas. Carla van der Helm bij Galerie Zöne.
THANK YOU FOR YOUR ATTENTION!

Marija Banovic

MARIJA BANOVIC
BREMEN, 24TH OF MAY 2017

This work has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration – DIVERSIFY (KBBE-2013-07 single stage, GA 603121)

http://www.diversifyfish.eu/
MAPP - RESEARCH ON VALUE CREATION IN THE FOOD SECTOR

DEPARTMENT OF MANAGEMENT

AARHUS UNIVERSITY