


**FUTURE
EUaqua**

**Effects of labelling and certification schemes
on perceptions, awareness and acceptance**

3rd FutureEUaqua Webinar

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This project has received funding from the European Union's Horizon 2020
research and innovation programme under grant agreement No 817737. 

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FuturEUaqua Project

Future growth in sustainable, resilient and climate friendly organic and conventional European aquaculture

STUDY 1

SPECIFIC OBJECTIVE


Analyze the differences in overall **awareness and salience** for five eco-labels normally found on packaging of smoked salmon/sea bass



STUDY 2

SPECIFIC OBJECTIVE

Analyze the **noticeability** of eco-labels and **choice experiment among different labelled smoked salmon/sea bass**



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STUDY 1. Methods

First Part – Overall awareness

- Measured as spontaneous recall and recognition

Second Part – Visual attention to eco-labels

- Measured through eye-tracking metrics

Third Part – Association task

- Participants were asked to associate the visual part of ecolabel to the text part



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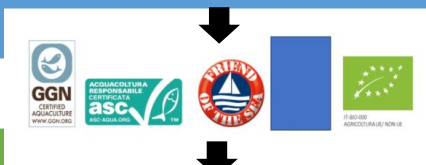


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 STUDY 1. First Part
OVERALL AWARENESS

SPONTANEOUS RECALL

“Do you recall seeing one or more certification label for aquaculture products?”



RECOGNITION

“Before today, have you ever seen one of these certification labels on aquaculture products (salmon or other farmed fish)? Click on the ones you remember or think you have seen before today “



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STUDY 1. First Part

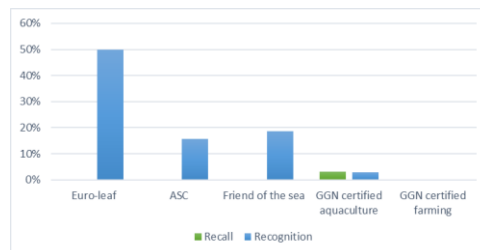
• PARTICIPANTS

- 32 consumers (16 M, 16 F) of aquaculture products (farmed salmon) recruited from students and non-research staff at UNIVPM, Italy, aged between 19 and 63 years old (mean age = 30.2 S.D. = 11.6).
- An incentive of 10 euro was paid to each and 5 euro more if the association task was correctly performed.
- All subjects were tested for **color blindness**

• RESULTS

- ❑ Only **GGN certified aquaculture** was spontaneously recalled by 1 participants.
- ❑ **Euro-leaf**, it was the most recognized of the eco-labels from respondents (16 participants), followed by Friend of the sea (6 participants) and ASC (5 participants).
- ❑ The number of participants who did not recognize any eco-labels was 15.

Figure 1
Awareness of eco-labels by percentage of participants



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STUDY 1. Second Part

Visual attention to eco-labels



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STUDY 1. Second Part

Visual attention to eco-labels



Eye-tracking metrics

Time to first fixation : the time that a respondent takes to fixate each eco-label for the first time

Time spent: amount of time that a respondent looks at a specific eco-label

Fixation count : number of times that an eco-label was fixated



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STUDY 1. Second Part. Results

VISUAL ATTENTION TO ECOLABELS

Heat map for eco-labels displayed in one slide



Average values for eye-tracking metrics

	TFFF-F (ms)	Time spent (ms)	Revisits	Fixation count
GGN cert. Aqua	3282.8	4165.6	7,1	34
ASC	4023	4549.7	6,9	35
Friend of the sea	5687.2	2382.8	5,6	21.6
GGN cert. farming	5978.9	4195.6	6,2	30.6
Euro-leaf	5752.1	3762.3	6,5	26.7



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STUDY 1. Third part

ASSOCIATION TASK

We asked participants to associate the text part of eco-labels to the visual part. We also introduced a fake text (ABF, aquaculture for better future) and "none" as response.

In riferimento ai marchi già osservati, associ ciascuna scritta al marchio corrispondente:

ACQUACOLTURA RESPONSABILE CERTIFICATA ASC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FRIEND OF THE SEA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GGN CERTIFIED AQUACULTURE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ABF AQUACULTURE FOR BETTER FUTURE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IT BIO 000 AGRICOLTURA UE/NOU UE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GGN CERTIFIED FARMING	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Percentage of participants who properly associated the text and the visual part of the ecolabels

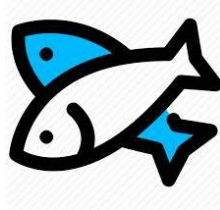


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STUDY 2

Analyze the **noticeability** of eco-labels and **choice experiment** among different labelled smoked salmon/sea bass



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STUDY 2. Methods

First Part

- DISCRETE CHOICE EXPERIMENT

Second Part (LABORATORY ONLY)

- VISUAL ATTENTION TO ECO-LABELS



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STUDY 2. Methods

Eco labels tested:

ASC farmed responsibly certified ; GGN certified aquaculture; GGN certified farming ; Friend of the sea (FOS)

The organic EuroLeaf was dropped from this study to avoid biases (it is much better known and attended by consumers in their choices).

The choice experiment took place during the month of **October 2020** online (Mturk).

It was replicated at the same time in person at the Consumer Research and Neuromarketing Laboratory (UNIVPM), to further collect **eye-tracking** measures.



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STUDY 2. Participants

ON-LINE EXPERIMENT**PARTICIPANTS**

158 (101 M, 57 F) consumers recruited on Mturk using a two-stage eligibility approach, aged between 18-64 (mean age = 33 S.D. = 9)

NATIONALITY

Norther Europe (Great Britain and Ireland)
 Nordic and Eastern Europe(Estonia, Hungary, Romania) ;
 Central Europe (Germany, Switzerland, Netherlands);
 Southern Europe (Spain, Portugal, France, Italy, Greece)

All participants were fully or partially responsible for **grocery shopping** and buying smoked packaged salmon or sea bass **at least once per year**. All subjects were tested for **color blindness**. A small monetary incentive was given for participation.

Participants for the laboratory experiment only were selected among those having **normal (or corrected to normal <1 dioptre) vision**

LABORATORY EXPERIMENT**PARTICIPANTS**

61 consumers (28 M, 33 F) aged 19-64 (mean age = 39 S.D. = 12) recruited among students and staff at UNIVPM, Italy

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STUDY 2

FIRST PART

CHOICE EXPERIMENT



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STUDY 2. First Part

Before the actual experiment participants were provided with **minimal / non biasing information on the eco-labels** in order to ensure that **they all have the same information**.

Information provided to participants
before choice tasks

	The certification label farmed responsibly ASC certified is used exclusively for responsible aquaculture products. Source: asc-aqua.org
	The certification label GGN certified farming can be found on several products from responsible breeding and cultivation: fish, meat, flowers, fruits and vegetables. Source: globalgap.org
	The certification label GGN certified aquaculture can only be found on products from responsible aquaculture. Source: globalgap.org
	The certification label Friend of the sea certification program can be found in products from both responsible aquaculture and sustainable fishing. Source: friendofthesea.org



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STUDY 2. First Part

DESIGN OF THE CHOICE EXPERIMENT

Attributes	Levels
Label	No label (baseline)
	ASC
	Friend of the sea
	GGN certified aquaculture
	GGN certified farming
Product	Smoked Sea Bass (baseline)
Size	Smoked Salmon
	Small (baseline)
Saliency	Large
	Normal (baseline)
Price	High
	€ 3
	€ 4
	€ 5



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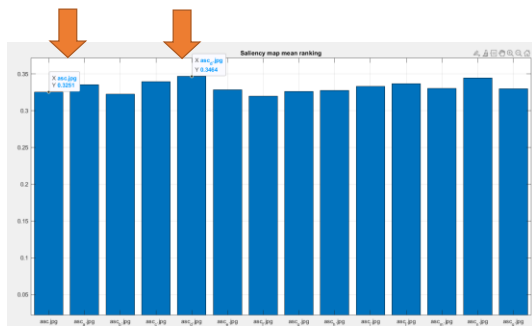


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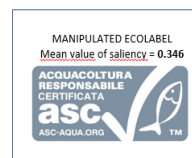
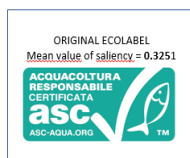
STUDY 2. First Part SALIENCY MANIPULATION

The **color intensity** of the label was varied and saliency maps were computed for each label. The **most salient label** was chosen, according to the results the **GBVS algorithm** (Harel et al., 2007).

Original ASC Most salient ASC



ASC mean saliency ranking



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STUDY 2. First Part

An example of the manipulation of GGN cert. aquaculture: SIZE vs. SALIENCY

Size
large vs. small



Saliency
original vs. high



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STUDY 2. First Part

AN EXAMPLE OF A CHOICE SET

Imagine today is a regular weekday, and you decided to have a dish based on some sort of fish for the next meal with your family. You go to the usual place in which you buy fish and the following alternatives are presented to you.

Please click "BUY" on the image with the fish packaging that you would like to buy the most. If you think you would not buy any of the options, then you can select the option "None".



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STUDY 2. First Part.

RESULTS

- In **both** the online and lab experiment, consumers' choices are significantly influenced by **price**, by the **type of product** and by all **ecolabels**.
- Price is negatively correlated with choice, as expected
- Smoked salmon exhibited significantly higher preference with respect to smoked sea bass (but this is likely to be biased by familiarity)
- **Any eco-label is preferred to no label**. There is not a significantly preferred label, though ASC & FOS generally score a bit higher.
- The subjects' preferences were **not** influenced by the **size** and **saliency** of eco-labels.



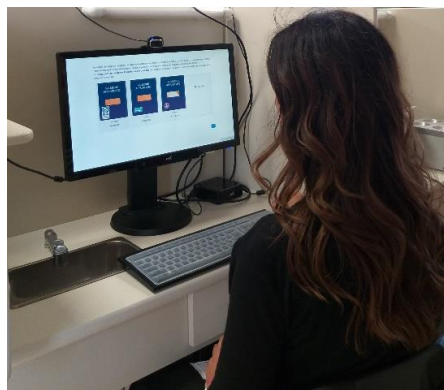
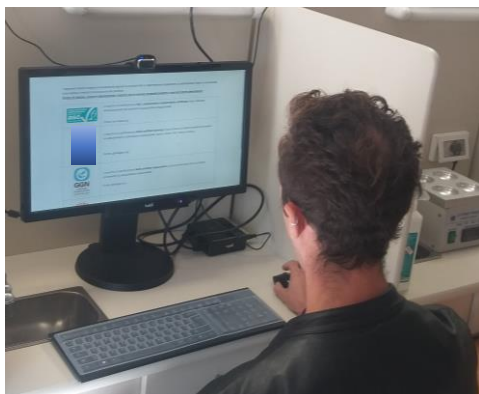
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SECOND PART

SECOND PART VISUAL ATTENTION TO ECOLABELS



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STUDY 2. Second Part

VISUAL ATTENTION TO ECOLABELS – eyetracking

Immagini che oggi sia un giorno normale della settimana e voglia consumare un piatto a base di pesce con la sua famiglia. Si reca nello stesso posto in cui abitualmente compra il pesce e Le vengono presentate le seguenti alternative. Per favore, clicchi su **"Acquista"** per scegliere la confezione di prodotto che vorrebbe acquistare. Se pensa di non acquistare nessuna alternativa, selezioni "Nessuna".

BRANZINO AFFUMICATO	SALMONE AFFUMICATO	BRANZINO AFFUMICATO	NESSUNA
5 euro Acquista	4 euro Acquista	3 euro Acquista	<input type="radio"/>

Use markers: 00:01 00:02 00:03 00:04 00:05 00:06 00:07 00:08 00:09 00:10 00:11 00:12 00:13 00:14 00:15 00:16 00:17 00:18
Requester: Matteo C. Stimulus: Quattro-1_G0111 00:00:00:00



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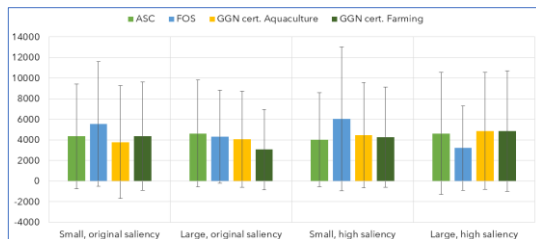


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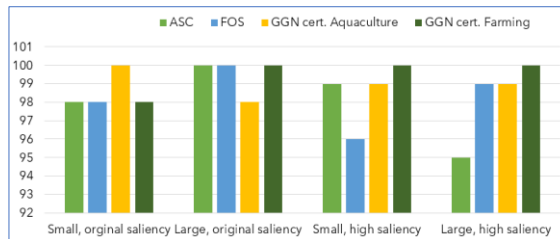
STUDY 2. Second Part

RESULTS OF VISUAL ATTENTION STUDY

Time to first fixation (ms) for each eco-label



Percentage of respondents that looked at each eco-label



- Time to first fixation (ms) is significantly influenced by **size**, by the **product** (salmon) and by the **position** of the label (left-center bias). No differences were found among the labels.
- **All labels** were fixated at least once by a very high proportion of participants.



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CONCLUSIONS & RECCOMENDATIONS

- Our eye-tracking studies and the choice experiment showed that:
 - the eco-labels under investigation were basically equivalent in terms of visual attraction (noticeability)
 - the label that is more recognizable (Friend of the sea) is also the label whose information content is also less congruent with the product category, according to respondents.
 - eco-labels, together with price, represented the most attended attributes for both capturing attention and determining choice
- Eco-labels are relevant cues for communicating the sustainability of products from aquaculture as they help shape consumer preferences for aquaculture products.
- However, “umbrella” eco-labels like the organic Euro-leaf and the new GGN sustainable farming, may be more effective than single-category eco-labels.
- First, consumers are more exposed to them, and they achieve higher recall and recognition. Second, since they are used and seen on more than one category of food products, a positive ‘halo’ effect may take place across food categories, and this will benefit nice products like farmed seafood.

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