



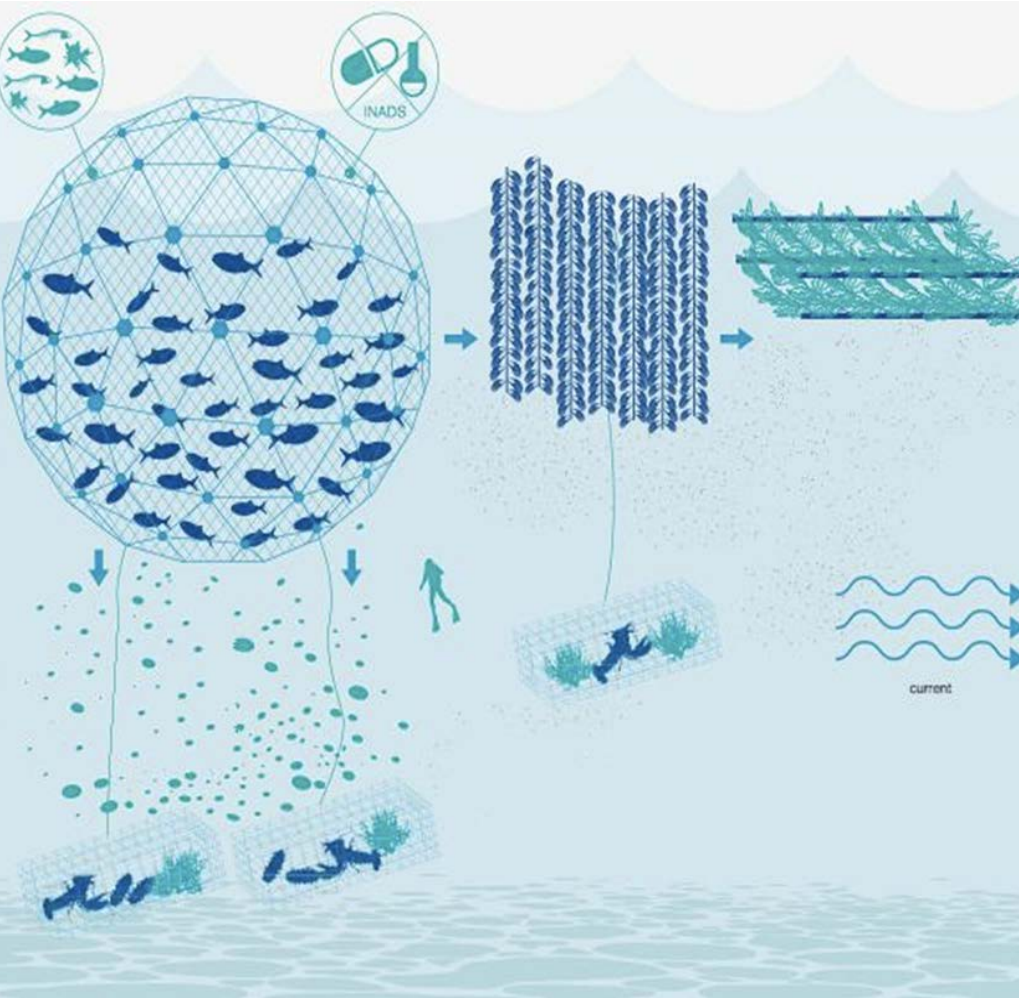
Consumers' WTP for Sustainable Seafood

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IMTA Economic Benefits



Economic benefits of IMTA are widely recognised

Supply:

- Nutrient cycling
- Added produce
- Product diversification

Demand:

- potentially higher profits due to consumers' WTP

Research aim :

to determine consumers' WTP for sustainable seafood.



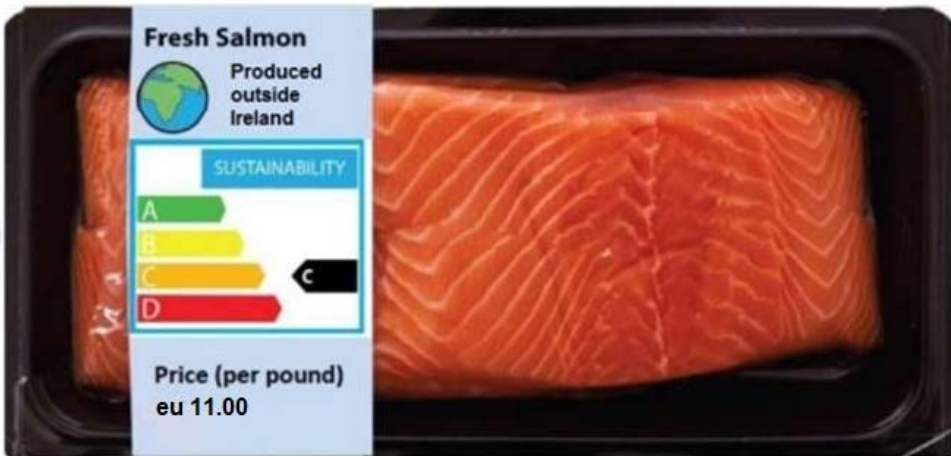
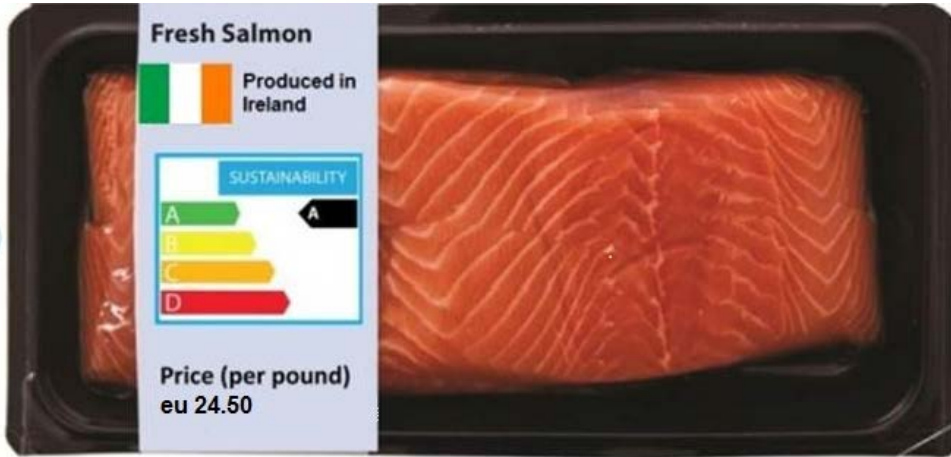
IDREEM project

Increasing Industrial Resource Efficiency in European Mariculture

- protect the long-term sustainability of European aquaculture
 - demonstrating IMTA through pilot commercial-scale testing, field research and modelling.
- Study aim:
 - Estimating consumer's WTP for sustainably produced seafood
- Survey in 5 countries (Ireland, Italy, Israel, Norway, UK)
 - 500 respondents per country
 - including a choice experiment



Choice Experiment Design



Data retrieved in 5 countries

Ireland, Italy, UK, Norway, Israel

500 respondents per country

- 8 choice cards per resp.
- 3 alternatives per choice card
2 purchases, 1 opt-out

3 attributes per choice

- Production location
nationally or internationally
- Sustainability
Ecolabel Sustainability A - D
- Price
Low, medium or high price



Random Utility Choice Model

- The RUM approach models the choice from among a set of alternative options as a utility-maximizing decision.

$$U_{ni} = V_{ni} + \varepsilon_{ni}$$

- The probability that individual n chooses alternative i from the set of J alternatives is given by:

$$P_{ni} = \text{Prob}(V_{ni} + \varepsilon_{ni} > V_{nj} + \varepsilon_{nj} \forall j \neq i)$$

- An individual picks the option that yields the highest utility level on any given choice occasion.
- Conditional Logit



The Random Parameter Logit Model

- Generalizes the CL by allowing the coefficients of observed variables to vary randomly over people rather than being fixed.

$$U_{ni} = bX_{ni} + \eta_n X_{ni} + \varepsilon_{ni}$$

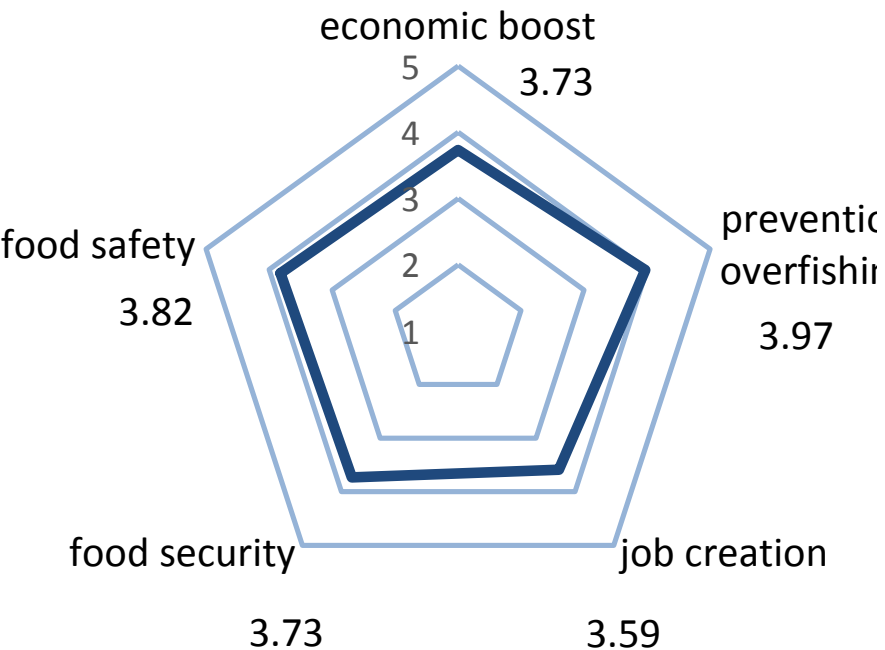
- Because the unobserved portion of utility is correlated over alternatives, RPL does not exhibit the independence from irrelevant alternatives property of a CL.

Consumer Attitudes for sustainable salmon production



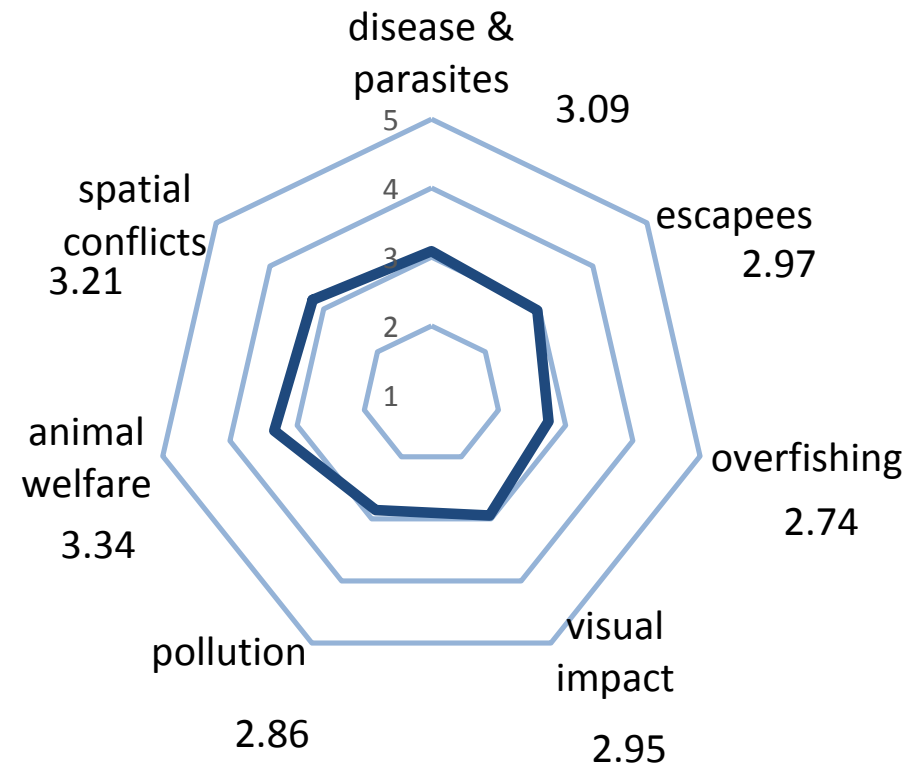
Ireland

Aquaculture Benefits



Ireland

Aquaculture Impact

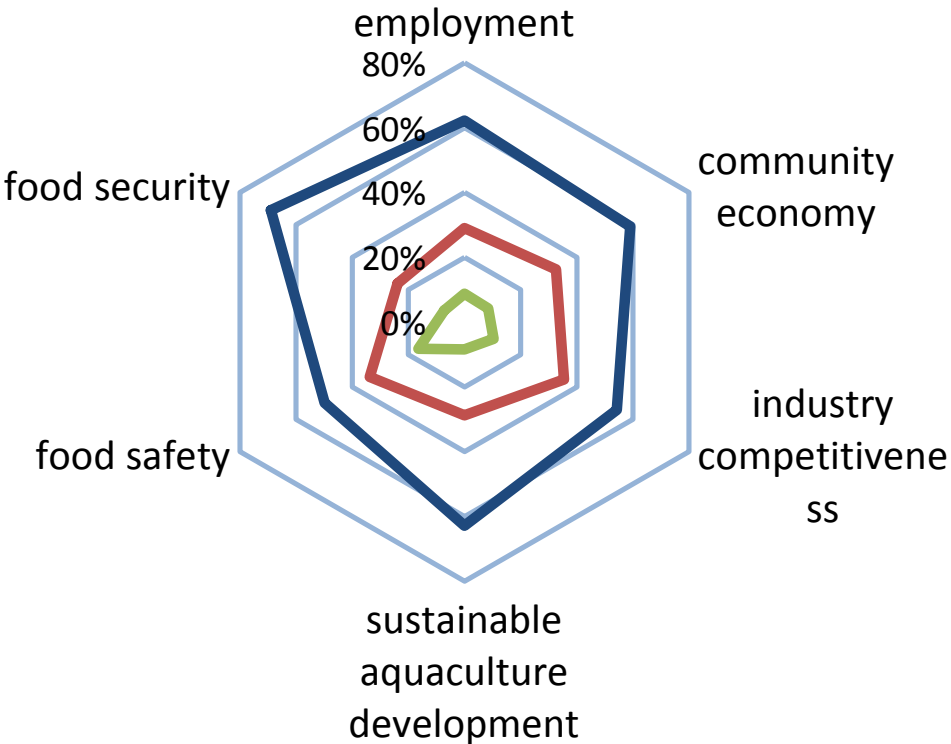


Consumer Attitudes for sustainable salmon production



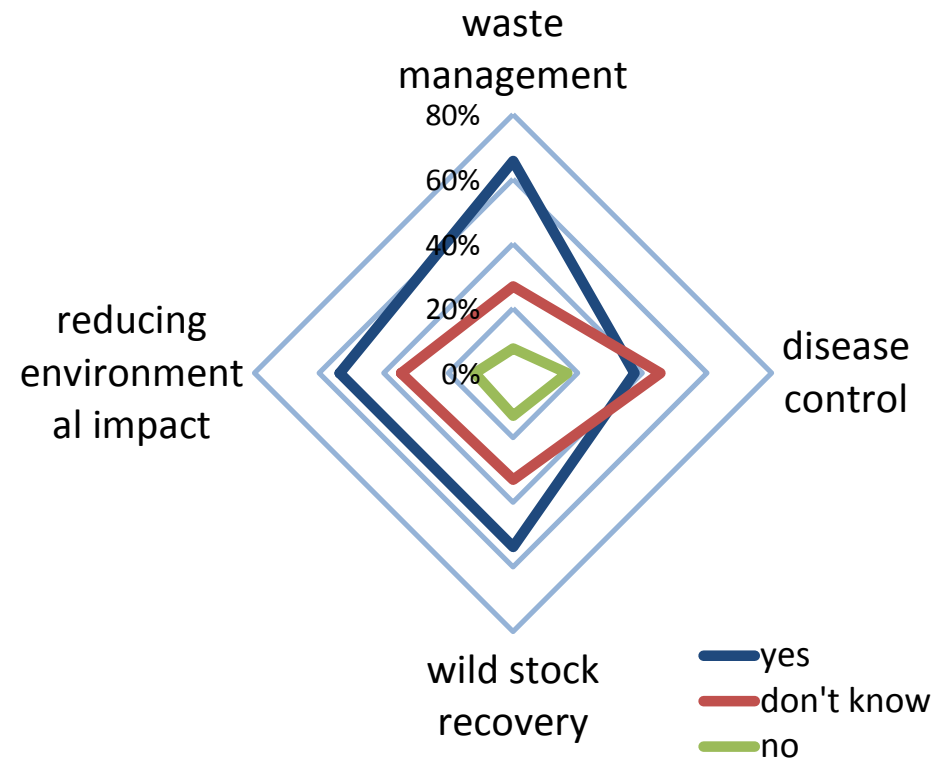
Ireland

IMTA Potential Economic



Ireland

IMTA Potential - Environmental





Model Results for Ireland

	Ireland	
choice	Random Coeff. (SE)	Standard Deviation (SE)
SusC	0.42 (.279)***	0.3 (.232)**
SusB	0.88 (.157)**	0.64 (.12)***
SusA	2.24 (.097)***	2.29(.091)***
Location	1.53 (.279)***	1.97 (.116)***

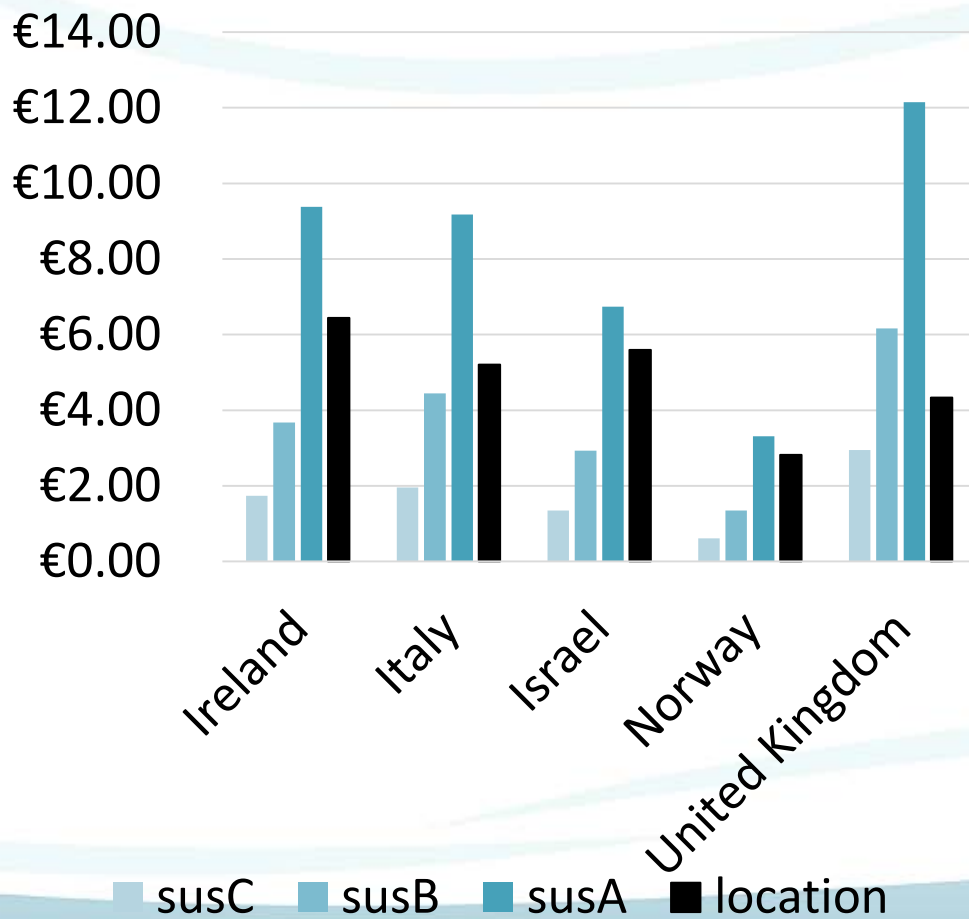
Log-Likelihood	-3198
LR Chi²	1701
Observations	12000

Non-Random Parameters	
	Coeff. (SE)
price	-0.24 (.009)***
ASC	-3.94 (.275)***
Male	-0.47 (.129)***
Third Level Ed	-0.06 (.118)
Age	0.03 (.005)***
Marital Status	-0.28 (.124)**
Income	-0.58 (.122)***
Home maker	-0.16 (.169)



WTP for sustainable salmon production

Marginal WTP for sustainable salmon production



Scenario	Production Location	Sus Level	CS - WTP
1	Ireland	Label A	€ 15.66
2	Ireland	Label B	€ 10.02
3	Ireland	Label C	€ 8.09
4	Elsewhere	Label A	€ 9.30
5	Elsewhere	Label B	€ 3.66
6	Elsewhere	Label C	€ 1.73

Scenario Analysis for Ireland



Conclusions

- Current aquaculture expansion in context of policies stressing blue growth and environmental protection
 - Analysis showed a positive preference for sustainability and national production
 - WTP could act as stimulus for sustainable production practices
 - Necessary to ensure that profit margins go to fish farmers and do not end up in the hands of retailers.
- Product diversification is prerequisite for IMTA
 - An ecolabel as presented in this research might contribute to both product diversification and consumer demand