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AQUACULTURE, FISHERIES AND AQUATIC RESOURCE MANAGEMENT 2008-11**

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Work package 12
Consumer Representatives

Deliverable 12.3
Identification of skills relevant to consumer issues

Deliverable 12.4
Identification of training needs regarding consumer issues

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Background

The WP12 core group dealing with consumer issues consisted of people representing several institutes from Belgium, Denmark, UK, and Greece. Each of the members is active in the field of social sciences, both in research and academic education, and each has been active in managerial, marketing and consumer science research dealing with seafood production and consumption (e.g. active research involvement in the EU FP6 Integrated Project SEAFOODplus on improving EU consumers' health and well-being through seafood, and the Coordination Action CONSENSUS on sustainable aquaculture in Europe).

As a result, this core group is well placed to reflect upon issues situated towards the end user pole of the food chain, including both retailer, consumer, policy and broader societal issues. It should be noted though that this core group does not represent consumer organizations or associations in the strict sense. Reflections are based, first, upon own empirical research with respect to societal issues, consumer interests, consumer concerns and acceptance of production technologies and products in the food area; and second, on own academic teaching experiences of social science subjects, among others in natural sciences-oriented bachelor and master programs throughout Europe.

This deliverable reports on the identification of skills relevant to consumer issues. In a first phase, this report provides insights based on literature and exploratory discussions within the core group. In a later stage of the project, quantitative conclusive data will be collected and reported.

Consumer issues related to seafood

Fish and seafood products are well-known and appreciated by consumers for their health benefits. Fish and seafood products are recommended to take a prominent position in the human diet due to their beneficial role in the prevention of chronic degenerative diseases. The consumption of fish may be protective against certain cancers and cardiovascular diseases. Consumption of fish or fish oils lowers the risk of coronary heart disease, death or sudden death. This (health) beneficial role of fish intake is particularly due to its omega-3 polyunsaturated fatty acids (PUFA) content, which have been associated with the prevention of cardiovascular diseases. Eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) that are formed from alpha-linolic acid have been identified as the two long-chain omega-3 PUFA's to be the likely active constituents of fatty fish. EPA has protective health effects such as the lowering rates of heart diseases, the reduction of arrhythmias and thrombosis, the lowering plasma triglyceride levels, and the reduction of blood clotting tendency.

Previous studies carried out on general population samples found that attitudes towards fish consumption, motivational aspects such as health involvement or the importance attached to healthy eating, were significant factors in explaining fish consumption. Also people's health motivation and knowledge about nutrition were, among others, positive predictors of dietary health preventive behaviour. Furthermore, fish availability, perceived difficulty or easiness in the preparation and cooking of fish, perception that fish is expensive compared to the other

food types, physical properties such as bones and smell, and taste preference were found to be important factors shaping fish consumption. Despite the predominantly healthy image fish has among nutritionists, food scientists, government and consumers, the recommendations of eating fish at least twice a week are not met by large groups of the population in many countries.

Nevertheless, seafood consumption remains below the recommended intake levels in most European countries. This is associated with uncertainty at the level of consumers, unawareness among consumers, and it may be due partly to the so-called nutritional-toxicological conflict relating to seafood (i.e. conflicting messages concerning health benefits and safety risks). Also other barriers, such as price, availability and convenience, are named as possible reasons for lower than recommended seafood intake levels.

The study by Brunsø et al. (2008) reported in *British Food Journal* investigated reasons for the huge variation in fish consumption that not only exists across European countries but also within countries by examining consumers motives and barriers for fish consumption across consumer groups as well as their ability to evaluate fish quality. Following consumer behaviour theories, the authors investigated qualitatively the reasons for fish consumption, and the quality indicators used in order to evaluate fish quality. This was done among two consumer segments and from a cross-cultural perspective; Heavy and light users of fish are considered in two European countries with significantly different levels of fish consumption, Spain and Belgium. Spain has one of the highest average consumption levels of fish in Europe, while Belgium is among the countries in Europe with the lowest average consumption of fish. The objectives of the study were (1) to identify and discuss motives and barriers for consuming fish among two consumer segments (heavy and light users of fish), (2) to discuss the role of consumer evaluation of fish quality and (3) to explore from a cross-cultural perspective if segments can be identified in a meaningful way. The full paper's main findings are highlighted below, and served as background information for discussing necessary skills towards consumer issues within AQUA-TNET2.

This exploratory cross-cultural study reveals relevant insights in motives/barriers and quality evaluation cues and processes across light and heavy fish consumer segments. As can be seen from the results there are both similarities and differences between the two investigated countries. It is interesting to see that even though we are dealing with countries with very different fish consumption levels and traditions, we find the same attitudinal motives and barriers for eating fish. On the contrary, there is quite a difference between the Belgian and the Spanish consumer when it comes to perceptions of fish preparation and the use of quality cues in fish quality evaluations. Very much in line with the existing theory, we find that the more experienced consumers in Spain are more skilled in the use of quality cues than the less experienced consumers in Belgium.

As described previously, earlier studies have shown that many barriers are related to the level of experience of the individual consumer with fish, and in general more barriers are perceived by the less experienced consumers than by the more experienced ones. Looking at the results from Spain, the findings from the focus groups are quite consistent also with this statement, as it is very evident that the time barrier in relation to the preparation of fish is stronger for the less experienced consumers than for the more experienced. However, in Belgium, where the consumers are much less experienced, time is not perceived as a major

barrier. This contradiction might be explained by the fact that the Belgian consumers only cook fish very seldom, and as a consequence the use of time is not the major barrier. Instead barriers are mainly related to quality uncertainty in relation to buying (choosing) fish and in relation to how to prepare the chosen fish. This is an interesting and unexpected result; it seems as if problems related to preparation of fish depends heavily on traditions, habits and daily routines. As a consequence the major barrier regarding fish preparation in Belgium is not time in the first instance, but that the consumer does not know how to prepare fish (which happens very seldom), while the major problem in Spain is not how the fish is prepared but rather the time it takes since this happens very often and is often based on whole fresh fish. This result needs further investigation, and indicates that product development targeted at making fish preparation easier must take specific habits and daily routines into account in order to understand the real problems and barriers consumers experience.

To conclude the authors have found both expected and unexpected similarities and differences among consumer groups. Even though we on purpose selected two countries with very different fish consumption levels and traditions, we found the same attitudinal motives and barriers for fish consumption. The respondents agreed that the main motives for eating fish are health and taste, while the main barriers are price perception, smell when cooking the fish and that fish does not fill you up / deliver the same level of satiety.

On the other hand, they find differences in the way problems related to preparing fish are perceived, both between countries and between segments, and the differences seem to be linked to the way fish as a meal is involved in daily consumption habits. Further research is needed in order to investigate this issue in more depth.

The study also sheds light on the quality cues the consumers use in relation to fish consumption. As opposed to the motives and barriers there are big differences between the countries concerning this issue. It can be concluded that the consumers in the heavy user country, Spain are very skilled concerning which cues to use when evaluating the quality of fish. On the contrary, the Belgian consumers, who can be characterised as light users, make seemingly irrational assumptions when evaluating the quality of fish, simply because they lack experience, confidence and knowledge about which cues to use.

Finally, based on the study, a sketch of three consumer segments has been proposed. “The skilled and demanding”, who consume fish 4-6 times a week and who can be characterised as fish-experts; “Skilled, but willing to compromise”, who know a lot about fish, but who also are willing to make compromises in order to save time or money when purchasing and preparing fish; and finally “The un-skilled light users”, who consume fish very rarely and who have no idea about how to evaluate the quality of fish. Further quantitative research is recommended to validate these motives, barriers and hypothesised fish consumer segments.

Overarching themes

The core consumer group has first identified a number of overarching themes with potential relevance to several or all workpackages within AQUA-TNET2, taking into account the insights obtained from previous consumer studies.

Public versus private goods focus - The core consumer group stresses that a clear distinction should be made between the development of skills (and the way this is incorporated in curricula) relating either to the “public goods” versus the “private goods” businesses. With respect to public goods, students should be made aware of relevant policy issues (e.g. national and international maritime policy, rural development policy, food policy, ...) and develop the skills to regard individuals as citizens who may have particular concerns and pursue specific values in their lives (e.g. relating to animal welfare, sustainability, environmental consciousness). With respect to private goods, students should be made aware that consumers ultimately vote pro or contra products through spending part of their money on this, and that acceptance or rejection depends on the interplay of multiple personal, environmental and product-specific factors. From this consumer perspective, products should offer benefits that are relevant to the individual, such as taste, convenience, quality and quality consistency. Through better communication and information provision, consumers can be enabled to make more informed choices, i.e. choices better in line with their actual preferences.

Problem-solving skills - A related point is that attention should be paid to transferring the ‘instruction’ system and approach from one based on ‘content’ to one based on ‘problem-solving’. The latter will require the identification of a list of problems, the provision of multidisciplinary theoretical bases complemented with practical explanations and examples, and the solution of complete cases, which can further be seen as benchmark. Solutions better than the benchmark will signal progress.

Parallels with and lessons from agriculture - Some relevant lessons can be learned from the way agriculture has developed from a farm-to-fork to fork-to-farm, and how (some) agriculture curricula have adapted to this shift. Agriculture has grown away from production efficiency and production orientation to more food science and technology issues, including sensory issues, food quality, branding and so on. It is likely that aquaculture will go the same way, i.e. away from producing a commodity into producing value-added and market-oriented products. This shifts should be anticipated to, ideally through preparing the future generations of aquaculture scientists and technologists for this through the curricula they are offered. Most likely, there are a lot of synergies possible with programs taught in other faculties, such as biological sciences faculties.

Issues management skills - A second important overarching topic pertains to providing students and researchers with appropriate “issues management” skills. This deserves particular attention since aquaculture may face a number of highly sensitive societal issues in the near future. The consumer group has identified a number of issues that consumers are particularly sensitive to (such as: quality consistency, product innovation focusing on convenience, taste, production and process characteristics, animal welfare), as well as to society as a whole (such as: sustainability, environmental preservation, information transfer and transparency).

Soft skills and communication - A third issue relates to taking the necessary steps to foster more “soft” skills, such as presentation and communication skills, which should enable students and post docs (at least to some extent) to communicate in a convincing way and using an understandable language with media and lay people.

Social benefits from mobility – An important benefit from student mobility undoubtedly relates to the development of social skills, interaction with peers and the broader society in other areas of the world, where for example differences in culture, production and consumption habits can be real eye-openers. Other locations mean other habits, eventually the use of other species, confrontation with other markets. This is an important learning opportunity that helps people appreciate diversity. Besides the numerous technical benefits from following courses in specialized institutes, these rather socially oriented benefits for the individuals taking part in the mobility deserve more attention, e.g. when motivating students to participate, or when students enter the job market.

Expected benefits from incorporating consumer and societal issues

Finally, the consumer validation group identified (indirect) the following benefits from the realizations from the AQUA-TNET, and from taking the above-mentioned recommendations into account. First, through being better informed, consumers will be enabled to make better choices. Second, this better choice should translate into better individual health and well-being. Third, the image of the aquaculture sector among seafood consumers and the broader public can be improved. Fourth, environmental benefits can be realized and fully exploited in communication with society. Fifth, the gap between aquaculture scientists and society can, at least partly, be bridged.

Summary of necessary skills and training needs and key questions

Skills related to consumer issues:

- Problem-solving skills
- Issue management skills
- Communication skills
- Reporting and presentation skills

Training needs: training related to the above-mentioned skills issues:

- Training in problem-solving
- Training in management
- Training in communication, reporting, and presentation

Key questions:

- Current availability of training related to the identified skills
- Perceived need and desirability of training related to the identified skills
- Perceptions related to organizational issues concerning training

Further research plans

Based on these insights, a quantitative conclusive survey will be organized with the aim to measure and quantify the perceived needs for “consumer and societal” skills identified in this preliminary phase. The population for completing this questionnaire consists of the network partners involved in all WPs of AQUA-TNET2. This work will be performed during 2010, in conjunction with the data collected dealing with training needs. The deliverable will be extended with the results of the quantitative study during 2010.

Reference

Brunso, K., Verbeke, W., Olsen, S.O. and Fruensgard-Jepesen, L. (2009). Motives, barriers and quality evaluation in fish consumption situations: Exploring and comparing heavy and light users in Spain and Belgium. *British Food Journal* **111**: 699-716.