**IFL Project Report**
**07 - 04**


**SEPTEMBER 2004**

# INTRODUCTION OF THE QUALITY INDEX METHOD (QIM) IN THE EUROPEAN FISHERY CHAIN (QIMCHAIN)

**SECOND CONSOLIDATED PROGRESS REPORT**

**ACCOMPANYING MEASURE CONTRACT No. QLK1-CT-2002-30152**

**Emilía Martinsdóttir**

# Skýrsluágrip Rannsóknastofnunar fiskiðnaðarins

## Icelandic Fisheries Laboratories Report Summary

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| *Titill / Title* | Introduction of Quality Index method (QIM) in the European Fishery Chain- Second Consolidated Progress Report | | |
| *Höfundar / Authors* | *Emilía Martinsdóttir* | | |
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***Ágrip á íslensku:***

Verkefnið felst í því að kynna gæðastuðulsaðferðina QIM fyrir fiskiðnaði í Evrópu og stuðla að því að samræmd aðferð verði tekin upp í skynmati á ferskum fiski. Samræmd aðferð við mat á ferskum fiski mun greiða fyrir viðskiptum með fisk á fiskmörkuðum og vera nauðsynlegur þáttur í í framleiðslu- og gæðastýringu í fiskiðnaði. Á seinna ári verkefnisins voru haldin tvö námskeið fyrir gæðastjóra í fiskiðnaði á Spáni og Bretlandi. Verkefnið var kynnt á sjávarútvegssýningunni í Brussel í maí og haldin námstefna um stöðu QIM. Margvíslegar greinar voru skrifaðar í blöð og tímarit, lokið var við útgáfu handbókar um skynmat á ferskum fiski sem þýdd var á 10 tungumál og reynt hefur að skapa umræðu um ferskfiskmat með þáttöku á fundum hjá hagsmunaaðilum. Heimasíða verkefnisins er www.qim-eurofish.com og þar eru birtir QIM einkunnaskalar sem eru til á ensku.



*Lykilorð á íslensku:* *QIM, gæðastuðulsaðferð, ferskleiki, fiskur, skynmat QIM*



*Summary in English:*

The Quality Index Method (QIM) is a seafood freshness quality control system. The main objectives of this project are: to introduce the Quality Index Method (QIM) and stimulate the implementation of QIM in the relevant parts of the European fishery chain to facilitate fish trade and improve quality assurance. The second year of the project the main emphasis was on holding two workshops for quality managers, one in Spain and one in the UK. The QIM method was demonstrated at the Seafood Exposition in Brussels and an international workshop was held. Translations and publication of multilingual guidelines and reference manuals for end-users in 10 languages were finalised. Various articles in industry orientated national journals have been written. The existing QIM-schemes in English are now published on the web-site (www.qim-eurofish.com)



*English keywords:* QIM, Fish, Sensory, Quality, Freshness

**PROGRESS REPORT**

| | | |
|---|---|---|
| Title of the project: Introduction of Quality Index method (QIM) in the European Fishery Chain | | |
| Acronym of the project QIMCHAIN | | |
| Type of contract QLAM | | Total project cost (in euro) 316756 € |
| Contract number<br><br>QLK1-CT-2002-30152 | Duration (in months)<br><br>24 Months | EU contribution (in euro)<br>316756 €<br>316756 € |
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| Key words (5 maximum - Please include specific keywords that best describe the project.).<br>QIM, Fish, Sensory, Quality, Freshness | | |
| World wide web address (the project's www address )<br>**www.qim-eurofish.com** | | |

List of participants Provide all partners' details including their legal status in the contract i.e.,contractor, assistant contractor (to which contractor?).

**All partners are contractors**

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# 1. CONSOLIDATED PROGRESS REPORT

## 1.1. Objectives

To introduce the Quality Index Method (QIM) and stimulate the implementation of QIM in the relevant parts of the European fishery chain, in order to facilitate fish trade, improve quality assurance and ensure traceability of quality information of fish for European consumers

To enhance the European dimension of the exploitation of research results on QIM in the European fish sector

To raise the awareness of the benefits of using standardised methods for evaluating fish freshness in Europe

To identify the need for further research in this field to be able to provide the European fish sector with multilingual tool for the most important fish species

This objective must be achieved through several sub-objectives:

To create and establish a QIM network-platform for partners in the fishery chain, authorities and scientists. Emphasis must be on active participation on behalf of fishermen, auctions, processors and retailers (including supermarkets). Regional and international (European) associations of the respective stakeholders must be approached.

Organisation of two QIM workshops for demonstration of the effectiveness and user-friendliness of the QIM scheme to the European fish sector. Existing key industrial key end-users of QIM must be involved.

Development of multi-lingual (computerised) sensory evaluation reference manual and guidelines for practical application of QIM for end-users, e.g. fish-auctions, fish processing industry, retailers, inspection bodies and research institutes.

Active dissemination of QIM knowledge by participation at important European fish exhibitions.

Information about QIM methodologies and practical applications must be published in popular fish trade journals at a national and European level.

Creation of a web-site with detailed information on QIM.

## 1.2. Description of work

The QIM-network has been launched both at meetings which have been organised and planned by the participants in collaboration with stakeholders and also by participating in meetings planned and organised by others. A European network has been formed. The network consists of all the partners from the project and other relevant key actors in the fishery chain, authorities and scientists from the various European countries which are interested in implementing QIM.

Project members have sought the opportunity to participate in ongoing meetings already established by the actors in the chain, to give information about QIM. Discussions about QIM have been carried out at various conferences and workshops, both for researchers and the fishing industry, to identify the needs for further research in this field, in order to monitor various different views. In addition, authorities in Brussels have been kept informed. The main emphasis of the second year of the project has been training of staff at fish auctions in UK, two workshops aimed for the fishing sector were held, one in Spain and one in the UK. The partners of QIMCHAIN very actively participated in the Brussels Seafood Exhibition in May 2004 and a QIM-workshop was held for members of the network and other participants at the exhibition.

The translation of a reference multilingual manual for education, training and easy application of QIM in the fishing sector was finalised in French. German, Greek, Italian. The final printing of the manual in 10 different languages was finalised and sent to all project participants and subcontractors. The manuals were delivered to the representative of the EU-Commission.
The usefulness and effectiveness of QIM for improving fish quality was demonstrated at five major European fish exhibitions.

Eight articles or information sheets on the QIM method and the possibilities of using the method have been published at a national level and one article in an international magazine. Three scientific paper was prepared and submitted and accepted for publication. One chapter has been written in a book published to be later this year.

A web-site offering up-to-date information about QIM and the status and possibilities of using QIM was created and maintained from the beginning of the project. This year it contained various information about the project, its status, progress and other relevant information. It is important that the web site has been an active forum for the QIM network.

### 1.3. Results and deliverables

All results from individual work-packages are found later in the report in more detail.

The development of a QIM platform made up of scientists and a network for partners in the fishery chain and authorities has made a considerable progress in 2003-4 with a new or stronger involvement of various partners from scientific institutes and from the fishery chain. Small workshops, aimed for the fish sector in selected European countries, have been held. Publication of multilingual guidelines and reference manuals for end-users in 10 languages was finished. Demonstration and presentations were performed at five important fishery exhibitions in Europe. One articles in an international industry orientated journal, eight in national journals have been written and published and a manuscript of a book chapter. Five scientific papers were submitted and accepted for publication. A web-site used as an active platform for the network is receiving numerous visits daily. The knowledge about QIM has spread in the fish sector, to authorities and within the scientific community and will lead to increased implementation and practical application of QIM in the European fish sector.

### 1.4. Dissemination of research results

**Diverse meetings and visits**

Meeting with EAPPA European Association of Fishing Ports and Associations in December Dec. 2nd 2003

Meetings with RIVO and the Netherlands Organiation of Auctions NOVA/Pvis 21 of April 2004.

*Name of the presentation:* Differentatie in kwaliteits klassen en prijsvorming van aangevoerde vis op afslagen door introductie van QIM-scan Lecturer Joop Luten (RIVO)

Meeting with the staff at the Icelandic Directorate of Fisheries April 5th 2004

*Name of the presentation:* Status of the QIMCHAIN-method in Europe *Lecturer*: Emilia Martinsdottir (IFL)

Icelandic fish companies and Belgian retailers in Iceland in June 2004

*Name of the presentation:* QIMCHAIN-method in assessing the quality of fish *Lecturer*: Emilia Martinsdottir (IFL)

Collaboration with DVZ Oostende regarding the development of 12 QIM schemes for new species in Belgium. Within this project RIVO assists in validation and advice. Visit to Oostende Fish auctions. 11-12-2003

Collaboration with Youngs Bluecrest UK Close contacts are made with Youngs Bluecrest UK for the development of a QIM scheme for Norway Lobster Tails.

Courses for the smokehouses in Denmark in using QIM for salmon

Visits to fishmongers all over Denmark to give information on use of QIM. Grethe Hyldig (DIFRES)

Presentation and demonstration on QIM at a workshop for Royal Greenland. Grethe Hyldig (DIFRES)

**Lectures given at:**

**QIM-Workshop in Vigo Spain January 26th-27th 2004**

*Name of the presentation:* Sensory Evaluation of Fish *Lecturer*: Grethe Hyldig (DIFRES)

*Name of the presentation:* Selection and training of assessors for QIM *Lecturer*: Grethe Hyldig (DIFRES)

*Name of the presentation:* Presentation of the results from the QIM sessions *Lecturer*: Grethe Hyldig (DIFRES)

All presentations were translated into Spanish

**International QIM workshop in Brussels on the 5th of May during the Seafood exhibition.**

*Name of the presentation:* Progress of the QIMCHAIN project *Lecturer*: Emilia Martinsdottir (IFL)

*Name of the presentation:* New QIM schemes (1: lemon sole, stingray, dogfish, red gurnard, pout, crangon crangon, scallops, monkfish 2: maatjesherring, Norwegian lobster 3: dab, flounder, frozen hake, trout) *Lecturer*: 1: Karen Bekaert (FRS), 2: Rian Schelvis (RIVO) and 3: Grethe Hyldig (DIFRES)

*Name of the presentation:* Wisefresh QIM software 'Future developments' *Lecturer*: Halldór Lúðvíksson (Maritech)

*Name of the presentation*: Quality characteristics for selling fish via the internet. *Lecturers:* Jack Vader (ID-Fish) and Paul de Niet (PVis) on behalf of the Dutch National Auction Organisation

*Name of the presentation*: QIM in auction practice *Lecturer*: Philippe Maryssael (Auction Zeebrugge)

*Name of the presentation*: Improved seafood sensory quality for the consumer *Lecturer*: Kolbrun Sveinsdottir (IFL)

**QIM-Workshop at Billingsgate market in London, UK, June 21st-22nd 2004**
*Name of the presentation*: Introduction of the status of QIM in Europe *Lecturer*: Emilia Martinsdottir (IFL)

*Name of the presentation*: Sensory evaluation and how to build a QIM-scheme *Lecturer*: by Grethe Hyldig (DIFRES)

*Name of the presentation*: Selection and Training of inspectors *Lecturer*: Rian Schelvis (RIVO)

Nordic Workshop in Sensory Science-Advanced Sensory Tools for Improved Products, 6-8 May 2004, Turku, Finland

*Name of the presentation*: QIM-Method in assessing the quality of fish *Lecturer*: Emilia Martinsdottir (IFL)

Fisheries Training Programme of the United Nations University October 2003

*Name of the presentation*: sensory Evaluation of fish *Lecturer*: Emilia Martinsdottir (IFL)

QIM training of trainers and researchers at Seafood Industry Authority SFIA November 3-6 2004 Lectures by Rian Schelvis

**Publications**

Hyldig G. and Green-Petersen, D., "Quality Index Method – An Objective Tool for Determination of Sensory Quality J. of Aquatic Food Product Technol. Accepted.

Hyldig G., ”Anvend kvalitetsindeksmetoden og få et mål for hvor frisk fisken er” Fisk og Hav Okt. 2004.

Hyldig G., ”Udvikling og demonstration af kvalitetsindeksmetoden (QIM) til kvalitetsstyring I den Europæiske fiskesektor” Under Overfladen 2004, 39:13-15

Hyldig G., A.Bremner, E. Martinsdóttir and Rian Schelvis-Smit, 2004. Quality Index Methods in “Sensory Evaluation of Muscle Food”, eds. Y. H. Hui, A Carbonelle, P. Coggins, G. Hyldig, L. McKee, O. Sanders, , DEStech Publications, Inc., Lancaster, Pennsylvania

Hyldig, G. & Nielsen, J. 2004, "QIM - a tool for determination of fish freshness," in Seafood Quality and Safety. Advances in the New Millennium, F. Shahidi & B. K. Simpson, eds., ScienceTech Publishing Company, St John´s, NL, pp. 81-89.

Martinsdóttir E., “QIM for evaluating fish freshness”. INFOFISH International March/April N0. 2/2004

Martinsdóttir E.,” Þarf ad meta ferskleika fisks”. Aegir , 2004, 7, p. 14 to 17.

Nielsen D and Hyldig G. 2004. Influence of handling procedures and biological factors on the QIM evaluation of whole herring (Clupea harengus L.) Food Research International. In press.

Nunes M.L. and I. Batista ”Aplicação do índice de qualidade (QIM) na avaliação da frescura do oescado”, IPIPMAR Dívulgação market" No 29. March 2004.

Oehlenschläger J., „Die Qualitäts-Index-Methode (QIM), ein verlässliches Instrument zur sensorischen Bewertung der Frische von Fisc“. Informationen für die Fischwirtschaft aus der Fischereiforschung, Aug. 2004.

Pérez-Villarreal, B. Sensory evaluation of fish freshness, Journal Productos del Mar, Sept/Oct 2004
Schelvis-Smit R., ”KIM geeft info over kwaliteit in hele visketen”. Visserij nieuws, 7 mei 2004. p 10.

Sørensen N.K., H. Nilsen and L. Akse,“QIM-Dokumenterer produktets ferskhet“. Fish - industry & market" July 2004.

Through the QIM-Eurofish website, “Cuán fresco está el fresco? Revista Redes, de la industria pesquera Argentina”. N° 135 mar/abr 2004. p80-84.

**Demonstrations**

Aquanor Trondheim (12/15-8-2003): presentation of QIM-Eurofish brochure by Fiskeriforskning and Wisefresh brochure by Maritech.

BIM-Irish seafood expo (10/11-9-2003): Presentation of QIM-Eurofish brochure.

VIGO (17/21-9-2003) presentation on QIM by Joop Luten. Participation of QIMCHAIN in the WEFTA booth.

Bremen (12/15-2-2004): Participation of QIMCHAIN in the WEFTA booth. Posters, presentation of QIM-Eurofish brochure and demonstration of software by RIVO, BFAFi and IFL

European Seafood Exhibition Brussels 4-6 May 2004. Presentation of QIM manual in 11 European languages. Demonstration of QIM-software and handheld device. Several posters with information on QIM.

Demonstration of QIM-software and handheld device at QIM-Workshop at Billingsgate market in London, UK, June 21st-22nd 2004 QIM-Workshop in Vigo Spain January 26th-27th 2004

The homepage of the project is: **www.qim-eurofish.com**.

Quality Index method schemes are presented at the web-pag.e

Supporting documentation of all activities accompany this report as Appendices

### 1.5. Future actions

There seems to be a need in the fishery chain to also include other factors in the classification of the quality of landed fish other than only the freshness. Translating the quality of handling the catch on board of the vessels into a catch quality index could be an interesting option for a common European strategy for research and fishermen. Stimulation of further implementation of QIM as reference method for evaluating fish freshness of seafood (products) is still needed. Two main issues have to be overcome: intensive training of quality employees of fishery partners in Europe and how to handle large amounts of landed fish within a reasonable time with available manpower. QIM Eurofish and the network developed with QIMCHAIN want to play an active role by submission of a project with the following aims:

> to stimulate further exploitation of the QIM methodology with focus on an integrated QIM training program in a number of selected innovative partners in the fishery chain (auctions, fish processors) and to stimulate the use of QIM by consumers C-QIM.
>
> to develop an appropriate logistic QIM evaluation procedure for evaluating fish freshness of landed fish within a short time frame.

Therefore the development of a tool (QIM scan) embedded in the developed QIM as the reference method is needed. QIMscan could become the possible intermediate between the QIM standard (evaluating all attributes for full characterization of freshness) developed now and the very simple (only a very few attributes) C-QIM developed for consumers. At the fish exhibition the representatives from the fish industry in Eastern Europe have expressed interest of translations of the reference manuals to more languages. The possibilities for funding in this area will be investigated.

More newsletters will be published by QIM-EUROFISH. All network participants will be sent the newsletter and contacted when news appear on the homepage.

The website will be maintained after the lifetime of the accompanying measure by the QIM Eurofish alliance.

### 1.6. Action requested from the Commission

Not relevant

## 2. PROGRESS REPORT OF WORKPACKAGE 1 - QIM NETWORK-PLATFORM

### 2.1 Objectives

The objective is to introduce the Quality Index Method (QIM) and to stimulate the implementation of QIM in the relevant parts of the European fishery chain to facilitate fish trade, improve quality assurance and ensure traceability of quality information of fish for European consumers. The objective must be achieved by creating and establishing a QIM network-platform for parties in the fishery chain, authorities and scientists. Emphasis must be on active participation of fishermen, auctions, processors and retailers (including supermarkets).

The aim is to raise the awareness of the benefits of using standardised methods for evaluating fish freshness in Europe.

Another aim is to identify the need for further research in the area of valid methods to evaluate fish quality, in order to be able to provide the European fish sector with multilingual tool for all important fish species.

### 2.2. Description of work

All information about dissemination's activities has been put on the website in order to inform all members of the network. Knowledge about QIM for evaluating fish freshness has been disseminated throughout the fish sector, the scientific community and authorities by this pan-European activity. The European dimension of the fish sector, using research results on QIM, has been enhanced and the awareness of the benefits of using standardised methods for evaluating fish freshness in Europe has increased.

### 2.3. Results and deliverables

During the second year several activities have taken place.

#### 2.3.1. Forming of the QIM-network and newsletter

Contact information (emails, addresses etc.) on 200 persons interested in evaluation of fish freshness using the QIM method from different parts of the fishery chain, scientist and authorities were collected and a data basis with this information was formed. All partners of the project took part in collecting the addresses and all furthermore contacted the key-actors in their own countryies. A newsletter was written containing information on the planned international workshop on the 5th of May in Brussels (Appendix 1a) and the progress of the QIMCHAIN project was sent to all the network 'members' on 22$^{nd}$ of March 2004. (Appendix 1b)

#### 2.3.2. European Association of Fishing ports and Auctions

Collaboration between the project members (QIM Eurofish) and European Association of Fishing Ports and Auctions continued.

As a follow up of the presentation of the outcome of the Concerted Action 'Fish Quality Labelling

and Monitoring' to the European Association of Fishing Ports and Auctions EAFPA in April 2003 during a meeting at DG Fisheries Joop Luten was invited by the EAFPA for a presentation about the QIM activities at their annual meeting in Quimper (France). (see Appendix 1c)

Besides the developments on QIM over the last ten years Joop Luten presented the progress of the QIM chain project and possibilities for collaboration between EAFPA and QIM Eurofish. The following options for collaboration were discussed:

- Presentation of position paper of the EAFPA about quality standards by Alain Schlesser, president of EAFPA at the QIMnetwork meeting at SEAFOOD exhibition 4-6 May 2004 in Brussels.
- Possibilities of a one day hands-on workshop on QIM in 2004 in France in a similar way as it is now organised in Vigo for January 2004.
- The possibilities for a future EU project with respect to training of auction staff on QIM assessment. This 'idea' will be worked out in 2004.

### 2.3.3. QIM chain at the European Seafood Exposition May 5th 2004, Brussels

QIM network workshop in Brussels was organized and held on May 5th 2004. In Appendix 1e is the programme and information on the pre-registered participants and all the presentations from the workshop. On the 5th of May during the Seafood exhibition the first international QIM workshop was held and was a success. This workshop offered the unique opportunity for an update about the possibilities of QIM as tool for evaluating the freshness of seafood. Experiences with the Quality Index Method (QIM) by experts and end-users were presented. The multi-lingual reference QIM manual was officially presented to Isabelle de Froidmont-Görtz DG 12 (see Appendix 1d-programme and presentations)

On May 4-6th 2004 QIM-EUROFISH presented the QIM-method and the QIMCHAIN project at the stand of the Trade Council of Iceland at the European Seafood Exposition & Seafood Processing Europe in Brussels. The European Seafood Exposition is one major event that brings together seafood-specific buyers and sellers from all over Europe and the world. With over 800 exhibitors from more than 40 countries, ESE offers seafood business professionals access to a one-stop resource to reach the global marketplace. The QIM manual now available in 11 languages English, Dutch, Danish, French, German, Greek, Icelandic, Italian, Norwegian, Portuguese and Spanish was presented at the stand. Visitors from various countries visited the stand and showed great interest, especially if the manual was available in their own language. All the manuals could have been sold at the spot but buyers were instead instructed to visit the homepage for ordering the manual. Many Russian, Polish and East-Europe visitors expressed an interest in buying the manual in their own language.

A practical demonstration on sensory evaluation by QIM-method of salmon of different freshness stages was also given.

Use of the hand-held device connected to Wisefresh-software was also demonstrated. The stand was visited by a delegation led by the Icelandic Minister of


***Partner 1 IFL, partner 2 RIVO and partner 3 DIFRES at the Seafood exhibition Brussels in May 2004***

Fisheries. The press also showed interest resulting in an article in one of the biggest Icelandic newspaper. (see posters in Appendix 4)


***Partners of the QIMCHAIN project with the contact person Isabelle de Froidmont-Görtz***

### 2.3.4. QIM training of trainers and researchers at SFIA

November 3-6 2004 Rian Schelvis-Smit trained 13 participants of the staff at Seafood Industry Authority on the QIM method (see Appendix 1e). All participants found it very valuable introduction to QIM. The training was very intensive and gave possibilities for the participants to continue with QIM both at SFIA as well as giving training to the industry.
Fishgate Hull UK is implementing QIM in their auction in 2004. Training and support is given by SFIA UK after RIVO had trained the staff at SFIA.

### 2.3.5. Netherlands Organisation of Fish Auctions 2003-2004

The Netherlands Organisation of Fish Auctions (NOVA) and the Dutch Board for Fisheries (PVis) have approached RIVO for a discussion about the state of the art on QIM and the need of auctions and (remote) buyers for an implementation of QIM. Although the experienced disadvantages (e.g. time consuming) should be reduced. Based upon the needs expressed by NOVA, a possible concept for QIMscan was presented recently. In accordance with the BIM meeting, it is also clear from this meeting that there is a request from buyers to involve also other quality elements like handling. However PVis and NOVA agreed that EU grading into E, A and B and subclasses should only be based on freshness by QIM.

After several meetings the conclusion was that quality assessment should meet 2 main requirements reliability and freshness. A solution is needed to develop a method for fast performance in practice. QIM can be used in this system possibly with a reduced number of QIM attributes for daily control with the normal QIM-scheme as a backup. The staff needs training (see Appendix 1f)

### 2.3.6. Flemish fish auctions 2003-2004

The Fisheries Research Station (FRS) in Oostende (Belgium) is involved in a Flemish regional project for improvement fish quality in auctions.RIVO and FRS have been working together several years in the implementation of QIM in Belgium auctions. Collaboration with DVZ Oostende continued in 2003 regarding the development of 12 QIM schemes for new species in Belgium. Within this project. RIVO assists in validation and advice.

### 2.3.7. QIM introduced in USA

At the first Trans Atlantic Fisheries Technology conference (TAFT) in Iceland from 10 - 14 June 204 the QIMchain project team discussed with Professor David Green (North Carolina State University) the possibilities for further introduction of QIM in the USA. Durita Nielsen of DIFRES worked with David Green and the program staff to improve overall acceptability of hybrid striped bass. The project objectives were to develop a Quality Index (QI) for farm-raised hybrid striped bass based on the Quality Index Method (QIM) and to introduce the QIM concept for assessing fish quality to the North Carolina fish and aquaculture industries. In Appendix 1g there is a copy of a promotional flyer published by North Carolina State University on a project on QIM.

***QIMchain partners (Grethe Hyldig (DIFRES), Emilia Martinsdottir (IFL) and Joop Luten (RIVO)) discussed with David Green (North Carolina State University) the possibilities for further QIM introduction in USA.***

### 2.3.8. Other activities:

**Partner no. 1, IFL**

IFL is using the QIM method in fish freshness evaluation in teaching and training in the Fisheries Training Programme of the United Nations University. (see Appendix 1h).

An introduction was given on the status of the QIM-method in Europe for the staff at the Directorate of Fisheries which is an Icelandic Government institution under the ultimate responsibility of the Minister of Fisheries. The Directorate is responsible for implementing government policy on fisheries management and handling of seafood products. Furthermore, the Directorate is the competent authority responsible for enforcing laws and regulations regarding the handling, processing and distribution of marine products. It is also responsible for the operation of border inspection posts and controlling imports of fishery products into the European Economic Area. (see Appendix 1i)

A meting was held for in Reykjavik in June 2004 an Icelandic Fish Processing company and exporter of fresh fish to the Netherlands and Belgium with the retailers from Belgium and a presentation was given on the use of QIM-method in the chain from landing the fish to the buyers. The fish processor and the retailers showed great interest in the methods and expressed the opinion that using such a method would facilitate the selling and buying of fish between countries. (see Appendix 1j)
A presentation was given at the workshop Nordic Workshop in Sensory Science-Advanced Sensory Tools for Improved Products, QIM-Method in assessing the quality of fish 6-8 May 2004, Turku, Finland (see Appendix 1k)

**Partner no. 2 RIVO** has in 2003 made a proposal to harmonise the training for new QIM-inspectors. This harmonisation is based on a 6- days programme aiming to teach QIM to be used in practise for a fast and objective assessment of freshness of two relevant species, to people working in the fish industry.

The handheld device for demonstrating the QIM software has been used several times during exhibitions and presentations.

**Collaboration with Youngs Bluecrest UK** Close contacts have been made with Youngs Bluecrest UK for the development of a QIM scheme for Norway Lobster Tails.

**Participant no. 3,** During the second project year several activities have taken place.

- Collecting addresses for the QIMCHAIN news.
- DIFRES personnel has given courses in using QIM for evaluating salmon in a national project together with the smokehouses.
- DIFRES, in connection to a national project, has visited fishmongers all over Denmark to give them information on how they could use QIM.
- DIFRES personnel has presented and demonstrated QIM at a workshop for Royal Greenland.
- DIFRES personnel has been contacted of several people for information about QIM. These include people from the industry, fishmongers, supermarkets etc.

**Other DIFRES activities**:

- A C-QIM workshop3 March 2003 in Roskilde, Denmark for technical staff from the Food Industry.
- In a national project; "Less known fish species" DIFRES has developed QIM scheme for dab and flounder and C-QIM scheme for round fish species and flat fish species.
- DIFRES are using QIM for salmon in a national project about cold smoked salmon.

**Participant no. 5, NIFA,** has advertised QIM as a useful tool for objective measurements of fish freshness in several presentations for the industry. In three industry projects on the quality of farmed cod NIFA has used QIM for freshness evaluation. Industry partners who were thus introduced to QIM were 10 cod farmers and the Norwegian Seafood Export Council.

Application of the Quality Index Method in research projects run at Fiskeriforskning

2000 – 2002. MUSTEC - Development of Multi-Sensor Techniques for Monitoring the Quality of Fish, FAIR CT98-4076. In this project QIM was used to determine freshness as a reference for a number of different measurement methods.

2001 – 2003. SPECTEC – Development of Spectroscopic Techniques for rapid quality assessment of fresh fish. In this project QIM was the method of reference for spectroscopic determination of freshness. The project was financed by the Norwegian Research Council.

2001 – 2003. Quality of salmon and halibut. In this project QIM is used to assess the freshness state of halibut. This is in co-operation with the Norwegian Institute of Marine Research and was financed by the Norwegian Research Council.

2002 – 2003. Quality perception and product image of farmed and fed cod in the Norwegian and English restaurant segment. In this project QIM was used to describe the quality of the fish prior to presentation in the restaurant. The project is in co-operation with the Norwegian Seafood Export Council.

**Partner no. 6: AZTI**

AZTI activities have been on the introduction of the QIM for two main actors of the fishing sector in the north of Spain: Fundación Kalitatea and Bermeo fishing port. Fundación Kalitatea is a Foundation that is in charge of defining and promoting food products with some quality features that make them singular through their Quality Label "K". In the fish sector, they have applied their quality label to some of the most important fish species in Spain: Thunnus alalunga, and Thunnus thynnus. Bermeo fishing port is one of the few ports provided with an electronic auction in the Cantabric Coast.

A 5 hours seminar on Fish Sensory Analysis and QIM for fresh and frozen fish products was held on 12$^{th}$ and 13$^{th}$ March inside the 2004 edition of the III Magister "Ciencia y tecnología de conservación de productos de la pesca" (Science and preservation technology of fish products) that takes place every second yearsand is organised by the Spanish association of Fish Canneries, ANFACO-CECOPESCA, and the University of Vigo.

Projects in which QIM has been used the last 2 years:

**In 2002: -**

Análisis de la cadena de valor del pescado fresco capturado por la flota vasca.

**Funding**: Agriculture and Fisheries Dtm. of the Basque Government.

Programa para facilitar la clasificación del pescado en función de su frescura.

**Funding:** Agriculture and Fisheries Dtm. of the Basque Government.

Labelización de túnidos.

**Funding:** Fundación Kalitatea.

**In 2003:**

Desarrollo de la hibernación como sistema de conservación del pescado fresco.

**Funding:** Agriculture and Fisheries Dtm. of the Basque Government.

Estándares de calidad para el mercado electrónico de los productos pesqueros.

**Funding:** Agriculture and Fisheries Dtm. of the Basque Government.

Estudio para la implantación de la trazabilidad y normalización del pescado fresco en la futura lonja virtual del aeropuerto de Vitoria-Gasteiz.

**Funding:** Agromare-VIA.

In 2002:*Análisis de la cadena de valor del pescado fresco capturado por la flota vasca*.

Funding: Agriculture and Fisheries Dtm. of the Basque Government.

- *Programa para facilitar la clasificación del pescado en función de su frescura*.
  Funding: Agriculture and Fisheries Dtm. of the Basque Government.

- *Labelización de túnidos*.
  Funding: Fundación Kalitatea.

In 2003:*Desarrollo de la hibernación como sistema de conservación del pescado fresco*.

Funding: Agriculture and Fisheries Dtm. of the Basque Government.

- *Estándares de calidad para el mercado electrónico de los productos pesqueros.*
  Funding: Agriculture and Fisheries Dtm. of the Basque Government.

- *Estudio para la implantación de la trazabilidad y normalización del pescado fresco en la futura lonja virtual del aeropuerto de Vitoria-Gasteiz*.
  Funding: Agromare-VIA.

**Participant no.7, IPIMAR,** has disseminated the QIM methodology, both in scientific papers and in theses written by students for a high school graduation or Master of Science Courses. IPIMAR has made contacts with scientists and technicians from other institutes (namely Instituto del Frio, Spain), in order to harmonize the description of some attributes. They are now developing QIM schemes for some fish species currently marketed in Portugal.

### 2.4. Future actions

More newsletters will be published by QIM-EUROFISH. All network participants will be sent the newsletter and contacted when news appear on the homepage.

## 3. PROGRESS REPORT OF WORKPACKAGE 2 – QIM WORKSHOPS

### 3.1. Objectives

The objective of the QIM workshops is to demonstrate the effectiveness and user friendliness of the Quality Index Method to fish processors and users. Furthermore, the objective is also to make the participants so familiar with the method that they can easily implement the method in their business. The aim is to involve the industrial key end-users and to share their practical experience of using QIM.

### 3.2. Description of work

The work in this work package was to organise and held two workshops. Based upon consultation among all partners in the project and any other relevant end-users, the dates,

location and contents of two workshops on QIM were decided. Between 40 to 50 quality managers from fish auctions and fish processors with no experience of using QIM participated in these workshops.

At the workshops, lectures were given and practical sessions held, where the QIM method was used to evaluate the freshness of fish were held. During the practical demonstration the emphasis was put on how QIM can be used and implemented in quality management and trade. The participants learned how to train inspectors in using the method. Industrial key end-users of QIM were contacted and invited to the workshops. The participants were expected to be able incorporate QIM into their part of the chain on a demonstration scale.

### 3.3. Results and deliverables

***Report from workshop in Vigo.*** The workshop in Vigo, Spain was held on January 27th 2004 (see Appendix 2a). The organizing committee was Rosa Fernández (Centro Tecnológico del Mar – fundación CETMAR), Grethe Hyldig (Danish Institute for Fisheries Research, DIFRES), Mercedes Careche and Ana Herrero (CSIC Instituto del Frio).

The interest for the workshop was enormous, 24 participated and 32 wanted to be included on a waiting list in the case that the workshop would be repeated. Because of the interest from the media a press conference was held during the morning. Reporters from two TV stations and from eight newspapers showed up. And they wanted to learn what QIM is all about.

The workshop took place at CETMAR and the practical QIM session at CSIC Instituto del Investigaciones Marinas. Rosa Fernández took care of all the practical things during the workshop. Grethe Hyldig gave all the presentations and Mercedes Careche translated it to Spanish. To help with the seminar there was Ana Herrero and Ditte Green-Petersen. The species in the QIM seminar was Giltheaded Seabream and frozen Hake, there were samples of three different storages time for both fish species. The participant followed the instructions and tried out the QIM evaluation in groups of two or three persons.

After the results from the seminar had been discussed the first examples of the QIM manual in Spanish were presented.

A press conference was held in the morning. Reporters from two local TV stations and from eight newspapers attended. After the QIM workshop, Mercedes Careche was interviewed in a radio program dealing with agro-fish-economy. Mercedes Careche also presented the outcome of the QIM workshop during a meeting at the Spanish Ministry of Agriculture, Fisheries and Food last Friday. Representatives from the Department dealing with Promotion of fishery products and the General Secretariat of Marine fisheries expressed their interest in QIM and they were impressed with the Spanish QIM manual. It is the aim to see if a further collaboration between QIM Eurofish and the Spanish partners involved in the workshop for future QIM activities in Spain can be established.

***Report from workshop at Billingsgate Fish Market***

The Second workshop was organized and held by the management partners RIVO, IFL and DIFRES (see Appendix 2b). This workshop of QIMCHAIN–project was held in collaboration with Adrian Barratt from Seafish Industry Authority at Billingsgate Seafood Training School at Billingsgate market in London on 22nd of June 2004. The Billingsgate Market is the most important

inland market in the UK. Daily arrivals from the coast and overseas ensure a continuity of fresh supplies with some 54 merchants trading in the Market Hall. The main aims of the Billingsgate Seafood Training School is to train young people who wish to undertake a career within the fish industry by re-introducing school programs and benchmark industry-wide training.

About 20 participants were at the workshops from inspection bodies, research associations, fishmongers and retailers.

The workshop started early as the participants were given a guided tour to see the Billingsgate fish market. The variety of fish species transported from all parts of the world was amazing.

Emilía Martinsdóttir, Grethe Hyldig and Rian Schelvis-Smit from QIM-Eurofish gave presentation on different topics. At the practical demonstration the participants showed a lot of interest in trying by themselves to evaluate the freshness of different coded fish samples and compare them to the results of the teachers.

In all, 44 key-users have participated in the two workshops. They now have knowledge and experience in using QIM.

**Report based on information from key-actors**

Following is a short overview of the status of QIM in the partners´ countries based on information from the key-actors.

**Norway** Training in Norway is not done regularily but there is a need for training. Discussion should be started with the European Commission to recommend the QIM, as it is difficult to have the industry to use the method if it is not in regulations. Tracability is a strong point for the atvantages of the QIM method compared to the existingEU scheme. In Norway there is an interest in assessing quality and a need with regard to costumers. The freshness is not a problem and the bigger companies are doing their own evaluation for use in claims. The focus in Norway is now on fresh fish and there is an increasing interest in QIM.

**Portugal** pointed out that differences between countries have to be taken into consideration.. Auctions are interested in QIM, but their opinion is that it is not fast enough to have it on a national level.

**Spain**: The interest comes from fish factories but it is difficult to have the auctions to do something. However, the interest is increasing. The aim is to hold more workshops. Auctions are not evaluating the freshness and not even using the EU-scheme. Quality labels of fish are used by some, therefore there is a great need for QIM, e.g.regarding tuna.

**Germany**: The focus is on frozen fish but wholesalers are interested in QIM, veterinerian inspection as well. A great deal of frozen fish and fillets is imported and the industry would like to use QIM on fillets. Fresh fish is also imported but QIM schemes are not available for the species involved. Interesting collaboration project exist between countries. One is with Greece, and the possibilities are to distribute QIM around the world. In the fish auctions there is nearly no checking of quality, not even EU scheme and there is also obligation of using EU besides QIM.

**Denmark:** Because of research projects, smokehouses have disscovered the importance, they are concerned about how fast the method may be used. The only official requirement for fishmongers

are knowledge about hygene, but it was very useful to introduce QIM. Big supermarkets are interested as well.

**Iceland** During coures for fishmarkets, participants were satisfied with the method nd found it it easy to use. Why do they not use it everyda, then? They are not obliged to use it. They are starting to sell fish through the internet to France, a quality score should be needed for that – but the problem is that they are afraid if the score is not indicating high quality. The interest has increased in the past two years. Fish processors are now interested to show their retailers of fresh fish that they are using a freshness evaluation. Maritec has still interest in the software and the method and is interested in continuation

**Netherlands:** The interest comes from Pefa and they want the QIM in their clock and to have trained people. There is a lack of money so that is where they cut down. All auctions are interested, but do not know how to implement it, and are, therefore, dragging their feets. A Belgium auction is assessing most of the fish by QIM, and have it on the clock, it used to be also the EU gradeing, but are now only using QIM. They are carrying out a project to develop 13 more QIM schemes. Interest is in UK but people there who were used to using Torry are begininning to realise the adcantages of using QIM instead. Auctions in the UK will be trained by Seafish.

The view that auctions should be carefully chosen as well as interested processors has been expressed, i.e. that it is essential ro reach the right parties in the processing chain. If the EU commission contributes to the training, it would definately speed up the implementation. An implementation plan is needed to have the people to use the method.

## 4. PROGRESS REPORT OF WORKPACKAGE 3 QIM-REFERENCE MANUAL

### 4.1. Objectives

The objective is to enhance the European dimension of research results on QIM for use in the European fish sector. The objective must be reached by developing practical guidelines and reference manuals. For a successful application of QIM in the fish sector and to facilitate implementation of the QIM method and stimulate general acceptance of the method, the guidelines and reference manuals must be in all languages of the partner's countries.

Information from the EU-project QimIT must be used (QIM-reference manual for at least 12 species in English) and existing information (already developed and proved QIM-schemes and photos) in each of the partners countries added and computerized.

### 4.2. Description of work

Even though it is stated in the objective it is not mentioned in the description of the work that the manual was also translated into Icelandic, Dutch and Danish. Practical reference manuals and guidelines, which will make the method easily workable and rapid for assessment of fish samples in the fish sector, based on existing information, were translated and printed in 10 languages. The guidelines and the manuals contain information on subjects such as: panel selection, panel training, sampling plan, assessments, facilities and examples of QIM-schemes and pictures.

The text and tables were delivered to all of the participants and the subcontractors for translation in word-format and excel-format. All of them delivered the translated text and tables back to Partner No 1 (coordinator). The software QUARK were used for design and printing of the manuals.

This second year the translation of a reference multilingual manual for education, training and easy application of QIM in the fishing sector was finalised in French. German, Greek, Italian. Translations into French, German and Greek were made by subcontractors, one in France (IFREMER, Nantes, FR), one in Greece (Agricultural University of Athens, Athens, GR) and one in Italy (Dipartimento di Scienze zootecniche, Firenze, IT). The quality of some pages in the Dutch, Spanish and Danish manuals was not sufficient. The pages with the pictures of the fish species were reprinted.

The final printing of the manual in 10 different languages was finalised and sent to all project participants and subcontractors. The Spanish manual was ready before the workshop in Spain in January 2004.

The manuals have been delivered to the representative of DG-12 Isabelle de Froidmont-Görtz. In Appendix 3 the front pages of the manuals are shown in different languages.

***Kolbrun Sveinsdóttir from IFL with the manuals***

### 4.2. Results and deliverables

Printed manuals in 10 languages. The schemes in 10 languages have been delivered to Maritech partner no. 8 for update of the existing software.

## 5. PROGRESS REPORT OF WORKPACKAGE 4 - DISSEMINATION AT FISH EXHIBITIONS

### 5.1. Objectives

The aim is to inform the fish sector of the QIM-method and demonstrate the use of the method.

### 5.2. Description of work

Material for exhibitions and trade fairs must be prepared, press conferences must be arranged and interviews in different media about the QIM methodology must be given. Efforts must be made to co-participate in booths with fish companies and auctions or participate in booths of the partners

already established e.g.WEFTA. At the exhibitions practical demonstrations on how to use QIM must be given.

Dissemination material to be used was selected: poster, handout, QIM-Eurofish brochure "QIM-your ideal tool for quality determination of fish freshness" and a software demo. A new poster about QIM was made, more suitable for exhibitions.

***The following fish exhibitions were used for dissemination in the second year:***

Aquanor Trondheim (12/15-8-2003): presentation of QIM-Eurofish brochure, leaflets were presented at the booth of Maritech

BIM-Irish seafood expo (10/11-9-2003): Presentation of QIM-Eurofish brochure.

VIGO (17/21-9-2003) presentation on QIM by Joop Luten. Participation of QIMCHAIN in the WEFTA booth.

Bremen (12/15-2-2004): Posters, presentation of QIM-Eurofish brochure and demonstration of software.


***Jörg Oehlenschläger from BFAFi and Rósa Jónsdóttir and Guðrún Ólafsdóttir from IFL at the Bremen exhibition in February 2004***

European Seafood Exhibition Brussels 4-6 May 2004. Presentation of QIM manual in 11 European languages. Demonstration of QIM-software and handheld device. Several posters with information on QIM. (see Appendix 4).

### 5.3. Results and deliverables

The results of the demonstration of QIM at the aforementioned fish exhibitions are increased awareness of QIM within the fish sector. The selected exhibitions represent the whole fisheries chains for fishermen and auctions, processing and products. This increased awareness has resulted in invitations for presentations about QIM at auctions, Information materials to be used at the

exhibitions have been posters, the QIM-Eurofish brochure “QIM-your ideal tool for quality determination of fish freshness” and a demo version of the QIM software.

### 5.4. Dissemination of research results

At the QIM-Eurofish website the exhibitions are listed.

## 6. PROGRESS REPORT OF WORKPACKAGE 5 –QIM ARTICLES

### 6.1. Objectives

The aim is to introduce the Quality Index Method (QIM) and to disseminate results on using QIM in the relevant parts of the European fishery chain to facilitate fish trade and improve quality assurance and production management. The aim is also to publish articles in popular journals, read by the fish sector, by fishermen, fish auctions, fish processors, retailers, distributors, and consumers as well as consumer groups to widely disseminate knowledge about QIM in the European fish and consumer group sector. In order to obtain this targeted dissemination, intensive contacts will be made with consumer groups and journals.

### 6.2. Description of work

The participants have written articles about QIM and the development of QIM. These articles must be published in international industry oriented and popular journals. These articles must then be translated into the languages of all partners in the project and published in national fish trade journals. Also, partners and any other relevant end-users must be involved in the distribution of these articles into journals they are familiar with.

### 6.3. Results and deliverables

**International articles:**

*Name of article:* QIM for evaluating fish freshness. *Name of author:* Emilía Martinsdóttir *Name of paper:* INFOFISH International March/April N0. 2/2004

**Scientific articles**

*Name of article:* Quality Index Method – An Objective Tool for Determination of Sensory Quality. *Name of author:* Grethe Hyldig and Ditte Green-Petersen: "Quality Index Method – An Objective Tool for Determination of Sensory Quality." *Name of scientific paper:* Journal of Aquatic Food Product Technology, accepted

Hyldig, G. & Nielsen, J. 2004, "QIM - a tool for determination of fish freshness," in Seafood Quality and Safety. Advances in the New Millennium, F. Shahidi & B. K. Simpson, eds., ScienceTech Publishing Company, St John´s, NL, pp. 81-89.

Nielsen D and Hyldig G. 2004. Influence of handling procedures and biological factors on the QIM evaluation of whole herring (Clupea harengus L.) Food Research International. In press.

**In Danish:**

*Name of article:* Udvikling og demonstration af kvalitetsindeksmetoden (QIM) til kvalitetsstyring I den Europæiske fiskesektor. *Name of author:* Grethe Hyldig Quality." *Name of paper:* Under Overfladen 2004, 39:13-15

*Name of article:* Anvend kvalitetsindeksmetoden og få et mål for hvor frisk fisken er *Name of author:* Grethe Hyldig Quality." *Name of paper:* Fisk og Hav Oktober 2004.

**In Dutch:**

*Name of article:* . KIM geeft info over kwaliteit in hele visketen. *Name of author:* rian Schelvis-Smit." *Name of paper:* Visserij nieuws, 7 mei 2004. p 10.

**In Icelandic:**

*Name of article:* Þarf ad meta ferskleika fisks *Name of author:* Emilía Martinsdóttir *Name of paper:* Aegir , 2004, 7, p. 14 to 17.

**In German.**

*Name of article:* Die Qualitäts-Index-Methode (QIM), ein verlässliches Instrument zur sensorischen Bewertung der Frische von Fisch *Name of author:* Jörg Oehlenschläger *Name of paper:* Informationen für die Fischwirtschaft aus der Fischereiforschung, in press 2004

**In Norwegian**

*Name of article:* QIM-Dokumenterer produktets ferskhet *Name of author:* Nils Kristian Sørensen, Heidi Nilsen and Leif Akse *Name of paper*: Fish - industry & market" July 2004

**In Portuguese**

*Name of article:* Aplicação do índice de qualidade (QIM) na avaliação da frescura do oescado ferskhet *Name of author:* Maria Leonor Nunes e Irineu Batista *Name of paper*: IPIPMAR Dívulgação market" No 29. March 2004.

**In Spanish:**

Partner no. 7 AZTI has produced a publication on Sensory evaluation of fish freshness in Spanish and distributed to the following media:

- Electronic news release: *Basque Research*
- Agrofishing divulgative journal: *Sustrai*
- Spanish fish trade journals: *Europa Azul* and *Rutas Pesqueras*.

Pérez-Villarreal, B.. Sensory evaluation of fish freshness, Journal Productos del Mar, Sept/Oct 2004

Through the QIM-Eurofish website a contact in Argentina requested information about QIM. This is used for an article in a Argentinean fish trade journal: Cuán fresco está el fresco? Revista Redes, de la industria pesquera Argentina. N° 135 mar/abr 2004. p80-84.

**Copies of the publications are in Appendix 5**

Partners 1, 2 and 3 have written a chapter in a book scheduled for publication in 2004.

G. Hyldig, A.Bremner, E. Martinsdóttir and Rian Schelvis-Smit, 2004. Quality Index Methods in "Sensory Evaluation of Muscle Food", eds. Y. H. Hui, A Carbonelle, P. Coggins, G. Hyldig, L. McKee, O. Sanders, , DEStech Publications, Inc., Lancaster, Pennsylvania

Furthermore, QIM is mentioned in several scientific articles when used as the reference method to assess fish freshness or a part of the referenced methodology.

***Publications where QIM is part of the reported methodology :***

Development of a Quality Index Method (QIM) for maatjes herring stored in air and under modified atmosphere. Authors: Ulrike Lyhs and Rian Schelvis-Smit. Submitted for publication.

Esaiassen, M, Nilsen H, Joensen S, Skjerdal T, Carlehög M, Eilertsen G, Gundersen B and Elvevoll E (2004) Effects of Catching Method on Quality Changes during Storage of Cod (Gadhus Morhua). Accepted for publication in Lebensmittel-Wissenschaft und- Technologie.

Heia K, Esaiassen M, Nilsen H and Sigernes F. (2003) Visible spectroscopy – Evaluation of storage time of ice stored cod and frozen stored hake. In Quality of Fish from Catch to Consumer. Labelling, Monitoring and Traceability. Eds.: JB Luten, J Oehlenschläger and G Ólafsdóttir, Wageningen Academic Publishers, p 201-209, ISBN 9076998140.

Heide M, Johnsen O, Tobiassen T, Østli J and Hamnvik S (2003) Experienced quality and image of farmed and fed cod in the Norwegian and English restaurant segment. Report 8/2003 from Fiskeriforskning (in Norwegian).

Nilsen H, Esaiassen M, Heia K and Sigernes F. (2002) Visible / Near-Infrared spectroscopy - a new tool for the evaluation of fish freshness? Journal of Food Science, 67(5), 1821-1826.

Nilsen H and Esaiassen M (2003) How Fresh is the Fish ?- Evaluation of Freshness by Means of VIS/NIR Spectroscopy, Proceedings of the First Joint Trans-Atlantic Fisheries Technology Conference (TAFT), 33rd WEFTA Meeting And 48th Atlantic Fisheries Technology Conference, 11th-14th June 2003, Reykjavik – Iceland, p 138-140.

Nilsen H and Esaiassen M. (2004) Predicting sensory score of cod (Gadus morhua) from visible spectroscopy. Submitted to Lebensmittel-Wissenschaft und- Technologie.

## 7. PROGRESS REPORT OF WORKPACKAGE 6 –QIM WEB-SITE

### 7.1. Objectives

The objective is to introduce the Quality Index Method (QIM), stimulate implementation and disseminate results on using QIM in the relevant parts of the European fishery chain via a QIM web site on the internet.

The web-site must be an active forum for the QIM partners and other relevant stake holders.

The web-site must have detailed information on QIM, covering the schemes for the different species and in various languages.

The web-site must also be used for dissemination of this accompanying measure aims, progress and relevant results

**7.2. Description of work**

A web-site that offers information to all interested parties about QIM and status and possibilities of using QIM has been created and maintained by partner 2 from the beginning of the project and contains information about the project, its status, progress and other relevant information. The existing schemes in English and photos are now available on the web-site.

This information has been integrated in the website of QIM Eurofish. All consortium members have made contributions to make the relevant up to date information available.

A new stats system has been deployed by the hosting provider, and data from August 2003 to August 2004 is purged. From September 2003 incremental counting is available. Unique Visitor is a unique visitor that has made at least 1 hit on 1 page of your web site during the current period shown by the report. If this host make several visits during this period, it is counted only once.

**Results and deliverables**

Key information:

| | | **Unique visitors** | **Numbers of visits** | **Pages** |
|---|---|---|---|---|
| Sept | 2003 | 333 | 531 | 3032 |
| Oct. | 2003 | 466 | 919 | 3593 |
| Nov. | 2003 | 520 | 985 | 3761 |
| Dec. | 2003 | 491 | 928 | 4608 |
| Jan. | 2004 | 459 | 920 | 3741 |
| Feb | 2004 | 455 | 806 | 2899 |
| Mar | 2004 | 466 | 1200 | 5907 |
| Apr | 2004 | 415 | 1157 | 5951 |
| May | 2004 | 439 | 1122 | 6514 |
| Jun | 2004 | 378 | 875 | 6175 |
| Jul | 2004 | 324 | 801 | 4324 |
| Aug | 2004 | 361 | 872 | 4241 |
| Total | | 5107 | 11116 | 54746 |
| Average | | 426 | 926 | 4562 |

The visitors on the web-site are coming from all over the world. Visitors are from many of the European countries. France, Spain Germany, Iceland Norway, Denmark, UK, Italy, Greece, Estonia, Belgium but also from other parts of the world: Panama, Canada, Australia, Argentina and Brazil. In Appendix 6 an example of the statistics of the visits to the homepage are shown (see appendix 6)

**Dissemination of research results**

Web-site used as an active platform for the network. Widespread knowledge about QIM in the fish sector, authorities and the scientific community.

**7.3. Results and deliverables**

Dissemination of all activities of the project on the web-site

**7.4. Future actions** The website will be updated and maintained after the lifetime of the accompanying measure by the QIM Eurofish alliance.

## 8. PROJECT MANAGEMENT

The Icelandic Fisheries Laboratories, IFL, has been carrying out the project co-ordination. The co-ordinator of the project is responsible for the overall management of the project and is the central contact person for all communications. The co-ordinator of this project provides the Commission with an annual progress report and cost statements. Partners from QIM Eurofish alliance are responsible the work-packages. To ensure effective management, a management team was formed, consisting of Emilía Martinsdóttir, the coordinator, Joop Luten and Rian Schelvis-Smit, RIVO and Grethe Hyldig, DIFRES. The management team met 3 times during the second year, Oct. 23rd, 2003 in Copenhagen, Feb. 5-6th, 2004 in Aarhus, Denmark and June 21st, 2004, in London. The daily communications between the meetings have been via e-mail networks. A collective meeting of all partners in the accompanying measure was held on May 5th 2004. The minutes of the meetings are in Appendix 7. The partners have kept record of individual time and expenses and provided the co-ordinator with this nformation.

## 9. PUBLICATIONS

Hyldig G. and Green-Petersen, D., “Quality Index Method – An Objective Tool for Determination of Sensory Quality J. of Aquatic Food Product Technol. Accepted.

Hyldig G., ”Anvend kvalitetsindeksmetoden og få et mål for hvor frisk fisken er” Fisk og Hav Okt. 2004.

Hyldig G., ”Udvikling og demonstration af kvalitetsindeksmetoden (QIM) til kvalitetsstyring I den Europæiske fiskesektor” Under Overfladen 2004, 39:13-15

Martinsdóttir E., “QIM for evaluating fish freshness”. INFOFISH International March/April N0. 2/2004

Martinsdóttir E.,” Þarf ad meta ferskleika fisks”. Aegir , 2004, 7, p. 14 to 17.

Nunes M.L. and I. Batista ”Aplicação do índice de qualidade (QIM) na avaliação da frescura do oescado”, IPIPMAR Dívulgação market" No 29. March 2004.

Oehlenschläger J., „Die Qualitäts-Index-Methode (QIM), ein verlässliches Instrument zur sensorischen Bewertung der Frische von Fisc“. Informationen für die Fischwirtschaft aus der Fischereiforschung, Aug. 2004.

Pérez-Villarreal, B. Sensory evaluation of fish freshness, Journal Productos del Mar , Sept/Oct 2004
Schelvis-Smit R., ”KIM geeft info over kwaliteit in hele visketen”. Visserij nieuws, 7 mei 2004. p 10.

Sørensen N.K., H. Nilsen and L. Akse,“QIM-Dokumenterer produktets ferskhet“. Fish - industry & market" July 2004.

Through the QIM-Eurofish website, “Cuán fresco está el fresco? Revista Redes, de la industria pesquera Argentina”. N° 135 mar/abr 2004. p80-84.

## 10. APPENDICES

**Appendix 1.**

1a. Newsletter

1b. Invitations to International QIM-workshop

1c. Meetings with EAFPA

1d. Programme+presentations QIM-workshop May 5$^{th}$ 2004

1e.Training report from SFIA

1f. Presentation +meeting report NOVA/PVis

1g. Leaflet on QIM from USA

1h. Presentation UNU

1i. Presentation Fisheries Directorate Iceland

1j Presentation Meeting of Icelandic fish exporter and Belgian retailer

1k. Presentation: Nordic Workshop in Sensory Science

**Appendix 2.** Reports from workshops

2.a. Vigo, Spain

2.b. Billingsgate, London

**Appendix 3.** Examples of frontpages of the multilingual manual

**Appendix 4.** Distributed material at exhibitions

**Appendix 5.** Copies of published articles

**Appendix 6.** Statistics of visits to the web-site

**Appendix 7.** Minutes of project meetings and project management meetings