AQUA EXCEL 2020

AQUAculture infrastructures for EXCELlence in European fish research towards 2020 — AQUAEXCEL2020

D2.5 – Impact analysis

Elin Kjørsvik (NTNU), Marieke Reuver, Darren Clarke, Claudia Junge (AQUATT), Catherine Pons, Alexandra Neyts (EATiP)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652831. This publication reflects only the view of the author, and the European Commission cannot be held responsible for any use which may be made of the information contained therein

Executive Summary

Objectives
The objective of deliverable 2.5 (M24) is to assess the impacts of the TNA actions and the results of knowledge transfer on target users to evaluate the overall effect and impact of AQUAEXCEL2020 on the aquaculture industry.

Rationale: Positive interactions between (often publicly-owned) RIs and industry stakeholders are necessary to maximise the potential of existing aquaculture RIs, to fully exploit the knowledge they create and provide the conditions required for uptake and impact. The first Impact Analysis report D2.5 (M24) describes the actions taken to analyse the impact through measuring commercial interest and relevance of results from the AQUAEXCEL and AQUAEXCEL2020 projects. Impact analysis is carried out at all project levels, from Trans National Access (TNA), Joint Research Activities (JRA) to Networking Activities (NA). The next Impact Analysis report (D2.5, due in M58) will indicate the effectiveness of knowledge transfer and identify aspects of high relevance to industry. Successful innovation depends on making use of the knowledge and associated technology, and requires excellent collaboration. To facilitate successful transfer and exploitation of the results (OUTPUTS) from AQUAEXCEL2020, a system for evaluating and monitoring impact was established.

Main Results:
AQUAEXCEL2020 established an interactive advisory body; the Industry & Research Advisory Panel (IRAP), which provides recommendations on current aquaculture industry needs and evaluates project results based on these needs. The IRAP members evaluated the available results (OUTPUTS) of both the AQUAEXCEL and AQUAEXCEL2020 projects. For the first brokerage event, the IRAP selected four OUTPUTS from the AQUAEXCEL project and four from AQUAEXCEL2020 for possible transfer, and seven of these were presented at the brokerage event (see Annex 2; the flyer for the event). Many in the audience at the brokerage event participated in the electronic KAHOOT quiz for the immediate feedback on the relevance and expected impacts of the presented OUTPUTS, and a feedback questionnaire (D2.2) was sent to all presenters after the brokerage event (Annex 3; the feedback questionnaire).

All participants found the format of the brokerage event and its presentations appropriate, and almost all were likely to attend a similar future event. A large majority found the OUTPUTS highly relevant and interesting for industry. The evaluation system proved to be adequate for the impact analysis.

Authors/Teams involved: The WP2 partners (Elin Kjorsvik and Alexandra Neyts – NTNU; Marieke Reuver, Claudia Junge and Darren Clarke – AQUATT; Courtney Hough and Catherine Pons - EATiP) and the members of the AQUAEXCEL2020 Industry and Research Advisory Panel (IRAP).

Table of contents

Executive Summary 2
Table of contents 3
1. THE IMPACT ANALYSIS 4
1.1. Impact evaluation system 4
1.2. Testing of the impact analysis system 5
Conclusion 8
Glossary 9
Document information 10
Annex 1: Deliverable Check list 11
Annex 2: AQUAEXCEL2020 brokerage event from research innovation to industry application 12
Annex 3: D2.2 Feedback (brokerage) template 13

1. THE IMPACT ANALYSIS

1.1. Impact evaluation system

Successful innovation depends on uptake of the knowledge and associated technology, and requires excellent collaboration. Task 2.4 of AQUAEXCEL[2020] will monitor the success and effectiveness of the transfer of knowledge generated in AQUAEXCEL[2020] towards the aquaculture industry. This will be done at the individual project activity level (from TNA, JRA and NA) and in the project as a whole. All contributors to the brokerage events will complete a feedback sheet, indicating the companies that have shown interest in the results, the key discussion points and the planned industry collaborative actions. These will give an indication of the impact AQUAEXCEL[2020] has on aquaculture developments, and will stimulate a more efficient uptake of knowledge and technology.

To facilitate successful transfer and exploitation of the results (OUTPUTS) from AQUAEXCEL[2020], the following system for evaluating and monitoring impact was established:

1. An AQUAEXCEL[2020] Industry and Research Advisory Panel/IRAP was appointed in the autumn 2016 (**Deliverable 2.1**).
2. A template for the "AE[2020] Project Catalogue" was constructed by AQUATT and the WP2 partners to facilitate successful transfer and exploitation of the OUTPUTS **(Deliverable 2.4**). This OUTPUT collection system will be used to collect and analyse all outputs, both from the project itself, as well as from the additional research projects carried out by external researchers in the TNA programme. Each individual involved in delivery of an AQUAEXCEL[2020] OUTPUT is expected to complete an OUTPUT collection form providing detailed information, amongst others on potential end users and applications, as well as expected impacts.
3. An "AE[2020] Project Catalogue Evaluation form" was also established, where all research activities during AQUAEXCEL[2020] will be catalogued and evaluated by the IRAP. The TNA projects from the previous AQUAEXCEL period were first listed and evaluated for industry relevance by the IRAP.
4. To create a forum for engagement and exchange between researchers and industry stakeholders who might benefit from the AQUAEXCEL[2020] OUTPUTS, the first in a series of brokerage events was organised during the "Aquaculture Europe 2017" conference in Dubrovnik, 17 – 20 October 2017 (**Deliverable 2.3/M24**). In these events, TNA projects and AQUAEXCEL[2020] research achieving top ranking from the IRAP are presented alongside presentations of the main research activities and results obtained by AQUAEXCEL[2020].
5. A template "Feedback questionnaire" (**Deliverable 2.2, Annex 3**) was developed by the main WP2 partners and the IRAP members, and was revised again after the first brokerage event. Attendees at the brokerage events completed a feedback sheet, indicating whether their company was interested in the results, and detailing the key discussion points and the planned industry collaborative actions. These will give an indication of the impact AQUAEXCEL[2020] has on the aquaculture sector, and will stimulate a more efficient uptake of knowledge and technology. The feedback questions reflect the objectives of the project, in order to monitor the success and effectiveness of the transfer of knowledge generated in AQUAEXCEL[2020]. The feedback form is electronic and was designed to be easy to complete and return. The

electronic feedback form is developed by NTNU for all the contributors at the brokerage events.

6. In order to obtain the immediate feedback from the audience on the relevance of the presented research, many of the brokerage participants took part in a KAHOOT session at the end of the brokerage. KAHOOT is an online tool to measure feedback and perception on defined issues and will be used as a basis to measure impact. Other means of measuring impact of the industry brokerage events will be explored as well, such as follow-up meetings and actions with selected industry stakeholders This will be repeated in all brokerage events.
7. An overview of actual implementations of results and possible patents, products, etc will be obtained from the different project leaders in AQUAEXCEL[2020] by the end of the impact analysis.

These aspects will mainly be used in the final impact analysis of all the project activities, and the IRAP will be an important contributor to this analysis.

1.2. Testing of the impact analysis system

After collection of all OUTPUTS from both FP7-AQUAEXCEL and H2020-AQUAEXCEL[2020] so far, these OUTPUTS were presented to the IRAP through means of an IRAP Evaluation Template. This Excel document contains detailed information on each OUTPUT such as a concise description, potential end users and applications, IP, etc. The IRAP members convened at several face-to-face meetings to evaluate all OUTPUTS and selected the OUTPUTS which they thought could have high potential impact on the aquaculture industry.
In advance of the first brokerage event, the IRAP selected four OUTPUTS from the AQUAEXCEL project and four from AQUAEXCEL[2020] as having potential high impact on the aquaculture industry. Seven of these eight OUTPUTS were presented at the first brokerage event (see attached flyer for the event; Annex 2). The IRAP concluded that the Evaluation Template used was useful and appropriate for the listing and evaluation of all OUTPUTS.

Collaboration within the framework of WP2 largely occurs between the project partners (and associated TNA users), the European Aquaculture Technology and Innovation Platform (EATiP) as the representative of the European aquaculture industry, and the IRAP for the purposes of dissemination and information sharing between AQUAEXCEL[2020] and the industry. To create a forum for engagement and further exchange between researchers and industry stakeholders who might benefit from the AQUAEXCEL[2020] OUTPUTS, the first in a series of brokerage events was organised during the “Aquaculture Europe 2017” conference in Dubrovnik, 17 – 20 October 2017 (Deliverable 2.3/M24). The most relevant TNA and AQUAEXCEL[2020] OUTPUTS achieving top ranking from the IRAP were presented alongside presentations of the main research activities and results obtained by AQUAEXCEL[2020] so far.

The KAHOOT survey showed that almost all participants found the format of the brokerage event and its presentations appropriate, and almost all answered that they were likely or very likely to attend a similar future event.

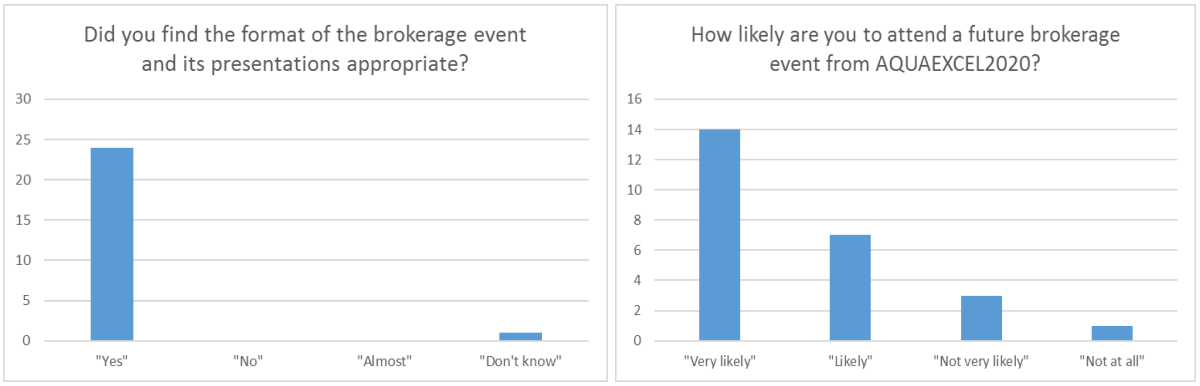


Figure 1. Analysis results from the KAHOOT survey on the first brokerage event in Dubrovnik, October 2017 (n=25).

A large majority of the participants found the presentations highly relevant and interesting for industry, as exemplified in Figure 2 from the KAHOOT survey. The feedback template form was covering the main objectives of the study. Both the KAHOOT survey and the feedback form will be revised as needed. When asked about possible further contact with the speakers, most people answered that they would prefer contact by e-mail (Figure 3). However, during the coffee break after the session, quite a few contacted the speakers directly and showed their interest. No specific information about the number of people contacting the speakers directly were given in the later questionnaire.

Response from the feedback questionnaire one month after the brokerage event, showed that two of the three TNA-speakers had replied. They had been contacted by 7 – 11 persons from different sectors of aquaculture industry and research. Although no specific plans were made at this point, the discussions were related to possible collaboration in research or industry development, a suggestion for a start-up company, and for co-writing articles. Although number of replies to the feedback questionnaire are still low, the questionnaire was found to give good indications on type of impact these projects will have. Vital for the further analysis will be more respondents and a follow-up contact a year later.

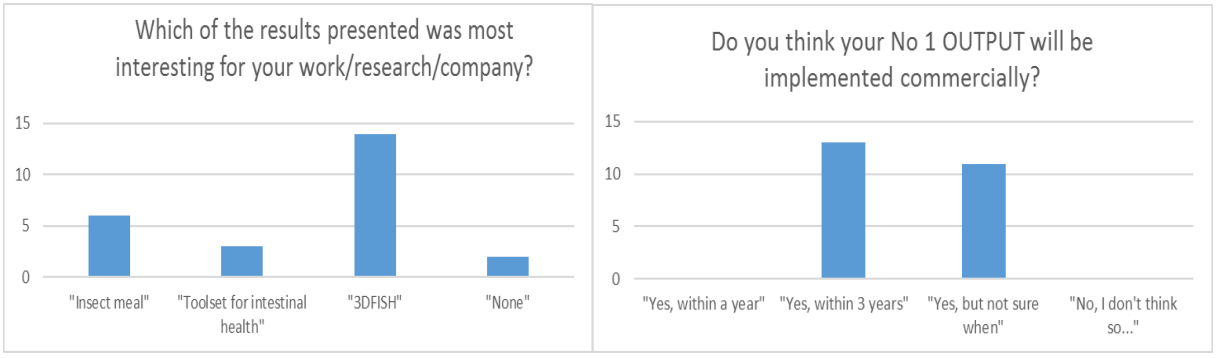


Figure 2. Analysis results about the industry relevance of presented OUTPUTS, from the KAHOOT survey during the first brokerage event in Dubrovnik, October 2017 (n=24-25).

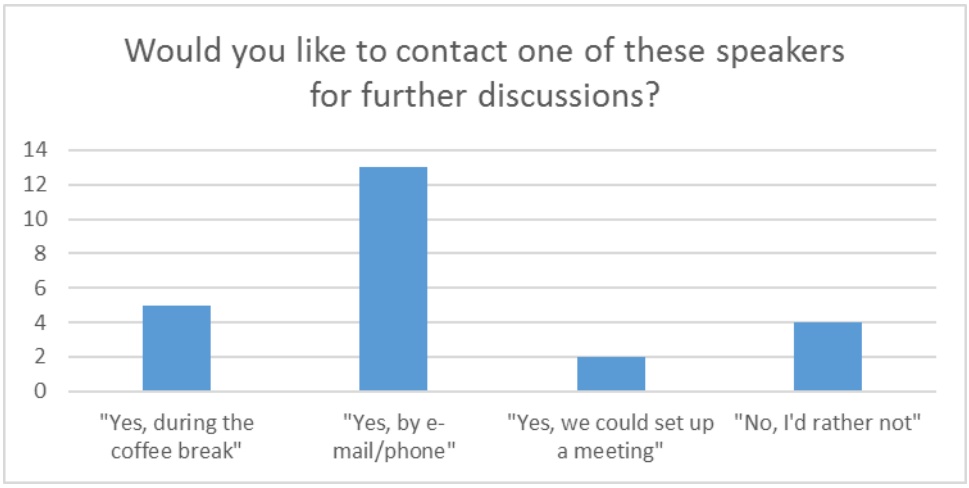


Figure 3. KAHOOT survey results on possible future follow-up on presented OUTPUTS, showing preferred means of contact from the first brokerage event in Dubrovnik, October 2017 (n=25).

Conclusion

To assess the effects and impact of AQUAEXCEL2020 on target users and the European aquaculture industry overall, several activities have been carried out within the framework of WP2.

The main means of targeted OUTPUT transfer so far has been the first brokerage event, which took place in October 2017 in Dubrovnik (Croatia). In advance of the event, the IRAP selected the OUTPUTS which were deemed to have high potential for impact. Impact analysis on this transfer activity has been carried out through a KAHOOT survey at the event itself, which was considered an innovative and effective to obtain good insights into actual end user perceptions of the OUTPUTS and their potential.

The current impact analysis system will remain as the methodology for evaluating OUTPUTS from AQUAEXCEL2020 presented at the industry brokerage events. It might be revised after the next brokerage events and IRAP meetings, if deemed necessary. The final impact analysis will be done towards the end of the project.

Glossary

AQUAEXCEL^{2020}: AQUAculture Infrastructures for EXCELlence in European Fish Research towards 2020

TNA projects: “TransNational Access” projects, those projects awarded grants for a research visit to one of the infrastructure laboratories in AQUAEXCEL^{2020}.

Document information

EU Project N°	652831	Acronym	AQUAEXCEL2020
Full Title	AQUAculture Infrastructures for EXCELlence in European Fish Research towards 2020		
Project website	www.aquaexcel.eu		

Deliverable	N°	D2.5	Title	Impact analysis
Work Package	N°	2	Title	Fostering Innovation from RIs

Date of delivery	Contractual	(Month 24)	Actual	10/07/2018 (Month 34)
Dissemination level	X	PU Public, fully open, e.g. web		
		CO Confidential, restricted under conditions set out in Model Grant Agreement		
		CI Classified, information as referred to in Commission Decision 2001/844/EC.		

Authors (Partner)	Elin Kjorsvik and Alexandra Neyts (NTNU) Marieke Reuver, Claudia Junge, Darren Clarke (AQUATT) Courtney Hough and Catherine Pons – EATiP IRAP experts			
Responsible Author	Name	Elin Kjørsvik	Email	Elin.Kjorsvik@ntnu.no

Version log			
Issue Date	Revision N°	Author	Change
22/03/2018	0	Elin Kjørsvik	Ex: first version
15/06/2018	1	AquaTT/Marieke Reuver	
03/07/2018	2	Elin Kjørsvik	

Annex 1: Deliverable Check list

(to be checked by the "Deliverable leader")

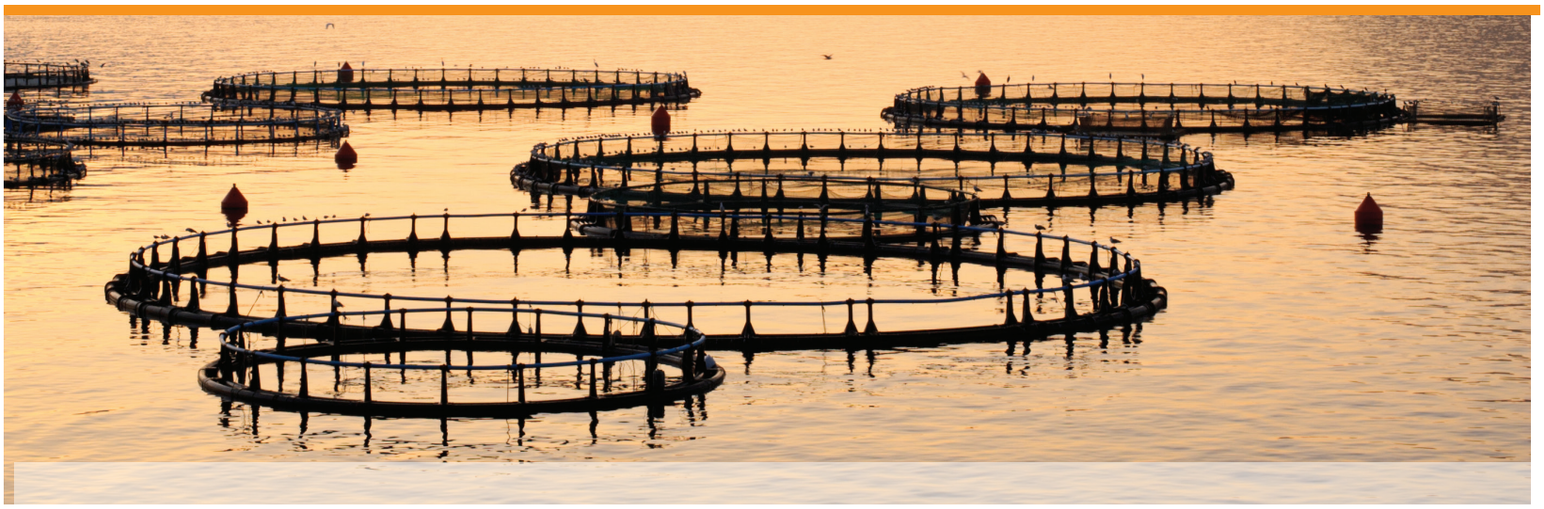
	Check list		Comments
BEFORE	I have checked the due date and have planned completion in due time		*Please inform Management Team of any foreseen delays*
	The title corresponds to the title in the DOW		*If not please inform the Management Team with justification*
	The dissemination level corresponds to that indicated in the DOW		
	The contributors (authors) correspond to those indicated in the DOW		
	The Table of Contents has been validated with the Activity Leader		*Please validate the Table of Content with your Activity Leader before drafting the deliverable*
	I am using the AQUAEXCEL2020 deliverable template (title page, styles etc)		*Available in "Useful Documents" on the collaborative workspace*
The draft is ready			
AFTER	I have written a good summary at the beginning of the Deliverable		*A 1-2 pages maximum summary is mandatory (not formal but really informative on the content of the Deliverable)*
	The deliverable has been reviewed by all contributors (authors)		*Make sure all contributors have reviewed and approved the final version of the deliverable. You should leave sufficient time for this validation.*
	I have done a spell check and had the English verified		
	I have sent the final version to the WP Leader, to the 2nd Reviewer and to the Project coordinator (cc to the project manager) for approval		*Send the final draft to your WPLeader, the 2nd Reviewer and the coordinator with cc to the project manager on the 1st day of the due month and leave 2 weeks for feedback. Inform the reviewers of the changes (if any) you have made to address their comments. Once validated by the 2 reviewers and the coordinator, send the final version to the Project Manager who will then submit it to the EC.*

Annex 2: AQUAEXCEL2020 brokerage event from research innovation to industry application

Thursday 19 October 2017, 14:30-17:30
at Aquaculture Europe 2017
Tajan room, VALAMAR Resort, Dubrovnik (Croatia)

AQUA EXCEL 2020

AQUAculture infrastructures for EXCELlence in European fish research towards 2020 – AQUAEXCEL^{2020}



AQUAEXCEL^{2020} BROKERAGE EVENT

FROM RESEARCH INNOVATION TO INDUSTRY APPLICATION

Are you working in the European aquaculture industry, and would you like to hear about the latest innovative research findings which can be applied to the aquaculture industry?

Would you like to contribute to the discussion on what industry expects from aquaculture research?

Curious to know how you can access top-class European aquaculture research infrastructures to carry out your applied research, fully funded by the European Commission?

Join us at the AQUAEXCEL^{2020} brokerage event to engage with aquaculture industry stakeholders and researchers!

Thursday 19 October 2017, 14:30-17:30
at Aquaculture Europe 2017
Tajan room, VALAMAR Resort, Dubrovnik (Croatia)

This event, organised by EATiP and AquaTT, will create a forum for engagement and exchange between researchers and potential industry beneficiaries of the research results generated from the AQUAEXCEL^{2020} project and its precursor, the AQUAEXCEL project.

REGISTRATION

You are invited to register in advance by emailing **secretariat@eatip.eu** with your name and contact details, but participants are also welcome to join on the day. For more information visit **www.aquaexcel2020.eu** or say hello at the **AquaTT (no. 88/89)** or **EATiP (no. 67) booths** at Aquaculture Europe 2017.

European Aquaculture Technology and Innovation Platform

AQUATT Science. Communication. Knowledge. Innovation.

WWW.AQUAEXCEL2020.EU

AQUAEXCEL^{2020} BROKERAGE EVENT PROGRAMME

INTRODUCTION TO AQUAEXCEL^{2020}	
14:30 - 14:35	**Welcome** Mr Courtney Hough (European Aquaculture Technology and Innovation Platform, EATiP)
14:35 - 14:40	**Introducing AQUAEXCEL^{2020} and its Relevance to the Aquaculture Industry** Dr Marc Vandeputte (Institut national de la recherche agronomique, INRA)
14:40 - 14:50	**Access to EU Aquaculture Research Infrastructures – the AQUAEXCEL^{2020} TNA Programme** TBC (On behalf of Mr John Bostock, the University of Stirling, UoS)
14:50 - 15:00	**Fostering Innovation from Research Infrastructures** • **The AQUAEXCEL^{2020} Knowledge OUTPUT Pathway to Industry Application** Dr Claudia Junge (AquaTT) • **The Industry & Research Advisory Panel (IRAP) and their Critical Role in AQUAEXCEL^{2020}** Ms Catherine Pons (EATiP)
SELECTED AQUAEXCEL(^{2020}) TNA OUTPUTS	
15:00 - 15:15	**Insect Meal to Feed Juvenile European Sea Bass** Dr Laura Gasco (University of Turin, UNITO)
15:15 - 15:30	**A Toolset to Assess Intestinal Health Benefits of Feed Additives** Dr Jaume Perez-Sánchez (Consejo Superior de Investigaciones Científicas, CSIC)
15:30 - 15:45	**3DFISH – 3D Fish Monitoring System for Aquaculture** Dr Petr Císař (University of South Bohemia, JU)
15:45 - 16:10	**COFFEE BREAK**
AQUAEXCEL^{2020} ACTIVITIES OF BENEFIT TO THE AQUACULTURE INDUSTRY	
16:10 - 16:45	**Standardisation and Maintenance of Fishlines** Dr Marc Vandeputte (INRA; on behalf of Dr Edwige Quillet, INRA) **Virtual Laboratories and Modelling Tools for Designing Experiments in Aquaculture Research Facilities** Dr Hans V. Bjelland (SINTEF Ocean AS; on behalf of Dr Gunnar Senneset, SINTEF Ocean AS) **Experimental Fish Management** Dr Åsa Espmark (Nofima) **New Aquaculture Training Courses and an Overview of the Online European Aquaculture Facility Directory** Ms Marieke Reuver (AquaTT)
WHAT DOES THE AQUACULTURE INDUSTRY IN GENERAL EXPECT FROM RESEARCH?	
16:45 - 16:55	**Perspectives from the Industry** Mr Kjell Maroni (Norwegian Seafood Research Fund, FHF)
16:55 - 17:25	**Industry Panel Discussion – Actions and Industry Interactions** Moderators: Mr Courtney Hough / Ms Catherine Pons (EATiP) Chairs: Mr Kjell Maroni (FHF) Dr Marc Vandeputte (INRA)
17:25 - 17:30	**Meeting close**

CONTACT US

Coordination: Marc.Vandeputte@inra.fr
IRAP & Brokerage: secretariat@eatip.eu
Project Management: Ronan.Pendu@inra.fr
Communication & Press: Marieke@aquatt.ie

WWW.AQUAEXCEL2020.EU
@AQUAEXCEL2020

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement no. 652831. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

Designed & developed by AquaTT

Annex 3: D2.2 Feedback (brokerage) template

AQUAEXCEL2020 Brokerage Event – Feedback Sheet

The answers will be submitted to AQUAEXCEL2020 project.
If you have questions, please contact elin.kjorsvik@ntnu.no

OUTPUT ID *

Output title

Name *

First Last

Email *

Identified end users/stakeholders (type) – FACILITIES AND PRODUCTION

- [ ] Aquaculture Facility Managers
- [ ] Aquaculture Production Managers
- [ ] Aquaculture Producers
- [ ] Aquaculture Transport Companies
- [ ] Fish Processing Companies
- [ ] Export companies

Identified end users/stakeholders (type) – TECHNOLOGY

- [ ] Aquaculture Technology Manufacturers/Producers
- [ ] Aquaculture Technology Suppliers
- [ ] Microprocessor Manufacturers
- [ ] ICT Solutions Providers
- [ ] Companies developing or using modelling tools for design and operations planning

Identified end users/stakeholders (type) – FEED

- [ ] Feed Suppliers/Providers
- [ ] Feed Manufacturers/Producers
- [ ] Feed Additive Companies
- [ ] Feed Companies

Identified end users/stakeholders (type) – HEALTH

- [ ] Fish Veterinarians
- [ ] Fish Pathologists
- [ ] Animal Health Authorities
- [ ] Pharmaceutical Companies
- [ ] Vaccine Producers

Identified end users/stakeholders (type) – BREEDING AND HUSBANDRY

- [ ]

- [ ] Breeding Companies
- [ ] Ongrowing Companies
- [ ] Broodstock Suppliers
- [ ] Aquaculture Hatchery Managers
- [ ] Aquaculture Farms

Identified end users/stakeholders (type) - OTHER

- [ ] Regulatory Authorities
- [ ] Certifiers for Quality/Organic Status
- [ ] Aquaculture Marketing Professionals
- [ ] Service Suppliers
- [ ] Public Service Providers
- [ ] Consulting Companies
- [ ] Private R&D Companies
- [ ] Other

AQUAEXCEL2020 Brokerage Event – Feedback Sheet

The answers will be submitted to AQUAEXCEL2020 project.
If you have questions, please contact elin.kjorsvik@ntnu.no

Please provide feedback for each end user/stakeholder separately

Name of end user/stakeholder 1 (e.g.company, organisation, R&D institute) showing interest: *

Country of end user/stakeholder 1: *

Key discussion points (1) *

Planned collaborative action (type) (1) *

- [ ] Meeting/discuss
- [ ] Research project
- [ ] Student project
- [ ] Prototyping / innovation project
- [ ] Investment
- [ ] Other

Start of collaborative activities (1) *

- ( ) in < 6 months
- ( ) 6-12 months
- ( ) > 1 year
- ( ) undefined

Assumed impact of collaboration (1) *

- [ ] New project
- [ ] New/improved protocol
- [ ] New/improved technology
- [ ] Application to new species
- [ ] New/improved product
- [ ] New company
- [ ] Other activiy

If other, please specify:

- [ ] Add another end user/stakeholder (2)

AQUAEXCEL2020 Brokerage Event – Feedback Sheet

The answers will be submitted to AQUAEXCEL2020 project.
If you have questions, please contact elin.kjorsvik@ntnu.no

Please provide feedback for each end user/stakeholder separately

Name of end user/stakeholder 2 (e.g.company, organisation, R&D institute) showing interest: *

Country of end user/stakeholder 2: *

Key discussion points (2) *

Planned collaborative action (type) (2) *

- [ ] Meeting/discuss
- [ ] Research project
- [ ] Student project
- [ ] Prototyping / innovation project
- [ ] Investment
- [ ] Other

Assumed impact of collaboration (2) *

- [ ] New project
- [ ] New/improved protocol
- [ ] New/improved technology
- [ ] Application to new species
- [ ] New/improved product
- [ ] New company
- [ ] Other activiy

Start of collaborative activities (2) *

- ( ) in < 6 months
- ( ) 6-12 months
- ( ) > 1 year
- ( ) undefined

Are there other stakeholders/end users who expressed interest? Please state their name(s), planned action(s), impact(s) and time frame here:

AQUAEXCEL2020 Brokerage Event – Feedback Sheet

The answers will be submitted to AQUAEXCEL2020 project.
If you have questions, please contact elin.kjorsvik@ntnu.no

Describe the expected result of collaboration: *

Do you plan to apply for an AQUAEXCEL2020 TNA project in the future? *

Thank you for your feedback. Do you have any other comments or recommendations?