Professionals Knowledge Transfer:
Thematic workshops on eco-efficient practices in aquaculture

WP3.3
Target audience

| AA Joint Secretariat | X |
| Partnership         | X |
| Associated partners | X |
| Media               | X |
| Public              | X |

Means of delivery

| E-mail       | X |
| Website      | X |
| Social media | X |

Lead partner for deliverable: SAMS

Contributing partners: SAMS, ISC, NUIG, CEVA, AGROCAMPU, ALGA+, CTAQUA

Due date of deliverable: March 2020

Actual submission date: May 2020
# CONTENTS

1. Introduction to the Work Package deliverable................................................................. 4  
2. Partner Summaries .................................................................................................................. 5  
   2.1 SAMS (UK) ....................................................................................................................... 5  
   2.2 NUIG & ISC (Ireland) ...................................................................................................... 9  
   2.3 CEVA & AGROCAMPUS (France) .................................................................................. 16  
   2.4 IPMA & ALGA+ (Portugal) ............................................................................................ 20  
   2.5 CTAQUA (Spain) .............................................................................................................. 25  
3. Summary ................................................................................................................................ 28
1 Introduction to the Work Package deliverable

The aim of WP3.3 was for each partner, or partner country, to hold a workshop session looking at how eco-efficient technology can be best implemented into existing IMTA aquaculture setups within their respective regions. The workshops were an opportunity (mirrored with the living lab visits in WP3.4) of engaging with industry, academia and government to create a dialogue about where IMTA should focus, and what specific aspects of it may need adapting to local circumstances. On a broader level, it also provided another opportunity for the partner institutions to explain the IMTA concept to some members of the industry who may not have had the opportunity for a wider briefing on the concept.

<table>
<thead>
<tr>
<th>Action Nº 3</th>
<th>ACTION TITLE: Professionals Knowledge Transfer: thematic workshops on Eco-efficient practices in aquaculture</th>
<th>Start month</th>
<th>End month</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACTION TITLE: Professionals Knowledge Transfer: thematic workshops on Eco-efficient practices in aquaculture</td>
<td>January 2019</td>
<td>March 2020</td>
</tr>
</tbody>
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| Action Nº 3 | Action description (500 characters)  
Workshops will be organized (1 per country) to introduce Eco-efficient innovative technology to aquaculture. Groups specifically targeted will be industry and research sectors. Also, public bodies will be invited to raise awareness of the potential benefits of IMTA with regard to common challenges faced by aquaculture. Marine spatial planning new opportunities for sustainable aquaculture will be shown, and identification of potential synergies and relations between aquaculture and environment. | Start month | End month |
| Deliverables | Outputs title: Environmentally friendly aquaculture: workshops and reports | Start month | End month |
| Deliverables | Outputs description (250 characters)  
Different experts will present how aquaculture can contribute with circular economy through IMTA practices by means of networking workshops, which will have greater added value because it will come from a transnational vision. | Start month | End month |
| Deliverables | Expected results title Potential IMTA professionals | Start month | End month |
| Deliverables | Expected results description (250 characters)  
Workshops will target to 200 attendees from across AA, aiming to present novel activities to be implemented that can revolutionize conventional aquaculture practices. Standard evaluation techniques, interviews and ex-post online survey will be used. | Start month | End month |

The action aimed to have one workshop per country – in the event the French and Irish partners held a joint event, but the Portuguese partners held separate events. As in the deliverable for WP3.4, we present a summary of each event, but we expand at the end of the deliverable upon the discussions held and some of the feedback gained from participants.
SAMS held its workshop at its premises in Oban on Wednesday 19th February 2020. The event was a joint meeting with two other projects (GENIALG and IMPAQT) that had a primary focus on the seaweed aquaculture sector in Scotland, but attracted a wide range of industry, academia and government.

The INTEGRATE session focused on explaining where IMTA currently stands in the European context, and asking the seaweed sector, and the delegates attending, their thoughts on the eco-efficient possibilities that IMTA may provide their sector, and Scottish aquaculture in general.

Split into a series of three, hour long workshops, the 90+ delegates were given a brief introduction to INTEGRATE, and the world of IMTA, before breaking into groups to focus on four key aspects of IMTA, namely Technical, Regulation, Economical and Perception. An open floor was held afterwards between all attendees where the key points from each sub-group were discussed openly.

The overwhelming mood in the room was positive towards the concept of IMTA, and specifically there was productive discussion as to where IMTA could facilitate seaweed cultivation, this being a current expansion area for Scottish aquaculture. Some of the key issues that came out of the workshop sessions:

- Building of interface and skills exchange between aquaculture sectors to encourage new development and transfer experience
- Better utilisation of allocated marine space, with the possibility that co-cultivation of species will drive remediation and encourage better growth
- Developing sources of technical information, driving a standard for IMTA products, and investigating whether the nutrient uptake effect can be traded as a value in its own right
- Defining the food safety and regulatory effects of an IMTA system
- Refining the concept of IMTA for the public – what branding could be used and what would be the selling points of the product

Many of the points that were raised mirrored those that had been noted in the WP4 round tables, as well as the WP6 regulatory sessions.
Photographs of session one of the chaired discussion at SAMS
Key outputs from the workshop, by area of information

Practical aspects of cultivation

- Focus is required on the technical aspects that are holding up practical IMTA. It is desirable in a Scottish context to have a benthic component to open-sea IMTA, and this will be of interest to industry, but there is no design solutions available.
- Different value products (finfish vs. shellfish) on a same site basis opens a variety of questions regarding hygiene, technical practicalities as well as operations for the farmer
- Do sites within a closed water system (i.e. a Scottish sea loch) need to be immediately adjacent or could they be modelled on a system basis?
- The industry currently lacks a practical method of knowledge transfer from the finfish to the shellfish sector and vice versa

Regulatory issues

- The current status of licencing – can IMTA create a simpler licencing landscape for the producer?
- Could IMTA start-up operations be allowed to work in ‘sandbox’ style licenced areas, allowing for easier operation, and creation of industry knowledge?
- The implications of national and EU food standards on new food products being introduced onto the market
- The possiblity of co-operative production groups within selected cultivation areas to ease mareting and handling

Economics & Feasibility

- The issue of scale mismatch – financially there is a wide gap between the income and investment possibilities of shellfish and finfish farmers. This makes it more difficult for shellfish/seaweed farmers to diversfy and could lead to finfish producers flooding the market if they enter IMTA in a large way
- What are the commercial returns for implementing IMTA – there are no ground studies to inform industry
- Will a producer always focus on the most valuable species on site? If this is the case will this lead to shellfish and seaweed receiving lower priority when site issues develop? (Cont.)
Can we achieve higher market values for IMTA products? If we can, how do we protect the core value of IMTA – what will constitute an IMTA system?

Public perception of IMTA

- What is the public’s knowledge of IMTA? Can they make an informed choice as to an IMTA product?
- If the idea gains more public knowledge, will we face a backlash as people see it as ‘one species feeding on another’s waste’?
- How to we increase the aquaculture footprint on the Scottish coast while addressing public concerns about visual impact?
- We need a ‘story’ to sell IMTA – who will create and market this story?
2.2 NUIG & ISC (Ireland)

The Irish partners requested that they could conduct the deliverable for this section in a different format. This was due to the difficulty in holding another stakeholder meeting after several they had already held for this, and other similar projects. Rather than risking ‘stakeholder burnout’ it was agreed that a series of interviews with key partners would be held instead.

Nine meetings/interviews were held between March 2018 and April 2020, with representatives from the Food Safety Authority, the Environmental Protection Agency, Bord Iascaigh Mhara (BIM; The Irish Sea Fisheries Board), Flannery-Nagel Consulting, Mount Lucas Perch Farm, Goatsbridge Trout Farm and TDs (members of the Irish parliament).

Introduction

IMTA fits within the stated aims of both the bio- and circular economy principle of making waste a valuable resource, thereby reducing depletion of natural resources and reducing pollution. However, a background paper (DEBI, 2019) states that: “The full potential of both the circular economy and the bioeconomy for Ireland is still in the process of being identified.”

This document outlines the Irish situation with regard to the outlined European Commission Plan ‘Closing the Loop: An EU Action Plan for the Circular Economy’, and identifies sectors that are envisaged as playing an important part in the circular economy as it becomes more established. While the marine, and aquaculture within this, is identified as likely to play an important role, it is noted that due to the disaggregated nature of the agri-food system (involving many stakeholders, processes and technologies) improvements in sustainability “are likely to follow a gradual reconfiguration .... rather than a rapid disruptive pattern”.

These interviews reflect this situation; it was not possible to find specific policies or programmes where IMTA could be directly incorporated, rather, the discussions served to continue to raise awareness of IMTA in Ireland amongst a broader group of stakeholders, and outline how IMTA could fit into the circular economy thinking. Summary points are detailed below:
Interview 1 - TDs

- The concept of IMTA was briefly explained, along with the project INTEGRATE, its overall objective and scope, and the roles of NUIG and the ISC within that; Ireland’s current status with regard to IMTA was discussed. The need for more research was explained, and the positive influence of the Bord Na Mona perch project highlighted. Within the national context, this successful project may pave a way forward for IMTA in Ireland.

- The process of development of the Climate Action Plan was outlined, which is a rolling document that will be updated through time. This document outlines specific actions and targets for tackling climate related social and economic policies and has specific sections on both agriculture and the circular economy. The focus of this document is reduction of emissions, predominantly in terms of CO2 equivalents. While examples of IMTA can, and in few cases do, outline their potential to draw down carbon, nutrient (N, P) emissions are more relevant in most cases.

- Although it was suggested that nutrient emissions were also applicable for consideration within this framework, as yet this is not a topic that has been treated explicitly in the document, other than in terms of reducing the heavy use of nitrogen based fertilisers in terrestrial agriculture.

- The Community Reuse Network Ireland (CRNI) was mentioned. The CRNI is a social enterprise with the aim of promoting community based, sustainable waste management. They provide resources aimed at facilitating individuals and businesses in the process of transferring to more circular economy systems. They also work to develop supportive policy and campaign regarding the same.

- In general, the circular economy within the mentioned policy documents in Ireland tends to be in terms of recycling/upcycling of domestic and industrial waste, rather than in terms of increased efficiency of food production.
Interview 2 - FSA

- The FSA is the central competence authority for all food safety legislation, both national and E.U. but has service contracts with a range of agencies, e.g. the Sea Fisheries Protection Authority (SFPA), the Marine Institute (MI) and the Department of Agriculture, Food and the Marine (DAFM).

- A risk analysis approach is taken for novel foods and production processes coming onto the market. This approach is obligatory and based on HACCP, however, as aquaculture is classed as primary production it is only loosely required to comply with this. Traditionally, the more intensive systems have generated the problems, and these have generally been to do with unintentional misuse of medicines (errors in calculations rather than misuse of banned or prescribed substances). When non-compliance is detected (routine monitoring; DAFM) a testing plan to understand whether the batch can remain in production is initiated. The cost of this is borne by the producers and encourages compliance. These data are public, contained in the annual National Residue Control Plan Report, available on the DAFM website.

- For IMTA, there is an absence of data and therefore an absence of regulation, regarding allowable residue levels of medicated feeds and other therapeutic or chemical treatments which may be accumulated in IMTA organisms other than the target organism. In ordinary circumstances (i.e. where data is available) the FSA would provide the guidance and policy, and the SFPA and the MI would carry out the groundwork and the science to establish allowable levels, and then to test for those levels. In this case (with an absence of data) the format would be for the FSA, SFPA and MI toxicologists and environmental scientists to make a decision together following the precautionary principle.

- The large body of legislation with regards to marketing also comes under the remit of the FSA, especially of novel foods. With regard to labelling, food product labelling must comply with FSA guidelines. There is a duty not to mislead, but ambiguity is tolerated; seafood in particular tends to run into problems with health claims. Eco-labelling is handled through the DAFM organics unit.

- In conclusion, while IMTA is a ‘new’ production process, the mechanisms so far established for regulation of aquaculture food safety appear to be sufficient to accommodate it using the precautionary principle, until such time as sufficient data exists to create IMTA specific food safety legislation.
**Interview 3 - EPA**

The EPA advocates for and encourages policy and practices that are in-line with eco-efficiency principles, e.g.:

- examination of new business models to stimulate a circular economy and achieve resource efficiency
- putting emphasis on re-use activities to preserve natural capital
- facilities regulated by the EPA are encouraged to adopt more eco-efficient practices
- stimulation of innovation for efficiency by formulating new business models and protocols for social enterprise and SME’s undertaking re-use operations

and could encourage the development of IMTA through these actions/mechanisms. With regard to licensing, enforcement and monitoring there are fewer possibilities. The EPA is not a Statutory Consultee in the licensing process and while it is the body charged with carrying out monitoring of waterbody status for the WFD, this is not in any way systematic with regard to water bodies containing aquaculture facilities. (N.B. Other Statutory Consultees e.g. Údaras na Gaeltachta and the Inland Fisheries Authority) have informally indicated that IMTA is likely to be regarded favourably within the consultation process but that this will be on a case by case and context dependent basis.

**Interview 4 - BIM**

BIM has programmes supporting the re-use and recycling of fishing nets, and also oyster bags at the end of their life. In general, IMTA is known and supported within their work and one of Ireland’s major IMTA projects (the Bord na Mona perch project) was initiated and developed by BIM. However, as yet IMTA does not fall under circular economy programmes within BIM’s framework.

BIM also provides an ‘environment management system for aquaculture’ scheme, called ECOPACT. This provides a template for evaluating and implementing best-practice of every aspect of the farming operation, with regard to environmental management (e.g. waste management, nature conservation, visual impact and use of public piers). It does not set indicators or targets, it does not carry out audits, and it does not issue any form of certification, but provides a framework for analysing and improving farm practices. External certification of produce/production methods may be via organic certification bodies, or Ireland’s Origin Green programme.
Origin Green is a food sustainability programme led by Bord Bia (the Irish Food Board). It sets measurable sustainability targets towards environmental and social best-practices, appropriate to the industry and business being assessed. Flannery Nagel Consulting carry out the first level assessment for seafood processors, prior to sending this to an external assessor for audit. All those certified through the Origin Green programme must commit to achieving their own targets that are set during the process; this scheme is certainly one through which the positive aspects of IMTA production could be recognised and rewarded.

**Interview 5**

The final meeting took place at the Mount Lucas, Bord na Mona farm. The farm is a freshwater recirculating system, culturing Rainbow trout, European Perch, and duckweed (*Lemna* sp.). The farm currently uses 4.9 Ha of 1,000 Ha available, and it was promoted under the sustainable criteria of nutrient remediation through IMTA, re-purposing of used peat land and wind farm power providing the energy for the recirculation component of the pill ponds.

- The farm manager was aware of the project INTEGRATE and we highlighted the main outcomes and results that are to be produced. This was followed with a visit to the farm.
- We stopped at the different ponds where the fish and the duckweed are cultured. We highlighted that this farming project is a clear example of the bio- and circular economy principle of making a waste a valuable resource. Also, that this farm is a perfect platform to continue to raise awareness of IMTA in Ireland, and how farming can be a sustainable farming set-up.
The sustainability of the enterprise provides the main marketing strategy. A high-end product allows sale to niche markets and underpins the business strategy of the company. The environmental credentials and benefits of this market strategy are a necessary added bonus, rather than the driver. IMTA is a means to achieve an end (high value product) rather than the end in itself.
Conclusions

- Both the circular economy and the bioeconomy are being actively promoted in line with the EU Action Plan for the Circular Economy. While it is possible to identify those parts of the plan into which IMTA can easily fit, the process is at too early a stage to have developed specific policies.

- Currently, due to the nascence of the Irish Circular Economy policy and regulatory situation, Aquaculture is referred to in these documents as a sector that could be developed in line with CE principles. However, the relative scale of the industry, and its emissions, is such that it is often subsumed within sectors (agriculture, marine in general) that are economically more significant, or have much higher emissions outputs.

- There is a lack of promotional strategy or policy specifically designed to internalise the costs of nutrient treatment, therefore the motivation for development of IMTA remains down to the possibility of improved profitability of IMTA systems, or increased economic resilience in the presence of fluctuating market prices of produced species. As has been well documented elsewhere, these benefits are not yet clearly demonstrated, particularly in a marine context, which constitutes the largest part of the Irish aquaculture industry.

- IMTA remains an intuitive and interesting prospect, particularly for freshwater and lower trophic level producers in Ireland. Pilot projects in Ireland (Bord na Mona perch project; incorporation of seaweeds with shellfish trials at sea) will provide more very much needed technical, economic and environmental data, which may provide further impetus for development of this section of the aquaculture industry, and/or inclusion within the circular economy paradigm and its (forthcoming) associated policies.

References:

Each year Agrocampus Ouest organizes transfer & communication days for professionals in the field of fishing and aquaculture on topical themes, most often linked to the institute's study programs.

The days of the year 2019 were therefore dedicated to IMTA in connection with the context of the Interreg Integrate project. The opportunity was taken to associate these days with partners with whom we collaborate in research and development and training and who work themselves on the IMTA theme. Therefore, the event was co-organized by Agrocampus Ouest & CEVA (INTEGRATE - Interreg program), INRA, ITAVI, CIPA (IMTA-EFFECT – Cofasp and EPURVAL 2), and Pôle Mer with the first aim of presenting different programs of IMTA development in France and Europe. The second aim was to reach as wide an audience as possible in the idea of promoting the IMTA included in the Integrate project. To this end, a large communication with mail-lists and social media actions was made by the various partners of the event to the producers, researchers, administrations, professional organisations, students and NGOs.

About 140 persons registered to attend the meeting with at least 100 participants on May 15 and 60 participants on May 16.

The first day focused on the introduction of the IMTA concept as well as a presentation of the different project the organisers are involved. This part gave more visibility to the different actions of the INTEGRATE project and to other IMTA initiatives in France.

Three plenary sessions then followed with presentations from our European partners, researchers, technical centers and professionals. The first session on May 15 on the IMTA was dedicated to re-circulated systems and the other two on May 16, on the IMTA in lagoon systems and pond systems and finally IMTA in open sea systems. For each system the question was asked: Where are we today? What are the constraints to its development? What are the impacts of this mode of aquaculture? What are its prospects?

Alternating plenary sessions, three workshops were conducted in parallel on specific points: action plan for development a strategic plan for the development of IMTA in Europe, ecosystem services in aquaculture, and development, acceptability and profitability issues for aquaponics as an IMTA system. These workshops enabled us to collect precious data about aquaculture and IMTA perception. They also gave the opportunity to involve different stakeholders in the redaction of the strategic plan for the development of IMTA, the final deliverable of WP6.
ASSOCIER LES ESPÈCES POUR UNE AQUACULTURE DURABLE : L’AQUACULTURE MULTI TROPHIQUE INTÉGRÉE (AMTI)

PROGRAMME
Journées professionnelles

15-16 mai 2019
Amphithéâtre Matagrin
Agrocampus Ouest, Rennes

15 MAI

9:00  Accueil et café de bienvenue

9:30  Mot d’introduction

9:45  Programme des journées

10:00 Présentation des projets portés par les organisateurs

11:30 État des lieux du secteur de l’AMTI en France

12:00  Repas

13:30 – 15:00 Session 1
L’AMTI À TRAVERS LES SYSTÈMES RECIRCULÉS
Préside la session :
Rachel Portal-Sellin (Pôle Mer Bretagne-Atlantique)
Michaël Futs (CPA)

15:00 – 17:00 Pause-café

Ateliers de travail

1° Discussion du plan stratégique pour le développement de l’AMTI en Europe

2° Les services écosystémiques de l’aquaculture

3° L’aquaponie : système AMTI ?
Quels enjeux de développement, d’acceptabilité et de rentabilité pour ces systèmes innovants ?
Programme summary of the two-day event
DELIIVERABLE NUMBER: 3.3
DELIIVERABLE TITLE: Professionals Knowledge Transfer: Thematic workshops on eco-efficient practices in aquaculture
The Portuguese Thematic Workshop on eco-efficient practices in aquaculture (INTEGRATE Action 3.3) was organised together with the Portuguese Association of Aquaculture Producers (APA). This was in conjunction with the XVII Aquaculture Seminar, a tri-annual event attended by most associates of APA (see Program below). The objective of the events was to reach the best target audience: producers, industry, professional organisations, ONGs, government representatives, researchers and students.

The event took place on November 19th, 2019, at the Sado Hotel in Setúbal, and was attended by 81 participants. During the morning session, several presentations coordinated by the APA were presented and during the afternoon session the section including the INTEGRATE project took place. The session with oral presentations were followed by a round table on the aquaculture challenges for the new Legislature with the presence of the Fisheries State Secretary.

At the beginning of the event, communication material intended to explain the INTEGRATE project to attendees was also distributed.
**PROGRAMA**

**Manhã**

10h45 – Café de boas vindas e registo

11h00 – Sessão de abertura  
(José Calheiros - Direcção da APA)

11h10 – MedAID - A nutrição como ferramenta para melhorar a robustez da dourada  
(Cléudia Aração - CCMAR)

11h30 – Perguntas e respostas

11h35 – Estratégias inovadoras de alimentação de peixes em aquacultura  
(Tiago Aires – Aquasoja)

12h05 – Perguntas e respostas

12h10 – Biodepura – Valorização de moluscos bivalves produzidos em aquacultura  
(Rui Rocha – Universidade de Aveiro)

12h30 - Perguntas e respostas

12h35 – Projecto ValorMar

  a) A valorização da ostra  
  (Rui Moreira - Bivalvia)

  b) Mecanismos integrados para suporte e otimização de sistemas de aquacultura  
  (Irene Martins – CILMAR)

12h55 - Perguntas e respostas

13h00 – Almoço com degustação de produtos de aquacultura nacional
Summary of two-day event
Photographs of the INTEGRATE presentation at the event
Project promotional material distributed at the event
Introduction

CTAQUA organised their WP3 Thematic Workshop & Living Lab (WP3.4) on Tuesday October 1st, 2019. In order to take advantage of the event to communicate the results of the INTEGRATE project to a wider public, we also invited representatives from local Andalusian and national Spanish media and hosted an “aperitivo with the media” as part of WP2 communication media activities.

Purpose of the communication action

The main aims of the event were the following:

1. To introduce eco-efficient innovative technology to aquaculture via professionals’ knowledge transfer: different invited experts from industry, academia, and public bodies presented how aquaculture can contribute to the circular economy through sustainable practices, such as integrated multi-trophic aquaculture (IMTA);
2. Professionals’ experience transfer to practice: technical field visit to the INTEGRATE Pilot Action 3 site in Puerto Real to demonstrate benefits related to resource efficiency and environmentally sustainable new technologies that IMTA practices imply;
3. Raise public awareness of IMTA benefits and enhance knowledge of IMTA among the aquaculture industry, academia, public bodies and the general public.

In general, the idea was to base the day on the INTEGRATE project but widen the reach by inviting experts from multiple disciplines and sectors, including other international projects related to the topic, in order to exchange knowledge and experiences about sustainable aquaculture practices and innovative technologies in this regard in general.

The programme began with the thematic workshop in the morning: following a few general presentations about INTEGRATE and about our pilot action by CTAQUA, Macarena Algarín, the owner of the “estero” (the aquaculture unit of the decommissioned salt facility), spoke about: IMTA in the southern Atlantic Region: advantages of its implementation - the history of the salt industry in this area and the benefits of converting it into sustainable aquaculture.

Subsequently, we had 2 working groups, which included 3 brief presentations from experts from different sectors and projects followed by discussions. The topics of the working groups were: 1. “Ecoefficient practices in aquaculture, potential synergies with the environment and its impact on the circular economy”; 2. Marine spatial planning: new opportunities for sustainable aquaculture”
Following the thematic workshop, we transferred to our Pilot Action site and carried out the living lab, i.e. technical field visit. We returned to CTAQUA for an aperitivo, including some of the products that a CTAQUA colleague is developing in other eco-efficient projects, transforming by-catch of fisheries into novel food products, for example. We also served fresh oysters from our Pilot Action!!

**Description of the materials used and means of delivery**

Each participant received a welcome pack, i.e. the INTEGRATE project folder with the printed material, including the programme of the day, the pilot action 3 leaflet, project factsheets (general and WP3 and WP4 since these were the most relevant to this event), and a satisfaction survey to be completed after the event.

**Results**

With 54 participants (plus media representatives), the turnout was very good. There was a wide range of sectors represented, including academia, industry, public administration, as well as other European projects working on IMTA, such as the H2020 IMPAQT project and the Interreg POCTEP project AQUA&AMBI.

Throughout the day there was time for networking and exchanging experiences among participants. Speaking to many of the participants it became clear that this type of combined event, i.e. a first theoretical part indoors with presentations and working groups followed by a second practical part outdoors in the installations, was very much appreciated. All the feedback received was positive and of great interest in the INTEGRATE project and IMTA. There was a range of stakeholders, for example representatives from the industry who would be interested in developing IMTA in their installations, as well as academics involved in aquaculture research, accompanied by quite a few students and future professionals in the sector.

The satisfaction survey, completed by 10 of the 54 participants showed that the general satisfaction with the event was good, i.e 3,72 out of 4 (1 being bad and 4 being very good). In the survey questions were asked about the structure of the event, the content, the material distributed, the duration of the event, the facilities, among others. For details, the summary of the satisfaction survey can be found here below and the related documents in the shared google drive.
There was quite a high press/media turnout, with media representatives from regional and national media outlets, such as the Canal Sur TV programme Tierra y Mar, el Ágora diario del agua, ABC, La Razón.

A TV report was produced on the Canal Sur TV programme Tierra y Mar, which can be found directly on their website here. An article about the Living Lab was written by el Ágora diario del agua and published on their website here.

Furthermore, CTAQUA published a brief news item about the report on our website and Twitter (see below)
3 Summary

Each set of country partners successfully delivered a set of thematic workshops as required in the project documents, and there were a wide range of attendees at the event from local and national governments, industry as well as interested academics. The workshops were always intended as a ‘shop window’ where each partner, or country, could explain the state-of-the-art to their respective audience, while allowing an informal feedback that would help them judge the thoughts and mood of the stakeholders.

Each set of partners used a distinctive framework for their meetings, that allowed them to refine their event to the specific local circumstances and audience that would benefit from the information provided. That said, within each country the attendees included a key body of academic, business and regulatory partners that benefitted from the exposure to IMTA concepts that the events provided. Although detailed in a separate WP deliverable, the visits organised to the living labs under WP3.4 also elucidated this effect.

Each partner garnered feedback from the events, and the key points from each are shown within the respective summary, but several key points can be taken from the events;

- There is a continued interest in the concept of IMTA from a variety of sources. This starts with the aquaculture industry itself, starting with larger multinational organisations, down to small individual producers looking to diversify and expand. This is followed by academia, which is keen to know and further understand the specific attributes that IMTA may assist the aquaculture community with. Finally, regulatory and supervisory bodies are keen to see where the concept of IMTA is heading, as the issues of biological remidiation and habitat improvement are seen as key issues.

- It is seen in most countries that IMTA is at an important juncture in its development. A lot of the early development in IMTA has been proving its practicality in a variety of settings, as well as trying to refine some of the potential economic and social benefits to the sector. While IMTA within Europe has largely been experimental until this point, the future path of its development will lie with commercial operators, and they require clarification on some of the concepts within IMTA, starting with a definition, and practical set-up issues.
• In a regulatory context, the next stage of IMTA development will be crucial, as there is inference from producers that they would like time to develop the concept to their needs before top-down legislation is imposed by local and national government. It appears that in all the partner countries, there is an open mind from the regulatory community into the practical directions that IMTA could take, and a desire to assist in the early stages of commercial development.

• The variety of IMTA systems available within the European context (and this is further demonstrated in WP3.4), be they onshore, lagoon or open sea, bodes well for a ‘toolbox’ style approach where technical standards can be developed to give producers certainty about design and installation – practical information on systems was a key desire of many farmers.

• Several participants queried the possibility of tying IMTA development into either carbon/nitrogen trading, or another form of climate effect mitigation. While this concept has been noted before, it is an area that has not been fully developed, but one that may provide a unique selling point for IMTA to specific producers.

The WP3.3 workshops provided a useful series of national events within the INTEGRATE projects, as one of the key ways of liaising with our stakeholders about the developments of the project as well as those within the greater IMTA world. It is fair to say that within these events, there was a highly useful exchange of thoughts and ideas between the organisers and participants, and this has fed back into each partners ideas of where IMTA can head next.