

ECsafeSEAFOOD

Priority environmental contaminants in seafood: safety assessment, impact and public perception

Grant agreement no: 311820

Deliverable D7.5

Progress report on the general dissemination efforts carried out during the first year

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Start date of the project: 02/2013 **Duration:** 48 months

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Revision: V1

Project co-funded by the European Commission within the Seventh Framework Programme (2007-2013)	
Dissemination Level	
PU Public	X
PP Restricted to other programme participants (including the Commission Services)	
RE Restricted to a group specified by the consortium (including the Commission Services)	
CO Confidential, only for members of the consortium (including the Commission Services)	

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Rationale

The overall objective of ECsafeSEAFOOD is to assess safety issues related mostly to priority contaminants present in seafood as a result of environmental contamination (including those originating from harmful algal blooms and those associated with marine litter) and evaluate their impact on public health. The project will support the provision of safe seafood to consumers and reduce human health risks. In the long term, the project will deliver several societal benefits, such as improving consumer education, increasing employment, improving nutrition and increasing the sustainability of an important food sector.

The ECsafeSEAFOOD project aims to have tangible impact in terms of:

- European competitiveness and innovation, particularly of food-producing SMEs and local communities
- Offering safe and high quality seafood to consumers
- Positive economic effects as a result of increasing seafood consumption due to higher awareness and confidence in these products in Europe
- Scientific breakthroughs including priority contaminants monitoring, risk assessment and toxicity, as well as establishing a quantitative link between the environment and that of seafood, taking into account climate change aspects
- Improving education, increasing employment, improving nutrition and increasing the sustainability of an important food sector

The dissemination of project results is a contractual obligation of participation in research initiatives supported under the European Union's Seventh RTD Framework Programme (FP7). The dissemination is a one-way communication and promotion activity for raising awareness of a research project and its aims and objectives. However, in order to ensure the uptake of the knowledge generated by the ECsafeSEAFOOD project, and because the audience for seafood quality and health promotion research is heterogeneous, WP7 aims to put in place a variety of activities that aim to capture and pass on the knowledge, skills and competence arising from the project to those who can use them, in a process that ECsafeSEAFOOD understands as Knowledge Transfer.

The general objective of ECsafeSEAFOOD Work Package 7 is to make stakeholders aware of the main findings of the project and transfer the knowledge generated by the project to the target users of this knowledge. The present report is a summary of the different dissemination actions carried out by the ECsafeSEAFOOD project during its first year.

Teams involved in deliverable writing: AquaTT

1. Introduction

The report focuses on Task 7.1 (Development of the detailed Communication and Dissemination Plan) and Task 7.2 (General Dissemination), which are both related to dissemination of the ECsafeSEAFOOD project. The completion of these two tasks resulted in the submission of Deliverables 7.1 (Dissemination Plan), 7.2 (Project Brand) and 7.3 (Project Website) as well as the development of different dissemination activities such as the publication of press releases, collaborations with different newsletters, web appearances, networking activities, and attendance at different events where the ECsafeSEAFOOD project has been presented.

Tasks 7.3 (Knowledge Transfer) and 7.4 (Identify and consult key stakeholders for exposure assessment and related ECsafeSEAFOOD activities such as data mining and targeted interviews) are not the main purpose of this report as the project is facing its initial stage and it is too early to discuss project results and knowledge outputs generated after the first year of the project. However, the publication of scientific findings by means of peer review journals is a way of transferring knowledge to the scientific community, and this report includes a reference to two scientific papers in which the ECsafeSEAFOOD project has been acknowledged. The first outputs of the project and the mechanisms implemented for their exploitation will be presented in Deliverable D7.6 (Progress report on dissemination and Knowledge Transfer) expected by the end of the second year of the project.

Task 7.4 is included in the Deliverable 7.4 (Stakeholder Database), submitted in M12 according to the DoW.

2. Task 7.1 Development of the detailed “Communication and Dissemination Plan”

Deliverable 7.1 “Dissemination Plan”

The ECsafeSEAFOOD Dissemination Plan describes the activities to be performed and the dissemination and exploitation means to be used in order to promote ECsafeSEAFOOD, and to disseminate and exploit the project results. The plan identifies the target groups and key stakeholders of the project, defines the dissemination channels, describes the means of dissemination and details, the targeted events and conferences of the project. In addition, the plan describes the internal process set up to manage the knowledge outputs and to ensure exploitation of ECsafeSEAFOOD results.

The Dissemination Plan contains a set of protocols to ensure that all relevant knowledge coming out of the project is carefully managed. The protocols are set up to:

- a) Disseminate the ECsafeSEAFOOD project and its results, ensuring information provision and awareness
- b) Collect, analyse and transfer research outputs (e.g. products, methodologies, findings) to end-users who can make best use of those results. The transfer phase will ensure that relevant information and knowledge is customised so that it is ready for uptake by different target end-users

- c) Ensure ECsafeSEAFOOD’s foreground and Intellectual Property (IP) are properly managed

Overall, the Dissemination Plan is a baseline tool for WP7 to ensure effective external communication, dissemination and optimal outreach of ECsafeSEAFOOD’s results and applications, leading to optimal exploitation of its research, as well as increased consumer confidence through clear and practical information spread in close collaboration with food safety authorities.

The Dissemination Plan was developed by AquaTT, which is responsible for its coordination. However, all project partners are involved in dissemination and exploitation in order to foster awareness and transfer results for impact, especially in their own countries and in their own communities.

Deliverable 7.2 “ECsafeSEAFOOD Project Brand”

The ECsafeSEAFOOD brand includes the name of the project, the logo, the PowerPoint templates to be used when presenting work or the results related to the project, and a project factsheet, which includes basic information about the project, its objectives and the partnership. The objective of the project brand is to ensure that the stakeholders, or any other person/parties, are able to recall and recognise the project under different conditions.

Project Logo

A specific project logo has been developed to support and reinforce the project’s identity. The logo will be included in all project promotional material, including the factsheet, website, etc. The logo is modern and fresh, and reflects the central concept of the project by incorporating the quality-assured tick mark into the spine of an abstract representation of a fish. The use of green in the logo represents health, sustainability and the environment.

There are two versions of the logo:

<p>1. Full colour</p>	
<p>2. Black and white</p>	

Figure 1. Project logo (colour and black & white version)

PowerPoint Template

The PowerPoint template includes three different slide types. The cover, the body slides, and the last slide. The cover slide includes the logo and the full title of the project. It leaves enough empty space to let people introduce the title and location of their presentation.



Figure 2. PowerPoint template. Cover Slide.

The body slide includes the logo of the project (up left) and the FP7 cooperation logo as well as the European flag (down right). There is an EU disclaimer in the blue banner at the bottom of the slide. The text states: “The research leading to these results has received funding from the European Community’s Seventh Framework Programme (FP7/2007-2013) under grant agreement no 311820”.



Figure 3. PowerPoint template. Body Slide.

The last slide is similar to the body slide although it includes a shaded version of the abstract representation of the fish from the logo.



Figure 4. PowerPoint template. Last Slide.

Project Factsheet

The factsheet is designed for double-sided printing on A4 paper. To achieve best quality, print the factsheet full colour on at least 160gsm paper (200gsm is ideal). Partners are encouraged to distribute the factsheet through their networks and at relevant events.

The two page factsheet describes the project, its main objectives, methodology, partnership, funding and expected results, and will be used to raise general awareness of the project.



Figure 5. Project Brochure.

The project brochure is downloadable from the project website. To date, the factsheet and brochure have been downloaded 431 times from the ECsafeSEAFOOD website. Partners are requested to bring factsheets and brochures with them when representing ECsafeSEAFOOD at related meetings and events. To date, 205 brochures and factsheet have been distributed at meetings (See Annex 1: Table of Dissemination activities).

Deliverable 7.3 “Project Website”

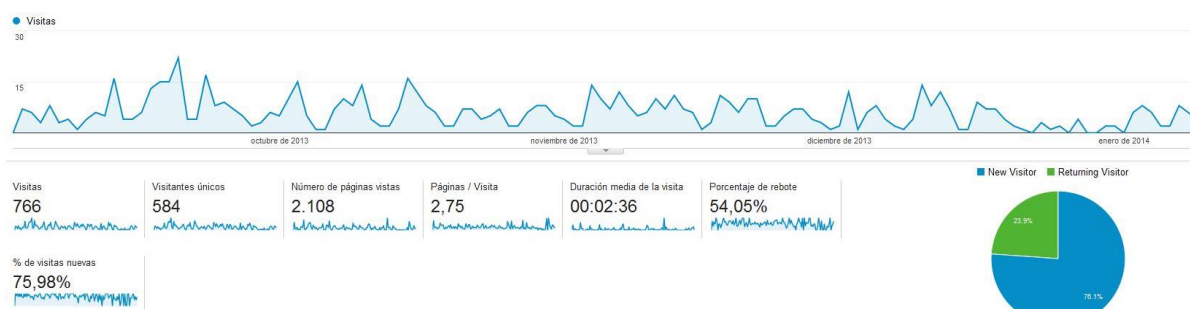
The ECsafeSEAFOOD project website was launched on 10 June 2013 (Month 5). It is Deliverable 7.3 (Project Website) of the ECsafeSEAFOOD project and provides an overview of the ECsafeSEAFOOD project and updates on progress. The website is structured around five main pages:

- Home
- Project
- Consortium
- Project calendar / Event
- Useful Links

The website provides links to all partner websites, contact details to all the personnel involved in the ECsafeSEAFOOD project, links to related initiatives (other FP7 initiatives related with food science and risk assessment, and Good Environmental Status (GES) of the seas) and also links to sources of additional information, including professional associations and networks.

Contacts details for the ECsafeSEAFOOD coordinator are given under the Contact Us footer, while the ECsafeSEAFOOD data policy and disclaimer are also provided in the footer of the website. The ECsafeSEAFOOD website also allows partners to access the ECsafeSEAFOOD intranet developed specifically for sharing of files and for communication between partners. Please refer to Deliverable 7.3 for more details on the content of the website.

The website includes a Google analytics script to inform the partnership about the traffic to the website. The website was launched on 10th June 2013 although the Google analytics script was included on 2nd September 2013. Between the inclusion of the Google analytics script and 9th January 2014 the website has received 795 hits. Over 592 different users have visited the site and there have been 2,191 page visits. Over 74% of these visitors are new visitors while 26% are return visitors. The average visitor to the websites stays for 2:42 minutes



3. Task 7.2 General Dissemination

Press releases

AquaTT has two separate targeted mailing lists to distribute press releases – one for research and scientific media (over 60 contacts), and one for marine contacts (again over 60 contacts – organisation and government contacts, etc.). The press releases are also distributed through the

Community Research and Development Information Service (CORDIS) and AlphaGalileo. CORDIS is the European Commission's primary public repository and portal to disseminate information on all EU-funded research projects and their results in the broadest sense. AlphaGalileo is a well-known and well-respected independent source of research news and distributed news releases. ECsafeSEAFOOD press releases issued via AlphaGalileo have featured on several websites related to fisheries, food health, toxicology and the marine environment. Apart from the mentioned sources, ECsafeSEAFOOD project partners are encouraged to distribute the press releases using their own dissemination channels.

- In March 2013 AquaTT (Partner 14) wrote and distributed a first press release entitled “New Project Will Assess Level of Contaminants in our Seafood”. As of 09/01/2014, AlphaGalileo's statistics indicate that the press release was sent to 4056 press contacts and it has been accessed 586 times and downloaded 110 times so far.
- In July 2013 AquaTT (Partner 14) wrote and distributed a second press release entitled “Safe Seafood Project is Raising Expectations” following the 2nd coordination meeting held in Brussels (16-17th June 2013). As of 09/01/2014, AlphaGalileo's statistics indicate that the press release was sent to 4003 press contacts and it has been accessed 447 times and downloaded 108 times so far.

Newsletters

Newsletters are periodic publications distributed by email to a list of subscribers. The ECsafeSEAFOOD project aims to publish relevant information about the project by using different Newsletters.

- AquaTT (partner 14) contributed to the dissemination of the project by publishing a short article in Aqua-tnet Newsletter in March 2013. Aqua-tnet is the European Thematic Network and the largest multidisciplinary European Education Network in the field of aquaculture, fisheries and aquatic resources management. Aqua-tnet bridges the gap between higher education institutions and other partners such as academic organisations, research institutions and industry, aiming to enhance quality and to define and develop a European dimension within its academic disciplines.
<http://www.aquatnet.com/index.php/200/newsletter-march-2013/>
- AZTI (partner 2) contributed to the dissemination of the project by publishing an article in Itsasnet in April 2014. Itsasnet is a digital newsletter published by AZTI.
[\(http://www.itsasnet.com/garantizar-la-seguridad-de-los-productos-pesqueros/\)](http://www.itsasnet.com/garantizar-la-seguridad-de-los-productos-pesqueros/)



Figure 6. Itsasnet Newsletter.

- AquaTT (partner 14) issued a press release entitled “New EU Project Will Assess Level of Contaminants in Our Seafood” published in the ISEKI Newsletter, Issue 7 (June 2013). ISEKI_Food 4 project aims to innovate the education and training of Food Science and Technology (FS&T), to implement soft and personal skills to produce the FS&T professionals of the future and to create a framework offering lecturing qualification for university teaching staff. The members of ISEKI_Food project publish a quarterly newsletter with the latest news about the ISEKI_Food project as well as any other relevant information of the interest to the partners’ network. <https://www.iseki-food.net/simplenews/3986>
- AquaTT (partner 14) contributed to the dissemination of the project by publishing a short article in the Aqua-tnet Newsletter in July 2013. <http://www.aquatnet.com/index.php/206/aqua-tnet-newsletter---july-2013/>
- IPMA (Partner 1) published an introduction to the ECsafeSEAFOOD project in the GPPQ (Gabinete de Promoção do Programa Quadro de I&DT) Newsletter (No 54, August 2013). GPPQ aims to promote and support the participation of scientific and business communities in FP7 and is the most relevant Portuguese research funding institution to the ECsafeSEAFOOD project.



Figure 7. GPPQ Newsletter.

- The ECsafeSEAFOOD press release published on 23 July (Safe Seafood Project is Raising Expectations) was included in the September 2013 issue of the US EPA’s National Listing of Fish Advisories Newsletter. The US EPA’s Fish Advisories Newsletter provides news and information about the science, communication, and health issues related to fish advisories.

Publications through Social Networks and Other Media

Some of the project partners disseminated the ECsafeSEAFOOD project and/or information about the kick-off meeting through their institutional websites.

- UM (partner 3) uploaded the project information to their institutional website. (<http://www.mf.uni-mb.si/index.php/en/researchact>)



Figure 8. UM Web Dissemination.

- Ugent (partner 4) uploaded the project information to their institutional website. (<http://www.publichealth.ugent.be/index.cfm?objectid=B2BE7CD7-2219-5E51-1C4E6992A05F9CC8>)

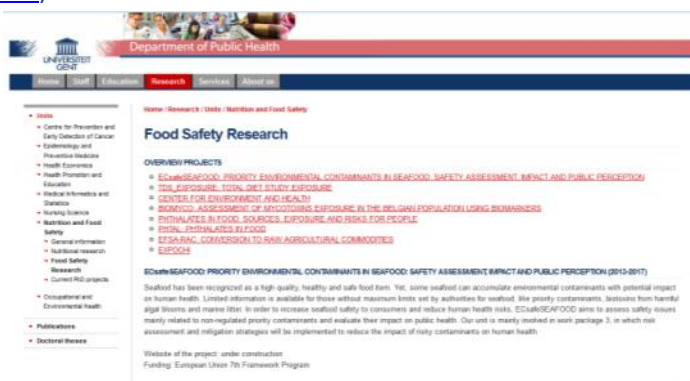


Figure 8. UGent Web Dissemination.

- NVI (partner 5) distributed the information related to the ECsafeSEAFOOD project through Toxinology website. Toxinology is Norway’s portal for natural toxin research. Toxinology is the area of science that deals with natural toxins (biotoxins) such as mycotoxins and other fungal toxins, toxins from marine and freshwater algae (phycotoxins), bacterial toxins (bacteriotoxins), plant toxins (phytotoxins) and animal toxins and venoms (zootoxins), including their chemistry, mode of action and ecological roles. <http://www.toxinology.no/Researchareas/Algaltoxins/Projects/ECsafeSEAFOOD/tabid/1102/2/Default.aspx>.



Figure 9. NVI Web Dissemination.

- ICRA (partner 6) uploaded the project information to their institutional website. (http://www.icra.cat/projecte_detall.php?&id=51&lang=3)

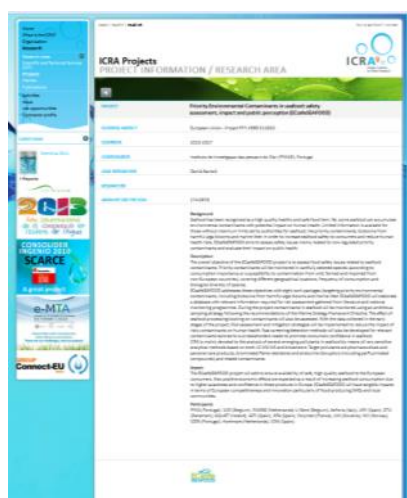


Figure 10. ICRA Web Dissemination.

- DTU (partner 7) uploaded the project information to their institutional website.

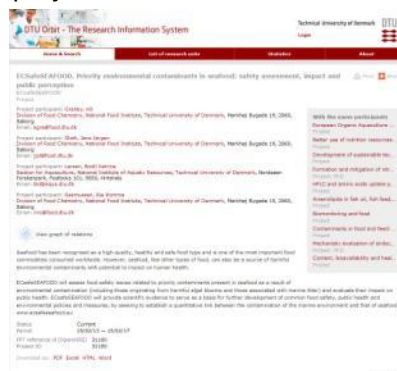


Figure 11. DTU Web Dissemination.

- IRTA (partner 10) uploaded the project information to their institutional website. http://www.irta.cat/es-es/RIT/Noticies/paginas/Reunio_ECsafeSEAFOOD.aspx



Figure 12. IRTA Web Dissemination.

- IMARES (partner 11) uploaded the project information to its institutional website.

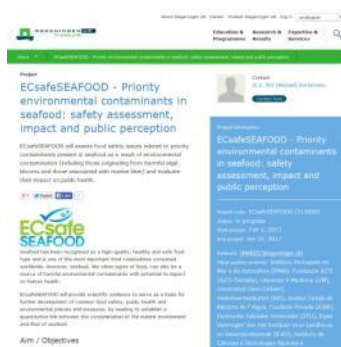


Figure 13. IMARES Web Dissemination.

- URV (partner 12) uploaded the project information to its institutional website. http://www.tecnatox.cat/noticies/TecnATox_participara_en_un_nou_projecte_FP7 and <http://www.tecnatox.cat/projectes/llicitat-de-projectes>



Figure 14. URV Web Dissemination.

- FAOfish tweeted a link to the “*Safe Seafood Project is Raising Expectations*” press release on the ECsafeSEAFOOD website on the 23rd July, through its Twitter account.
- AquaTT (partner 14) tweeted a link to the “*Safe Seafood Project is Raising Expectations*” press release on the ECsafeSEAFOOD website on the 23rd July, through its Twitter account.
- Arvam (partner 15) uploaded the project information to their institutional website.



Figure 15. ARVAM Web Dissemination.

- Polyintell SAS (partner 16) uploaded the project information to their institutional website. <http://www.polyintell.com/about-us/partners/>





Figure 16. Polyintell Web Dissemination.

- The press releases and newsletters distribution, as well as the different actions undertaken by the project participants such as uploading project information to their institutional website or attending events, contributed to the promotion of the ECsafeSEAFOOD project in other websites or publications that considered the ECsafeSEAFOOD project information relevant for their readership.
 - **Magazine Oceano (Portugal)** is a new Spanish – Portuguese magazine about marine science: <http://magazineoceano.com/ecsafeseafood-evaluara-la-contaminacion-de-los-alimentos-de-origen-marino/#.UVLTWjebVjM>



Figure 15. Magazine Oceano Web Dissemination.

- **PHYS.ORG** is a web-based science, research and technology news service which covers a full range of topics, including physics, earth science, medicine, nanotechnology, electronics, space, biology, chemistry, computer sciences, engineering, mathematics and other sciences and technologies. Launched in 2004, Phys.org’s readership has grown steadily to include 1.75 million scientists, researchers and engineers every month. <http://phys.org/news/2013-03-tool-seafood-contamination.html>

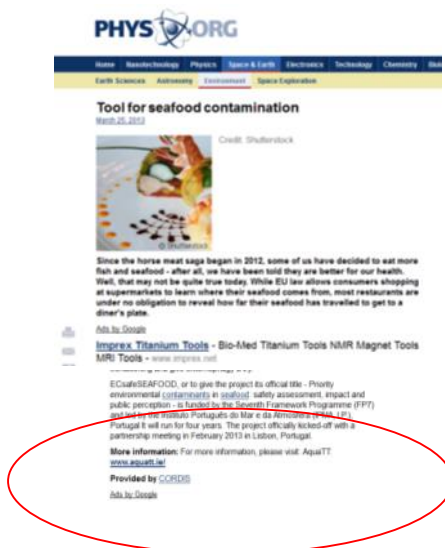


Figure 16. Phys.org Web Dissemination.

- **Undercurrentnews (seafood business news from beneath the surface)** is a website created to provide news to the seafood industry. <http://phys.org/news/2013-03-tool-seafood-contamination.html>

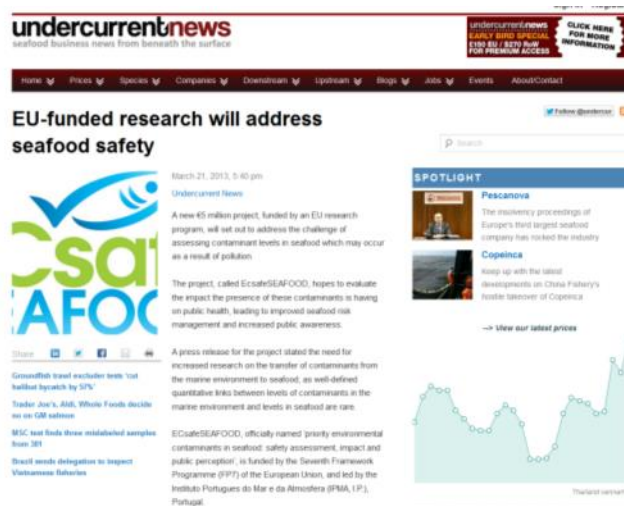


Figure 17. Undercurrentnews Web Dissemination.

- **World Fishing & Aquaculture: insight for the international fishing & aquaculture industry** is dedicated to all aspects of commercial fishing. It provides readers with the latest news and product launches, alongside country profile features, interviews and regular columns from fishery experts. Since 1952, it has been a respected channel of business information. It provides readers with authoritative editorial prepared by writers who are experts in their field, and in an easy to read layout. <http://www.worldfishing.net/>



Figure 18. WorldFishing Web Dissemination .

- Aquafeed.com is an on-line information resource providing sector-specific business, scientific and technical news and information of the interest of the aquaculture industry. Aquafeed published information about the ECsafeSEAFOOD project in March 2013.



Figure 19. Aquafeed Web Dissemination.

- **Aguas residuales.info** is the first Spanish website with relevant information for water professionals. The website published information about the ECsafeSEAFOOD project in April 2013.



Figure 20. Aguas Residuales Web Dissemination.

- **FIS**, the web site of Fish Information & Services, is widely recognized as the standard for global seafood industry information on the Internet. Founded in 1995 the site delivers reliable, timely, comprehensive worldwide fishing, seafood and aquaculture information in three languages: Japanese, English and Spanish. FIS featured a profile of the ECsafeSEAFOOD project.



Figure 21. FIS Web Dissemination.

- **Aqui Europa** is a Spanish website featuring information related to the EU. ICRA and AZTI took an active role in dissemination in the second bi-monthly project reporting period. Sara Rodriguez (ICRA) and Alejandro Barranco (AZTI) contributed to the publication “Arranca una evaluación europea sobre la presencia de contaminantes en el marisco”.



Figure 22. Aqui Europa Web Dissemination.

- **Eroski** is one of the biggest food companies in Spain accounting for more than 2000 supermarkets and 38500 employees. The ECsafeSEAFOOD project was disseminated by means of the company website, which offers news of interest to consumers.



Figure 23. Eroski Web Dissemination.

- **ECOWEB** is an initiative by the European Commission to increase the uptake of European eco-innovations by SMEs. ECOWEB aims to link enterprises, in particular SMEs, and eco-innovations to increase the uptake of EU-funded research. It offers a web platform through which enterprises can find information about European eco-innovations, connecting existing networks and multipliers and increasing collaboration and synergies between research and enterprise networks. IPMA (partner 1) uploaded the information of the project at the ECOWEB website. AquaTT (Partner 14) published an item about ECsafeSEAFOOD’s inclusion in ECOWEB in the “News section” of the project website on 26 July, and sent a tweet about it from the AquaTT twitter account (@AquaTT_Ireland) on 28 August.
- The ECsafeSEAFOOD press release published on 23 July (Safe Seafood Project is Raising Expectations) was included in the September 2013 issues of the EAS Magazine. AQUACULTURE EUROPE is the magazine of the EAS and is published biannually from 2013 on (before, quarterly). It is included in EAS membership, or available on a separate subscription basis.

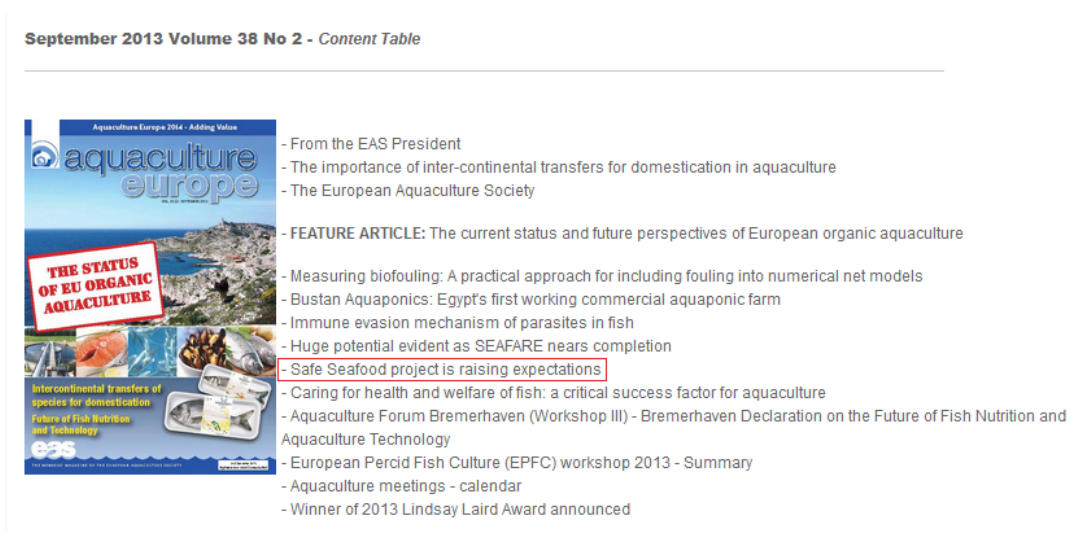


Figure 24. EAS Magazine Cover.

tion rates. Puget Soundkeeper Alliance, EarthJustice, and several Riverkeeper groups said the EPA must require the State of Washington to revise its fish consumption rate, which is how the state determines the health of Puget Sound and its fish and what emissions standards it needs to require of communities and industry. The groups claim the current consumption rate is based on outdated studies. The current number is 6.5 grams, which means the average Washington state resident eats 6.5 grams of fish, the equivalent of approximately one bite every day. According to these groups, some Washington residents eat much more fish. Other states' rates are much higher, such as Oregon which has a consumption rate of 175 grams per day. During the last legislative session industry groups fought efforts to increase Washington state's consumption rate. Many of the groups have issued press releases stating the number is too low and that not enough is being done to regulate discharges into state waters. Link to original article: <http://www.kgw.com/lifestyle/green/Suit-threat-over-how-much-fish-eaten-in-Wash-216766241.html>.
 Source: Chittim, Gary. King 5 News. 24 July 2013.

by the Portuguese Institute of Sea and Atmosphere and includes 18 partners from ten countries in the European Union. European added-value in the global seafood market lies in offering safe, high-quality seafood to consumers. Accordingly, the ECsafeSEAFOOD project will provide scientifically-based advice to facilitate the development of common food safety, public health, and environmental policies and measures. This is an interdisciplinary project bringing together scientists from a variety of food science disciplines: ecotoxicology, biochemistry, nutrition; risk assessment; seafood quality; and consumer behavior and perceptions. The project is divided into scientific work packages that will address these issues. For more information on ECsafeSEAFOOD, please visit: www.ecsafeseafood.eu. Link to original article: <http://www.thefishsite.com/fishnews/2013/07/24/safe-seafood-project-is-raising-expectations>.
 Source: TheFishSite News Desk. 24 July 2013.

Safe Seafood Project is raising expectations

The ECsafeSEAFOOD project held its second coordination meeting in Brussels, Belgium, in June 2013. The goal of this project is to assess food safety issues related to priority contaminants present in seafood as a result of environmental contamination and to determine their impact on public health. The ECsafeSEAFOOD consortium is led

Scientific team collects fish to test

A research team from the U.S. Army Public Health Command Water Resources Program (USAPHC) at Aberdeen Proving Ground, Maryland, is collecting fish off the shores of the U.S. Army Kwajalein Atoll (USAKA), located in the Republic of the Marshall Islands, for testing. USAKA is comprised of more than 100 islets, 11 of which currently serve as a testing range for ballistic missiles. The USAPHC has conducted surveys and provided environmental consultation services to USAKA for more than 25 years. The goal of this research is to determine if the consumption of

Figure 25. EAS Magazine Article.

- An ECsafeSEAFOOD project summary was published in the EC brochure published by the Ocean of Tomorrow Projects (2010–2013) – Joining Research Forces to Meet Challenges in Ocean Management. 2013. Pages 42-43. ISBN: 978-92-79-26745-1; doi: 10.2777/22249.

ECsafeSEAFOOD:
 Priority environmental contaminants in seafood: safety assessment, impact and public perception

Disruptive seafood has been recognized as a high quality healthy and safe food item, some seafood can accumulate environmental chemical contaminants with impact on human health. Limited information is available for contaminants without levels and by authorities (for example, like priority chemical contaminants, bisphenols, from harmful algal blooms and more fish). In order to promote seafood safety to consumers, ECsafeSEAFOOD aims to assess safety issues related to non-regulated priority chemical contaminants and evaluate their impact on public health. In this regard, the project is relevant for the Marine Strategy Framework Directive (MSFD) and especially for the objective of an assessment of fish and seafood which will be useful to determine the good environmental status of EU waters.

The ECsafeSEAFOOD project will monitor the presence of priority environmental contaminants in the environment and in seafood, scientific data that are real hazards for human health, and assess the transfer of relevant priority environmental contaminants between the environment and seafood, taking into account the effect of climate change. The project will develop, validate and create new tools to make the assessment of the presence of environmental contaminants in seafood products easier and faster. It will also study the effect of greenhouse gas

on the behaviour of priority environmental contaminants in seafood and further understand the public health impacts of these chemical pollutants, through the toxicological characterization of the selected seafood contaminants in realistic conditions. Such information will be crucial to assess the potential impact of seafood contaminants on public health using in-depth analytical measures tools. Several other related initiatives will be studied for similar results representing a risk to consumer health, like an order

book and guidelines for stakeholders and assess innovative physico-chemical mitigation technologies on fish and environment at pilot scale. Concerning dissemination activities, the project will investigate what information is needed and how it should be disseminated, in collaboration with risk managers, for the general public and to vulnerable groups of consumers in order to reduce public health risks from seafood consumption. In this way, the new information gathered in ECsafeSEAFOOD will be able to contribute to the European Marine Reference Levels (EMRL) in relation to those contaminants or byproducts that are not hazardous and for which no regulation exists or the information is still insufficient.

ECsafeSEAFOOD will create a database with relevant information about priority contaminants: their structure and natural occurring concentrations. For contaminants with limited information available, a screening strategy will be implemented, taking into account toxicological

aspects, their environment and mitigation strategies will be implemented. Risk screening detection methods will be designed for relevant chemical contaminants. The links between the level of contaminants in the environment and that in seafood will be targeted, taking into account the effect of climate change.

ECsafeSEAFOOD European Added Value:
 ECsafeSEAFOOD will have tangible impacts in terms of: (i) European competitiveness and innovation partnerships of food producing SMEs and local communities, (ii) offering safe and high quality seafood to consumers, (iii) positive economic effects as a result of increasing seafood consumption, (iv) scientific breakthroughs including priority chemical contaminants monitoring, risk assessment and toxicity and (v) societal impacts: increasing education, increasing employment, improving nutrition and increasing the sustainability of an important food sector.

Project ID	Topic	EU contribution	Location	Project duration
311820	Priority environmental contaminants in seafood and their impact on public health	€ 5,910,000	all over the EU	2011-2013

Partners:
 Portugal (ECsafeSEAFOOD), Spain, Belgium, France, Denmark, The Netherlands, Italy, Ireland

Contact: António HANCOCK
 INSTITUTO PORTUGUÊS DE CIÊNCIAS AMBIENTAIS E DO AR
amh@ipam.pt

Figure 26. Oceans of Tomorrow Projects Brochure.

Events attended

- II ISEKI annual meeting

The ISEKI-Food Association (IFA) is an independent European non-profit organisation established in 2005 by university institutions, research institutes, companies, and associations related to food, from



all over the world. Its main objective is the establishment and maintenance of a network between universities, research institutions and companies in the food chain.

The 2nd Overall Meeting of the ISEKI-Food 4 project held in Kaunas (Lithuania) was organised in collaboration with Rimantas Venskutonis and his team at the Department of Food Technology of the Kaunas University of Technology from the 15 – 17th May. This meeting was an important event for the project: all participants provided updates on current and forthcoming activities associated with the various work packages. The meeting included a workshop on “Knowledge and Technology Transfer in the Food area”. Marieke Reuver (AquaTT – partner 14) was one of the experts invited and introduced the ECsafeSEAFOOD project to the ISEKI members by means of a presentation which included several slides featuring the ECsafeSEAFOOD project. Further, Marieke distributed 40 ECsafeSEAFOOD factsheets.

- **Eurofoodchem XVII Congress**

EuroFoodChem XVII, the latest in the series of flagship conferences organised by the Food Chemistry Division of EuCheMS, the European Association of Chemical and Molecular Sciences, provided (i) formal and informal discussion and debate of state of the art knowledge and applications in food chemistry and complementary disciplines; (ii) networking opportunities for scientists active in food chemistry and other disciplines to network with one another and with industries and with representatives of consumer groups within and beyond the borders of the European Union; (iii) a venue for young researchers and students at the start of their careers to establish contact with more experienced colleagues and to discuss their interests; (iv) a forum for discussion on integrating European and global food chemistry, food quality and food safety research, and for exchanging knowledge and best practice to develop common (or worldwide) strategies for food quality and safety assessment; and (iv) a bridge between East and West that addresses key issues relevant to industry, the research and science communities, national and international regulatory bodies, policy makers and consumer organisations.

The conference was held in Istanbul (Turkey) from May 7-10th with 500 participants. Alex Barranco (AZTI – Partner 3) offered an oral presentation entitled “Tools for the Toxic Assessment of Environmental Contaminants in Fish” and presented the ECsafeSEAFOOD project to the audience.



Figure 27. Slides from AZTI's presentation in Eurofoodchem.

Cover slide and one of the slides which mentioned the ECsafeSEAFOOD project.

- **VI Workshop sobre nanociencia y nanotecnología analíticas**

IRTA (partner 10) attended the workshop in Alcala de Henares (Madrid) on 8-9 of July, participating with an oral flash communication and a poster entitled: “Magnetic particles as immobilisation supports in sensing and transduction strategies for the detection of aquatic toxins” (L. Reverte, D. Garibo, J. Diogene and M. Campas).

- **Aquaculture Europe 2013**

The European Aquaculture Society (EAS) organised its annual conference in Trondheim, Norway, from 9-12 August 2013. The conference focused on the theme *Making Sense of Science: knowledge management to support technological development and innovation* with the aim to set priorities for knowledge generation using the best people and infrastructures to create knowledge and using the most suitable communication channels to ensure maximum impact of results for all the actors in the value chain as well as for the end users. The conference attracted more than 325 attendees. AquaTT (Partner 14) had a stand at the event where information about ECsafeSEAFOOD was available. Marieke Reuver and Cliona Ni Cheallachain attended the event on behalf of AquaTT and distributed 40 ECsafeSEAFOOD factsheets to visitors.

- **Aqua Nor 2013**

The Nor-Fishing Foundation organised the 18th Aqua Nor tradeshow to coincide with the Aquaculture Europe 2013 conference in Trondheim, Norway from 13-16 August 2013. The Nor-Fishing Foundation was established in 1992 by the Norwegian Ministry of Fisheries, and was given the exclusive right to organise the international fisheries trade show Nor-Fishing and Aqua Nor. Aqua Nor has been an important international event for the aquaculture industry for more than 30 years. The event aims to introduce stakeholders to advances, products, services and research and development projects of relevance to the industry. This year Aqua Nor received more than 18,500 visitors from 65 nations and 480 exhibitors from 22 countries. AquaTT (Partner 14) had a stand where the visitors could be informed about the ECsafeSEAFOOD project and ECsafeSEAFOOD factsheets were distributed.

- **XVIII Trobada Transfronterera de Sensors i Biosensor**

IRTA (Partner 10) attended the event in Ales (France) on 19-20 of September, participating with a poster titled: Electrochemical biosensors as screening methods in the framework of the ECsafeSEAFOOD project (L. Reverte, J. Diogene, P. de la Iglesia, M. Fernandez-Tejedor y M. Campas).

- **Spanish Agency of Food Safety (AESAN) presentation.**

IRTA (Partner 10) presented the ECsafeSEAFOOD project to AESAN in Madrid on 20 September 2013.

- **XV National Congress on Aquaculture**

IRTA (partner 10) attended the XV National Congress on Aquaculture held in Guijon, Spain, in September 23-25, and offered two oral presentations: “Present Evaluation of marine toxins in aquaculture products: challenges to improve public health associated to regulated non-regulated toxins” and “Evaluacion actual de toxinas marinas en productos de la acuicultura: retos para mejorar la seguridad alimentaria asociada a toxinas reguladas y no reguladas” in the framework of the ECsafeSEAFOOD project, by Pablo de la Iglesia, Margarita Fernandez-Tejedor, Monica Campas, Carles Guallar, Karl Andree, Maria Garcia-Altas, Diana Garibo, Lucia Soliño, Olga Carnicer, Alexis Casanova and Jorge Diogene.

- **IMEKO Symposium on Traceability in Chemical, Food and Nutrition Measurements.**

IPMA (Partner 1) presented the ECsafeSEAFOOD project at the Joint IMEKO TC8, TC21, TC24 – Symposium on Traceability in Chemical, Food and Nutrition Measurements. National Institute of Health Doctor Ricardo Jorge in Lisbon, Portugal, on 23 September.


- **Research Days of the Norwegian Research Council**

NVI (partner 5) presented the crab and shellfish contamination with algal toxins trials foreseen in ECsafeSEAFOOD at Froya, Norway, as part of the Norwegian Research Council’s “Research Days”.

- **The 6th International Symposium Euro-Aliment 2013.**

The mission of Euro Aliment is to bring together scientists; producers; experts belonging to food associations, aquaculture and environment; experts working in food marketing and management; and experts in medicine to exchange knowledge, and to understand the state of research and open new challenges to future projects.

The event was held in Galati (Romania) from 3-5 October 2013. Tomaz Langerholc (UM, partner 3) attended the event and gave an oral presentation entitled “*Toxicological assessment of bioavailability – the role of processing and food matrix*”, which included a reference to the ECsafeSEAFOOD project.



ECsafeSEAFOOD—Priority environmental contaminants in seafood: safety assessment, impact and public perception

- 18 partners in the project – IPMA from Lisbon as coordinator
- Feb2013 – August 2017
- Focused on contaminants in seafood products with scarce or non existing toxicological data
- University of Maribor is involved in toxicological assessment and determination of bioavailability
- Determination of bioavailability is based on real seafood samples undergone culinary processing and not on pure chemical standards

The research leading to these results has received funding from the European Union's Seventh Framework Programme (FP7/2007/2013) under grant agreement no. 311820

www.ecsafeseafood.eu






Figure 28. Slides from UM’s presentation in EuroAliment 2013.

- **Annual Workshop on chemical elements in food of animal origin.**

Jens Sloth (DTU, partner 7) offered an oral presentation entitled: “Arsenic specialization in food – current status on standardization of methods for specific determination of inorganic arsenic” at the Annual Workshop of the EU-RL on chemical elements in food of animal origin, 7-8th October 2013, Rome, Italy

- **IV International scientific consultation/conference food, exercise and health.**

The event was held in Radikan (Slovenia) from 16-18 October 2013. Eneko Madorran and Tomaz Langerholc presented a talk entitled “*Influence of food processing, farming type, vegetable variant and place of cultivation on nitrate levels in vegetables*” and acknowledged the ECsafeSEAFOOD project.

- **SEAFARE Seminar: The potential of wetlands aquaculture to contribute to economic development and to benefit environmental conservation.** 30 October 2013. Seville, Spain.

SEAFARE is a transnational project financed by the Atlantic Area Transnational Programme of the European Union, which has developed innovative solutions to promote environmentally-friendly aquaculture in wetlands. The project aims to make policy makers aware of how to conduct sustainable aquaculture, strengthen the links between researchers and industry, and influence policies and environmental managers at regional and national scales.

The event was held in Seville the 30 October 2013. Federico Cardona (AquaTT, partner 14) attended the event, carried out networking and dissemination activities for the ECsafeSEAFOOD project, and distributed 20 project factsheets among the attendants.

- **Marine Food and Feed, Recent Advances in Food Analysis (RAFA)**

Rasmussen RR (DTU, partner 7), presented an oral presentation entitled “Methylmercury determined by HPLC-ICP-MS” in Marine Food and Feed, Recent Advances in Food Analysis (RAFA), 5-8. November 2013, Prague, Czech Republic.

- **4th Annual SmartOcean Forum: Blue Growth: Seize the Opportunity. Share the potential. 5-6 November 2013. Belfast, Northern Ireland (UK)**

The purpose of this all-island event is to highlight the potential of our ocean resources to support shared opportunities in delivering hi-tech products and services to global marine markets. The forum focused on key areas such as blue growth, marine data and knowledge, renewable energy and ocean observation. It featured speakers from industry, academia and state agencies from Ireland, the US, Canada and Europe, reflecting on recent developments such as the Galway Statement on Atlantic Ocean Cooperation, the launch of the EU’s Atlantic Strategy Action Plan and the launch of Horizon 2020 in 2014.

The event was held in Belfast (Northern Ireland, UK) the 6 November 2013. David Murphy (AquaTT, partner 14) attended the event, carried out networking and dissemination activities for the ECsafeSEAFOOD project, and distributed 20 project factsheets among the attendants.

- **Catalan Agency for Food Safety and Nutrition**

IRTA (partner 10) presented the ECsafeSEAFOOD project to ACSA, the Catalan Agency for Food Safety and Nutrition and to the Commission for the follow up of fishery products safety in November 15 2013, Barcelona. The presentation was addressed to an audience of 15 people mainly covering the areas of food safety and commercialization of fishery products. IRTA focused on the main objectives of the project and the partners, especially the presentation of the Spanish partners associated. IRTA invited AESAN to get in touch with any of the partners if they came across some particular issues and to attend the next project meeting in Tarragona.

- **4th SCARCE International Conference: Towards a better understanding of the links between stressors, hazard assessment and ecosystem services under water scarcity.**

The SCARCE Consolider Ingenio project aims to understand the impact of global change on water quality and availability and its effect on the ecosystem services, human beings and the economy. This project is focused on four Mediterranean river basins in order to improve the knowledge at different scales. A multidisciplinary approach has been developed to offer a complete vision of water problems. The topics for the 4th SCARCE International Conference include: (i) Monitoring network for chemical and biological data, tools for integration and improvement of risk assessment; (ii) Effect of global change on groundwater and surface hydrology; (iii) Assessment of water quality and ecosystem functions, tools for water management; (iv) Development of models and integration tools to assess and manage water resources; (v) Freshwater ecosystem services; and (vi) Socioeconomic issues and water management.

The event was held in Cadiz (Spain) from 25-26 November 2013. Diana Álvarez Muñoz (ICRA, partner 6) presented a poster entitled “Evaluation of a simple method for the analysis of pharmaceuticals in seafood”, where the ECsafeSEAFOOD project was acknowledged. Furthermore, Belinda Huerta (ICRA, partner 6) gave an oral presentation entitled “Uptake and Bioaccumulation of Endocrine Disruptors and Pharmaceutical compounds in Biofilm, Macroinvertebrates, and Fish in four Mediterranean Rivers”, where the ECsafeSEAFOOD project was also acknowledged.

- **5th International Workshop on Per- and polyfluorinated substances (PFAS) in materials, humans and the environment: current knowledge and scientific gaps.**

DTU Aqua (P7) presented a poster entitled “Perfluorinated compounds in fish and carryover from fishfeed to farmed rainbow trout.

The conference was organized by DTU in Helsingor, Denmark from the 27-29 of November, and attracted 182 participants from all over the world.

- **SEAFARE Seminar: Supporting Sustainable Oyster Aquaculture for the Atlantic Region of Europe.**

SEAFARE is a transnational project financed by the Atlantic Area Transnational Programme of the European Union, which has developed innovative solutions to promote environmentally-friendly aquaculture in wetlands. The project aims to make policy makers aware of how to conduct sustainable aquaculture, strengthen the links between researchers and industry, and influence policies and environmental managers at regional and national scales.

The event was held in London the 3rd of December 2013. Federico Cardona (AquaTT, partner 14) attended the event, carried out networking and dissemination activities for the ECsafeSEAFOOD project, and distributed 20 project factsheets among the attendants.

- **Marine Strategy Framework Directive (MSFD) meeting.**

The project coordinator Antonio Marques (IPMA, partner 1) and UGent were invited to participate in the meeting of the Marine Strategy Framework Directive (MSFD) of the EC, within the Descriptor 10 – Marine litter, taking place in Lisbon, Portugal, from the 11th to the 13th December, 2013.

Table. Summary of the dissemination activities carried out by the ECsafeSEAFOOD project in its first year.

Id	Type of activity	Lead Partner	Title	Date	Place	Type of audience	Size of audience	Countries addressed
1	Press Release	AquaTT (P14)	New project will assess level of contaminants in our seafood	03/2013	ECsafeSEAFOOD website (Link)	Communication agencies, scientific community (higher education, research), food and chemical industry, consumer groups, national and international regulatory bodies, policy makers, Civil Society.	4014 press contacts + website visits	World Wide
2	Newsletter	AquaTT (P14)	New project will assess level of contaminants in our seafood	03/2013	Aquat-net newsletter (Link)	Scientific community, aquaculture and fisheries industry, civil society, policy makers		European Level
3	Web dissemination	UGent (P4)	Food Safety Research	03/2013	UGent institutional website (Link)	Scientific community		Belgium
4	Web dissemination	NVI (P5)	ECsafeSEAFOOD – Priority contaminants in seafood: safety assessment, impact and public perception	03/2013	Toxinology website (Link)	Scientific community		Norway
5	Web dissemination	IRTA (P10)	Reunion inicial del proyecto ECsafeSEAFOOD	03/2013	IRTA institutional website (Link)	Scientific community		Spain
6	Web dissemination	IMARES (P11)	ECsafeSEAFOOD – Priority environmental contaminants in seafood: safety assessment, impact and public perception	03/2013	IMARES institutional website (Link)	Scientific community		European Level
7	Web dissemination	URV (P12)	Tecnatox will participate in a new FP7 project	03/2013	URV institutional website (Link)	Scientific community		Spain

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8	Web dissemination	Polyintell SAS (P16)	European ECsafeSEAFOOD project: Priority environmental contaminants in seafood: safety assessment, impact and public perception	03/2013	Polyintell institutional website (Link)	Scientific community, seafood industry, pharmaceutical industry.		European Level
9	Web dissemination		ECsafeSEAFOOD vai avaliar contaminação dos alimentos de origen marinho	03/2013	Oceano Magazine (Link)	Scientific community, general public		Spain, Portugal
10	Web dissemination		Tool for marine contamination	03/2013	Phys.org (Link)	Communication agencies, scientific community (higher education, research), Industry, Civil Society, Policy makers		World Wide
11	Web dissemination		EU-funded research will address seafood safety	03/2013	Undercurrent News (Link)	Seafood industry, scientific community, civil society, policy makers		World Wide
12	Web dissemination		New project to assess contaminants in seafood	03/2013	World Fishing & aquaculture	Fishing and aquaculture industry, scientific community		World Wide
13	Web dissemination		How safe is your seafood?	03/2013	Aquafeed.com (Link)	Aquaculture industry, scientific community.		World Wide
14	Web dissemination	UM (P3)	International Research Project ECsafeSEAFOOD KBBE.2012.2.4-01	04/2013	UM institutional website (Link)	Scientific Community		Slovenia
15	Web dissemination	ICRA (P6)	Priority environmental contaminants in seafood: safety assessment, impact and public perception (ECsafeSEAFOOD)	04/2013	ICRA institutional website (Link)	Scientific Community		Spain
16	Web dissemination	DTU (P7)	ECsafeSEAFOOD. Priority environmental contaminants in seafood: safety assessment, impact and public perception.	04/2013	DTU institutional website (Link)	Scientific Community		
17	Newsletter	Azti (P2)	Garantizar la seguridad de los productos pesqueros	04/2013	Itsasnet Newsletter (Link)	Scientific Community, Environmental managers, Policy		Spain

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						makers, Food, fish and aquaculture industry representatives		
18	Web dissemination	ICRA (P6)	PROYECTO ECsafeSEAFOOD: El ICRA participa en este proyecto cuyo objetivo general es evaluar la inocuidad de los alimentos relacionados con los contaminantes del mar.	04/2013	Aguas Residuales (Link)	Scientific Community, water industry, environmental managers, policy makers		Spain
19	Web dissemination	ARVAM (P15)	Priority contaminants in seafood: assessment, impact and public perception.	04/2013	ARVAM institutional website (Link)	Scientific Community		
20	Web dissemination		ECsafeSEAFOOD	04/2013	FIS (Link)	Scientific Community, food industry, environmental managers.		World Wide
21	Web dissemination	Azti (P2) and ICRA (P6)	Arranca una evaluacion europea sobre la presencia de contaminantes en el marisco	05/2013	Aquí Europa	Scientific Community, Environmental managers, policy makers, civil society		Spain
22	Web dissemination		Evaluacion de contaminantes en pescado y marisco	05/2013	Eroski Consumer	Civil Society		Spain
23	Oral presentation	P14 (AquaTT)	Knowledge and Technology Transfer in the food area	05/2013	II Iseki anual meeting (Kaunas - Lithuania)	Scientific community, food industry, consumer organizations, national and international regulatory bodies		World Wide
24	Oral presentation	Azti (P2)	Tools for the Toxic Assessment of Environmental Contaminants in Fish	05/2013	Eurofoodchem XVII Congress (Istanbul – Turkey)	Scientific community, food and chemical industry, consumer groups, national and international regulatory bodies, policy makers		World Wide
25	Twitter		ECsafeSEAFOOD aims to assess issues related to contaminants present in seafood as a result o	06/2013	@FAOfish	Communication agencies, scientific community (higher education, research),		World Wide

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			environmental contamination			food and chemical industry, consumer groups, national and international regulatory bodies, policy makers, Civil Society.		
26	Newsletter	P14 (AquaTT)	Safe Seafood project will assess level of contamination in our seafood	06/2013	ISEKI Newsletter	Scientific community, food industry, consumer organizations, national and international regulatory bodies		World Wide
27	Network / Platform cooperation	P1 (IPMA)		07/2013	ECOWEB	Enterprises, eco-innovation, scientific community, environmental managers		European Level
28	Twitter	P14 (AquaTT)	ECsafeSEAFOOD included in ECOWEB	07/2013	@AquaTT_Ireland	Communication agencies, scientific community, industry, civil society.		World Wide
29	Press Release	AquaTT (P14)	Safe Seafood project is raising expectations	07/2013	ECsafeSEAFOOD Website (Link)	Communication agencies, scientific community (higher education, research), food and chemical industry, consumer groups, national and international regulatory bodies, policy makers, Civil Society.		World Wide
30	Twitter	AquaTT (P14)	Safe Seafood project is raising expectations	07/2013	AquaTT Twitter account	Communication agencies, scientific community, industry, civil society.		World Wide
31	Newsletter	AquaTT (P14)	New project will assess level of contaminants in our seafood	07/2013	Aquat-net newsletter (Link)	Scientific community, aquaculture and fisheries industry, civil society, policy makers		European Level
32	Technical Report / Book	DTU (P7)	Chemical contaminants 2004 – 2011, Food monitoring 2004 –	07/2013	http://orbit.dtu.dk/fedora/objects/orbit:122258/datastreams/file_6b464f13-49b2-41ca-9308-a7a641eb7ca8/content	Scientific community, civil society, policy makers, environmental		Denmark

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			2011. National Food Institute			managers, aquaculture and fisheries industry		
33	Newsletter	IPMA (P1)	Projecto ECsafeSEAFOOD	08/2013	Gabinete de Promoção do Programa Quadro de I&DT	Scientific community, SMEs, civil society, policy makers		Portugal
34	Event Attendance	AquaTT (P14)		08/2013	Aquaculture Europe 2013. Trondheim, Norway.	Scientific community, aquaculture industry, environmental managers, policy makers		European Level
35	Event Attendance	AquaTT (P14)		08/2013	AquaNor 2013. Trondheim, Norway.	Scientific community, aquaculture industry, environmental managers, policy makers		European Level
36	Event Attendance	IRTA (P10)		08/2013	XVIII Trobada Transfronterera de Sensors i Biosensors	Scientific community		European Level
37	Article	AquaTT (P14)	Safe Seafood Project is Raising expectations	09/2013	European Aquaculture Society (EAS) Magazine	Scientific community, aquaculture and fisheries industry, civil society, policy makers		European Level
38	Newsletter		Safe Seafood Project is Raising expectations	09/2013	US EPA's Fish Advisories	Scientific community, aquaculture and fisheries industry, civil society, policy makers		United States
39	Event Attendance	IRTA (P10)		09/2013	AESAN Meeting	National regulatory body		Spain
40	Event attendance	IRTA (P10)		09/2013	XV National Congress on Aquaculture	Scientific community, aquaculture and fisheries industry, civil society, policy makers		Spain
41	Event attendance	IPMA (P1)		09/2013	IMEKO Symposium	Scientific community, aquaculture and fisheries industry, civil society, policy makers		European Level
42	Event attendance	NVI (P5)		09/2013	Research Days	Communication agencies, scientific community, industry, civil society.		Norway
43	Project Brochure		ECsafeSEAFOOD: Priority environmental contaminants in seafood: safety	10/2013	EC – Ocean of Tomorrow Projects (2010-2013): Joining Forces to Meet Challenges in Ocean Management	Scientific community, environmental managers, policy		European Level

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			assessment, impact and public perception			makers, industry, civil society		
44	Oral presentation	UM (P3)	Toxicological Assessment of bioavailability	10/2013	6 th International Symposium Euro-Aliment 2013 (Galati, Romania)	Scientific community, food producers, food associations, food marketing, food management		European Level
45	Event Attendance	DTU (P7)		10/2013	Annual Workshop on Chemical Elements in Food of Animal Origin	Communication agencies, scientific community, industry, civil society.		European Level
46	Oral presentation	UM(3)	Influence of food processing farming type, vegetable variant and place of cultivation on nitrate levels in vegetables.	10/2013	IV International Scientific Conference on food, exercise and health.	Scientific community, food industry, consumer associations.		European Level
47	Event Attendance	AquaTT (P14)		10/2013	Seafare seminar “The potential of wetlands aquaculture to contribute to economic benefit and to benefit environmental conservation”. Seville, Spain.	Scientific community, aquaculture industry, NGOs, environmental managers.		World Wide
48	Event Attendance	DTU (P7)		11/2013	Marine Food Feed, Recent Advances in Food Analysis (RAFA)	Scientific community, aquaculture industry, NGOs, environmental managers.		European Level
49	Event Attendance	AquaTT (P14)		11/2013	4 th Annual SmartOcean Forum: Blue Growth: Seize the opportunity. Share the potential. Belfast, Northern Ireland.	Scientific Community, NGOs, Environmental managers, policy makers		European Level
50	Event Attendance	IRTA (P10)		11/2013	Catalan Agency for Food Safety and Nutrition meeting	Seafood industry, seafood commercialization		Regional Level
51	Poster Presentation	ICRA (P6)	Evaluation of a simple method for the analysis of pharmaceuticals in seafood	11/2013	4 th SCARCE International Conference. Cadiz, Spain.	Scientific Community, NGOs, Environmental managers, policy makers		European Level
52	Poster presentation	DTU (P7)	Perfluorinated compounds in fish and carryover from fishfeed to farmed rainbow trout.	11/2013	5 th International Workshop on Per- and Poly-fluorinated substances (PFAS)	Scientific community		International
53	Event organization	DTU (P7)			5 th International Workshop on Per- and Poly-fluorinated substances (PFAS)	Scientific Community		International

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54	Oral presentation	ICRA (P6)	Uptake and Bioaccumulation of Endocrine Disruptors and Pharmaceutical compounds in Biofilm, Macroinvertebrates, and Fish in four Mediterranean Rivers	11/2013	4 th SCARCE International Conference. Cadiz, Spain.	Scientific Community, NGOs, Environmental managers, policy makers		European Level
55	Event Attendance	AquaTT (P14)		12/2013	Seafare Seminar: Supporting sustainable oyster aquaculture for the Atlantic Region of Europe.	Scientific community, aquaculture industry, NGOs, environmental managers.		European Level
56	Event Attendance	IPMA (P1)		12/2013	The Marine Strategy Framework Directive (MSFD). Descriptor 10 – Marine Litter	Scientific Community, NGOs, Environmental managers, policy makers		European Level

Table 1. List of all dissemination activities (publications, conferences, workshops, web sites/applications, press releases, flyers, articles published in press, videos, media briefings, presentations, exhibitions, thesis, interviews, films, TV clips, posters).

4. Task 7.3 Knowledge Transfer

“Knowledge Transfer” is more advanced than dissemination and requires a crucial step: the identification and analysis of the primary end-user(s) of specific units or clusters of knowledge. This end-user analysis step is crucial as it is customer focused and allows us to partition the audience for the new knowledge that will arise from ECsafeSEAFOOD.

Scientific papers are a way of transferring knowledge as they target the scientific community as potential end-users of the outputs generated by means of the ECsafeSEAFOOD project. During the first 2 month period, Partner 6 (ICRA) succeeded in the publication of the first scientific paper in which the ECsafeSEAFOOD project has been acknowledged. The paper, entitled “*Analysis of multi-class pharmaceutical in fish tissues by ultra-high performance liquid chromatography tandem mass spectrometry*”, presents a new sensitive method based on pressurised liquid extraction (PLE) for the determination in fish homogenate, liver and muscle, of twenty pharmaceuticals compounds and metabolites from seven commonly used therapeutic families.

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Analysis of multi-class pharmaceuticals in fish tissues by ultra-high-performance liquid chromatography tandem mass spectrometry

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ABSTRACT

A new sensitive method based on pressurized liquid extraction (PLE) and purification by gel permeation chromatography (GPC) prior to ultra-high-performance liquid chromatography coupled to tandem mass spectrometry (UHPLC–MS/MS) was developed for the determination in fish homogenate, liver and muscle of twenty pharmaceuticals compounds and metabolites from seven commonly used therapeutic families. An extensive matrix effect evaluation was performed in order to select the best approach when analyzing such complex matrices. Limits of detection (MDLs) for the target compounds were in the range of 0.03–0.50 ng/g for fish homogenate, 0.01–0.42 ng/g for fish muscle, and 0.08–0.98 ng/g for fish liver. The method was applied to fish tissues of eleven fish species from four heavily impacted Mediterranean rivers. Nine compounds from five therapeutic families were measured at concentrations higher than MDLs. Highest levels were found in trout liver, with a maximum concentration of 18 ng/g for carbamazepine, whereas the most ubiquitous compound was diclofenac.

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1. Introduction

In recent years, the occurrence, fate, and adverse effects of pharmaceutical residues in aquatic organisms have become a noteworthy issue. In Europe, the legislative proposal for amending the list of priority substances that represent a significant risk to or via the aquatic environment was presented by the European Commission on 31 January 2012, and included for the first time the pharmaceutical substances 17- α -ethinylestradiol (EE2), 17- β -estradiol (E2) and diclofenac [1]. The U.S. Environmental Protection Agency (EPA) has also included some pharmaceutical substances in the Drinking Water Contaminant Candidate List, such as the antibiotic erythromycin and the estrogenic hormones 17- α -estradiol, estril and estrone [2]. In addition, many reports have highlighted the potential of pharmaceuticals and/or their metabolites to accumulate in tissues of aquatic organisms, such as crustaceans, molluscs and fish, as a consequence of their chronic exposure in aquatic ecosystems [3–5]. In general, pharmaceutically active compounds (PhACs) are highly hydrophilic, and their bioaccumulation potential might be considered irrelevant, particularly when compared to other pollutants, such as pesticides and persistent organic compounds (POPs). These conventional pollutants have been reported in a vast number of studies to bioaccumulate in different organisms because of their lipophilicity and tendency to bind to organic matter [6–10] and are considered in many priority pollutants lists [11,12]. However, some studies have indicated that the bioaccumulation of PhACs is not only determined by chemical lipophilicity, and other processes should also be considered, such as active transport through biological membranes or uptake and depuration kinetics [13–15]. Analytical techniques used for the detection of PhACs presence at (ultra)trace quantities in environmental matrices have advanced significantly in the last few years and have been summarized in recent reviews [16–24]. Even though an increasing number of analytical procedures have been reported for several therapeutic families in biota in the last years, they are still sparse, probably due to the challenges associated with the complexity of the biological matrices [25]. Groups of PhACs analyzed in biota so far include psychiatric drugs [5,26–29], synthetic hormones [30], and antibiotics [3,29,31,32]. Exhaustive sample preparation followed by sensitive detection techniques is required in these cases, due to the very low concentration of analytes in biological matrices [33]. Both, ultrasonication and pressurized liquid extraction (PLE) have been often used for the extraction of PhACs in aquatic organisms, such as crustaceans, mussels, algae, and fish [27,28,30,34–37]. Regarding the crucial purification step of the sample extract, different

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<http://dx.doi.org/10.1016/j.chroma.2013.03.001>

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Figure 29. Huerta’s et al. Peer reviewed paper.

ICRA (partner 6) submitted a paper that has been accepted for publication in the Journal of Chromatography, where the ECsafeSEAFOOD project has been acknowledged. As of the date of this present report, the print proofs have already been corrected and the paper's publication is expected occur and be available online during the following days.

The paper is entitled "*Development of a liquid chromatography – tandem mass spectrometry procedure for determination of endocrine disrupting compounds in fish from Mediterranean rivers*".

Author: Jakimska, A. *et al.*

ECsafeSEAFOOD [311820] – Deliverable 7.5

#	D.O.I	Title	Main Author	Title of the periodical or the series	Number, date or frequency	Publisher	Place of publication	Date of publication	Relevant Pages	Permanent identifiers (if available)	Open access is/will be provided to this publication	Status
1	10.1016/j.chroma.2013.03.001	Analysis of multi-class pharmaceuticals in fish tissues by ultra-high-performance liquid chromatography tandem mass spectrometry	B. Huerta	Journal of Chromatography. A	1288	Elsevier		03.05.2013	63-72		Available for purchase at (http://www.sciencedirect.com/science/article/pii/S0021967313004238)	Online
2		Development of a liquid chromatography – tandem mass spectrometry procedure for determination of endocrine disrupting compounds in fish from Mediterranean rivers	Jakimska, A.									

Table 2. List of all scientific (peer reviewed) publications relating to the foreground of the project.

5. Conclusion

The dissemination and knowledge transfer activities carried out within the project were designed to facilitate and improve the relationship and communication among stakeholders, scientists and civil society. Through the press releases, different newsletters and project websites, the project reached the wider public and raised awareness among the target end-users about the project's objectives and expected results. Dissemination activities includes the creation of general and targeted dissemination material (such as the ECsafeSEAFOOD logo, brochure and the project website), the publication of press releases on the main achievements of the ECsafeSEAFOOD project, the presentation of the ECsafeSEAFOOD expected results in relevant events (scientific conferences, workshops, seminars) and peer reviewed publications.