



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773330

Deliverable report for

GAIN

Green Aquaculture Intensification in Europe

Grant Agreement Number 773330

Deliverable D6.4

Title: Intermediate plan for the exploitation and dissemination

Due date of deliverable: 31/10/2019

Actual submission date: 31/10/2019

Lead beneficiary: SPAROS

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WP: 6

Dissemination Level:		
PU	Public	Y

Document log

Version	Date	Comments	Author(s)
Version 1	04/10/2019	First Draft	Luis Conceição
Version 2	23/10/2019	Comments and revisions	Gesche Krause
Version 3	24/10/2019	Second Draft	Luis Conceição
Version 4	30/10/2019	Improvement based on comments by RP and JGF	Luis Conceição
Version 5	31/10/2019	Final version	Luis Conceição
Version 6	17/12/2019	Revised version	Luis Conceição

Recommended Citation

Conceição, L., G. Pereira, B. Grote, B. H. Buck, G. Krause, 2019. Intermediate plan for the exploitation and dissemination D6.4. GAIN - Green Aquaculture INTensification in Europe. EU Horizon 2020 project grant nº. 773330. 28 pp.

GLOSSARY OF ACRONYMS

Acronym	Definition
CDE	Communication, Dissemination and Exploitation
BOX	A cloud-based data management and services platform, powered by partner IBM
DMP	Data Management Plan

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1.Introduction

Green Aquaculture Intensification in Europe (GAIN) is designed to support the ecological intensification of aquaculture in the European Union (EU) and the European Economic Area (EEA), by developing and validating innovative production tools and knowledge to end-use and market level as well as increasing production and competitiveness of the industry, while ensuring sustainability and compliance with EU regulations on food safety and environment. GAIN is a transdisciplinary project that involves the integration of scientific and technical innovations, new policies and economic instruments, as well as the mitigation of social constraints.

Dissemination and exploitation of GAIN project results is an important part of our project in order to achieve the largest possible impact. The GAIN consortium is committed to maximize the impact of the results and has planned a full range of activities to achieve maximum dissemination of the project. This includes a realistic, active disclosure of results to a broad range of stakeholders. In accordance with this vision, the Exploitation of GAIN's outcomes are expected to expand beyond the project's life-cycle, and outside Europe as it contributes to the aquaculture sector innovation and sustainability. This is achieved by testing/demonstrating products, results or recommendations to distinct stakeholders in order to maximize the impact of GAIN.

The description of the dissemination plan (section 2) starts with a brief discussion of the core components (2.2) and objectives (2.3) as well as the project's target audiences (2.4). A major component of the project's dissemination strategy is a targeted set of fine-tuned, modern dissemination tools (section 3).

All partners are engaged in dissemination activities. The dissemination strategy is based on the expertise and experience of all partners, taking advantage of the balanced composition of the consortium between academia and the private sector to reach the relevant audiences. This deliverable builds on D6.2 - Plan for the Exploitation and Dissemination of Results and is one step further for the final Plan for the Exploitation and Dissemination of Results (PEDR) of GAIN project, as planned dissemination activities as well as the exploitation of results are evolving during the project's life cycle. This document reviews the draft Plan for exploitation and dissemination, presents the results obtained from month 1 to month 18 and schedules exploitation and dissemination activities from month 18 to month 40.

2. Dissemination Plan

2.1 Overall strategy

The dissemination, exploitation and communication work package (WP6) is strongly related to all other work packages and collects input from different tasks, depending on the actual project phase. Project goals, ideas and (interim) results are being communicated to all interested, relevant audiences from project start onwards through different, modern dissemination channels and tools.

Our strategy contains build-in flexibility in order to deal with potential rapid change in dissemination platforms. To be effective and efficient, the dissemination strategy includes the:

- Use of different dissemination tools on the same platform such as written text, graphs, illustrations, web-based tools, apps, oral presentations, leaflets, brochures etc.
- Recognition of the need of the audiences by using appropriate language and information levels.
- Interaction with other relevant projects and initiatives.

2.2 Core components

GAIN contains three core components in preparing and implementing a strategy for dissemination and exploitation of results:

1. What – key results
2. Who – stakeholder
3. How – dissemination tools

2.3 Dissemination Objectives

The GAIN project dissemination objectives are:

- To engage with the key stakeholder groups – (i) industry, insurance and investors; (ii) Policy-makers; (iii) Research community, and share its progress and results by means of appropriate dissemination tools and language (in terms of different languages and appropriate expression);
- To disseminate and transfer the GAIN knowledge, activities, methods, and products;
- To enable scope for societal uptake of GAIN results for food security transformation in EU

Research results will be reviewed within GAIN, and the data management plan will follow the FAIR approach: Findability, Accessibility, Interoperability, Reusability (see 2.6).

In order to reach a wide range of audiences, we are following the principle of ‘AIDA’, which stands for: Attention, Interest, Desire (or decision), Action which is widely adopted in modern-day marketing and promotion. The concept of AIDA was adapted to the purpose of GAIN (Fig. 1), as follows:

Attention refers to inform a wider public about the GAIN project by means of place or personalization of information. Dissemination tools can be: videos, leaflets, brochures, posters and forms of social media.

Interest describes the part of dissemination where an audience already aware of the project is made curious about the project (and its findings) in more detail. This can be done by dissemination material, such as websites, newsletters, and videos, or by conference talks, publications and posters.

Desire means to turn the project into something which is not only relevant to the targeted audiences but also to keep them interested in it during the project progress. This includes updates on social

media, websites, updated videos and newsletters, as well as participation to conferences. In addition, **decisions** about future pathways of food security access, and utilise GAIN findings via engagement with policy-makers, industry and investors.

Action means leading the audiences to take action and to make use of the project results. This includes supporting policy making, providing ready-to-use products and apps as well as providing up-to-date information via social media, websites, updated videos and newsletters, as well as at conferences.

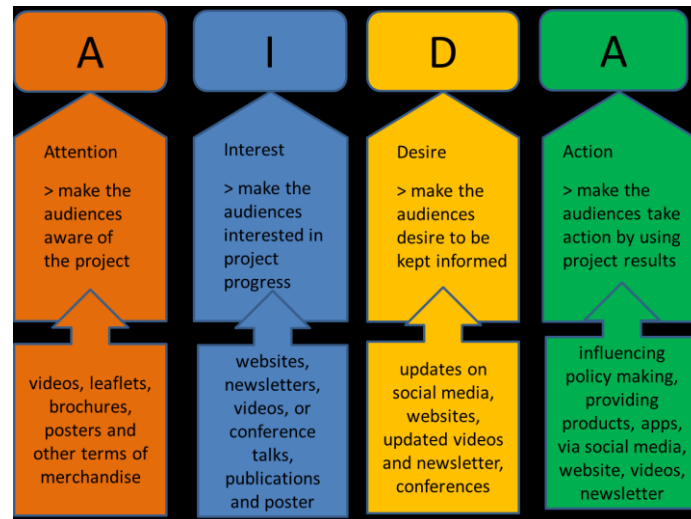


Fig. 1 AIDA concept for GAIN

2.4 Target audiences

The success of GAIN depends on its results and the potential innovations they hold for specific stakeholder groups. As GAIN applies a co-production of knowledge approach, these will, to some extent, affect the overarching project decisions and outcomes in different ways. Hence, to maximize the project impact, it is important to identify and classify targeted audiences and stakeholders in order to select the appropriate dissemination tools which hold the potential to foster the two-way transfer of knowledge, involving feedback from stakeholders to monitor and improve the effects of GAIN over the course of the project life-cycle. The Consortium identified a first set of target groups, covering the full range of potential users and stakeholders. These stakeholders are to provide valuable feedback on the project (Fig.2) and introduce challenging requirements to be considered, while having a major impact on the project's sustainable development. The described target audiences are also be used for exploitation efforts (5.2).



Fig. 2 GAIN dissemination and exploitation feedback loops. Please note: That “Citizens and Public” primarily refers to “Communication” but interacts with dissemination/exploitation as well.

2.4.1 Public authorities:

A wide group encompassing local and regional authorities, ministries, parliaments and Public Administrations at national and international level:

- National Policy-Makers in Member States: national ministries, governmental agencies as well as regional and local policy makers will be informed about the project from the initial awareness phase (8 months) onwards; These stakeholders will be reached by formal and informal channels. Institutional and personal contacts of consortium participants are an example of informal channel, while formal channels such as sending of project newsletters and press releases to the cabinets of ministers, members of parliament and high/mid level public officers acting in the area of aquaculture, will also be used by consortium participants.
- European level Policy Makers will also be reached; at the level of the European Commission, these are expected to be reached through the project Policy Officer, while project newsletters and press releases will be sent to the cabinets of members of the European parliament.

2.4.2 Business community:

This group comprises stakeholders from industry, insurances, investors, SMEs, seafood producers (farmers), retailers, wholesale agents, feed producers, food processing industry. As diverse as this group are the dissemination tools (see 3.) to inform about the project and to engage this important stakeholder group in GAIN activities in order to facilitate continuous two-way-transfers of knowledge.

2.4.3 Academia:

This group comprises researchers of institutes and universities, as well as other EU-funded projects of a similar topic. Central dissemination activities for this group revolve around scientific publications, presentations on conferences and science events, as well as newsletters and reports.

2.4.4 Specialized Media:

For the technical media, mainly professional readership magazines/websites print and online (e.g., Aquaculture Europe Magazine, Intrafish, Aquafeeds.com, Aquaculture Asia Pacific), press releases regarding events, workshops and publications will be prepared regularly.

2.5 Dissemination rules and publication policy

2.5.1 General principles

In GAIN, the Consortium Agreement (CA) has established a legal framework and provides clear regulations for issues within the consortium related to the work, IP-Ownership, Access Rights to Background and Results and any other matters of the consortium's interest. In particular, the CA includes explicit agreements concerning IP ownership, access rights to any Background and Results for the execution of the project and the protection of intellectual property rights (IPRs) and confidential

information. To ensure a smooth execution of the project, in the Consortium Agreement the project partners have granted each other and their affiliated companies, royalty-free Access Rights to their Background and Results for the execution of the project. This allows the researchers the ability to execute the project to the best of their ability, without being hindered by administrative issues. The Consortium Agreement has defined further details concerning the Access Rights for Exploitation to Background and Results. For dissemination activities, the principle of Intellectual Property (IP) Rights are followed, next to ensuring proper references, and aligning with transparency procedures.

2.5.2 Authorship and acknowledgement guidelines

Authorship on publications is based on academic standards and practice. All investigators and contributors to a publication will be acknowledged, in compliance with recognized standards concerning publication and authorship, including the most recent “Recommendations for the Conduct, Reporting, Editing and Publications of Scholarly Work in Medical Journals” developed by the International Committee of Medical Journal Editors (ICMJE).

Unless the Commission requests or agrees otherwise or unless it is impossible, any dissemination of results (in any form, including electronic) must:

- (a) display the EU logo and
- (b) include the following text:

“This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 773330”.

Any Dissemination activities must indicate the contribution made by each of the Parties to the conduct of the research being reported and to the funding of the research by the European Union. To that end the publishing Party(ies) shall ensure the following statement is included in any publications relating to the Project:

“The research leading to these results has received funding from the European Union’s HORIZON 2020 Framework Programme under GRANT AGREEMENT NO. 773330.”

Any dissemination of results must indicate that it reflects only the author’s view and that the Commission is not responsible for any use that may be made of the information it contains.

2.5.3 Open Access to published results

Each Party is responsible for the fulfilment of the requirements in the Grant Agreement regarding Open Access publications involving that Party. When two or more Parties are publishing together, they shall agree about the costs for the fulfilment of the requirements in the Grant Agreement before they publish.

2.5.4 Prior notice obligation

During the Project and for a period of 1 year after the end of the Project, the dissemination of own Results by one or several Parties including but not restricted to publications and presentations, shall be governed by the procedure of Article 29.1 of the Grant Agreement subject to the following provisions. Prior notice of any planned publication shall be given to the other Parties at least 45 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Coordinator and to the Party or Parties proposing the dissemination within 30 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.

2.6 Data management plan

The Data Management Plan (DMP) is developed to guarantee and promote information flows within the GAIN project as well as externally. The DMP involves protocols for data standards. The responsibility for data lies with each partner, while the coordinator ensures that all named data managers and partners are following the GAIN DMP, notwithstanding the responsibility of each partner in following National and EU legislative data protection procedures. As part of the exploitation strategy, we are working with end-users to identify what datasets can readily be made publicly available and seek appropriate consent during the data collection phase. Non-commercially sensitive data, including all data related to scientific publications, are to be made available in an open research data repository. Our DMP aims to address data curation (based on standardization and indexing) and data preservation considerations (by depositing final datasets in replicated online open-access repositories such as ZENODO). When uploading data to the web, a protocol for unique and persistent identifiers, such as a DOI is to be used (OpenAIRE+ and ZENODO e-infrastructures). Data are to be archived in perennial repositories in order to make data publicly available as soon as possible.

GAIN is part of the Horizon 2020 Open Research Data Pilot, and for each (external and/or internal) resource type and related software, the DMP considers the following aspects, based on the FAIR (Wilkinson et al., 2016)* approach (Table 1). Following the terms of reference of the H2020 Data Pilot, a detailed DMP based on these aspects are defined in GAIN Deliverable D7.3. The range of data being collected, generated and used as part of the project are described; data typology and volume are presented together with the utility both towards the GAIN project and for the wider scientific community. A detailed description of open-access procedures are provided in D7.3 together with an assessment of the data sets that can be made open either partially or in totality. A final decision on providing any particular data set as open data will be documented in a future revision of that Deliverable.

Moreover, in the GAIN project, large sets of heterogeneous data will be generated, including quantitative, qualitative, and fuzzy data. When appropriate, data will be integrated with marine and terrestrial Earth Observation data downloaded from public portals such as Copernicus.

In order to guarantee data access and use, GAIN has created a mutual cloud-based data management and services platform (IBM's BOX tool) that offers unified access to relevant information (including *in situ* sensor data, relevant public data, model hindcasts, nowcasts, and forecasts, and farm operations data).

Table 1. The FAIR (Findable, Accessible, Interoperable, Reusable) approach of the GAIN Data Management Plan (DMP).

FAIR element	Detail*	GAIN DMP
Findability	F1. (meta)data are assigned a globally unique and persistent identifier F2. data are described with rich metadata (defined by R1 below) F3. metadata clearly and explicitly include the identifier of the data it describes F4. (meta)data are registered or indexed in a searchable resource	Review projected GAIN data types and assign appropriate metadata classifications; apply the Digital Object Identifier (DOI) standard for assignment to data and metadata as appropriate
Accessibility	A1. (meta)data are retrievable by their identifier using a standardized communications protocol A1.1 the protocol is open, free, and universally implementable A1.2 the protocol allows for an authentication and authorization procedure, where necessary A2. metadata are accessible, even when the data are no longer available	Information Management System (IMS) data, i.e. derived from sensors, will have its own standardized communications protocol, with built-in security authentication. IBM has extensive experience in this area. Other types of data and metadata will be accessible using industry-standard protocols such as JSON
Interoperability	I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation. I2. (meta)data use vocabularies that follow FAIR principles I3. (meta)data include qualified references to other (meta)data	GAIN will meet specific knowledge representation and vocabulary standards, e.g. standards for data annotation and data exchange, and combinations of datasets from different origins. GAIN will draw on the state-of-the-art in this area.
Re-Usability	R1. meta(data) are richly described with a plurality of accurate and relevant attributes R1.1. (meta)data are released with a clear and accessible data usage license R1.2. (meta)data are associated with detailed provenance R1.3. (meta)data meet domain-relevant community standards	GAIN will apply industry-standard ontology principles, to ensure adequate formal naming and definition of entities, making metadata as useful as possible. There is a substantial body of information on the current computer science approaches to this topic, and we will review and select the best options in our DMP

*Wilkinson, M. D., M. Dumontier, I. J. Aalbersberg, G. Appleton, M. Axton, A. Baak, N. Blomberg, et al. 2016. The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data* 3 (1): 160018. doi:10.1038/sdata.2016.18. <http://dx.doi.org/10.1038/sdata.2016.18>.

2.7 Dissemination and stakeholder engagement time line

All dissemination activities are planned according to each stage of the project. The most significant dissemination actions with the greatest impact are to take place as soon as final research results are presented and GAIN enters the exploitation phase. The different phases of the time line partly overlap, as dissemination and stakeholder engagement are dynamic processes and success are to be continuously monitored throughout the project in order to reproduce it. Thus, dissemination activities and tools are being constantly adapted to changes in outreach and visibility during the project, as well as when new insights from the two-way transfer of knowledge between different knowledge realms of science and society surface.

Table 2. The dissemination activities are planned according to the following time line:

Phase	I.								II.								IV.								VI.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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- I. Initial awareness phase (month 0-8):** during this phase, social media activities were fostered and the project was presented to the different target audiences using tools such as website, newsletter, Twitter, Facebook, leaflets, press releases, as well as events and conference presentations. The communication kit including project logo, project presentation, project poster, project leaflet, and templates for project documents was designed and made available to all partners.
- II. Interaction with stakeholders (month 8-18):** in the second phase, the interaction with and the involvement of stakeholders is focusing in dissemination activities. Dissemination tools already used include GAIN leaflet, newsletters, participation in workshops, conferences and tradeshow, interviews, questionnaires or focus groups.
- III. Validation in science (month 10-24):** during this phase, first results are to be analysed and interpreted. This phase overlaps with phase II and IV.
- IV. Feedback to stakeholders (month 18-30):** preliminary findings will be presented to different target audiences. All dissemination tools (see 3.) will be continuously updated with new results. Two-way-communication and transfer of knowledge will be supported by deliverables such as reports, videos, scientific articles, technical articles, white papers, etc.
- V. Collate findings across different sectors conclusively (month 24-34):** as soon as first results are available and towards the end of the project, findings need to be analysed in conclusive manner across different sectors in order to reach the highest impact of project results.
- VI. Conclusive summary and final phase (month 31-42):** Final results will be summarized and disseminated to all target audiences using the different dissemination channels identified for each group. The final dissemination and exploitation plan will be produced. The results will be available long after the project end (see 5.).

2.8 Disseminating GAIN results and achievements at different geographical levels

2.8.1 Setting up local dissemination & communication plans

Besides the general dissemination plan outlined in detail in this document, project partners were asked from the onset of GAIN to fill in templates for “local dissemination plans” and nominate a dedicated person responsible for plan implementation and monitoring on local/regional level. They are enquired to report regularly (at least twice a year) to the overall project dissemination plan manager. In order to support the GAIN project partners in choosing the right dissemination tools and times for the different target audiences, a GAIN sheet “Events of interest for GAIN Dissemination and Communication activities” is available at the Communication, Dissemination and Exploitation (CDE) file

at BOX project internal web-based communication hub, a resource powered by partner IBM, to assist partners with local and regional dissemination purposes.

Furthermore, local /regional dissemination activities include:

- Putting a link on partner websites to www.unive.it/gainh2020_eu and <https://gain2020.blog>
- Identifying local media and approach them with press releases
- Continuously Identify national events where GAIN should be presented
- Identifying regional/local publication opportunities
- Informing national stakeholders according to the “Events of interest for GAIN Dissemination and Communication activities”
- Sending a list of relevant events for publication on the GAIN website
- Following GAIN on social media and actively disseminate GAIN news

2.8.2 National activities

Dissemination activities on the national level will also be the main responsibility of the project partners and include:

- Identifying national events where GAIN should be presented such as conferences, seminars, or workshops.
- Identifying national media and approach them with press releases for articles in national newspapers and magazines for both the general public and public authority professionals

3. GAIN dissemination tools

3.1 Project visual identity

Although not a dissemination tool, the project logo allows for an easy identification of GAIN documents, results and outputs, boosting dissemination tools and activities. It is available in different formats (.jpg, .png, .tiff, .eps) allowing the print and web material. The Logo was designed by GAIN partner Longline Environment Ltd (LLE).



3.2 Project website

The project's website at www.unive.it/gainh2020_eu is next to the GAIN Blog (see 3.3) the main point for information on the objectives, methods and results of GAIN. The website is structured as follows:

- **Homepage:** The homepage focuses on the objectives of GAIN and the Consortium. The project name, the vision of the project, its management structure and the expected impact are described. This is followed by a short introduction of the consortium. At the bottom of the homepage, contact details are given, twitter and facebook link are included and a link to the GAIN blog is presented. As the project progress continues, content elements will be added pointing directly to important website content, such as key deliverables or videos.
- **Partners:** the partners of the GAIN project are presented
- **Pilot sites:** it is a section devoted to the 10 pilot farming sites used by GAIN organised in two paragraphs:
 - a) Shellfish, with three locations
 - b) Finfish, with seven locations.All sites are identified with geographical coordinates and brief description of the site.
- **Media relations:** this section is devoted to:
 - The Newsletter, with option of downloading the issues from the website, and also the possibility is given to subscribing and receiving it directly, as soon as a new one is published.
 - Promotional material
 - Press Releases
 - Videos
- **Dissemination:**
 - Deliverables
 - Papers and conference proceedings
- **News:** all news, press releases etc. regarding the project are shown. This is being updated regularly.

The GAIN website is updated continuously: new pages/sections can be added or removed. The website is maintained by the project's manager at Ca' Foscari University of Venice. Several GAIN partners also have webpages dedicated to GAIN.

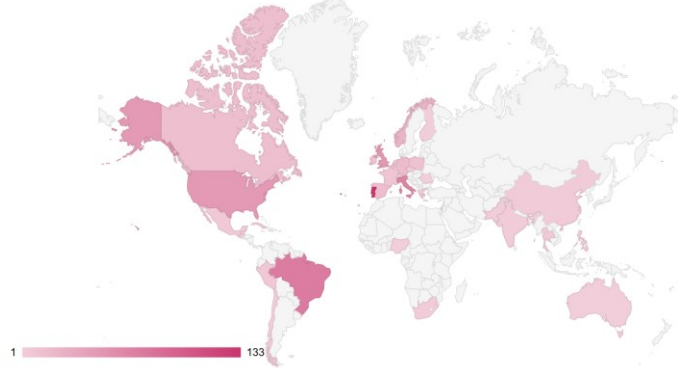


www.unive.it/gainh2020_eu

The GAIN website received so far 1952 page-views, with an average time on the page of 2'03 ''.

3.3 Project blog

A Gain Blog was launched at <https://gain2020.blog> in order to provide videos and short notices on the GAIN development and results. All project partners will contribute blog entries and news will be presented with a monthly frequency. So far, the blog has published 13 posts, and has 1182 views, 624 visitors, in 34 countries the top-ten nations being Portugal, Brazil, Italy, United Kingdom, United States, Norway, Belgium, Germany, Spain and Canada (see map below). Some of the most popular posts are shown below, together with their visitor statistics.



The day of a fish

ghotimeansfish Animal Welfare, Aquaculture, Fish, Uncategorized
September 12, 2019 1 Minute

By [Caitlin Stockwell](#):

Have you ever wondered what the day of a fish looks like? Or what leads to their decision making? Well I have always been curious, and I turned that curiosity into a career path.

Women in aquaculture science

ghotimeansfish Aquaculture, Women in Aquaculture Science September 4, 2019 2 Minutes

By [Gabriella Pereira](#):

I started my life in aquaculture science as an intern while undertaking my undergrad ten years ago. I took my undergrad course in Aquaculture Engineering at the Federal University of Santa Catarina in Florianopolis, Brazil, the same institution where I also took my M.Sc. degree in Aquaculture.



Weekly visitor statistics:



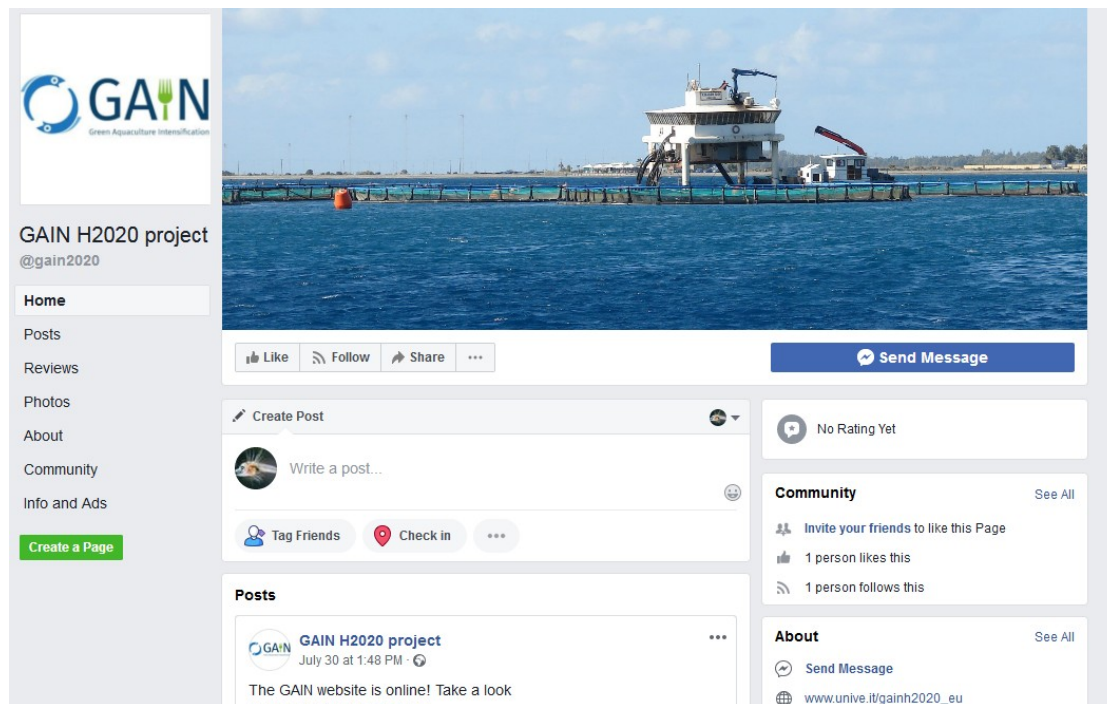
<https://gain2020.blog>

3.4 Web 2.0 - Social Media strategy

Social media is one of the most important tools for dissemination for the audiences of millennials and younger people. To reach out to these groups is central for GAIN, as these are the stakeholders that hold the highest potential to uptake GAIN results and to harness these for future transformative food production systems. The Social networks provide numerous tools for dissemination that are used with different objectives and varying degrees of success. Thus, our plan contains built-in flexibility and includes monitoring the success of social media dissemination tools, by likes, followers, retweets, etc., in order to deal with potential rapid change in dissemination platforms and to reproduce the success. Furthermore, a two-way social media communication is envisaged. Standard methods such as Google Analytics will be used to monitor traffic. This strategy was adapted to set a benchmark for increasing visibility of the GAIN project.

Concrete measures for social networking channels include:

The **GAIN Facebook** site was launched in June 2018 at <https://www.facebook.com/gain2020> and is updated regularly. It contains many visual elements and links to videos etc. From July 2018 to October 2019, the GAIN facebook site received 587 Interactions on posts, which reached 6005 people.



<https://www.facebook.com/gain2020>

The project is also present on **Twitter** at <https://twitter.com/gain2020> and tweets are sent regularly. By October 2019 GAIN twitter had 77 followers: from June 2018 to October 2019, GAIN's Twitter received 18,742 Impressions, 451 Engagements.

The GAIN's **Instagram** - GAIN2020@greenaquaculture2020 has also been setup, and currently has 61 followers, and with 30 posts made. Recent posts (since early July) are getting over 10 likes/post.

Furthermore, TV interviews with participating celebrity chefs and a jointly presented TED talk by a scientist and a chef are planned.



<https://twitter.com/gain2020>

As one product of the GAIN project, an app will be designed in three European languages to provide transparency and up-to-date information on pricing for farmed products for consumers. The use of the smartphone app will also be used to increase the public awareness and consumer-oriented strategies

for better product information. This platform will be advertised on the GAIN website and through the other social media channels.

A series of short videos will be produced to inform about objectives, activities and results of GAIN. Additional videos will be produced by the partners, communicating specific results. All videos will be professionally produced and posted on YouTube and other social media platforms.

Concurrent with the first finalised video from GAIN, a GAIN2020 YouTube channel will be created in order to post all dissemination videos produced under the project. The plan for video productions includes six central videos. Their title, coordinating partner, aimed duration and envisaged release month is listed in the table below.

Video content	Partner in charge	Planned duration	Release date
Project objectives and activities	SPAROS	4'	Month 19 (Dec 2019)
Intermediate achievements and results	UNIVE	4'	Month 31 (Dec 2020)
Novel eco-efficient aquafeeds	SPAROS	2'	Month 36 (Apr 2021)
Secondary products	CSIC	2'	Month 38 (Jun 2021)
Precision aquaculture	IBM	2'	Month 41 (Sep 2021)
Final achievements and results	UNIVE	4'	Month 42 (Oct 2021)

The coordinating partner is supposed to define the scripts for each video and define what kind of images/footage needs to be shot. To facilitate identification of the needed footage and identify already existing footage (from past projects, corporate videos, etc) SPAROS has prepared a database-style file to support cost-efficiency in production.

In addition to these professional-style videos, the production of other videos (~1 min) by partners is stimulated. These may be employed in the blog, website, as well as linked to the GAIN2020 Youtube channel. Contacting schools to produce GAIN-inspired additional short videos is also envisaged. The positive example provided by the former AQUASPACE project in which a school contest lead to a successful video production will be used as showcase approach.

3.5 Academic publications

All project partners are encouraged to publish research results in peer-reviewed, high-ranked academic journals. We aim at a high number of collaborative research articles in peer-reviewed journals to communicate results and make them available to the academic community for further refinement. These will foster academic networking within GAIN, but also ensure high visibility within the different academic disciplines pertaining to the research results but also to the topic of eco-intensification of aquaculture for transformative food security.

3.6 Non-academic publications

All non-academic publications will be freely available on the project's website and developed for targeted stakeholders and a broad readership.

3.6.1 Project leaflet

The first draft was designed by the Work package 6 Leader – SPAROS and reviewed by the PMT. The 2-page leaflet provides a brief overview of the GAIN project, its approach and main objectives. A map provides a visual overview of the partner institution locations of the GAIN consortium.

The leaflet also includes additional information about project partners, and contacts for getting up-to-

date information concerning project activities and results. It was already distributed at the joint World and European Aquaculture Societies (WAS/EAS) Conference in Montpellier (France) at the end of August 2018, at the WAS Aquaculture Conference in New Orleans in March 2019, and at the EAS Aquaculture Europe Conference in Berlin in October 2019.



3.6.2 Protocol/User Tool Kit

A tool kit for users, such as aquaculture producers regarding eco-efficient aquaculture practices will be developed and provided for download on the website. Furthermore, an information package for secondary schools will be designed informing on the GAIN project and the eco-intensification of aquaculture practices across Europe.

3.6.3 Newsletters

GAIN newsletters will be issued periodically, send to subscribers per eNewsletter as well as being presented on the project website and provides:

- Project-related news (e.g. launch and meetings)
- Updates of the project's progress
- Dates and details of upcoming events, conferences, meetings and publications
- Lectures, talks, and training opportunities

The eNewsletter will address target stakeholder groups and end-users (internal partners, industrial, scientific, standardization organizations, project beneficiaries) in an appropriate style and language and for a broad readership. Subscription to this newsletter is open to everyone. Selected issues may also be printed for distribution at events, as it happened for instance with issue nr 2, distributed at Partner SPAROS booth at EAS Aquaculture Europe Conference in Berlin in October 2019.

So far two issues of the GAIN Newsletter were released focusing on project ambitions and activities, one in May 2019 and another in October 2019. By-annual publications of subsequent issues is planned.

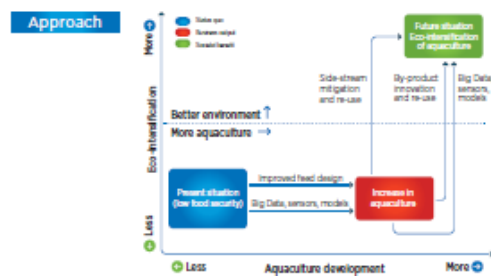


Editorial

GAIN is a collaborative project funded by the European Union (EU), designed to support the ecological intensification of aquaculture in the EU and European Economic Area (EEA), with the dual objectives of increasing production and competitiveness of the industry, while ensuring sustainability and compliance with EU regulations on food safety and environment. Eco-intensification of European aquaculture is a challenge that requires the integration of scientific and technical innovations, new policies and economic instruments, as well as addressing social considerations, in order to promote the implementation of the principles of circular economy in aquaculture.

GAIN specific objectives are:

1. Design and test an innovative range of finfish feeds;
2. Develop and test a platform for supporting the implementation of precision aquaculture by combining sensors, Big Data analysis, and predictive models;
3. Add value to cultivation of both finfish and shellfish by means of innovation in co-products from improved re-use of secondary materials, thus increasing profit and minimizing the environmental footprint of aquaculture;
4. Support integrated policies concerning aquatic food production, by addressing current barriers to the circular economy;
5. Promote market access, and help consumers, both in Europe and elsewhere, to understand the true value of quality production from European waters;
6. Provide guidelines for sustainable ecological and economic intensification of European aquaculture, and disseminate and exploit these findings and recommendations to farmers, managers, and policy-makers. In order to achieve these ambitious goals, GAIN is structured in 8 Work Packages, two of which are described in more detail in this first Newsletter.



Editorial

GAIN - setting the stage for the eco-intensification of EU aquaculture.






At the end of an intense and vibrant year, on May 7th and 8th GAIN partners gathered at Alfred Wegener Institute in Bremerhaven to take stock of the achievements accomplished thus far and to plan for future activities. Here is a short summary; more details can be found on our website, from which GAIN deliverables can be downloaded:

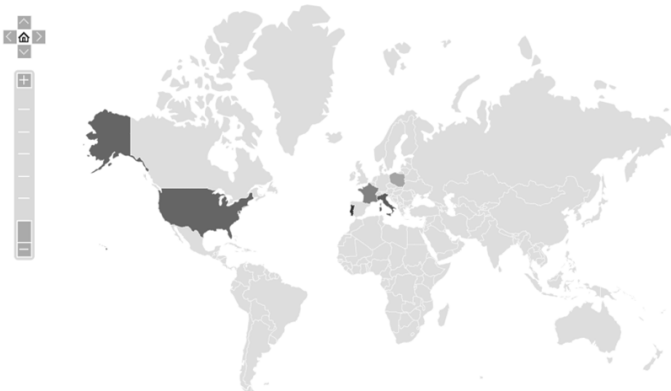
- Ten pilot sites, including salmon, rainbow trout, carp, seabass, shrimp and mussel farms in EU, Canada and China, were instrumented with state-of-the-art sensors for real time monitoring of environmental variables as well as behaviour and growth performances of farmed organisms.
- A prototype of the Information Management System, based on data from the ten pilot sites sent to a common platform and analyzed using machine learning algorithm and dynamic models, including data assimilation algorithms, was set up and tested.
- Enzymatic hydrolysis processes for extracting valuable products, e.g. fish protein hydrolysates (FPHs), from farmed fish filleting by-products using were optimized.
- Innovative, sustainable feeds, based on emergent ingredients that contribute to a circular economy towards zero waste, such as FPHs, insect meal, by-products of agroindustry, European-sourced vegetable protein concentrates, microalgae and microalgae were designed and are being tested on Atlantic salmon, trout, turbot and seabream; preliminary results concerning rainbow trout are very encouraging.



A mailing list for this eNewsletter is active, using mailchimp™ and fully compliant with EU's GDPR. However, GDPR compliance makes the set up and running of such a mailing list difficult and slow. Currently the mailing list has only 15 enrolled receivers, and a total of 7 opens (see graph).

Top locations by opens

	Portugal	14	37.8%
	Italy	9	24.3%
	USA	8	21.6%
	France	5	13.5%
	Poland	1	2.7%



3.6.4 Project presentation slides

A set of presentation slides and poster templates were developed in order to support representatives of GAIN to introduce the project to third parties, i.e. on events and conferences.



3.6.5 Deliverables / Reports

All public deliverables will be published on the GAIN website.

Table 3 Public deliverables on the GAIN website

Deliverable number	Title	Available
D1.1	Report on instrumentation of GAIN pilot sites.	May 2019
D1.2	Report on the formulation of eco-efficient feed	November 2019
D1.4	Report on identification of algae strains as multifunctional fish feed ingredients	January 2021
D1.5	Report on the Assessment of eco-efficient feed	May 2021
D2.1	Report on solutions for capture and use of particulate and dissolved matter in aquaculture side-streams	December 2020
D2.2	Report on the selected solutions for capture and use of mortalities in aquaculture	December 2020
D2.3	Report on the use of fish by-products	December 2020
D2.4	Report on use of shellfish mineral by-products as biofilters	December 2020
D2.5	Report on use of shellfish by-products in cement production	December 2020
D2.6	Report & white paper on framework for a nutrient credit trading policy for Europe, integrating shellfish producers.	May 2021
D3.1	Report on legislation, regulation, and certification of aquaculture within the circular economy	May 2019
D3.2	Report on EU consumption and production mass balance, and trade and market of different species	November 2019
D3.3	Report on value chain mapping for key species /systems, with SWOT analysis of key informants	November 2019
D3.4	White paper on policy/legislation change	May 2020
D3.5	Report on standards for competitiveness and employment, with risk profiles for eco-intensification	May 2020
D3.6	Twelve 'Voices from the water' videos	May 2020
D3.7	Report on consumer and stakeholder acceptance of eco-intensification measures, including impact assessment of improved information availability	May 2020
D4.1	Report on the application of the typical farm approach at the farm scale and across the whole sector	May 2020
D4.2	Report on value chain analysis	May 2020
D4.3	EISI sustainability approach, and results and analysis	May 2021
D4.4	Report on the application of LCA	May 2021
D4.5	B2C and B2B apps for smartphones and tablets	May 2021
D4.6	Report and white paper for policy-makers with key findings and recommendations	September 2021
D4.7	Website and video with the 'Veta la Palma' statement	October 2021
D5.1	Online courses, website and supporting information	May 2021
D5.2	Report on onsite training courses	September 2021
D6.5	Summary of GAIN dissemination activities	September 2021
D6.6	Evaluation of the AFP and legacy exploitation plan	September 2021
D7.3	Data Management Plan	available

3.7 Events

3.7.1 International expert workshops

GAIN participants were present at a range of national and international events. A key event was AQUA 2018 in Montpellier (France), a major conference and trade show, jointly organised by the World- and European Aquaculture Society, with over 2500 visitors, where the project was introduced to a wide group of academic and industry experts.

The Good fish meeting to be held towards the end of the project is planned to bring together key stakeholders, such as farmers, wholesalers, retailers, chefs, policy-makers and scientists.

It is planned to join Galway meetings, to support harmonization of policy approaches across the North Atlantic Member States. This shall be fostered via joint workshops under the Galway initiative with help from AORA (Atlantic Ocean Research Alliance). Since the GAIN consortium contains participants from all signatories of the Galway Statement, these workshops will be a significant milestone in further developing the collaboration. Input from NGOs on policy documents will be collated.

Conference presentations at e.g. Aquaculture Europe have been budgeted and planned, and young scientist will be encouraged to present GAIN results. We envisage at least two sessions at EAS conferences (2020 and 2021) chaired or co-chaired by GAIN. **A list of Events of interest** is in continuous update at the GAIN's Communication, Dissemination and Exploitation (CDE) file, which is available in GAIN's BOX, the project internal web-based communication hub, a resource powered by partner IBM. The events that are currently targeted and listed are assembled below.

Table 4. Events targeted by GAIN in 2019 and 2020

Date:	Occasion/Event:	Target audience	Location
07/03/2019	WAS 2019	ALL	New Orleans US
07/03/2019	Aquaculture and Marine Biotechnology	ALL	Amsterdam, NL
07/05/2019	Seafood expo 2019	ALL	Brussels, Belgium
10/05/2019	4th Global Food Security, Food Safety & Sustainability Conference	ALL	Montreal, Canada
10/06/2019	World Congress on Recent Advances in Aquaculture Research & Fisheries	ALL	Dublin, Ireland
20/08/2019	AquaNor 2019	ALL	Trondheim, Norway
07/10/2019	Aquaculture Europe 2019. Conference & tradeshow	ALL	Berlin, Germany
09/02/2020	WAS 2020	ALL	Honolulu, US
TBD	Seminário de Aquacultura - Associação Portuguesa de Aquacultores	Industry	TBD, Portugal
29/09/2020	EAS2020	ALL	Cork, Ireland
TBD	Seafood expo 2020	ALL	Brussels, Belgium
30/09/2021	Goodfish meeting	General Public	TBD
TBD	Seafood expo 2021	ALL	Brussels, Belgium
October 2021	EAS2021	ALL	Southern Europe
27/02/2022	WAS 2022	ALL	San Diego, US
TBD	Seafood expo 2022	ALL	Brussels, Belgium
October 2022	EAS2022	ALL	Southern Europe
19/02/2023	WAS 2023	ALL	New Orleans, US
TBD	AquaNor 2021	ALL	Trondheim, Norway

So far, the main dissemination action has been on the Aquaculture Europe 2019 (Conference & tradeshow), where a total of 10 presentations (9 oral, 1 poster) were made, with a wide coverage of GAIN's activities, from a project overview presentation at the tradeshow, to 2 presentations at the nutrition-related section on the novel eco-efficient feeds (Task 1.2), 3 presentations on use of sensors and big data to promote precision aquaculture (Task 1.4), 2 presentations on the use of aquaculture side streams, one on aquaculture carrying capacity aspects (Task 2.4) and one on the typical farm assessment (Task 4.1). These presentations raised considerable interest, with several public questions, followed by corridor discussions. As an example, the novel eco-efficient formulations raised several expressions of interest, including two feed companies, and 4 ingredient suppliers.

3.7.2 Participation to international third party events

In addition, GAIN Partners will participate in specific and non-scientific events such as Researchers Night, European Maritime Day, AquaNor to increase the visibility of the project and to disseminate project results to a wider public.

4. Reporting on dissemination activities

In order to reinforce the internal communication between all project partners throughout the project, a combined Communication/Dissemination/Exploitation reporting template was developed, the GAIN's Communication, Dissemination and Exploitation (CDE) file, which is available to all project participants in GAIN's BOX, and is in continuous update for reporting of communication, dissemination and exploitation activities. The reporting template includes instructions on how to fill out the template and will ease overall reporting of activities. See Annex 1, for further details.

5. Exploitation Plan

The outcomes of GAIN will help consumers in Europe and elsewhere to understand the value of sustainable production from European waters. We will provide guidelines for sustainable ecological and economic intensification of European aquaculture and disseminate and exploit these findings and recommendations to producers, managers, and policy-makers. We envisage a delivery of products tailor-made for industry, policy-makers, and the public.

Thus, the GAIN project will foster sustainable development of aquaculture in Europe, building trust and capacity in collaborative marine research processes among diverse stakeholders, communities, scientists and decision makers. This can improve European market-potential and competitiveness by enhancing ethical and sustainable seafood, which consumers demand.

5.1 Exploitation Plan and Management

The Exploitation Plan (EP) will be formulated in order to multiply the impact of the GAIN project results and prepare the transition towards industrial and commercial application in order to fully reach the

expected impact. The EP also defines the actions to be undertaken in order to secure the dissemination and exploitation of project outcomes beyond the project itself.

The EP will reflect and will be built-up as a result of sound analysis of the market trends (D3.1, D3.2), potential users (D3.5, D3.7, D4.1, D, and financial sustainability (D3.5, D4.2). The final exploitation Plan will be coordinated by LLE in collaboration with the WP6 lead SPAROS and the project manager. A value chain and market analysis will be performed in order to find the needs of the customers and the competitive situation (D4.2, UoS).

The existence of the website beyond the project life guarantees that online courses, training courses, user tool kits and other information are available to stakeholders and end users hereafter.

The legacy exploitation plan (D6.6) at the end of project (see table 2) will ensure further use of project results and the continued impact of GAIN. This is of importance, as former co-production of knowledge research approaches have shown, that impact of research findings often occur after the direct project life-time, as societal uptake of results take time.

In GAIN we will make sure that the different types of exploitable results (data, tool kits, publications, app, technologies, reports) are clearly identified and their direct and indirect impact and value for the diverse stakeholders are accounted for. The risks and potential barriers for exploitation will be recognized and met with relevant actions.

5.2 Target audiences

The target groups are identical to those described in Chapter 2.4 for "Dissemination".

5.3 Planned exploitation

Project partners are asked to continuously update a template for "exploitation", at GAIN's Communication, Dissemination and Exploitation (CDE) file, which is available to all project participants in GAIN's BOX, and is in continuous update, and also to nominate a dedicated person responsible for plan implementation and the monitoring of planned exploitation.

List of Annexes

1. Annex 1 - GAIN's Communication, Dissemination and Exploitation (CDE) file (Excel file, available on request)