



AQUAEXCEL

Aquaculture Infrastructures for Excellence in European Fish Research

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Combination of CP & CSA
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Capacities

Deliverable D2.2

**Directory of infrastructure facilities, services,
biological resources.**

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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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Glossary

AQUAEXCEL: Aquaculture Infrastructures for Excellence in European Fish Research

Research Infrastructure: a site-specific cluster of research groups and tools that provide services for basic or applied research

Operating Institute: the legal entity operating the Research Infrastructure

Facility Unit: specific experimental or analytical laboratory, which is part of the Research Infrastructure

Transnational Access: an AQUAEXCEL instrument that sponsors research teams to access and use major, rare and world-class Research Infrastructures they require for their work.

Summary

Objectives: to create a directory of European Research Infrastructures dedicated to aquaculture research and development, presenting available facilities, services, analytical laboratories and biological resources within and outside the consortium and to make the lists available to all participants, the scientific community and the industry.

Rationale:

AQUAEXCEL aims to integrate key aquaculture research infrastructures across Europe, in order to promote their coordinated use and development. Through collaboration between 17 partners and 23 facilities, AQUAEXCEL offers top class research infrastructures for both basic and applied research, giving aquaculture research groups the opportunity to utilise AQUAEXCEL's facilities.

WP2 aims to provide an integrated online infobase with all aquaculture research infrastructures in Europe and associated countries, including those provided by non-AQUAEXCEL partners. The infobase will be a viable European aquaculture research infrastructure directory designed to provide an open, sustainable service beyond the life-time of the AQUAEXCEL project. It will also be a powerful tool for identifying European facilities, genetic and human resources, and for promoting mutual collaboration.

The content of D2.2 is based on the outcome of D2.1, i.e. the integrated online directory system, made available at the AQUAEXCEL web site. It provides a synopsis of aquaculture research infrastructures available in Europe and associated countries, including those operated by non-AQUAEXCEL partners. The directory is a viable European aquaculture research infrastructure database designed to provide an open, sustainable service beyond the life-time of the AQUAEXCEL project. It will also be a powerful tool for identifying European facilities, genetic and human resources, and for promoting mutual collaboration.

The directory was built up using the records uploaded by each Research Infrastructure, describing its services, tools and fields of expertise. It will be the basis for identifying potential gaps in aquaculture research areas in Europe. As the on-line Research Infrastructure map is a dynamic and interactive database, the directory will be updated in order to reflect the additions and modifications that will be occurring over time.

Teams involved: IFREMER (P7) described the directory, with input and feedback from NTNU (P10) and AquaTT (P16). All partners entered data concerning their own Research Infrastructure and invited external partners within their geographical area to join the inventory.

Geographical areas covered: European Union Member States and Associated Countries, as well as non-European countries involved in interregional collaboration projects, such as Aquamed and NACEE.

Introduction

AQUAEXCEL aims to integrate key aquaculture research infrastructures across Europe, in order to promote their coordinated use and development. Through collaboration between 17 partners and 23 facilities, AQUAEXCEL offers top class research infrastructures for both basic and applied research, giving aquaculture research groups the opportunity to utilise AQUAEXCEL's facilities.

In 2012, a new online interactive system was developed and made available by AQUAEXCEL for registration of aquaculture research infrastructure. The aim of this system was:

- To describe available facilities, services, analytical laboratories and biological resources within and outside the consortium.
- To provide a powerful tool to identify European facilities, genetic and human resources and to promote mutual collaboration.
- To identify infrastructure clusters with complementary properties related to its systems, species, fields of research or environment.
- To retrieve information on existing Research Infrastructures, their facilities and services, and the type of fish material available for aquaculture research.

By applying a Google map based user interface, the system is easy to use for anyone looking to find the right connections, to tailor targeted research projects, to stimulate collaboration with the industry and to carry out joint experimental activities. In this way AQUAEXCEL provides two important instruments to the European aquaculture community: the current Research Infrastructure directory (D2.2) and the on-line interactive Research Infrastructure system on which the directory is based (D2.1).

The categories of information that were gathered for all Research Infrastructures are:

- General information: Research Infrastructure name, address, country, URL, contact person name, contact person e-mail address, and whether it is part of the AQUAEXCEL consortium and has facilities offering Transnational Access.
- Operating Institution name and type (selecting either University, Research Institute, Industry or other).
- Expertise fields and sub-fields (selecting up to three main fields)
 - Genetics: quantitative or molecular
 - Nutrition: feeding and digestion, defecation and excretion, new feed resources, product quality
 - Physiology: endocrinology, other physiological aspects of domestication
 - Welfare: behaviour, handling, stress
 - Health and pathology: bacteriology, virology, parasitology, microbial ecology, other issues
 - Aquaculture system engineering: recycling systems, cage systems, long line systems, pond systems, control systems, mathematical modelling
 - Environmental interactions and impacts: eutrophication, wildlife interactions, inorganic components, benthic and pelagic impacts, biofouling, transport
 - Processing: slaughtering, thermic processes (freezing, cooling, heating), other processes (smoking, salting), packaging, traceability, waste management
 - Other expertise areas
- Main species (selecting as many categories as appropriate, and specifying the species name(s)): marine fish, diadrome fish, freshwater fish, ornamental fish, shellfish, macroalgae, planktonic organisms, other aquaculture species.
- Identified fish lines: yes or no.

- Type of site (selecting as many categories as appropriate): land-based recirculation, land-based flow-through, cages, ponds, suspended systems, other type of site.
- Type of water (selecting as many categories as appropriate): seawater (natural), seawater (artificial), freshwater, brackish water, other.
- Instrumentation (selecting as many categories as appropriate): monitoring, robots, cameras, control systems, communication systems, other.

In addition, more detailed information was collected from the facility units that are offering Transnational Access within the AQUAEXCEL project:

- Technical description of the facility
- Remote monitoring and control
- Water and environmental conditions: flow rate, temperature, salinity, oxygen concentration, pH range, light intensity and wavelength, photoperio
- Processing labs
- Lodging facilities
- Numbers of researchers and technicians
- Past and present involvements in EU projects
- Services: scientific support, electronic database, quality insurance, safety and ethical issues
- Fish line information: name, species, general description, type (traits selected, number of generations, effective population size)
- Fish measurement methodology
- Pictures of the facility unit
- Modality of access, definition of unit of access

The definition of the different information categories that build up the online inventory system was based on extensive discussions among all AQUAEXCEL partners. A lot of category revisions and change of wordings had to be carried out. The final information categories were slightly different and less detailed than what was originally envisaged in the DoW. There are two main reasons for this: selecting the data that are considered necessary to identify possible Research Infrastructure gaps, and lowering the threshold for external Research Infrastructures to join and thus to ensure their contribution in the directory. The full information as described above and in the DoW can be found for each AQUAEXCEL Research Infrastructure on the project website – consortium pages.

IMPORTANT: The establishment of a European Directory of Aquaculture Research Infrastructures is an ongoing process. It is therefore planned that a revised version of the current document will be made available towards the end of the project.

Methodology

After finalisation of the inventory system's user interface (see D2.1), it was published on the AQUAEXCEL web site at www.aquaexcel.eu/rimap/. From there, it was made available to the public at large.

Firstly, an initial list of available Research Infrastructures in Europe was drawn up, based on an existing set of data derived from the FP6 European project DesignAct. This list was further completed with contact details of aquaculture institutions that are part of the Aqua-tnet consortium. All AQUAEXCEL partners were given the responsibility to invite identified Research Infrastructures within their respective geographical area to upload their data into the newly developed on-line inventory. These areas and corresponding partners are described in Table 1. Ifremer (P7) assigned the consortium partners with the task to invite dedicated non-AQUAEXCEL partners into the online inventory, using a standard letter of invitation. This letter is provided in Annex 3 ("Invitation letter to join the newly developed online Aquaculture Research Infrastructure Directory"). All partners were asked to send out their invitations within a 3 weeks deadline. A reminder was sent to all partners if no response was received.

When accessing the interactive map, either directly via its web address, or through the main AQUAEXCEL web site, the first step is to register with the system by entering an e-mail address, name and password. After admission, the Research Infrastructure providers are guided through a standardised interactive form for the registration of records in the different categories, in a straight-forward and user-friendly way. The invitation letter also included the necessary user guidelines and links to ensure the procedure is as straightforward as possible.

The AQUAEXCEL inventory is a Research Infrastructure unit based tool. As one Operating Institution may own and operate different Research Infrastructures, it was important to address each Research Infrastructure separately. Hence, invitations were directed towards those, and not only to the administrative head of the Operating Institution. In this way, each Research Infrastructure can be identified as a separate entry in the directory.

Table 1: European regions covered by the AQUAEXCEL interactive Research Infrastructure map and AQUAEXCEL partners with the main responsibility to distribute invitations to non-AQUAEXCEL partner Research Infrastructures within the respective regions.

EU countries	AE partners
Benelux, Central Europe	UGent
France	INRA
Greece	HCMR
Scandinavia, Finland, Iceland	NTNU
Spain, Portugal	ULPGC
UK, Ireland	UoS
Mediterranean countries (Aquamed partners), France	Ifremer
Eastern Europe (NACEE partners)	VURH, HAKI
Aqua-tnet members	AquaTT

Newly uploaded Research Infrastructures are listed in a separate section in the admin back-end of the system, and Ifremer (P7) as administrator and AquaTT (P16) as developer of the system perform a quality control of the submitted Research Infrastructure data before the new RI is accepted and viewable on the map. The quality control is a process which may involve discussions between the information providers and the AQUAEXCEL administrators. Special attention was given to the authenticity of fields of expertise, avoiding an overestimation of number of expertise fields. Once the record is checked and approved, it is published on the interactive Research Infrastructure map at www.aquaexcel.eu/rimap/.

A list of all invitations and responses was summarised in a MASTER database, which is stored and regularly updated by the administrator.

The European Aquaculture Research Infrastructure Directory

The final product of this deliverable, i.e. the AQUAEXCEL directory, provides quality-controlled and detailed information on Aquaculture Research Infrastructures, not only from the 23 facilities participating in the project itself, but also from a large number of other European institutions and organisations owning experimental facilities, instruments, databases or other facilities that are of relevance to the academic and industrial aquaculture community.

The directory of European Research Infrastructures registered so far is given in Table 2. It summarises all the information provided by the Research Infrastructure through the AQUAEXCEL online interactive map. The data conversion from html to excel format is done automatically through a service operated by the administrator. In this way, a new version of the directory can be generated each time a new Research Infrastructure is uploaded or an existing one is modified.

In the current directory, the Research Infrastructures are listed by country as follows (referring to the pages in the document):

Austria: 10
 Belarus: 11
 Belgium: 12-15
 Croatia: 16
 Czech Republic: 17
 Denmark: 18
 Finland: 19-23
 France: 24-28
 Greece: 29-31
 Hungary: 32-39
 Iceland: 40
 Italy: 41-44
 Netherlands: 45-47
 Norway: 48-61
 Poland: 62
 Romania: 63-64
 Russian Federation: 65-66
 Spain: 67-83
 Turkey: 84-86
 United Kingdom: 87-88

An overview over the available Research Infrastructures categorised according to fields of expertise, main type of species, type of site and type of water is given in Annex 2.

Table 2: Directory of European aquaculture Research Infrastructures, based on the records uploaded into the AQUAEXCEL on-line inventory system (1 page per Research Infrastructure, listed per country) as of 1 February 2013.

Name Research Infrastructure	Institute for Ecology and Aquaculture – Ökologische Station Waldviertel
Address	Gebharts 33, 3943 Schrems
Country	Austria
URL	http://www.baw-oeko.at
Contact person	Christian Bauer
E-mail address	christian.bauer@baw.at
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Other
if other type	Federal Agency
Name Operating Institute	Federal Agency for Water Management
AQUAEXCEL member	No
Main field of expertise	Carp Pond Aquaculture
2nd field of expertise	Product Quality
if other field	Fat Content
3rd field of expertise	Environmental interactions and impacts
if other subfield	Ponds in the Landscape
Freshwater fish	Cyprinus carpio
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	Yes
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	No
Communication systems	No
Other type of instrumentation	Telemetry
Longitude	15,1253839
Latitude	48,8039203

Name Research Infrastructure	RUE FISH INDUSTRY INSTITUTE
Address	Minsk 220024, 22, Stebeneva Str., Belarus
Country	Belarus
URL	www.belniirh.by
Contact person	Uladzimir Kastausau
E-mail address	belniirh@tut.by
Offers TNA?	No
Open for use to external users	No
Type Operating Institute	Research Institute
Name Operating Institute	RUE FISH INDUSTRY INSTITUTE
AQUAEXCEL member	No
Main field of expertise	Welfare
Main subfield of expertise	Behaviour
2nd field of expertise	Nutrition
2nd subfield of expertise	New feed resources
3rd level of expertise	Genetics
3rd sublevel of expertise	Quantitative
Freshwater fish	Carp, catfish, silurids
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	Yes
Other type of sites	lakes
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	27,5666667
Latitude	53,9

Name Research Infrastructure	Aqua4C (Biosystems KU Leuven)
Address	Kasteelpark Arenberg 30, 3001 Leuven
Country	Belgium
URL	http://www.biw.kuleuven.be/
Contact person	Stijn Van Hoestenbergh
E-mail address	stijn.vanhoestenbergh@biw.kuleuven.be
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of Leuven
AQUAEXCEL member	No
Main field of expertise	Aquaculture system engineering
Main subfield of expertise	Recycling systems
2nd field of expertise	Nutrition
2nd subfield of expertise	Feeding and digestion
3rd level of expertise	Environmental interactions and impacts
3rd sublevel of expertise	Eutrophication
Freshwater fish	Jade perch (<i>scortum barcoo</i>)
Ornamental fish	jaraqui
Shellfish	red claw (<i>cherax quadricarinatus</i>)
Identified lines	No
Recirculation	Yes
Flow through?	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	Yes
Longitude	4,6820023
Latitude	50,8624908

Name Research Infrastructure	Gnotobiotic culture system for Artemia and sea bass (GART)
Address	Ghent University, Lab of Aquaculture & Artemia Reference Center, Rozier 44, 9000 Gent
Country	Belgium
URL	http://www.aquaculture.ugent.be/index.htm
Contact person	kristof dierckens
E-mail address	kristof.dierckens@ugent.be
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	Ghent University
AQUAEXCEL member	Yes
Main field of expertise	Health and pathology
Main subfield of expertise	Microbial ecology
2nd field of expertise	Nutrition
2nd subfield of expertise	Feeding and digestion
Marine fish	Dicentrarchus labrax
Other species	Artemia spp.
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Other type of sites	bacteria free, small vials
Seawater natural	No
Seawater artificial	Yes
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	3,7259922
Latitude	51,0451973

Name Research Infrastructure ILVO - D1	
Address	Ankerstraat 1, B-8400 Oostende
Country	Belgium
URL	http://www.ilvo.vlaanderen.be/
Contact person	Daan Delbare
E-mail address	daan.delbare@ilvo.vlaanderen.be
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Institute for Agricultural and Fisheries Research - ILVO
AQUAEXCEL member	No
Main field of expertise	Aquaculture system engineering
Main subfield of expertise	Flow through systems
2nd field of expertise	Welfare
2nd subfield of expertise	Stress
3rd level of expertise	Nutrition
3rd sublevel of expertise	Product quality
Marine fish	Psetta maxima, Solea solea, Dicentrarchus labrax,
Ornamental fish	Lysmata amboinensis, Hippocampus sp.
Shellfish	Mytilus edulis, Crassostrea gigas, Ostrea edulis
Planktonic organisms	copepods, Mnemiopsis leydii
Other species	Litopenaeus vannamei, Crangon crangon
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	Yes
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	No
Longitude	2,9392547
Latitude	51,2330623

Name Research Infrastructure	Mesodrome
Address	Groenenborgerlaan 171, Antwerpen
Country	Belgium
URL	http://www.sphere.be
Contact person	Freddy Dardenne
E-mail address	freddy.dardenne@ua.ac.be
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of Antwerp
AQUAEXCEL member	No
Main field of expertise	Environmental interactions and impacts
2nd field of expertise	Physiology
if other subfield	adaptational (eco)physiology
3rd level of expertise	Other expertise areas
if other subfield	Ecosystem Management
Marine fish	Sea bass, European dogfish, Flatfish
Diadrome fish	Sea bass
Freshwater fish	Zebrafish, Common carp, Tilapia, Trout, Gold fish
Shellfish	Zebra mussel, Blue mussel
Macroalgae	Selenastrum, Pseudokirchneriella , other species
Planktonic organisms	Daphnia spp.
Other species	Midge larvae, several macroinvertebrates
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Other type of sites	Controlled mesocosms
Seawater natural	No
Seawater artificial	Yes
Freshwater	Yes
Brackish water	Yes
Suspended systems	No
Other type of water	OECD artificial fresh water
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	No
Longitude	4,4159104
Latitude	51,1771971

Name Research Infrastructure	IMP - Institute for Marine and Coastal Research/ University of Dubrovnik
Address	D. Jude 12, 20000 Dubrovnik
Country	Croatia (Hrvatska)
URL	http://www.imp-du.com/
Contact person	Valter Kozul
E-mail address	valter.kozul@unidu.hr
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	IMP - Institute for Marine and Coastal Research / University of Dubrovnik
AQUAEXCEL member	No
Main field of expertise	Other expertise areas
if other subfield	Oceanology
if other subfield	Plankton ecology, Population genetics
2nd field of expertise	Other expertise areas
if other subfield	Aquaculture
if other subfield	New species introduction
3rd level of expertise	Other expertise areas
Marine fish	Carangidae, Labridae, Sparidae, Serranidae
Shellfish	Pinnidae, Pectinidae, Mytilidae, Arcidae
Planktonic organisms	Bacterioplankton, Fitoplankton, All zooplankton groups, Benthic diatoms
Other species	Echinodermata
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	Yes
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	No
Communication systems	No
Longitude	18,1122436
Latitude	42,6399616

Name Research Infrastructure	Research Institute of Fish Culture and Hydrobiology (VURH)
Address	Zátisí 728/II, 389 01 Vodnany
Country	Czech Republic
URL	http://www.frov.jcu.cz/en/vurh-frov-ju/vurh-ju-ve-vodnanech
Contact person	Monika Malkusová
E-mail address	mmalkusova@frov.jcu.cz
Offers TNA?	Yes
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of South Bohemia in Ceske Budejovice, Faculty of Fisheries and Protection of Waters
AQUAEXCEL member	Yes
Main field of expertise	Genetics
Main subfield of expertise	Quantitative,Molecular
2nd field of expertise	Aquaculture system engineering
2nd subfield of expertise	Flow through systems,Recycling systems,Pond systems
3rd level of expertise	Nutrition
3rd sublevel of expertise	Feeding and digestion,New feed resources
Freshwater fish	common carp, sturgeon, tench, pike, pikeperch, European catfish, grass carp, perch, barbel, vimba bream, nase, sheatfish, silverfish
Identified lines	Yes
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	Yes
Other type of sites	tanks
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	Yes
Cameras	Yes
Control systems	Yes
Communication systems	No
Longitude	14,1738963
Latitude	49,1605811

Name Research Infrastructure	SINTEF Flume tank
Address	The North Sea Science Park, Willemoesvej 2, 9850 Hirtshals
Country	Denmark
URL	http://www.sintef.no/home/Fisheries-and-Aquaculture/About-us/Laboratories/SINTEF-Fisheries-and-aquaculture-flume-tank/
Contact person	Kurt Hansen
E-mail address	kurt.hansen@sintef.no
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	SINTEF Fisheries and aquaculture
AQUAEXCEL member	Yes
Main field of expertise	Aquaculture system engineering
Main subfield of expertise	Flow through systems,Cage systems,Control systems,Mathematical modelling
if other subfield	Mooring systems
Marine fish	Salmon
Identified lines	Yes
Recirculation	No
Flow through	No
Cages	Yes
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Suspended systems	No
Monitoring	Yes
Robots	Yes
Cameras	No
Control systems	Yes
Communication systems	No
Longitude	9,9798847
Latitude	57,5866317

Name Research Infrastructure	Kainuu Fisheries Research
Address	Manamansalontie 90, FI-88300 Paltamo
Country	Finland
URL	http://www.rktl.fi/english/institute/stations/kainuu/
Contact person	Pekka Hyvärinen
E-mail address	pekka.hyvarinen@rktl.fi
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	RKTL (Finnish Game and Fisheries Research Institute)
AQUAEXCEL member	No
Main field of expertise	Welfare
Main subfield of expertise	Behaviour
if other subfield	Enriched rearing
2nd field of expertise	Physiology
2nd subfield of expertise	Other physiological aspects of domestication
3rd level of expertise	Aquaculture system engineering
3rd sublevel of expertise	Pond systems, Control systems
Marine fish	Atlantic salmon, Brown trout
Freshwater fish	Pike-perch, Whitefish, Vendace, Smelt, Perch, Pike, Grayling, Burbot, Crayfish
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	Yes
Other type of sites	Experimental stream-pool systems, streams
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	No
Other type of instrumentation	PIT-telemetry
Longitude	27,512578
Latitude	64,4056612

Name Research Infrastructure	Laukaa fish farm
Address	Vilppulantie 415, FI-41341 Laukaa
Country	Finland
URL	http://www.rktl.fi/english/
Contact person	juha koskela
E-mail address	juha.koskela@rktl.fi
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	RKTL (Finnish Game and Fisheries Research Institute)
AQUAEXCEL member	Yes
Main field of expertise	Nutrition
2nd field of expertise	Other expertise areas
if other field	Diversification of aquaculture by new fish species
if other field	Environmental factors and growth
Freshwater fish	Rainbow trout, whitefish, pike perch
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	No
Other type of instrumentation	pilot twin-screw feed extruder, Dinnissen vacuum coater, radiographic system
Longitude	25,8764897
Latitude	62,469284

Name Research Infrastructure	RKTL Parainen, Rymättylä Aquaculture Research Station
Address	Kalakouluntie 71, FIN-21610 Kirjala
Country	Finland
URL	http://www.rktl.fi/english/institute/stations/
Contact person	Susanna Airaksinen
E-mail address	susanna.airaksinen@rktl.fi
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	RKTL (Finnish Game and Fisheries Research Institute)
AQUAEXCEL member	No
Main field of expertise	Physiology
Main subfield of expertise	Other physiological aspects of domestication
2nd field of expertise	Nutrition
2nd subfield of expertise	Feeding and digestion, New feed resources
3rd level of expertise	Welfare
3rd sublevel of expertise	Handling, Stress
Marine fish	Rainbow trout, European whitefish, Pikeperch etc.
Identified lines	No
Recirculation	Yes
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	Yes
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	Yes
Other type of instrumentation	Arvotec feeding systems
Longitude	22,3574367
Latitude	60,3590896

Name Research Infrastructure	Rymättylä Aquaculture Research Station
Address	Luotojentie 525, FIN-21150 Röölä
Country	Finland
URL	http://www.rktl.fi/english/institute/stations/
Contact person	Susanna Airaksinen
E-mail address	susanna.airaksinen@rktl.fi
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	RKTL (Finnish Game and Fisheries Research Institute)
AQUAEXCEL member	No
Main field of expertise	Nutrition
Main subfield of expertise	Feeding and digestion, New feed resources
2nd field of expertise	Physiology
2nd subfield of expertise	Other physiological aspects of domestication
3rd level of expertise	Other expertise areas
if other subfield	Aquaculture production practices
Marine fish	Rainbow trout, European whitefish, Pikeperch
Identified lines	No
Recirculation	No
Flow through	No
Cages	Yes
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	Yes
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	Yes
Other type of instrumentation	Arvotec and Akvasmart feeding systems
Longitude	21,9568284
Latitude	60,346406

Name Research Infrastructure	Universtiy of Jyväskylä, Dept. Biol. & Env. Sci.
Address	P.O. Box 35, 40014 University of Jyväskylä
Country	Finland
URL	www.jyu.fi/bio
Contact person	Juhani Pirhonen
E-mail address	juhani.pirhonen@jyu.fi
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of Jyväskylä
AQUAEXCEL member	No
Main field of expertise	Health and pathology
Main subfield of expertise	Bacteriology,Parasitology
2nd field of expertise	Physiology
2nd subfield of expertise	Other physiological aspects of domestication
3rd level of expertise	Nutrition
3rd sublevel of expertise	Feeding and digestion,New feed resources
Diadrome fish	Salmo sp.
Freshwater fish	rainbow trout, pikeperch, whitefish, African catfish (Clarias gariepinus)
Ornamental fish	Discus (symphysodon sp)
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	25,7358352
Latitude	62,2376631

Name Research Infrastructure	Experimental facilities for marine fish larvae (MFL)
Address	zi Pointe du Diable 29280 PLOUZANE
Country	France
URL	www.ifremer.fr
Contact person	Jose-Luis ZAMBONINO
E-mail address	Jose.Luis.Zambonino@ifremer.fr
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	IFREMER
AQUAEXCEL member	Yes
Main field of expertise	Physiology
Main subfield of expertise	Other physiological aspects of domestication
if other subfield	Growth, Morphogenesis, Gene Expression Patterns.
2nd field of expertise	Nutrition
2nd subfield of expertise	Feeding and digestion
if other subfield	Nutritional requirements of marine fish larvae.
3rd level of expertise	Nutrition
3rd sublevel of expertise	New feed resources
if other subfield	Inert feed during larval nutrition.
Marine fish	Dicentrarchus labrax, Sparus auratus, Scophtalmus maximus.
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Other type of sites	tanks of various shapes and volumes.
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	Yes
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	Yes
Other type of instrumentation	Several labs for water monitoring, biochemical and molecular analysis.
Longitude	-4,620404
Latitude	48,381438

Name Research Infrastructure	Fish behavioural facility
Address	INTECHMER, BP 324, 50103, Cherbourg
Country	France
URL	http://www.intechmer.cnam.fr
Contact person	David Benhaim
E-mail address	david.benhaim@cnam.fr
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	IFREMER
AQUAEXCEL member	Yes
Main field of expertise	Welfare
Main subfield of expertise	Behaviour, Handling, Stress
Marine fish	Sea bass
Identified lines	Yes
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	Yes
Control systems	No
Communication systems	No
Other type of instrumentation	Behavioural softwares : Ethovision, observer; mazes for fish cognition
Longitude	-1,625298
Latitude	49,639093

Name Research Infrastructure	Ifremer platform in fish aquaculture
Address	Chemin de Maguelonne, 34250, Palavas les Flots
Country	France
URL	http://wwwz.ifremer.fr/mediterranee/bienvenue
Contact person	LEMARIE Gilles
E-mail address	glemarie@ifremer.fr
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	IFREMER
AQUAEXCEL member	Yes
Main field of expertise	Genetics
Main subfield of expertise	Quantitative
2nd field of expertise	Aquaculture system engineering
2nd subfield of expertise	Recycling systems
3rd level of expertise	Environmental interactions and impacts
3rd sublevel of expertise	Eutrophication
Marine fish	Seabass
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	3,9087382
Latitude	43,5198954

Name Research Infrastructure	INRA PEIMA
Address	Barrage du Drennec 29450 Sizun
Country	France
URL	www.rennes.inra.fr/l_inra_en_bretagne_et_basse_normandie/ressources_specifiques/un_dispositif_experimental_unique/une_pisciculture_experimentale_d_eau_douce
Contact person	Laurent Laurent
E-mail address	Laurent.Labbe@rennes.inra.fr
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Institut National de la Recherche Agronomique (INRA)
AQUAEXCEL member?	Yes
Main field of expertise	Genetics
Main subfield of expertise	Quantitative
2nd field of expertise	Physiology
2nd subfield of expertise	Other physiological aspects of domestication
3rd level of expertise	Aquaculture system engineering
3rd sublevel of expertise	Recycling systems
Freshwater fish	Oncorhynchus mykiss and Salmo Trutta
Identified lines	Yes
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	Yes
Other type of instrumentation	Self feeder
Longitude	-4,077555
Latitude	48,405806

Name Research Infrastructure	INRA-STPEE
Address	UR INRA NuMEA - Pôle Hydrobiologie INRA Quartier Ibarron 64310 Saint-Pée-sur-Nivelle, France
Country	France
URL	http://www.bordeaux-aquitaine.inra.fr/st_pee_eng/ur_numea
Contact person	Francoise MEDALE
E-mail address	medale@st-pee.inra.fr
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Institut National de la Recherche Agronomique (INRA)
AQUAEXCEL member	Yes
Main field of expertise	Nutrition
2nd field of expertise	Physiology
3rd level of expertise	Other expertise areas
if other subfield	Metabolism
Freshwater fish	Rainbow trout
Identified lines	Yes
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Other type of instrumentation	complete feed manufacturing plant including a twin-screw ex-truder, grinder, blender, drier and sieves
Longitude	-1,550488
Latitude	43,356582

Name Research Infrastructure	HCMR-Aqualabs
Address	PO BOX, 71003, Heraklion
Country	Greece
URL	http://innovator.ath.hcmr.gr/newhcmr1/secondpage.php?id=39
Contact person	Stavros Chatzifotis
E-mail address	stavros@her.hcmr.gr
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Hellenic Centre for Marine Research (HCMR)
AQUAEXCEL member	Yes
Main field of expertise	Nutrition
2nd field of expertise	Health and pathology
3rd level of expertise	Aquaculture system engineering
Marine fish	Dicentrarchus labrax, Sparus aurata, Argyrosomus regius, Puntazzo puntazzo, Diplodus sargus
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	Yes
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	Yes
Longitude	25,1442126
Latitude	35,3387352

Name Research Infrastructure	HCMR-Souda
Address	Souda
Country	Greece
URL	http://innovator.ath.hcmr.gr/newhcmr1/secondpage.php?id=39
Contact person	Nikolaos Papandroulakis
E-mail address	npap@her.hcmr.gr
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Hellenic Centre for Marine Research (HCMR)
AQUAEXCEL member	Yes
Main field of expertise	On growing in Cage
Main subfield of expertise	Feeding, behavior
Marine fish	Dicentrarchus labrax, Sparus aurata, Argyrosomus regius, Dentex dentex, Seriola dumerili
Identified lines	No
Recirculation	No
Flow through	No
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	No
Other type of instrumentation	Echo sounders
Longitude	24,0742105
Latitude	35,4874818

Name Research Infrastructure	R&D Department
Address	69, Anaximandrou, Thessaloniki
Country	Greece
URL	http://www.nearhus.gr
Contact person	Konstantinos Koukaras
E-mail address	kkoukaras@nearhus.gr
Offers TNA	No
Open for use to external users?	No
Type Operating Institute	Industry
Name Operating Institute	Nearhus
AQUAEXCEL member	No
Main field of expertise	Environmental interactions and impacts
Main subfield of expertise	Eutrophication
if other subfield	advanced services for fish farm development
2nd field of expertise	Aquaculture system engineering
2nd subfield of expertise	Recycling systems
3rd level of expertise	Health and pathology
if other subfield	shellfish Purification
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	Yes
Longitude	22,9748437
Latitude	40,5982812

Name Research Infrastructure	Balaton Limnological Institute, Centre for Ecological Research, HAS
Address	3 Klebelsberg K. street, Tihany, Hungary
Country	Hungary
URL	http://www.blki.hu/BLRI/index.htm
Contact person	Gergely Boros
E-mail address	boros.gergely@okologia.mta.hu
Offers TNA	No
Open for use to external users	No
Type Operating Institute	Research Institute
Name Operating Institute	Balaton Limnological Institute, Centre for Ecological Research, HAS
AQUAEXCEL member	No
Main field of expertise	Environmental interactions and impacts
Main subfield of expertise	Eutrophication
2nd field of expertise	Aquaculture system engineering
3rd level of expertise	Physiology
Planktonic organisms	phytoplankton, picoplankton
Other species	macrobenthos, epiphytic and epilithic crustaceans
Identified lines	No
Recirculation	No
Flow through	No
Cage	No
Ponds	No
Other type of sites	lakes
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	Yes
Longitude	17,8922044
Latitude	46,9139495

Name Research Infrastructure	Department of Nature Protection
Address	H-7401 Kaposvár Guba S.40
Country	Hungary
URL	http://english.ke.hu/menu/36/26
E-mail address	molnar.tamas.gergely@mail.ke.hu
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	Kaposvár University
AQUAEXCEL member	Yes
Main field of expertise	Nutrition
Main subfield of expertise	Product quality
2nd field of expertise	Welfare
2nd subfield of expertise	Behaviour, Stress
Freshwater fish	pikeperch, carp
Identified lines	No
Recirculation	Yes
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	17,8253309
Latitude	46,3833915

Name Research Infrastructure	HAKI OEPS
Address	H-5540 Szarvas Anna-liget 8.
Country	Hungary
URL	http://www.haki.hu
Contact person	István Lehoczky
E-mail address	lehoczkyi@haki.hu
Offers TNA	Yes
Open for use to external users	No
Type Operating Institute	Research Institute
Name Operating Institute	Research Institute for Fisheries, Aquaculture and Irrigation
AQUAEXCEL member	Yes
Main field of expertise	Nutrition
Main subfield of expertise	Feeding and digestion
2nd field of expertise	Environmental interactions and impacts
2nd subfield of expertise	Benthic and pelagic impacts
3rd level of expertise	Genetics
3rd sublevel of expertise	Molecular
Freshwater fish	Common carp, sturgeon species
Identified lines	Yes
Recirculation	No
Flow through	No
Cages	No
Ponds	Yes
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	20,5549859
Latitude	46,8578499

Name Research Infrastructure	HAKI RECIRK
Address	H-5540 Szarvas, Anna-liget 8.
Country	Hungary
URL	http://www.haki.hu
Contact person	István Lehoczky
E-mail address	lehoczkyi@haki.hu
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Research Institute for Fisheries, Aquaculture and Irrigation
AQUAEXCEL member	Yes
Main field of expertise	Nutrition
Main subfield of expertise	Feeding and digestion
2nd field of expertise	Physiology
2nd subfield of expertise	Other physiological aspects of domestication
3rd level of expertise	Genetics
3rd sublevel of expertise	Molecular
Diadrome fish	Asian seabass
Freshwater fish	Common carp, Sturgeon species, African catfish
Identified lines	Yes
Recirculation	Yes
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	20,5549859
Latitude	46,8578499

Name Research Infrastructure	SZIE Department of Aquaculture
Address	Gödöllő Páter K. U. 1.
Country	Hungary
URL	http://www.mkk.szie.hu/dep/halt/
Contact person	Balazs Kovacs
E-mail address	Kovacs.Balazs@mkk.szie.hu
Offers TNA	No
Open for use to external users	No
Type Operating Institute	University
Name Operating Institute	Szent Istvan University, Department of Aquaculture
AQUAEXCEL member	No
Main field of expertise	Genetics
Main subfield of expertise	Molecular
if other subfield	Aquatic Toxicology
3rd level of expertise	Reproduction and cryopreservation
Freshwater fish	common carp, sturgeon species, brown trout, rainbow trout, eel, pike, pikeperch, european catfish, african catfish, zebrafish, various freshwater finfish
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Other type of sites	tanks
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	Yes
Longitude	0
Latitude	0

Name Research Infrastructure	University of Debrecen - Experimental Recirculation Aquaculture Facility
Address	138 Boszormenyi str. Debrecen, H-4032
Country	Hungary
URL	http://portal.agr.unideb.hu/
Contact person	Laszlo STUNDL, Ph.D.
E-mail address	stundl@agr.unideb.hu
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of Debrecen, Centre for Agriculture & Engineering
AQUAEXCEL member?	No
Main field of expertise	Nutrition
Main subfield of expertise	Feeding and digestion
2nd field of expertise	Aquaculture system engineering
2nd subfield of expertise	Recycling systems
3rd level of expertise	Processing
3rd sublevel of expertise	Other processes (smoking, salting)
Diadrome fish	Barramundi, Red drum
Freshwater fish	Hybrid stripped bass, Common carp, Zander, Pike, Tench, Bullhead
Planktonic organisms	Artemia, Rotatoria, Microalgae
Identified lines?	No
Recirculation?	Yes
Flow through?	No
Cages?	No
Ponds?	No
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	Yes
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	21,6094419
Latitude	47,5506987

Name Research Infrastructure	University of Pannonia Georgikon Faculty, Aquaculture Group
Address	16. Deák F. str. Keszthely, Hungary, H-8360
Country	Hungary
URL	www.aquaculture.hu
Contact person	Miklós Bercsényi
E-mail address	bm@georgikon.hu
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of Pannonia Georgikon Faculty
AQUAEXCEL member	No
Main field of expertise	Nutrition
Main subfield of expertise	New feed resources
2nd field of expertise	Health and pathology
2nd subfield of expertise	Parasitology
3rd level of expertise	Environmental interactions and impacts
3rd sublevel of expertise	Inorganic components
Freshwater fish	Silurus glanis, Perca fluviatilis, Sander lucioperca, Cyprinus carpio
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	Yes
Ponds	Yes
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	No
Longitude	17,2399662
Latitude	46,7654091

Name Research Infrastructure	West Hungarian University
Address	H-9200 Mosonmagyaróvár Vár 2.
Country	Hungary
URL	www.nyme.hu
Contact person	Dr. László Szathmári
E-mail address	szathmaril@mtk.nyme.hu
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	West Hungarian University
AQUAEXCEL member	No
Main field of expertise	Nutrition
Main subfield of expertise	New feed resources
2nd field of expertise	Processing
2nd subfield of expertise	Other processes (smoking, salting)
3rd level of expertise	Environmental interactions and impacts
3rd sublevel of expertise	Eutrophication
Freshwater fish	Common carp, African catfish, pike perch, sterlet, sturgeon
Identified lines	Yes
Recirculation	No
Flow through	Yes
Cages	No
Ponds	Yes
Other type of sites	hatchery and nursing system
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Other type of water	warm water supply (bore hole) combined with liquid oxygen system
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	No
Other type of instrumentation	water chemistry monitoring system
Longitude	17,2731834
Latitude	47,8801711

Name Research Infrastructure	Holar University College - Verid
Address	Haeyri 1, 550 Saudarkrokur
Country	Iceland
URL	www.holar.is
Contact person	Helgi Thorarensen
E-mail address	helgi@holar.is
Offers TNA	No
Open for use to external users	No
Type Operating Institute	University
Name Operating Institute	Holar University College
AQUAEXCEL member	No
Main field of expertise	Nutrition
Main subfield of expertise	New feed resources
2nd field of expertise	Aquaculture system engineering
2nd subfield of expertise	Flow through systems
3rd field of expertise	Environmental interactions and impacts
3rd sublevel of expertise	Wildlife interactions
Marine fish	Atlantic cod
Diadrome fish	Arctic charr, Atlantic salmon
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	Yes
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	No
Longitude	-19,6477926
Latitude	65,7586226

Name Research Infrastructure	Aquaculture Experimental Plants
Address	Via San Mauro, 8 33010 Pagnacco
Country	Italy
URL	http://www.uniud.it/dipartimenti/dial/sezioni/Acquacoltura
Contact person	Emilio Tibaldi
E-mail address	emilio.tibaldi@uniud.it
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of Udine
AQUAEXCEL member	No
Main field of expertise	Nutrition
Main subfield of expertise	Feeding and digestion
2nd field of expertise	Welfare
2nd subfield of expertise	Handling, Stress
3rd field of expertise	Health and pathology
3rd sublevel of expertise	Bacteriology, Parasitology, Other issues
if other subfield	Immunology
Marine fish	Sea bass
Freshwater fish	Rainbow trout, European grayling
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	Yes
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	13,1808272
Latitude	46,1252715

Name Research Infrastructure	Department of Life and Environmental Sciences
Address	Via Brecce Bianche, Ancona
Country	Italy
URL	www.disva.univpm.it/
Contact person	OLIANA CARNEVALI
E-mail address	o.carnevali@univpm.it
Offers TNA	No
Open for use to external users	No
Type Operating Institute	University
Name Operating Institute	Polytechnic University of Marche
AQUAEXCEL member	No
Main field of expertise	Other expertise areas
if other subfield	reproduction
2nd field of expertise	Nutrition
3rd field of expertise	Welfare
Freshwater fish	Danio rerio
Ornamental fish	Amphiprion spp
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	13,5155805
Latitude	43,5812631

Name Research Infrastructure	University of Insubria, Department of Biotechnology and Life Sciences, Animal Sciences and Aquaculture Unit
Address	via JH Dunant 3, Varese
Country	Italy
URL	http://www.dbism.uninsubria.it/acqua/
Contact person	Marco Saroglia
E-mail address	marco.saroglia@uninsubria.it
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of Insubria, Department of Biotechnology and Life Sciences
AQUAEXCEL member	No
Main field of expertise	Nutrition
if other subfield	Nutrigenomics, functional genomics, proteomics, metabolomics; gut microbiota and bacterial activity; nutrition and innate immunity
2nd field of expertise	Physiology
if other subfield	Fish metabolism; fish swimming; respiration
3rd field of expertise	Welfare
if other subfield	molecular response; nutrition and welfare; density; welfare and innate immunity
Marine fish	European seabass (<i>Dicentrarchus labrax</i>)
Freshwater fish	Rainbow trout (<i>Oncorhynchus mykiss</i>)
Other species	Perch
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Other type of water	Recirculation system with salt water and freshwater
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No

Other type of instrumentation	Water Recirculation facilities, molecular biology laboratory with real time PCR, proteomic facilities, equipped fish swimming tunnel, GC Mass, HPLC, HPLC Mass, laser scan and electronic microscopy. Possibility to collaborate with NMR laboratory. "On farm"
Longitude	8,8250576
Latitude	45,8205989

Name Research Infrastructure	Aquatic Research Facilities (ARF)- Wageningen UR
Address	CARUS, De Bornse Weilanden 5, 6708 WG Wageningen
Country	Netherlands
URL	http://www.afi.wur.nl/UK/Research+facilities/
Contact person	Menno ter Veld
E-mail address	menno.terveld@wur.nl
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	Animal Science Group of Wageningen University
AQUAEXCEL member	Yes
Main field of expertise	Physiology
Main subfield of expertise	Other physiological aspects of domestication
if other subfield	nutrition and behaviour aspects
2nd field of expertise	Aquaculture system engineering
2nd subfield of expertise	Recycling systems
if other subfield	denitrification
3rd field of expertise	Environmental interactions and impacts
3rd sublevel of expertise	Biofouling
if other subfield	microbiotics
Marine fish	Tarbot, Sole, Yellowtail kingfish, Sea Bass
Diadrome fish	Eel
Freshwater fish	Common Carp, Catfish, Zebrafish, Tilapia, Trout
Ornamental fish	Corals, Sea horse, Poeciliidae
Planktonic organisms	Paramecium
Other species	Shrimp, Sepia
Identified lines	Yes
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	Yes
Seawater natural	No
Seawater artificial	Yes
Freshwater	Yes
Brackish water	Yes
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	Yes
Other type of instrumentation	Metabolic chambers, Auto-analyser

Longitude	5,658126
Latitude	51,9849175

Name Research Infrastructure	DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
Address	Haringkade 1, 1976 CP IJmuiden
Country	Netherlands
URL	http://www.imares.wur.nl
Contact person	Andries Kamstra
E-mail address	andries.kamstra@wur.nl
Offers TNA	Yes
Open for use to external users	No
Type Operating Institute	Research Institute
Name Operating Institute	DLO - IMARES (Institute for Marine Resources and Ecosystem Studies)
AQUAEXCEL member	Yes
Main field of expertise	Aquaculture system engineering
Main subfield of expertise	Recycling systems
2nd field of expertise	Physiology
3rd field of expertise	Genetics
Marine fish	Sole, Turbot, Yellow Tail, Salmon, Trout
Freshwater fish	Pikeperch, Perch, Eel, Catfish, Carp
Shellfish	Mussels, Oysters, Clams
Planktonic organisms	Micro algae cultures (indoor & outdoor)
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	Yes
Freshwater	Yes
Brackish water	Yes
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	No
Longitude	4,593972
Latitude	52,456935

Name Research Infrastructure	ACE/SeaLab SSO
Address	Brattørkaia 17b 7010 Trondheim
Country	Norway
URL	www.aceaquaculture.com
Contact person	Finn Victor Willumsen
E-mail address	fvw@aceaquaculture.com
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	SINTEF Fisheries and aquaculture
AQUAEXCEL member	Yes
Main field of expertise	Aquaculture system engineering
Main subfield of expertise	Cage systems
2nd field of expertise	Environmental interactions and impacts
2nd subfield of expertise	Benthic and pelagic impacts,Biofouling
3rd field of expertise	Welfare
3rd sublevel of expertise	Behaviour
Marine fish	Salmon
Macroalgae	sweet tangle
Identified lines	No
Recirculation	No
Flow through	No
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	Yes
Longitude	10,3987347
Latitude	63,4378623

Name Research Infrastructure	Aqua Gen AS
Address	POB 1240, Sluppen, 7462 Trondheim
Country	Norway
URL	www.aquagen.no
Contact person	Arne Storset
E-mail address	arne.storset@aquagen.no
Offers TNA	No
Open for use to external users	No
Type Operating Institute	Industry
Name Operating Institute	Aqua Gen AS
AQUAEXCEL member	No
Main field of expertise	Genetics
Main subfield of expertise	Quantitative
if other subfield	Genetic traits related to health, animal welfare, growth and quality
2nd field of expertise	Health and pathology
2nd subfield of expertise	Bacteriology
if other subfield	Resistance to viral and bacterial diseases
3rd field of expertise	Health and pathology
if other subfield	Control of vertically transmittable diseases
Marine fish	Atlantic salmon Rainbow trout
Freshwater fish	Atlantic salmon Rainbow trout
Identified lines	Yes
Recirculation	Yes
Flow through	Yes
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	Yes
Longitude	10,3950528
Latitude	63,4305149

Name Research Infrastructure	Aquaculture Research Station in Tromsø, Ltd
Address	9131 Kårvik
Country	Norway
URL	http://www.havbruksstasjonen.no/
Contact person	Elin Antonsen
E-mail address	e-post@havbruksstasjonen.no
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Other
Name Operating Institute	Nofima, University of Tromsø,
AQUAEXCEL member	No
Main field of expertise	Welfare
2nd field of expertise	Physiology
3rd field of expertise	Health and pathology
Marine fish	Cod, Polar cod, Spotted wolffish
Diadrome fish	Atlantic salmon
Freshwater fish	Arctic charr
Planktonic organisms	Rotifers, copepods
Other species	Red king crab, salmon louse, sea urchin
Identified lines	Yes
Recirculation	No
Flow through	Yes
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	Yes
Other type of water	Marine groundwater
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	Yes
Longitude	18,9202717
Latitude	69,8664784

Name Research Infrastructure	Austevoll Research Station
Address	5392 Storebø
Country	Norway
URL	http://www.imr.no
Contact person	Torfinn Grav
E-mail address	torfinng@imr.no
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Institute of Marine Research (IMR)
AQUAEXCEL member	Yes
Main field of expertise	Welfare
Main subfield of expertise	Behaviour, Handling, Stress
2nd field of expertise	Nutrition
2nd subfield of expertise	Feeding and digestion, New feed resources
Marine fish	Atlantic cod (<i>Gadus morhua</i>), Atlantic mackerel (<i>Scomber scombrus</i>), Atlantic herring (<i>Clupea harengus</i>),
Diadrome fish	Atlantic Salmon (<i>Salmo Salar</i>)
Shellfish	Lobster (<i>Homarus gammarus</i>)
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	5,2317941
Latitude	60,0929455

Name Research Infrastructure	Averøy Research Station
Address	Ekkilsøy N 6530 Averøy
Country	Norway
URL	http://www.nofima.no/en/artikkel/24383373381930952
Contact person	Per Brunsvik
E-mail address	per.brunsvik@nofima.no
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Nofima
AQUAEXCEL member	Yes
Main field of expertise	Nutrition
2nd field of expertise	Welfare
3rd field of expertise	Health and pathology
Marine fish	Ballan wrasse
Diadrome fish	Atlantic Salmon, Rainbow Trout
Identified lines	No
Recirculation	No
Flow through	No
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	7,5806182
Latitude	63,0752838

Name Research Infrastructure	Flødevigen Research Station
Address	Nye Flødevigveien 20, 4817 HIS
Country	Norway
URL	http://www.imr.no
Contact person	Tor Birkeland
E-mail address	tobi@imr.no
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Institute of Marine Research (IMR)
AQUAEXCEL member	Yes
Main field of expertise	Environmental interactions and impacts
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	Yes
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	8,7546465
Latitude	58,4262293

Name Research Infrastructure	GIFAS
Address	8140 Innndyr
Country	Norway
URL	http://www.gifas.no
Contact person	Ronald Jørgensen
E-mail address	ronald.jorgensen@gifas.no
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Industry
Name Operating Institute	Nearhus
AQUAEXCEL member	No
Main field of expertise	Nutrition
Main subfield of expertise	Feeding and digestion
2nd field of expertise	Physiology
2nd subfield of expertise	Other physiological aspects of domestication
3rd field of expertise	Aquaculture system engineering
3rd sublevel of expertise	Cage systems
Marine fish	Lumpfish
Diadrome fish	Salmon
Identified lines	No
Recirculation	No
Flow through	No
Cages	Yes
Ponds	Yes
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	Yes
Longitude	14,0280581
Latitude	67,031947

Name Research Infrastructure	Matre Research Station
Address	Matre 5, N-5984 Matredal
Country	Norway
URL	http://www.imr.no
Contact person	Øivind Torslett
E-mail address	oivindto@imr.no
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Institute of Marine Research (IMR)
AQUAEXCEL member	Yes
Main field of expertise	Welfare
Main subfield of expertise	Behaviour, Handling, Stress
2nd field of expertise	Physiology
2nd subfield of expertise	Endocrinology, Other physiological aspects of domestication
3rd field of expertise	Nutrition
3rd sublevel of expertise	Feeding and digestion, Defecation and excretion, New feed resources
Marine fish	Atlantic cod (<i>Gadus morhua</i>), Atlantic mackerel (<i>Scomber scombrus</i>), Atlantic herring (<i>Clupea harengus</i>),
Diadrome fish	Atlantic Salmon (<i>Salmo Salar</i>), Rainbow Trout (<i>Oncorhynchus mykiss</i>)
Freshwater fish	Arctic char (<i>Salvelinus alpinus alpinus</i>), Brown Trout (<i>Salmo trutta trutta</i>)
Shellfish	Lobster (<i>Homarus gammarus</i>)
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	Yes
Suspended systems	No
Monitoring	No
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	No
Longitude	5,5906357
Latitude	60,8728267

Name Research Infrastructure	NIVA Marine Research Station at Solbergstrand
Address	Mølleveien 2, 1440 Drøbak
Country	Norway
URL	http://www.niva.no/en/om-niva/kontorer-og-avdelinger/marin-forskningsstasjon-solbergstrand
Contact person	Oddbjørn Pettersen
E-mail address	pet@niva.no
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Norwegian Institute for Water Research (NIVA)
AQUAEXCEL member	No
Main field of expertise	Aquaculture system engineering
Main subfield of expertise	Flow through systems
2nd field of expertise	Environmental interactions and impacts
if other subfield	large-scale experiments in marine ecology
3rd field of expertise	Other expertise areas
if other field	manipulation and control marine ecosystems.
if other subfield	simulation natural environmental conditions such as current, wave action, water quality and ecological community structures.
Marine fish	Salmon
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Other type of sites	tanks of various shapes and volumes.
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	Yes
Other type of instrumentation	a larger system to simulate mixing zones in rivers
Longitude	10,6528178
Latitude	59,6157541

Name Research Infrastructure	Nofima Centre for Recirculation in Aquaculture (NCRA)
Address	N 6600 Sunndalsøra
Country	Norway
URL	http://www.nofima.no/en/artikkel/4869733954035201089
Contact person	Per Brunsvik
E-mail address	per.brunsvik@nofima.no
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Nofima
AQUAEXCEL member	Yes
Main field of expertise	Nutrition
2nd field of expertise	Physiology
3rd field of expertise	Aquaculture system engineering
Marine fish	atlantic cod, ballan wrasse
Diadrome fish	Atlantic salmon, Rainbow trout
Freshwater fish	Atlantic salmon, Rainbow Trout
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	Yes
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	No
Longitude	8,5515335
Latitude	62,6754495

Name Research Infrastructure	Norwegian Cod Breeding Centre
Address	NO-9291 Tromsø
Country	Norway
URL	www.nofima.no
Contact person	Atle Mortensen
E-mail address	atle.mortensen@nofima.no
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Nofima
AQUAEXCEL member	Yes
Main field of expertise	Genetics
Main subfield of expertise	Quantitative
2nd field of expertise	Physiology
2nd subfield of expertise	Other physiological aspects of domestication
3rd field of expertise	Nutrition
3rd sublevel of expertise	Feeding and digestion
Marine fish	Atlantic cod (Gadus morhua)
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Other type of sites	0
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	Yes
Cameras	No
Control systems	Yes
Communication systems	No
Longitude	18,9119144
Latitude	69,634811

Name Research Infrastructure	NTNU Centre of Fisheries and Aquaculture (Sealab)
Address	Brattorkaia 17C, 7010 Trondheim
Country	Norway
URL	http://www.ntnu.edu/marine/sealab
Contact person	Elin Kjørsvik
E-mail address	elin.kjorsvik@bio.ntnu.no
Offers TNA	Yes
Open for use to external users	No
Type Operating Institute	University
Name Operating Institute	Norwegian University of Science and Technology (NTNU)
AQUAEXCEL member	Yes
Main field of expertise	Physiology
Main subfield of expertise	Endocrinology, Other physiological aspects of domestication
2nd field of expertise	Aquaculture system engineering
2nd subfield of expertise	Flow through systems, Recycling systems
3rd field of expertise	Environmental interactions and impacts
3rd sublevel of expertise	Eutrophication, Benthic and pelagic impacts
Marine fish	cod, wrasse
Diadrome fish	Atlantic salmon, eel
Planktonic organisms	rotifers, Artemia, copepods
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	Yes
Cameras	Yes
Control systems	Yes
Communication systems	Yes
Longitude	10,3961256
Latitude	63,4369686

Name Research Infrastructure	Senja Aquaculture Center AS
Address	Rubbestadveien 400 9304 Vangsvik
Country	Norway
URL	www.akvaplan.niva.no
Contact person	Lars Olav Sparboe
E-mail address	los@akvaplan.niva.no
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Akvaplan-niva AS
AQUAEXCEL member	Yes
Main field of expertise	Aquaculture system engineering
Main subfield of expertise	Recycling systems
2nd field of expertise	Other expertise areas
if other subfield	Intensive land based farming, production improvement
Marine fish	Spotted wolffish, Atlantic cod
Diadrome fish	Atlantic salmon
Identified lines	No
Recirculation	Yes
Flow through	No
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	Yes
Longitude	17,7334243
Latitude	69,171549

Name Research Infrastructure	TMY Ltd
Address	Salarøyveien 981 9103 Kvaløya
Country	Norway
URL	tmy@akvaplan.niva.no
Contact person	Thor Arne Hangstad
E-mail address	tah@akvaplan.niva.no
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Akvaplan-niva AS
AQUAEXCEL member	Yes
Main field of expertise	Health and pathology
Main subfield of expertise	Parasitology
if other subfield	Biological fish lice treatment
2nd field of expertise	Aquaculture system engineering
2nd subfield of expertise	Recycling systems
3rd field of expertise	Environmental interactions and impacts
if other subfield	Comprehensive aquaculture services
Marine fish	Atlantic cod, Polar cod, Spotted wolffish, Lumpfish
Macroalgae	Sugar kelp
Planktonic organisms	Amphipods
Other species	Sponges
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	Yes
Longitude	18,7982077
Latitude	69,8036243

Name Research Infrastructure	Faculty of Environmental Sciences
Address	Oczapowskiego 5, 10-719 Olsztyn
Country	Poland
URL	www.wnos.uwm.edu.pl
Contact person	Piotr Gomulka
E-mail address	pgomulka@uwm.edu.pl
Offers TNA	No
Open for use to external users	No
Type Operating Institute	University
Name Operating Institute	University of Warmia and Mazury
AQUAEXCEL member	No
Main field of expertise	Other expertise areas
if other subfield	controlled fish reproduction
2nd field of expertise	Genetics
3rd field of expertise	Health and pathology
3rd sublevel of expertise	Other issues
if other subfield	toxicology
Freshwater fish	Cyprinus carpio
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	20,4604368
Latitude	53,75747

Name Research Infrastructure	University of Oradea, Faculty of Sciences, Department of Biology
Address	Oradea, Universitatii Street no. 1, 410087
Country	Romania
URL	http://stiinte.uoradea.ro/ro/index_ro.htm
Contact person	Cupsa Diana
E-mail address	dcupsa@uoradea.ro
Offers TNA	No
Open for use to external users	No
Type Operating Institute	University
Name Operating Institute	University of Oradea
AQUAEXCEL member	No
Main field of expertise	Environmental interactions and impacts
Main subfield of expertise	Wildlife interactions
if other subfield	aquatic ecology, exotic species, river conectivity isruption
2nd field of expertise	Other expertise areas
if other field	Taxonomy and systematics
if other subfield	river biodiversity: target groups macrozoobenthos, fishes, amphibians
3rd field of expertise	Other expertise areas
if other field	improvement in biomonitoring
if other subfield	indicator species, monitoring indexes
Marine fish	No
Diadrome fish	no
Freshwater fish	bony fish species from the Tisa basin system
Ornamental fish	no
Shellfish	no
Macroalgae	no
Planktonic organisms	no
Other species	macrozoobenthos
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No

Communication systems	No
Other type of instrumentation	field and laboratory analysis instruments
Longitude	21,9316983
Latitude	47,0666279

Name Research Infrastructure	Research and Education Center "Sturgeon"
Address	Astrakhan,14a Volodarskogo Str., RF 414000
Country	Russian Federation
URL	http://www.aspu.ru
Contact person	Lidia M. Vasilieva
E-mail address	bios94@mail.ru
Offers TNA	No
Open for use to external users	No
Type Operating Institute	University
Name Operating Institute	Astrakhan State University
AQUAEXCEL member	No
Main field of expertise	Physiology
Main subfield of expertise	Flow through systems
if other subfield	Reproduction and breeding
2nd field of expertise	Aquaculture system engineering
2nd subfield of expertise	Flow through systems
Freshwater fish	Various Sturgeons species
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	Yes
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	48,0321731
Latitude	46,350236

Name Research Infrastructure	State Scientific-and-Production Centre for Fisheries
Address	33, Odesskaya str., Tyumen, Russian Federation, 625023
Country	Russian Federation
URL	http://www.gosrc.ru/
Contact person	Yana Kapustina
E-mail address	kapustinaya@mail.ru
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	State Scientific-and-Production Centre for Fisheries
AQUAEXCEL member	No
Main field of expertise	Physiology
2nd field of expertise	Environmental interactions and impacts
2nd subfield of expertise	Eutrophication
3rd field of expertise	Health and pathology
3rd sublevel of expertise	Parasitology
Freshwater fish	whitefish, sturgeon, salmon
Planktonic organisms	artemia, gammarus
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	Yes
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	Yes
Longitude	65,5868527
Latitude	57,1415785

Name Research Infrastructure	AZTI-BIOAP
Address	Mendexa, Basque Country.
Country	Spain
URL	www.azti.es
Contact person	Diego Mendiola
E-mail address	dmendiola@azti.es
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	AZTI-Tecnalia
AQUAEXCEL member	No
Main field of expertise	Physiology
Main subfield of expertise	Other physiological aspects of domestication
if other subfield	shellfish production
2nd field of expertise	Environmental interactions and impacts
2nd subfield of expertise	Benthic and pelagic impacts,Biofouling,Transport
3rd field of expertise	Aquaculture system engineering
3rd sublevel of expertise	Long-line systems
if other subfield	Production operations; logistics; and food product quality
Shellfish	mussels, oysters, clams, algae, abalon
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Other type of sites	OFFSHORE
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	Yes
Monitoring	Yes
Robots	Yes
Cameras	Yes
Control systems	No
Communication systems	No
Longitude	-2,4833333
Latitude	43,3463889

Name Research Infrastructure	Centro de Acuicultura "Las Vegas del Guadiana"
Address	Ctra. Antigua Nacional V, km 391, 7 CP 06195 - Villafranco del Guadiana (Badajoz)
Country	Spain
URL	http://pescajeros.juntaextremadura.es
Contact person	César Fallola Sánchez-Herrera
E-mail address	cesar.fallola@juntaextremadura.net
Offers TNA	No
Open for use to external users	No
Type Operating Institute	Other
if other type	Government body (regional level)
Name Operating Institute	Dirección General de Medio Ambiente
Main field of expertise	Other expertise areas
if other field	Breeding programmes, restocking purposes, fish conservation programmes, angling purposes
2nd field of expertise	Aquaculture system engineering
2nd subfield of expertise	Flow through systems, Recycling systems
Freshwater fish	Barbus comiza, Barbus microcephalus, Iberochondrostoma lemmingii, Pseudochondrostoma willkommii, Squalius pyrenaicus, Squalius alburnoides, Salapia fluviatilis, Anaecypris hispanica, Cobitis paludica
Planktonic organisms	Cladocera (Daphnia sp, Alona sp, Bosmina sp)- Rotifera (Branchionus) - Chironomidae
Identified lines	No
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	Yes
Other type of sites	tanks, raceways
Seawater natural	No
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	-6,8610909
Latitude	38,8841235

Name Research Infrastructure	Centro de Experimentación Pesquera
Address	Paseo del Muelle s/n. 33760 Castropol (Asturias)
Country	Spain
URL	http://tematico.asturias.es/dgpesca/
Contact person	José Francisco Carrasco Fidalgo
E-mail address	josefrancisco.carrascofidalgo@asturias.org
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Other
if other type	Regional Administration
Name Operating Institute	Centro de Experimentación Pesquera
AQUAEXCEL member	No
Main field of expertise	Nutrition
2nd field of expertise	Aquaculture system engineering
Shellfish	Octopus vulgaris; Ruditapes decussatus, Crassostrea gigas
Other species	Paracentrotus lividus
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	-7,0302936
Latitude	43,527411

Name Research Infrastructure	CENTRO DE INVESTIGACIÓN MARIÑAS (CIMA)
Address	Vilanova de Arousa, Pontevedra
Country	Spain
URL	cimacoron.org
Contact person	Guerradiaz, Alejandro
E-mail address	guerrad@cimacoron.org
Offers TNA	No
Open for use to external users	No
Type Operating Institute	Research Institute
Name Operating Institute	CIMA
AQUAEXCEL member	No
Main field of expertise	Other expertise areas
if other field	Marine Resources and Aquaculture
if other subfield	Cultivation of marine species, fish and shellfish
2nd field of expertise	Health and pathology
2nd subfield of expertise	Parasitology
3rd field of expertise	Other expertise areas
if other field	shellfish immunology
Marine fish	Psetta maxima, Solea senegalensis, Pagellus bogaraveo
Shellfish	Tapes pullastra, Donax trunculus, Tapes semidecussatus, Mitylus edulis
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	Yes
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	-8,8274228
Latitude	42,5627589

Name Research Infrastructure	CENTRO DE INVESTIGACIONES MARIÑAS (CIMA) 2
Address	Ribadeo Lugo
Country	Spain
URL	cecumar@cimacoron.org
Contact person	Dorotea Martinez Patiño
E-mail address	mptea@cimacoron.org
Offers TNA	No
Open for use to external users	No
Type Operating Institute	Research Institute
Name Operating Institute	CIMA
AQUAEXCEL member	No
Main field of expertise	Aquaculture system engineering
Main subfield of expertise	Flow through systems
2nd field of expertise	Nutrition
2nd subfield of expertise	Feeding and digestion
3rd field of expertise	Environmental interactions and impacts
3rd sublevel of expertise	Wildlife interactions
Shellfish	Tapes pullastra, Donax trunculus, Tapes semidecussatus, Tapes rhomboides,
Identified lines	Yes
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	Yes
Longitude	-7,0403489
Latitude	43,5336794

Name Research Infrastructure	Centro Oceanográfico de Santander
Address	Marine Culture Center El Bocal, Monte, Santander
Country	Spain
URL	http://www.iew.es/santander.html
Contact person	Olvido Chereguini
E-mail address	o.chereguini@st.iew.es
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Spanish Institute of Oceanography
AQUAEXCEL member	No
Main field of expertise	Other expertise areas
if other subfield	marine fish culture
2nd field of expertise	Other expertise areas
if other subfield	reproduction
3rd field of expertise	Other expertise areas
if other subfield	Cryopreservation gametes
Marine fish	<i>Solea senegalensis</i>
Identified lines	Yes
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	Yes
Communication systems	No
Longitude	-3,8318535
Latitude	43,4762011

Name Research Infrastructure	Experimental Marine Culture Unit, Oceanographic Centre of the Canary Islands, Spanish Institute of Oceanography
Address	Vía Espaldón, Dársena Pesquera PCL 8 38180 Santa Cruz de Tenerife
Country	Spain
URL	http://www.iew.es/tenerife.html
Contact person	Juana R. Cejas Pulido
E-mail address	juana.cejas@ca.iew.es
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	Spanish Institute of Oceanography
AQUAEXCEL member	No
Main field of expertise	Other expertise areas
if other field	Diversification
if other subfield	Development of culture technology of new species for aquaculture
2nd field of expertise	Other expertise areas
if other field	Reproduction
if other subfield	Reproduction in captivity of marine species.
3rd field of expertise	Nutrition
if other subfield	Lipid nutrition in fish and cephalopods
Marine fish	<i>Seriola dumerili</i> , <i>Pagrus pagrus</i> , <i>Sparus aurata</i>
Planktonic organisms	<i>Artemia</i> , rotifers, phytoplankton
Other species	<i>Octopus vulgaris</i>
Identified lines	Yes
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	-16,2316216
Latitude	28,5137565

Name Research Infrastructure	Feed Ingredients-additives Testing Unit (FITU)
Address	Muelle de Taliarte, Gran Canaria
Country	Spain
URL	http://www.giaqua.org/fitu/
Contact person	Marisol Izquierdo López
E-mail address	mizquierdo@dbio.ulpgc.es
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	Universidad de Las Palmas de Gran Canaria
AQUAEXCEL member	Yes
Main field of expertise	Nutrition
if other subfield	Fish immunology
2nd field of expertise	Welfare
2nd subfield of expertise	Stress
3rd field of expertise	Processing
3rd sublevel of expertise	Slaughtering
Marine fish	Gilthead seabream, seabass, red porgy, red banded seabream, Seriola, Jack mackerel
Shellfish	Seahorse
Macroalgae	Abalone
Other species	Octopus
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	-15,3743406
Latitude	27,9897642

Name Research Infrastructure	Instituto de Acuicultura Torre de la Sal (IATS)
Address	Torre de la Sal, s/n. 12595 Ribera de Cabanes, Castellón
Country	Spain
URL	www.iats.csic.es
Contact person	Ariadna Sitjà-Bobadilla
E-mail address	aquaexcel.wp4@iats.csic.es
Offers TNA	Yes
Open for use to external users	No
Type Operating Institute	Research Institute
Name Operating Institute	Agencia Estatal Consejo Superior de Investigaciones Científicas (CSIC)
AQUAEXCEL member	Yes
Main field of expertise	Nutrition
Main subfield of expertise	Feeding and digestion, New feed resources, Product quality
2nd field of expertise	Physiology
2nd subfield of expertise	Endocrinology, Other physiological aspects of domestication
if other subfield	Reproduction
3rd field of expertise	Health and pathology
3rd sublevel of expertise	Bacteriology, Parasitology
Marine fish	Sparus aurata, Dicentrarchus labrax, Solea seleganesis, Psetta maxima
Shellfish	Mytilus galloprovincialis, Ruditapes decussatus, Ruditapes philippinarum, Pecten jacobus
Planktonic organisms	Artemia, rotifers, phytoplankton
Other species	Oryzias latipes, Danio rerio
Identified lines	Yes
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	No
Longitude	0,15894
Latitude	40,12776

Name Research Infrastructure	Instituto de Ciencias Marinas de Andalucía - CSIC
Address	Avda. Republica Saharaui, 2, 11519 Puerto Real, Cadiz
Country	Spain
URL	http://www.icman.es
Contact person	Carmen Sarasquete
E-mail address	direccion.icman@csic.es
Offers TNA	No
Open for use to external users	No
Type Operating Institute	Research Institute
Name Operating Institute	Agencia Estatal Consejo Superior de Investigaciones Cientificas (CSIC)
AQUAEXCEL member	Yes
Main field of expertise	Physiology
Main subfield of expertise	Endocrinology
2nd field of expertise	Health and pathology
2nd subfield of expertise	Other issues
if other subfield	Histopathology
Marine fish	Sparus aurata, Dicentrarchus labrax, Solea senegalensis, Chelon labrosus
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Other type of water	Well water
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	-6,211743
Latitude	36,5286246

Name Research Infrastructure	IRTA (Institute Research & Technology Food & Agriculture)
Address	Passeig de Gràcia 44 3r, Barcelona
Country	Spain
URL	http://www.irta.cat/en-US/RIT/A/A3/Pages/A3.aspx
Contact person	Cristóbal Aguilera
E-mail address	cristobal.aguilera@irta.cat
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Research Institute
Name Operating Institute	IRTA (Institute Research & Technology Food & Agriculture)
AQUAEXCEL member	No
Main field of expertise	Aquaculture system engineering
Main subfield of expertise	Recycling systems
2nd field of expertise	Nutrition
2nd subfield of expertise	Feeding and digestion
3rd field of expertise	Health and pathology
if other subfield	Dolors Furones & Ana Roque
Marine fish	seabream, seabass, sole, maigre, eel
Diadrome fish	salmon
Freshwater fish	trout, tinca
Shellfish	clam, oyster, mussel, octopus, patella, pecten
Planktonic organisms	microalgae and live food
Identified lines	Yes
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	No
Other type of sites	Off-shore experimental infrastructures
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	Yes
Suspended systems	Yes
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	Yes
Communication systems	Yes
Other type of instrumentation	Labs full equipped for nutrition, health, fisiology,...
Longitude	2,166171
Latitude	41,3916592

Name Research Infrastructure	Laboratori d'Investigacions Marines i Aquicultura (LIMIA)
Address	Avd. Gabriel roca 69, Puerto de Andratx 07157
Country	Spain
URL	http://www.caib.es/govern/organigrama/area.do?coduo=1160&lang=ca
Contact person	Elena Pastor
E-mail address	epastor@dgpesca.caib.es
Offers TNA	No
Open for use to external users	No
Type Operating Institute	Other
if other type	Autonomic Goverment
Name Operating Institute	Government Islas Baleares
AQUAEXCEL member	No
Main field of expertise	Other expertise areas
if other field	Restocking studies
if other subfield	movement and recaptures, tagging studies
2nd field of expertise	Other expertise areas
if other field	marine organisms histology
if other subfield	Histopathology, Reproductive cycles studies, Histological atlas
3rd field of expertise	Health and pathology
Marine fish	Argyrosomus regius, Epinephelus marginatus, Pagellus erithrinus, Dentex dentex, Sparus auratus
Shellfish	Pinna nobilis, Ostrea edulis, Mitillus edulis, Chamelea Gallina, Venus verrucosa
Other species	Maja squinado, Octopus vulgaris
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	2,3781411
Latitude	39,5443545

Name Research Infrastructure	Marine Biosecurity Station (MBS)
Address	Muelle de Taliarte, Gran Canaria
Country	Spain
URL	http://www.giaqua.org/mbs/
Contact person	Fernando Real Valcárcel
E-mail address	freal@dpat.ulpgc.es
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	Universidad de Las Palmas de Gran Canaria
AQUAEXCEL member	Yes
Main field of expertise	Health and pathology
if other subfield	Fish immunology
2nd field of expertise	Welfare
2nd subfield of expertise	Stress
3rd field of expertise	Nutrition
Marine fish	Gilthead seabream, seabass, red porgy, Seriola, Jack mackerel, Meagre
Ornamental fish	Seahorse
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	-15,3743406
Latitude	27,9897642

Name Research Infrastructure	Spanish Institute of Oceanography. Oceanographic Center of Vigo
Address	Subida a Radio Faro, 50. 36390. Vigo. Pontevedra. Galicia
Country	Spain
URL	http://www.vi.ieu.es
Contact person	Juan Otero
E-mail address	jjose.otero@vi.ieu.es
Offers TNA	No
Open for use to external users	No
Type Operating Institute	Research Institute
Name Operating Institute	Spanish Institute of Oceanography
AQUAEXCEL member	No
Main field of expertise	Other expertise areas
if other field	Diversification
2nd field of expertise	Genetics
2nd subfield of expertise	Quantitative,Molecular
3rd field of expertise	Nutrition
3rd sublevel of expertise	Feeding and digestion,New feed resources
Marine fish	Psetta maxima, Solea senegalensis, Pagellus bogaraveo, Merluccius merluccius, Polyprion americanus
Shellfish	Octopus vulgaris, Maja brachydactyla
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	Yes
Communication systems	No
Longitude	-8,8129326
Latitude	42,1837371

Name Research Infrastructure	Station of Marine Science of Toralla (ECIMAT)
Address	Isla de Toralla s/n
Country	Spain
URL	www.ecimat.org
Contact person	Antonio Villanueva
E-mail address	ecimat@ecimat.org
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of Vigo
AQUAEXCEL member	No
Main field of expertise	Nutrition
Main subfield of expertise	Feeding and digestion
2nd field of expertise	Health and pathology
2nd subfield of expertise	Bacteriology,Virology,Parasitology
if other subfield	Biosecurity
3rd field of expertise	Physiology
3rd sublevel of expertise	Endocrinology
Marine fish	Scophthalmus maximus, Solea senegalensis
Shellfish	Mytilus galloprovincialis, Ostrea edulis, Tapes decussatus, Venerupis pullastra, Ensis ensis
Planktonic organisms	Rotifers, Copepods, Artemia, Microalgae
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	Yes
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	Yes
Longitude	-8,8025154
Latitude	42,200094

Name Research Infrastructure	Technological Institute for the Monitoring of the Marine Environment of Galicia
Address	Peirao de Vilaxoán s/n 36611 Vilagarcía de Arousa - Pontevedra
Country	Spain
URL	http://www.intecmar.org/
Contact person	Covadonga Salgado
E-mail address	intecmar@intecmar.org
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	Other
if other type	Technological Institute
Name Operating Institute	Technological Institute for the Monitoring of the Marine Environment of Galicia
AQUAEXCEL member	No
Main field of expertise	Marine Environmental Control
2nd field of expertise	Health and pathology
Shellfish	Bivalve molluscs
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	-8,7750261
Latitude	42,5947382

Name Research Infrastructure	Warm Water Species Selection Unit (WWSSU)
Address	Muelle de Taliarte, Gran Canaria
Country	Spain
URL	http://www.giaqua.org/wwssu/
Contact person	Juan Manuel Afonso López
E-mail address	jafonso@dpac.ulpgc.es
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	Universidad de Las Palmas de Gran Canaria
AQUAEXCEL member	Yes
Main field of expertise	Genetics
Main subfield of expertise	Quantitative
2nd field of expertise	Nutrition
2nd subfield of expertise	New feed resources
3rd field of expertise	Health and pathology
3rd sublevel of expertise	Bacteriology
Marine fish	Gilthead seabream, seabass, meagre, red porgy, red banded seabream, Seriola, Jack mackerel
Ornamental fish	Seahorse
Shellfish	Abalone
Identified lines	No
Recirculation	No
Flow through	No
Cages	No
Ponds	No
Seawater natural	No
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	-15,3743406
Latitude	27,9897642

Name Research Infrastructure	Department of Aquaculture
Address	01330 Sarıçam, Turkey
Country	Turkey
URL	http://suurunleri.cu.edu.tr
Contact person	Dr. Tufan EROLDogan
E-mail address	mtufan@cu.edu.tr
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of Cukurova
AQUAEXCEL member	No
Main field of expertise	Nutrition
Main subfield of expertise	Feeding and digestion
2nd field of expertise	Physiology
3rd field of expertise	Processing
Marine fish	Sea bass, sea bream
Diadrome fish	mullet
Freshwater fish	rainbow trout
Ornamental fish	carasius spp.
Macroalgae	spriluna
Other species	shrimp
Identified lines	Yes
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	Yes
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	Yes
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	Yes
Longitude	35,2793892
Latitude	37,0431202

Name Research Infrastructure	Dokuz Eylül University Institute of Marine Sciences and Technology
Address	Bakü Bulvari No: 100 35340 Inciralti- Izmir
Country	Turkey
URL	http://imst.deu.edu.tr
Contact person	Guzel YUCEL-GIER
E-mail address	yucel.gier@deu.edu.tr
Offers TNA	No
Open for use to external users	No
Type Operating Institute	Research Institute
Name Operating Institute	Dokuz Eylül University Institute of Marine Sciences and Technology
AQUAEXCEL member	No
Main field of expertise	Environmental interactions and impacts
2nd field of expertise	Welfare
3rd field of expertise	Aquaculture system engineering
Marine fish	Marine Fish
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	No
Communication systems	Yes
Longitude	27,052937
Latitude	38,405383

Name Research Infrastructure	Faculty of Marine Sciences, Aquaculture Research Center
Address	Camburnu, 61530 Trabzon
Country	Turkey
URL	www.ktu.edu.tr
Contact person	Prof. Dr. Kadir SEYHAN
E-mail address	kseyhan.1962@gmail.com
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	Karadeniz Technical University
AQUAEXCEL member	No
Main field of expertise	Nutrition
2nd field of expertise	Genetics
3rd field of expertise	Health and pathology
Marine fish	Sea bass, sea bream, horse mackerel, sturgeon
Diadrome fish	sea trout
Freshwater fish	Brown trout, rainbow trout, brook trout
Identified lines	Yes
Recirculation	No
Flow through	Yes
Cages	Yes
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	Yes
Control systems	No
Communication systems	Yes
Longitude	40,2036755
Latitude	40,9127485

Name Research Infrastructure	Institute of Aquaculture
Address	University of Stirling, Stirling FK9 4LA
Country	United Kingdom
URL	http://www.aquaculture.stir.ac.uk/
Contact person	David Penman
E-mail address	d.j.penman@stir.ac.uk
Offers TNA	Yes
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of Stirling
AQUAEXCEL member	Yes
Main field of expertise	Health and pathology
2nd field of expertise	Genetics
3rd field of expertise	Nutrition
Marine fish	Wrasse, cod
Diadrome fish	Atlantic salmon
Freshwater fish	Tilapia, rainbow trout, brown trout, African catfish
Ornamental fish	zebra danio
Identified lines	Yes
Recirculation	Yes
Flow through	Yes
Cages	No
Ponds	Yes
Seawater natural	Yes
Seawater artificial	No
Freshwater	Yes
Brackish water	No
Suspended systems	No
Monitoring	No
Robots	No
Cameras	No
Control systems	No
Communication systems	No
Longitude	-3,928932
Latitude	56,14751

Name Research Infrastructure	NAFC Marine Centre
Address	Port Arthur, Scalloway, Shetland, ZE1 0UN
Country	United Kingdom
URL	http://www.nafc.ac.uk
Contact person	Gregg Arthur
E-mail address	gregg.arthur@uhi.ac.uk
Offers TNA	No
Open for use to external users	Yes
Type Operating Institute	University
Name Operating Institute	University of the Highlands and Islands
Main field of expertise	Other expertise areas
if other subfield	Aquaculture
Marine fish	Various coldwater marine finfish
Shellfish	Molluscs, Echinoderms and Decapods
Macroalgae	Kelps
Planktonic organisms	Live prey species, Sea Lice
Identified lines	No
Recirculation	No
Flow through	Yes
Cages	No
Ponds	No
Seawater natural	Yes
Seawater artificial	No
Freshwater	No
Brackish water	No
Suspended systems	No
Monitoring	Yes
Robots	No
Cameras	No
Control systems	Yes
Communication systems	No
Longitude	-1,2878648
Latitude	60,1334991

When it comes to the AQUAEXCEL consortium partners, additional information about the Facility Units open for Transnational Access was collected. For this purpose, a special template was developed. Each entry was published on the individual partner's web site. A summary of these facilities is given in Table 3.

Table 3: Directory of Research Infrastructures with Facility Units open for Transnational Access under the AQUAEXCEL project.

Country	Name of the Facility Unit	AQUA-EXCEL partner	URL
Belgium	Gnotobiotic culture system for Artemia and sea bass (GART)	Ugent	www.aquaculture.ugent.be/index.htm
Czech Republic	Research Institute of Fish Culture and Hydrobiology (VURH)	VURH	www.frov.jcu.cz/en/vurh-frov-ju/vurh-ju-ve-vodnanech
France	IFREMER-MES	IFREMER	www.ifremer.fr/mediterranee/bienvenue
France	IFREMER-MFL	IFREMER	www.ifremer.fr/mediterranee/bienvenue
France	INRA PEIMA	INRA	www.rennes.inra.fr/l_inra_en_bretagne
France	INRA-STPEE	INRA	www.bordeaux-aquitaine.inra.fr/st_pee_eng/ur_numea
Greece	HCMR-Aqualabs	HCMR	innovator.ath.hcmr.gr/newhcmr1/seconddpage.php?id=39
Greece	HCMR-Souda	HCMR	innovator.ath.hcmr.gr/newhcmr1/seconddpage.php?id=39
Hungary	HAKI OEPS	HAKI	www.haki.hu
Hungary	HAKI RECIRK	HAKI	www.haki.hu
Netherlands	DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)	DLO - IMARES	www.imares.wur.nl
Netherlands	Aquatic Research Facilities (ARF)- Wageningen UR	WU	www.afi.wur.nl/UK/Research+facilities/
Norway	NTNU Centre of Fisheries and Aquaculture (Sealab)	NTNU	www.ntnu.edu/marine/sealab
Norway	ACE/SeaLab SSO	SINTEF	www.aceaquaculture.com
Norway	Matre Research Station	IMR	www.imr.no
Norway	Nofima Centre for Recirculation in Aquaculture (NCRA)	Nofima	www.nofima.no/en/artikkel/4869733954035201089
Norway	Averøy Research Station	Nofima	www.nofima.no/en/artikkel/24383373381930952
Norway	Norwegian Cod Breeding Centre	Nofima	www.nofima.no
Spain	Instituto de Acuicultura Torre de la Sal (IATS)	CSIC	www.iats.csic.es
Spain	Warm Water Species Selection Unit (WWSSU)	ULPGC	www.giaqua.org/wwssu/
Spain	Marine Biosecurity Station (MBS)	ULPGC	www.giaqua.org/mbs/
Spain	Feed Ingredients-additives Testing Unit (FITU)	ULPGC	www.giaqua.org/fitu/
United Kingdom	Institute of Aquaculture	UoS	www.aquaculture.stir.ac.uk/

Conclusion

The AQUAEXCEL directory provides detailed information on Aquaculture Research Infrastructures in Europe and beyond, based on data provided through an interactive web-based map (see www.aquaexcel.eu/rimaps/) , specifically developed for the project, and openly available.

The AQUAEXCEL consortium consists of 23 aquaculture Research Infrastructures. In addition, there are a large number of other European institutions and organisations owning and operating experimental facilities, instruments, databases or other facilities that are of relevance to the aquaculture academic and industrial community. The current directory therefore aims at providing a complete overview of available resources in Europe.

Quality control is taken care of through an administrator, who is in charge of checking all records submitted through the online system. The electronic directory is automatically updated when Research Infrastructures are added or modified through the AQUAEXCEL interactive map. As new Research Infrastructures are joining in continuously, this is a work in progress, and an update of the current document is anticipated to be published towards the end of the project period.

The AQUAEXCEL directory is an important tool for Research Infrastructure providers as it promotes their facilities and services. It is also an important tool for the users of Research Infrastructures, as it eases the process of finding relevant services, tools, and expertise, and hence stimulates networking activities between institutions with complimentary expertise and related interests. The AQUAEXCEL directory can therefore be regarded as an important tool for the aquaculture community to create networks, avoid duplications and increase collaboration.

In addition, the AQUAEXCEL directory will provide a basis for identifying current Research Infrastructure gaps, to be accomplished in a later stage of the project.

Finally, the AQUAEXCEL directory is a unique chance to promote the European aquaculture Research Infrastructure capacity worldwide, increasing its visibility in an international scene.

Annex 1

Deliverable Check list (to be completed by Deliverable leader)

	Check list	Comments
BEFORE	I have checked the due date and have planned completion in due time	<i>Please inform Management Team of any foreseen delays</i>
	The title corresponds to the title in the DOW	<i>If not please inform the Management Team with justification</i>
	The dissemination level corresponds to that indicated in the DOW	
	The contributors (authors) correspond to those indicated in the DOW	
	The Table of Contents has been validated with the Activity Leader	<i>Please validate the Table of Content with your Activity Leader before drafting the deliverable</i>
	I am using the AQUAEXCEL deliverable template (title page, styles etc)	<i>Available in "Useful Documents" on the collaborative workspace</i>
The draft is ready		
AFTER	I have written a good summary at the beginning of the Deliverable	<i>A 1-2 pages maximum summary is mandatory (not formal but really informative on the content of the Deliverable)</i>
	The deliverable has been reviewed by all contributors (authors)	<i>Make sure all contributors have reviewed and approved the final version of the deliverable. You should leave sufficient time for this validation.</i>
	I have done a spell check and had the English verified	<i>Ask a colleague with a good level of English to review the language of the text and do a spell-check too.</i>
	I have sent the final version to the Activity Leader and to the 2 nd Reviewer for approval	<i>Send the final draft to your Activity Leader and the 2nd Reviewer and leave 2 weeks for feedback and final changes before the due date. Once validated by the 2 reviewers, the draft is ready to be sent to the Management Team that will ask for the Coordinator validation and then transfer it to the EC.</i>

Annex 2

Aquaculture Research Infrastructure Directory according to expertise (extracted from the online inventory)

1. Genetics

Aqua Gen AS
DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
Faculty of Environmental Sciences
Faculty of Marine Sciences, Aquaculture Research Center
HAKI OEPS
HAKI RECIRK
INRA PEIMA
Ifremer platform in fish aquaculture
Institute of Aquaculture
Norwegian Cod Breeding Centre
RUE "FISH INDUSTRY INSTITUTE"
Research Institute of Fish Culture and Hydrobiology (VURH)
SZIE Department of Aquaculture
Spanish Institute of Oceanography. Oceanographic Center of Vigo
Warm Water Species Selection Unit (WWSSU)

2. Nutrition

Aqua4C (Biosystems KU Leuven)
 Aquaculture Experimental Plants
 Austevoll Research Station
 Averøy Research Station
 CENTRO DE INVESTIGACIONES MARINERAS (CIMA)
 Centro de Experimentación Pesquera
 Department of Aquaculture
 Department of Life and Environmental Sciences
 Department of Nature Protection
 Experimental Marine Culture Unit, Oceanographic Centre of the Canary Islands, Spanish Institute of Oceanography
 Experimental facilities for marine fish larvae (MFL)
 Faculty of Marine Sciences, Aquaculture Research Center
 Feed Ingredients-additives Testing Unit (FITU)
 GIFAS
 Gnotobiotic culture system for Artemia and sea bass (GART)
 HAKI OEPS
 HAKI RECIRK
 HCMR-Aqualabs
 Holar University College - Verid
 ILVO - D1
 INRA-STPEE
 IRTA (Institute Research & Technology Food & Agriculture)
 Institut National des Sciences et Technologies de la Mer - Parc Aquacole,
 Annexe de Kheireddine
 Institute of Aquaculture
 Instituto de Acuicultura Torre de la Sal (IATS)
 Laukaa fish farm
 Marine Biosecurity Station (MBS)
 Matre Research Station
 Nofima Centre for Recirculation in Aquaculture (NCRA)
 Norwegian Cod Breeding Centre
 RKTL Parainen, Rymättylä Aquaculture Research Station
 RUE "FISH INDUSTRY INSTITUTE"
 Research Institute of Fish Culture and Hydrobiology (VURH)
 Rymättylä Aquaculture Research Station
 Spanish Institute of Oceanography. Oceanographic Center of Vigo
 Station of Marine Science of Toralla (ECIMAT)
 University of Debrecen - Experimental Recirculation Aquaculture Facility
 University of Insubria, Department of Biotechnology and Life Sciences,
 Animal Sciences and Aquaculture Unit
 University of Pannonia Georgikon Faculty, Aquaculture Group
 University of Jyväskylä, Dept. Biol. & Env. Sci.
 Warm Water Species Selection Unit (WWSSU)
 West Hungarian University

3. Physiology

AZTI-BIOAP
 Aquaculture Research Station in Tromsø Ltd
 Aquatic Research Facilities (ARF)- Wageningen UR
 Balaton Limnological Institute, Centre for Ecological Research, HAS
 DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
 Department of Aquaculture
 Experimental facilities for marine fish larvae (MFL)
 GIFAS
 HAKI RECIRK
 INRA PEIMA
 INRA-STPEE
 Institut National des Sciences et Technologies de la Mer - Parc Aquacole,
 Annexe de Kheireddine
 Instituto de Acuicultura Torre de la Sal (IATS)
 Instituto de Ciencias Marinas de Andalucía - CSIC
 Kainuu Fisheries Research
 Matre Research Station
 Mesodrome
 NTNU Centre of Fisheries and Aquaculture (Sealab)
 Nofima Centre for Recirculation in Aquaculture (NCRA)
 Norwegian Cod Breeding Centre
 RKTL Parainen, Rymättylä Aquaculture Research Station
 Research and Education Center "Sturgeon"
 Rymättylä Aquaculture Research Station
 State Scientific-and-Production Centre for Fisheries
 Station of Marine Science of Toralla (ECIMAT)
 University of Insubria, Department of Biotechnology and Life Sciences, Animal
 Sciences and Aquaculture Unit
 University of Nordland - Research Station
 Universtiy of Jyväskylä, Dept. Biol. & Env. Sci.

4. Welfare

ACE/SeaLab SSO
 Aquaculture Experimental Plants
 Aquaculture Research Station in Tromsø Ltd
 Austevoll Research Station
 Averøy Research Station
 Department of Life and Environmental Sciences
 Department of Nature Protection
 Dokuz Eylül University Institute of Marine Sciences and Technology
 Feed Ingredients-additives Testing Unit (FITU)
 Fish behavioural facility
 ILVO - D1
 Kainuu Fisheries Research
 Marine Biosecurity Station (MBS)
 Matre Research Station
 RKTL Parainen, Rymättylä Aquaculture Research Station
 RUE "FISH INDUSTRY INSTITUTE"
 University of Insubria, Department of Biotechnology and Life Sciences, Animal Sciences and Aquaculture Unit

5. Health and pathology

Aqua Gen AS
 Aquaculture Experimental Plants
 Aquaculture Research Station in Tromsø Ltd
 Averøy Research Station
 CENTRO DE INVESTIGACIÓN MARIÑAS (CIMA)
 Faculty of Environmental Sciences
 Faculty of Marine Sciences, Aquaculture Research Center
 Gnotobiotic culture system for Artemia and sea bass (GART)
 HCMR-Aqualabs
 IRTA (Institute Research & Technology Food & Agriculture)
 Institute of Aquaculture
 Instituto de Acuicultura Torre de la Sal (IATS)
 Instituto de Ciencias Marinas de Andalucía - CSIC
 Laboratori d'Investigacions Marines i Aquicultura (LIMIA)
 Marine Biosecurity Station (MBS)
 R&D Department
 State Scientific-and-Production Centre for Fisheries
 Station of Marine Science of Toralla (ECIMAT)
 TMY Ltd
 Technological Institute for the Monitoring of the Marine Environment of Galicia
 University of Pannonia Georgikon Faculty, Aquaculture Group
 University of Jyväskylä, Dept. Biol. & Env. Sci.
 Warm Water Species Selection Unit (WWSSU)

6. Aquaculture systems engineering

ACE/SeaLab SSO
 AZTI-BIOAP
 Aqua4C (Biosystems KU Leuven)
 Aquatic Research Facilities (ARF)- Wageningen UR
 Balaton Limnological Institute, Centre for Ecological Research, HAS
 CENTRO DE INVESTIGACIÓN MARÍNAS (CIMA)
 Centro de Acuicultura "Las Vegas del Guadiana"
 Centro de Experimentación Pesquera
 DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
 Dokuz Eylül University Institute of Marine Sciences and Technology
 GIFAS
 HCMR-Aqualabs
 Holar University College - Verid
 ILVO - D1
 INRA PEIMA
 IRTA (Institute Research & Technology Food & Agriculture)
 Ifremer platform in fish aquaculture
 Kainuu Fisheries Research
 NIVA Marine Research Station at Solbergstrand
 NTNU Centre of Fisheries and Aquaculture (Sealab)
 Nofima Centre for Recirculation in Aquaculture (NCRA)
 R&D Department
 Research Institute of Fish Culture and Hydrobiology (VURH)
 Research and Education Center "Sturgeon"
 SINTEF Flume tank
 Senja Aquaculture Center AS
 TMY Ltd
 University of Debrecen - Experimental Recirculation Aquaculture Facility
 University of Nordland - Research Station

7. Processing

Department of Aquaculture
 Feed Ingredients-additives Testing Unit (FITU)
 University of Debrecen - Experimental Recirculation Aquaculture Facility
 West Hungarian University

8. Environmental interactions and impacts

ACE/SeaLab SSO
 AZTI-BIOAP
 Aqua4C (Biosystems KU Leuven)
 Aquatic Research Facilities (ARF)- Wageningen UR
 Balaton Limnological Institute, Centre for Ecological Research, HAS
 CENTRO DE INVESTIGACIÓN MARÍTIMA (CIMA)
 Dokuz Eylül University Institute of Marine Sciences and Technology
 Flødevigen Research Station
 HAKI OEPS
 Holar University College - Verid
 Ifremer platform in fish aquaculture
 Institute for Ecology and Aquaculture - Ökologische Station Waldviertel
 Mesodrome
 NIVA Marine Research Station at Solbergstrand
 NTNU Centre of Fisheries and Aquaculture (Sealab)
 R&D Department
 State Scientific-and-Production Centre for Fisheries
 TMY Ltd
 University of Nordland - Research Station
 University of Oradea, Faculty of Sciences, Department of Biology
 University of Pannonia Georgikon Faculty, Aquaculture Group
 West Hungarian University

9. Other expertise areas

CENTRO DE INVESTIGACIÓN MARIÑAS (CIMA)
 Centro Oceanográfico de Santander
 Centro de Acuicultura "Las Vegas del Guadiana"
 Department of Life and Environmental Sciences
 Experimental Marine Culture Unit, Oceanographic Centre of the Canary Islands, Spanish Institute of Oceanography
 Faculty of Environmental Sciences
 HCMR-Souda
 IMP - Institute for Marine and Coastal Research/ University of Dubrovnik
 INRA-STPEE
 Institut National des Sciences et Technologies de la Mer - Parc Aquacole, Annexe de Kheireddine
 Institute for Ecology and Aquaculture - Ökologische Station Waldviertel
 Laboratori d'Investigacions Marines i Aquicultura (LIMIA)
 Laukaa fish farm
 Mesodrome
 NAFC Marine Centre
 NIVA Marine Research Station at Solbergstrand
 Rymättylä Aquaculture Research Station
 SZIE Department of Aquaculture
 Senja Aquaculture Center AS
 Spanish Institute of Oceanography. Oceanographic Center of Vigo
 Technological Institute for the Monitoring of the Marine Environment of Galicia
 University of Oradea, Faculty of Sciences, Department of Biology

Aquaculture Research Infrastructure Directory according to species type
(extracted from the online inventory)

1. Marine fish

ACE/SeaLab SSO
 Aqua Gen AS
 Aquaculture Experimental Plants
 Aquaculture Research Station in Tromsø Ltd
 Aquatic Research Facilities (ARF)- Wageningen UR
 Austevoll Research Station
 Averøy Research Station
 CENTRO DE INVESTIGACIÓN MARÍTIMA (CIMA)
 Centro Oceanográfico de Santander
 DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
 Department of Aquaculture
 Dokuz Eylül University Institute of Marine Sciences and Technology
 Experimental Marine Culture Unit, Oceanographic Centre of the Canary Islands, Spanish Institute of Oceanography
 Experimental facilities for marine fish larvae (MFL)
 Faculty of Marine Sciences, Aquaculture Research Center
 Feed Ingredients-additives Testing Unit (FITU)
 Fish behavioural facility
 GIFAS
 Gnotobiotic culture system for Artemia and sea bass (GART)
 HCMR-Aqualabs
 HCMR-Souda
 Holar University College - Verid
 ILVO - D1
 IMP - Institute for Marine and Coastal Research/ University of Dubrovnik
 IRTA (Institute Research & Technology Food & Agriculture)
 Ifremer platform in fish aquaculture
 Institute of Aquaculture
 Instituto de Acuicultura Torre de la Sal (IATS)
 Instituto de Ciencias Marinas de Andalucía - CSIC
 Kainuu Fisheries Research
 Laboratori d'Investigacions Marines i Aquicultura (LIMIA)
 Marine Biosecurity Station (MBS)
 Matre Research Station
 Mesodrome
 NAFC Marine Centre
 NIVA Marine Research Station at Solbergstrand
 NTNU Centre of Fisheries and Aquaculture (Sealab)
 Nofima Centre for Recirculation in Aquaculture (NCRA)
 Norwegian Cod Breeding Centre
 RKTL Parainen, Rymättylä Aquaculture Research Station

Rymättylä Aquaculture Research Station
 SINTEF Flume tank
 Senja Aquaculture Center AS
 Spanish Institute of Oceanography. Oceanographic Center of Vigo
 Station of Marine Science of Toralla (ECIMAT)
 TMY Ltd
 University of Insubria, Department of Biotechnology and Life Sciences,
 Animal Sciences and Aquaculture Unit
 University of Nordland - Research Station
 University of Oradea, Faculty of Sciences, Department of Biology
 Warm Water Species Selection Unit (WWSSU)

2. Diadrome fish

Aquaculture Research Station in Tromsø Ltd
 Aquatic Research Facilities (ARF)- Wageningen UR
 Austevoll Research Station
 Averøy Research Station
 Department of Aquaculture
 Faculty of Marine Sciences, Aquaculture Research Center
 GIFAS
 HAKI RECIRK
 Holar University College - Verid
 IRTA (Institute Research & Technology Food & Agriculture)
 Institute of Aquaculture
 Matre Research Station
 Mesodrome
 NTNU Centre of Fisheries and Aquaculture (Sealab)
 Nofima Centre for Recirculation in Aquaculture (NCRA)
 Senja Aquaculture Center AS
 University of Debrecen - Experimental Recirculation Aquaculture Facility
 University of Nordland - Research Station
 University of Oradea, Faculty of Sciences, Department of Biology
 University of Jyväskylä, Dept. Biol. & Env. Sci.

3. Freshwater fish

Aqua Gen AS
 Aqua4C (Biosystems KU Leuven)
 Aquaculture Experimental Plants
 Aquaculture Research Station in Tromsø Ltd
 Aquatic Research Facilities (ARF)- Wageningen UR
 Centro de Acuicultura "Las Vegas del Guadiana"
 DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
 Department of Aquaculture
 Department of Life and Environmental Sciences
 Department of Nature Protection
 Faculty of Environmental Sciences
 Faculty of Marine Sciences, Aquaculture Research Center
 HAKI OEPS
 HAKI RECIRK
 INRA PEIMA
 INRA-STPEE
 IRTA (Institute Research & Technology Food & Agriculture)
 Institut National des Sciences et Technologies de la Mer - Parc Aquacole,
 Annexe de Kheireddine
 Institute for Ecology and Aquaculture - Ökologische Station Waldviertel
 Institute of Aquaculture
 Kainuu Fisheries Research
 Laukaa fish farm
 Matre Research Station
 Mesodrome
 Nofima Centre for Recirculation in Aquaculture (NCRA)
 RUE "FISH INDUSTRY INSTITUTE"
 Research Institute of Fish Culture and Hydrobiology (VURH)
 Research and Education Center "Sturgeon"
 SZIE Department of Aquaculture
 State Scientific-and-Production Centre for Fisheries
 University of Debrecen - Experimental Recirculation Aquaculture Facility
 University of Insubria, Department of Biotechnology and Life Sciences, Animal
 Sciences and Aquaculture Unit
 University of Nordland - Research Station
 University of Oradea, Faculty of Sciences, Department of Biology
 University of Pannonia Georgikon Faculty, Aquaculture Group
 Universiti of Jyväskylä, Dept. Biol. & Env. Sci.
 West Hungarian University

4. Ornamental fish

Aqua4C (Biosystems KU Leuven)
 Aquatic Research Facilities (ARF)- Wageningen UR
 Department of Aquaculture
 Department of Life and Environmental Sciences
 ILVO - D1
 Institute of Aquaculture
 Marine Biosecurity Station (MBS)
 University of Oradea, Faculty of Sciences, Department of Biology
 Universiti of Jyväskylä, Dept. Biol. & Env. Sci.
 Warm Water Species Selection Unit (WWSSU)

5. Shellfish

AZTI-BIOAP
 Aqua4C (Biosystems KU Leuven)
 Austevoll Research Station
 CENTRO DE INVESTIGACIÓN MARIÑAS (CIMA)
 CENTRO DE INVESTIGACIÓN MARIÑAS (CIMA)
 Centro de Experimentación Pesquera
 DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
 Feed Ingredients-additives Testing Unit (FITU)
 ILVO - D1
 IMP - Institute for Marine and Coastal Research/ University of Dubrovnik
 IRTA (Institute Research & Technology Food & Agriculture)
 Instituto de Acuicultura Torre de la Sal (IATS)
 Laboratori d'Investigacions Marines i Aquicultura (LIMIA)
 Matre Research Station
 Mesodrome
 NAFC Marine Centre
 Spanish Institute of Oceanography. Oceanographic Center of Vigo
 Station of Marine Science of Toralla (ECIMAT)
 Technological Institute for the Monitoring of the Marine Environment of Galicia
 University of Nordland - Research Station
 University of Oradea, Faculty of Sciences, Department of Biology
 Warm Water Species Selection Unit (WWSSU)

6. Macroalgae

ACE/SeaLab SSO
 Department of Aquaculture
 Feed Ingredients-additives Testing Unit (FITU)
 Mesodrome
 NAFC Marine Centre
 TMY Ltd
 University of Oradea, Faculty of Sciences, Department of Biology

7. Planktonic organisms

Aquaculture Research Station in Tromsø Ltd
 Aquatic Research Facilities (ARF)- Wageningen UR
 Balaton Limnological Institute, Centre for Ecological Research, HAS
 Centro de Acuicultura "Las Vegas del Guadiana"
 DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
 Experimental Marine Culture Unit, Oceanographic Centre of the Canary Islands, Spanish Institute of Oceanography
 ILVO - D1
 IMP - Institute for Marine and Coastal Research/ University of Dubrovnik
 IRTA (Institute Research & Technology Food & Agriculture)
 Instituto de Acuicultura Torre de la Sal (IATS)
 Mesodrome
 NAFC Marine Centre
 NTNU Centre of Fisheries and Aquaculture (Sealab)
 State Scientific-and-Production Centre for Fisheries
 Station of Marine Science of Toralla (ECIMAT)
 TMY Ltd
 University of Debrecen - Experimental Recirculation Aquaculture Facility
 University of Nordland - Research Station
 University of Oradea, Faculty of Sciences, Department of Biology

8. Other aquaculture species

Aquaculture Research Station in Tromsø Ltd
 Aquatic Research Facilities (ARF)- Wageningen UR
 Balaton Limnological Institute, Centre for Ecological Research, HAS
 Centro de Experimentación Pesquera
 Department of Aquaculture
 Experimental Marine Culture Unit, Oceanographic Centre of the Canary Islands, Spanish Institute of Oceanography
 Feed Ingredients-additives Testing Unit (FITU)
 Gnotobiotic culture system for Artemia and sea bass (GART)
 ILVO - D1
 IMP - Institute for Marine and Coastal Research/ University of Dubrovnik
 Instituto de Acuicultura Torre de la Sal (IATS)
 Laboratori d'Investigacions Marines i Aquicultura (LIMIA)
 Mesodrome
 TMY Ltd
 University of Insubria, Department of Biotechnology and Life Sciences, Animal Sciences and Aquaculture Unit
 University of Nordland - Research Station
 University of Oradea, Faculty of Sciences, Department of Biology

***Aquaculture Research Infrastructure Directory according to type of site
(extracted from the online inventory)***

1. Land-based recirculation

Aqua Gen AS
 Aqua4C (Biosystems KU Leuven)
 Aquaculture Experimental Plants
 Aquatic Research Facilities (ARF)- Wageningen UR
 Centro de Acuicultura "Las Vegas del Guadiana"
 DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
 Department of Aquaculture
 Department of Nature Protection
 Experimental facilities for marine fish larvae (MFL)
 Faculty of Environmental Sciences
 Fish behavioural facility
 HAKI RECIRK
 HCMR-Aqualabs
 ILVO - D1
 INRA PEIMA
 INRA-STPEE
 IRTA (Institute Research & Technology Food & Agriculture)
 Institut National des Sciences et Technologies de la Mer - Parc Aquacole,
 Annexe de Kheireddine
 Institute of Aquaculture
 Instituto de Acuicultura Torre de la Sal (IATS)
 Laukaa fish farm
 Mesodrome
 NTNU Centre of Fisheries and Aquaculture (Sealab)
 Nofima Centre for Recirculation in Aquaculture (NCRA)
 R&D Department
 RKTL Parainen, Rymättylä Aquaculture Research Station
 Research Institute of Fish Culture and Hydrobiology (VURH)
 Senja Aquaculture Center AS
 University of Debrecen - Experimental Recirculation Aquaculture Facility
 University of Nordland - Research Station
 University of Pannonia Georgikon Faculty, Aquaculture Group

2. Land-based flow-through

Aqua Gen AS
 Aquaculture Experimental Plants
 Aquaculture Research Station in Tromsø Ltd
 Aquatic Research Facilities (ARF)- Wageningen UR
 CENTRO DE INVESTIGACIÓN MARÍTIMA (CIMA)
 CENTRO DE INVESTIGACIÓN MARÍTIMA (CIMA)
 Centro Oceanográfico de Santander
 Centro de Acuicultura "Las Vegas del Guadiana"
 DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
 Department of Aquaculture
 Dokuz Eylül University Institute of Marine Sciences and Technology
 Experimental Marine Culture Unit, Oceanographic Centre of the Canary Islands, Spanish Institute of Oceanography
 Experimental facilities for marine fish larvae (MFL)
 Faculty of Environmental Sciences
 Faculty of Marine Sciences, Aquaculture Research Center
 Fish behavioural facility
 Flødevigen Research Station
 HCMR-Aqualabs
 Holar University College - Verid
 ILVO - D1
 IMP - Institute for Marine and Coastal Research/ University of Dubrovnik
 INRA PEIMA
 INRA-STPEE
 IRTA (Institute Research & Technology Food & Agriculture)
 Institute of Aquaculture
 Instituto de Acuicultura Torre de la Sal (IATS)
 Instituto de Ciencias Marinas de Andalucía - CSIC
 Kainuu Fisheries Research
 Laboratori d'Investigacions Marines i Aquicultura (LIMIA)
 Laukaa fish farm
 Matre Research Station
 Mesodrome
 NAFC Marine Centre
 NIVA Marine Research Station at Solbergstrand
 NTNU Centre of Fisheries and Aquaculture (Sealab)
 Nofima Centre for Recirculation in Aquaculture (NCRA)
 Norwegian Cod Breeding Centre
 R&D Department
 Research Institute of Fish Culture and Hydrobiology (VURH)
 Research and Education Center "Sturgeon"

Spanish Institute of Oceanography. Oceanographic Center of Vigo
 State Scientific-and-Production Centre for Fisheries
 Station of Marine Science of Toralla (ECIMAT)
 TMY Ltd
 University of Nordland - Research Station
 University of Pannonia Georgikon Faculty, Aquaculture Group
 West Hungarian University

3. Cages

ACE/SeaLab SSO
 Aqua Gen AS
 Aquaculture Research Station in Tromsø Ltd
 Averøy Research Station
 CENTRO DE INVESTIGACIÓN MARIÑAS (CIMA)
 Faculty of Marine Sciences, Aquaculture Research Center
 GIFAS
 HCMR-Aqualabs
 HCMR-Souda
 IMP - Institute for Marine and Coastal Research/ University of Dubrovnik
 Laboratori d'Investigacions Marines i Aquicultura (LIMIA)
 Matre Research Station
 Rymättylä Aquaculture Research Station
 SINTEF Flume tank
 TMY Ltd
 University of Pannonia Georgikon Faculty, Aquaculture Group

4. Ponds

Aquatic Research Facilities (ARF)- Wageningen UR
 Centro de Acuicultura "Las Vegas del Guadiana"
 Department of Aquaculture
 GIFAS
 HAKI OEPS
 Institute for Ecology and Aquaculture - Ökologische Station Waldviertel
 Institute of Aquaculture
 Kainuu Fisheries Research
 RUE "FISH INDUSTRY INSTITUTE"
 Research Institute of Fish Culture and Hydrobiology (VURH)
 Research and Education Center "Sturgeon"
 State Scientific-and-Production Centre for Fisheries
 University of Pannonia Georgikon Faculty, Aquaculture Group
 West Hungarian University

5. Suspended systems

AZTI-BIOAP

Aquaculture Research Station in Tromsø Ltd

CENTRO DE INVESTIGACIONES MARIÑAS (CIMA)

ILVO - D1

IMP - Institute for Marine and Coastal Research/ University of Dubrovnik

IRTA (Institute Research & Technology Food & Agriculture)

6. Other type of site

AZTI-BIOAP

Balaton Limnological Institute, Centre for Ecological Research, HAS

Centro de Acuicultura "Las Vegas del Guadiana"

Experimental facilities for marine fish larvae (MFL)

Gnotobiotic culture system for Artemia and sea bass (GART)

IRTA (Institute Research & Technology Food & Agriculture)

Institut National des Sciences et Technologies de la Mer - Parc Aquacole,

Annexe de Kheireddine

Kainuu Fisheries Research

Mesodrome

NIVA Marine Research Station at Solbergstrand

RUE "FISH INDUSTRY INSTITUTE"

Research Institute of Fish Culture and Hydrobiology (VURH)

SZIE Department of Aquaculture

West Hungarian University

Aquaculture Research Infrastructure Directory according to type of water
(extracted from the online inventory)

1. Seawater (natural)

ACE/SeaLab SSO
 AZTI-BIOAP
 Aqua Gen AS
 Aquaculture Experimental Plants
 Aquaculture Research Station in Tromsø Ltd
 Averøy Research Station
 CENTRO DE INVESTIGACIÓN MARIÑAS (CIMA)
 CENTRO DE INVESTIGACIÓN MARIÑAS (CIMA)
 Centro Oceanográfico de Santander
 DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
 Department of Aquaculture
 Dokuz Eylül University Institute of Marine Sciences and Technology
 Experimental Marine Culture Unit, Oceanographic Centre of the Canary Islands, Spanish Institute of Oceanography
 Experimental facilities for marine fish larvae (MFL)
 Faculty of Marine Sciences, Aquaculture Research Center
 Fish behavioural facility
 Flødevigen Research Station
 GIFAS
 HCMR-Aqualabs
 HCMR-Souda
 Holar University College - Verid
 ILVO - D1
 IMP - Institute for Marine and Coastal Research/ University of Dubrovnik
 IRTA (Institute Research & Technology Food & Agriculture)
 Institute of Aquaculture
 Instituto de Acuicultura Torre de la Sal (IATS)
 Laboratori d'Investigacions Marines i Aquicultura (LIMIA)
 Matre Research Station
 NAFC Marine Centre
 NIVA Marine Research Station at Solbergstrand
 NTNU Centre of Fisheries and Aquaculture (Sealab)
 Nofima Centre for Recirculation in Aquaculture (NCRA)
 Norwegian Cod Breeding Centre
 R&D Department
 Senja Aquaculture Center AS
 Spanish Institute of Oceanography. Oceanographic Center of Vigo
 Station of Marine Science of Toralla (ECIMAT)
 TMY Ltd
 University of Nordland - Research Station

2. Seawater (artificial)

Aquaculture Experimental Plants
Aquatic Research Facilities (ARF)- Wageningen UR
DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
Gnotobiotic culture system for Artemia and sea bass (GART)
HCMR-Aqualabs
Mesodrome
Station of Marine Science of Toralla (ECIMAT)

3. Freshwater

Aqua Gen AS
 Aqua4C (Biosystems KU Leuven)
 Aquaculture Experimental Plants
 Aquaculture Research Station in Tromsø Ltd
 Aquatic Research Facilities (ARF)- Wageningen UR
 Balaton Limnological Institute, Centre for Ecological Research, HAS
 Centro de Acuicultura "Las Vegas del Guadiana"
 DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
 Department of Aquaculture
 Department of Nature Protection
 Faculty of Environmental Sciences
 Faculty of Marine Sciences, Aquaculture Research Center
 Flødevigen Research Station
 HAKI OEPS
 HAKI RECIRK
 Holar University College - Verid
 ILVO - D1
 INRA PEIMA
 INRA-STPEE
 IRTA (Institute Research & Technology Food & Agriculture)
 Institut National des Sciences et Technologies de la Mer - Parc Aquacole,
 Annexe de Kheireddine
 Institute for Ecology and Aquaculture - Ökologische Station Waldviertel
 Institute of Aquaculture
 Instituto de Acuicultura Torre de la Sal (IATS)
 Kainuu Fisheries Research
 Laukaa fish farm
 Matre Research Station
 Mesodrome
 NIVA Marine Research Station at Solbergstrand
 NTNU Centre of Fisheries and Aquaculture (Sealab)
 Nofima Centre for Recirculation in Aquaculture (NCRA)
 R&D Department
 RUE "FISH INDUSTRY INSTITUTE"
 Research Institute of Fish Culture and Hydrobiology (VURH)
 Research and Education Center "Sturgeon"
 SINTEF Flume tank
 SZIE Department of Aquaculture
 State Scientific-and-Production Centre for Fisheries
 TMY Ltd
 University of Debrecen - Experimental Recirculation Aquaculture Facility
 University of Nordland - Research Station
 University of Oradea, Faculty of Sciences, Department of Biology
 University of Pannonia Georgikon Faculty, Aquaculture Group
 West Hungarian University

4. Brackish water

Aquatic Research Facilities (ARF)- Wageningen UR
 DLO-IMARES (Institute for Marine Resources and Ecosystem Studies)
 Department of Aquaculture
 Experimental facilities for marine fish larvae (MFL)
 Flødevigen Research Station
 Holar University College - Verid
 IRTA (Institute Research & Technology Food & Agriculture)
 Matre Research Station
 Mesodrome
 Nofima Centre for Recirculation in Aquaculture (NCRA)
 RKTL Parainen, Rymättylä Aquaculture Research Station
 Rymättylä Aquaculture Research Station
 University of Debrecen - Experimental Recirculation Aquaculture Facility

5. Other

Aquaculture Research Station in Tromsø Ltd
 Instituto de Ciencias Marinas de Andalucía - CSIC
 Mesodrome
 University of Insubria, Department of Biotechnology and Life Sciences, Animal
 Sciences and Aquaculture Unit
 West Hungarian University

Annex 3

Invitation letter to join the newly developed online Aquaculture Research Infrastructure Directory

Dear colleague,

AQUAEXCEL (Aquaculture Infrastructures for Excellence in European Fish Research) is an EU FP7 project which aims to integrate key **aquaculture research infrastructures** across Europe, in order to promote their coordinated use and development. Through collaboration among 17 partners and 23 facilities, AQUAEXCEL offers top class research infrastructures for both **basic and applied research**, giving aquaculture research groups the opportunity to utilise AQUAEXCELs facilities.

In addition, it aims to provide an integrated online infobase with **ALL aquaculture research infrastructures in Europe and Associated countries**, including non-AQUAEXCEL partners. The infobase will be a viable European aquaculture research **infrastructure directory** in the long term, and a **powerful tool** to identify European facilities, genetic and human resources and to promote mutual collaboration.

We invite you to submit information on your aquaculture research infrastructure into the AQUAEXCEL database, and so:

- **giving you a unique chance to promote your institution and its facilities worldwide**
- **allowing colleagues worldwide to identify your institution, its properties and its researchers**
- **providing opportunity for international cooperation**
- **giving networking chances**

To add your Research Infrastructure to the AQUAEXCEL online infobase, go to:

<http://www.aquaexcel.eu/rimap>

or go to www.aquaexcel.eu >> choose Interactive map from menu

[please note that the system is best viewed in Mozilla Firefox or Google Chrome]

1. **Click on “Register to map”**
2. **Complete your details and submit**
3. **You will be sent a confirmation e-mail with your login details**
4. **Complete the fields**
5. **Send an e-mail to marieke@aquatt.ie who will check and publish the information**

As different Research Infrastructures from the same Operating Institution can be located in different locations and operated by different persons, please forward this invitation to the person able to complete the details for the/another aquaculture Research Infrastructure.

For more information please check out www.aquaexcel.eu