



EUROPEAN HEALTH AND DIGITAL EXECUTIVE
AGENCY (HADEA)

Department A Health and Food Unit A2 EU4Health/SMP



Single Market Programme (SMP Food)

SMP-FOOD-2025-EURL-EURC-PJG-IBA 2025-2027

Project Number: 101202280

Activities of the EU Reference Laboratories and EU Reference Centres in 2025-2027

SUBMISSION FORM: DESCRIPTION OF THE ACTION
(Annex 1 – Description of the action (part B))

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Applicant shall provide information on each question contained in the Form. The information filled in the Form, shall be clear, concise, consistent and complete.

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Applicant - COORDINATOR (Name of EURC)	University of Crete, Greece - EURCAW Aqua
Topic	Animal welfare of aquatic animals
Implementation period	01/01/2025 – 31/12/2027

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1. List of abbreviations and key words

AAC	Aquaculture Advisory Council
AAM	EU Aquaculture Assistance Mechanism
BCAS	Biology Centre, Czech Academy of Sciences, Institute of Parasitology
CoP	Community of Practice
DG MARE	The Commission's Directorate-General for Maritime Affairs and Fisheries
DG SANTE	The Commission's Directorate-General for Health and Food Safety of the European Commission
EFARO	European Fisheries and Aquaculture Research Organizations
EFSA	European Food Safety Authority
EUP AH&W	European Partnership Animal Health & Welfare
EURCAWs	EU Reference Centres for Animal Welfare
EURCAW-Aqua	EU Reference Centre on Animal Welfare - Aquatic Animals
EURCAW-Pigs	European Union Reference Centre for Animal Welfare for Pigs
EURCAW-Poultry-SFA	European Union Reference Centre for Animal Welfare for Poultry and other small farmed animals
EURCAW-Ruminants & Equines	European Union Reference Centre for Animal Welfare for Ruminants & Equines
FEAP	Federation of European Aquaculture Producers
FELASA	Federation of European Laboratory Animal Science Associations
FAQS	Frequently Asked Questions
Indicator	Indicators are evidence used to identify the welfare status of an individual animal; a quantitative, measurable parameter, indicating an animal's welfare aspect.
Iceberg indicator	An indicator identifying more than one welfare consequence
M	Month
MC	Management Committee
MSs	Member States of the EU
NCA, Cs	National Competent Authorities
NGOs	Non-governmental organizations
NSBs	National Supporting Bodies (organisations, institutions or individuals supporting NCAs with scientific, research, training, and communication-based advice)
NRCs	National Reference Centres for animal welfare, officially designated by a Member State

RAS	Recirculating Aquaculture System
REB	Reflection Board will represent the farmed aquatic animals' stakeholders (e.g. farmed fish supply chain, professional organisations, civil society organisations, relative advisory councils and reference bodies of EU interest)
SBs	Supporting bodies of the National competent authorities
Target groups	DG SANTE, DG MARE, NCAs, NRCs and SBs
Third countries (TCs)	Countries that are not EU Member States
UAB	Universitat Autònoma de Barcelona
UoC	University of Crete

2. Introduction

The consortium consisting of the University of Crete (UoC, Greece - coordinator), and the Biology Centre, Czech Academy of Sciences, Institute of Parasitology (BCAS, Czech Republic) and the Universitat Autònoma de Barcelona (UAB, Spain), was designated as the European Union Reference Centre for the Welfare of Aquatic Animals (EURCAW-Aqua) on 17th of January 2024 (Decision 2024/266). EURCAW-Aqua (hereinafter referred to as the “Centre”) was established in May 2024, in accordance with Regulation (EU) 2017/625 (art. 95) on official controls, to support the European Commission’s Directorate-General for Health and Food Safety of (DG SANTE), the Member States (MSs) Competent Authorities (CAs) and their Supporting Bodies (SBs), by providing scientific and technical studies, training and education on the welfare of aquatic animals. The EURCAW-Aqua will develop and disseminate knowledge and tools to assist EU MSs in carrying out official controls on aquatic animal welfare.

The EURCAW-Aqua will provide services that will also be available to other stakeholders such as Non-Governmental Organizations (NGOs), Producer Associations and Third-Party Audit and Certification Organizations, NCAs in third countries (TCs) (after prior approval by the European Commission). In addition, the EURCAW-Aqua will conduct and facilitate research in the underdeveloped area of aquatic animals’ welfare, will foster the collaboration among researchers, organizations and institutions working in this field and will engage in public outreach and awareness campaigns through public lectures and exhibitions.

The EURCAW-Aqua is structured and operated to address the main challenges in assessing the welfare of aquatic organisms, namely: (i) the diversity of farming systems, the importance of the aquatic environment and water quality and the uniqueness of different aquatic environments, (ii) the large number of farmed fish and decapod species, (iii) new, emerging aquaculture candidate species (e.g. cephalopods), (iv) life cycle (broodstock, hatchery, weaning, on-growing) specific welfare needs of the reared species, and (v) common production practices and operations (husbandry practices, vaccination, medicinal and non-medicinal treatments, selective breeding, transport, harvesting and slaughter).

During the 2024 work program EURCAW-Aqua focused on three farmed fish species (European sea bass (*Dicentrarchus labrax*), rainbow trout (*Oncorhynchus mykiss*) and common carp (*Cyprinus carpio*)) and two critical production phases (live transport and harvest). EURCAW-Aqua provided a list of currently available welfare indicators and identified knowledge gaps regarding laboratory and operational welfare indicators for common carp and European seabass during transport and at harvest. It also developed an overall on farm score to assess the welfare of common carp during transport and harvest. The Centre reviewed (i) the currently available welfare assessment systems for farmed fish, (ii) the regulatory framework for live farmed aquatic animals during transport and harvest, and (iii) the methods to detect loss of consciousness and/or sensibility in fish at slaughter. Finally, it identified the training needs of the NCAs in the assessment of aquatic animals’ welfare on farm. During this period, the EURCAW-Aqua web portal was launched (<https://www.eurcaw-aqua.eu/>) and networking was established (report with a list of NCAs).

In the upcoming period (2025-2027) EURCAW-Aqua will focus on the welfare of European sea bass (*Dicentrarchus labrax*), gilthead seabream (*Sparus aurata*), rainbow trout (*Oncorhynchus mykiss*), common carp (*Cyprinus carpio*), and decapods [crab (*Cancer pagurus*) and lobster (*Nephrops norvegicus*)]. Other farmed aquatic animals, ornamental aquarium species, and wild fish caught for farming purposes, will be dealt with under Activity 1 (Coordinated Assistance) when specific queries on these animals arise.

The EURCAW-Aqua in collaboration with DG SANTE has identified **five priority areas** to be implemented during the 2025-2027 working period:

1. Fish welfare in hatcheries
2. Fish welfare in intensive production systems (RAS, sea cages)
3. Fish Welfare in rearing systems, including transport and slaughter
4. Capture, transport & storage of decapod crustaceans
5. Development of positive welfare indicators

List of activities and sub-activities (Partner Leader in brackets)

The EURCAW-Aqua has identified five activities: 1. Coordinated assistance, 2. Animal welfare indicators, methods for the assessment and of improvement of animal welfare, 3. Scientific and technical studies, 4. Training courses and 5. Dissemination of research results and innovation activities. All partners participate in all activities.

Activity 1. Coordinated assistance (UoC)

- Sub-activity 1.1: Network building (UoC)
- Sub-activity 1.2: Technical assistance provision (UoC)
- Sub-activity 1.3: Creation of EURCAW-Aqua ecosystem (UoC)
- Sub-activity 1.4: Collaboration among the four EURCAWs (UoC)

Activity 2. Animal welfare indicators, methods for the assessment and improvement of animal welfare (BCAS)

- Sub-activity 2.1: Identification of iceberg indicators to provide an overall assessment of fish welfare in the hatchery (broodfish, larvae, juveniles) (BCAS)
- Sub-activity 2.2: Identification of welfare indicators for on-growing fish (common carp and gilthead seabream) reared in intensive production systems (BCAS)
- Sub-activity 2.3: Identification of welfare indicators at capture, transport & storage of decapod crustaceans (crabs, lobsters) (UAB)

Activity 3. Scientific and technical studies (UAB)

- Sub-activity 3.1: Scientific reviews on aquatic animal's welfare on farm and at harvest (UAB)
- Sub-activity 3.2: Scientific and technical studies to validate indicators and methods (UoC)
- Sub-activity 3.3: Review of good welfare practices (UoC)

Activity 4. Training courses (UAB)

- Sub-activity 4.1: Design and implementation of aquatic animals' welfare training courses (UAB)
- Sub-activity 4.2: Development of toolkits based on NCAs queries/needs (UoC)
- Sub-activity 4.3: Implementation of training events and roadshows (UoC)

Activity 5. Dissemination of research findings and innovation activities (UoC)

- Sub-activity 5.1: Maintenance of EURCAW-Aqua portal and data management system (UoC)
- Sub-activity 5.2: Dissemination tools and activities (UoC)
- Sub-activity 5.3: Development of a Community of Practice (BCAS)
- Sub-activity 5.4: Novel support tool for welfare inspection purposes (UoC)

An annual evaluation will be carried out together with the European Commission in order to analyse and align the current priorities with the concerns of the target groups (Sub-activity 1.3). Based on this analysis, the priorities of the Work Programme may be adjusted, and new topics may be included.

3. WORK PACKAGES / ACTIVITIES

[Regulation \(EU\) 2017/625](#) - Article 96

The **European Union reference centres for animal welfare** shall be responsible for the supporting tasks described under section 3 below, insofar as they are included in the reference centres' annual or multiannual work programmes that have been established in conformity with the objectives and priorities of the relevant work programmes adopted by the Commission in accordance with Article 16 of Regulation (EU) No 2021/690.

3.1. Work Package 1 - Coordinated assistance

Article 96 (a): Providing scientific and technical expertise within the scope of their mission including, where appropriate in the form of coordinated assistance, to relevant national support networks and bodies in the area governed by the rules on the welfare requirements for animals.

Sub-activity 3.1.1 Network building (UoC)

Objective:

EURCAW-Aqua's primary objective is to support the implementation of EU animal welfare legislation regarding Aquatic Animals by providing scientific consultation and expertise to the EU institutions and to the NCAs of MSs. Networking, physical and digital meetings, and introduction of communication portals are the main tools to achieve the following objectives:

- Establish communication lines and relations with NCAs and NRCs.
- Close cooperation with European Commission services and institutions.
- Active engagement with stakeholders.

Achievements so far:

- ✓ Website of the Centre to be used as the main communication portal has been designed.
- ✓ A list of NCAs and official inspectors from MSs is available.

Description:

This is the first period in which EURCAW-Aqua has been fully operational, enabling the establishment of a collaborative network of key policy makers and official inspectors focused on the welfare of aquatic animals. The establishment of a Stakeholders Advisory Group – Reflection Board (REB) and partnerships with institutions with similar interests and objectives worldwide facilitated the creation of an ecosystem dedicated to the welfare of aquatic animals. The REB does not represent the target group, but represent the fish farming, cephalopods and decapods supply chain, related professional organisations and civil society organisations. DG SANTE may participate as an observer. The names of the organisations represented in the REB are presented on our website. The REB will meet once a year.

Quarterly meetings with DG SANTE and DG MARE are planned, as well as semi-annual meetings with EFSA and the European Partnership on Animal Health & Welfare (EUP AH&W). In addition, annual meetings with NCAs will be organized, either in person or online, to ensure effective cooperation and

information exchange. EURCAW-Aqua will also consolidate the network with the existing NRCs (SE, FI, FR, IT ES, SI) and SBs for Animal Welfare. One in person meeting with NCAs will be hosted in 2025 and for the next two years online annual meetings with NCAs will be organised. Digital meetings (once a year) with the REB.

Expected output and timing:

- D1. Report with minutes of meetings and actions agreed with EU services and institutions (M: every three months; L: UoC)
D2. Report with meeting minutes and priorities agreed with NCAs, NRCs and REB yearly (L: UoC)

Sub-activity 3.1.2 Technical assistance (UoC)

Objective:

The main objectives are:

- Establishment of a solid knowledge base on species of interest and identify emerging knowledge gaps.
- Operation of a centralized information hub (knowledge base) to upload and store comprehensive information in a structured manner following the FAIR (Findability, Accessibility, Interoperability, and Reuse of data) principles for scientific data management and stewardship.
- Provision of reliable information to relevant stakeholders.

Achievements so far:

- ✓ Ticketing system to register queries from NCAs, EU services, EU institutions and stakeholders is operating.
- ✓ Repository for scientific reviews, best practices and leaflets has been created in the EURCAW-Aqua website within 2024.

Description:

The Centre will serve as the primary reference point for aquatic animal welfare issues in the EU. A direct line of communication with the European Commission will be established to provide timely technical expertise. To facilitate communication with NCAs and other stakeholders, an easily accessible point of contact for technical queries will be established. The Centre's main goal is to provide unbiased consultation based on sound scientific evidence. Physical meetings with EU services and NCAs will provide opportunities to identify key areas of concern and address specific knowledge gaps.

The Centre will ensure that queries are handled accurately and promptly through the efficient operation of an established ticketing system. In addition, a repository of questions and answers will be created to facilitate knowledge sharing among stakeholders. Reviews of publications relevant to aquatic animal welfare are expected to generate valuable information, which will be communicated via factsheets published in the repository. This repository is expected to contribute to the growth of knowledge within the Centre and to provide more streamlined services in the future.

Expected output and timing:

- D3. Factsheets on European seabass, gilthead seabream, Atlantic salmon, rainbow trout and common carp welfare risks (M: ongoing; L: UoC)
D4. Report on the ticketing service operation (number of tickets/ time to respond/ level of service provision/ satisfaction level etc) (M6, M12, M18, M24, M30; L: UoC)

Sub-activity 3.1.3 Creation of EURCAW-Aqua ecosystem (UoC)

Objective:

The main objectives are:

- Establish a strong scientific partnership with academia.
- Active engagement with stakeholders.

Achievements so far: Due to growing public interest, the welfare of aquatic animals is receiving increased attention from various stakeholder groups. EURCAW-Aqua aims to define practical application and enforcement of animal welfare legislation assisting MS in conducting controls and support the activities of European Commission. As a secondary target must cultivate collaborative relationships that improve the collective comprehension and execution of robust welfare standards. This will be achieved through active participation in national and international events within EU Member States, as well as global events in third countries. EURCAW-Aqua will deploy advanced communication and interactive tools to foster these connections. Through the formation of a reflection board (REB) and attendance at major scientific and commercial events, EURCAW-Aqua will ensure continuous engagement with NGOs, producers, consumers, and the scientific community, integrating stakeholder feedback into future actions to enhance aquatic welfare.

- ✓ Presentation of EURCAW-Aqua have been made to DG Mare, Aquaculture Advisory Council, EUP AH&W.
- ✓ Spontaneous formal meetings with animal welfare NGOs and Farmer's Associations.
- ✓ REB has been formed by EURCAW-Aqua in 2024.

Description:

EURCAW-Aqua is committed to establishing robust lines of communication with diverse stakeholder groups to enhance the welfare of aquatic animals. To achieve this, a Reflection Board has been established, consisting of NGOs, producers, consumer representatives, and the scientific community. EURCAW-Aqua will actively participate in major scientific and commercial events, such as the European Seafood Exhibition and the EAS/WAS aquaculture conferences, as well as national-level events in EU Member States and international exhibitions. A comprehensive communication plan will be developed, outlining the type and frequency of engagement with stakeholders. This plan will ensure that feedback is effectively integrated into the future planning and actions of EURCAW-Aqua, fostering ongoing collaboration and improvement.

EURCAW-Aqua will participate by presenting the Centre's objectives and public deliverables and by joining round tables in EAS 2025 (Valencia, Spain), EAFP 2025 (Heraklion, Greece), ESE 2026 and WAS 2026, Seafood Expo North America 2027 (M9, M14, M26; L: UoC).

Expected output and timing:

D5. Code of Conduct (describing the type of engagement, the frequency and means of communication and the way feedback received is integrated on EURCAW-Aqua activities planning) (M4; L: UoC)

Sub-activity 3.1.4 Collaborative actions among the four EURCAWs (UoC)

Objective:

The main objectives are:

- To ensure the availability and harmonized application of methods for welfare assessment.
- To improve the effectiveness and efficiency of EU funding.
- To strengthen collaboration and enhance a common approach among all EURCAWs.

Achievements so far:

Throughout 2024, a series of meetings among the four EURCAWs have been conducted, fostering significant collaboration and support. EURCAW-Aqua has received substantial assistance from its counterparts, enhancing its operational capabilities and saving valuable time. Notably, EURCAW-Aqua participated in a joint meeting in Thessaloniki in June 2024, where the centers agreed on aligned actions. A commitment to close cooperation between the training and communications teams of all EURCAWs has been established, ensuring synergy in their efforts. Additionally, topics of common interest for further development during 2025-2027 have been identified, setting the stage for future collaborative projects and initiatives aimed at advancing animal welfare across various species.

Description:

Collaboration between the four EURCAWs through shared initiatives and coordinated actions can enhance animal welfare across various species. Each EURCAW specializes in different groups of animals, bringing together expertise and resources to tackle common challenges. By fostering collaboration, the four reference centers aim to achieve greater synergies and complementary outcomes. The focus will be on enhancing communication, training, and practical guidance for policy makers and official inspectors involved in animal welfare. Through joint efforts, the EURCAWs strive to create innovative solutions and provide comprehensive support to improve welfare standards across Europe, ensuring that best practices are adopted and implemented effectively for the benefit of all animals.

The four EURCAWs will engage in collaborative actions through annual meetings (virtual - once every three months, and an annual in person meeting) involving all members to share insights and strategies. The training and communication teams will work closely to achieve synergies and complementarity in their planned actions. The training and communication teams will meet virtually on a regular basis to develop collaboration and achieve common approaches.

The four EURCAWs will work jointly on the following common topics:

a) Guidance for the assessment of stunning equipment. This topic will be initiated by the EURCAW Poultry SFA in 2025 and is described in their Work Programme 2025-2027 in sub-activity 3.3.1. In consultation with DG SANTE this guidance will be included and further developed for pig stunning equipment in the EURCAW-Pigs programme 2026 or 2027. This document will guide EURCAW Aqua in the assessment of available stunning technologies for aquatic organisms.

b) Novel digital support tool for inspectors. This topic will be developed by EURCAW-Pigs and is described in their Work Programme in sub-activity 5.4. To achieve this common goal and to optimize the use of the financial resources of this work programme, EURCAW- Ruminants & Equines will explore, together with EURCAW-Pigs, the possibility to partially reuse already available tools for further development, in particular, the CARE4DAIRY application and its source IT systems. In the EURCAW Aqua Work Program this activity is described in 3.5.4. sub-activity “Novel support tool for welfare inspection purposes”.

c) Audio materials. The EURCAW-Ruminants & Equines are taking the lead in a joint effort to produce audio materials. These are described in their sub-activity 5.2. In consultation with DG SANTE the methodologies will be applied to EURCAW-Aqua outputs in future activities during 2026 and/or 2027. In the EURCAW-Aqua Work program this type of material will be produced under the 3.5.2. sub-activity “Dissemination tools and activities”.

d) Community of Practice. The development of a pilot community of practice will be led by both EURCAW-Ruminants & Equines and the EURCAW-Pig teams. A description can be found in sub-activity 5.1 of the EURCAW-Ruminants & Equines and sub-activity 5.2 of the EURCAW-Pig Work Programmes 2025-2027. In EURCAW-Aqua work program joined activities are planned under the 3.5.3. sub-activity “Development of a Community of Practice”.

EURCAW-Aqua will

- host the annual in person meeting of EURCAWs in Crete in spring 2025;
- Develop three joint training events with other EURCAWs on topics of interest, such as live transport and slaughtering in the period 2025 – 2027, and
- provide translation services for 8 different leaflets prepared by other EURCAWs in languages of its competency (Czech, Croatian, French, German, Greek, Italian, Polish, Portuguese, Spanish)

Expected outputs and timing:

D6. Minutes of the meeting for EURCAWs in 2025 (M4; L: UoC)

D7. Reports of 3 joint training events with other EURCAWs on topics of interest in the period 2025 – 2027 (M6; L: UAB)

D8. 8 different leaflets prepared by other EURCAWs translated into 9 languages (Czech, Croatian, French, German, Greek, Italian, Polish, Portuguese, Spanish; L: UoC)

3.2. Work Package 2 - Animal welfare indicators

Article 96 (b): Providing scientific and technical expertise for the development and application of the animal welfare indicators referred to in point (e) of Article 21(8); i.e., the cases and conditions where official controls to verify compliance with animal welfare requirements may include the use of specific animal welfare indicators based on measurable performance criteria, and the design of such indicators on the basis of scientific and technical evidence.

Article 96 (c): Developing or coordinating the development of methods for the assessment of the level of welfare of animals and of methods for the improvement of the welfare of animals.

Sub-activity 3.2.1 Identification of “iceberg” indicators which will provide an overall assessment of fish welfare at hatchery (BCAS)

Objective:

The main objectives are:

- To provide a list and description of welfare indicators for broodstock of all top five farmed fish species in EU MSs.
- To provide a list and description of welfare indicators for juveniles of all five major farmed fish species in EU MSs.
- To provide a list and description of welfare indicators for juveniles of all five major farmed fish species at transport¹.
- To develop an overall assessment score for broodstock of all five major farmed fish species in EU.

Achievements so far:

EURCAW-Aqua partners have already reviewed animal-based, management-based and resource-based input and output welfare indicators for on growing European seabass, gilthead seabream and common carp. The development of welfare assessment methods for on growing European seabass and gilthead seabream are in place under the framework of the Horizon Europe funded project CURE4AQUA. The Aquaculture Advisory Council (AAC), consisting of industry and non-governmental organizations (NGOs) is currently working on a “*Recommendation on a Code of Good Practices and priorities for EURCAW-Aqua*” to be finalised in 2024. Finally, the EU Aquaculture Assistance Mechanism (AAM) will develop by the end of 2024 a document on “generic fish welfare indicators and good practices on fish welfare addressing different life stages and production methods” (mapping of existing information) that will be peer reviewed by the EURCAW-Aqua in early 2025. EURCAW-Aqua is following these activities and will provide factsheets with reliable welfare indicators, as well as novel assessment schemes for the evaluation of broodfish and juveniles’ welfare state.

- ✓ During the 2024 Work Programme a list of the currently available welfare indicators for common carp and European seabass during transport and at harvest was delivered.
- ✓ Knowledge gaps regarding laboratory and operational welfare indicators at live fish transport and at harvest were identified, for seabass, seabream and carp in EU MSs.

Description:

This sub-activity aims to identify, evaluate and develop indicators to assess welfare and verify compliance with welfare legal requirements of fish at the hatchery production phase. It will also develop welfare assessment scores for the assessment of fish (rainbow trout, European seabass and gilthead seabream) welfare on farm.

¹ The 2024 Work Programme will deliver a list of the currently available welfare indicators for common carp and European sea bass during transport and at harvest.

Expected output and timing:

Peer review of the AAM document on “Generic fish welfare indicators and good practices on fish welfare addressing different life stages and production methods” in early 2025 (see D19). Evaluation and development of indicators to assess welfare and verify compliance with welfare legal requirements of fish at the hatchery production phase (broodstock, weaning, juveniles live transportation). Evaluated and verified welfare indicators to be included on factsheets easy to by communicate to NCAs and to be applied by inspectors. The deliverables will be evaluated either by EURCAW Aqua Coordination Team (internally) or through external scientists on peer reviewed scientific publications.

D9. Ten factsheets on fish welfare indicators (BCAS) for:

- ❖ rainbow trout broodstock fish (M18; L: BCAS)
- ❖ Atlantic salmon broodstock fish (M18; L: UAB)
- ❖ common carp broodstock fish (M18; L: BCAS)
- ❖ European seabass broodstock fish (M12; L: UoC)
- ❖ gilthead seabream broodstock fish (M12; L: UAB)
- ❖ rainbow trout juvenile fish, including transport (M16; L: BCAS)
- ❖ Atlantic salmon juvenile fish, including transport (M16; L: UAB)
- ❖ common carp juvenile fish (M16; L: BCAS)
- ❖ European sea bass juvenile fish (M15; L: UoC)
- ❖ gilthead seabream juvenile fish, including transport (M15; L: UoC)

D10. Three reports on overall welfare assessment score for broodstock fish (UAB) of:

- ❖ rainbow trout and Atlantic salmon (M16; L: UAB)
- ❖ common carp (M14: BCAS)
- ❖ European sea bass and gilthead seabream (M11; L: UoC)

D11. Report on the 3 workshops identifying welfare risks and practices (UoC) for:

- ❖ on growing gilthead seabream: welfare risks and practices of welfare concern (M5, UAB)
- ❖ rainbow trout at hatchery: broodstock, larvae, fry welfare risks and practices (including live transport) (M16; BCAS)
- ❖ European seabass at hatchery: broodstock, larvae, fry welfare risks and practices (including live transport) (M10; UoC)

Sub-activity 3.2.2 Identification of welfare indicators for fish reared in recirculated aquaculture systems (BCAS)

Objective:

The main objectives are:

- To develop and validate welfare indicators for on-growing rainbow trout and Atlantic salmon in RAS.
- To develop and validate welfare indicators for on-growing gilthead seabream and European seabass in RAS.

Achievements so far: N/A

Description:

Based on different levels of production intensity and human intervention fish farming systems can be described as extensive, semi-intensive, intensive and hyper-intensive. Each of these categories of production systems can present different welfare risks for the fish and its life stage. Most of the published literature on fish welfare focuses on intensive or hyper-intensive aquaculture systems.

Currently, significant investments are being made in hyper-intensive farming based on Recirculation Aquaculture Systems (RAS) where main farming parameters such as water quality, water flow, water temperature, lighting, gas mix and other aspects such as feeding, and behaviour are fully controlled. Commercially important fish species such as rainbow trout, Atlantic salmon, European seabass, gilthead seabream and carp start to be reared in recirculated aquaculture systems in Europe and in some cases, under hyper-intensive conditions.

EURCAW-Aqua will review the existing scientific and technical literature, will develop and validate welfare indicators, for on-growing Atlantic salmon, rainbow trout, European seabass and gilthead seabream in RAS. A desk study will be performed to identify available welfare indicators for fish reared under recirculated aquaculture production systems. Based on this analysis welfare risks will be identified, and welfare indicators will be developed for rainbow trout, Atlantic salmon, European seabass and gilthead seabream. Two case studies will be performed for the validation of the proposed welfare indicators.

Expected output and timing:

D12. Report on the Desk study on the development and validation of welfare indicators for rainbow trout and Atlantic salmon breeders reared in RAS (M6; BCAS)

D13. Report on the Desk study for the development and validation of welfare indicators for gilthead seabream and European seabass reared in RAS (M12; UAB)

Sub-activity 3.2.3 Identification of welfare indicators at capture, transport, storage and slaughter of decapod crustaceans (UAB)

Objective:

The main objectives are:

- To review the existing literature on stress and welfare indicators in the above-mentioned decapods.
- To review slaughter methods and available humane killing practices.
- To develop initial recommendations for the welfare of decapods during transport, storage, and handling.

Achievements so far: N/A

Description:

Decapoda, an order of more than 8,000 species of crustaceans (phylum Arthropoda), include shrimp, lobsters, crayfish, hermit crabs, and crabs. Decapods are most abundant in warm, shallow tropical sea waters, but they are commercially exploited throughout the world. The annual EU production of decapod crustaceans in aquaculture is about 400 to 500 tonnes and worth about 3 million Euros, with one third to one half of the production taking place in Spain and a smaller but with high value sector in France. Production in hyper-intensive RAS systems seems particularly promising. EU imports of crustaceans farmed in third countries amount to about 1.7 million tonnes annually, many of which are transported live. EU legislation on the welfare of farmed animals does not cover decapods.

EURCAW-Aqua will review the existing scientific and grey literature on stress and welfare indicators in transport storage and handling of decapods such as the lobster (*Homarus gammarus*), spiny lobsters (*Panulirus regius* and *Palinurus elephas*), the Norway lobster (*Nephrops norvegicus*), the mud crab (*Scylla serrata*), edible or brown crab (*Cancer pagurus*), and will focus on the identification of welfare indicators for the Norway lobster and the edible crab.

Through desk research and contact with experts, existing welfare stress and welfare indicators, and currently used slaughter methods, will be identified and reviewed. A first set of recommendations to improve welfare assessment at harvest and at transportation will be developed.

Expected output and timing:

D14. Three factsheets (M20; UAB) on:

- ❖ welfare indicators of decapods at transportation and storage
- ❖ slaughter methods for decapods
- ❖ specifications of decapod species covered needs

3.3. Work Package 3 - Scientific and technical studies

Article 96 (d): Carrying out scientific and technical studies on the welfare of animals used for commercial or scientific purposes.

Sub-activity 3.3.1 Scientific reviews on aquatic animals' welfare on farm and at harvest (UAB)

Objective:

The main objectives are:

- To perform a study on the welfare needs of broodstock fish and fish larvae, towards the development of welfare assessment methods.
- To review positive welfare indicators and challenges of implementation in fish farming.
- To review humane slaughter methods and develop guidelines for the assessment of stunning of aquatic animals on farm.

Achievements so far:

During the 2024 Work Programme, a report on currently available methods to detect loss of consciousness and/or sensibility of various farmed fish species (according to the published data) at slaughter, was prepared.

Description:

Scientific research on a variety of fish species and cephalopods has focused on a better understanding of the genetic, physiological and neuro-endocrine and behavioural mechanisms of stress and anxiety-like behaviour. Research is also focused on characterizing of the biological needs of farmed aquatic animals in relation to the rearing system and husbandry practices. As stated in the "Research for PECH Committee – Animal welfare of farmed fish" (Pavlidis et al., 2023), *"all farmed fish have common welfare needs.... however, different lifestyles, species-specific differences in stress tolerance and disease resistance, as well as individual differences within species should be considered when assessing welfare status and husbandry practices"*.

EURCAW-Aqua will provide scientific reviews/studies to assess the welfare state of the five major EU farmed fish at different critical phases of the life cycle in captivity to support the official inspections. The results of these studies will assist the implementation of specific sub-activities (1.2: Technical assistance, queries service; 2.1 & 2.2: iceberg welfare indicators; 4.1 & 4.2: Training). In particular, literature reviews of available welfare indicators related to the life cycle stages and production phases under investigation will be performed. These reviews will be conducted using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method, with Google Academic serving as the search platform. Desk studies will be performed to develop welfare indicators and/or

assessment schemes for broodfish and fish larvae and guidelines for the assessment of stunning of aquatic animals on farm. A shared methodology on scoring approach will be developed for comparisons across different farmed species. The reviews will be peer reviewed either by EURCAW Aqua Coordination Team or externally through peer reviewed publications. Finally, in cooperation with the other EURCAWs, a study on candidate, objective positive welfare indicators (e.g. positive affective states, environmental enrichment) for aquatic animals will be conducted.

The studies will (a) reflect on, and use, the relevant international research literature in the field, (b) consider relevant studies (grey literature) with the assistance of NCAs officers, (c) provide insights on the topic beyond the current state of knowledge, based on EURCAW-Aqua associated experts, and (d) produce original content. The studies will be implemented according to ethical principles, as set out in the European Code of Conduct for Research Integrity, avoiding fabrication, plagiarism and other research misconduct.

EURCAW-Aqua will also peer-review AAM documents on general fish welfare indicators and best practices on fish welfare.

Expected outputs and timing:

D15. Seven studies on aquatic animals' welfare (UAB), including:

I) Three studies on welfare assessment schemes for:

- a) rainbow trout broodfish (M24; L: BCAS)
- b) European seabass broodfish (M12; L: UoC)
- c) gilthead seabream broodfish (M16; L: UAB)

Note: On-farm welfare assessments for broodfish will cover the long-term keeping period in broodstock tanks, emphasizing in the period when special handling of fish is needed.

II) Two studies on welfare indicators for:

- a) European seabass and gilthead seabream larvae (M26; L: UoC)
- b) potential positive welfare indicators of EU top 5 farmed fish species (M24; L: UAB)

III) Two studies on:

- a) stunning and slaughter methods of EU top 5 farmed fish (M22; L: UoC)
- b) welfare assessment at transport and stunning of decapods (M10; L: UAB)

Sub-activity 3.3.2 Scientific and technical studies to validate indicators and methods (UoC)

Objective:

The main objectives are:

- To investigate the usefulness and reliability of welfare indicators in relation to the priority areas of the Work Programme.
- To assist the development of welfare assessment schemes for aquatic animals on farm.

Achievements so far: N/A

Description:

The sub-activity aims to perform pilot scientific and technical studies to validate candidate welfare indicators. The outcome of these studies will assist the implementation of specific sub-activities (1.2: Technical assistance, query service; 2.1 & 2.2: Iceberg welfare indicators; 4.1 & 4.2: Training).

Case studies (field or laboratory studies) will be designed and implemented to evaluate individual- or group-based welfare indicators, identified in Activities 2 and 3. These case studies will cover the following priorities of the Work Programme:

Priority Area 1. Fish welfare in hatcheries

Two pilot case studies will be performed to validate individual-based welfare indicators for European seabass and gilthead seabream juveniles. For this, fish will be purchased from different fish farms, their external morphological characteristics and photos will be taken under identical lighting conditions (device provided by UoC). Additional data about fish behaviour, fish physiology/biochemistry will be provided. Individual fish will be evaluated by three experienced evaluators. From the results obtained an overall welfare score will be developed.

Priority Area 2. Fish welfare in RAS production systems

One pilot case study will be performed to validate morphological individual-based and behavioural group-based welfare indicators for on growing European seabass, gilthead sea bream and trout. For this, fish will be purchased from different fish farms at two different times of the year, and their morphological characteristics be evaluated by three experienced evaluators. From the results obtained an overall welfare score will be developed. From the results obtained an overall welfare score will be developed.

Priority Area 5. Development of positive welfare indicators

A scientific study will be conducted, in cooperation with the other EURCAWs, to identify and evaluate positive welfare indicators.

Expected output and timing:

D16. Three studies (UAB):

- ❖ A pilot laboratory study to validate individual-based welfare indicators of European seabass juveniles (M20, L: UoC)
- ❖ A pilot laboratory study to validate individual-based welfare indicators of gilthead seabream juveniles (M22, L: UAB)
- ❖ A pilot case study to validate morphological individual-based and behavioural group-based welfare indicators for on growing European seabass, gilthead seabream and trout in RAS (M18; L: BCAS)

Sub-activity 3.3.3 Examples of good welfare practices (UoC)

Objective:

The main objective is:

- To identify examples of good welfare practices.

Achievements so far: N/A

Description:

This sub-activity aims to identify examples of good welfare practice, to inform accordingly the NCAs officers and farmers at different MS. Such examples may cover the whole production phase, specific phases (e.g. on growing) and operations (e.g. transportation, grading, vaccination, slaughter) or management practices. These examples will also be used as a paradigm to develop similar practices in other farmed aquatic animals. The EU Aquaculture Assistance Mechanism (AAM) will develop by the end of 2024 a document on “generic fish welfare indicators and good practices on fish welfare addressing different life stages and production methods” (mapping of existing information) that will be peer reviewed by the EURCAW-Aqua in early 2025.

The objective of sub-activity 3.3.3 will be achieved through a thorough literature review and through contacts of the EURCAW-Aqua network. When potential good welfare practices are identified, they will be carefully reviewed (either from published or written material or interviews) and then site visits will be performed. In case of a positive evaluation, a factsheet will be produced to present the specific good welfare practice.

Expected output and timing:

D17. (Four to six) good welfare practice factsheets (M30; L: UoC)

D18. Peer review of the EU Aquaculture Assistance Mechanism report on fish welfare indicators and good farming practices (M6; L: UoC)

3.4. Work Package 4 - Training courses

Article 96 (e): conducting training courses for staff of the national scientific support networks or bodies, for staff of the competent authorities and for experts from third countries.

Sub-activity 3.4.1 Design and implementation of aquatic animals' welfare training courses (UAB)

Objective:

The main objective is:

- To design and organize webinars on specific welfare topics.

Achievements so far:

- ✓ During the 2024 Work Programme a questionnaire was developed, distributed through an online platform to the inspectors of the NCAs and analysed to identify their learning needs.
- ✓ A desk study was performed, in collaboration with the NCAs, to identify possible existing training courses and materials at EU and MS level.
- ✓ Workshops on welfare during transport and slaughter for species such as seabass, seabream and trout delivered during 2024 Work Programme

Description:

Competent authority inspectors are expected to have a good understanding of fish farming, transport, stunning and slaughter practices. Inspectors may engage in dialogue with farmers, transporters, and slaughter personnel, and need to have a good understanding of how practical situations occur when the law is correctly implemented. Therefore, lifelong learning approaches are needed to ensure proper transfer of state-of-the-art knowledge on aquatic animals' welfare and practical skills to monitor and evaluate fish welfare on farms.

Based on the analysis of the questionnaire distributed during the 2024 Work Programme, EURCAW-Aqua will develop specific training courses and audio-visual materials (see sub-activity 3.4.2). A standard interactive webinar will have a duration of 90 minutes with 75 minutes of lectures, quizzes and a 15-minute Q&A session. The webinars will also include a "call to action", asking the audience to engage, such as a link to access a factsheet, or a handout or a case study regarding the topic.

The target audience will be the official inspectors of the NCAs, and there will be no limitation on the number of attendees. The webinars will be recorded and uploaded to the Centre's data repository system (Centre's website) to be available to any official inspector who is unable to attend the presentation, as well as to stakeholders and the public. Feedback from trainees will be collected with

Google Forms (or other relevant) at webinar exit pages, training confirmation emails and media landing pages, through Likert scale and open comments questions.

The webinars to be organized are linked to the Priority Areas of the Work Programme and in particular to:

- Welfare indicators and assessment tools for on growing fish (rainbow trout, common carp, European seabass, gilthead seabream)
- Welfare indicators and assessment tools for fish (rainbow trout, common carp, Atlantic salmon, European seabass, gilthead seabream) at transport.
- Humane slaughter methods and tools to assess loss of consciousness after stunning.

Expected output and timing:

D19. Reports of eight webinars on welfare indicators and assessment tools (UAB) for:

- ❖ on growing rainbow trout (M9; L: BCAS)
- ❖ on growing European seabass and gilthead seabream (M5, L: UoC)
- ❖ rainbow trout (juveniles or adult) at transport (M14; BCAS)
- ❖ common carp at transport (juveniles or adult) (M14; BCAS)
- ❖ Atlantic salmon at transport (M18, L: UAB)
- ❖ European seabass and gilthead seabream (juveniles) at transport (M14; L: UAB)
- ❖ crabs and lobsters transport, storage and handling (M25; L: UoC), and for:
- ❖ Humane slaughter methods and tools to assess loss of consciousness in fish after stunning (M20; L: UoC)

Sub-activity 3.4.2 Development of toolkits based on NCAs queries/needs (UoC)

Objective:

The main objective is:

- To develop training materials and a training platform that will be hosted in EURCAW-Aqua portal, about the training activities presented in sub-activity 3.4.1.

Achievements so far:

During the 2024 Work Programme training materials of existing courses (e.g. European seabass welfare, tilapia welfare, cephalopods welfare) at EU and MS level were reviewed.

Description:

This sub-activity is about producing training courses material that will be available online for the attendees. This will facilitate the official control services and will enhance the uniformity of inspections according to the present or future (in the case of several farmed aquatic animals) legal requirements.

Each respective webinar will consist of:

- An objective statement and learning objectives describing what NCAs officers will be able to do after completing the course.
- Homework material (factsheets, technical studies, reviews), relevant to the objectives of the course.
- Videos and/or animations, to describe welfare indicators and scoring systems. Interactive transcripts would be used to create a video that becomes searchable and navigable in seconds.
- Gamification to increase the engagement and motivation of learners.
- Short quiz (provided after the webinar) for self-assessment of the learning outcomes.

The training platform is targeting EU Member State welfare inspectors. However, the generic nature of the material is also relevant for welfare inspectors in non-EU MSs. Together with DG SANTE we will

identify the group of competent authorities in non-EU MSs, and the material will be made available to them.

Expected output and timing:

D20. Three videos or animations and a series of quizzes (M18; L: UoC)

Sub-activity 3.4.3 Implementation of training events and roadshows (UoC)

Objective:

The main objectives are:

- To support national capacity building in the visited MSs, by presenting the latest scientific evidence related to the topics chosen by the delegates
- To identify areas of interest and plan tailored future activities for inspectors and policy makers

Achievements so far: N/A

Description:

One out of the three common training events that will be planned in cooperation with other EURCAWs will be hosted by EURCAW-Aqua (Sub activity 3.1.4).

Road shows of EURCAW-Aqua experts will be organised in a selected Member States. The implementation of roadshows is a good practice based on the experience gained so far from other EURCAWs reference centers. These meetings are planned in cooperation with the NCAs of the selected MS usually in the local language. Competent authorities invite inspectors and policy makers to spend one day or more with EURCAW members to express their ideas, suggestions and queries on aquatic animals' welfare issues. This will be implemented by visiting fish farms in the countries selected and by discussing on the field welfare topics of interest for the respective species and production system. Field visits will be planned in such a way that private time between trainers and NCAs representatives will be booked to safeguard isolated interactions between EURCAW Aqua and NCAs.

The Road Shows support local knowledge development and capacity building, and are highly useful for other EURCAW activities, e.g., the search for inspiring examples, finding members of the Community of Practice, obtaining video footage, identifying areas of interest for future activities of the EURCAW. A training for 35 participants and 10 trainers will be held in Athens, Greece on a topic of common interest between the EURCAWs. Visits to fish farms in the region are planned.

EURCAW-Aqua will organise in person meetings in Spain, France, Italy, Greece, Germany and Czech Republic during the new work program. The meetings will include interpretation in the language of the MS visited. All materials presented will be uploaded (English and MS visited language translation) on the EURCAW website. The intention of the roadshows is also to include a visit to a local fish farm to multiply the experience of the participants.

Expected output and timing:

D21. Report of training course on a common topic of interest between EURCAWs for 35 trainees (M18; L: UoC)

D22. Report of six roadshows implemented on selected Member States in 2025-2027 (M18; L: UoC)

3.5. Work Package 5 - Disseminating research and innovations

Article 96(f): disseminating research findings and technical innovations and collaborating with Union research bodies in the fields within the scope of their mission.

Sub-activity 3.5.1 Maintenance of EURCAW-Aqua portal and data management system (UoC)

Objective:

The main objectives are:

- To implement and further develop the website and knowledge base, making the Centre's deliverables related to its activities available.
- To establish and ensure a broad dissemination framework and maximisation of the work programme outcomes and impacts based on the needs of the target groups (Competent Authorities, Welfare policy workers and supporting bodies).
- The portal and the data management system are part of this broad dissemination framework, which includes other supplementary activities and tools (see relevant sub-activity).
- Support to CAs for the translation of the Factsheets, into 9 national languages² of the EUMSs.

Achievements so far:

- ✓ The EURCAW-Aqua website was launched in September 2024.
- ✓ The EURCAW-Aqua knowledge base, based on an open-access repository was created in 2024. The community is curated by the Centre and is dedicated to the Centre's output production related to the Centre's activities. Each published document has a DOI. A link to the EURCAW-Aqua's repository is available on the Centre's website in the 'Knowledge base' sub-page. <https://zenodo.org/communities/eurcaw-aqua/records?q=&l=list&p=1&s=10&sort=newest>
- ✓ Close collaboration with other EURCAWs on common dissemination tools (e.g., common templates (PPT, factsheets, reviews), icons, and document identifiers) has been ongoing since the designation of the Centre.

Description:

This activity is dedicated to the dissemination of the Centre's outputs and innovations in the field of aquatic animal welfare through the Centre's website, knowledge base, and newsletter. A cost-effective and consistent approach to dissemination and communication will be ensured through ongoing consultation with the dissemination teams of other EURCAWs.

Website: Dissemination and communication of EURCAW-Aqua and other relevant information will continue through the Centre's website. The Centre will work with the other EURCAWs on the development and functioning of the websites for dissemination purposes to make their use easy for targeted bodies.

The dual goal is: (a) to develop a user-friendly website structure that allows easy access to documents, reports, and other outputs, and (b) to ensure that the knowledge base is searchable, regularly updated, and accessible to all relevant stakeholders. A link with the EU aquaculture website should be foreseen in a visible and efficient way and to avoid that the repositories on fish welfare documents in both websites overlap.

As the Centre's site will be the main entry point for information, it will contain information on:

- The Centre ("About the Centre"), and
- Existing legislation

² Czech, French, German, Greek, Italian, Czech, Polish, Portuguese, Spanish

- News, newsletters etc.
- Information on meetings
- Scientific information including implementation of corresponding legislation
- Services overview
- Training activities
- Scientific output, indicators & thematic factsheets
- Questions to the Centre (FAQ)
- Good Welfare Practices
- Tools to assess aquatic animals' welfare

The Centre website's content is published in English. The Centre does not have the capacity to translate the material into all national languages, but to facilitate the dissemination of information to member states level, the Centre will prepare all the factsheets translated into nine languages corresponding to the countries that are among the main producers of aquatic animals in Europe.

Monthly statistics will be generated using Google Analytics, focusing on the total number of users, web pages visited, number of downloads and the demographics of visitors, namely country.

Knowledge base: Public documents produced by the Centre (factsheets, reports, reviews, training, and newsletters) during 2025-2027 will be published in the repository, along with the documents produced during 2024. The knowledge base will be continuously updated. The published documents will result from the output of the other workpackages.

Activities:

A short description and keywords will be available for each document.

Factsheets produced by the Centre will be translated (six to eight per year) into specific languages depending on the species of interest and the MSs' producing capacity. Generic factsheets will be translated into nine languages. Translations will be organised in collaboration with the other EURCAWs.

Moreover, together with the portal, selected social media accounts are going to be created and linked to the website with the specific buttons. A EURCAW-Aqua [LinkedIn](#) account will be created to promote the Centre's activities. LinkedIn will be used as the main social media to communicate any new activity on the website and in the Centre. A EURCAW-Aqua [YouTube](#) channel will be created and used as the main platform to share online videos used in the Centre's output. Virtual meetings will be conducted throughout the period with the other EURCAWs communication teams, to implement a common dissemination approach policy.

Dissemination framework: To bridge the gap between researcher outcomes and target groups' needs network exchanges through press releases and newsletters will be carried out. During the 2025-2027 work period, the Centre will evaluate the feasibility of using an online newsletter tool and, if possible, develop an e-EURCAW-Aqua newsletter.

To develop a solid and cohesive dissemination framework, the team is going to:

- Identify the needs of each target group and tailor dissemination activities accordingly.
- Use a mix of communication channels (e.g., newsletters, social media, workshops, webinars, commercial and scientific events) to reach the widest possible audience (see also other sub-activities).
- Monitor and evaluate the effectiveness of dissemination efforts, adjusting as necessary to improve outreach and impact.

- Use improved design and aesthetics to make educational and informational materials more interesting and effective.

Portal-based engagement analytics: Use of portal will be evaluated by recording users activity. This will be possible by tracking clicks and downloads per deliverable (e.g. factsheet, video, infographic), by rank videos based on access achieved, record language preferences, counting feedback scores and by mapping geographic coverage of participants. Google analytics and custom dashboards will be used as tools.

Maintenance and regular update of EURCAW-Aqua web site and online tools (M1-M36; L: UoC);
Create and maintain the EURCAW-Aqua LinkedIn account and YouTube channel (M1-M36, L: UoC)

Expected output and timing:

D23. Report EURCAW-Aqua web site and online tools in 2025-2027 (M1-M36; L: UoC)

D24. Report EURCAW-Aqua LinkedIn account and YouTube channel created in 2025-2027 (M1-M36, L: UoC)

D25. Factsheets (produced in activity 3.2) translated into various EUMS's languages (M3-M36, L: BCAS)

D26. List of newsletters produced quarterly in 2025-2027 (M3 - M36; L: UoC)

Sub-activity 3.5.2 Dissemination tools and activities (UoC)

Objective:

The main objective is:

- To develop tools (i.e., videos, leaflets, practice ready documents with infographics and multilingual audios, banners, podcasts, factsheets) to promote the knowledge produced by the Centre. The content of the tools will be the one created by EURCAW Aqua 3.1 – 3.4 activities.

Achievements so far: N/A

Description:

This sub-activity is designed to produce, where possible, dissemination tools to promote the knowledge produced by the Centre, to make it more easily accessible and to find new ways of engaging with the target audience. The tools mentioned in the sections will be in accordance with the general dissemination framework and they will use cohesive material with the one that is going to be used on the portal.

To increase the dissemination and use of the knowledge produced by the Centre, and to increase the awareness of the centre's activities, dissemination tools will be developed. These could be:

- An animated video to present the activities of the centre
- Short videos (e.g., knowledge pills) on selected topics of interest within the Centre's outputs
- Podcasts, as audio files, have already been initiated by EURCAW Pigs. EURCAW-Aqua will follow up with the progress and target audience acceptance of the Pigs podcasts and evaluate their creation. Podcasts will be produced as inspiration and information for inspectors. Inspectors will be invited to talk about their experiences in the field. Experts will be guests and will be interviewed on specific topics and knowledge.

This is aligned with the contacts and specifics outputs in the CoP (sub-activity 3. 5.3).

For practice-ready documents (in cooperation with the other EURCAWs):

- Use of visually engaging infographics. Text will be kept to a minimum and will be replaced by graphical tools and supported by photos and QR codes linked to videos.

- Creating output in different languages by use of automated translation tools (i.e., DeepL).
- Publishing multilingual audio versions using a text to speech app, e.g., Speechify. Improving the accessibility of practice-ready documents for official inspectors will be piloted by creating downloadable audio versions in several languages. This activity will be led by EURCAW Ruminants & Equines.

Activities such as the development of workshops, meetings and participation in major conferences will further assist in the dissemination of the centre's work and outputs.

The dissemination plan will be updated every six months, to adapt communication and dissemination activities to the Centre's development and to ensure that relevant information is effectively disseminated to the target groups/ authorities.

The Centre will develop a media plan to ensure awareness of Centre's outcomes, through press releases in European, national and local press and social media.

To build a common dissemination approach strategy with the other EURCAWs, several meetings will be conducted along the period with the other EURCAWs communication teams.

Production of 12 (4 annually) visually engaging infographics in practice-ready documents;
Development of relevant dissemination tools.

Expected output and timing:

D27. 12 infographics (4 annually) (M2-M36; L: UoC)

D28. Dissemination tools developed in 2025-2027 (M2-M36; L: UoC):

- ❖ 1 video (to present the activities of the Centre)
- ❖ 9 short videos or animations (on selected topics)
- ❖ 4 podcasts
- ❖ Thematic and welfare indicator factsheets in various EUMS's languages

D29. Report – meetings' minutes and list of participants of workshops & meetings held in 2025-2027 (M4 – M36; L: UoC)

Sub-activity 3.5.3 Development of a Community of Practice (CoP) (BCAS)

Objective:

The main objectives are:

- To observe EURCAWs CoPs.
- To investigate a pilot online CoP for CAs in cooperation between the EURCAWs.
- To enhance collaboration on fish welfare issues at EU and MSs level.

Achievements so far:

- ✓ EURCAW-Aqua already has available a dissemination and communication plan based on the communication strategy developed during the first year of operation (2024 Work Programme).
- ✓ EURCAW-Aqua has in place an IT support plan where maintenance and regular update of web page and online tools is included.
- ✓ A data repository will be available within 2024 on a designated area of the Web page.

Description:

The third sub-activity will observe other EURCAW's Community of Practice (CoP) and investigate a pilot for the EURCAW-Aqua CoP to assess the benefits of knowledge sharing through productive discussions between EU member states Competent Authorities (e.g., official Inspectors, policy workers, national contact points etc) and EURCAW-Aqua. The CoP could contribute to more informed decision-making and policy development in the field of aquaculture welfare across EU Member States.

During the first half of the period, the Centre will monitor EURCAWs CoPs. Regular meetings of the EURCAWs' communication team will allow to follow other centres progression in this dissemination media. Success, achievements, possible obstacles and difficulties will also be identified and discussed in the framework of the meeting between EURCAWs and EURCAWs-DG SANTE.

Some key benefits of such actions include:

- ✚ More thorough study on existing models, indicators, sector issues, etc.
- ✚ Identification of best practices
- ✚ Stakeholder engagement

Based on the results of a survey sent to EU Member States (launched in 7/2024), and the outcome of the discussion with the CAs during the annual EU network meeting (October 2024), the need to create a EURCAW-Aqua CoP was evaluated.

In mid-2026-2027, the Centre will explore the feasibility of developing a CoP on the EURCAW-Aqua's website, i.e., creating an online community. This will be beneficial because it can:

- ✚ Enhance knowledge sharing and collaboration at multinational level
- ✚ Increase engagement and participation
- ✚ Increase the efficiency of dissemination
- ✚ Support decision making and problem solving
- ✚ Build better relationships within the sector
- ✚ Increase visibility and influence
- ✚ Enhance participants' satisfaction and loyalty
- ✚ Make communication cost-effective
- ✚ Support continuous professional development

Explore the feasibility of the development of a CoP on the EURCAW-Aqua's website:

In the meantime, building on the experience of other EURCAWs', and using the established network of EU MS CAs, EURCAW-Aqua will explore a pilot CoP for EU MS CAs (e.g., official Inspectors, policy workers, national contact points) relating to aquatic animals' welfare. The registration form would be sent to the participants through CA national contact points to ensure that the aimed audience is reached. The connection would be password protected to enable the exchange of knowledge and experience by CAs in a secure environment.

Expected outputs and timing:

D30. Report on the opportunity to develop a EURCAW-Aqua Community of Practice (M24; L: BCAS)

Sub-activity 3.5.4 Novel support tool for welfare inspection purposes

Objective:

The main objectives of Sub-activity 3.5.4 are:

- To streamline and standardize the control process, we aim to create a user-friendly and accessible smart phone application for inspectors that includes a collection of materials that are pertinent to aquatic animal indicators.

- Creating a novel support tool for welfare inspection purposes could significantly enhance the efficiency, accuracy, and consistency of animal welfare inspections. Below are some key benefits of such a tool:
 - Improved Inspection Efficiency
 - Enhanced Accuracy and Consistency
 - Better Data Management and Analysis
 - Increased Transparency and Accountability
 - Continuous Professional Development
 - Proactive Compliance Management
 - Scalability and Adaptability

Achievements so far: N/A

Description:

CAs and official inspectors require easily accessible and reliable indicators to verify compliance with the requirements of the European aquatic species welfare legislation. Indicators are selected in sub-activity 3.2.1. In sub-activity 3.5.4 they are further developed and elaborated into supporting tools for welfare inspection.

EURCAW-Pigs will lead the development of an app for inspectors. The costs will be shared between the EURCAWs. The objective is to develop a fully smartphone accessible set of reference materials per relevant welfare indicator. As described in sub-activity 5.4 of EURCAW-Pigs Work Programme 2025-2027, the novel welfare inspection tool will be designed and developed in 2026 and piloted in 2027 with three sets of indicators, covering husbandry, transport and slaughter.

EURCAW-Aqua following the example of EURCAW pigs will be continuously evaluate the effectiveness of the output:

- Is the format of the factsheets still appropriate? Should we change it to a smartphone accessible web-based format?
- Is the content still appropriate? We wanted to be comprehensive and cover all indicators, but maybe inspectors only need a subset, or particular issues or descriptions. If so: which?
- For inspections 'on the spot', there is a need for practical and tailored information, and few texts. Should we make use of visually engaging infographics (see also sub-activity 5.3) where appropriate and helpful?
- There is often a lack of good photo and video materials. Can we build a photo and video repository for an improved illustration of a specific welfare inspection?
- Translations are time- and cost-intensive. When changing the original versions, all translated versions have to be changed. Can we make use of automated (AI) tools to do the translations and have them as audio versions (see also sub-activity 5.3)?

These questions led us to propose that the current factsheets will be maintained (new and translated ones without legislation), and while the content will gradually be transferred to a novel 'welfare inspection support tool', which can be accessed via a smartphone:

- In 2025 EURCAWs will investigate the inspectors' needs for format and content of the new tool. And which indicators should be covered per welfare topic. This will be done by interviewing 10-15 team leaders from different MS, also supported by the CoP.

- In 2026-2027, for prioritized topics and indicators, sets of visual materials will be collected: photos and videos. Infographics will be designed where needed. This will be done by a professional photographer/ designer.
- In 2026, the novel welfare inspection tool will be developed and piloted in 2027 with three sets of indicators, covering husbandry, transport and slaughter. First ideas are an app or another web-based application.

Expected output and timing:

D31. Report on novel welfare inspection tool piloted and its evaluation report (M36, L: EURCAW-Pigs)

List of Indicators:

- Number of enquires requested from national support networks and bodies and competent authorities /CAs
- Number and quality of replies provided to enquiries of national support networks and bodies and CAs
- Number of training and collaboration activities with national support networks and bodies and CAs
- Number of workshops & meetings organised in 2025, 2026 and 2027
- Number of participants in workshops & meetings in 2025, 2026 and 2027
- Cost of workshops & meetings (€)
- Number of technical and scientific feedback provided by EURCs based on Commission enquiries
- Number of collaboration activities with other organisations
- Number and quality of technical and scientific studies and materials developed and/or updated by EURCAW

4. Remarks

1. EURCAWs

EURCAW-Aqua is already in contact with the three existing EURCAWs (<https://eurcaw-pigs.eu/>; <https://www.eurcaw-poultry-sfa.eu/en/minisite/sfawc/welcome-european-reference-centre-animal-welfare-poultry-and-other-small-farmed>; <https://www.eurcaw-ruminants-equines.eu/>) to ensure close cooperation, achieve synergies, and develop joint activities.

2. DG MARE

The EURCAW-Aqua will be in close contact with DG MARE and the EU Aquaculture Assistance Mechanism (AAM), to benefit of DG MARE's network of aquaculture experts in the Member States, to peer-review, to peer-review AAM documents on general fish welfare indicators and good practices on fish welfare, and to link in an efficient way their website knowledge base repositories on fish welfare.

3. European Partnership on Animal Health and Welfare (EUP AH&W)

The EURCAW-Aqua will be in close contact with the EUP AH&W to avoid duplication of efforts and to take advantage of the scientific outcomes of both entities, towards the improvement of farmed animals' welfare. EUP AH&W (<https://www.eupahw.eu/>) is the most ambitious research and innovation initiative the European Commission has funded to control infectious diseases of animals, and to promote animal welfare. The Partnership involves 56 Research Performing Organizations in Europe, it is anticipated to invest €360 million over seven years to boost research and facilitate cooperation between all actors, and to provide societal impact through a One Health and One Welfare approach. EURCAW-Aqua coordination team will be in close link with the EUP AH&W to ensure an ongoing, mutually beneficial cooperation.