



REPORT

Consultation of AH&W CWG members of their expectation for the EC Framework Programme 10

December 2024

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Table of Contents

Summary	4
Introduction	5
1. What is the most important point to take on board for FP10?	5
2. What are the top priorities among all your activities?.....	7
3. With which SCAR WG do you cooperate and what is needed to improve cooperation?.....	8
4. How can you integrate climate and freshwater and competitiveness issues in your work?....	8
Annexes	9
Annex 1	9
Annex 2	10
Annex 3	11
What is the most important take away for FP10?	11
What are the top priorities among all your activities?.....	13
With which SCAR WG do you cooperate and what is needed to improve cooperation?.....	15
How can you integrate climate and freshwater and competitiveness issues in your work?..	16
Do you have any comments that you want to share?	17

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Summary

The initiative of SCAR to consult its Working Groups on their expectations for the European Commission's 10th Framework Programme was an opportunity for the AH&W CWG to conduct an online survey among its members. The results of this consultation were presented at the SCAR Plenary meeting in Budapest in December 2024 and are more detailed in this report.

AH&W CWG members felt that a key priority must be the adoption of a holistic, One Health vision that integrates animal health and welfare, environmental sustainability, and human health. This approach requires systemic, interdisciplinary collaboration between academia, industry, and policy makers to effectively address complex and interrelated challenges. Specific examples are zoonoses and AMR, including resistance against anthelmintics and alternatives against antibiotics.

To ensure impact, FP10 must embrace and go beyond basic research. It should prioritise the translation of scientific results into practice, by investing in research on diagnostics, surveillance platforms, digital tools, and methodologies regarding risk assessment and management. Early involvement of the private sector in research activities is essential to drive innovation and accelerate the uptake of solutions. Mechanisms should be developed to bridge the gap between research and commercial application, while protecting intellectual property and fostering collaboration.

Critical technical areas include the development of rapid diagnostics, flexible and mass-deployable vaccines. Research must also focus on emerging diseases and the resilience of animals and systems to climate change.

Animal welfare is a key pillar, requiring better assessment tools, improved housing and microclimate conditions, and a deeper understanding of animal cognition and emotion. These efforts should support the wider transition to agro-ecological systems where welfare and productivity go hand in hand.

Climate change and freshwater availability need to be integrated into all activities. These factors affect, among other things, disease dynamics and the viability of farming systems. Research should support adaptation strategies such as heat stress mitigation, water quality monitoring and climate-resilient animal breeding.

Finally, FP10 must also improve communication between science and policy, and between science and society, in order to restore public confidence and ensure that research delivers practical, scalable solutions for sustainable animal production.

Introduction

In preparation for the SCAR Plenary meeting that was to be held on 4 December 2024, the RTD-Secretariat asked the chairs of the various SCAR Working Groups to reflect on the following questions:

1. What is the most important point to take on board for FP10?
2. What are the top priorities (2-3) among all your activities?
3. Which SCAR WGs do you cooperate with and what is needed to improve cooperation?
4. How can you embed the issues of climate and freshwater, and competitiveness in your work?

In the weeks prior to the event, the AH&W CWG consulted its members through an online survey which included the above questions. Fifteen responses from 8 countries (AT, BE, ES, FR, IT, PL, PT, SE) plus AnimalHealthEurope and EFSA (Annex 1), were received and the results are presented in this report.

A summary of the responses was presented at the SCAR Plenary meeting of 4 December 2024. Those slides are available in Annex 2.

In the following paragraphs the survey answers are summarised. The full texts are copied in Annex 3 where some spelling errors have been corrected.

1. What is the most important point to take on board for FP10?

From the answers, it is clear that a cross-sector, One Health approach was selected as one of the top priorities. The need for multidisciplinary cross-sectoral collaboration and coordination between actors with expertise in animal health and welfare, public health and the environment on topics like zoonoses and AMR was highlighted. This conclusion suggests that efforts should be made in FP10 to promote and encourage the overcoming of disciplinary barriers and thus facilitate the establishment of One Health and One Welfare consortia across sectors. Respondents also underscored the objective of developing strategies for a holistic view to achieve healthy and sustainable livestock systems. The link between the gut-lung-brain system, where imbalances in one system leads to health problems in the other, was named as a specific example for the need of a holistic, One Health inspired approach.

These recommendations emphasise a holistic and durable outlook to EU research funding in the field of livestock health and welfare, aligning with the One Health and One Welfare framework. The One Welfare approach recognizes the close interrelationship between animal welfare, human well-being and environmental viability, and underscores that improvements in one area will have a positive impact on the others. By integrating animal welfare into broader social and

ecological frameworks, One Welfare promotes sustainable food systems, ethical animal husbandry and a healthier coexistence between humans, animals, and the environment.

Another issue identified as a high priority was the need to develop strategies for sustainable animal production as part of a long-term food production sector. Clearly, animal welfare is considered a formal part of achieving sustainable animal production.

Several respondents highlighted that excellent research under FP10, both basic and applied, should not only produce high quality results, but should also contribute to building capacities for surveillance, detection, characterisation and risk assessment, and to developing new or improved methodologies such as early warning systems. The expected impact of the research should be assessed in different domains, i.e. for society, economy and policy. One respondent stressed the need to address his perceived waning trust in science by developing more effective communication strategies and tools for science to policy and science to society, as an essential condition for achieving impact.

Respondents underlined that collaboration with the private sector can ensure that patents and intellectual property rights, confidentiality clauses, etc. are taken into account. These are issues with which academic researchers are less familiar, but which will facilitate the translation of results into practical and commercially available tools. A supportive comment in this regard was the recommendation to include regulatory science topics in FP10 to support policy makers in their evidence-based decisions. In this context, the examples of alternatives to antibiotics and technologies that can act complementary to antibiotics were given.

Respondents encouraged future research to focus on research gaps identified by expert groups such as STAR-IDAZ, DISCONTTOOLS and AnimalhealthEurope.

Surveillance and monitoring of both emerging and classical animal diseases continued to be recognised as a priority. Also, animal welfare monitoring and improved diagnostics, supported by artificial intelligence and other new technologies, and the management of open databases were identified as priority issues. Both recommendations fit perfectly into the One Health – One Welfare approach.

Finally, some specific topics were proposed for inclusion in FP10:

- Research on welfare of aquatic animals, food safety, water safety.
- Research on vaccines (adaptation of existing vaccines to circulating pathogens, vaccines targeting the mucosal immunity, oral vector vaccines, etc.).
- Research into viral diseases (e.g. PRRS, ASF and emerging viral small DNA viruses) aiming to developing vaccines.
- Research to prepare for climate change, focusing on strategies, measures and policies to mitigate the risks for animal health, animal welfare and agriculture in general.
- Economic studies related to the costs of transition into sustainable housing conditions.

In summary, respondents strongly endorsed the need for a systemic, interdisciplinary and collaborative strategy involving academia, industry and policy makers. By developing innovative, integrated strategies that consider multiple scales of performance - from individual animals to whole populations - FP10 should aim to avoid duplication of effort and promote a comprehensive view of livestock systems.

2. What are the top priorities among all your activities?

This section provides a synthesis of the top priorities of respondents' activities. Note that it is expected that respondents will have listed their activities as the highest priority, hence the close link between the answers to questions 1 and 2 (see Annex 2 for all individual responses).

The One Health approach alongside surveillance of animal health, support for animal welfare, rapid diagnostics (including genomics, point-of-care, lab-free testing and artificial intelligence), risk management, prudent use of antimicrobials, antimicrobial resistance and alternatives to antimicrobials, biosecurity, vaccines, sustainable animal production and cost-benefit studies are recurring priorities in the work of the respondents.

Some additional priority topics were mentioned, i.e. vector borne diseases (vectors, diagnostics and vaccines), the role of wildlife in livestock infections and mitigation measures, studies on the protective immune response in food-producing animals, genetics, the basis for animal resilience and animal breeding.

Some funders emphasised their role in providing some degree of continuity in subsequent research calls, in encouraging the strengthening of networks and collaboration to avoid duplication of work, and in promoting the dissemination and uptake of research results by stakeholders, including farmers.

Finally, in the field of animal welfare the following priorities were identified: welfare assessment including automated systems on farm, during transport and at slaughter, housing conditions including various climatic conditions (temperature, humidity, floods) and possible mitigation measures.

A respondent placed particular emphasis on the feasibility of transforming animal husbandry towards more sustainable systems, and the study of possible biotechnical and socio-economic determinants to monitor this process. Understanding the cognitive and emotional capacities of farm animals, including how these abilities develop over their lifetime is key to helping animals adapt to environmental change.

In line with the first question, aquaculture was mentioned by several respondents, e.g. welfare monitoring, aquatic species behaviour, cognition, tools to detect and assess fish welfare, positive welfare of farmed fish, welfare during stunning and at slaughter of farmed fish.

3. With which SCAR WG do you cooperate and what is needed to improve cooperation?

The respondents mainly propose to collaborate with the WGs on Sustainable Animal Production, Fish and Agroecology, but also Food Systems, Bioeconomy, AKIS.

Respondents expected further financial support, especially for networking, scientific activities such as workshops or foresight studies, etc., and liaison with EFSA and with national, European and international policy makers.

4. How can you integrate climate and freshwater and competitiveness issues in your work?

Climate change (higher temperatures, droughts, but also extreme humidity and floods) will affect the emergence and spread of previously uncommon arthropods (vectors of disease), animal pathogens and zoonoses, but also harmful substances through contaminated water: pharmaceuticals, antibiotics, pollutants. Climate change will have a huge impact on the welfare of terrestrial animals and aquaculture through heat stress, scarcity of clean fresh water, etc.

Research funding should prioritise modelling the emergence of pathogens and their vectors, developing sensitive monitoring systems, and assessing habitat changes under extreme conditions, all within the framework of the One Health approach. The restoration of biodiversity in local areas should be explored and its possible contribution to mitigation strategies. Research is also needed to reduce greenhouse gas emissions from livestock. Strategies for mitigating severe welfare consequences are required. Local studies and region-specific climate data will support decisions and prepare future-proof policies.

There is a need for studies aimed at improving animal resilience and livestock adaptation in an integrated, holistic approach, by advancing research to improve the selection and management of resilient animals and climate-adapted farming systems.

Annexes

Annex 1

The organisations that participated in this survey were:

- AT: University of Veterinary Medicine Vienna, representing the Austrian Federal Ministry of Health
- BE: Federal Public Service for Health, Food Chain Safety and Environment; Flanders Research Institute for Agriculture (ILVO), Fisheries and Food; Ghent University, Sciensano; the Belgian Institute for Health
- ES: National Institute for Agricultural and Food Research and Technology (INIA)
- FR: National Research Agency (ANR); National Research Institute for Agriculture, Food and Environment (INRAE)
- IT: Council for Agricultural Research and Agricultural Economics; /Ministry of agriculture, food sovereignty and forestry (MASAF); Istituto Zooprofilattico Sperimentale del Lazio e Toscana, representing the Ministry of Health
- PL: National Research Institute of Animal Production
- PT: Centre of Marine Sciences (CCMAR)
- SE: Swedish Research Council for Sustainable Development (FORMAS)
- AnimalhealthEurope
- EFSA

Annex 2

Slides presented at the SCAR Budapest meeting (4th December 2024):

CWG AH & W

Update CWG AH&W (*collection through survey, #15*)

- **What is the most important point to take onboard for FP10?**
 - Still need for **research opportunities** for **animal health and welfare**, and in the **One Health-One Welfare** context (incl. environment and human health), both for **terrestrial animals and aquaculture**; **social sciences** should be included.
 - **Integrated strategies** for a **sustainable** European animal production; calculating the **costs** related to the transition towards improved **livestock preparedness** and **food safety**.
 - Both **basic, bottom-up AH&W research** and **capacity building**, strengthen **communication** (science to policy) to **implement outcomes and gain impact**.
 - Keep **smaller R&I projects** in the Work Programme, alongside complex partnerships, and build on **earlier work** (e.g. STAR-IDAZ, DISCONTTOOLS, others).
- **What are the top priorities (2-3) among all your activities?**
 - Fast, on-site and reliable **diagnostics** (and **surveillance capacity** in general) for health and welfare (e.g. ABM, indicators); efficient **vaccine** development.
 - **Antimicrobial resistance** and **use of antimicrobials** in food producing animals; alternatives.
 - Vector-borne diseases, wildlife, 'ancient zoonoses' (e.g. TUB, BRU) terrestrial & **aquaculture**.
 - **Breeding techniques** to obtain resilient, healthy and stress resistant animals; **biosecurity**.

CWG AH & W

Update CWG AH&W

- **Which SCAR WGs do you cooperate with and what is needed to improve cooperation?**
 - Respondents are related with CWG AH&W and propose mainly cooperation with WGs **Sustainable Animal Production**, **Fish** and **Agroecology**, but also Food Systems, Bioeconomy, AKIS.
 - While acknowledging the benefits of the FWC and RefreSCAR, further improvement are expected through **financial support** (networking, scientific activities such as workshops or foresight studies) to WGs, liaison with **EFSA** and (EU/MS/AC) **policymakers**.
- **How can you embed the issues of Climate and Freshwater, and Competitiveness in your work?**
 - Climate change (higher temperatures and droughts, floods) has an expected impact on **emergence and spread of previously unusual arthropods** (vectors of disease) or **harmful substances** (medicines, antibiotics, pollutants), **welfare** of terrestrial animals and aquaculture, impact on **production**.
 - Need for improving the **animals' resilience** and **adaptation of livestock farming** (integrated, holistic approach).

Annex 3

In this annex, the responses are copied and grouped per theme.

What is the most important take away for FP10?

One Health, holistic approach

- The most important point to consider for the new European Research Framework Program regarding research in livestock health and welfare is the adoption of a holistic, sustainable approach that integrates animal health and welfare, environmental sustainability, and human health. This aligns with the One Health framework.
- Adopt a systemic, interdisciplinary, crosscutting, collaborative, and coordinated approach involving academia, industry, and policy makers is also important to avoid fruitless efforts and duplications.
- Develop innovative concepts and integrated strategies to improve multi performance, including animal health and welfare together at different scales (animal, population, systems) to provide a holistic view of the livestock systems.
- Through the different topics, we want to ensure the recognition of interconnectedness of challenges and the need to implement in practice the One Health approach.
- One health-one welfare approach, e.g. unravelling the connection among gut-lung-brain axis. Exploring how imbalances or changes in one of these systems can lead to health issues.

Sustainable Animal Production

- Promoting sustainable animal farming, health and welfare in policy strategies and in farming systems
- The animals' important role in a sustainable food-sector
- Development of extensive, sustainable livestock farming, to favour biodiversity; innovative housing of animals
- Sustainable livestock: animals are a part of sustainable agrosystems, contributing to healthy food systems. Improving animal health and welfare.
- Sustainability, more connection among SCAR Groups (e.g. SCAR FS), competition among food (animal vs human)

Impact-driven research

- Implementing research results
- Build capacity for platforms allowing monitoring and surveillance of animal health and welfare issues to support IMPACT assessments for policy (platform should allow integration of information/data on economy, environment, input/resources and outcome-based information)
- FP10 should look not only at the R&D per se, but also at investing in capacity building and infrastructure, 2 examples can be:

- Laboratory diagnostic capacities to efficiently detect novel pathogens, contributing to early identification and containment of emerging infectious diseases at the human-animal-environment interface.
 - Means to implement research results, like veterinary infrastructure; digital tools, early warning systems etc.
- Early involvement of the private sector is imperative, to make best use of their R&D, manufacturing, and distribution capacity.
- More specific suggestions can be:
 - Incentivise research to fill the research gaps in the identified by STAR IDAZ, DISCONTTOOLS and AnimalhealthEurope (through the pre-competitive topics public list)
 - Create mechanisms to better prepare academia to connect, communicate and collaborate with industry for uptake of research, making sure that any viable new animal health solutions can rapidly be made commercially available.
 - Guarantee that research programmes consider competitive issues, patents, confidentiality clauses and any other questions that might affect animal industry business models and, consequently, availability of animal health products, especially for limited markets.
 - Support the development and uptake of early detection mechanisms.
- Allow research (money) for regulatory science allowing policy makers to make informed decisions on the gaps identified by previous assessments. Where research is recommended it should be taken up as action to further improve policy
- Most importantly, we want to make sure there is specific research dedicated to the animal health topic.
- Some more opportunities for bottom-up and basic research within broadly pre-defined topics
- On a more general level, the most important aspect is combatting the waning trust in science and developing more effective communication (tools, channels, strategies,...) regards science to policy and science to society.
- Format:
 - Further strengthen actual cooperation (synergies) between partners and avoid working in silos: from the submission of the proposal on, it should be clear how each partner of the consortium will contribute to obtain the objectives and what the added value of working together represents. This means: The link between the work and added value of the collaboration between different partners within the consortium should be clearly described from the beginning to avoid that the work is just divided into small parts individually taken up by the partners of the consortium without actual collaboration.
 - Better explain expectations towards work package leaders

Treatments

- Science based regulatory framework for alternatives to antibiotics or for technologies that can work complementary to antibiotics

Diagnostics

- Rapid diagnostics for better monitoring/epidemiology, open databases and use of AI for maximal use of diagnostics and databases in policy and control of emerging diseases

- Early detection of animal diseases and animal welfare issues (housing condition - differences between countries in keeping animals and ensuring their higher welfare condition)
- Content: Also focus on diagnostic research gaps like 'reintroduction of 'ancient' animal diseases in Europe'; improve surveillance and diagnostics by public-private collaborations

Vaccines

- Higher flexibility in adaptation of vaccines to circulating strains in the field.
- Mass vaccination technologies targeting mucosal immunity (oral, aerosol) for optimal animal health and welfare
- Development of vector vaccine for oral vaccines

Specific topics

- How does the welfare of aquatic animals integrate the agenda of SCAR? Are there any specific actions planned?
- Emerging viral small DNA viruses, such as parvo- and circoviruses
- Better insights in the pathogenesis of top priority viral diseases (PRRSV, ASFV, SIV) with regard to a better development of vaccines.
- Better insights in the protective immunity against priority viruses (PRRSV, ASFV)
- Preparedness in the context of climate change, focusing thereby on strategies, actions, and policies aimed at mitigating the risks for animal health (and agriculture)
- Food Safety (in the meaning extension of EFSA remit - Animal Health, Food Safety, Animal Welfare)
- Water safety especially in Agriculture sector
- Estimating the costs of transition into better conditions for keeping animals (discussing possible sources of funding for such systems)

What are the top priorities among all your activities?

General

- Antimicrobial resistance, Biosecurity, Risk Management, Sustainability Animal Productions.
- Identification of best surveillance practices and effective biosecurity measures will be needed.
- Surveillance (genomic surveillance included) and diagnostics of (re)emerging and economically important diseases.
- Building future proof surveillance systems.
- As a funding agency, we have to ensure that relevant topics of previous initiatives will be supported in ongoing and next work program ('continuity').
- We have to organise, programme and implement networking allowing enlarged collaborations and avoiding duplication
- We have also to develop strategies allowing clusterisation of projects results for better impact
- More connection between science and policy, at the different level (e.g. need to transfer results/innovations/solutions to farmers). Important the role of SCAR in this connection: research results need to be communicated at political, institutional and users.

- Animal health economics
- A Sustainable animal production, and livestock preparedness
- Sustainability
- Regulatory science & research to fill the gaps for legislators.
- Innovation
- One health
- One health (AMR, VBD, wildlife, ...)

AMR and AU

- AB usage/AMR monitoring and surveillance systems for animal infectious diseases and zoonoses
- AMR and zoonoses in a One Health context: contributions of animal, environmental and clinical sectors
- Science based regulatory framework for alternatives to antibiotics or for technologies that can work complementary to antibiotics.
- Reducing antibiotics use.

Diagnostics

- Rapid diagnostics for better monitoring/epidemiology, open databases and use of AI for maximal use of diagnostics and databases in policy and control of emerging diseases.
- Fast and point of care lab-free diagnostics of pathogens and toxic substances in food and environmental matrices.

Vaccines

- Higher flexibility in adaptation of vaccines to circulating strains in the field
- Mass vaccination technologies targeting mucosal immunity (oral, aerosol) for optimal animal health and welfare.
- Development of vector vaccine for oral vaccines

Research on pathogens, host response and breeding

- Better insights in the pathogenesis of top priority viral diseases (PRRSV, ASFV, SIV) with regard to a better development of vaccines.
- Infectious diseases in food producing animals; from fundamental research over diagnostics or treatment / prevention and policy decision making.
- Emerging viral small DNA viruses, such as parvo- and circoviruses
- Vector borne diseases should be high in the agenda, with short, medium and long-term strategies being proposed.
- AHW: infectious diseases (improved diagnostics and vaccines), concern about vector borne diseases (changes in vector population dynamics in the context of climate change).
- Other diseases with a wildlife component, prevention strategies that consider the EU as a whole will need to be considered. The focus on prevention should be placed on EU borders and MSs that have less resources, to minimize the risks for incursions and spread of exotic diseases.
- Better insights in the protective immunity against priority viruses (PRRSV, ASFV)

- Host response (immunocompetence/immunotolerance studies, genomic selection in animals, microbiome) and preventive tools (vaccines).
- Genetics addressed to more robust and resilient animals, and to the reduction of greenhouse gas emissions (ruminants).
- Reproductive and gamete conservation techniques to improve efficiency in animal productions and for the protection of biodiversity.
- Breeding livestock for improved health and welfare at the animal and population level: Identify 1- resilience indicators and their relation (trade-offs) with health, welfare and production traits, and 2- genetic factors influencing the dynamic of infectious diseases through genetic epidemiological models, in order to 3- integrate these novel traits in selective breeding and develop true integrated health and welfare management strategies in synergy with current prevention methods like vaccination.

Animal welfare and housing (detection-guidelines)

- A high animal welfare with a strong competitiveness.
- Environmental enrichment and positive welfare for farmed fishes (improving how fish live)
- Physiology and behaviour of animals depending on better and worse housing conditions (providing higher vs. lower housing comfort)
- Research in aquatic species behaviour, cognition and welfare
- Stunning and slaughter in farmed fishes (improving how fish die)
- Welfare assessment using behaviour
- Physiology and behaviour of animals in various microclimatic conditions.
- New technologies enabling the improvement of microclimate conditions on farms in summer.
- Development and sound validation of Animal based measures to be used routinely and automatized on-farm, during transport and at slaughter.
- Identifying the conditions for viability and helping support the transformation of livestock production systems committed to the agro-ecological transition, with the health and well-being of farm animals at the heart of their multi-objectives. Analysing the biotechnical and socio-economic determinants of the viability of production systems and studying possible levers for action to remove points of vulnerability, make these systems operational, facilitate their adoption and add value to their output along the value chain.
- Developing knowledge of the cognitive and emotional capacities of farm animals, how they are built up throughout life to promote positive mental states, and how they are mobilized by the animal to facilitate adaptation to environmental changes. How to integrate this knowledge in the conception of farming systems that promote positive welfare and good health?

With which SCAR WG do you cooperate and what is needed to improve cooperation?

- CWG Animal Health & Welfare. Urgently needed are support funds to support back office including web presence, reimburse travel costs for meetings and fund strategic activities such as foresight studies, expert workshops, webinars, etc.
- AH&W CWG
- SCAR AH&W
- CWG Sustainable Animal Productions; WG Fishery; WG Food Systems Better evidence-based link between EFSA and Policy Makers needs and SCAR.
- SCAR SAP. SAP has no specific target in Horizon Europe Partnerships. Therefore, a stronger collaboration with EUPAHW is probably needed.

- SCAR Animal Health and Welfare and SCAR Sustainable Animal production. I would suggest that these two WG join to one group! I do not know if this have been discussed and discarded before.
- I have good contact with the leaders of the Animal Welfare Group, I cannot say what can be improved - being in this group is very inspiring for me, I get a lot of useful information during meetings.
- Animal Health and Welfare; FISH; Foresight Group; Sustainable animal production.
- Improve cooperation with: SCAR Food Systems, SCAR Bioeconomy.
- SCAR CWG on Animal Health and Welfare: Good communication; Feedback on the activities of the other groups so we can know how and where we can contribute.
- SCAR SAP, SCAR Agroecology and SCAR AKIS (connection with the previous answer 'science to policy').
- SCAR AH&W, SCAR SAP, SCAR Agroecology, SWG FISH. Reason: Having a better and shared holistic view of livestock farming systems, to improve multiperformance including health, welfare and environmental issues together, to design and implement breeding and integrated management strategies at the animal, herd, population and system levels.

How can you integrate climate and freshwater and competitiveness issues in your work?

- Climate and the availability or non-availability of freshwater impact disease dynamics, proliferation and spread as well as productivity and welfare of livestock. Domestic research funding therefore focuses on monitoring and modelling pathogen and vector emergence, habitat changes and supporting One Health activities.
- Freshwater can be a sink of harmful substances like residues of medicines such as antibiotics, which can lead to further spread of AMR-bacteria and pathogens in the environment. Freshwater is used as basis for drinking water (animals, humans) and for irrigation of crops as well as for recreation. Consequently, fresh water is an important vehicle and reservoir in a One Health context. In our work, we analyse residues of veterinary drugs, pathogens and AMR in fresh water like river water, brackish water, sediments and investigate the importance of antibiotic use in animal production and of manure and wastewater treatment plants in dissemination of the residues, pathogens or AMR in the freshwater ecosystem. Climate change can influence this process of dissemination through periods of flooding or extreme drought.
- Trying to understand the interconnections, e.g. study how climate change impacts spread of diseases and especially appearance of vectors. This part can be at (pan) European level. Thereafter it is of important to incorporate local data and use region-specific climate data to guide decisions and prepare future-proof policy.
- Impact of climate change on animal diseases transmission; impact of animal diseases on GHG emissions; animal health implication on use of recycled waters; role of freshwaters in diseases spread.
- Climate change is a major concern for animal welfare and production (see Huntingford, F. A., Kadri, S., & Saraiva, J. L. (2023). Welfare of Cage-Cultured Fish under Climate Change. In Climate Change on Diseases and Disorders of Finfish in Cage Culture (pp. 462-498). GB: CABI.)
- Fish farming activities in freshwater impacts not only the welfare of farmed animals but also affects the communities and water quality in which they are carried out.

- At ANR level, we have a dedicated subgroup to Freshwater issues and we coordinate Water4all. Regarding climate, we are member of JPI FACCE and we coordinate FOSC (food system facing climate change). The climate dimension is in the heart of most of our international actions.
- These two aspects are embedded in everything concerning animals and animal production. Also, preparedness is an important aspect.
- I have very good cooperation with Polish entrepreneurs involved in the development of water-saving air cooling installations. We have one successful project. We are thinking about more, but we haven't agreed on the details yet.
- Adaptation to climate changes --> Strategies to mitigate welfare consequences derived from climate change; what would temperature increase (air/water) and related distortions of weather mean in practice to mitigate heat stress in different animal species?
- Territory Management through silvo-pastoral activity (biodiversity) creating a harmonious ecosystem that optimizes land use while reducing greenhouse gas emissions.
- Research aimed at improving the adaptation of livestock farming to climate change and at reducing the emission of greenhouse gases in livestock farming.
- Highlighting and enhancing the ecosystem services of livestock.
- We would need a bit more background to understand this question. Good animal health can be a good ally to promote sustainability, fight climate change, etc. Is that in the remit of what you meant?
- Animal production is strictly connected to sustainability (both Health and welfare aspects). For freshwater, better to specify the meaning (pollution from livestock or water footprint?)
- Climate: vector-capacity studies VBD, surveillance VBD (also in wildlife), impact of climate (on biodiversity) and emergence of zoonosis.
- Freshwater: AMR in fish, diagnostics of fish diseases, (re)emergence of zoonosis (e.g. leptospirosis) related to fresh water.
- Propose a holistic approach to investigate how livestock can better contribute to the mitigation of climate changes and also how it suffers its consequences, considering both local (territories) and global (planet) challenges. Contribute to advancing research and development in the selection and management of robust animals and climate-resilient livestock farming systems.

Do you have any comments that you want to share?

- For almost two decades now, we have considered the CWG AHW as our primary source for staying informed about ongoing activities regards research activities and research funding activities in animal health and welfare at both the European and member state levels. Its longevity has led among its partners to a high level of mutual trust and understanding each other, which has greatly facilitated creating and supporting opportunities for collaboration across member state border.
- SCAR WGs risk to be of very diverse and not harmonised nature; e.g. horizontal and vertical mandate. Consequent risk of overlapping and uncovered areas.
- The survey was filled by MASAF and CREA (Italy).