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FishGov 2 Project

EUROPEAN UNION

World Organisation for Animal Health

First Steering Committee Meetings of the Regional Aquatic Animal Health Networks for North Africa and Southern Africa

24th June, 2025, World Aquaculture Safari
Kampala, Uganda



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TABLE OF CONTENTS

1.0	*INTRODUCTION*	*1*
2.0	*PARTICIPANTS*	*2*
3.0	*OFFICIAL OPENING SESSION*	*2*
4.0	*OBJECTIVES OF THE MEETING*	*2*
5.0.	*PROCEEDINGS OF THE MEETING*	*3*
5.1.	*Plenary opening session*	*3*
5.2.	*Group discussions*	*3*
5.3.	*Plenary discussions*	*4*
6.0.	*RECOMMENDATIONS AND OUTCOMES*	*4*
6.1.	*RAAHN-NA*	*4*
6.2.	*RAAHN-SA*	*6*
6.3.	*Cross-cutting issues*	*7*
7.0.	**THE WAY FORWARD**	**10**
7.1.	*RAAHN-NA*	*10*
7.2.	*RAAHN-SA*	*10*
7.3.	*Continental recommendations*	*10*
8.0.	**OFFICIAL CLOSURE**	**12**
	APENDICES	**13**
	Appendix 1: The Regional Aquatic Animal Health Networks for Africa: North Africa and Southern African Development Community	*13*
	Appendix 2: List of participants	*14*
	Appendix 3: Concept note and agenda of the meeting	*17*
	Appendix 4: Presentations delivered	*20*

1.0 INTRODUCTION

The inadequate sharing of sanitary information is among the major bottlenecks for the establishment of effective aquatic biosecurity and biosafety control in Africa's fisheries and aquaculture sector. This issue is negatively impacting sustainable development and growth, equitable and free access to markets and the status of aquatic biodiversity. By anchoring onto the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa (PFRS)[1], Animal Health Strategy for Africa (2019-2035)[2] and OIE Aquatic Animal Health Strategy 2021-2025[3], AU-IBAR and WOAH collaborated in 2023 to launch two Regional Aquatic Animal Health Networks (RAAHN), RAAHN-North Africa[4] and RAAHN- Southern Africa[5]. Regional aquatic animal health multi-stakeholder networks as platforms where sanitary information is shared transparently to develop, harmonize and coordinate the implementation of aquatic biosecurity and biosafety control measures, support aquatic animal health and welfare management practices coherently in transboundary aquatic ecosystems and regional fisheries and aquaculture value chains and trade routes are a recognised global best practice that facilitate the adoption of One Health and One Welfare in the aquatic animal resource sector.

The establishment and promotion of RAAHNs is viewed as Africa's most pragmatic approach for rapidly building continental capacity for aquatic biosecurity and biosafety control, bearing in mind the transboundary nature of its aquatic animal resources, volume of informal regional fish trade and the growing environmental and climate change hazards the sector is exposed to. As information sharing platforms, it is envisaged the RAAHNs will strengthen communication, build synergies and improve coordination for implementation of regional fisheries and aquaculture Sanitary and Phytosanitary (SPS) standards more cost-effectively and self-sustainably. The capacity built additionally contributes towards facilitating intra and inter regional fish trade in line with Africa's regional integration trade agenda and the Protocol on Trade in Goods of the Africa Continental Free Trade Area (AfCFTA).

Outputs of the launch workshops

The regional multi-stakeholder consultative workshops that launched RAAHN-North Africa and RAAHN-Southern Africa in 2023, recommended pathways for the institutionalisation and operationalisation of each respective network[4,5]. These constituted proposed Terms of Reference (TOR's), institutional frameworks and an inaugural action plan to guide the process of establishment as regional multi-stakeholder public-private sector platforms. Both meetings agreed first inaugural steering committee meetings be organised to validate theses outputs prior to their submission for endorsement by the respective regional Economic Communities (REC). It was also recommended that the first steering committee meetings be organised back-to-back with a continental Africa Aquaculture Conference and Exhibition (AFRAQ) for lessons learning and experience sharing on regional and global best practices in aquatic animal health and biosecurity control.

Cognizant of this, the first RAAHN steering committee meetings were organised back-to-back with the World Aquaculture Safari (WA25) that was held in Kampala Uganda from the 25th to 27th June, 2025 (see side-event abstract in Appendix 1).

[1] https://au.int/sites/default/files/documents/30266-doc-au-ibar_-_fisheries_policy_framework_and_reform_strategy.pdf
[2] https://www.scribd.com/document/844563493/Animal-Health-Strategy-for-Africa
[3] https://www.woah.org/app/uploads/2021/05/en-oie-aahs.pdf
[4] https://rr-africa.woah.org/en/news/launch-of-the-regional-aquatic-animal-health-network-north-africa/
[5] https://rr-africa.woah.org/en/news/launch-of-the-regional-aquatic-animal-health-network-southern-africa/

2.0 PARTICIPANTS

The meeting was attended by both inaugural steering committee members of RAAHN North Africa and Southern Africa and representatives from the SADC Secretariat, WOAH, AU-PANVAC, AU-IBAR and the Chair of the Pan-African Chief Veterinary Officers platform (Appendix 2).

3.0 OFFICIAL OPENING SESSION

The meeting was officially opened by Dr. Nelly Isyagi on behalf of the Director of AU-IBAR, Dr. Huyam Salih. In her opening remarks the Director of AU-IBAR noted the significance of the meeting bearing in mind the contribution of Africa's fisheries and aquaculture sector to food and nutrition security albeit the challenges impeding the expansion of the sector due to biosecurity and biosafety threats. There have been repeated reports of disease and environmentally-induced mass fish mortalities in some of Africa's large inland water bodies known to support livelihoods, employment and food nutritional status of rural communities and national economies including by contributing directly to foreign exchange earnings. The current status whereby capacities for the effective implementation of aquatic biosecurity and biosafety measures across the continent were still weak, presented a challenge for the sustainability of the sector. Weaknesses in the early detection, reporting, surveillance and the effective communication of sanitary challenges left stakeholders ill-prepared to mitigate and address sanitary challenges and their impacts cost-effectively without impeding access to markets. On this note, she officially opened the meeting.

4.0 OBJECTIVES OF THE MEETING

The objectives of the one-day meeting were to:

i. Review and validate outputs of the RAAHN launch workshops and recommend their submission to the respective regional processes for endorsement.
ii. Share experiences and learn lessons on the status of the aquaculture sector, aquatic animal health management, aquatic biosecurity and biosafety control and the implementation of WTO's aquatic SPS standards and measures globally, and within Africa.
iii. Elaborate a prioritized action(s) to kick-start the operationalization of the RAAHNs.
iv. Participate in the World Aquaculture conference and exhibition.

See Appendix 3 for concept note and agenda of the meeting.

5.0. PROCEEDINGS OF THE MEETING

5.1. Plenary opening session

The following presentations were delivered to highlight the purpose of the workshop:

i. A selection of videos from WAOH on the implementation of the global aquatic animal health standards and safe trade:
   - Benefits of aquatic animals are infinite. Keep them healthy! https://www.youtube.com/watch?v=ERNwOwSI_Q8
   - Improving aquatic animal health and welfare worldwide: https://www.youtube.com/watch?v=7hzYPDj1JNk
   - Standards: why implementation matters: https://www.youtube.com/watch?v=m7dxZ30P3oI
   - Video on Aquatic Code and Aquatic manual: https://youtu.be/pdumtxhe1Ro
   - OIE international Standards: Protecting animals, preserving our future: https://www.youtube.com/watch?v=Pqi9Y6LAOhA
   - The role of Veterinary Services in emergency management: https://www.youtube.com/watch?v=a_qDmCnKwT8

ii. An update of Africa's actions on strengthening aquatic biosecurity control and safe trade, by Nelly Isyagi, AU-IBAR.

iii. Benefits of regional collaboration in programs for AA biosecurity control: Experiences of Tunisia under GFCM, by Nadia Cherif, National Institute for the Sciences and Technologies of the Sea (INSTM), Tunisia.

iv. Experiences of Africa Regional AAH Reference Laboratories: CLAR as WOAH Collaborating AA Lab for NA/Middle East, AU CoE for AAH, by Prof El-Gamaal, Egypt.

v. Experiences of Africa Regional AAH Reference Laboratories: UNZA as FAO/SA regional collaborating laboratory in aquatic animal disease surveillance, AU Centre of Excellence for Infectious Animal Diseases, by Mwansa Songe, University of Zambia, Zambia.

See appendix 4 for more details.

5.2. Group discussions

The planned agenda intended separate group discussions to allow RAAHN-SA and RAAHN-NA independently review and validate the outcomes of the respective launch workshops that were held in 2023. Instead of dividing themselves into groups, the participants agreed to examine the results of their individual launch workshops in a plenary session, with one RAAHN serving as an observer for the other. This was done to allow the RAAHNs to learn from each other and share their experiences.

5.2.1. RAAHN-NA

RAAHN-NA discussed the following:

i. Need for strengthening collaboration between Member States in the North Africa region for aquatic biosecurity
ii. Reviewed for validation RAAHN-NA inaugural action plan out of which actions from the year 2025/26 were prioritised.
iii. Recruit a dedicated a focal point to coordinate the institutionalization and operationalization RAAHN-NA.

5.2.2. RAAHN-SA

RAAHN-SA discussed the following:

i. Reviewed RAAHN-SA's proposed Terms of Reference
ii. Reviewed for validation RAAHN-SA inaugural action plan out of which actions from the year 2025/26 were prioritised.
iii. Elected the substantive steering committee

5.3. Plenary discussions

The plenary additionally discussed issues and reviewed outcomes within the continental context.

6.0. RECOMMENDATIONS AND OUTCOMES

The following were the major outcomes.

6.1. RAAHN-NA

The number of RAAHN-NA steering committee members present did not constitute a quorum. The following were, however, recommended for onward validation by the substantive RAAHN-NA committee.

i. North Africa's fisheries and aquaculture sectors, related Blue Economy industries and trade was closely linked to the Mediterranean Sea, Atlantic Ocean, Red Sea, and Nile River shared water bodies. In order to promote regional aquatic biosecurity control, market access, and safe trade, regional cooperation based on all-inclusive multi-stakeholder led by region's Chief Veterinary Officers was raised as RAAHN-NA's top priority. In this regard, RAAHN-NA's primary role would be to harmonize regional approaches for the adoption of WTO sanitary and phytosanitary measures, notably WOAH's Aquatic Code and Manual, WHO/FAO Codex Alimentarius and other regional measures. The establishment and operationalisation of RAAHN-NA would therefore serve to safeguard the sector against sanitary and environmental hazards considering One Health, as well as build climate change resilience more comprehensively.
ii. The RAAHN-NA participants agreed that RAAHN-NA continue to be based at the WOAH Sub-Regional Representation for North Africa (WOAH-SRR NA) until it is fully established for the following reasons:
    - While all Member States of North Africa are members of the African Union (AU), they do not belong to the same AU Regional Economic Communities (REC). Except for Egypt, the rest belong to the North African Arab Maghreb Union[6] (UMA). A formal mutual agreement comprising Memoranda of

[6] *Arab Maghreb Union (UMA) member states: Algeria, Libya, Mauritania, Morocco and Tunisia*

Understanding, a regional policy and legal framework would therefore need to be put place between UMA and its Member States, and Egypt to comprehensively facilitate the institutionalisation and operationalisation of RAAHN-NA as an aquatic animal health regional network that coordinates both public and private sector actors. All the member states of North Africa are however members of WOAH under which they currently collaborate through WOAH- SRR NA in all matters pertaining to WTO's standards and measures for both terrestrial and aquatic animal health and welfare, and safe trade.

- The Member States of North Africa currently belong to a multiplicity of regional fisheries bodies and animal health networks. Participants observed that this was both an opportunity and strength for RAAHN-NA to build upon. The General Fisheries Commission for the Mediterranean (GFCM)[7] for example is a Regional Fisheries Management Organization (RFMO) that constitutes twenty-two countries and the European Union (EU). GFCM's main objective is to ensure the conservation and the sustainable use of living marine resources including sustainable aquaculture development, in the Mediterranean and in the Black Sea. GFCM's geographical area covers the North Africa, Sothern Europe and West Asia. Members of GFCM have existing long-standing technical partnerships with each other including within the domain of aquatic animal health and biosecurity control, aquaculture development and regional fish trade. Similarly, so was the situation with COMPHAT/ATLAFCO[8] and the Lake Chad Basin Commission (LCBC) to which Morocco, Mauritania and Libya respectively belonged. was additionally a member the Mediterranean Animal Health Network (REMESA)[9] and Aquatic Middle East Network (AQMENET)[10] . AQMENET constitutes member states bordering the Red Sea, and Egypt is a member. Both REMESA and AQUAMENT are WOAH networks. RAAHN-NA would thus benefit from establishing an institutional arrangement whereby its directly equally linked to both AU-IBAR and WOAH
- As members of the AU, all the member states ascribe to the AU's sectoral policies, including in this case, the PFRS and ABES under which continental actions to promote aquatic biosecurity control and safe regional fish trade are being promoted. Participants consequently reaffirmed that AU-IBAR and WOAH need to continue working closely together to support the establishment and effective operationalisation of RAAHN-NA[4].

iii. The establishment of RAAHN-NA was recognised as a mechanism that would facilitate coordination and the pooling of resources to rapidly and more cost-effectively leverage the region's capacity to solve sanitary challenges impacting the productivity and sustainability of the region's fisheries and aquaculture and removal of technical barriers more equitably. Collectively, it would enhance access to markets for the broader sector as a whole within the region and globally, which would greatly benefit local communities, rather than only the export-oriented fisheries and aquaculture value chains as is largely the case. The EU, US and Middle East are major external markets for North Africa's fishery and aquaculture products. Through the RAAHN-NA, this capacity could additionally become accessible for the benefit of North

[7] *GFCM's AU member states: Algeria, Libya, Egypt, Morocco and Tunisia*

[8] *ATLAFCO/COMHAPHAT:* The Ministerial Conference on fisheries cooperation among African States bordering the Atlantic Ocean (ATLAFCO), *is an intergovernmental regional fisheries organization comprising 22 countries from Morocco to Namibia.*

[9] *REMESA as a network was created as a common framework for work and cooperation, having the necessary capabilities to assist and coordinate the development and implementation of animal health regional projects and programs in the Mediterranean region.*

[10] *AQMENET is a regional network committed to enhancing the aquaculture industry in the Middle East. The network provides cutting-edge knowledge on aquatic animal disease prevention, early detection, control, diagnostics, surveillance and related aspects. AQMENET recognizes the significance of aquatic animal production in strengthening food security in the region, as well as the growing demand for aquatic animals and their products.*

Africa's transboundary territorial fisheries and aquaculture sectors, as well as for the continent. The achievement of RAAHN-NA's objectives, however depended on the strong leadership from the region's CVOs, supported by their respective National Aquatic Focal Points, notably RAAHN-NA's Steering Committee.

iv. Mapping of the region's institutional, human and technical resources for aquatic animal health, welfare and biosecurity control was noted as the key priority for the region. The mapping of stakeholders, laboratories, policies and regulations, production systems and development programs were an essential first step for the assessment of regional status, building partnerships and development of relevant compliant programs tailored to the region's needs. Morocco and Tunisia for example had substantial existing capacity for aquatic biosecurity control, diagnostics and safe trade in lieu of their external markets for fishery and aquaculture products. Enhancing North Africa's capacity for compliance and participation in WTO' SPS measures, the PFRS, Africa Blue Economy GFCM process would greatly benefit RAAHN-NA.

v. RAAHN-NA participants agreed that the inaugural action plan reflected what was discussed during the launch and the activities prioritised then were still pertinent. Participants, however, noted the control of aquatic/aquaculture AMR and invasive species were growing concerns that needed to be included as priorities in the inaugural action plan.

vi. Bearing in mind the workload of the steering committee members, RAAHN-NA participants recommended a dedicated coordinator be recruited with support from AU-IBAR to follow-up the formal institutionalisation and operationalisation of RAAHN-NA and implementation of the inaugural action. The WOAH-SRR NA in Tunis, Tunisia, was proposed as the duty station for the coordinator.

vii. The RAAHN-NA recommended the inaugural action plan, proposed institutional and terms of reference for validation by RAAHN-NA's steering committee subject to the inclusion of the observations outlined in 6.3. below, on capacity building, antimicrobial resistance and aquatic animal vaccines.

6.2. RAAHN-SA

i. A quorum was recorded for the first inaugural steering committee meeting at the WA25. The RAAHN-SA first SC meeting achieved following:

- Validation of the institutional documents and terms of reference drafted at the launch of RAAHN for submission to SADC and the respective Member States processes for consideration[5].
- Validated the inaugural action plan subject to the addition of the items listed below that are additionally outlined in 6.1(ii) above and 6.3 below:
  - All actions on 'capacity building' be updated to reflect 'capacity building and sustainability'
  - The prevention and control of aquaculture AMR
  - The development and use of aquatic animal vaccines
  - Strengthen One Health, data collection systems and the establishment of regional aquatic animal diagnostic systems and services
  - Strengthening and sustaining capacities of smallholders, women, youth and disadvantaged communities for adopting of aquatic animal health and other related sanitary and phytosanitary measures.
- Elected the substantive RAAHN-SA's SC for a term of two-years as guided by validated Terms of Reference and Institutional guidelines[5]. RAAHN-NA, AU-IBAR and SADS Secretariat observed the electoral process. RAAHN-SA SC (2025-2027) committee comprises representative of both MS and community

stakeholders as was recommended during the inauguration (Box 1).

Box 1. *Members of RAAHN-SA Steering Committee (2025-2027)*

Member States

1) Zambia- Chair
2) Eswatini- Vice-Chair
3) Madagascar
4) South Africa
5) Mozambique

Stakeholders

6) University of Botswana (training/research)
7) Mukasa Fish Farm (aquaculture producers)
8) WorldFish- Secretariat (R&D)
9) AW-FISHNET Southern Africa Chair
10) Crocodile Producers Consortium (private sector aquatic animal health practitioners)

6.3. Cross-cutting issues

On the whole, participants noted:

i. Capacity Building – Current capacities for the implementation of aquatic animal health and welfare and aquatic biosecurity and biosafety control among AU-MS and RECs was viewed generally weak. Most of the interventions to address this situation focussed on training and policy to address human resource and institutional capacity needs for sector managers, research and academia and in some cases, producers. Furthermore, the initiatives were mostly through donor supported projects with fixed timeframes. When projects ended, positive benefits quickly fizzled out because no inbuilt mechanisms tended to be simultaneously established by donors or host institutions, to foster and upscale positive outcomes sustainably. Notable concerns raised in this regard:

- Drawing lessons from terrestrial animal health management and biosecurity control, effective aquatic animal health management and biosecurity control requires the long-term commitment of the sector's primary and secondary stakeholders, and public-at-large. Medium to long-term programs that additionally enhanced public awareness, would in the long run foster self-sustainability. For this reason, the establishment of RAAHNs as a strategic approach across the continent was the most preferred.
- Often staff trained on projects tended to be redeployed or moved on soon after projects closed. Human resources, knowledge and skills, including for the maintenance of equipment would consequently be immediately lost before scalable impacts could be achieved. Systems that promoted continuous in-service training were recommended as a measure against this shortfall.
- Effective implementation of aquatic animal health and welfare and aquatic biosecurity and biosafety control measures required that commensurate supporting legislation be put in place. Guidance on this was already outlined by WOAH's Aquatic Code. However, most AU-MS have yet to put in place the adequate policies and supporting legislature to facilitate the desired multisectoral and multi-stakeholder coordination and collaboration to achieve this.

- It was subsequently recommended that all references to 'capacity building' in the inaugural action plans be revised to read 'capacity building and sustainability.

ii. One Health was not adequately emphasised in both proposed inaugural action plans yet this was both a continental and global best practice. It was recommended both inaugural action plans be updated to reflect this. Notable concerns raised in this regard were:

iii. Prevention and control of antimicrobial resistance. The lack of approved and/or registered therapeutic drugs for use in aquatic animals in most AU-MS. Several countries relied on formulations for terrestrial animal medicine. Legal frameworks, both national and regional, needed to be developed based on outcomes research and national surveillance. Given their mandate, the pivotal role of RECs in promoting the establishment of regional aquatic AMU/AMR surveillance programs among AU-MS under the framework of RAAHNs was emphasised. Therefore, participants recommended inaugural action plans respectively prioritise actions to assess the status and prospects for establishing regional and national aquaculture and aquatic AMU/AMR surveillance programs.

iv. Aquatic animal vaccines – Growing stakeholder concern over the AMU and status of AMR in aquatic animals, particularly of farmed stock across the continent was noted. Based on anecdotal evidence, indications were that aquaculture AMR was rising in Africa due to limited provision of veterinary services to the sector. The supply and use of antimicrobials and other veterinary inputs in aquaculture is poorly supervised in most AU-MS and had begun negatively affecting access to markets for aquaculture producers. The promotion of alternatives to minimise the AMU for aquatic animal health management was consequently a priority. The AUC's 5th STC ARDWE has consequently requested AU-IBAR and AU-PANVAC to develop a continental strategy to guide Africa in strengthening its continental capacity for aquatic animal health and biosecurity control and the development and use of aquatic animal vaccines (appendix …). Actions to promote aquatic animal welfare and the use of immunostimulants such as vaccines based on national disease risk analyses were therefore noted as gaps in the draft RAAHN inaugural action plans and institutional documents.

v. Lack of systematically collected and collated aquatic animal health data from the field to national level - This gap was recognised as a major bottleneck for disease reporting, monitoring and surveillance, impact analyses and the quality assurance of fish value chains. This would support the establishment of national and regional pathogen lists and disease risk analyses that formed the basis to guide the development of sound policy, strategies and actions to safeguard the sector from sanitary challenges and promote sustainable trade. The role of RAAHNs in establishing such harmonised regional aquatic animal disease data management and information systems with support from AU-IBAR and WOAH was also emphasised.

vi.

vii. Smallholders - The artisanal fisheries and aquaculture producers who produce and supply most of Africa's aquatic animal produce and products are smallholders. Their participation, specific interests and needs need therefore to be voiced in the RAAHNs. The resilience and sustainability of Africa's fisheries and aquaculture sector hinges a lot on their status given that they are major custodians (including of indigenous knowledge), managers and users of Africa's aquatic resources. Tailored guidelines, support services and skills-based training to build and sustain involvement as partners in the development, adoption and

implementation of RAAHN best practices was considered crucial.

viii.

ix. Prioritisation of disease risk analysis - Given the growing rise in reports of aquatic animal health and biosecurity challenges, it was recommended that the continent commences harnessing the knowledge gained from its own experiences with previous incidents using the resources at hand, rather than wait for catastrophes to occur. Cognizant of the continent's eminent aquatic biosecurity and biosafety risks vis-à-vis the financial, human, institutional and infrastructural constraints for effective implantation faced RECs and AU-MS it was strongly recommended that simple tools be developed to guide AU-MS undertake basic risk analyses as a priority. Citing Madagascar's experiences this can be achieved affordably. The recently launched Regional Aquatic Animal Health Laboratory Network for Africa (RAAHLN-Af)[11] was urged to prioritise the development of a simple continental tool to support AU-MS and REC's in assessing their sanitary status with the view to establishing pathogen lists, understanding national and regional vulnerabilities, developing national and regional aquatic animal health and biosecurity and biosafety control strategies, and updating regulation. The outcomes would also enhance and strengthen sectoral environmental management and climate change resilience actions as well as facilitate the adoption of FAO's Progress Management Pathway for Aquaculture Biosecurity (PMP□AB).

x. Promoting the RAAHN approach and model –RAAHNs were applauded as a strategic approach for promoting best practices for transboundary aquatic biosecurity control, One Health and One Welfare, and safe intra and inter-regional fish trade in Africa. The all-inclusivity of these regional multi-stakeholder platforms was key for establishing strategic partnerships and close collaboration between the public and private sectors, development partners and the general public for the mobilisation of resources (human, technical, financial, institutional, physical and natural) for the development, implementation, communication and adoption of aquatic sanitary standards, measures and best practices self-sustainably. This will enhance prospects for access to markets and for sustainable regional fish trade as anticipated by the African Continental Free Trade Area (AfCFTA) and development of sustainable aquatic food systems as envisaged by the CAADP Strategy and Action Plan 2026 - 2035[12]. For this reason, the establishment of RAAHN's semi-autonomous public-private partnership run technical institution's affiliated to REC's was tabled. In support of this, AU-IBAR and WOAH were urged to facilitate development of "Development and Business Plan Model(s) for RAAHN's, policy and legal guidelines. The need additionally encompasses (i) the establishment/strengthening of regional aquatic animal laboratory diagnostic systems and services that foster One Health and One Welfare all-inclusively and (ii) conflict resolution. Such an approach would also promote the establishment of RAAHNs and commensurate national networks in regions currently without; as well as facilitate the development and implementation of 5th STC's ARDWE'S recommendations on aquatic animal health.

[11] *https://rr-africa.woah.org/en/news/launch-of-the-regional-aquatic-animal-health-laboratory-network-for-africa-2/*

[12] *https://au.int/en/documents/20241230/caadp-strategy-and-action-plan-2026-2035*

7.0. THE WAY FORWARD

7.1. RAAHN-NA

Noting the lack of quorum, RAAHN-NA participants recommended the following for RAAHN-NA SC consideration:

i. The validation of RAAHN-NA draft inaugural action plan subject to the following:
   - All references to 'capacity building' be changed to 'capacity building and sustainability'
   - Add priority activities to promote and strengthen One Health including control of aquaculture AMR, aquatic animal vaccine development and the establishment of regional aquatic animal health diagnostic and information management systems and services
   - Add priority activities to promote and strengthen smallholders, women, youth and disadvantaged communities' capacities for the adoption of aquatic animal and other related sanitary and phytosanitary measures following One Health.

ii. With support from AU-IBAR and WOAH/SRR-North Africa re-organize RAAHN-NA 1st Steering Committee meeting online. The proposed agenda:

iii. Review and validate of the revised draft inaugural action plan.

iv. Adopt RAAHN-NA draft institutional framework and Terms of Reference (ToR) for RAAHN-NA.

v. Deliberate the recruitment of a focal point to coordinate the activities of RAAHN-NA and be stationed at WOAH-SRR NA office in Tunisia.

7.2. RAAHN-SA

i. Updated outlined in 7.1(i) and validated the revised inaugural action plan and draft institutional documents for submission to SADC regional institutional processes for approval.

ii. With support from SADC-Secretariat, commence mobilizing RAAHN-SA's stakeholders and create public awareness.

iii. Mobilize resources to organize a joint SC and Technical Committee meeting in liaison with SADC-Secretariat, AU-IBAR and WOAH to launch the action plan once approved by the SADC processes.

7.3. Continental recommendations

i. AU-IBAR with support WOAH to continue promoting and supporting the establishment of RAAHNs in all regions of Africa. This will contribute towards building the sectors' resilience and sustainability in coherence with regional, continental and global norms and best practices.

ii. Cognizant of each region's unique institutional set-ups, aquatic ecosystems, fishery and aquaculture value chains, markets, sociocultural and geopolitical environments, AU-IBAR/WOAH requested to document and publish:
   - the inaugural experiences of RAAHN-NA and RAAHN-SA as a benchmark in support of the establishment of additional RAAHNs on the continent.
   - Develop continental guidelines to support the institutional development of RAAHNs in Africa in congruence with regional and continental development agendas.
   - Incentivize the RAAHNs to facilitate their dynamism through, for example, supporting them

in recruiting dedicated coordinators until such a time when they can self-sustainably operate as semiautonomous public-private multi-stakeholder platforms affiliated to respective AU Regional Economic Communities.

iii. Share outcomes and recommendations of the meeting deliberations as regional stakeholder input towards AUC 5th STC ARDWE'S decision on the development of a continental aquatic animal health strategy and a continental aquatic animal vaccine strategy.

iv. AU-IBAR and AU-PANVAC urged to prioritize strengthening aquatic animal health diagnostic services, access to aquatic animal vaccines and risk-based aquatic biosecurity and biosafety control. Notably:
   - The institutionalization and operationalization of RAAHLN-Af
   - Finalize and share findings of the on-going continental online surveys to map the use of aquatic animal vaccines and status of aquatic animal laboratory diagnostic services in Africa with proposals on possible ways forward.
   - Under the framework of RAAHLN-Af, collaborate with RECs and AU-MS to develop and implement a continental aquatic animal disease risk analysis and respectively, regional and national pathogen lists and commensurate aquatic animal health management and aquatic biosecurity and biosafety control measures. This would support 5th STC-ARDWE's decision on establishing the epidemiological status of aquatic animal diseases in Africa.

v. To promote and strengthen the adoption of aquatic animal vaccines and other veterinary biological products as alternatives to antimicrobial use for aquatic animal health in Africa, AU-IBAR/AU-PANVAC with support from WOAH and the Pan-African Chief Veterinary Officers & WOAH Delegates:
   a. to propose the development and adoption of a global standard to WOAH's Biological Standards Commission (BSC) and/or the Aquatic Animal Health Standards Commission (AAHSC) to guide the development and use aquatic animal vaccines. The standard will anchor the development of Africa's continental aquatic animal vaccine guidelines, including for quality assurance, on international standards.
   b. Organize a continental High-Level Policy consultative event on the development and use of aquatic animal vaccines in Africa.
   c. Promote and mainstream aquaculture AMU and AMR surveillance into National Action Plans for AMR and its reporting to the established continental and global systems animal One Health information systems, notably ARIS, ANIMUSE and GLASS
   d. Assess the status of national and regional policy and regulation governing the use of aquatic animal veterinary inputs, including aquatic animal vaccines and other aquatic veterinary biological products.
   e. Develop and maintain an updated continental registry of aquatic animal diagnostic laboratory services and of aquatic animal vaccines used in Africa.

vi. Develop a continental business case to support the sustainable mobilization of resources for the afore-mentioned activities that elaborates the need for training, institutional development, laboratories, public and environmental health, climate-change resilience, food and nutritional security, access to markets, sustainable food systems and expansion of value-chains and job creation for youth.

8.0. OFFICIAL CLOSURE

Closing remarks were given by Dr. Alexander Shula Kefi on behalf of the SADC-Secretariat, and Dr. Patrick Bastiaensen on behalf of WOAH. The official closing remarks were given by Dr. Nelly Isyagi on behalf of the Director AU-IBAR, Dr. Huyam Salih.

APENDICES

Appendix 1: The Regional Aquatic Animal Health Networks for Africa: North Africa And Southern African Development Community

Nelly Isyagi[1], Patrick Bastiaensen[2], Hiver Boussini[1], Sanne Charles Bodjo[3], Delvis Fortes[1] and Rafik Nouaili[1]*

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Background

AU-IBAR in collaboration with WOAH supported the launch of the Regional Aquatic Animal Health Networks (RAAHN) for Southern and North Africa in 2023. The establishment of RAAHNs is among the key outputs of the EU supported second Fisheries Governance Project on improving regional capacities for aquatic disease outbreak detection, notification and coordinated response with a view to enhancing safe intra and inter regional fish trade in line with the regional integration trade agenda and the Protocol on Trade in Goods of the Africa Continental Free Trade Area. Additionally, the action is also in concurrence with the WOAH's Aquatic Animal Health Strategy (2021-2025).

The RAAHNs offer an opportunity for establishing an all-inclusive multi-stakeholder participatory mechanism through which the sectors stakeholders collaborate equitably, to share sanitary information. This is a proven global and continental best practice that has been shown to promote coherence and cost-effectiveness in the development and implementation of animal SPS standards and measures, and thus promoting the sustainable development of animal (aquatic animals notwithstanding) value-chains. The approach further aligns with the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa (PFRS) and the Africa Fisheries Reform Mechanism (AFRM). The action will ultimately promote aquatic animal health governance to safeguard Africa's aquatic animal resources against biological threats, enhance the productivity and resilience of its fishery and aquaculture production systems, foster aquatic biodiversity conservation, and enhance the competitive access to markets for Africa's aquatic animal resource goods and services. This is paramount for the development sustainable food systems.

The occasion to conduct the first steering committee meetings for RAAHN North Africa and SADC as a side-event at World Aquaculture 2025 offered committee members an opportunity to draw and share lessons from global and regional experiences.

Appendix 2: List of participants

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Appendix 3: Concept note and agenda of the meeting

BACK-TO-BACK FIRST STEERING COMMITTEE MEETINGS OF THE REGIONAL AQUATIC ANIMAL HEALTH NETWORKS FOR SOUTHERN AND NORTH AFRICA WITH WORLD AQUACULTURE SAFARI 2025

24th to 27th June 2025 Kampala, Uganda.

Background

AU-IBAR in collaboration with WOAH supported the launch of the Regional Aquatic Animal Health Network's (RAAHN) for Southern and North Africa in 2023. The establishment of RAAHN's is among the key outputs of the FishGov 2 Project on improving regional capacities for aquatic disease outbreak detection, notification and coordinated response with a view to enhancing safe intra and inter regional fish trade in line with the regional integration trade agenda and the Protocol on Trade in Goods of the Africa Continental Free Trade Area. Additionally, the action is also in concurrence with the WOAH's Aquatic Animal Health Strategy (2021-2025).

The RAAHN's offer an opportunity for establishing an all-inclusive multi-stakeholder participatory mechanism through which the sectors stakeholders collaborate equitably, to share sanitary information. This is a proven global and continental best practice that has been shown to promote coherence and cost-effectiveness in the development and implementation of animal SPS standards and measures, and thus promoting the sustainable development of animal (aquatic animals notwithstanding) value-chains. The approach further aligns with the PFRS and AFRM. The action will ultimately promote aquatic animal health governance to safeguard Africa's aquatic animal resources against biological threats, enhance the productivity and resilience of its fishery and aquaculture production systems, foster aquatic biodiversity conservation, and enhance the competitive access to markets for Africa's aquatic animal resource goods and services. This is paramount for sustainable food systems.

Key outputs of the workshops to launch RAAHN-SADC and RAAHN-NA were draft the Terms of Reference (TOR's), institutional frameworks and inaugural action plans to guide the process of their establishment and anchorage into the REC's as multi-stakeholder platforms. Additionally, priority activities to strengthen regional collaboration for aquatic animal health and biosecurity control were outlined. Both meetings agreed the next step would be to organise first RAAHN inaugural Steering Committee meetings to validate the outputs of the launch for uptake by the respective REC's.

It was also proposed that experience sharing and learning opportunities on global best practices in the management of aquatic animal health be provided for the steering committee to facilitate coherence. Thus, their organisation back-to-back with the World Aquaculture Safari (June 2025 Uganda) (WA5), a global platform where the global aquaculture industry shares experiences, information and knowledge on technology and best practices in the various disciplines of aquaculture, aquatic animal health and welfare notwithstanding was

recommended.

Objectives of the Meeting

The specific objectives of the one-day meeting are to:

1. Review and validate outputs of the RAAHN launch workshops for their adoption and endorsement by the respective REC's.
2. Share experiences and learn lessons on the status of aquatic animal health and biosecurity control and implementation of aquatic SPS standards and measures in globally and within Africa.
3. Elaborate a prioritized action(s) to kick-start the operationalization of the RAAHNs.
4. Participate in the World Aquaculture conference and exhibition.

Expected workshop outputs

1. Outputs of the launch workshops reviewed and validated for adoption and endorsements by the REC.
2. A concept outlining prioritized action(s) to kick-start the operationalization of the RAAHNs
3. Interact, share and learn experiences from the World Aquaculture, notably on the status of aquatic animal SPS measures globally and within Africa's aquaculture sector.
4. Workshop reports.

Modalities for conducting the workshop.

The RAAHN SADC and North Africa Steering Committee meetings will run for one day on the 24th June 2025 Thereafter (25th to 27thJune, 2025) and participants with thereafter participate and share experiences in the main Aquatic Animal Health and related sessions, including those representing Africa.

The RAAHN SADC and North Africa Steering Committee meetings will be interactive based on discussion to review and share experiences. It will comprise a plenary where the objectives of the meeting will be outlined, followed by a regional break-out session.

AU-IBAR in collaboration with WOAH and REC's will facilitate the meeting and compile background documents to be shared prior to the workshop.

Expected Participants

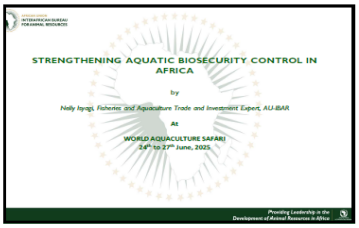
RAAHN-SADC Steering Committee members AU-IBAR, AU-PANVAC, WOAH, FAO regional offices, AfCTA and ARSO.

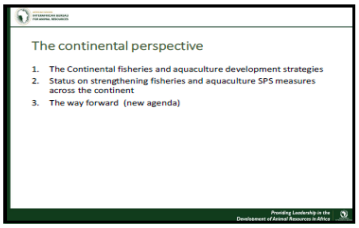
Proposed Agenda for 24th June 2024.

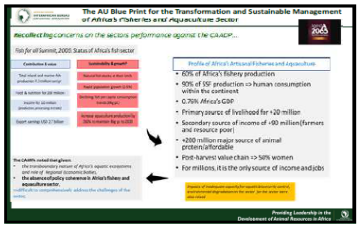
Time (Hrs)	Activity	Facilitator
	Opening	
09 – 09.30	Opening remarks by AU-IBAR, WOAH and REC	AU-IBAR
	Objective of the meetings	
	Key note presentation(s)	
09.30 – 09.40	Overview of the status and continental actions to strengthen aquatic animal biosecurity control and safe trade	AU-IBAR
09.40 – 09.50	The performance of Africa's fisheries sector in AfCTA	AfCTA Africa
09.50 - 10.00	Overview Aquatic Animal Code emphasizing articles to promote aquatic biosecurity control and safe trade and WOAH's Aquatic Animal Health Strategy 2021-2025	WOAH
10.00 – 10.30	***TEA BREAK***	
10.30 – 13.00	Group discussions, i.e. RAAHN-SADC and RAAHN -NA to respectively discuss and come up with their regional way forward for their respective RAAHNs	RECs
13.00 – 14.00	***LUNCH***	
14.00 – 15.30	Group discussions, i.e. RAAHN-SADC and RAAHN -NA to respectively discuss and come up with their regional way forward for their respective RAAHNs	RECs
15.30 – 16.00	***TEA BREAK***	
16.00 – 16.45	Plenary discussion and way forward	AU-IBAR/ WOAH
16.45 – 17.00	Closure	WOAH

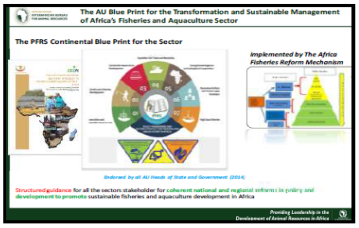
Appendix 4: Presentations delivered

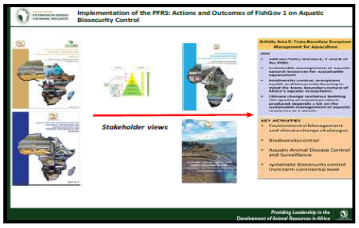
Appendix 4a – Strengthening aquatic biosecurity control in Africa

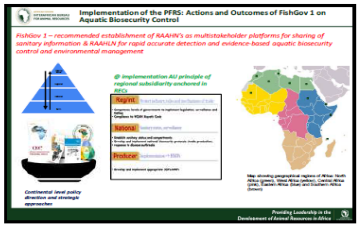


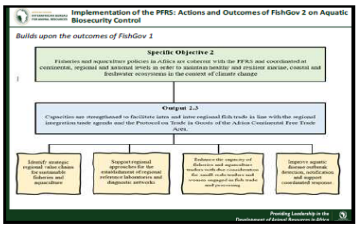


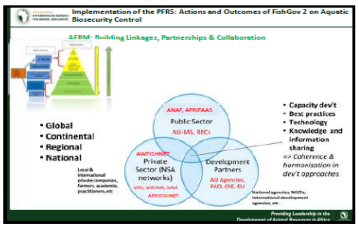


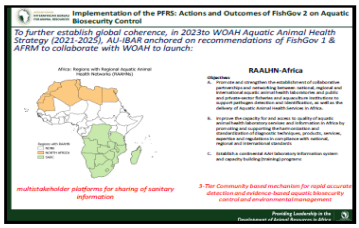


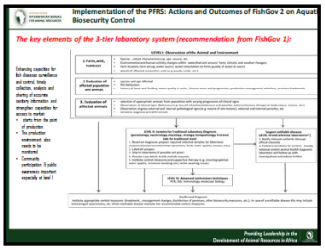


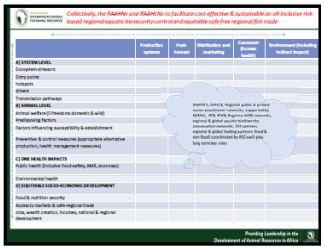


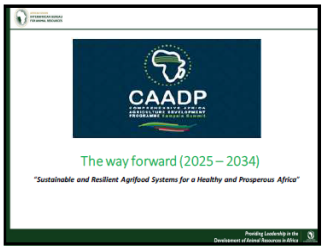


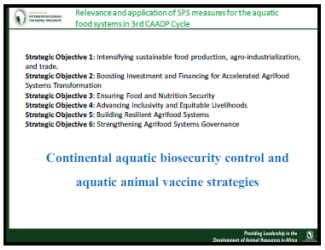


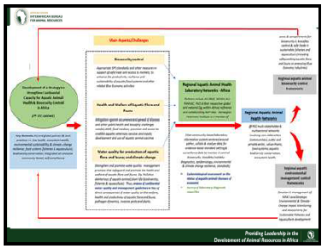



Implementation of the PFRS: Actions and Outcomes of FishGov 2 on Aquat
Biosecurity Control
The key elements of the 3-tier laboratory system (recommendation from FishGov 1):


Collectively, the RAAHNs and RAAHLNs to facilitate cost-effective & sustainable an all-inclusive risk-based regional aquatic biosecurity control and equitable safe free regional fish trade


CAADP
The way forward (2025 – 2034)
"Sustainable and Resilient Agrifood Systems for a Healthy and Prosperous Africa"


Relevance and application of SPS measures for the aquatic food systems in 3rd CAADP Cycle
Strategic Objective 1: Intensifying sustainable food production, agro-industrialization, and trade.
Strategic Objective 2: Boosting Investment and Financing for Accelerated Agrifood Systems Transformation
Strategic Objective 3: Ensuring Food and Nutrition Security
Strategic Objective 4: Advancing Inclusivity and Equitable Livelihoods
Strategic Objective 5: Building Resilient Agrifood Systems
Strategic Objective 6: Strengthening Agrifood Systems Governance
Continental aquatic biosecurity control and aquatic animal vaccine strategies




Next steps
To share your contributions for the mentioned continental strategies
Launch online survey on "Prospects for strengthening continental aquatic animal laboratory services for the sustainable development of fisheries and aquaculture in Africa"
Insights into the planned continental mapping and needs assessment for improving access to safe and effective aquatic animal vaccines in Africa

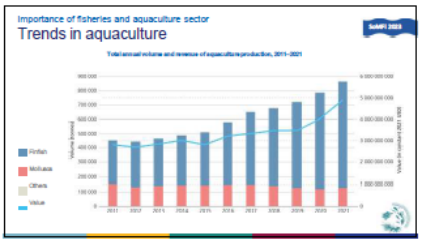

Thank you | Merci | شكراً لك | Obrigado | Gracias | Asante

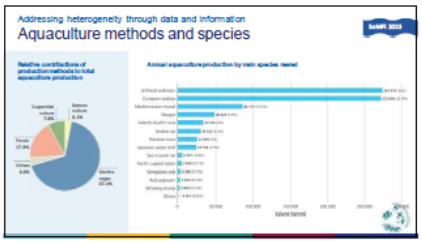
Appendix 4b – Benefits of regional collaboration in programs for Aquatic Animal Biosecurity Control



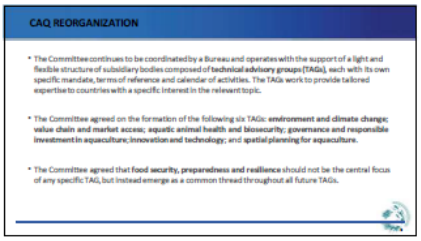


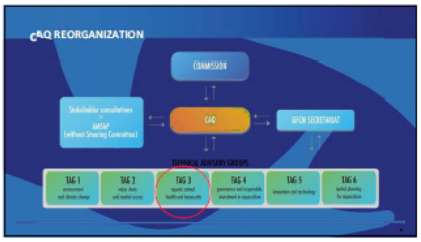


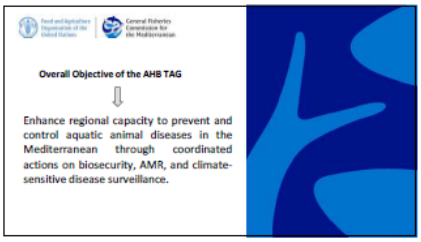






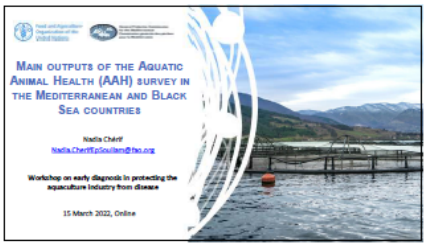


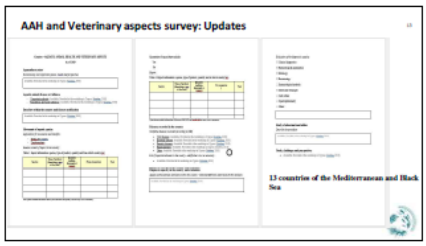


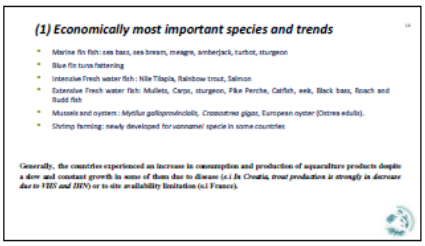


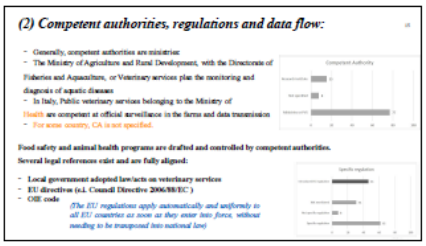

Over the past 2 years, the TAG has been actively involved in several important initiatives:
A series of brainstorming sessions bringing together leading experts from Mediterranean countries. These exchanges helped identify shared challenges.
A particular focus was also being placed on the harmonization of diagnostic techniques across the region, as this is fundamental for effective and timely identification of causative agents.

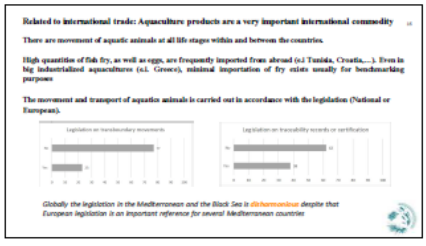

How?
Some Areas of Priority
Increase surveillance capacities for TAADs and other endemic aquatic animal diseases of regional economic significance (labs, field , legislation...) increasing specialists and operational platforms.
Improve the sharing-of on aquatic animal diseases, continuous training, new species to farm
Disease surveillance systems: data collection, reporting, data management
Biosecurity AMR mitigation and disease prevention, including good aquaculture practices (GAP) and alternatives to antimicrobials

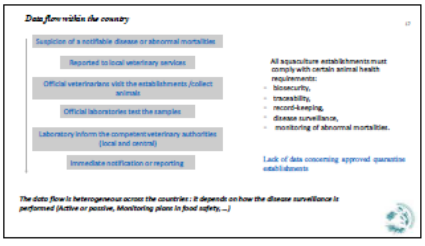

Main outputs of the Aquatic Animal Health (AAH) survey in the Mediterranean and Black Sea countries
Nadia Chérif
Nadia.CherifEgGoullam@fao.org
Workshop on early diagnosis in protecting the aquaculture industry from disease
15 March 2022, Online


AAH and Veterinary aspects survey: Updates
13 countries of the Mediterranean and Black Sea

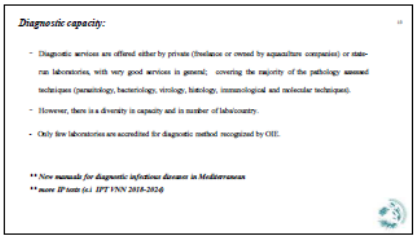

(1) Economically most important species and trends
Marine fin fish: sea bass, sea bream, meagre, amberjack, turbot, sturgeon
Blue fin tuna fattening
Intensive Fresh water fish : Nile Tilapia, Rainbow trout, Salmon
Extensive Fresh water fish: Mullets, Carps, sturgeon, Pike Perche, Catfish, eels, Black bass, Roach and Rudd fish
Mussels and oysters : Mytilus galloprovincialis, Crassostrea gigas, European oyster (Ostrea edulis).
Shrimp farming: newly developed for vannamei specie in some countries
Generally, the countries experienced an increase in consumption and production of aquaculture products despite a slow and constant growth in some of them due to disease (e.i In Croatia, trout production is strongly in decrease due to VHS and IHN) or to site availability limitation (e.i France).

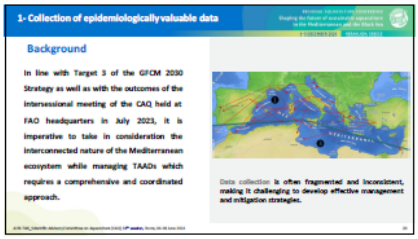

(2) Competent authorities, regulations and data flow:
Generally, competent authorities are ministries
The Ministry of Agriculture and Rural Development, with the Directorate of Fisheries and Aquaculture, or Veterinary services plan the monitoring and diagnosis of aquatic diseases
In Italy, Public veterinary services belonging to the Ministry of Health are competent at official surveillance in the farms and data transmission
For some country, CA is not specified.
Food safety and animal health programs are drafted and controlled by competent authorities.
Several legal references exist and are fully aligned:
Local government adopted law/acts on veterinary services
EU directives (e.i. Council Directive 2006/88/EC)
OIE code
(The EU regulations apply automatically and uniformly to all EU countries as soon as they enter into force, without needing to be transposed into national law)

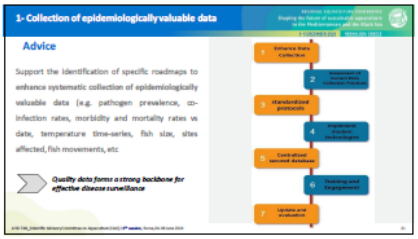

Related to international trade: Aquaculture products are a very important international commodity
There are movement of aquatic animals at all life stages within and between the countries.
High quantities of fish fry, as well as eggs, are frequently imported from abroad (e.i Tunisia, Croatia,...). Even in big industrialized aquacultures (e.i. Greece), minimal importation of fry exists usually for benchmarking purposes
The movement and transport of aquatic animals is carried out in accordance with the legislation (National or European).
Globally the legislation in the Mediterranean and the Black Sea is dishomonious despite that European legislation is an important reference for several Mediterranean countries

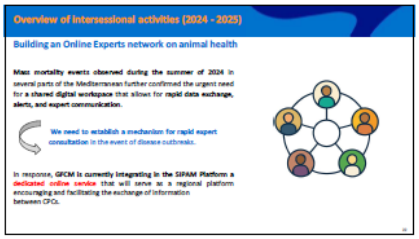

Data flow within the country
Suspicion of a notifiable disease or abnormal mortalities
Reported to local veterinary services
Official veterinarians visit the establishments /collect animals
Official laboratories test the samples
Laboratory inform the competent veterinary authorities (local and central)
Immediate notification or reporting
All aquaculture establishments must comply with certain animal health requirements:
biosecurity,
traceability,
record-keeping,
disease surveillance,
monitoring of abnormal mortalities.
Lack of data concerning approved quarantine establishments
The data flow is heterogeneous across the countries : it depends on how the disease surveillance is performed (Active or passive, Monitoring plans in food safety, ...)

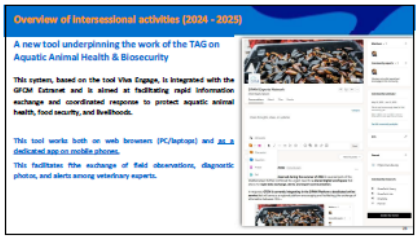

Listed and important diseases in the country:
OIE disease
Important diseases and microbial agents
Viral :
VNN, Lymphocystis
IPN (Montenegro, Turkey)
Few OIE listed diseases
No disease is listed for Mediterranean fish species
The own "national" lists of finfish diseases impacting on marine and freshwater aquaculture other than the OIE and EU notifiable based on risk assessment.

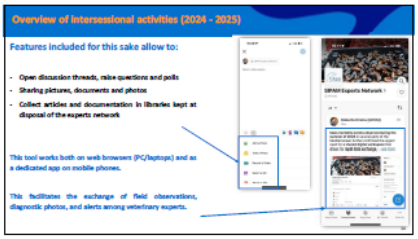

Diagnostic capacity:
- Diagnostic services are offered either by private (freelance or owned by aquaculture companies) or state-run laboratories, with very good services in general; covering the majority of the pathology assessed techniques (parasitology, bacteriology, virology, histology, immunological and molecular techniques).
- However, there is a diversity in capacity and in number of labs/country.
- Only few laboratories are accredited for diagnostic method recognized by OIE.
** New manuals for diagnostic infectious diseases in Mediterranean
** more IP items (c.i. IPT VNN 2018-2024)

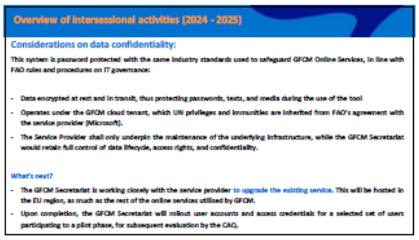

1- Collection of epidemiologically valuable data
Background
In line with Target 3 of the GFCM 2030 Strategy as well as with the outcomes of the intersessional meeting of the CAQ held at FAO headquarters in July 2023, it is imperative to take in consideration the interconnected nature of the Mediterranean ecosystem while managing TAADs which requires a comprehensive and coordinated approach.
Data collection is often fragmented and inconsistent, making it challenging to develop effective management and mitigation strategies.

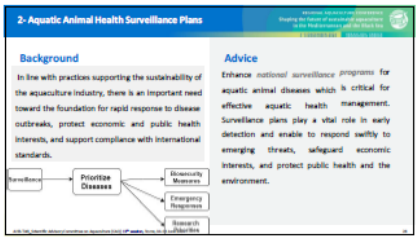

1- Collection of epidemiologically valuable data
Advice
Support the identification of specific roadmaps to enhance systematic collection of epidemiologically valuable data (e.g. pathogen prevalence, co-infection rates, morbidity and mortality rates vs date, temperature time-series, fish size, sites affected, fish movements, etc
Quality data forms a strong backbone for effective disease surveillance
1 Enhance data collection
2
3 standardized protocols
4
5 Centralized secured database
6 Training and Engagement
7 Update and evaluation

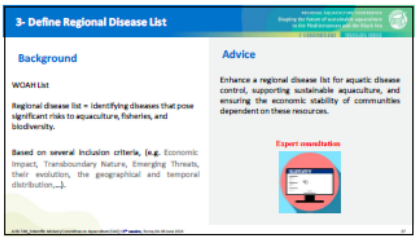

Overview of intersessional activities (2024 - 2025)
Building an Online Experts network on animal health
Mass mortality events observed during the summer of 2024 in several parts of the Mediterranean further confirmed the urgent need for a shared digital workspace that allows for rapid data exchange, alerts, and expert communication.
We need to establish a mechanism for rapid expert consultation in the event of disease outbreaks.
In response, GFCM is currently integrating in the SIPAM Platform a dedicated online service that will serve as a regional platform encouraging and facilitating the exchange of information between CPCs.

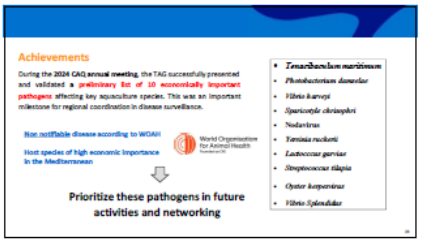

Overview of intersessional activities (2024 - 2025)
A new tool underpinning the work of the TAG on Aquatic Animal Health & Biosecurity
This system, based on the tool Vhn Engage, is integrated with the GFCM Extranet and is aimed at facilitating rapid information exchange and coordinated response to protect aquatic animal health, food security, and livelihoods.
This tool works both on web browsers (PC/laptops) and as a dedicated app on mobile phones.
This facilitates the exchange of field observations, diagnostic photos, and alerts among veterinary experts.

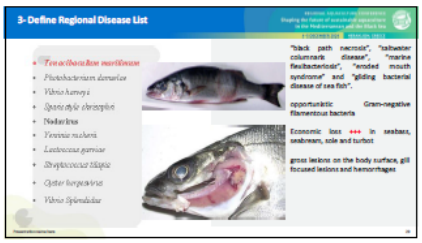

Overview of intersessional activities (2024 - 2025)
Features included for this sake allow to:
- Open discussion threads, raise questions and polls
- Sharing pictures, documents and photos
- Collect articles and documentation in libraries kept at disposal of the experts network
This tool works both on web browsers (PC/laptops) and as a dedicated app on mobile phones.
This facilitates the exchange of field observations, diagnostic photos, and alerts among veterinary experts.

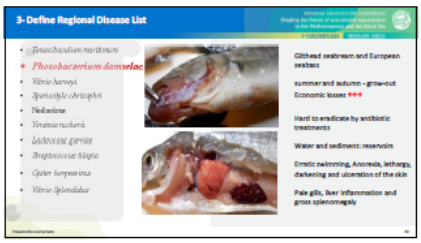

Overview of intersessional activities (2024 - 2025)
Considerations on data confidentiality:
This system is password protected with the same industry standards used to safeguard GFCM Online Services, in line with FAO rules and procedures on IT governance:
- Data encrypted at rest and in transit, thus protecting passwords, texts, and media during the use of the tool
- Operates under the GFCM cloud tenant, which UN privileges and immunities are inherited from FAO's agreement with the service provider (Microsoft).
- The Service Provider shall only underpin the maintenance of the underlying infrastructure, while the GFCM Secretariat would retain full control of data lifecycle, access rights, and confidentiality.
What's next?
- The GFCM Secretariat is working closely with the service provider to upgrade the existing service. This will be hosted in the EU region, as much as the rest of the online services utilised by GFCM.
- Upon completion, the GFCM Secretariat will rollout user accounts and access credentials for a selected set of users participating to a pilot phase, for subsequent evaluation by the CAQ.

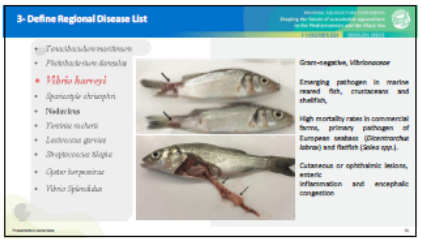

2- Aquatic Animal Health Surveillance Plans
Background
In line with practices supporting the sustainability of the aquaculture industry, there is an important need toward the foundation for rapid response to disease outbreaks, protect economic and public health interests, and support compliance with international standards.
Advice
Enhance national surveillance programs for aquatic animal diseases which is critical for effective aquatic health management. Surveillance plans play a vital role in early detection and enable to respond swiftly to emerging threats, safeguard economic interests, and protect public health and the environment.
Surveillance
Prioritize Diseases
Biosecurity Measures
Emergency Response
Research

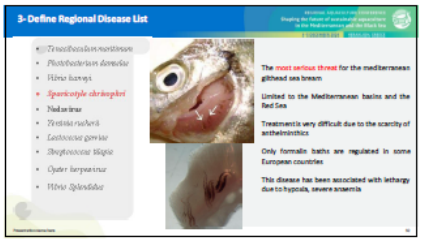

3- Define Regional Disease List
Background
WOAH List
Regional disease list = identifying diseases that pose significant risks to aquaculture, fisheries, and biodiversity.
Based on several inclusion criteria, (e.g. Economic Impact, Transboundary Nature, Emerging Threats, their evolution, the geographical and temporal distribution,...).
Advice
Enhance a regional disease list for aquatic disease control, supporting sustainable aquaculture, and ensuring the economic stability of communities dependent on these resources.
Expert consultation

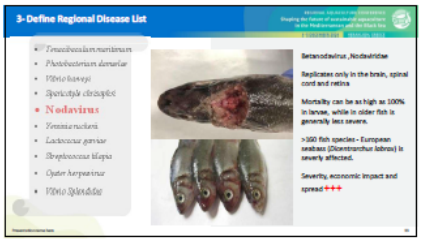

Achievements
During the 2024 CAQ annual meeting, the TAG successfully presented and validated a preliminary list of 10 economically important pathogens affecting key aquaculture species. This was an important milestone for regional coordination in disease surveillance.
Not notifiable disease according to WOAH
Host species of high economic importance in the Mediterranean
World Organisation for Animal Health
Tenacibaculum maritimum
Photobacterium damselae
Vibrio harveyi
Sparicotyle chrysophri
Nodavirus
Yersinia ruckeri
Lactococcus garvieae
Streptococcus iliopis
Oyster herpesvirus
Vibrio Splendidus
Prioritize these pathogens in future activities and networking

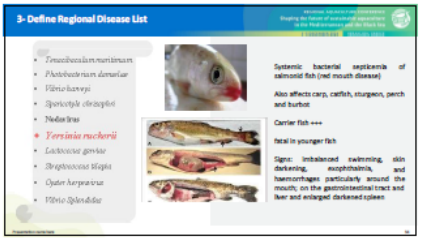

3- Define Regional Disease List
Tenacibaculum maritimum
Photobacterium damselae
Vibrio harveyi
Sparicotyle chrysophri
Nodavirus
Yersinia ruckeri
Lactococcus garvieae
Streptococcus iliopis
Oyster herpesvirus
Vibrio Splendidus
"black path necrosis", "saltwater columnaris disease", "marine flexibacteriosis", "eroded mouth syndrome" and "gliding bacterial disease of sea fish".
opportunistic Gram-negative filamentous bacteria
Economic loss +++ in seabass, seabream, sole and turbot
gross lesions on the body surface, gill focused lesions and hemorrhages


3- Define Regional Disease List
Tenacibaculum maritimum
Photobacterium damselae
Vibrio harveyi
Sparicotyle chrysophri
Nodavirus
Yersinia ruckeri
Lactococcus garvieae
Streptococcus iliopis
Oyster herpesvirus
Vibrio Splendidus
Gilthead seabream and European seabass
summer and autumn - grow-out
Economic losses +++
Hard to eradicate by antibiotic treatments
Water and sediment: reservoirs
Erratic swimming, Anorexia, lethargy, darkening and ulceration of the skin
Pale gills, liver inflammation and gross splenomegaly


3- Define Regional Disease List
Tenacibaculum maritimum
Photobacterium damselae
Vibrio harveyi
Sparicotyle chrysophri
Nodavirus
Yersinia ruckeri
Lactococcus garvieae
Streptococcus iliopis
Oyster herpesvirus
Vibrio Splendidus
Gram-negative, Vibrionaceae
Emerging pathogen in marine reared fish, crustaceans and shellfish,
High mortality rates in commercial farms, primary pathogen of European seabass (Dicentrarchus labrax) and flatfish (Solea spp.).
Cutaneous or ophthalmic lesions, enteric inflammation and encephalic congestion

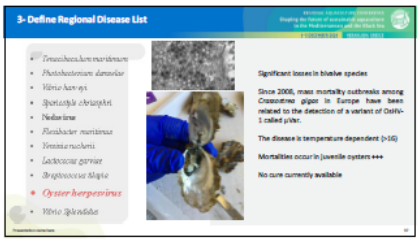

3- Define Regional Disease List
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Photobacterium damselae
Vibrio harveyi
Sparicotyle chrysophri
Nodavirus
Yersinia ruckeri
Lactococcus garvieae
Streptococcus iliopis
Oyster herpesvirus
Vibrio Splendidus
The most serious threat for the mediterranean gilthead sea bream
Limited to the Mediterranean basins and the Red Sea
Treatment is very difficult due to the scarcity of anthelmintics
Only formalin baths are regulated in some European countries
This disease has been associated with lethargy due to hypoxia, severe anaemia


3- Define Regional Disease List
Tenacibaculum maritimum
Photobacterium damselae
Vibrio harveyi
Sparicotyle chrysophri
Nodavirus
Yersinia ruckeri
Lactococcus garvieae
Streptococcus iliopis
Oyster herpesvirus
Vibrio Splendidus
Betanodavirus , Nodaviridae
Replicates only in the brain, spinal cord and retina
Mortality can be as high as 100% in larvae, while in older fish is generally less severe.
>160 fish species - European seabass (Dicentrarchus labrax) is severly affected.
Severity, economic impact and spread +++

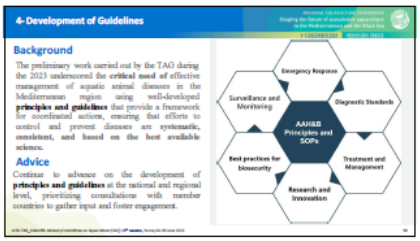

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Sparicotyle chrysophri
Nodavirus
Yersinia ruckeri
Lactococcus garvieae
Streptococcus iliopis
Oyster herpesvirus
Vibrio Splendidus
Systemic bacterial septicemia of salmonid fish (red mouth disease)
Also affects carp, catfish, sturgeon, perch and turbot
Carrier fish +++
fatal in younger fish
Signs: imbalanced swimming, skin darkening, exophthalmia, and haemorrhages particularly around the mouth; on the gastrointestinal tract and liver and enlarged darkened spleen

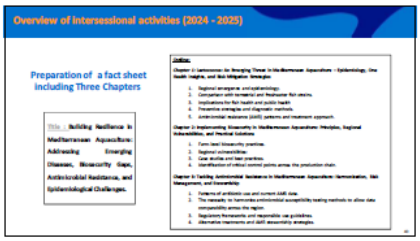

3- Define Regional Disease List
Tenacibaculum maritimum
Photobacterium damselae
Vibrio harveyi
Sparicotyle chrysophri
Nodavirus
Flavobacter marinivivus
Yersinia ruckeri
Lactococcus garvieae
Streptococcus iliopis
Oyster herpesvirus
Vibrio Splendidus
An emergent disease
Economic loss +++
in marine and freshwater aquaculture
Defined as a hyperacute and haemorrhagic septicemia
Antibiotic resistances +++
High mortality and economic loses +++

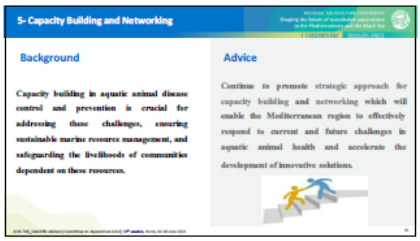

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Vibrio harveyi
Sparicotyle chrysophri
Nodavirus
Yersinia ruckeri
Lactococcus garvieae
Streptococcus iliopis
Oyster herpesvirus
Vibrio Splendidus
Present during entire tilapia growth cycle
Heavy economic losses +++
Swirling behaviour, lethargy, bent bodies and disorientated fish, eye lesions and opacification. The base of the tail is a common site for large abscesses
Big fish are more susceptible to the disease (>100g)
No effective commercial vaccines

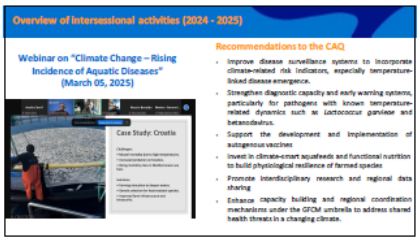

3- Define Regional Disease List
Tenacibaculum maritimum
Photobacterium damselae
Vibrio harveyi
Spiroplyte chrisopiri
Nodavirus
Flavobacter maritimus
Yersinia ruckeri
Lactococcus garvieae
Streptococcus Iniae
Oyster herpesvirus
Vibrio Splendidus
Significant losses in bivalve species
Since 2008, mass mortality outbreaks among Crassostrea gigas in Europe have been related to the detection of a variant of OsHV-1 called µVar.
The disease is temperature dependent (>16)
Mortalities occur in juvenile oysters +++
No cure currently available


3- Define Regional Disease List
Tenacibaculum maritimum
Photobacterium damselae
Vibrio harveyi
Spiroplyte chrisopiri
Nodavirus
Flavobacter maritimus
Yersinia ruckeri
Lactococcus garvieae
Streptococcus Iniae
Oyster herpesvirus
Vibrio Splendidus
Widely distributed in marine ecosystems
Associated with mortalities of molluscs
High genetic diversity
Virulent +++
Leads to high mortality rates mainly in nursery cultures of juvenile bivalves

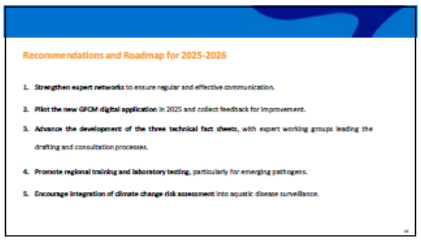

4- Development of Guidelines
Background
The preliminary work carried out by the TAG during the 2023 underscored the critical need of effective management of aquatic animal diseases in the Mediterranean region using well-developed principles and guidelines that provide a framework for coordinated actions, ensuring that efforts to control and prevent diseases are systematic, consistent, and based on the best available science.
Advice
Continue to advance on the development of principles and guidelines at the national and regional level, prioritizing consultations with member countries to gather input and foster engagement.
Emergency Response
Diagnostic Standards
Treatment and Management
Research and Innovation
Best practices for biosecurity
Surveillance and Monitoring
AAHAB Principles and SOPs


Overview of Intersessional activities (2024 - 2025)
Preparation of a fact sheet including Three Chapters


5- Capacity Building and Networking
Background
Capacity building in aquatic animal disease control and prevention is crucial for addressing these challenges, ensuring sustainable marine resource management, and safeguarding the livelihoods of communities dependent on these resources.
Advice
Continue to promote strategic approach for capacity building and networking which will enable the Mediterranean region to effectively respond to current and future challenges in aquatic animal health and accelerate the development of innovative solutions.


Overview of Intersessional activities (2024 - 2025)
Webinar on "Climate Change – Rising Incidence of Aquatic Diseases" (March 05, 2025)
Case Study: Croatia
Recommendations to the CAQ
Improve disease surveillance systems to incorporate climate-related risk indicators, especially temperature-linked disease emergence.
Strengthen diagnostic capacity and early warning systems, particularly for pathogens with known temperature-related dynamics such as Lactococcus garvieae and betanodavirus.
Support the development and implementation of autogenous vaccines.
Invest in climate-smart aquafeeds and functional nutrition to build physiological resilience of farmed species.
Promote interdisciplinary research and regional data sharing.
Enhance capacity building and regional coordination mechanisms under the GFCM umbrella to address shared health threats in a changing climate.


Overview of Intersessional activities (2024 - 2025)
Recommendations to the CAQ
Support the Harmonization of Regional Biosecurity Standards:
Promote the development and adoption of minimum regional biosecurity protocols and disease surveillance standards to improve preparedness, response, and cross-border coordination.
Integrate Climate Data into Health Surveillance Systems:
Strengthen the link between environmental monitoring and disease surveillance by integrating climate indicators (e.g. temperature, salinity) into early warning systems for aquaculture diseases.
Promote Responsible Use of Antimicrobials:
Facilitate regional cooperation to reduce reliance on antibiotics through improved farm management, vaccination strategies, and enhanced diagnostic capacities to guide targeted treatment.
Workshop on "Enhancing Aquatic Animal Health and Biosecurity: Surveillance, Control, and Best Practices for Key Pathogens in Aquaculture" (Saudi Arabia. May 05-06, 2025)


Recommendations and Roadmap for 2025-2026
1. Strengthen expert networks to ensure regular and effective communication.
2. Pilot the new GFCM digital application in 2025 and collect feedback for improvement.
3. Advance the development of the three technical fact sheets, with expert working groups leading the drafting and consultation processes.
4. Promote regional training and laboratory testing, particularly for emerging pathogens.
5. Encourage integration of climate change risk assessment into aquatic disease surveillance.


Thank you for your Attention
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Aquatic Animal Health & Biosecurity
TAG LEADER
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Appendix 4c - Experiences of Africa Regional AAH Reference Laboratories: UNZA as FAO/SADC regional collaborating laboratory in aquatic animal disease surveillance, AU Center of Excellence for Infectious Animal Diseases

Experiences of Africa Regional AAH Reference Laboratories: UNZA as FAO/SADC regional collaborating laboratory in aquatic animal disease surveillance, AU CoE for Infectious Animal Diseases

Mwansa Songe
School of Vet. Medicine
University of Zambia

FIRST STEERING COMMITTEE MEETINGS OF THE REGIONAL AQUATIC ANIMAL HEALTH NETWORKS FOR SOUTHERN AND NORTH AFRICA From 24th to 27th June, 2025. Kampala, Uganda

Introduction

- The University of Zambia, School of Veterinary Medicine has three core functions, namely:
  - Teaching
  - Research
  - Diagnostics

FAO/SADC regional collaborating laboratory in aquatic animal disease surveillance with demonstrated experience in the diagnosis of Epizootic Ulcerative Syndrome (EUS) and other aquatic diseases

- Receives support from:
  - Government of the Republic of Zambia
  - Cooperating partners

FACILITIES

- The institution conducts diagnostics in:
  - Microbiology (Bacteriology, Virology and Mycology)
  - Parasitology
  - Pathology



Core-Facility and Laboratories

- Four fully equipped Biosafety Level 2 Laboratories
- One BSL 3 Facility
- Experimental animal facilities (Fish and Terrestrial animals)

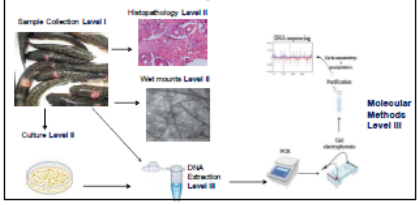








Laboratory Facilities



Setting Regional Standards

- The UNZA School of Veterinary Medicine provides pathogen standards
  - EUS isolate from the UNZA Vet serves as a positive control for other researchers in the region who may need the material
- This promotes the setting of standards
  - It serves as a benchmark to validate the effectiveness of tests, procedures, and interventions designed to detect, identify, and control the spread of *Aphanomyces invadans*

Training and Capacity Building

- The school offers academic training programs in aquatic animal health (MSc and PhD) to develop a cadre of professionals skilled in aquatic animal health management and biosecurity within the region
- Collaborates with the Norwegian University of Life Sciences and other Universities in Africa, on NORAD-funded projects: "Training and Research in Aquatic and Environmental Health in Eastern and Southern Africa" (TRAHESA) and "Enhanced Capacity for Aquatic Resources in East and South Africa (ECAHESA)"
- Increased number of people specializing in AAH in the region
- Short-term trainings have been conducted for professionals from DRC, Malawi and Zimbabwe, in aquatic animal health management, building capacity for effective disease prevention and control within the region
- In July 2025, Practical Training on Diagnostic Techniques for Key Fish Diseases for Mozambique

Aquatic Animal disease surveillance & reporting

- The UNZA Veterinary laboratory plays a crucial role in the diagnosis and reporting of Epizootic Ulcerative Syndrome (EUS) in the region by acting as a Regional Diagnostic Centre
- Strengthens AA disease outbreak investigation capacities and makes timely diagnoses
- Most recent example is Malawi
  - Samples from affected areas in Malawi were sent to UNZA VET laboratory for analysis, where histopathology and PCR tests confirmed the presence of EUS
    - Timely notification of the WOAH and the implementation of control measures in Malawi to prevent further spread
    - The diagnosis facilitated the implementation of control measures in Malawi, such as temporary bans on fish movement and fishing in affected areas, to prevent the disease from spreading further

R&D for aquatic animal vaccines

- Research on development of a monovalent autogenous vaccine against infection with *Streptococcus agalactiae* was conducted
  - That was with support from NORAD on the TRAHESA Project
- Immunogenecity studies were carried out in the lab and the vaccine showed efficacy against *Streptococcus* infection



R&D for aquatic animal vaccines

- Vaccinated fish was protected as evidenced by:
  - No clinical signs noted
  - No bacterial re-isolated from tissues of laboratory infected fish
  - No bacteria in tissues of vaccinated fish

R&D for aquatic animal vaccines

- Currently working to develop a multivalent autogenous vaccine in collaboration with colleagues from Mississippi State University, funded by the USAID
- Aimed at reducing mortalities on small-scale cage fish farms on lake Kariba



R&D for aquatic animal vaccines

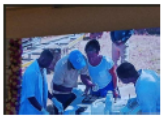
- So far, a bivalent vaccine against *Lactococcus garvieae* and *Aeromonas hydrophilia* has been evaluated
- Initially, the vaccine underwent laboratory trials to establish its efficacy
- Subsequently, a cage was secured on the lake for further trials
- 35 farmers on two cage platforms consented to use the vaccine





R&D for aquatic animal vaccines

- Administration via intraperitoneal route proved tedious, stressful for the fish and not economically feasible
- Currently working on developing an oral vaccine which will be administered via feed



R&D for aquatic animal vaccines

The Fish Innovation Lab activity studying fish vaccine development has continued to work and interact with the farmers to educate them on how they can minimize the impact of diseases on their fish farms and avoid imprudent



THANK YOU FOR YOUR ATTENTION!


Central Laboratory for Aquaculture Research
CLAR
EXTENSION
CLAR disseminate research findings to the aquaculture community. This can be done through publications, workshops, seminars, and online resources.
CLAR can serve as a hub for showcasing and demonstrating new aquaculture technologies and practices
10


Fish Resource in Egypt
Fisheries
Total
PRODUCTION
Modern Hatcheries: Our hatcheries maintain optimal conditions for incubation, hatching, and early-stage rearing, fry production.
Size Grading and Packaging: Offering well-graded and appropriately packaged fry and fingerlings enables farmers to choose the best stocks for their production systems.
11


Egypt is the leading aquaculture producer in Africa.
The country's aquaculture sector generates 1.6 million tons of fish annually.
INTERNATIONAL COOPERATION
12


INTERAFRICAN BUREAU FOR ANIMAL RESOURCES
CLAR nominated as one of the African Union Centers of Excellence in Fisheries and Aquaculture (AU-COEs)


World Organisation for Animal Health
Aquatic Middle East Network
(AQMENET)
CLAR nominated as a new WOAH Collaborating Centre for Aquatic Animal Health Management in the Middle East .
14


WorldFish
Training courses, Seminars and Workshops
The 1st International Conference and Exhibition Sustainable Development of Aquaculture
Research project:
1 Aquaculture for Low Income Consumers (AquaLINC)
2 Advancing Technologies and capacity Building for Aquaculture in Arid Lands (ACLISAT), funded by IFAD


Arab Organization for Agricultural Development (AOAD)
16


CAPACITY BUILDING AND TRAINING FOR REGIONAL AND AFRICAN PARTNERS


CLAR regularly receive visits from various countries in the aquaculture and fish health-related fields, seeking insights and knowledge exchange.
18

FISH HEALTH MANAGEMENT DEPARTMENT
MEMBERS OF FHM DEPARTMENT





❑ Role and Responsibilities

- Oversee the health of fish populations, encompassing both farmed species in Aquaculture and those in Natural water bodies.
- conducting regular health assessments, identifying potential threats, and taking preventive measures
- Preparedness and epidemiological surveillance to emergent aquatic diseases ;and applying of value-chain biosecurity measurements



❑ Capacity Building and Training

- We provide specialized training to veterinarians and aquatic animal health professionals to enhance their skills and knowledge in fish health management and Biosecurity.
- Through workshops, seminars, and hands-on training, participants gain valuable insights into disease prevention, diagnostic techniques, and effective treatment methods.



❑ Diagnosis of Fish Diseases

- The department is equipped with advanced laboratory facilities and expertise to diagnose fish diseases accurately.
- Studying Zoonosis and AMR as well as climate change impact in aquaculture, with considering to "One Health" concept through human, aquatic animal, environment interface.



LABORATORIES FOR DIAGNOSIS OF AQUATIC DISEASES

Bacteriology Lab.

Bacterial isolation, culturing and identification

Available equipment

1. Microscopes
2. Incubators
3. Autoclave
4. Petri Dishes & Agar Plates
5. Bunsen Burner
6. Inoculation Loop or Needle
7. Gram Staining Kit
8. Microbiological Pipettes
9. Safety Cabinets or Hoods
10. Refrigerator
11. Digital Sensitive balance



Virology Lab.

VIRAL ISOLATION AND IDENTIFICATION

Available equipment

1. Microscopes
2. PCR Machine
3. Nano drop Spectrophotometer
4. Vortex
5. Viral RNA/DNA Extraction Kits
6. Homogenizer
7. Safety Cabinets or Hoods
8. Centrifuges
9. Gel Electrophoresis Equipment
10. Deep Freezer



Histopathology Lab.

Available equipment:

1. **Microtome**
2. **Camera Microscopes**
3. **Staining Equipment**
4. **Embedding Station**
5. **Cryostat:** For cutting frozen tissue sections.
6. **Tissue Processing Equipment**
7. **Slide Stainers**
8. **Histology Brushes and Knives:** For handling and cutting tissue samples.
9. **Safety Cabinets or Hoods.**
10. **Digital Imaging System:** For capturing and analyzing histopathological images.



Sampling Lab

Available equipment:

1. **Water Quality Testing:** For assessing water parameters like pH, temperature, DO, etc.
2. **Atomic absorption spectroscopy**
3. **Nets and Traps:**
4. **Sampling Containers:**
5. **Sediment Sampling Equipment:** For analyzing substrate quality.
6. **Thermometers:**
7. **Water Sampling Bottles**
8. **Field Microscopes:**
9. **Safety Equipment**



- To enhance our fish health diagnosis capacity and broaden our possibilities, we are acquiring **New Lab Devices through AU-IBAR funding.**
- This step will keep us at the **forefront of advanced diagnostic technologies, ensuring accurate and efficient disease detection and management.**



❑ Participation in Projects

- The **FHM** department actively participates in **various research projects** aimed at addressing fish health challenges.
- we collaborate with researchers and scientists in the investigation of the **emergent new diseases** for example:
  - ❑ Project funded from **FAO (Viral and microbial diagnosis of tilapia summer mass mortality).**
    May 2017 – December 2018.
  - ❑ Project funded from **STDF (Bring next generation breeding from tilapia into aquaculture resist summer mass mortality.**
    June 2019 and continue



❑ Mentorship and Academic Support

- The department play a **significant role in mentoring postgraduate students** pursuing master's and PhD degrees in fish health-related fields.
- By providing **academic support and research opportunities,** they nurture the next generation of fish health professionals.



❑ Scientific consultations to National organizations and Agencies

- **CLAR Director Dr. Refaat El-Gamal** is Member of the Egyptian Board of the Lakes Protection and Fish Resources Agency.
- The department has conducted **assessments of fish health status in Egyptian lakes,** including Manzala and lake Naser.
- We collaborate with **GOVS** in establish **Zoning for Aquaculture** and we have conducted **Aquatic Disease List** all over the country



❑ Knowledge Sharing and Outreach

- The department is committed to **sharing knowledge beyond academic circles.**
- We engage with the wider community through **social media, TV shows, articles in magazines, and other platforms** to disseminate information on fish health management best practices.



Articles Published in Peer-reviewed Journals

EXAMPLES OF SUCH ACTIVITIES IN VRAL DISEASES

Title	Authors
Viral Investigation In the Mass Mortality Phenomenon Occurred During Summer Season In Cultured Tilapia Fish	Ammar A.A., Sakr S.F., Abdel-Wahab A.M., Ahmed A.A., Eladawy M.M. and T.M. Nagaeb (2021)
Development of A continuous Cell Line from Tilapia Liver	Ayman A. Ammar and Ahmed M. Abdel Wahab (2019).
Viral studies on diseased Penaeid collected from Suez governorate.	Ahmed M. Abdel-Wahab (2018).
In vitro studies on antiviral effects of Galaxaura elongata marine algae on white spot syndrome virus	Ahmed M. Abdel-Wahab (2014)
Establishment primary tissue culture from Nile tilapia and used for tilapian viruses isolation.	A. M. Abdel-Wahab; A. M. Ali and M.M. El – Adway (2014).
Detection of white spot syndrome in cultured penaeid shrimp in Egypt: Histopathological observation and PCR	Mohamed S. El-Bahidy, Refaat M. El-Gamal, Amina A. Dessouki, Randa Y. Thabet, Shahira A. Abdelwahab, Mohamed M. Abd-Elaziz (2016)

Title	Authors
Evaluation of different RT-PCR assays for diagnosis of carrier infection of nodavirus(MrNV) and extra small virus (XSV) in *Macrobrachium rosenbergii* in Egypt	Elsaa I. A. M, Diab A. S., Ahmed A. A. and Mona Zaki. (2014)
Diagnosis of white tail disease in *Macrobrachium rosenbergii*.	Elsaa, I. A. M, A. S. Diab, S. F.M. Saker and A. A. Ahmed. (2013).
Effect of green tea, Camellia sinensis, and licorice extracts, Glycyrrhiza glabra, on H5N1 avian flu virus neuraminidase in vitro.	Sameh A. Meriwaly, Dreidar M. F., (2013)
Diagnosis of white spot syndrome virus (WSSV) among shrimp.	Elsaa, I. A. M, A. F. R. Badreaa, A. S. Diab, S. F.M. Saker and A. A. Ahmed. (2009).
Improving Isolation of White Spot Syndrome Virus on Mammalian Cell Lines.	Sahsaa A.A, Diab A.S, Abd El-Samie A.H and Abdel-Wahab A.M (2009).
Isolation and Identification of White Spot Syndrome Virus.	Sahsaa A.A, Diab A.S, Abd El-Samie A.H and Abdel-Wahab A.M (2008).

For more information about Publications of the department members, see Annex 2





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