



# Résistance aux antimicrobiens (RAM) en aquaculture

11 - 12 juillet 2024 Tunis, Tunisie





# Use of alternatives to antimicrobials for health management of aquatic animals

## Africa's perspective

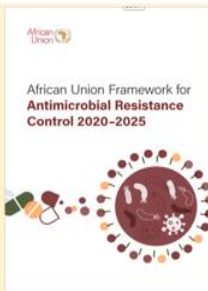
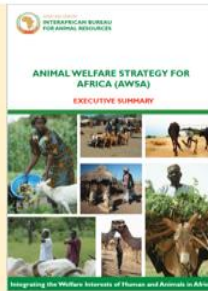
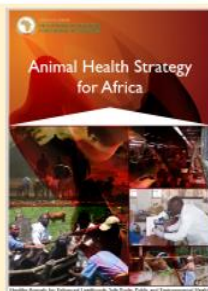
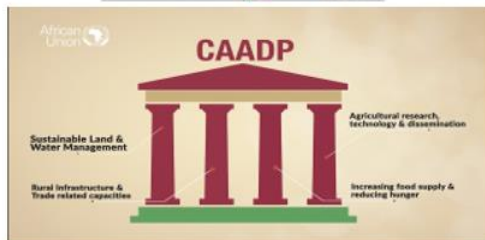
*by*

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### Key factors

- smallholders, women, youth and marginalized communities
- Equitable benefit sharing
- Transboundary water bodies with multiple users
- Open/semi-open aquatic animal production systems (fisheries & most aquaculture grow-out)
- Native species for fisheries & aquaculture
- Regional integration
- Market access
- Biodiversity conservation

### Hence:

- ⇒ Simple, easily adaptable, affordable
- ⇒ Efficient and cost-effective
- ⇒ Rely/leverage locally available resources and opportunities
- ⇒ Establish a level ground to foster equity (*notably access to knowledge & skills, tools, production resources, markets*)
- ⇒ Environmentally sustainable
- ⇒ Climate change
- ⇒ Collective responsibility, transparency

## Alternatives to antimicrobials for health management of aquatic animals in Africa

A] Prevent AA from falling sick and the spread of diseases

B] Prevent AA from falling sick and the spread of diseases

C] Prevent AA from falling sick and the spread of diseases



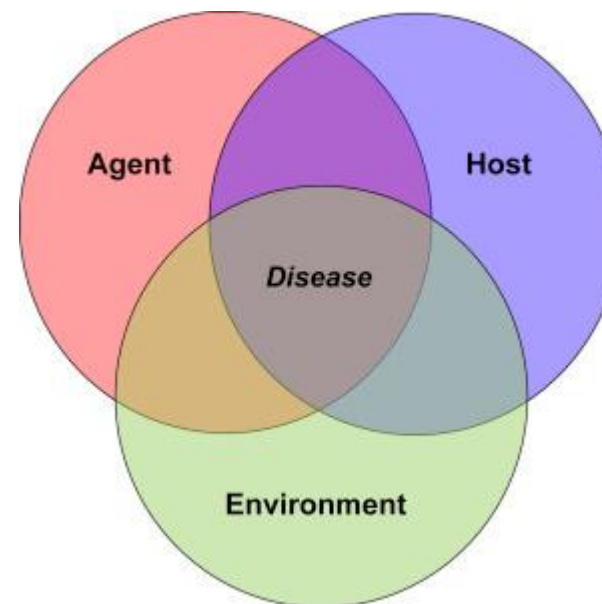
## Considering the characteristics of Africa's fisheries and aquaculture sector

*comprehensive, holistic, ecosystems, achieve economies of scale in all actions to reduce unit cost and ensure measures and tools are beneficial & accessible for all stakeholders*



# To prevent fish from falling sick

- A. Prevent stress
- B. Reduce exposure to pathogens
- C. Enhance immunity
- D. In event of disease – treatment and control



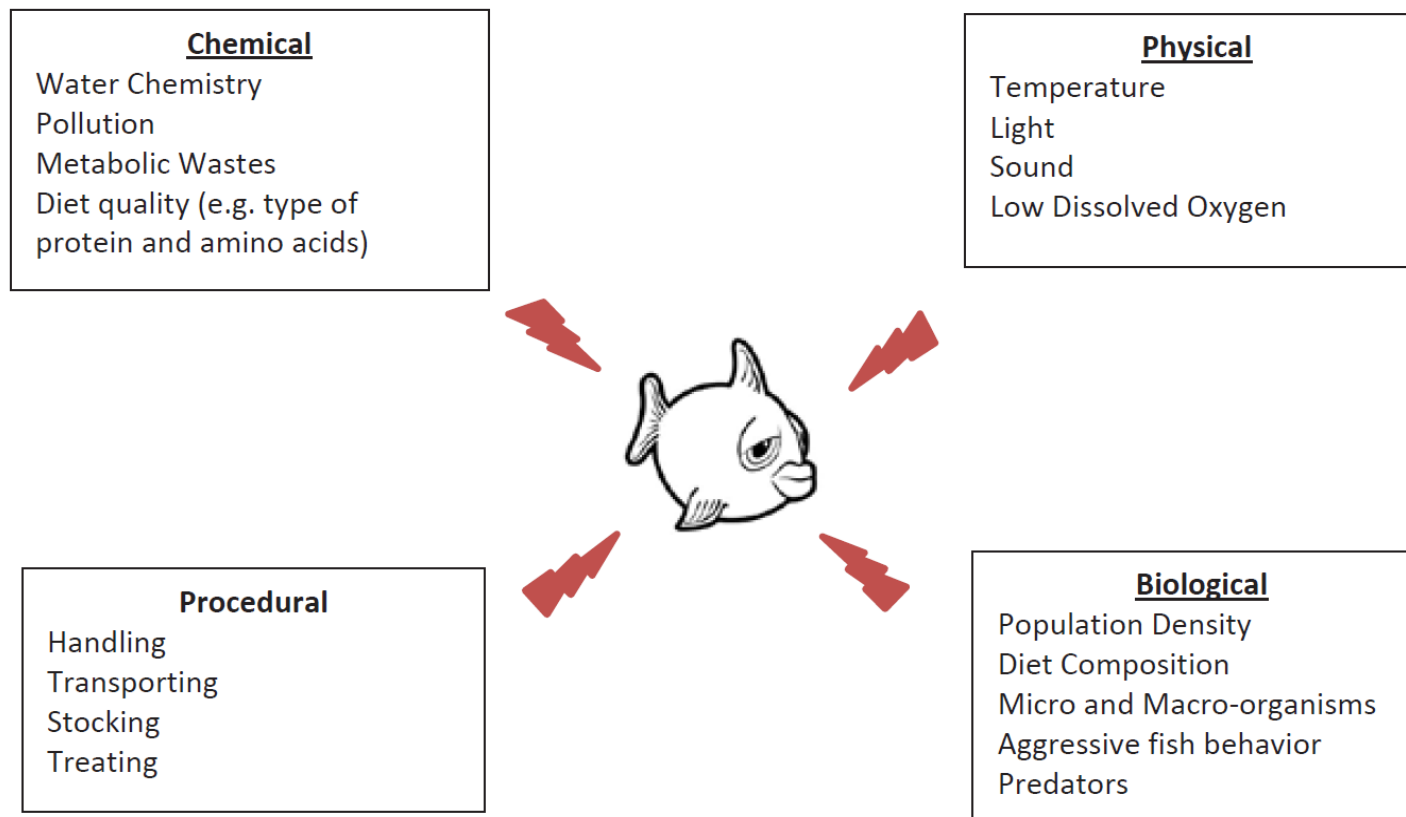
*The disease triad*

# A] To Stress: Animal Welfare





## How can we effectively ensure stress is avoided/minimized & aquatic animal welfare promoted in all production units/systems across the continent?



*Common Causes of Fish Stress.* Adapted from Aquaculture Training Manual for Extension Workers, MAAIF, Uganda. 2020

## Continental and regional policy, regulation, standards and guidelines to promote the adoption of One Welfare from grass-roots

### a. Evidence based tools for evaluating status with accompanying solutions to address animal welfare challenges objectively, accurately and timely\*

*e.g. at farm level objectively verifiable and simple field indicators for the different systems based on a sound understanding of fish behavior in local environments, animals responses to tailored different the production system, environments and markets, e.g. ornamental industry has additional factors to consider*

### b. Improve availability and access to safe and good quality feed ingredients, feeds and feedstuffs locally

*Regional and national policy and standards that promote and facilitate quality assurance for manufactured, on-farm and live feeds, new opportunities for feed ingredients e.g. algal and zooplankton like artemia, incentives for producer/manufacturers, tax regimes, accurate labelling, etc.*

### c. Mitigate against degradation and/or destruction of aquatic environments

## Continental and regional policy, regulation, standards and guidelines to promote the adoption of One Welfare from grass-roots

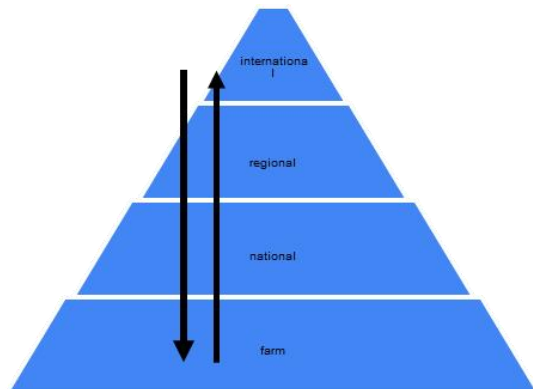
### c. Mitigate against degradation and/or destruction of aquatic environments\*

- **Generate and share data, information and knowledge to develop appropriate tools including for risk analysis and early warning particularly for those farming in open water-bodies**
  - Harness indigenous knowledge, existing climatic, aquatic environmental & hydrological databases and correlate with fish behavior and habitat requirements
  - Inform zonation for aquaculture, marine protected areas, transport routes and tourism
  - Best practices and standard operating procedures
- **Review and/or develop a continental water quality strategy**
  - Expand the scope of current water resource management and environmental monitoring to safeguard aquatic living resources. *For example E.coli loads based on human health only. What about impact on aquatic health? Minimum residual levels for antimicrobials/AMR from human health and terrestrial farm establishments, impacts of effluent on DO levels.*
- **Inform and protect zonation for fishery resources, aquaculture, marine protected areas, marine transport, tourism => to limit entry, transmission, and hotspots**
- **Create awareness and public education**

## B] Reduce Exposure to pathogens

- *Harmonised continental and regional policy, regulation, standards and guidelines to strengthen aquatic biosecurity control*  
*Yes, WOAH & FAO standards and guidelines exist =>? How do we make them useful, actually used beneficially for everyone in the sector right from community level?*  
↓
- *Strengthen capacity to adopt, adapt to our constraints and needs, cost-effectively implement and monitor aquatic biosecurity control coherently across the different value-chains, aquatic ecosystems, geo-political characteristics*
- *Standardised tools => role of RAAHNS, RAHL and RAHE critical*
- *Supporting policy, regulation, SoPs (for all levels)*
- *Public awareness*

## B) Reduce Exposure to pathogens



*Continental level policy direction and strategic approaches*

*@ implementation AU principle of regional subsidiarity anchored in RECs*

<b>Reg/int</b>	Protect industry, rules and mechanisms of trade
<ul style="list-style-type: none"> <li>• Competence levels of governments to implement legislation, surveillance and testing</li> <li>• Compliance to WOAH Aquatic Code</li> </ul>	
<b>National</b>	Sanitary status, surveillance
<ul style="list-style-type: none"> <li>• Establish sanitary status and compartments</li> <li>• Develop and implement national biosecurity protocols (trade, production).</li> <li>• response to disease outbreaks</li> </ul>	
<b>Producer</b>	Implementation => BMPs
<ul style="list-style-type: none"> <li>• Develop and implement appropriate SOPs/BMPs</li> </ul>	



Map showing geographical regions of Africa: North Africa (green), West Africa (yellow), Central Africa (pink), Eastern Africa (blue) and Southern Africa (brown)

## C] Enhance Immunity

- Reduce stress
- optimum nutrition
- Optimum growing environment

- **Immunostimulants**

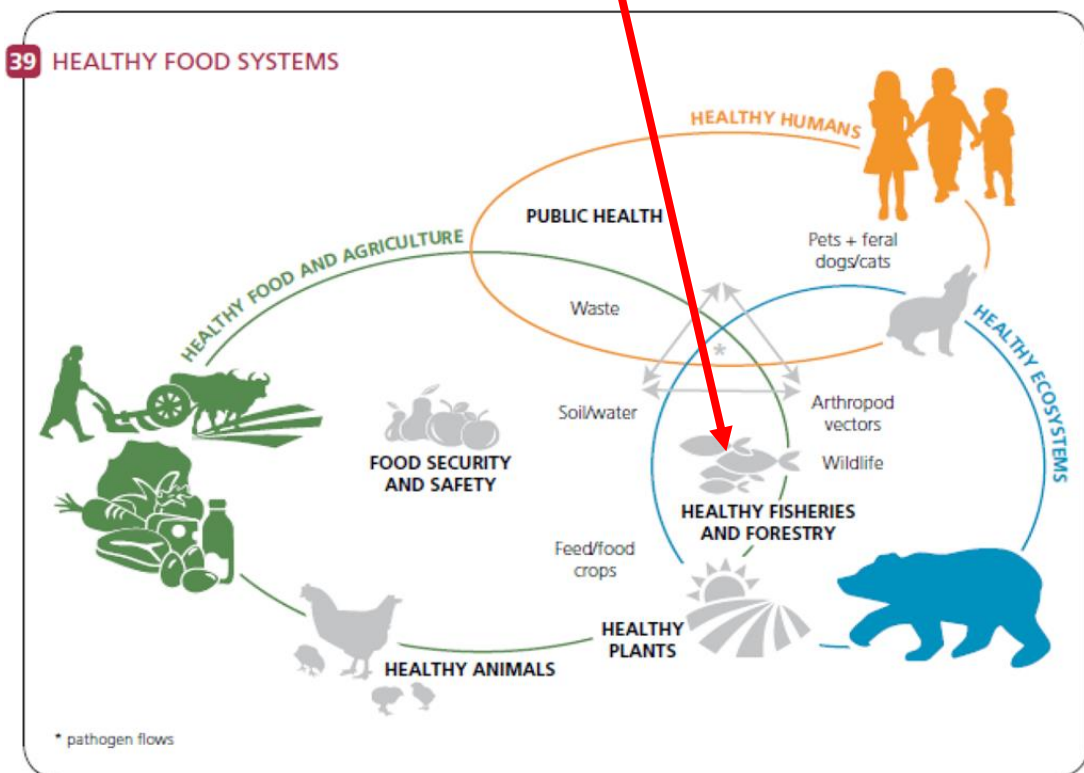
⇒ Feed additives such nutritional supplements,

⇒ Immune boosters like pro-biotics

⇒ vaccines

## C] Enhance Immunity

*From the One Health perspective*, whether we like it or not, the reality is that among the animal food producing sector, the aquaculture sector will have the strictest controls for AMU



Strong emphasis on promoting and strengthening capacity for:

- (i) Aquatic animal welfare
- (ii) Aquatic ecosystem health
- (iii) Biosecurity control
- (iv) Enhancing immunity
- (v) Expanding scope of AAH policy and regulation to cater for AA => regulation of veterinary inputs

PFRS, AHSA, AWSA

## C] Enhance Immunity

- Availability and accessibility to safe and validated immunostimulants
- Right biological agents (probiotics and vaccines) tailored to our local needs (i.e. pathogen strains)
- Biosafety, biosecurity, quality assurance and traceability
- SoPs and tools for application

⇒ *Strengthen capacity for R&D and commercial production on the continent vested in public interest => RECs, RFBs, RAAHNs, RAAHLN*

⇒ *Expand the scope of AU/PANVAC to cater for Africa's aquatic animal sector*

⇒ *The proposed continental strategy to integrate continental aquatic vaccine guidelines*



## D] Cross-cutting issues: Creating a conducive environment for promoting aquatic animal welfare and biosecurity control in transboundary ecosystems while fostering equity



**Legally sound:** policy and legal reviews and alignments, rights-based, empower the disadvantaged, protect producers and other users

- Enhancing the ratification of global instruments by AU-MS prioritizing those most essential for the sustainable management and utilization of fisheries and aquaculture resources in Africa and aquatic biodiversity

*For example*

1. *Convention for the prevention of pollution from ships (1973) –*
2. *Convention on the prevention of marine pollution by dumping of wastes and other matter (1972)*
3. *The international convention on oil pollution, preparedness, response and cooperation (1990)*
4. *Seabed arms control treaty (1971)*
5. *United Nations Convention of the Law of the Seas (1972)*
6. *Convention for Biological Diversity (1992)*
7. *United Nations Framework Convention on Climate Change (1992)*
8. *CITES*
9. *Code of Conduct for responsible fisheries*

# Thank You



**AU-IBAR: Providing leadership in the development of animal resources for Africa**