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Biosecurity measures: Evaluation and Program improvement

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Why animal health and biosecurity are important in Aquatic Animal farms?

Aquatic Animal diseases threaten the sustainable growth of the aquaculture sector and, consequently, food supply

Implementation of biosecurity measures to mitigate the introduction and spread pathogenic agents

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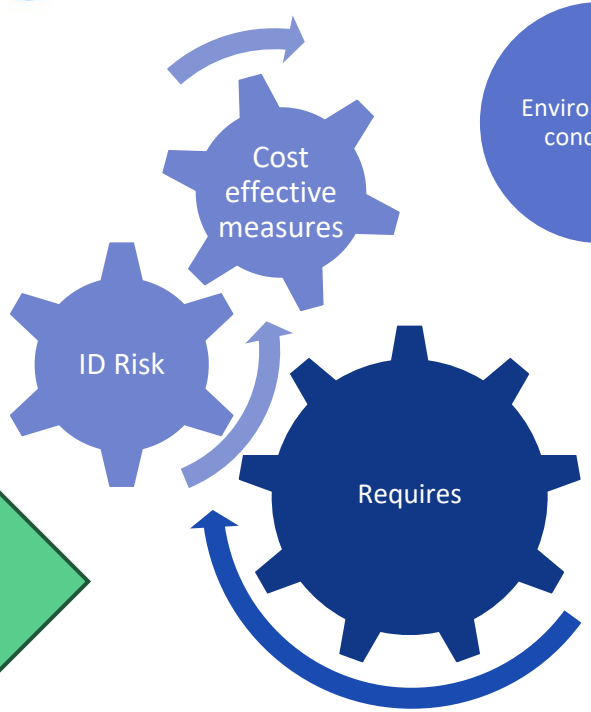
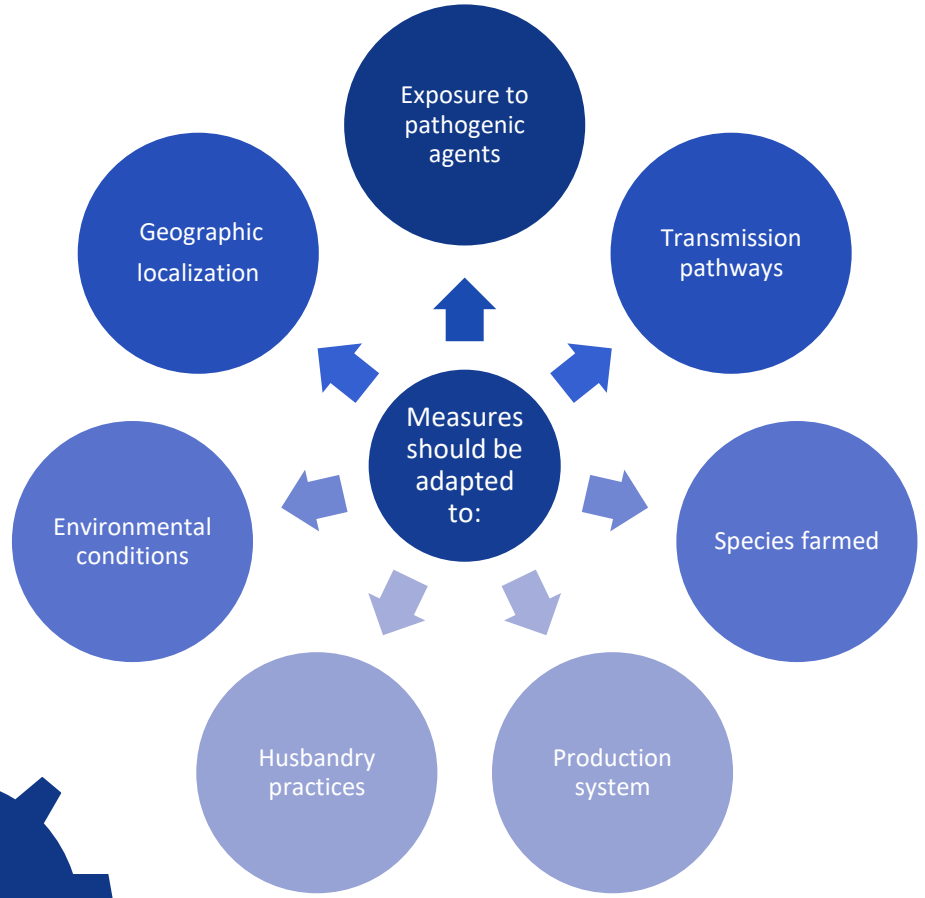
https://www.woah.org/es/que-hacemos/sanidad-y-bienestar-animal/animales-acuaticos/

General Principles

Biosecurity is



On-Farm Implementation



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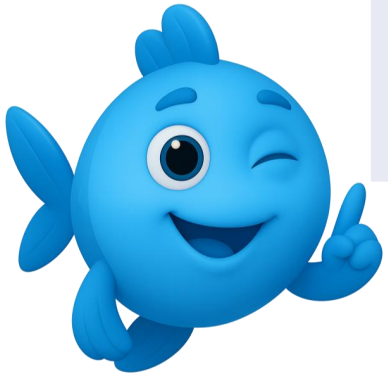
Transmission Pathways

Pathogenic agents

Move into, spread within and/or Released

Aquaculture establishments

Via



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On-Farm Biosecurity Measures Categorization

To reduce Risks

Preventive measures

External Biosecurity Measures

- Introduction
- Release from

Internal Biosecurity Measures

- Spread Within

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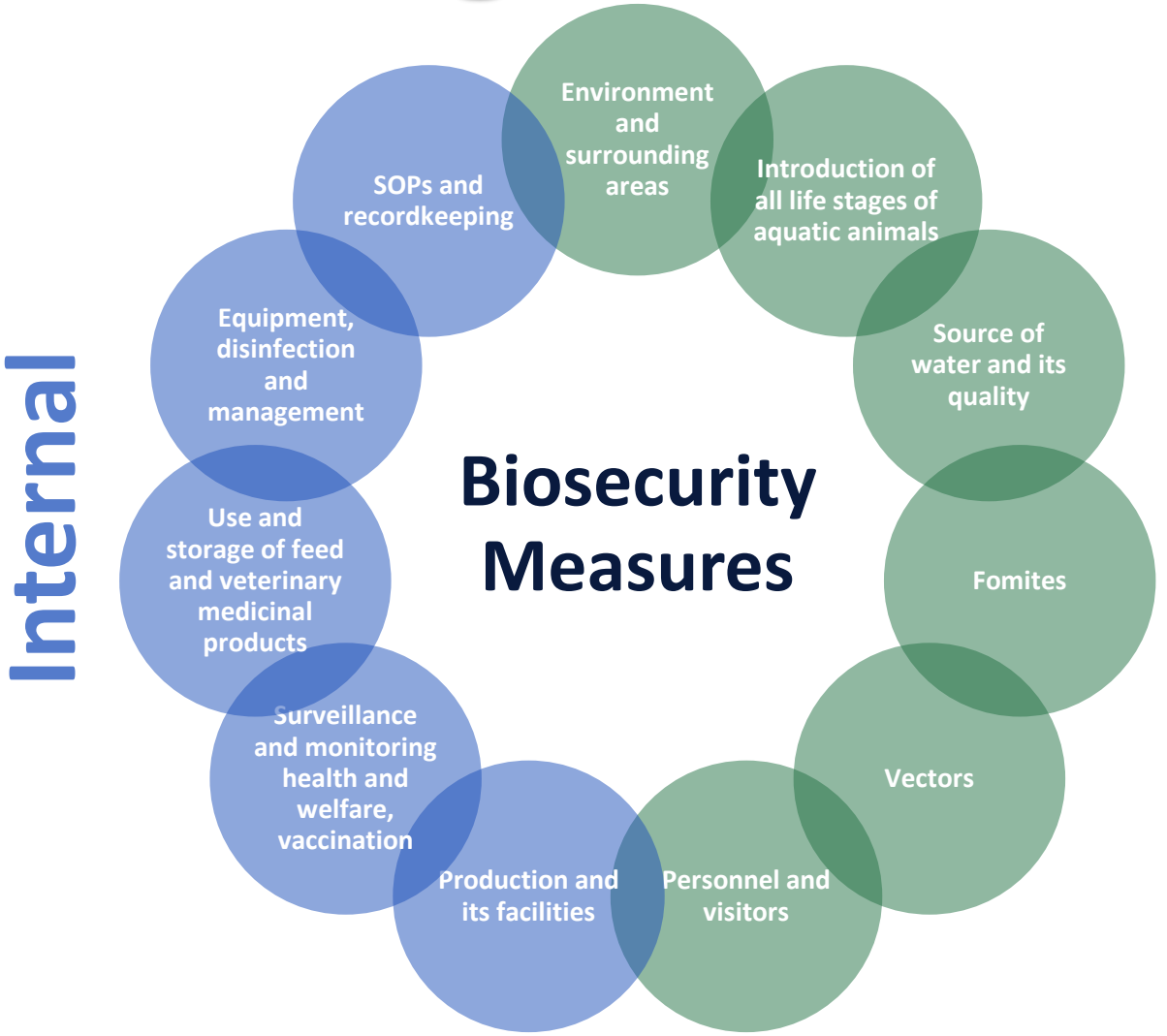
On-Farm Biosecurity Measures Categorization



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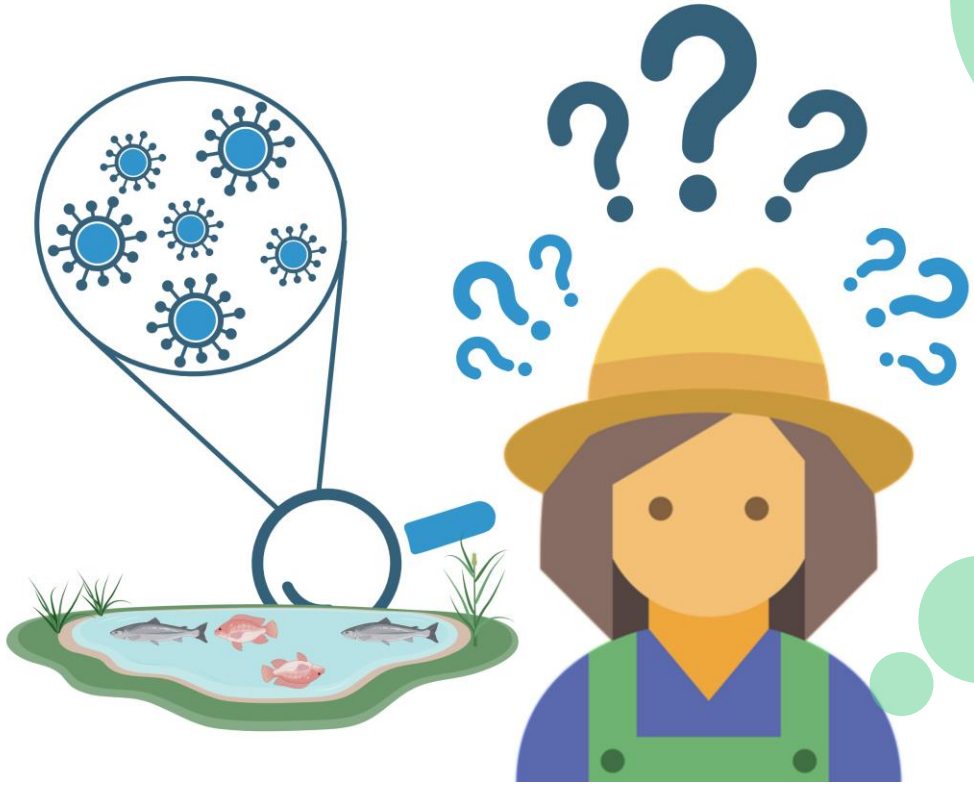
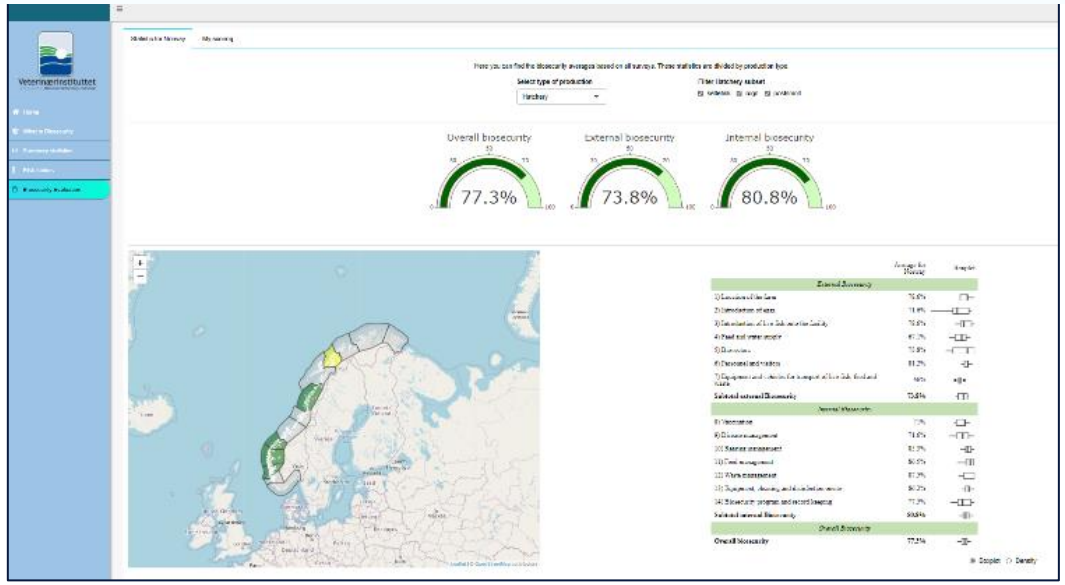
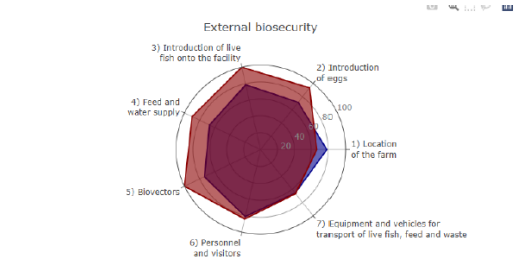


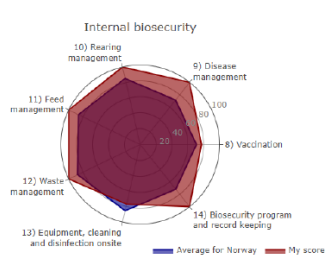
How can we determine the level of biosecurity on an aquatic animal farm??

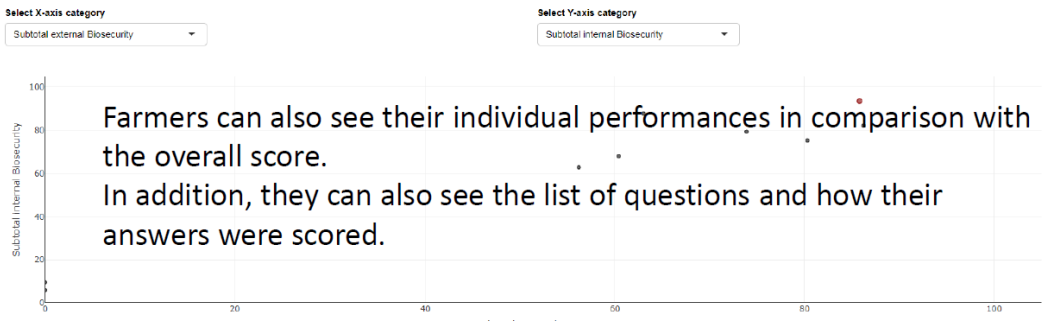
Development of digital tools

- ✓ Salmon: Land-based and sea-based facilities
- ✓ Trout: Fresh-water production
- ✓ Aquatic Animals (General)
- ✓ Small-scale Farmers (on development)









Farmers can also see their individual performances in comparison with the overall score.
In addition, they can also see the list of questions and how their answers were scored.

Environment and surrounding areas

Proximity to Other Aquaculture Farms

Signage of farm perimeter boundaries

Signage for different production areas

Facilities has a sanitary system including handwashing and disinfection footwear at the entrance

External

Introduction of all life stages of aquatic animals

Introduction and Frequency of Live Animals and Genetic Material

Requirement of official permits/licenses

Requirement of health status documentation

Application of quarantine and isolation

Have a quarantine zone separated from other production areas

Cleaning and disinfection of quarantine facilities before use

Application of therapeutic or prophylactic measures

Post-arrival screening for mandatory / important diseases

Dedicate clothes or clean and disinfect the clothes after leave the quarantine area

Have a traceability system and record the origin.

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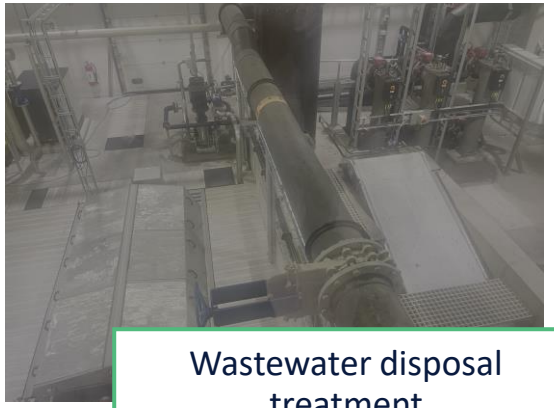
External

Source of water and its quality

Source of water used at the facility

Shared water source with other aquatic animal facilities

Implementation of intake water treatment



Wastewater disposal treatment

Water quality monitoring and analysis

Disinfection of water supply tanks

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External

Fomites

Feeding with fresh feed, raw feed, mortalities, homemade feed or feces

Quality inspection of veterinary medicinal products before storage

Limit vehicle entry to the facility (cars, trucks, vessels)

Do not share vehicles with other facilities

Implementation of vehicle (cars/trucks) disinfection prior to facility entry

Have a designated visitor parking area outside the production area

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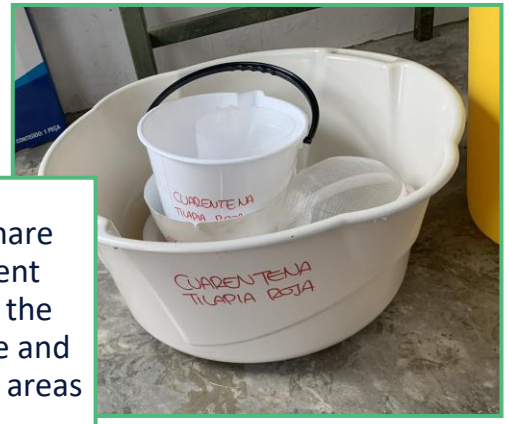
External

Fomites

Do not Share equipment or materials with other facilities

Disinfecting equipment and materials shared with other facilities

Do not share equipment between the quarantine and production areas



Disinfect Animal transport containers before disposal.

Do not reuse boxes and bags used to transport live animals

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External

Vectors

					
Have fences or barriers to prevent entry of potential vectors (wildlife and other animals)	Regularly inspect for pests and predators	Apply pest control measures	Use nets to prevent birds from accessing aquatic animals	Restrict pet access to the production area	Proper disposal of organic and aquatic animal waste at the facility • Entrails, fecal matter, uneaten feed, unfertilized eggs

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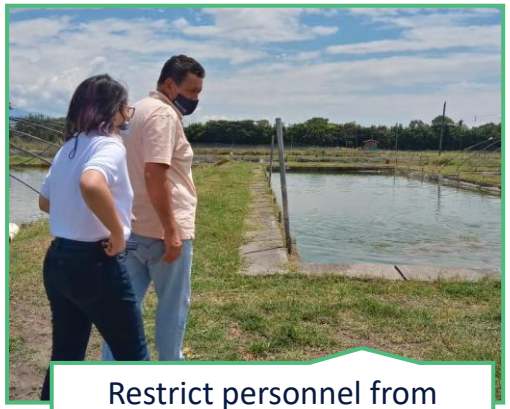
External

Personnel and visitors

Implement measures for personnel and visitors' entry*



Restrict personnel from visiting other aquaculture facilities

Personnel must wash their hands regularly during daily activities

Visitor access is restricted

Visitors are informed of the facility's biosecurity protocols

Prohibit visitors close contact with aquatic animals

Washing and disinfection of protective clothing for personnel and visitors

*Wear protective clothing, change footwear, and hand/shoes disinfection

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Production and its facilities

Define a maximum number of animals per cage, tank, or unit, and do not exceed it

Designate a specific area for cleaning and disinfecting nets and equipment

Have a dedicated cleaning and disinfection station for hands and footwear at all entry and exit production area points

Surveillance and monitoring health and welfare, vaccination

Inspection of abnormal behavior, feeding, and clinical signs

Perform necropsies and diagnostic tests for disease monitoring at a defined frequency.

Vaccination against diseases of concern

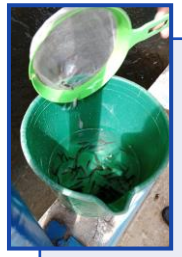
Promptly remove of dead animals

Final disposal of dead animals

Report unusual mortality or detected diseases to the Competent Authority

Have a defined process for handling the aquatic animals

Use equipment designed and operated to minimize physical injuries to aquatic animals



Define a process for loading and unloading animals to minimize stress and prevent injuries

Use and storage of feed and veterinary medicinal products

Conduct regular inspections of stored feed and veterinary products

Rotate feed stock using the First-In, First-Out (FIFO) method

Follow good practices for the administration of veterinary products*

Use and storage of feed and veterinary medicinal products

Prohibition of antibiotic use as growth promoters or preventive purposes (prophylactic)

Perform susceptibility tests before using antibiotics

Batches under veterinary treatment clearly identified with visible signage.

Report side effects from veterinary products to the competent authority

Equipment, disinfection and management

					
<u>Do not share</u> equipment and materials between batches whitin the facility	Use dedicated equipment for handling dead and moribund animals	Cleaning and disinfection of facilities and equipment between batches	Perform fallowing before introducing new animals	Conduct soil treatment in all earth ponds	Do not apply untreated animal feces as pond fertilizer

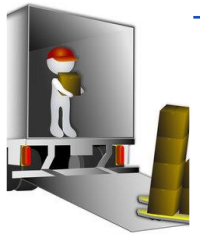
Equipment, disinfection and management

				
Routinely clean and disinfect handling equipment	Proper and safe use of treatments • Pesticides, herbicides, fertilizers, probiotics and prebiotics.	Regularly remove debris and waste from the facility	Handwashing after contact with sick or dead aquatic animals	Ensure all personnel are properly trained in biosecurity protocols.

SOPs and recordkeeping

Comprehensive and documented biosecurity program

SOPs for Animal Health and Welfare purposes



SOPs for traceability purposes

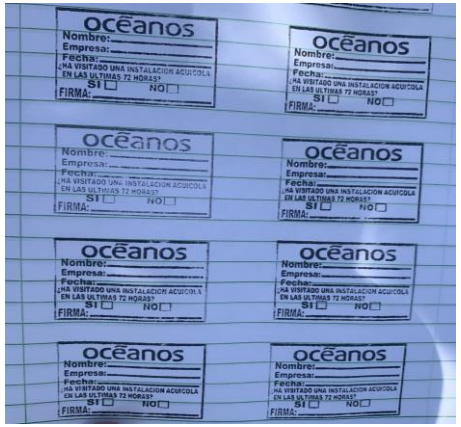
SOPs for production and productivity management

SOPs for environmental and sanitation practices

SOPs for cleaning and disinfection activities

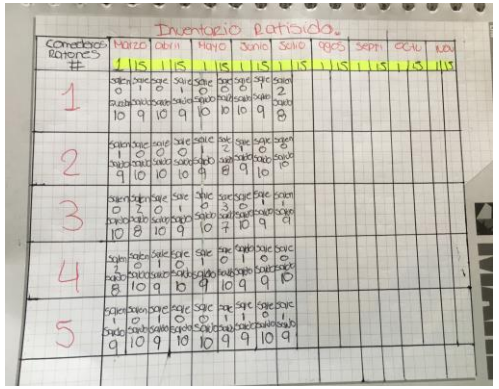
Internal

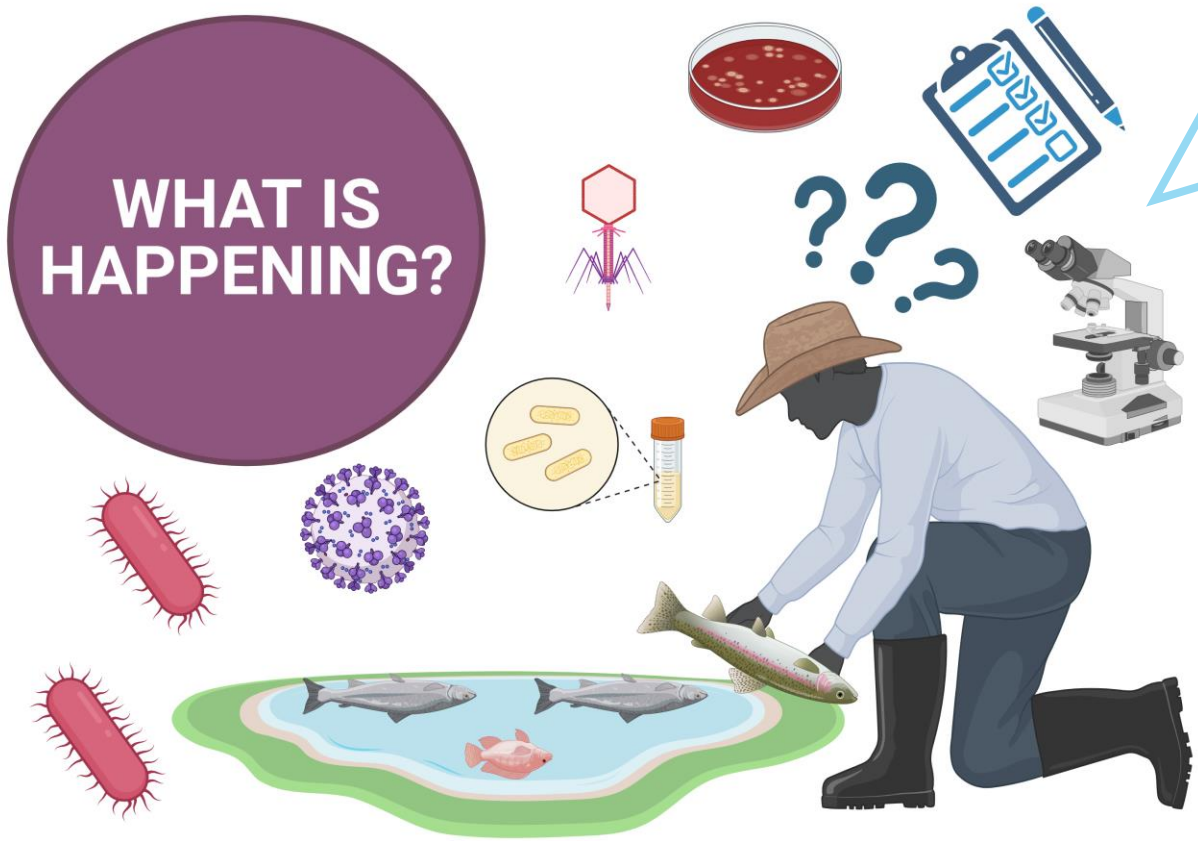
SOPs and recordkeeping



HAVE WRITTEN RECORDS OF:

- Mortality, including causes and disposal
- Health status of new animals and quarantine
- Stocking densities,feeding and growth rate
- Daily inspections, including feeding behavior and swimming
- Visitors and vehicle disinfection
- Feed storage conditions
- Water quality and monitoring
- Sanitary inspections, including necropsy reports and lab results
- Veterinary treatments, prescriptions and vaccinations
- Pests control activities
- Training of personnel





Would you be interested in providing your expertise on the weighted scoring system for on-farm biosecurity in aquatic animals?

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What we want to do??

Expert consultation

To develop a weighted scoring system for quantifying farm biosecurity measures in aquatic animal farms

Becuse we recognize

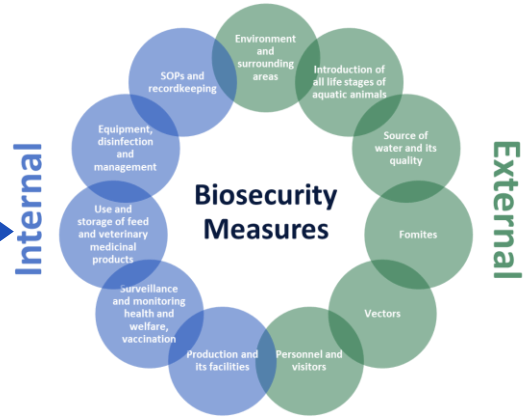
That not all biosecurity risk have the same likelihood of occurrence,due to varying efficiency of disease transmission pathways

How are we going to do this?

Subcategory Scoring Survey

*We will ask for your opinion on the importance the subcategories of on-farm measures allocating 100 points among the subcategories.

*This allocation should reflect your opinion of each subcategory's importance for the introduction, spread within, and release of infectious diseases in aquatic animal farms



The survey will be conducted through Metimeter

* With 4 Scenarios to scoring subcategories by production type/species: Genetic Material (gametes and fertilised eggs), Grow out Freshwater cultured species, Grow out Marine cultured species, and Grow out Shrimp.

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- Biosecurity Expert elicitation

  Survey: https://www.mentimeter.com/app/presentation/ali3a24fjj94efj9211unrsxo73gcfbr/edit?source=share-modal

- National Biosecurity

  Programs: https://www.mentimeter.com/app/presentation/al9ch9iewgkff3bdin227731qd2c285x/edit?source=share-modal

THANK YOU!!

Scientifically ambitious, forward-looking and collaborative – for One Health

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