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Evaluation of the Performance of the Aquatic Animal Health Services Report



World Organisation
for Animal Health

PVS Pathway

PVS FOLLOW-UP EVALUATION REPORT OF THE AQUATIC ANIMAL HEALTH SERVICES OF Mozambique

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List of acronyms, abbreviations and/or special terms

Term	Definition
AAD	Aquatic Animal Disease
AAH	Aquatic Animal Health
AAHS	Aquatic Animal Health Services
ADNAP	Administracao Nacional das Pescas - National Fisheries Administration
AMAPIC	Associacao Mocambicana de Armadores de Pesca Industrial de Camarao - Mozambican Association of Industrial Fishing
AMAQUA	Associacao Mocambicana de Aquacultores - Mozambican Aquaculture Association
APCM	Associacao dos Produtores de Camarao de Mocambique – association of prawn producers of Mozambique
BIP	Border Inspection Posts
CA	Competent Authority
CB-EMU	Biotechnology Centre - Eduardo Mondlane University
CEPAQ	Centro de Pesquisa em Aquacultura (Aquaculture Research Centre)
CVL	Central Veterinary Laboratory
CVO	Chief Veterinary Officer
DDAE	Direccao distrital das actividades economicas – Economical activities district office
DNDP	Direccao Nacional de Desenvolvimento Pecuário - National Directorate of Livestock Development, -
DNSAB	Direccao de Sanidade Agro-Pecuária e Biossegurança - National Directorate of Agricultural Health and Biosafety
DNSV	Direcção Nacional de Veterinária - National Veterinary Directorate
DPP	Direccao Provincial das pescas
EEZ	Exclusive Economic Zone
EGFAE	General Statute of State Employees
ES	Escola das pescas
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FMV	Faculdade de Medicina Veterinaria -Veterinary Medicine Faculty
FP	Focal Point
GDP	Gross Domestic Product
Ha	Hectare
HACCP	Hazard Analysis of Critical Control Points
ICEIDA	Icelandic International development agency
ICT	Information and communication technology
IDEPA	Instituto de Desenvolvimento da Pesca e Aquacultura - Fisheries and Aquaculture Development Institute
IFAD	International Fund for Agricultural development
IIAM	Instituto de Investigacao Agraria de Mocambique- Mozambique Agricultural Research Institute
INAE	National institute for economic activities
INAQUA	Instituto Nacional de Desenvolvimento da Aquacultura
INFRAPESCA	The National Institute for the Development and Management of Fisheries Infrastructures
INIP	Instituto Nacional de Inspeccao de Pescado - National Institute for Fish Inspection
InOM	Oceanographic Institute of Mozambique

IPAC	Instituto Portugues de Accreditaçao
LIP	Fish inspection laboratory
MADER	Ministério da Agricultura e Desenvolvimento Rural - Ministry of Agriculture and Rural Development
MCTES	Ministry of Science Technology and High Education
MIMAIP	Ministry of the Sea, Inland Waters and Fisheries
MoA	Ministry of Agriculture
MoH	Ministry of Health
MTA	Ministry of Land and Environment
OMVM	Ordem Medicos Veterinarios de Mocambique - Veterinary Statutory Body
PCR	Polymerase chain reaction
PPM	Maputo Fishing port
PPQ	Quelimane Fishing Port
PRODAPE	Aquaculture and Fishing Development Project
PVS Tool	Performance of Veterinary Services Evaluation Tool
SCSQ	Central Services for Sanitary Certification and Quarantine
SDAE	Servico Distrital das Actividades Economicas - District Economic Activities Service
SLIP	Fish Inspection Laboratory Central Services
SLS	Central Sanitary Licensing Services
SPP	Servico Provincial de Pecuaria
SWIOFish	South West Indian Ocean Fisheries Governance and Shared Growth Project
TiLV	Tilapia Lake Virus
UEM	Universidade Eduardo Mondlane - Maputo
EUS	Epizootic Ulcerative Syndrome
UNIDO	United Nations Industrial Development Organization
VPH	Veterinary Public Health
VS	Veterinary Service(s)
WOAH	World Organisation for Animal Health
WSD	White Spot disease
WSSV	White spot syndrome virus

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PART I: EXECUTIVE SUMMARY

I.1 Introduction

In response to a request made by the Mozambican Delegate to WOA, a PVS Follow-Up Evaluation of the Performance of the Aquatic Animal Health Services (PVS) for Aquatic Animal Health (AA) in Mozambique was carried out. The mission took place from 3 till 14 July 2023. The evaluators proposed by WOA and accepted by the Delegate, were Dr Marc Le Groumellec, Team Leader, and Drs Ana Afonso, and Stian Johnsen, Technical Experts. Dr Ronello Abila participated in the mission as an Observer on behalf of Asian Regional Office of WOA, and Dr Moetapele Letshwenyo from the Sub-Regional Representative for Southern Africa joined the mission for the last two days.

While wild fisheries are an important source of foreign exchange and foreign currency for Mozambique, aquaculture is still in its early stages of development, with a limited production compared to its theoretical capacity. As for crustacean aquaculture, the White Spot Syndrome Virus outbreak in August 2011 caused a drastic drop in the shrimp aquaculture production to almost zero before 2018. Between 2018 and 2022, the production gradually increased to just less than 50% of the peak yearly production prior to 2011. Only one company still subsists in this industry when there were previously three.

Fish aquaculture has increased step by step, notably due to the development of Nile Tilapia (*Oreochromis niloticus*) culture, the farmers receiving technical support from Instituto de Desenvolvimento da Pesca e Aquacultura - Fisheries and Aquaculture Development Institute (IDEPA) and financial support from ProAzul Mozambique, as part of the new Strategy of Aquaculture Development 2020-2030. This strategy is targeting improvement of the nutrition and revenues of small farmers, for a decentralized production, which number has increased from around 3500 in 2011 to close to 9000 to date. There has also recently been an industrial development of some big players in this fish industry, massively contributing to the increase in production, e.g., the Chicoa Fish in Tete, in a similar way to what has been developed in neighbouring countries Zambia and Zimbabwe.

To succeed in this ambitious development program, it will be necessary to maintain and improve the sanitary status of the Aquatic Animals, notably prevent, early detect and control diseases that affect productivity and may affect the food security in Mozambique and limit international trade. To achieve this objective in a sustainable way, the role of the Aquatic Animal Health Services (AAHS) is crucial.

The 2011 PVS Evaluation concluded that Mozambique's AAHS have fully developed their activities in food safety for aquatic animal products to be exported. However, it also stated that the legal framework and organization allowing to perform the fundamental tasks on aquatic animal diseases were not yet fully operational. Considering that the aquaculture development strategy is currently taking off, this was an adequate time to perform a PVS Follow Up Evaluation and confirm that AAHS will have the capacity to support such a development.

A summary of the results of the WOA PVS Follow Up Evaluation of AAHS is presented in Table 1.

I.2 Key findings of the evaluation

I.2.A Human, physical and financial resources

The majority of positions requiring veterinary and aquatic animal health professional skills are occupied by university qualified personnel. Veterinarians have insufficient training on aquatic diseases diagnosis, prevention and control, and aquaculture courses have just recently been

integrated into the Veterinary courses' curriculum. Local (District) offices staff – extensionists – are responsible for agriculture and aquaculture and many are graduates in aquaculture and fisheries, although missing specific training on aquatic diseases. There is no organized continuing education program.

It was difficult to assess if the number of AAHS staff is sufficient. No new staff, except a small number of extensionists, have been recruited for the past seven years due to a national policy of freeze hiring in the government services.

The Mozambique Aquaculture Development Strategy (2020-2030) sets several ambitious objectives but a clear legal framework for implementation of aquatic animal diseases (AAD) prevention and control is not yet approved. The strategy and its implementation plan include provisions on aquatic health management but the Instituto Nacional de Inspeção de Pescado - National Institute for Fish Inspection (INIP) as Competent Authority for AAH struggles to align the requirements for AAH with the policy production targets.

The CA roles and responsibilities and an effective chain of command regarding licencing of fishing vessels, aquatic animals and products establishments, and food safety monitoring and inspection is in place at all levels of administration. In terms of animal health, the draft “*Lei de Sanidade Animal Maio de 2023*” has not yet been promulgated. In the meantime, even without official delegation of functions, there is a degree of practical implementation of the new Law in the field. In this context, Surveillance and disease control programmes, including emergency preparedness and response, are not effectively implemented. There are informal collaboration mechanisms between ministries and technical committees within MIMAIP institutions but discrepancies on priorities for the sector development and for AAD activities were observed. District offices staff are hired by the provincial administration and perform activities for the province and the INIP provincial delegate which answers directly to the central services at MIMAIP.

The AAHS have suitable physical resources at national and provincial levels but deficiencies on transport and equipment were observed at district level. Clear rules for budget attribution in consultation with the various administrative levels are in place and there is the possibility to access to grants/donor funds and own revenues at provincial and local levels of administration. Food safety activities are adequately financed but not for AAD prevention, control and surveillance, and for diagnostic services.

A general provision for emergency funding access is included in the Animal health law but does not describe what types of emergencies and modalities of compensation per disease/animal species/animal products are covered.

1.2.B Technical authority and capability

Food safety for aquatic animal products is operational and well performed in all the country, including accreditation. INIP oversees fully equipped fish inspection laboratories (LIP) in the three main fishing harbors, i.e., Maputo, Beira and Quelimane, which are now all certified under ISO/IEC 17025:2017 standard by Instituto Portugues de Accreditação (IPAC), it is perfectly suitable for controlling exported aquatic animal products and has also started to provide services for local market.

On the contrary, for diagnostic of AAD, INIP is not equipped and depends on the services provided by Biotechnology Center - Eduardo Mondlane University (CB-EMU) for PCR tests (Diagnostic level III), with no capacity in Diagnostic levels I (direct observation of clinical signs, dissection, fresh mounts, etc.) and II (notably histology, microbiology) despite them being critical activities to detect unknown and emerging diseases. Until recently, this laboratory was not capable of testing other pathogens than White Spot Syndrome Virus (WSSV) and is still not certified under ISO/IEC 17025:2017 standard. It has now acquired the capacity of testing eight more crustacean diseases, including the WOA listed diseases. However, suitability of the national laboratory network can be questioned, since it cannot provide services to most of

the artisanal farms and cannot diagnose any fish or mollusc diseases so far, while the major species on which the aquaculture development strategy 2020-2030 is based is Tilapia (*Oreochromis niloticus*).

Adequate risk analysis of the sector has not been performed yet, although it would greatly help prioritize future activities if implemented.

Despite an effort to register and control aquaculture establishments, the data information system is still incomplete, notably for broodstock centres and hatcheries, and not computerized for easy access.

In terms of surveillance, passive surveillance is currently not implemented, despite the possibility of involvement of recently recruited extensionists in this activity, in addition to INIP employees. As for active surveillance, the National Surveillance program is limited to WSSV, and only a targeted program has occurred for Epizootic Ulcerative Syndrome (EUS) as part of a regional survey, samples being sent to Zambia. Occasionally for Tilapia Lake Virus (TiLV), the status of a Governmental facility of Tilapia broodstock has been evaluated by sending samples to an Italian laboratory, which is not a reference laboratory for this disease. Moreover, risk-based surveillance, which would focus the monitoring in the high-risk areas, including broodstock farms and hatcheries has not yet been implemented, except by some stakeholders in the private sector.

In terms of emergency preparedness and response, this is not yet implemented but legislation will be enforced by the future Animal Health Law. A field network can be developed once the extensionists are trained and directly involved. All stakeholders involved in AAHS should be able to act quickly.

Biosecurity requirements, although mentioned in the terms of reference for the licensing (registration) of aquaculture establishments, are sometimes lacking implementation in the field, especially at small stakeholders' facilities. Adapted biosecurity plans for each type of aquaculture establishments are not yet written, despite being critical to control transmission pathways and mitigate risks, and to prevent diseases, notably (but not only) for high-risk activities like hatcheries or broodstock producers.

Among these procedures, contingency plans should allow disease control or eradication: although not operational - since regulatory framework is not available yet - this activity is planned to be implemented rapidly once new legislation is adopted.

Licensing and inspection of establishments for aquatic animal products is fully effective, notably for export, but limitations still exist to control food safety for artisanal fisheries and local markets. Residues are included in supervised parameters.

As for veterinary medicines, there are no authorized medicines for aquatic animals, and there are no controls on the use of registered antimicrobials. Since the number of veterinarians is limited and none are specialized in aquaculture in the private sector, the risk of self-prescription by farmers still exists, although there is no evidence of such practice yet in aquaculture and no feeds used are medicated. Moreover, there is no production of aquatic animal feed in the country, but there are technical requirements for imported feeds, and this is controlled during audits.

A licensing system for aquatic food products processing plants, fishing vessels and aquaculture sites is in place but only a very small percentage of artisanal facilities is currently registered. Registration is ongoing by IDEPA and a census was organized in 2022. Animal welfare, and current WOA Code requirements for transport and killing of farmed fish or shrimp are not yet taken into consideration. Current systems allow for traceability of products. Recall simulations are a good way to test the system's effectiveness.

Aquatic animal movement control is covered by regulations, and a permit needs to be issued by the CA. However, critical movements for AAHS, such as the movement of fry (fingerlings, post-larvae) from hatcheries is not registered, except for vertically integrated stakeholders.

1.2.C Interaction with stakeholders

The AAHS maintain a dedicated and specialist communications function which communicates with stakeholders occasionally, but it is not always up to date or pro-active in providing information. Considerable improvement has been made since 2011. Most of the relevant Ministries and governmental institutions have well maintained and informative websites and regular meetings with stakeholders provide a platform for information exchange on national and regional programmes and projects. However, focus seems to be on big and medium scale producers and establishments.

Formal channels for consultation with stakeholders, represented by wild fisheries industry and associations, have been developed and stakeholders that are being consulted are being heard when developing legislation and national programmes. The Committee for fisheries administration (CAP) and the consultation platform for One Health ensures broad stakeholder representation, both from the public and private sector. It should be noted that aquaculture stakeholders seem to be underrepresented in the CAP. Artisan farmers have so far not been formally consulted.

The AAHS are active in relevant international meetings and activities, especially at regional level through the Southern African Development Community (SADC) but there was no evidence of submission of comments to WOAHP or regional committees, nor a systematic coordination and consultation procedure for preparation of comments on reports of the WOAHP Specialist Commission.

Accreditation, authorization and delegation of official tasks from the public to the private sector does not exist but some parts of the private sector seem to have the capacity and expertise to assist the public sector in increasing the support on prevention, early detection and control of AA diseases.

A VSB exists and registers and regulates veterinarians working in aquatic animal health, but they are subject only to generic veterinary educational and professional standards. No aquatic animal-health-specific educational or professional standards applicable to veterinarians working in aquatic animal health have been established and the VSB does not regulate or apply disciplinary measures to veterinarians working in AAH.

There are no aquatic animal health professionals operating in the country. However, the University Eduardo Mondlane in Maputo has recently developed a specific program for aquatic veterinarians.

No public-private-partnerships (PPPs) programmes exist. The Strategy for development of aquaculture includes the roles of the public and private sectors but does not contain any plans for the development of PPPs. Mozambique has several resourceful fishing and aquaculture companies and associations that have valuable knowledge and experience that could be shared with both the private and public sectors. There is also funding available through ProAzul that could be targeted at establishing functional PPPs.

Access to aquatic animal health management and clinical services to meet the needs of aquaculture establishments, public and private, is limited. There is currently no legal obligation for registered aquaculture establishments to have agreements with private aquatic animal health management or clinical services. The public services have limited staff, competency, and financial resources for support on AAH management and clinical or diagnostic services.

1.2.D Access to markets

The AAHS have the necessary authority and capability to develop or update AAH legislation to ensure its quality and coverage of the AAH domain. At present, the aquatic animal health legislation covers most fields of the AAH domain, including those fields under other Competent Authorities. In particular, the quality of the drafting and amendments of legislation on food

safety of AA products for export is high, while new legislation covering more of the AAH domain is in pipeline through the new AH law.

The existing AAH legislation is implemented in a good way. However, like in 2011, it is only comprehensive and effective for the export of aquatic products for human consumption. There is limited human, physical and financial resources for inspection and control of other parts of the AAH besides food safety.

The CA and the VA actively follow the WOAHS standard setting process by attending the World Assembly of delegates in Paris and are aware of amended and new standards. Several bilateral agreements for the export of fishery products in the field of food safety and aquatic animals, including ornamentals, prove that the country has both the authority and capability to actively harmonise national legislation with international standards and certification requirements, at least on some areas.

Currently, the AAHS only has the authority and capability to certify for exported fishery products in the field of food safety and ornamental aquatic animals in accordance with international standards. Due to lack of adequate risk analysis, proper biosecurity in aquaculture establishments, as well as deficiencies in passive and active surveillance of AADs and registration of farms, the country is at present not capable of certifying of aquatic animals for export in accordance with international standards.

The country has consistently submitted six-monthly reports to WOAHS. Immediate notification of occurrence of notifiable AA diseases has only been submitted occasionally since 2010. As there is no functioning passive and active surveillance system in place, no available reference laboratory for AA diseases or a functioning disease notification system, the country is not expected to be able to submit immediate notifications to WOAHS.

There is no legal framework to establish disease-free zones or compartments. To establish such zones, basic biosecurity conditions, functioning surveillance systems and diagnostic capacity needs to be in place. The CA has the authority to establish zones or compartments, but it is uncertain whether the CA and the private sector have the required capacity and resources. Establishment of compartments could open new export markets, and hatcheries with disease-free status will reduce the risk of introduction of diseases to aquaculture establishments, and it is recommended to consider compartmentalisation as a central part of the aquaculture strategy.

Table 1: Summary results of the PVS AAHS Evaluations

	Previous PVS Evaluation 2011	Result 2023
I. HUMAN, PHYSICAL AND FINANCIAL RESOURCES		
I-1.A. Staffing: Veterinarians or aquatic animal health professionals	2	2
I-1.B. Staffing: AAH technical personnel and veterinary paraprofessionals	2	3
I-2.A. Competencies and education of veterinarians or AAH professionals	2	2
I-2.B. Competencies and education of AAH technical personnel, veterinary paraprofessionals	3	3
I-3. Continuing education	4	2*
I-4. Technical independence	3	3
I-5. Planning, sustainability and management of policies and programmes	4	3*
I-6.A. Internal coordination (chain of command)	4	3*
I-6.B. External coordination (including the One Health approach)	2	3
I-7. Physical resources and capital investment	2	3
I-8. Operational funding	2	3
I-9. Emergency funding	1	1
II. TECHNICAL AUTHORITY AND CAPABILITY		
II-1.A. Access to laboratory diagnosis	2	2
II-1.B. Suitability of the national laboratory system	N/A	2
II-1.C. Laboratory quality management systems (QMS)	2	2
II-2. Risk analysis and epidemiology	2	2
II-3. Quarantine and border security	1	1
II-4.A. Passive surveillance	1	1
II-4.B. Active surveillance and monitoring	1	3
II-5. Emergency preparedness and response	1	1
II-6.A. Disease prevention	1	2
II-6.B. Disease control or eradication	1	2
II-7.A. Regulation, inspection, authorisation and supervision of establishments	3	3
II-7.B. Inspection of collection/slaughter, processing and distribution of aquatic animal products	3	3
II-8. Veterinary medicines and biologicals	1	2
II-9. Antimicrobial resistance (AMR) and antimicrobial use (AMU)	N/A	2
II-10. Residue testing, monitoring and management	2	2
II-11. Aquatic animal feed safety	N/A	2
II-12.A. Aquaculture establishment identification, batch and aquatic animal movement control	3	2*
II-12.B. Identification, traceability and control of aquatic animal products	3	3
II-13. Welfare of farmed fish	2	1*
III. INTERACTION WITH STAKEHOLDERS		
III-1. Communication	2	3
III-2. Consultation with stakeholders	2	3
III-3. Official representation and international collaboration	3	3
III-4. Accreditation/authorisation/delegation	1	1
III-5.A. VSB: Veterinarians working in aquatic animal health	N/A	3
III-5.B. VSB: Aquatic animal health professionals (non-veterinarians)	N/A	1
III-6. Participation of producers and other stakeholders in joint programmes	1	2
III-7. Aquatic animal health management and clinical services	N/A	1
IV. ACCESS TO MARKETS		
IV-1.A. Legal quality and coverage of aquatic animal health legislation	2	3
IV-1.B. Implementation and compliance of aquatic animal health legislation	3	3
IV-2. International harmonisation	3	3
IV-3. International certification	4	3*
IV-4. Equivalence and other types of sanitary agreements	3	3
IV-5. Transparency	3	2*
IV-6. Zoning	1	1
IV-7. Compartmentalisation	2	1*
*: the PVS evaluation tool has been modified between 2011 and 2023, and thus criteria to determine levels of advancement for each critical competencies have evolved, which explains why levels may appear lower than during the first PVS mission.		

I.3 Key recommendations

I.3.A Human, physical and financial resources

In 2011, key recommendations for human, physical and financial resources mentioned that a coordination mechanism should be implemented to address the deficient coordination between the various institutions of the MIMAIP and also external stakeholders.

It was also recommended to implement an effective, user friendly information management system to manage data from central and provincial INIP.

In 2023, human, physical and financial resources have improved. Nevertheless, new recommendations can be made to reach higher levels of advancement in these Critical Competencies, notably to:

Conduct a workforce assessment of the AAHS to determine the number of professional and technical staff needed, and the corresponding training required.

Given that the Veterinary Faculty of Eduardo Mondlane University is planning to set up a MSc in Aquatic Animal Health, the INIP could collaborate with the school to develop a training for modules for in-service veterinarians and aquatic professionals. A training module can be developed in collaboration with veterinary and fishery schools, and regular training conducted for field AAH technical personnel, particularly aquatic disease surveillance.

Ensure technical decisions for the prevention and control of AA diseases are based on a high level of scientific evidence and are not changed to meet production targets that can compromise the future sustainability of the sector.

Implement a review of policies and programmes, (using data collection and analysis) to update over time, through formal national strategic planning cycles, in order to improve effectiveness and address emerging concerns.

Ensure allocation of resources and effective coordination between INIP delegate and provincial authorities to allow for implementation of all AAHS aspects including disease surveillance (and reporting), disease control programmes and emergency response.

Establish formal mechanisms of coordination between MADER and MIMAIP, and between the various technical committees within MIMAIP institutions at central and provincial level, and clarify roles and chain of command for district organic units to ensure effective use of resources.

Improve database of aquaculture sites and establishments including the results of the census as a basis to develop AAH disease prevention and control plans.

Ensure that all extensionists have transport means to access farms and establishment's locations and collect and deliver samples to provincial laboratories, and estimate resources to effectively implement necessary AAH activities in particular for surveillance of AAHD.

Establish emergency funding access rules, and modalities of compensation per disease/animal species/ animal products. The modalities of access should be well defined in future emergency preparedness plans, and contingency plans should be drafted and tested.

I.3.B Technical authority and capability

Also in 2011, experts recommended to develop legislation to regulate and control importation, production, sale and use of veterinary medicines in terrestrial and aquatic animals. A specific point was stressed out for the AAHS to improve collaboration with the Direção Nacional de Veterinária - National Veterinary Directorate (DNSV) of the Ministry of Agriculture (MoA).

As for the 2023 follow up mission, recommendations were made on the following aspects:

The goal should be to build INIP's own National Reference Laboratory (NAAHRL), which should have the diagnostic capacity for all Aquatic Animal Diseases of concern, notably the WOAHL listed diseases of reared species and national diseases of concern. Meanwhile, progress can be made by optimizing the current resources:

One suggestion is to start building capacity diagnostic levels I (for example involving INIP's staff and extensionists, district level), and level II (Veterinarian Terrestrial laboratory at Eduardo Mondlane University Campus; belonging to the Direção de Ciências Animais- Departamento de Nutrição e Alimentos), in both histology (notably for diagnosing emerging fish diseases), and microbiology.

Level III diagnostic capacity at CB should be developed for other aquatic animals reared in the country rather than only crustaceans, to accompany the strategy of development of aquaculture in the country (detection of major diseases, WOAHL listed diseases in priority), thus optimizing the services provided within the signed Memorandum of Understanding. In the short term, suitability of the national laboratory network should be modified to adapt to the aquaculture development strategy: capitalize on CB-UEM and Veterinarian Terrestrial Laboratory at Eduardo Mondlane University facilities, to improve the necessary services for existing and new aquaculture production units, notably for fish (mostly Tilapia so far), by completing the list of diseases CB-UEM is capable to diagnose, including relevant fish and molluscs diseases of concern, prioritizing diseases through a Risk Analysis.

Distinguish diagnostic activities from research activities (equipment, employees), situation to be clarified in the signed MoU. Consider requesting from CB-UEM dedicated personnel focused on AAD within the MoU, to ensure reactivity, continuity in the SOPs and continuous improvement in the quality and reliability of the laboratory results.

The Team recommends developing collaborations with WOAHL reference centres for diseases of concern to acquire technical knowledge for these additional diseases and develop proficiency tests (ring tests) to ensure the reliability of the information provided to INIP. The opportunity to embark into the Laboratory Twinning Programme should also be considered (please refer to the WOAHL website and Aquatic Code for details).

Embark into Risk Analysis activities after following training courses, including Import Risk Analysis (IRA)¹.

Apply Risk Analysis in the field to define priorities, considering the strategy of development of aquaculture in the country developed by MIMAIP and implemented by IDEPA, and to then develop biosecurity plans adapted to these identified risks for each type of aquaculture establishment².

Design and develop "ready to implement" small quarantine units, with both facilities and SOPs, for example in RAS, so that they are ready in case AA importation is considered urgently needed by extension institutions; and develop coordination with other CA at border control points and capacity building to improve levels of biosecurity.

Develop sampling and testing procedures for relevant AAD on imported aquatic animal products, and review the possibility of a reporting system of field agents or extensionists, (in coordination with IDEPA and provinces / districts), where passive surveillance information data from the field is collected and reported to central CA. In addition, develop a network for early

¹ For example, there is an FAO online course describing risk analysis available at the website: <https://elearning.fao.org/course/view.php?id=979>.

² It is highly recommended to read and apply guidelines and recommendations presented in the chapter of the Aquatic Code "Biosecurity for Aquaculture Establishments" during the implementation of such plans in the field, https://www.woah.org/en/what-we-do/standards/codes-and-manuals/aquatic-code-online-access/?id=169&L=1&htmlfile=chapitre_biosecu_estab_aqua.htm, which can then be the base for developing new risk-based surveillance activities and help determine which are risky activities and locations for AAH, and whether a quarantine is needed.

detection and reporting of AAD with the contribution of public (extensionists notably) and private stakeholders (WhatsApp groups, etc.).

Review WSSV surveillance data (prevalence remains quite high despite almost no activity in crustacean aquaculture), confirm reliability of results obtained (excluding false positive cases, potentially linked to cross contamination at sampling point and/or at the laboratory), and review sampling programs accordingly to focus on WSSV “hotspots” and the understanding of WSSV continuous and relatively high-level replication in the environment, and Include details of surveillance activities in the draft legislation to be soon adopted.

Consider the possibility of collaborating and future twinning with TiLV Reference Laboratories, notably from Thailand, to determine the sanitary status of CEPAQ broodstock and establish whether a compartment can be built in this location, from this stock.

Build surveillance programs for pathogens of concern (both WOAHA listed and of national importance) focused on fish aquaculture industry, notably on Tilapia industry, including small stakeholders, based on risk analysis, and allowing a sustainable development of this fast-expanding activity by controlling sanitary status of the stocks, starting with broodstock and fingerlings used in the country, and in particular by extension programs.

Develop National Contingency Plans for species of interest (Tilapia as a priority, then shrimp or other crustaceans like crabs, etc.), with adequate legal framework and financial support, and organize simulation exercises to assess the operationality and efficiency of contingency plans in the field and implement continuous improvement.

Guidelines on biosecurity standards need to be developed at national level, and implemented in aquaculture establishments, in the form of a Biosecurity plan based on design of the facilities and risk analysis. It is recommended to focus on broodstock centres and hatcheries as a starting point, considering that aquatic animals delivered from these facilities usually represent a high risk of spread of aquatic animal diseases if their sanitary status is not established and under strict control. Include basic biosecurity equipment and SOPs in the design and management of aquaculture development programs, notably for small farmers.

Visits/audits are to be organized by INIP to evaluate the level of adoption of disease prevention measures by the aquaculture industry and recommend action plans for future improvement. This could be an opportunity to embark all stakeholders into the Progressive Management Pathway to Aquaculture Biosecurity (PMP/AB), through an e-learning program³.

Develop contingency plans, including SOPs for the design of containment zones and proceed to simulation exercises with private sector stakeholders to be confronted to field reality in the application of contingency plan SOPs, as well as continuous improvement of procedures and training of stakeholders.

Complete registration of all relevant establishments and processes for premises supplying national and local markets and implement an inspection plan based on risks for public health and promote training of fish inspectors on recognition of aquatic diseases as a tool for AAH surveillance. Inspection should be in place for aquatic animal products that are distributed also throughout the local markets.

Enable legislation to exercise control over the sale and use of veterinary medicines in terrestrial and aquatic animals. Define priorities and finalize the AMR component of the One Health policy currently under discussion in collaboration with other ministries. Actively contribute to the WOAHA ANIMUSE report system for the next collection round (the 9th collection round in 2023, and 10th in 2024) to include aquatic animals to the database. Extend the National Residue Control Plan to more domestic aquatic animal products.

³ <https://elearning.fao.org/course/view.php?id=979>

Ensure that penalties are applied in case of non-compliance, including for domestic-sold aquatic animal products.

Implement a random sampling program, with periodicity and quantities sampled based on total annual volumes imported, and analyse critical feed parameters (for example proximal formulation, humidity rate, absence of antimicrobials or heavy metals, etc.). For major aquatic animal feed producers, if possible, organize a visit/audit of feed plants abroad, or alternatively online interviews.

Implement full registration, identification of broodstock centres and hatcheries in the country as a priority. Implement a control of domestic movements of aquatic species fingerlings and/or larvae as a priority, then extend to all live aquatic animals. Make sure the new specific form created for movements of live aquatic animals is implemented, pass the adequate legislation for transport/movement control, and make simulations of animal blocking, destruction or recall, validating its operationality.

Develop a data collection system, a database and procedures allowing to identify and eventually traceback aquatic animal products in case of food safety, zoonotic or aquatic animal health potential issues or risks. Regularly audit the implemented system to assess efficiency.

Initiate the process of awareness raising and capacity building on Aquatic Animal welfare among stakeholders, specifically in transport, grow-out and slaughter of farmed fish (following the recommendations of the WOAHS Aquatic Code), and develop species-specific standards. Initiate the development of the corresponding standards within the new Aquatic Animal legislation for future enforcement.

1.3.C Interaction with stakeholders

The 2011 PVS mission recommended that “INIP maintains an official contact point for communications”.

During the 2023 PVS Follow Up mission, we can confirm that this recommendation has been considered, and improvements in interaction with stakeholders are noticeable. To achieve higher levels of advancements in these Critical Competencies of this fundamental component, it is recommended to implement the following action plan:

Strengthen the Committee for fisheries administration (CAP) and the consultation platform for One Health ensures broad stakeholder representation by inviting more aquaculture stakeholders.

Promote associations for artisan producers. Establish channels for consultations with artisan fishermen and farmers. This is particularly important as a main objective of the Strategy for development of aquaculture is to increase artisan aquaculture. Establish a national communication plan.

Implement formal procedures for inter- authority consultation for drafting of new and amended AAH and welfare legislation and programmes. In addition, establish a consultation procedure to facilitate participation of public and private stakeholders in the WOAHS standard setting process and to prepare for and report from international meetings.

The CA should map the AAH competency and capacity in the private industry to assess the possibility of delegating official functions. This could be interesting to increase the diagnostic capacity in particular.

Follow up closely the development of Aquatic MSc programmes, and potentially Veterinarian cursus (notably at UEM), and make sure that both the CA and VSB get involved in the training content of future Veterinarians working in Aquatic Animal Health. Explore with the government agency regulating professional groups to set up a body to regulate aquatic animal health professionals.

Develop a PPP programme based on the needs and roles described in the Strategy. The private sector should be actively involved in the development and implementation of Strategy activities.

Coordinate the inputs from the different authorities responsible for aquaculture and AAH to ProAzul. Use the outcomes of the PVS follow up mission to identify priority areas. The diagnostic capacity of AAH can be established in the existing three INIP Veterinary Public Health Laboratories of the LIP (Maputo, Beira and Quelimane), to optimize available human and physical laboratory resources.

Explore the possibility to establish a formal collaboration between the Biotechnology Center of the Eduardo Mondlane University (CB-UEM) and Institute of Animal Sciences – Instituto de Investigacao Agraria de Mocambique (IIAM) to increase the diagnostic capacity on AA diseases. Explore the possibility to delegate AAH tasks to the private sector.

1.3.D Access to markets

In 2011 the PVS Team recommended that INIP and the WOAHA Delegate optimize the internal coordination mechanisms to facilitate the timely reporting of aquatic animal disease outbreaks from the WOAHA Focal Point for Aquatic Animal Health, through the WOAHA Delegate, in the WOAHA WAHIS data management system. Moreover, to facilitate activities like export of live aquatic animals and aquatic animal products for human consumption, it was recommended to investigate possibilities; formulate necessary guidelines and procedures, to implement in close cooperation with the private sector, aquatic animal disease-free compartments in identified localities in Mozambique.

The 2023 PVS Follow Up mission reiterated some of these recommendations, providing more details on what could be contemplated to comply with higher levels of advancements of these competencies:

The CA should ensure that the new AHL (i.e. the NAAHRL) and its implementing regulations covers AA and AAH, including the small aquaculture farms and hatcheries.

Identify the needs for human, physical and financial resources as part of the implementation of the Strategy.

Set up a system for documenting reports of responding to non-compliance. Develop a strategy to approach instances of non-compliance through multiple means, including through targeted communications, incentives, and appropriate legal processes.

Use the experience from the bilateral agreements to further develop the AAH legislation and implementation of measures to prevent, early detect and control AA diseases.

Submit comments on reports from the WOAHA Specialist Commissions. Active participation is believed to increase the understanding of the WOAHA standards and the importance of implementation.

Implement AA welfare regulations in accordance with the WOAHA standards or equivalent.

Consider the demand for export of live AA. Export of live AA would require additional human and financial resources and strengthening of legislation to ensure health status of the exported animals. Also consider whether the establishment of disease-free compartments could kick-start the export market for live AA.

Focus on setting up a system to enable domestic notification of listed and emerging diseases:

- Increase the diagnostic capacity to be able to detect AA diseases and develop passive and active surveillance systems.

- INIP and the Delegate/VA should optimize the internal coordination mechanisms to facilitate the timely reporting of aquatic animal disease outbreaks from the Focal Point for Aquatic Animal Health, through the Delegate, to the WAHIS data management.

- Mozambique is advised to only notify diseases to WOAHA when they have been confirmed by recognised diagnostic methods for confirmation according to the Aquatic Manual as any notification may have consequences on trade (e.g., recent case of suspected EUS outbreak). To be efficient, this would require implementing early detection, fast samples collection and a reliable domestic laboratory capable of rapidly achieving confirmation of WOAHA listed diseases of concern in a timely manner, to be able to take eradication or mitigation measures, and to implement contingency plans.

As part of the aquaculture strategy, explore the will from the industry to consider zoning in some remote areas easy to maintain WSSV free - like small islands where a wild *P. monodon* broodstock source exist. This would be mostly relevant to exporting establishments.

As part of the aquaculture strategy, explore the will from and need of the industry to consider compartmentalised farms to safeguard and facilitate distribution of disease-free animals domestically and for export. Hatcheries with disease-free status will reduce the risk of introduction of diseases to aquaculture establishments and it is recommended to consider compartmentalisation as a central part of the aquaculture strategy.

For each major aquatic animal species chosen for the aquaculture development strategy, develop one (or more) compartmentalised broodstock centre(s), providing a reliable source for hatcheries (except for vertically integrated stakeholders?). This could start rapidly with Nile Tilapia stocks, for example by upgrading CEPAQ facilities and biosecurity plan, and ensure their stocks is Specific Pathogen Free (SPF) for known pathogens (for example TiLV, and not becoming an EUS vector, for example by transporting spores contaminated water with live aquatic animals). It is worth reminding that while Nile Tilapia (*Oreochromis niloticus*) is not affected, other endemic species like the Mozambique tilapia (*Oreochromis mossambicus*) are affected by this pathogen. Similarly for future projects of crustacean or molluscs aquaculture, access to an SPF stock could help. This could be achieved by public sector, as a collaboration of InOM, IDEPA and INIP; or it can involve Public Private Partnerships (PPPs).

PART II: CONDUCT OF THE EVALUATION

II.1 *PVS Tool - Aquatic*: method, objectives and scope of the evaluation

To assist countries to establish their current level of performance, form a shared vision, establish priorities and carry out strategic initiatives, WOAHA has developed an evaluation tool called the *WOAHA Tool for the Evaluation of Performance of Aquatic Animal Health Services (PVS Tool - Aquatic)* which comprises four fundamental components:

- Human, physical and financial resources
- Technical authority and capability
- Interaction with stakeholders
- Access to markets

These four fundamental components encompass 47 critical competencies, for each of which five qualitative levels of advancement are described. For each critical competency, a list of suggested indicators was used by the WOAHA Evaluation Team to help determine the level of advancement.

A glossary of terms is provided in Appendix 2.

The report follows the structure of the *PVS Tool - Aquatic*. The objective and scope of the Aquatic PVS evaluation includes all aspects relevant to the WOAHA Aquatic and Terrestrial Animal Health Codes. In addition, the scope and objectives were clarified before the mission (see Appendix 7) as appropriate to the mandate and context of the AAHS in this country.

II.2 Context of the evaluation

II.2.A Availability of data relevant to the evaluation

A list of documents received by the Team before and during the Aquatic PVS Evaluation mission is provided in Appendix 6.

All documents listed in Appendix 6 are referenced to relevant critical competencies to demonstrate the levels. Documents and pictures are also referenced to relevant critical competencies to support the related findings.

The following table provides an overview of the availability of the main categories of documents or data needed for the evaluation, taking into account the information requirements set out in the WOAHS Aquatic and Terrestrial Animal Health Codes.

Table 2: Summary of data available for evaluation

Main document categories	Data available in the public domain	Data accessible only on site or on request	Data not available
→ Aquatic Animal census:			
○ at 1st administrative level			NO
○ at 2 nd administrative level			NO
○ at 3 rd administrative level			NO
○ per animal species			NO
○ per production systems			NO
→ Organisations charts			
○ Central level of the AAHS	YES		
○ 2 nd level of the AAHS	YES		
○ 3 rd level of the AAHS			
→ Job descriptions in the AAHS			
○ Central levels of the AAHS		YES	
○ 2 nd level of the AAHS			NO
○ 3 rd level of the AAHS			NO
→ Legislations, regulations, decrees ...			
○ Aquatic animal health and public health	YES		
○ Veterinary practice	YES		
○ Veterinary statutory body		YES	
○ Other professional authorities			NA
○ Veterinary medicines and biologicals		YES	
○ Official delegation			
→ Veterinary census			
○ Global (public, private, veterinary, aquatic animal health professional, technical personnel)		YES	
○ Per level			
○ Per function			
→ Census of logistics and infrastructures		YES	
→ Activity reports	YES	YES	
→ Financial reports			
→ Aquatic animal health status reports		YES	
→ Evaluation reports		YES	
→ Procedures, registers, records, letters ...		YES	

II.2.B General organisation of the Aquatic Animal Health Services

The National Directorate of livestock development (DNDP) under the Ministry of Agriculture and Rural Development (MADER) is the Veterinary Authority, with the competence to guarantee the protection of animal health, aquatic animals, zoosanitary control and public health.

The Ministry of the Sea, Inland Waters and Fisheries (MIMAIP), through the National Institute for Fish Inspection (INIP- in portuguese *Inspeccao do pescado* (IP)) is the Competent Authority to promote the monitoring and certification of the health of aquatic organisms in coordination with the Veterinary Authority.

The competencies of INIP include (Ministerial Diploma 93/22 – INIP internal regulation):

- a) propose the definition of strategies, policies and plans with regard to the hygienic and sanitary quality of fishery products and feed for aquatic animals;
- b) promote and support the integration of artisanal fishing production into quality assurance systems for fishery products;
- c) propose the approval and implement the regulatory principles and technical standards for health licensing, health certification and laboratory activities;
- d) propose the approval and implement the regulatory principles and technical standards for health control and monitoring activities of aquatic organisms, in coordination with the Competent Veterinary Authority;
- e) carry out health licensing and inspection of operators and production units handling and processing fishery products and feed for aquatic animals;
- f) inspect and carry out health certification of fishery products, including those transiting through the country;
- g) inspect and carry out the health certification of feed for aquatic animals, in coordination with the Competent Veterinary Authority;
- h) promote the monitoring and certification of the health of aquatic organisms, in coordination with the Competent Veterinary Authority;
- i) carry out research and assessment programs related to hazards and risks in aquatic organisms, fishery products, and feed for aquatic animals;
- j) carry out verification and auditing of compliance and compliance with health and hygiene requirements of operators and production units, at all stages of the production chain, including distribution and trade;
- k) collect and record amounts arising from the provision of services;
- l) ensure the certification process of the fish inspection body and maintain the respective level of certification;
- m) ensure the accreditation process for laboratory analyses and maintain the respective level of accreditation;
- n) publish and update, whenever necessary, the list of accredited and reference laboratories for analyses relating to official controls and self-control of production units and operators regarding the hygienic and sanitary quality of products.

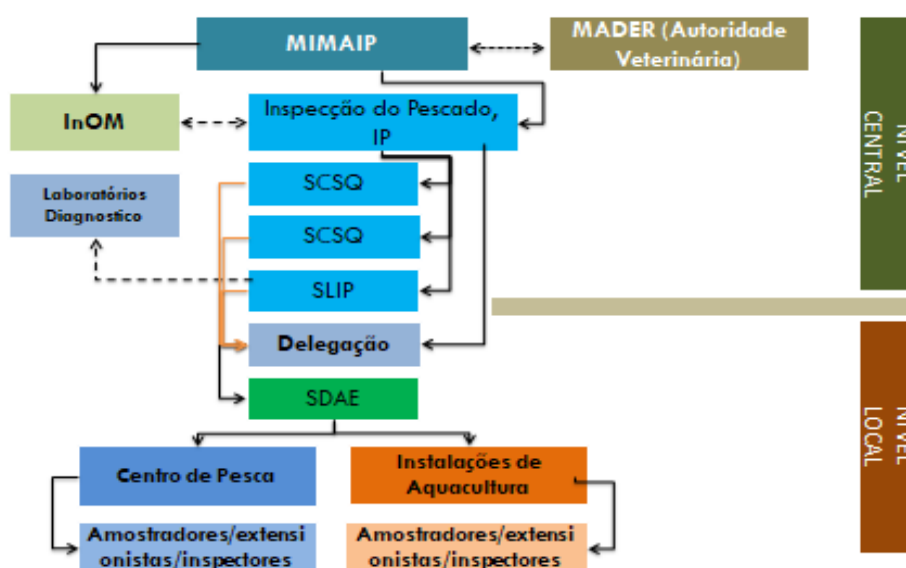
The AAHS are organised at INIP central level, INIP in the Central services for sanitary certification and quarantine (SCQP), Fish inspection laboratory services (SLIP) and Central sanitary licencing services (SLS).

There have been no changes since 2011 in terms of AAHS legislation, so the legal responsibilities and competent authorities remain the same, and the active law is still the

“Decreto 26/2009”. There is a draft animal health law “Lei de Sanidade Animal Maio de 2023” that has not yet been promulgated. There is no official delegation of functions from the Veterinary Authority, but a degree of practical implementation of the new Law in the field, by means of different mechanisms of coordination.

Mozambique has 11 provinces and 153 districts. At province level the main activities of AAHS are performed in coordination with the “Servicos Provinciais de Actividades Economicas” (SPAЕ) and “Direccao Provincial de Agricultura e Pescas” (DPAP). Districts are organized in District Economic activities services (SDAE). The SDAE respond to both SPAЕ and DPAP.

Organização e Operação do AAHS



II.2.C Aquatic animal disease occurrence

Information on aquatic animal disease occurrence from the WOA website (see table 3).

Table 3: Disease status of the country

HOME » ANIMAL DISEASE EVENTS							
Events management							
Filters		See on the map					
Animal type: AQUATIC		Country: Mozambique					
☐	Country	Report number	Disease	Genotype/ Serotype/ Subtype	Reason	Start date	Report date
☐	Mozambique	FUR_1	Aphanomyces Invadans (Inf. with) (Epizootic ulcerative syndrome)		First occurrence in the country	2023/07/15	2023/08/24
☐	Mozambique	FUR_2	White spot syndrome virus (Inf. with)		First occurrence in a zone or a compartment	2011/08/31	2013/07/23

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II.3 Organisation of the evaluation

II.3.A Timetable of the mission

Appendix 4 provides a list of persons met and the timetable of the mission and details of the facilities and locations visited by the WOA Aquatic PVS Team and Appendix 5 provides the international air travel itinerary of team members.

II.3.B Categories of sites and sampling for the evaluation

The table 4 lists the categories of site relevant to the evaluation and the number of each category of site in the country. It indicates how many of the sites were visited, in comparison with the suggested sampling framework (“ideal” sampling) recommended in WOA PVS Manuals.

Table 4: Site sampling

	Terminology or names used in the country	Number of sites	“Ideal” sampling	Actual sampling
GEOGRAPHICAL ZONES OF THE COUNTRY				
Climatic zone	1 - Tropical savannah climate on the coast. 2 - Humid Subtropical climate inland, with smaller zones as warm semi-arid or desert climate.		3	2
Topographical zone				
Agro-ecological zone				
ADMINISTRATIVE ORGANISATION OF THE COUNTRY				
1st administrative level	National	1	All	1
2nd administrative level	Province;	10	All	2
3rd administrative level	District	153	All	0
4th administrative level	Administrative post	419	All	0
Urban entities	Municipality	53	All	0
VETERINARY SERVICES OR AQUATIC ANIMAL HEALTH SERVICES ORGANISATION AND STRUCTURE				
Central (Federal/National) AAHS	Headquarters of INIP	1	All	1
Internal division of the central AAHS	3 central services (Central health certification and quarantine service and central health licensing service and central laboratory services	3	All	3
1 st level of the AAHS	Headquarters of INIP	1	All	1
2 nd level of the AAHS	6 Provincial Fish Inspection Delegations and 2 Provincial Fish Inspection Representation	8	All	2
3 rd level of the AAHS	Not applicable			
Veterinary organisations (VSB, unions...)	1. Order of Veterinary Doctors of Mozambique; 2. Association of Veterinary Doctors of Mozambique	2	All	1
FIELD AQUATIC ANIMAL HEALTH NETWORK				
Field level of the AAHS (aquatic animal health)	Fish inspectors, samplers and extension agents,		All	1
Private veterinary sector	Not applicable	-	-	0
Other sites	Farms			
VETERINARY MEDICINES & BIOLOGICALS				
Production sector	Not applicable	-	-	0

Import and wholesale sector	The National Directorate for Livestock Development in the Ministry of Agriculture and Rural Development is the entity responsible for registration, market introduction as well as marketing authorization.			0
Retail sector				1
Other partners involved	Not applicable			
LABORATORIES				
National laboratories	Biotechnology Center at Eduardo Mondlane University	1	All	2
Regional and local laboratories	Not applicable	-	-	2
Associated, accredited and other laboratories	Not applicable	-	-	
AQUATIC ANIMAL AND ANIMAL PRODUCTS MOVEMENT CONTROL				
Bordering countries	Eswatini, South Africa, Zambia, Malawi, Tanzania and Zimbabwe	6	All	0
Airports and ports border posts	8 airport and 13 border post	21	All	1
Main terrestrial border posts	7	7	All	0
Minor terrestrial border posts	9	9	All	0
Quarantine stations for import	Does not exist	-	-	0
Internal check points	16	16	-	1
Live aquatic animal markets	Does not exist	-	-	
Zones, compartments, export quarantines	Does not exist	-	-	
PUBLIC HEALTH INSPECTION OF AQUATIC ANIMALS AND AQUATIC ANIMAL PRODUCTS				
Export processing plants	19	19	All	
National market processing plants	22	22	All	
Local market processing plants	1	1	All	
On farm processing sites	3	3	All	
Processing sites	22	22	All	
Retail outlets (shops, restaurants)	-	-	-	
TRAINING AND RESEARCH ORGANISATIONS				
Veterinary university	1. Eduardo Mondlane University-FaVET 2. University of Save-Faculty of Veterinary Chongoene	2	All	1
AAH professional training schools	1. Gaza Higher Polytechnic Institute, (ISPG) 2. Fishing School	2	All	1
Fisheries, aquaculture and veterinary research organisations	1. CEPAC- Aquaculture Research Center 2. LIP-Fish Inspection Laboratory 3. InOM-Oceanographic Institute of Mozambique 4. IIAM-Agrarian Research Institute 5. DCA-Animal Sciences Directorate	5	All	3
STAKEHOLDERS' ORGANISATIONS				
Agricultural Chamber / organisation	Does not exist	-	-	
National aquaculture farmers organisations	Mozambican Association of Aquaculturists,	1	All	1

Local aquaculture farmers organisations	Does not exist	-	-	
Other stakeholder organisations	Mozambican Association of Industrial Fishing			
Consumer organisations	1. PROCONSUMERS-Association for Consumer Study and Defense 2. DECOM- Consumer Protection Association of Mozambique	2	All	

PART III: RESULTS OF THE EVALUATION & GENERAL RECOMMENDATIONS

This evaluation identifies the strengths and challenges of the Aquatic Animal Health Services and makes general recommendations.

FUNDAMENTAL COMPONENTS

1. HUMAN PHYSICAL AND FINANCIAL RESOURCES
2. TECHNICAL AUTHORITY AND CAPABILITY
3. INTERACTION WITH STAKEHOLDERS
4. ACCESS TO MARKETS

The activities of the Aquatic Animal Health Services are recognised by the international community and by WOAHS Members as a '**global public good**'. Accordingly, it is essential that each country acknowledges the importance of its role and responsibilities and gives them the human and financial resources needed to fulfil their responsibilities.

PVS Evaluations examined each critical competency under the 4 fundamental components, listed strengths and weaknesses where applicable, and established a current level of advancement for each critical competency. Evidence supporting this level are listed in Appendix 5. General recommendations were provided where relevant.

The current level of advancement for each critical competency is shown in cells shadowed in grey (15%) in the table.

III.1 Fundamental component I: Human, physical and financial resources

This component of the evaluation concerns the institutional and financial sustainability of the AAHS as evidenced by the level of professional/technical and financial resources available and the capacity to mobilize these resources. It comprises twelve critical competencies:

Critical Competencies:

Section I-1	Professional and technical staffing of the Aquatic Animal Health Services (AAHS)
	A. Veterinarians or aquatic animal health professionals (university qualification)
	B. Aquatic animal health technical personnel, including veterinary paraprofessionals
Section I-2	Competencies of education of veterinarians or aquatic animal health professionals, and technical personnel
	A. Veterinarians and aquatic animal health professionals (university qualification) including the WOAHS Day 1 competencies for veterinarians
	B. Aquatic animal health technical personnel, including veterinary paraprofessionals
Section I-3	Continuing education (CE)
Section I-4	Technical independence
Section I-5	Planning, sustainability and management of policies and programmes
Section I-6	Coordination capability of the AAHS
	A. Internal coordination (chain of command)
	B. External coordination (including the One Health approach)
Section I-7	Physical resources and capital investment
Section I-8	Operational funding
Section I-9	Emergency funding

----- Aquatic Code references:

- Points 1-7, 9, 11 and 14 of Article 3.1.2. on Fundamental principles of quality: Professional judgement/Independence/Impartiality/Integrity/Objectivity/Aquatic animal health legislation and regulations/General organisation/Documentation/Procedures and standards/Human and financial resources.

Terrestrial Code references:

- Article 3.2.1. on General considerations.
- Article 3.2.2. on Fundamental operating principles.
- Article 3.2.3. on Policy and management.
- Article 3.2.4. on Personnel and resources.
- Article 3.2.5. on The veterinary profession.
- Article 3.2.6. on Stakeholders.
- Article 3.2.10. on Laboratories.
- Article 3.2.12. on International trade.
- Chapter 3.5. on Communication.

Terrestrial Manual reference:

- Chapter 1.1.1. on Management of veterinary diagnostic laboratories.

I-1. Professional and technical staffing of the Aquatic Animal Health Services (AAHS) <i>The appropriate staffing of the AAHS to allow for veterinary and aquatic animal health professional functions to be undertaken efficiently and effectively.</i> A. Veterinarians or aquatic animal health professionals (university qualification)	Levels of advancement
	1. The majority of positions requiring veterinary and aquatic animal health professional skills are not occupied by appropriately qualified personnel.
	2. The majority of positions requiring veterinary and aquatic animal health professional skills are occupied by appropriately qualified personnel at central and state/provincial levels.
	3. The majority of positions requiring veterinary and aquatic animal health professional skills are occupied by appropriately qualified personnel at local (field) levels.
	4. There is a systematic approach to defining job descriptions and formal, merit-based appointment and promotion procedures for veterinarians and aquatic animal health professionals.
	5. There are effective procedures for formal performance assessment and performance management of veterinarians and aquatic animal health professionals.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

INIP personnel does not have specific job descriptions.

The majority of professional positions are occupied by appropriately qualified personnel at central and provincial levels

PVS Evaluation (2011) - Level 2

Findings:

The AAHS of Mozambique primarily consists of staff members from the National Institute for Fish Inspection (INIP) under the Ministry of the Sea, Inland Waters, and Fisheries (MIMAIP). Personnel from other MIMAIP-affiliated agencies, such as IDEPA can also be considered integral members of the AAHS. IDEPA's personnel play a role in providing extension services to promote aquatic health. At the provincial level, individual staff from SPAE and DPAP are also considered part of the AAHS.

The distribution of AAHS personnel from the various agencies mentioned above is outlined in the table below.

	Veterinary / AAH Professional staff (university qualification)		administrative staff		Veterinary /AAH paraprofessionals and other technical staff	
	filled posts	vacant posts	filled posts	vacant posts	filled posts	vacant posts
Aquatic Animal Health						
<i>Central/National</i>	3	2			7	--
<i>State/Regional</i>	7	10			42	--
<i>Local)</i>	153	0			306	--
<i>border controls</i>	0	10			3	--
Veterinary Public Health (food safety)						
<i>Central/ National</i>	7	3			--	--
<i>State/Regional</i>	42	20				18
<i>Location (SDAE)</i>	306	0			--	--
<i>laboratory service</i>					--	--

<i>central laboratory</i>	2	1			--	--
<i>regional laboratories</i>	3	3			0	
Others (specify)						

Key Changes from 2011 to 2023:

- No major changes were observed, except the creation of the One Health Platform, which has existed since 2013.

Strengths:

- A significant number of AAHS staff are university graduates. The central staff of INIP mainly comprises of veterinarians.

Weaknesses:

- No new staff have been recruited for the past seven years due to a national policy of freeze hiring. Retired staff are not replaced.

Recommendations:

- Conduct a workforce assessment of AAHS to determine the number of professional and technical staff needed, and the corresponding training required.
- Write detailed job descriptions at all levels of AAHS organization.
- Develop performance assessment systems based on the job descriptions and annual projects.

Evidence (listed in Appendix 6): 113.

I-1. Professional and technical staffing of the Aquatic Animal Health Services (AAHS)	Levels of advancement
B. Aquatic animal health technical personnel, including veterinary paraprofessionals	1. The majority of positions requiring aquatic animal health technical skills are not occupied by personnel holding appropriate qualifications.
<i>The appropriate level of staffing of the AAHS to enable aquatic animal health professional functions to be undertaken efficiently and effectively.</i>	2. Some positions requiring technical skills are occupied by personnel holding appropriate qualifications. There is little or no veterinary or aquatic animal health professional (university-level qualification) supervision.
<i>This covers aquatic animal health technical personnel trained at dedicated educational institutions with formal qualifications which are recognised by the government or the Veterinary Statutory Body or other official body for veterinary specialisation.</i>	3. The majority of positions requiring technical skills are occupied by personnel holding appropriate qualifications. There is a variable level of veterinary or aquatic animal health professional (university-level qualification) supervision.
	4. The majority of technical positions are effectively supervised on a regular basis by veterinarians or aquatic animal health professionals (university-level qualification).
	5. There are effective management procedures for formal appointment and promotion, as well as performance assessment and performance management of technical positions (non-university-level qualification).

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Medical technologists are trained at the veterinary faculty in Food Hygiene.

The majority of technical positions at central and provincial levels are occupied by personnel holding technical qualifications but not at local level.

PVS Evaluation (2011) - Level 2

Findings:

The team visited the Instituto Superior Politecnico de Gaza (ISPG), which offers a 4-year Bachelor's degree in Aquaculture. This program began in 2014, and its first graduates completed their studies in 2019. Currently, there are 119 students enrolled, with an average of 35 new students admitted each year. The faculty consists of 6 full-time teachers, with an additional 2 on scholarships pursuing PhDs in fish diseases in Brazil and fish biology.

Many graduates in aquaculture and fisheries have found employment in government agencies, especially at the provincial and district levels. In contrast to the 2011 PVS evaluation, where AAHS had minimal presence at the local level, this follow-up PVS Mission revealed evidence of provincial and district governments hiring personnel specifically for aquatic and fishery activities.

INIP and other national agencies under MIMAIP have a significant number of technical and paraprofessional staff at the central, provincial and local / district levels. It is difficult to assess if the number of extensionists is sufficient to implement the activity plans drafted by the central and provincial services. In many districts extensionists support both aquaculture and agriculture farmers.

Key Changes from 2011 to 2023:

- Additional schools were offering aquaculture or fishery courses to produce more graduates with sufficient technical expertise.
- Staffing of AAHS extended to the local level, although INIP is not currently involved in the recruitment and hierarchy of extensionists dedicated to aquaculture and fisheries.

Strengths:

- Contributions of local government to hire aquaculture and fishery personnel to support national programs.

Weaknesses:

- Similar to CC 1-1A, no new staff have been recruited for the past 7 years due to a national policy of freeze hiring. Retired staff are not replaced.

Recommendations:

- Similar to C 1-1A, to conduct a workforce assessment of AAHS to determine the number of professional and technical staff needed, and the corresponding training required.

Evidence (listed in Appendix 6): 113.

I-2. Competencies and education of veterinarians or aquatic animal health professionals, and technical personnel	Levels of advancement
<i>The capability of the AAHS to effectively carry out their veterinary or aquatic animal health professional practices and technical functions, as indicated by the level and quality of the qualifications of their personnel in veterinary or aquatic animal health professional positions.</i> A. Veterinarians and aquatic animal health professionals (university qualification) including the WOA Day 1 competencies for veterinarians <i>This references the WOA recommendations on the Competencies of Graduating Veterinarians (Day 1 Graduates) and the WOA Guidelines on Veterinary Education Core Curriculum⁴. Specific competencies in aquatic animal health should also be considered.</i>	1. The knowledge, skills and practices of veterinarians or aquatic animal health professionals are of a variable standard that allow for elementary clinical and administrative activities of the AAHS.
	2. The knowledge, skills and practices of veterinarians or aquatic animal health professionals are of a uniform standard sufficient for accurate and appropriate clinical and administrative activities of the AAHS.
	3. The knowledge, skills and practices of veterinarians or aquatic animal health professionals are sufficient for all professional/technical activities of the AAHS (e.g. surveillance, treatment and control of aquatic animal disease, including conditions of public health significance).
	4. The knowledge, skills and practices of veterinarians or aquatic animal health professionals are sufficient for specialised activities (e.g. higher-level epidemiological analysis, disease modelling, animal welfare science) as may be needed by the AAHS, supported by post-graduate-level training.
	5. The knowledge, skills and practices of veterinarians or aquatic animal health professionals are subject to regular updating, and are internationally recognised, for example through formal evaluation and/or the granting of international equivalence with other recognised veterinary or AAH membership qualifications.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 2

Findings:

There are two veterinary schools in Mozambique: The Veterinary Faculty of Eduardo Mondlane University and UniSAVE College of Veterinary Medicine.

During the PVS Team's visit to the Veterinary Faculty of Eduardo Mondlane University, the Dean outlined three main areas of focus: veterinary medicine, animal production, and food safety. Currently, the school offers a Master of Science (MSc) degree in Animal Production and Food Safety. Recognizing the growing importance of aquaculture, the school is planning to develop an MSc program in Aquatic Animal Health, with curriculum development support from experts based in Pretoria. Additionally, two faculty members are currently pursuing PhDs focused on White Spot Syndrome Virus (WSSV). The school also plans to collaborate with universities in Botswana and Brazil to contribute to the teaching of the new MSc program in Aquatic Animal Health.

Most the veterinarians working at INIP are graduates from the Veterinary Faculty of Eduardo Mondlane University. While the majority did not get specific training on aquatic animal health during their university education, they get various trainings from international experts visiting Mozambique for some donor-assisted projects. They also join international trainings, including those training organized by WOA for Aquatic Focal Points.

The PVS Team was impressed with skills of the staff working in various laboratories it visited. This is evidenced with the central laboratory of INIP recognized by EU to test samples of

⁴ Reference can be made to the Recommendations on Competencies of graduating veterinarians ('Day 1 graduates') to assure National Veterinary Services of quality and the WOA Guidelines on Veterinary Education Core Curriculum both available at the WOA website at <https://www.woah.org/en/what-we-offer/improving-veterinary-services/pvs-pathway/targeted-support/veterinary-and-veterinary-paraprofessional-education/>

aquatic products for export. The staff from INIP also show evidence of their capacity to design and implement an active surveillance for WSSV. They also conducted an investigation of suspected TiLV.

While staff involved in AAHS at central level are recruited on their professional skills in AAH, local employees are recruited by the provinces, and managed by both the federal agencies and provinces. Since extensionists are recruited to support both agriculture, fisheries and aquaculture, they often don't have skills nor experience in AAHS, but more in agriculture or fisheries.

Key Changes from 2011 to 2023:

- Additional veterinary school was established - UniSAVE College of Veterinary Medicine

Strengths:

- The Veterinarians and aquatic animal health professionals working at INIP (both those involve in field and laboratories) have enough knowledge and skills to conduct their routine work.

Weaknesses:

- No evidence to show that the aquatic animal health professionals working at provincial and district level have enough knowledge and skills for aquatic animal health.

Recommendations:

- Given that the Veterinary Faculty of Eduardo Mondlane University is planning to set up a MSc in Aquatic animal Health, the INIP could collaborate with the school to develop a training for modules for in-service veterinarians and aquatic animal health professionals.

Evidence (listed in Appendix 6): 65, 66, 67, 68, 69, 70, 113.

I-2. Competencies and education of veterinarians or aquatic animal health professionals, and technical personnel B. Aquatic animal health technical personnel, including veterinary paraprofessionals ⁵	Levels of advancement
	1. Positions requiring technical personnel skills are generally occupied by those having no formal training or qualifications from dedicated educational institutions.
	2. The training and qualifications of those in positions requiring technical personnel skills are of a variable standard and allow for the development of only basic competencies.
	3. The training and qualifications of technical personnel are of a fairly uniform standard that allows the development of some specific competencies (e.g., supervised treatment administration on farms, aquatic animal product hygiene control, basic laboratory tests).
	4. The training and qualifications of technical personnel are of a uniform standard that allows the development of more advanced competencies (e.g., tissue sample collection on farms, supervised aquatic animal product inspection, complex laboratory testing).
	5. The training and qualifications of technical personnel are of a uniform standard and are subject to regular evaluation and/or updating.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 3

Findings:

The PVS Team visited the Instituto Superior Politecnico de Gaza (ISPG) which offers a four-year Bachelor's degree in Aquaculture, a program that was initiated in 2014. The curriculum at ISPG is structured to include general courses in the first year, followed by specialized courses in the second and third years, covering topics such as Microbiology and Pathology. In their fourth year, students participate in field practice for one semester and subsequently prepare a technical report based on their experiences. These students gain practical experience by working in various aquaculture institutions, including CEPAQ. Graduates from this program are considered to have acquired the minimum knowledge and skills necessary to work in the field of aquatic animal health.

Technical staff and veterinary paraprofessionals specializing in AAH at the National Institute of Fish Health (INIP) have access to various training programs to support their roles as veterinarians and AAH professionals.

Additionally, training opportunities are provided by ProAzul through their program aimed at encouraging young entrepreneurs to engage in aquaculture. Commercial enterprises like Chicoa Fish Farm also offer short-term, on-the-job training opportunities for private individuals at their facilities.

Key Changes from 2011 to 2023:

- Additional schools offering bachelor's degrees on Aquaculture were established, for example the Instituto Superior Politecnico de Gaza (ISPG).

Strengths:

- Availability of more staff trained about AAH to reduce the gap at national level.

Weaknesses:

- A significant gap on the knowledge and skills of technical personnel at the provincial and district level, as evidenced by lack of passive surveillance.

⁵ Reference can be made to the WOAHS Competency Guidelines for Veterinary Paraprofessionals (2018) and WOAHS Curricula Guidelines for Veterinary Paraprofessionals (2019) available on the WOAHS website at <https://www.woah.org/en/what-we-offer/improving-veterinary-services/pvs-pathway/targeted-support/veterinary-and-veterinary-paraprofessional-education/>

Recommendations:

- Develop a training module and conduct regular training for field AAH technical personnel and veterinary paraprofessionals, particularly in aquatic disease surveillance.

Evidence (listed in Appendix 6): 113.

I-3. Continuing education (CE)⁶ <i>The capability of the AAHS to maintain, update and improve knowledge, attitudes and skills of their personnel, through an ongoing staff training and development programme assessed on a regular basis for relevance and targeted skills development.</i>	Levels of advancement
	1. The AAHS have no access to veterinary, professional or technical CE.
	2. The AAHS have access to CE (internal and/or external training and development programmes) on an irregular basis but it does not take needs into account, or new information, or understanding.
	3. The AAHS have access to CE that is reviewed and sometimes updated, but it is implemented only for some categories of the relevant personnel.
	4. The AAHS have access to CE that is reviewed annually and updated as necessary and is implemented for all categories of the relevant personnel.
	5. The AAHS have up-to-date CE that is implemented or is a requirement for all relevant personnel and is subject to dedicated planning and regular evaluation of effectiveness.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 4

Findings:

While there are a number of trainings that veterinarians / AAH professionals and AAH technical staff and paraprofessionals have attended both at local and international level, there is no organized continuing education program to build the capacity needs of the AAH services in a harmonised way. Most of these trainings are ad hoc, dependent on some projects.

Examples of trainings recently attended by INIP veterinarians are:

October 2022: Workshop on Aquatic Animal Health organized by the World Organization for Animal Health (WOAH).

April 2021: Aquatic Animal Diseases (Focused on tilapia and catfish: diseases and treatment) - Webinar workshop held by Aquaculture Africa Magazine.

November 2019: Participation in the sub-regional workshop on antimicrobial resistance (AMR) in aquaculture, in Durban, RSA

December 2018: 3rd regional training cycle of focal points 2018, in Dar es Salam, Tanzania.

Key Changes from 2011 to 2023:

- During PVS Evaluation in 2011, a number of trainings were listed, mainly for laboratory staff. This was not provided during the current mission.

Strengths:

- Actively participate in international trainings organized by WOAH and other international partners.

Weaknesses:

- No institutionalized continuing education program. Training activities are fully dependant on external programmes.

⁶ Continuing education includes Continuous Professional Development (CPD) for veterinary, or aquatic animal health professional and other technical personnel.

Recommendations:

- Develop training modules in collaboration with veterinary and fishery schools for an institutionalised training program.

Evidence (listed in Appendix 6): 113.

I-4. Technical independence	Levels of advancement
<i>The capability of the AAHS to carry out their duties with autonomy and without undue commercial, financial, hierarchical and political influences that may affect technical decisions in a manner contrary to the provisions of WOH (and of the WTO SPS Agreement, where applicable).</i>	1. The technical decisions made by the AAHS are generally not based on scientific considerations.
	2. The technical decisions consider the scientific evidence but are routinely modified to conform to non-scientific considerations.
	3. The technical decisions are based on scientific evidence but are subject to review and possible modification based on non-scientific considerations.
	4. The technical decisions are made and generally implemented in accordance with the country's WOH obligations (and with the country's WTO SPS Agreement obligations, where applicable).
	5. The technical decisions are based on a high level of scientific evidence, which is both nationally relevant and internationally respected, and are not unduly changed to meet non-scientific considerations.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

No evidence of ministerial interventions to modify technical decisions made.

PVS Evaluation (2011) - Level 3

Findings:

The MIMAIP is implementing the Mozambique aquaculture development strategy which considers the political decision to support commercial and small-scale aquaculture. The strategy and its implementation plan include provisions on aquatic animal health management, but INIP, as Competent Authority for AAH, has difficulty in aligning the requirements for AAH with the policy's ambitious aquaculture production objectives.

There is no evidence that decisions at technical level are influenced by commercial /private stakeholders or political governance. Clear rules for budget attribution and staff recruitment based on open competition and merit are available. Responsible staff at central level (INIP) has the necessary scientific technical competencies on AAH including food safety and import-export requirements. At provincial/local level activities are coordinated by the INIP delegation-MIMAIP and SDAE – District governor, both being politically nominated.

Scientific evidence is considered for AAH activities, but the lack of a legal framework and availability of resources limits its implementation.

Key Changes from 2011 to 2023:

- Competencies on Aquatic animal health management prevention and control in coordination with the Veterinary authorities are now part of the INIP competencies established by the Ministerial Diploma 93/22 – INIP internal regulation, on aspects related with food safety and aquatic animal disease management.

Strengths:

- Clear attribution of AAH competent authority role to INIP.
- Technical competencies of responsible INIP staff.

Weaknesses:

- Priority to production objectives in detriment of AAH considerations.

Recommendations:

- Ensure technical decisions for the prevention and control of AA diseases are based on a high level of scientific evidence and are not changed to meet production targets that can compromise the future sustainability of the sector.

Evidence (listed in Appendix 6): 15, 16, 17, 18, 35, 50.

I-5. Planning, sustainability and management of policies and programmes	Levels of advancement
<i>The capability of the AAHS leadership and organisation to develop, document and sustain strategic policies and programmes, and to report on, review and evolve them, as appropriate over time.</i>	1. Policies and programmes are insufficiently developed and documented. Substantial changes to the organisational structure and/or leadership of the public sector of the AAHS frequently occur (e.g., annually), resulting in a lack of sustainability of policies and programmes.
	2. Some basic policy and programme development and documentation exist, with some reporting on implementation. Sustainability of policies and programmes is negatively impacted by changes in the political leadership or other changes affecting the structure and leadership of the AAHS.
	3. There is well-developed and stable policy and programme documentation covering most relevant areas. Reports on programme implementation are available. Sustainability of policies and programmes is generally maintained during changes in the political leadership and/or changes to the structure and leadership of the AAHS.
	4. Policies or programmes are sustained, but also reviewed (using data collection and analysis) and updated appropriately over time, through formal national strategic planning cycles, to improve effectiveness and address emerging concerns. Planning cycles continue despite changes in the political leadership and/or changes to the structure and leadership of the AAHS.
	5. Effective policies and programmes are sustained over time and the structure and leadership of the AAHS is strong and stable. Modifications to strategic and operational planning are based on a robust evaluation or audit process, using evidence, to support the continual improvement of policies and programmes over time.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Changes in political leadership have little or no negative effect on sustainability of policies.

The six INIP provincial representatives (delegations) are not subordinate to the provincial governor in respect of their functions. Administrative and financial actions such as personnel administration, budget, and financial issues (including salaries) however are the responsibility of the provincial administration.

PVS Evaluation (2011) - Level 4

Findings:

In 2011 (simultaneously with the first PVS AAH mission) Mozambique notified its first outbreak of infection with WSSV. The outbreak led to the closure of all commercial shrimp farms and the development of a new aquaculture development strategy with a bigger focus on small scale Tilapia farming with the objective to ensure subsistence to local communities. In addition, the decrease of “capeta” stocks in inland waters was observed as well as a decrease of wild shrimp fishing catch and unavailability of infrastructure (commercial fishing harbours) for processing and export of wild catches.

The current aquaculture development strategy is from 2020, a health strategy for aquatic organisms and biosecurity was approved in 2023 and the Cahora Bassa dam management plan is to be approved. The activities on food safety of aquatic animal products were revised following the 2013 FVO inspection with revision of the national residues monitoring plan. A strategic plan for AMR is in place and a One Health national strategy is being developed. Reports of the AAHS activities conducted by INIP both centrally and locally are available but not all components of the AAHS are implemented. The Blue Economy Development Fund, FP - ProAzul created in 2019, is a government financial mechanism that manages donor funding

so that strategic and financial resources are aligned with initiatives for the sustainable exploitation of inland waters, sea and coastline.

The CA for the management of AAHS is MIMAIP. Its latest organizational review is from 2015.

Filipe Jacinto Nyusi is the fourth President of Mozambique since 2015. He is the current leader of FRELIMO, the party that has governed Mozambique since its independence from Portugal in 1975. No major political or government reorganization has occurred since 2015.

Key Changes from 2011 to 2023:

- The WSD outbreak of 2011.
- New Aquaculture development strategy 2020-2030.
- The description of level 4 in the report of 2011 was " Some changes occur in the organizational structure and/or leadership of the public sector of the AAHS following a change in the political leadership but these have little or no negative effect on sustainability of policies." Which is in line with the current 2023 assessment.

Strengths:

- Well-developed policy and programme documentation covering most relevant areas.
- Reports on programme implementation are available.

Weaknesses:

- Legal framework for implementation of programs in AAH is not approved.
- Implementation of policies is insufficient to improve /review strategic plans.

Recommendations:

- Implement a review of policies and programmes, (using data collection and analysis) to update over time, through formal national strategic planning cycles, in order to improve effectiveness and address emerging concerns.

Evidence (listed in Appendix 6): 6, 7, 8, 9, 10, 11, 16, 17, 103.

I-6. Coordination capability of the AAHS	Levels of advancement
A. Internal coordination (chain of command) <i>The capability of the Competent Authority to coordinate its mandated activities with a clear chain of command, from the central level (the Chief Veterinary Officer or equivalent) to the field level of the AAHS, as relevant to the WOA Aquatic Code (i.e. surveillance, disease control, eradication, food, emergency preparedness and response).</i>	1. There is no formal internal coordination, and the chain of command is not clear.
	2. There are internal coordination mechanisms for some activities, but the chain of command is not clear.
	3. There are internal coordination mechanisms and a clear and effective chain of command for some activities, such as export certification, border control and/or emergency response.
	4. There are formal, internal coordination mechanisms and a clear and effective chain of command for most activities, including surveillance (and reporting) and disease control programmes.
	5. There are formal, documented, internal coordination mechanisms and a clear and effective chain of command for all activities, and these are periodically reviewed/audited and updated to re-define roles and optimise efficiency, as necessary.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Strengths:

Clear and effective chain of command.

The organigramme illustrates the direct chain of command between INIP and MIMAIP.

PVS Evaluation (2011) - Level 4

Findings:

The Ministry of the Sea, Inland Waters and Fisheries (MIMAIP), through the National Institute for Fish Inspection (INIP) is the Competent Authority to promote the monitoring and certification of the health of aquatic organisms in coordination with the Veterinary Authority. MIMAIP is separated from the MoA for more than 20 years. INIP is a public institution, endowed with legal personality and administrative autonomy. Its objectives and competencies were revised in 2019 and besides the activities regarding food of aquatic origin, its production and inspection, also registration, certification, monitoring and inspection of establishments and products of feed for aquatic animals and aquaculture in coordination with the veterinary authority are included.

At central level INIP is organized in 5 departments⁷:

- Central services for sanitary certification and quarantine (SCQP)
- Fish inspection laboratory services (SLIP)
- Central sanitary licencing services (SLS)
- Administration and Human resources
- Communication and information technology

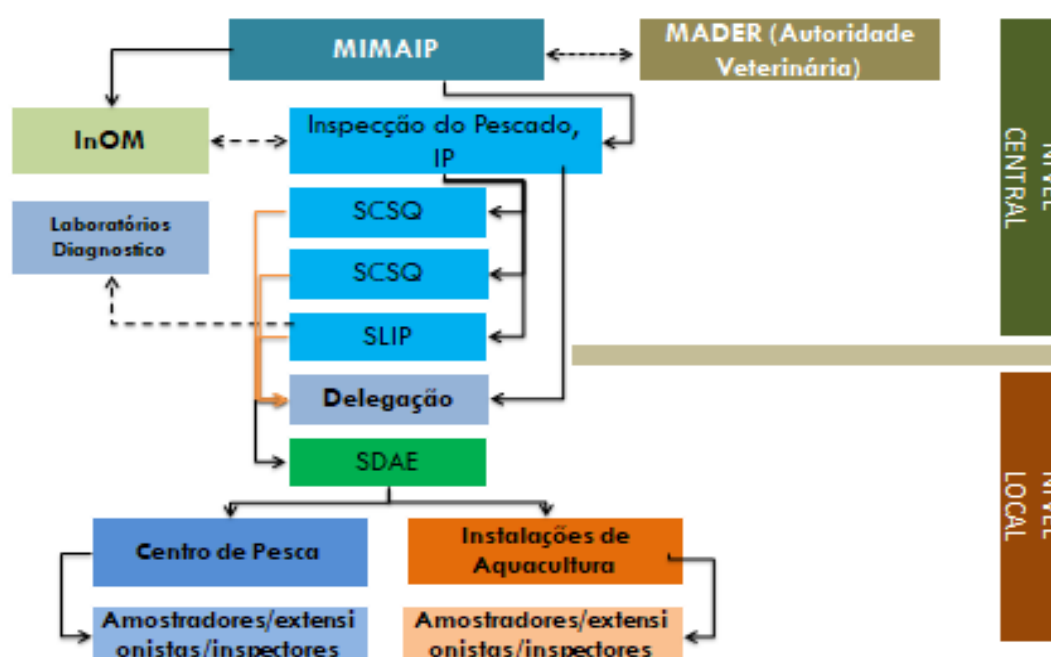
Mozambique has 11 provinces and 153 districts. The chain of command is established by the internal regulations of the Inspeção do Pescado, INIP. At the provincial level, INIP delegates are appointed by the Minister of the Sea, inland waters and fisheries at the proposal of the Director General and report to the General Director of INIP. INIP is responsible for the activities of certification, licencing and inspection including the provision of laboratory services.

⁷ https://www.mimaip.gov.mz/o-ministerio/instituicoes-tuteladas-e-subordinadas/?page_id=1391

At province level the main activities of AAHS are performed in coordination with the “servicos provinciais de actividades economicas” (SPAЕ) and “Direcção provincial de agricultura e pescas” (DPAP). The SPAЕ responds to the government provincial general secretary and the DPAP to the province governor who is elected at provincial level. In the visit to the DPAP of Tete it was evident that province priorities could differ from the IDEPA-INIP priorities.

Districts are organized in District Economic activities services (SDAE). The SDAE respond to both SPAЕ and DPAP. SDAE have a formal agreement with INIP to conduct activities at local level through their extensionists and inspectors. In most cases Extensionists work in both fisheries and agriculture tasks and it is unclear how resources are prioritised between activities.

Organização e Operação do AAHS



For example, to implement WSD targeted surveillance, a plan has been drafted by INIP central SQCP, the plan has been agreed with Province INIP delegate and inspectors to collect samples at district level to be sent for laboratorial analysis.

Key Changes from 2011 to 2023:

- While in 2011 the activities implemented consisted solely of regulatory actions such as the licencing of fish vessels, processing plants, and aspects related with food safety, in 2023 aquatic animal health activities have been included although not all of them are being implemented (Diploma Ministerial 93/22 de 23 de Agosto 2022, INIP internal regulation).
- District organic units, SDAE respond to both SPAЕ and DPAP at provincial level. The SPAЕ responds to the government provincial general secretary and the DPAP to the province governor who is elected at provincial level.
- The description of level 4 in the report of 2011 was "There are internal coordination mechanisms and a clear and effective chain of command for most activities". Which is in line with the current 2023 assessment

Strengths:

- Clear CA roles and responsibilities with effective chain of command regarding licencing of fishing vessels, aquatic animals and products establishments, and food safety monitoring and inspection aspects at all levels of administration.

Weaknesses:

- Surveillance (and reporting) and disease control programmes including emergency response at are not effectively implemented at local level.
- Absence of national reference laboratories/insufficient diagnostic capacity.

Recommendations:

- Ensure allocation of resources and effective coordination between INIP and provincial authorities to allow for implementation of all AAHS aspects including disease surveillance (and reporting), disease control programmes and emergency response.

Evidence (listed in Appendix 6): 1,10, 37, 103, 104, 113.

I-6. Coordination capability of the AAHS	Levels of advancement
B. External coordination (including the One Health approach) <i>The capability of the Competent Authority to coordinate its resources and activities at all levels with other relevant government authorities with responsibilities within the AAH domain⁸, in order to implement all national activities relevant to the WOAHA Aquatic Code, especially those not under the direct line authority of the Chief Veterinary Officer (or equivalent).</i> <i>Relevant authorities include other Ministries and Competent Authorities, such as government partners in public health (e.g., zoonoses, food safety, drug regulation and antimicrobial resistance), environment (e.g., wildlife health), Customs and border police (e.g., border security), Defence/Intelligence (e.g., bio-threats⁹), or municipalities/local councils.</i>	1. There is no external coordination with other government authorities.
	2. There are informal external coordination mechanisms for some activities at national level, but the procedures are not clear and/or external coordination occurs irregularly.
	3. There are formal, external coordination mechanisms with clearly described procedures or agreements (e.g., Memoranda of Understanding) for some activities and/or sectors at the national level.
	4. There are formal external coordination mechanisms with clearly described procedures or agreements at the national level for most activities (such as for One Health), and these are uniformly implemented throughout the country, including at state/provincial level.
	5. There are national external coordination mechanisms for all activities, from national to field, and these are periodically reviewed and updated to re-clarify roles and optimise efficiency.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

The Team identified the virtual total absence of coordination and collaboration with other specialized agencies of the MIMAIP as a major constraint to the aquatic animal health sector.

Similarly, no coordination was evident between the veterinary faculty of the University (UEM) of Maputo and the CVL.

INIP personnel were not aware of the diagnostic PCR activities regarding aquatic animal diseases of the Biotechnology Laboratory, as well as the histopathology performed by the Pathology department (UEM).

PVS Evaluation (2011) - Level 2

Findings:

The National Directorate of livestock development (DNPD) under the Ministry of Agriculture and Rural Development (MADER) is the Veterinary Authority, with the competence to guarantee the protection of animal health, aquatic animals, zoosanitary control and public health. A draft animal health law including aquatics is expected to be adopted in 2023 to replace the animal health law of 2009. In addition, competencies on Aquatic animal health management, prevention and control, in coordination with the Veterinary authorities, are part of the INIP competencies established by the Ministerial Diploma 93/22 – INIP internal regulation.

The WOAHA AA focal point nominated by the CVO (Director of Veterinary services) is the INIP director. The mission was accompanied by a representative of the VS and the team had the opportunity to meet staff from the VS at the central veterinary laboratory and at provincial level.

⁸ See definition (Introduction)

⁹ Recommended Reading: [WOAH Biological Threats Reduction Strategy](https://www.woah.org/en/what-we-do/global-initiatives/biological-threat-reduction/) at <https://www.woah.org/en/what-we-do/global-initiatives/biological-threat-reduction/>.

The regulation for hygienic and sanitary controls of fishery products created an inter-institutional forum of a consultative nature (OCIP) that pronounces on matters of interest and scope of INIP.

Other ministries involved in the aquatic animal health domain are the:

- **Ministry of Land and Environment (MTA)** through its National Directorate for the Environment has a cross-cutting mandate to issue environmental licenses for activities.
- **Ministry of Health (MoH)** with responsibilities in the elaboration of “One Health” strategy and AMR control.
- **Ministry of Science technology and high education (MCTES)** Research programs and education curricula.

A One Health Platform had been created including The Ministry of the Sea, Inland Waters and Fisheries (MIMAIP), the ministries of human (MoH), animal (MADER and MIMAIP) and environmental (MTA) health, and research academic institutions. An action plan has been developed, including a research component. The platform members meet once a year, and the secretarial responsibility is rotating. There are plans for a permanent secretariat.

The team did not meet any representatives of the other ministries mentioned in the report but saw evidence of the MTA documentation for licencing of aquatic establishments and met university staff and research centres such as the Centre of Biotechnology of the university of Mondlane (CB-EMU) who currently does the molecular testing for aquatic diseases. INIP and CB-EMU have a formal memorandum of understanding.

MIMAIP includes beyond INIP the following institutions:

- Instituto Nacional do Mar
- Instituto nacional de desenvolvimento e gestao das infraestruturas pesqueiras
- Administração Nacional das Pescas (ADNAP)
- Instituto de Desenvolvimento da Pesca e Aquacultura (IDEPA)
- Fundo de Desenvolvimento da Economia Azul (PROAZUL)
- Instituto Oceanografico de Mocambique (InOM)
- Museu das Pescas
- Escola de Pesca

The team met with staff of INOM central services and with the responsible for the Songo laboratory. InOM staff was not aware of any research project on aquatic diseases instead projects on fisheries management (invading species, population decrease research) were mentioned as well as research into genetic improvement for tilapia (*O. mossambicus*) done in Chicoa at CEPAQ.

Legally InOM has a role in the detection of aquatic diseases since its “amostradores” (samplers) often research episodes of mortality but there is no training or awareness about AA diseases or clear reporting procedures. A sampler identified recently an episode of mass mortality, but the staff did not know what happened next.

The **Institute for the Development of Fishing and Aquaculture (IDEPA)** promotes the development of fisheries and aquaculture, with a view to increasing the capacity of operators in the production, valuation, management and marketing of national fishery products.

IDEPA has 10 Provincial delegations and offices around the country with a total of 87 staff in Maputo central office and 300 extensionists. The extensionists are employed by the districts and generally operate for support to farmers/agriculture having no training on aquatic animal diseases. IDEPA is involved in several projects the most relevant is PRODAPE - project for

development of small-scale aquaculture - funded by IFAD¹⁰. Fingerlings for the project are acquired from CEPAQ¹¹ and from private. PRODAPE works with associations instead of individuals. As part of the project a national census for fisheries and aquaculture was recently finalized.

The Director of IDEPA stated that the main objective is production increase and recognized that some of the constraints as lack of coordination for emergency response observed in 2011 remain, for example INIP was not informed by IDEPA of a detected case of illegal import of live fish.

The **Administração Nacional das Pescas (ADNAP)**¹² was created in 2020, and is responsible for the planning, licensing and monitoring of aquaculture and fisheries activities. In the past, these activities were performed by IDEPA.

There is no legal instrument describing coordination between the various institutions of MIMAIP. However, a technical committee gathering all sectors in the ministry of fisheries meets weekly: IDEPA, INIP, ADNAP.

Key Changes from 2011 to 2023:

- Competencies on aquatic animal health management, prevention and control, in coordination with the Veterinary Authorities, are now part of the INIP competencies established by the Ministerial Diploma 93/22 – INIP internal regulation. This led to the creation of different collaboration mechanisms between ministries and technical committees within MIMAIP institutions.
- Reorganization of MIPAIP structure
- District organic units, SDAE respond to both SPAE and DPAP at provincial level. The SPAE responds to the government provincial general secretary and the DPAP to the province governor who is elected at provincial level.

Strengths:

- Almost all activities of the AAH domain as described by WOAHS are under the responsibility of INIP, according to Ministerial Diploma 93/22 – INIP internal regulation.
- There are collaboration mechanisms between ministries and technical committees within MIMAIP institutions.
- The regulation for hygienic and sanitary controls of fishery products created an inter-institutional forum of a consultative nature (OCIP).
- A One Health Platform has been created in 2013.

Weaknesses:

- Lack of formal instruments of coordination between MIMAIP institutions.
- Unclear chain of command at district level, district organic units, SDAE respond to both SPAE and DPAP at provincial level.
- Incomplete data base of aquaculture sites and information available.

Recommendations:

- Establish formal mechanisms of coordination between MADER and MIMAIP and between the various technical committees within MIMAIP institutions at central and provincial level.

¹⁰ <https://www.mimaip.gov.mz/prodape01/https://www.mimaip.gov.mz/prodape01/>

¹¹ <https://www.gaza.gov.mz/por/Ver-Meu-Distrito/Chokwe/Potencialidade/Aquacultura>

¹² <https://www.mimaip.gov.mz/o-ministerio/instituicoes-tuteladas-e-subordinadas/administracao-nacional-das-pescas/>

- Clarify roles and chain of command for district organic units to ensure effective use of resources.
- Improve data base of aquaculture sites and establishments including the results of the census as a basis to develop AAH disease prevention and control plans.

Evidence (listed in Appendix 6): 1, 2, 3, 55, 61, 62, 103.

I-7. Physical resources and capital investment <i>The access of the AAHS to functional and well-maintained resources, including buildings, transport, information technology (e.g., Internet access), cold chains, and other necessary equipment or structures. This includes whether major capital investment is available.</i>	Levels of advancement
	1. The AAHS have no or unsuitable physical resources at almost all levels, and maintenance of existing infrastructure is poor or non-existent.
	2. The AAHS have suitable physical resources at the national (central) level and at some regional levels, and maintenance and replacement of obsolete items occur only occasionally.
	3. The AAHS have suitable physical resources at national, regional and some state/provincial levels, but maintenance, as well as replacement of obsolete items, occurs rarely.
	4. The AAHS have suitable physical resources at all levels, and these are regularly maintained. Major capital investments occur occasionally to improve the AAHS operational infrastructure over time.
	5. The AAHS have suitable physical resources at all levels (national, state/provincial and local) and these are regularly maintained and updated as more advanced items become available. Major capital investments occur regularly to improve the AAHS operational capability and infrastructure.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Physical resources such as vehicles, motorbikes telecommunications office and laboratory equipment were sufficient for the duties performed. Several improvements to modernise IT infrastructure were ongoing.

PVS Evaluation (2011) - Level 2

Findings:

The CA – INIP has adequate well maintained physical resources including office space, IT equipment, laboratorial space and equipment at central and provincial level. At province level INIP delegates are sometimes sharing office with the provincial services. At district level the team was informed of absence of transport to do extension work and issues with sample preservation for laboratorial analysis. There are no operating quarantine sites although CEPAQ has an isolated area of the facility intended to be for quarantine. The BIP at the Maputo airport has no facilities for checking of live animals. Inspection posts at district level are simple road stop points for documentation checks. The fish incineration is carried out in a private incinerator and the monitoring process is done in coordination with the Ministry of Health.

Summary of the facilities

Local	Cabinets / Compartments	inspection posts	quarantine places	Search training locations
Central	10	0	0	0
Provincial	65	3	0	0
Location (SDAE)	153	0	0	0

Summary of communications available

	Landline	Cell phones	laptop	PC internet access
Central	17	10	10	all
Provincial	65	30	18	all
Location (SDAE)	153	5	153	All

Numbers and types of transport available

	4x4 vehicle	motorcycles	Bicycle
Central	14	1	0
Provincial	13	6	0
Location (SDAE)	153	153	0

Budget for maintenance of Real Estate and Furniture

Budget	Value
Vehicle maintenance	2,300,000.00 MT
Building maintenance	9,300,000.00 MT
Equipment maintenance	10,000,000.00 MT

Key Changes from 2011 to 2023:

- Modern computers and telephones were available at all AAHS levels.

Strengths:

- The AAHS have suitable physical resources at national and provincial level, that are regularly maintained and replaced.

Weaknesses:

- No official quarantine in place.
- At district level there are deficiencies on transport and infrastructure.
- Cold chain for sampling transport is deficient.

Recommendations:

- Ensure that all extensionists have transport means to access farm and establishments locations and collect and deliver samples to provincial laboratories.

Evidence (listed in Appendix 6): 14, 15, 16, 17, 18, 82, 113.

I-8. Operational funding	Levels of advancement
<i>The ability of the AAHS to access financial resources adequate for their planned and continued activities (e.g., salaries, contracts, fuel, vaccines, diagnostic reagents, personal protective equipment, per diem or allowances for field work).</i>	1. Operational funding for the AAHS is neither stable nor clearly defined but depends on the irregular allocation of resources.
	2. Operational funding for the AAHS is clearly defined and regular but is inadequate for their required baseline operations (i.e., disease surveillance, disease control and/or public health).
	3. Operational funding for the AAHS is clearly defined and regular, and is adequate for their baseline operations, but there is no provision for new or expanded operations.
	4. Operational funding for new or expanded operations is on a case-by-case basis, and not always based on risk analysis and/or cost-benefit analysis.
	5. Operational funding for all aspects of AAHS activities is adequate. All funding, including for new or expanded operations, is provided via a transparent process that allows technical independence, based on risk analysis and/or cost-benefit analysis.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Strengths:

Funding of the veterinary public health sector in INIP is adequate.

Weaknesses:

There are no funds allocated to services within aquatic animal health.

PVS Evaluation (2011) - Level 2

Findings:

The CA have access to financial resources which are in general adequate for their planned and continued activities, however the budget for AAD surveillance, diagnosis, prevention and control need to be revised both at central and provincial.

There are clear rules for establishment of budget including a consultation process so that budget is attributed to cover the sampling /inspection programs at each province at least for activities on food safety. The resources allocated to the CA are approved and stated in the Budget Act. The distribution of the budget and its control is carried out by area of jurisdiction (central province/district). The budget allocated for aquaculture in the year 2022 was 34,579,000.00 of this 3,500,000.00 MT was allocated to AAHS.

Fees for licencing, inspection and laboratory services are retained at the province/district level.

Due to National budget restrictions a moratorium has been in place since 2016 preventing the hiring of new public sector staff, each 3 retirement posts are replaced by 1. Nevertheless, the CA have recently hired extensionists for district level work.

Financial resources of the AAHS

YEAR	VALUE
2021	3,000,000.00 MT
2022	3,500,000.00 MT
2023	3,800,000.00 MT

Key Changes from 2011 to 2023:

- Revision of the fees system.
- Budget allocated to AAH activities.

Strengths:

- Clear rules for budget attribution in consultation with the various administrative levels
- Food safety aspects adequately financed.
- Increase of national budget over the last 3 years and possibility to access to grants/donor funds and own revenues.

Weaknesses:

- Insufficient resources (staff and budget) to implement necessary activities for surveillance of AAHD.

Recommendations:

- Estimate resources to effectively implement necessary AAH activities in particular for surveillance of AAHD.

Evidence (listed in Appendix 6): 14, 15, 16,17, 18, 82.

I-9. Emergency funding	Levels of advancement
<i>The capability of the AAHS to access extraordinary financial resources in order to respond to emergency situations or emerging aquatic animal health issues, as measured by the ease with which contingency and related funding (e.g., arrangements for compensation to producers in emergency situations, disposal of dead animals, etc.) can rapidly be made available when required.</i>	1. No emergency funding arrangements exist.
	2. Emergency funding arrangements with limited resources have been established, but these are inadequate for likely emergency situations (including newly emerging issues).
	3. Emergency funding arrangements with limited resources have been established; additional resources may be approved but approval is through a political process.
	4. Emergency funding arrangements with adequate resources have been established; their provision must be agreed through a non-political process on a case-by-case basis.
	5. Emergency funding arrangements with adequate resources have been established and their rules of operation documented and agreed with stakeholders.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Although no specific fund may exist, the Team is under the impression that there may be funding available for contingency activity within the INIP to cope with extraordinary activities such as the WSD outbreak.

PVS Evaluation (2011) - Level 1

Findings:

A general provision for emergency funding access is included in the Animal health law and also on the draft currently under approval. However, the current animal health law does not provide specific regulation of AAH diseases. This generic provision does not describe what types of emergencies are covered, what funding of emergency operations including coordination activities, what modalities of compensation per disease, what animal species and animal products are covered.

Recently, eradication was conducted following a TiLV outbreak, but no compensation was given. Operational funds for the eradication were available at INIP.

Key Changes from 2011 to 2023:

- No changes.

Strengths:

- Generic legal provision for emergency situations in the Animal health law.

Weaknesses:

- No emergency funding arrangements exist.

Recommendations:

- To establish emergency funding access rules, and modalities of compensation per disease/animal species/ animal products.
- The modalities of access should be well defined in future emergency preparedness and contingency plans drafted and tested.

Evidence (listed in Appendix 6): 4, 102.

III.2 Fundamental component II: Technical authority and capability

This component of the evaluation concerns the authority and capability of the AAHS to develop and apply sanitary measures and science-based procedures supporting those measures. It comprises nineteen critical competencies.

Critical competencies:

Section II-1	Laboratory diagnosis A. Access to laboratory diagnosis B. Suitability of national laboratory system C. Laboratory quality management system (QMS)
Section II-2	Risk analysis and epidemiology
Section II-3	Quarantine and border security
Section II-4	Surveillance and early detection A. Passive surveillance B. Active surveillance and monitoring
Section II-5	Emergency preparedness and response
Section II-6	Disease prevention, control and eradication A. Disease prevention B. Disease control or eradication
Section II-7	Aquatic animal production food safety A. Regulation, inspection (including audits), authorisation and supervision of establishments for the production and processing of aquatic animal products B. Inspection of collection/slaughter, processing and distribution of aquatic animal products
Section II-8	Veterinary medicines and biologicals for aquatic animals
Section II-9	Antimicrobial resistance (AMR) and antimicrobial use (AMU)
Section II-10	Residue testing, monitoring and management
Section II-11	Aquatic animal feed safety
Section II-12	Identification, traceability and movement control A. Aquaculture establishment identification, batch and aquatic animal movement control B. Identification, traceability and control of aquatic animal products
Section II-13	Welfare of farmed fish

----- Aquatic Code references:

- Chapter 1.4. on Aquatic animal health surveillance.
- Section 2. on Risk analysis.
- Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards.
- Chapter 4.1. on Biosecurity for aquaculture establishments.
- Chapter 4.4. on Disinfection of aquaculture establishments and equipment.
- Chapter 4.5. on Recommendations for surface disinfection of salmonid eggs.
- Chapter 4.6. on Contingency planning.
- Chapter 4.7. on Fallowing in aquaculture.
- Chapter 4.8. on Handling, disposal and treatment of aquatic animal waste.
- Chapter 4.9. on Control of pathogenic agents in aquatic animal feed.
- Section 5. on Trade measures, importation/exportation procedures and health certification.
- Section 6. on Antimicrobial use in aquatic animals.
- Section 7. on Welfare of farmed fish.

Terrestrial Code references:

- Chapter 2.2. on Criteria applied by WOAHS for assessing the safety of commodities.
- Article 3.2.3. on Policy and management.
- Article 3.2.4. on Personnel and resources.

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- Article 3.2.7. on Animal Health.
 - Article 3.2.8. on Animal production food safety.
 - Article 3.2.9. on Veterinary medicinal products.
 - Article 3.2.10. on Laboratories.
 - Article 3.2.11. on Animal welfare.
 - Article 3.2.12. on International trade.
 - Article 3.4.12. on Human food production chain.
 - Chapter 6.2. on The role of Veterinary Services in food safety systems.
 - Chapter 6.3. on Control of biological hazards of animal health and public health importance through ante- and post-mortem meat inspection.
 - Chapter 6.7. on Introduction to the recommendations for controlling antimicrobial resistance.
 - Chapter 6.8. on Harmonisation of national antimicrobial resistance surveillance and monitoring programmes.
 - Chapter 6.9. on Monitoring of the quantities and usage patterns of antimicrobial agents used in food-producing animals.
 - Chapter 6.10. on Responsible and prudent use of antimicrobial agents in veterinary medicine.
 - Chapter 6.11. on Risk analysis for antimicrobial resistance arising from the use of antimicrobial agents in animals.

References to Codex Alimentarius Commission Standards:

- Code of Hygienic Practice for Meat (CAC/RCP 58-2005).
- Code of Hygienic Practice for Milk and Milk Products (CAC/RCP/ 57-2004).
- General Principles of Food Hygiene (CAC/RCP 1-1969; amended 1999. Revisions 1997 and 2003).
- Guidelines for Risk Analysis of Foodborne Antimicrobial Resistance (CAC/GL 77-2011).
- Code of Practice to Minimize and Contain Antimicrobial Resistance (CAC/RCP 61-2005).
- Guidelines for the Design and Implementation of National Regulatory Food Safety Assurance Programmes Associated with the Use of Veterinary Drugs in Food Producing Animals (CAC/GL 71-2009).
- Glossary of Terms and Definitions (Residues of Veterinary Drugs in Foods) (CAC/MISC 5-1993).
- Maximum Residue Limits (MRLs) and Risk Management Recommendations (RMRs) for Residues of Veterinary Drugs in Foods (CAC/MRL 2).
- General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193-1995).
- Code of Practice Concerning Source Directed Measures to Reduce Contamination of Foods with Chemicals (CAC/RCP 49-2001).
- Code of Practice for Fish and Fishery Products (CAC/RCP 52-2003)

Aquatic Manual references:

- Chapters 1.1.1. to 1.1.2. on Quality management in veterinary testing laboratories/Principles and methods of validation of diagnostic assays for infectious diseases.
- Part 2. on Recommendations applicable to specific diseases.
- Part 3. On WOAHE expertise.

Terrestrial Manual references:

- Chapters 1.1.1. to 1.1.7. on Management of veterinary diagnostic laboratories/Collection, submission and storage of diagnostic specimens/Transport of biological materials/Biosafety and biosecurity: Standards for managing biological risk in the veterinary laboratory and animal facilities/Quality management in veterinary laboratories/Principles and methods of validation of diagnostic assays for infectious diseases/Standards for high throughput sequencing, bioinformatics and computational genomics.
- Chapter 2.1.3. on Managing biorisk: examples of aligning risk management strategies with assessed biorisks.
- Section 2.2. on Validation of diagnostic tests.

II-1. Laboratory diagnosis	Levels of advancement
<i>The authority and capability of the AAHS to effectively and efficiently use accurate laboratory diagnosis to support their aquatic animal and public health activities.</i> A. Access to laboratory diagnosis <i>The authority and capability of the AAHS to have access to laboratory diagnosis to identify and record pathogenic agents, including those relevant for public health, that can adversely affect aquatic animals and aquatic animal products.</i>	1. Disease diagnosis is almost always conducted by clinical means only, with no access to or little use of a laboratory to obtain a correct diagnosis.
	2. For major aquatic animal diseases of national economic importance or potential zoonotic importance, and for the food safety of aquatic animal products, the AAHS have access to and use a laboratory to obtain a correct diagnosis.
	3. For aquatic animal diseases (and potential zoonoses) present in the country, and for feed safety and veterinary AMR surveillance, the AAHS have access to and use a laboratory to obtain a correct diagnosis.
	4. For aquatic animal diseases of economic or zoonotic importance not present in the country but known to exist in the region and/or that could enter the country, the AAHS have access to and use a laboratory to obtain a correct diagnosis.
	5. In the case of emerging diseases in the region or worldwide, the AAHS have access to and use a network of national or international reference laboratories (e.g., a WOA or FAO Reference Laboratory) to obtain a correct diagnosis.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 2

Findings:

Public health activities are managed through INIP's own fully operational laboratory network, located in main harbours where aquatic animal products are exported, i.e., Maputo, Beira and Quelimane. These laboratories can provide analysis for all microbiology parameters, and measuring limits of some chemicals commonly used, like metabisulfite. For parameters requiring more sophisticated and rare equipment, although some equipment is available in Maputo, most analysis of potential toxics and residues, like levels of heavy metals, pesticides, antimicrobial residues are performed in a laboratory in Portugal.

Regarding microbiology proficiency tests, the service was provided by a Swedish provider until 2019. However, the National Fish Inspection was unable to pay the debt and stopped receiving the tests (the amount was supposed to be paid by the Swiofish project which has ended);

In 2020, INIP LIPs began participating in proficiency testing by a South African provider - National Laboratory Association (NLA), funded by UNIDO.

For the Chemistry proficiency tests LIPs continued with a provider from England, FERAS/FAPAS, with the support of UNIDO.

There is a limited access to laboratory diagnosis for Aquatic Animal Diseases. No Level I (direct observation of clinical signs, dissection, fresh mounts, etc.) nor level II (histology, microbiology) diagnostic activities are performed. Diagnostic activities are mostly performed through the biotechnology laboratory at the Eduardo Mondlane University (CB) and two external laboratories in Zambia, Italy and USA only for level III diagnostic activities (molecular Biology Diagnostic Techniques). A Memorandum of understanding has been signed between CB and INIP. At CB, research activities are undergoing at the same location as diagnostic activities, using PCR - Polymerase Chain Reaction -, Reverse-Transcriptase and Real-Time PCR. Their activity with aquatic animals is currently focused on crustaceans; White Spot Syndrome Disease and eight other crustacean diseases can be diagnosed (DIV1, IHHNV, IMNV, TSV, YHV/GAV, NHP, AHPND/EMS and EHP).

Private laboratories exist, and they have relationships with an Australian private laboratory. This activity is focused on detection of crustacean diseases, notably on WSSV surveillance in the surroundings of the aquaculture production units of the company owning the laboratory.

There is no evidence of access to WOAHS reference laboratories.

Key Changes from 2011 to 2023:

- There is an improvement of laboratory capacities, both public and private, in total number of detectable AAD, notably for diseases of crustaceans.

Strengths:

- The laboratory diagnosis network for food safety is adequate and processing all seafood for export markets.
- Initiation of AAD activities, focused on crustaceans, level III diagnostic methods only (molecular biology techniques).

Weaknesses:

- There is no internal nor national access to diagnostic capacity for the major AA species reared in Mozambique (Tilapia).
- There is a need to subcontract foreign labs to analyse samples on WOAHS listed diseases of aquatic animals (EUS, TiLV), which does not give the required reactivity in case of outbreaks.

Recommendations:

- The ultimate goal should be to build INIP's own National Reference Laboratory, which should have the diagnostic capacity for all Aquatic Animal Diseases of concern, notably the WOAHS listed diseases of reared species and national diseases of concern. Meanwhile, progress can be made by optimizing the current resources:
- One suggestion is to start building capacity diagnostic levels I (for example involving INIP's staff and extensionists, district level), and level II (Veterinarian laboratory at Eduardo Mondlane University Campus; belonging to the Direcção de Ciências Animais- Departamento de Nutrição e Alimentos), in both histology and microbiology.
- Level III diagnostic capacity at CB should be developed for other aquatic animals reared in the country, other than only crustaceans, to accompany the strategy of development of aquaculture (detection of major diseases, WOAHS listed diseases in priority), thus optimizing the services provided within the signed Memorandum of Understanding.
- It is recommended developing collaborations with WOAHS reference centres for diseases of concern to acquire technical knowledge for these additional diseases and develop proficiency tests (ring tests) to ensure the reliability of the information provided to INIP. The opportunity to embark into the Laboratory Twinning Programme should also be considered (please refer to the WOAHS website and Aquatic Code for details).

Evidence (listed in Appendix 6): 49, 115.

II-1. Laboratory diagnosis	Levels of advancement
B. Suitability of national laboratory system <i>The sustainability, effectiveness, safety¹³ and efficiency of the national (public and private) laboratory system (or network), including infrastructure, equipment, maintenance, consumables, personnel and sample throughput, to service the needs of the AAHS.</i>	1. The national laboratory system does not meet the needs of the AAHS.
	2. The national laboratory system partially meets the needs of the AAHS, but is not sustainable, as the management and maintenance of resources and infrastructure are ineffective and/or inefficient. Laboratory biosafety and biosecurity measures do not exist or are very limited.
	3. The national laboratory system generally meets the needs of the AAHS. Resources and organisation are managed effectively and efficiently, but funding is insufficient for a sustainable system, and limits throughput. Some laboratory biosafety and biosecurity measures are in place.
	4. The national laboratory system generally meets the needs of the AAHS, including for laboratory biosafety and biosecurity. There is sufficient sample throughput across the range of laboratory testing requirements. Occasionally, it is limited by delayed investment in certain aspects (e.g., personnel, maintenance or consumables).
	5. The national laboratory system meets the needs of the AAHS, has appropriate levels of laboratory biosafety and biosecurity, and is efficient and sustainable with a good throughput of samples. The laboratory system is regularly reviewed, audited and updated as necessary.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 2

Findings:

For food safety activities of the AAHS: the national laboratory network is suitable, and capable of providing good services to INIP and exporting seafood companies.

Regarding the AAD: the only diagnostic laboratory capable of providing services to all aquaculture stakeholders and AAHS in the country is the CB-UEM, developing level III diagnostic methods only (i.e., molecular biology tests, determining presence or absence of a given and already well-known pathogen). It is currently focused on crustacean diseases listed by WOA, and analysis are performed by researchers from the UEM University. It is therefore suited to support the development of crustacean aquaculture industry or to determine the sanitary status of a given population of wild or cultured crustaceans, like shrimp penaeids, crabs, etc., including for surveillance activities. However, the crustacean industry is currently represented by only one stakeholder, with a limited production capacity and which possesses its own diagnostic tools. Another company is catching wild broodstock and can adequately use CB-UEM to demonstrate absence of WOA listed diseases.

Meanwhile, the aquaculture development strategy of Mozambique is currently focused on fish aquaculture, notably Nile Tilapia (*Oreochromis niloticus*). CB-UEM cannot currently diagnose fish diseases, notably the WOA listed fish diseases nor the national diseases of concern. Moreover, if an emerging disease is observed while fish aquaculture is developing, no laboratory will be able to determine whether aetiology of this disease is infectious, and what type of pathogen is involved, since no level I (field observation of clinical signs, abnormal behaviour, wet mounts, dissection and visible lesions characterization, etc.) and level II (histology, microbiology) diagnostic activities are available in the country. Samples of diseased fish would consequently need to be processed in other countries, thus delaying the emergency response if needed.

¹³ Recommended Reading: [WOAH Biological Threats Reduction Strategy](https://www.woah.org/en/what-we-do/global-initiatives/biological-threat-reduction/) at <https://www.woah.org/en/what-we-do/global-initiatives/biological-threat-reduction/>.

Similarly, some molluscs like mussels are contemplated in the aquaculture development strategy, while no molluscs diseases can currently be diagnosed at national level.

Key Changes from 2011 to 2023:

- A Level III diagnostic laboratory has been developed at CB-UEM and can provide services to the AAHS by performing PCR, RT-PCR and Real-Time PCR tests for crustacean diseases, notably WSSV.

Strengths:

- Complete and operational Food Safety Laboratory Network, fully accredited in exporting harbours.

Weaknesses:

- No National Aquatic Animal Health Reference Laboratory (NAAHRL).
- For most AAD, diagnostic services are either subcontracted with other public or private institutions, or even performed outside the country, with little capacity of evaluating the reliability of the results obtained and of proceeding to complementary tests when necessary.
- Diagnostic activities at CB-UEM are performed by researchers, which does not always provide a warranty of consistency in the methodology, reactivity and reliability, since there might be a high turnover in the personnel, and they might be in the early stages of their learning curve in terms of diagnostic techniques and interpretation.
- The current diagnostic services provided in the country are not consistent with the recent strategy of aquaculture development chosen by Mozambique: CB-UEM can only detect WSSV and eight other crustacean diseases (i.e. DIV1, IHNV, IMNV, TSV, YHV/GAV, NHP, AHPND/EMS and EHP), while aquaculture production has drastically dropped in terms of total production and number of aquaculture establishments involved. Meanwhile, a massive development of tilapia small farmers is taking place under the impulsion of IDEPA and MIMAIP, which currently needs, and will certainly need more support by AAHS.

Recommendations:

- In the long term, build a NAAHRL.
- In the short term, the suitability of the national laboratory network should be modified to adapt to the aquaculture development strategy: capitalize on CB-UEM and Veterinarian Terrestrial Laboratory at Eduardo Mondlane facilities, to improve the necessary services to existing and new aquaculture production units, notably for fish aquaculture (mostly Tilapia so far).
- Increase the list of diseases CB-UEM is capable to diagnose, including relevant fish and molluscs diseases of concern, prioritizing diseases through a Risk Analysis.
- Distinguish CB-UEM's diagnostic activities from research activities (i.e., equipment, employees). Consider including this in the MoU, requesting dedicated personnel focused on AAD, to ensure reactivity, continuity in the SOPs and continuous improvement in the quality and reliability of the laboratory results.
- Develop level I and level II diagnostic activities, at first through research projects, which might lead to diagnostic activities if pathogens are detected.

Evidence (listed in Appendix 6): 49, 51, 52, 88, 89.

II-1. Laboratory diagnosis	Levels of advancement
C. laboratory quality management systems (QMS) <i>The quality and reliability of laboratory testing those services the public-sector AAHS, as assessed using formal QMS, e.g., having a dedicated quality manager and quality manual. This includes, but is not limited to, attainment of ISO 17025 accreditation¹⁴ and participation in proficiency-testing programmes.</i>	1. No laboratories used by the public-sector AAHS are using formal QMS.
	2. One or more laboratories servicing the public-sector AAHS, including the major national aquatic animal health reference laboratory, are using formal QMS.
	3. Most major laboratories servicing the public-sector AAHS are using formal QMS.
	4. All the laboratories servicing the public-sector AAHS are using formal QMS, with regular use of multi-laboratory proficiency-testing programmes.
	5. All the laboratories servicing the public-sector AAHS are using formal QMS systems, which are regularly assessed via national, regional or international proficiency-testing programmes.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 2

Findings:

For AAHS in food safety: the INIP laboratories of Maputo, Quelimane and Beira have been accredited by the IPAC (Instituto Portugues de Accreditacao) in accordance with ISO/IEC 17025:2017 standards. A South African laboratory is solicited for proficiency tests in microbiology and since for other parameters analysis are externalised, there is no QMS in place.

For Diagnosis of Aquatic Animal Diseases: ISO/IEC 17025:2017 accreditation of CB is to be organized in 2023 (to be programmed during the month of august). Restarting ring tests for WOAHS Reference laboratory is contemplated, for crustaceans. For fish, there is currently no diagnostic activities in the country, and therefore no QMS.

Key Changes from 2011 to 2023:

- The three main food safety laboratories managed by INIP are now accredited and participate in proficiency testing activities.

Strengths:

- Good Food Safety Laboratory Network, fully accredited for exporting harbours.

Weaknesses:

- No National Aquatic Animal Health Reference Laboratory, so there is no QMS under public control for AAD.
- For most AAD, diagnostic services are either subcontracted outside the country, with very little capacity of evaluating the results obtained.
- No multi-laboratory proficiency testing programs in AAD yet.

Recommendations:

- Build a National Aquatic Animal Health Reference Laboratory, based on CB for level III diagnostic methods, and possibly used the facilities of the Veterinarian Terrestrial Laboratory at Eduardo Mundane, for level II diagnostic methods (histology, notably for diagnosing emerging fish diseases).

¹⁴ Recommended reading: ISO 17025 specifications at www.iso.org/standard/39883.html and www.iso.org/standard/66912.html.

- Implement proficiency tests for AAD laboratories.

Evidence (listed in Appendix 6): 71, 72, 73, 74, 87, 93.

II-2. Risk analysis and epidemiology	Levels of advancement
<i>The authority and capability of the AAHS to base their risk management and risk communication measures on risk assessment, incorporating sound epidemiological principles.</i>	1. Risk management and risk communication measures are not usually supported by risk assessment.
	2. The AAHS compile and maintain data but do not have the capability to carry out risk analysis. Some risk management and risk communication measures are based on risk assessment and some epidemiological principles.
	3. The AAHS compile and maintain data and have the policy and capability to carry out risk analysis, incorporating epidemiological principles. The majority of risk management and risk communication measures are based on risk assessment.
	4. The AAHS conduct risk analysis in compliance with the relevant WOAHS standards and sound epidemiological principles and base their risk management and risk communication measures on the outcomes of risk assessment. There is a legislative basis (e.g. legal instrument) that supports the use of risk analysis.
	5. The AAHS are consistent and transparent in basing aquatic animal health and sanitary measures on risk assessment and best practice epidemiology, and in communicating and/or publishing their scientific procedures and outcomes internationally.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 2

Findings:

As stated in the previous PVS Evaluation, INIP is highly qualified in food safety Risk Analysis and HACCP, which can be the basis for further use of the Risk Analysis approach in other activities.

In the field of AAH, however, there was no evidence of Risk Analysis activity, nor Import Risk Assessment during our visit. A list of mandatory notifiable AAD exists, but the application of required activities to detect and control these is not enforced.

Private stakeholders expressed a concern regarding imported aquatic animals (live and frozen), notably frozen crustaceans and fish from other continents, but also illegal importations of live or fresh fish from surrounding countries, which could lead to introduction of disease agents, some of which might not be present in Mozambique yet.

Suspicion of imports of live tilapia broodstock from locations where EUS and TiLV might exist, risk not assessed without health certification.

Key Changes from 2011 to 2023:

- No major changes were observed.

Strengths:

- Motivation to progress and understanding what is at stake.

Weaknesses:

- No trained staff in Risk Analysis, nor for IRA.

Recommendations:

- Embark into Risk Analysis activities after following training courses, including for IRA. For example, there is an FAO online course describing risk analysis available at the website: <https://elearning.fao.org/course/view.php?id=979>.

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- Apply Risk Analysis in the field to define priorities, considering the strategy of development of aquaculture in the country developed by MIMAIP and implemented by IDEPA, and then develop biosecurity plans adapted to these identified risks for each type of aquaculture establishment. It is highly recommended to read and apply guidelines and recommendations presented in the chapter of the Aquatic Code “Biosecurity for Aquaculture Establishments” during the implementation of such plans in the field https://www.woah.org/en/what-we-do/standards/codes-and-manuals/aquatic-code-online-access/?id=169&L=1&htmlfile=chaptre_biosecu_estab_aqua.htm. It can then be the base for developing new risk-based surveillance activities.

Evidence (listed in Appendix 6): 52.

II-3. Quarantine and border security	Levels of advancement
<i>The authority and capability of the AAHS to prevent the entry and spread of diseases and other hazards of aquatic animals, aquatic animal products and veterinary products into their country.</i>	1. The AAHS cannot apply any type of quarantine or border security procedures for aquatic animals, aquatic animal products or veterinary products with their neighbouring countries or trading partners.
	2. The AAHS can establish and apply minimal quarantine and border security procedures, or the AAHS can only apply quarantine and border security procedures effectively at some official entry points via border posts.
	3. The AAHS can establish and apply quarantine and border security procedures based on import protocols and international standards at all official entry points via border posts, but the procedures do not systematically address illegal activities ¹⁵ relating to the import of aquatic animals, aquatic animal products and veterinary products.
	4. The AAHS can establish and apply quarantine and border security procedures, which systematically address legal pathways and illegal activities (e.g., through effective partnerships with national Customs and border police).
	5. The AAHS can establish, apply and audit quarantine and border security procedures which systematically address all risks identified, including through collaboration with their neighbouring countries and trading partners.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 1

Findings:

There is no official quarantine available. Official importation of live aquatic animals in Mozambique has been rare in the past, therefore no need for quarantine has been expressed, since importation of live aquatic animals or fresh products were inexistant during the last decade. A draft of technical instructions for quarantine activities has been developed and will depend solely on on-farm quarantine.

When importing, quarantine has been achieved at production site, under the responsibility of the stakeholder, but under the supervision of the Competent Authority.

There are rumours of importations of live Tilapia breeders, notably from Asia, without INIP being informed.

As far as importation of aquatic animal products go, they are imported frozen or canned, from either neighbouring country like South Africa and Indian Ocean SADC countries, or from the EU and China as presented in the table below:

Table 8. Imports of animals and animal products in 2022

Species/products	Quantity ¹⁵ (products)	Countries of origin	Ports of entry
horse mackerel	57 739	Namibia, Russia, New Zealand	Beira, Maputo and Nacala
Shrimp	16	South Africa	Beira, Maputo and Nacala
Crab	14	South Africa	Beira, Maputo and Nacala
Cod	355	EU	Beira, Maputo and Nacala
Fish	3 450	China	Beira, Maputo and Nacala
Caned fish	1 460	EU	Beira, Maputo and Nacala

¹⁵ Illegal activities include attempts to gain entry for animals or animal products other than through legal entry points and/or using certification and/or other procedures not meeting the country's requirements.

Sardine	582	EU	Beira, Maputo and Nacala
Portion	2 273	Mauritius and Zimbabwe	Beira, Maputo and Nacala
Tuna	980	EU	Beira, Maputo and Nacala
Squid	50	South Africa	Beira, Maputo and Nacala
Octopus	4	South Africa	Beira, Maputo and Nacala
Others	120	EU, South Africa and China	Beira, Maputo and Nacala
TOTAL	67,043.32	-	-

Source: INIP

⁽¹⁾Number of Live animals. Kg/Ton of products

Key Changes from 2011 to 2023:

- No major changes were observed.

Strengths:

- The Competent Authority perfectly understands the importance of quarantine.
- There is a clear motivation to improve border control and quarantine activities.

Weaknesses:

- There are no resources to implement a better control and procedures yet.
- The coordination of INIP with other CA at borders or in the country need to be reviewed to make sure there is no illegal imports of aquatic animals, or aquatic animal products.

Recommendations:

- Risk-based analysis might help determine which are risky activities and locations for AAH, and whether a quarantine is needed.
- Develop “ready to implement” small quarantine units, with detailed description (Tanks, RAS, building, including budget estimation), in order to be ready to finance and implement in case AA importation is considered urgently needed by extension institutions. Include development of corresponding SOPs for the management of such governmental facilities.
- Develop coordination with other CA at border control points and capacity building to improve level of security.
- Develop sampling and tests for relevant AAD on imported aquatic animal products.

Evidence (listed in Appendix 6): 10, 99, 102.

II-4. Surveillance ¹⁶ and early detection	Levels of advancement
<i>The authority and capability of the AAHS to determine, verify and report on the sanitary status of aquatic animal populations, including wild aquatic animal populations, in a timely manner.</i>	1. The AAHS have very limited passive surveillance capacity, with no formal disease list, little training/awareness and/or inadequate national coverage. Disease outbreaks are not reported, or reporting is delayed.
A. Passive surveillance¹⁷	2. The AAHS have basic passive surveillance authority and capacity. There is a formal aquatic animal disease list with some training/awareness and some national coverage. The speed of detection and level of investigation are variable. Disease outbreak reports are available for some species and diseases.
<i>A surveillance system based on a field aquatic animal health network, capable of reliably detecting (by clinical or post-mortem signs), diagnosing, reporting and investigating legally notifiable diseases and emerging diseases in a timely manner.</i>	3. The AAHS conduct some passive surveillance with some sample collection and laboratory testing. There is a list of notifiable diseases with trained field staff covering most areas. The speed of reporting and investigation is timely in most production systems. Disease outbreak investigation reports are available for most species and diseases.
	4. The AAHS have effective passive surveillance, with routine laboratory confirmation and epidemiological disease investigation (including tracing and pathogenic agent characterisation), in most sectors, covering wild aquatic animal populations, producers, markets and processing establishments. There are high levels of awareness and compliance with the need for prompt reporting from all aquatic animal producers/farmers and the field AAHS.
	5. The AAHS have comprehensive passive surveillance nationwide, providing confidence in the country's notifiable disease status in real time. The AAHS routinely report surveillance information to producers, the industry and other stakeholders. Full epidemiological disease investigations are undertaken in all relevant cases with tracing and active follow up of at-risk establishments.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 1

Findings:

No passive surveillance system in place. INIP agents capable of detecting some mortality and clinical signs but are not sufficient in numbers to ensure a presence in the field.

INIP therefore relies on the private industry or district employees (extensionists) to ensure frequent controls of small farmers activities. These employees usually have some basic knowledge on fish disease due to their initial training (they commonly come from one university), but to date they are not requested to report to INIP when they observe anything abnormal, mortality or clinical signs.

Key Changes from 2011 to 2023:

- No key changes were observed.

Strengths:

- Now field technicians are being recruited, notably through provinces (extensionists).

¹⁶ Recommended reading: [WOAH Guide to Terrestrial Animal Health Surveillance \(2014\)](https://www.woah.org/en/a-new-oie-guide-to-better-surveillance-and-detection-of-health-risks-related-to-animals/) at <https://www.woah.org/en/a-new-oie-guide-to-better-surveillance-and-detection-of-health-risks-related-to-animals/>, [Guide for Aquatic Animal Health Surveillance](https://www.woah.org/en/what-we-do/standards/codes-and-manuals/aquatic-code-online-access/?id=169&L=1&htmlfile=chaptre_aqua_animal_surveillance.htm) at https://www.woah.org/en/what-we-do/standards/codes-and-manuals/aquatic-code-online-access/?id=169&L=1&htmlfile=chaptre_aqua_animal_surveillance.htm.

¹⁷ Another term for passive surveillance is 'general surveillance'.

Weaknesses:

- There is no specific training nor information collection in place for AAD.

Recommendations:

- Review the possibility of a reporting system of field agents or extensionists, in coordination with IDEPA and provinces / districts. This system would allow Aquatic Animal Health data from the field to be collected and reported to the central CA.
- Develop database to store and systematize the information collected for future analyses.
- Start developing a passive surveillance network for early detection and report of AAD with the contribution of public (extensionists notably) and private stakeholders (WhatsApp groups, etc.), to constitute a base on which the suggested database can be built.

Evidence (listed in Appendix 6): 12, 52, 116.

II-4. Surveillance and early detection	Levels of advancement
B. Active surveillance and monitoring <i>Surveillance targeting a specific disease or hazard to determine its prevalence, measure progress in disease control, or support the demonstration of disease freedom (combined with passive surveillance), most often in the form of pre-planned surveys with structured sampling and laboratory testing.</i>	1. The AAHS have no active surveillance programme.
	2. The AAHS conduct active surveillance for one or a few diseases or hazards of economic, environmental or zoonotic importance, but the surveillance is not representative of the population and the surveillance methodology is not revised regularly. The results are reported with limited analysis.
	3. The AAHS conduct active surveillance using scientific principles and WOAHS standards for some diseases or hazards, but it is not representative of the susceptible populations and/or is not updated regularly. The results are analysed and reported to stakeholders.
	4. The AAHS conduct active surveillance in compliance with scientific principles and WOAHS standards for some relevant diseases or hazards, which is representative of all susceptible populations, including wild populations, and is updated regularly. Results are routinely analysed, reported and used to guide further surveillance activities, disease control priorities, etc.
	5. The AAHS conduct ongoing active surveillance for most significant diseases and hazards and apply it to all susceptible populations, including wild populations. The results are routinely analysed and used to guide disease control and other activities. The active surveillance programmes are regularly reviewed and updated to ensure that they meet country needs and WOAHS reporting obligations.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 1

Findings:

So far, active surveillance activities in Mozambique have been implemented for three AADs:

TiLV has been analysed only to remove doubt in one production site belonging to the CEPAQ centre managed by InOM. This facility was intended to be the main centre to provide Tilapia fingerlings to the Mozambique industry as there were doubts about the sanitary status of the originally imported stock of GIFT Tilapias from Thailand. Samples were all analysed in foreign laboratories; initially sent to a Norwegian laboratory, due to the involvement of NORAD in this project, and later to an Italian laboratory. None of these laboratories are dedicated WOAHS Reference Laboratories for TiLV. Results obtained were apparently contradictory between the two laboratories, the Norwegian laboratory supposedly finding five TiLV positive cases in the samples received, and the Italian Laboratory finding all samples from the same tilapia stock sent some years later TiLV negative.

Regarding EUS, there is evidence of a targeted surveillance on Zambeze river, linked to a regional surveillance program for EUS, since upstream countries had previously reported EUS cases. Samples have been analysed by a foreign laboratory in Zambia. This disease has been detected in Zambeze river, but only in asymptomatic cases, and surveillance has been stopped. However, there are recent clinical reports of lesions in lakes Chiúta, Chiura and Amaramba in Niassa, strongly suggesting the existence of ongoing outbreaks of this WOAHS listed disease in 2023.

Since 2011 and the first WSSV outbreak, several surveillance surveys of cultured and wild crustaceans have been implemented country wide, notably on coastal provinces (Nampula, Sofala, Zambézia), in 2020, 2021 and 2022. Samples were taken by INIP agents or other public or private entities and shipped to CB. They were analysed by using IQ2000 Genereach diagnostic nested PCR kit, a sensitive method of detection compliant with the Aquatic Manual recommendations. Reports are showing a remaining presence of WSSV in most coastal

zones, with a variable prevalence level, but in some “hot spots” with a relatively high prevalence, higher than 10% of samples in average.

Key Changes from 2011 to 2023:

- Some active surveillance activity has been implemented, notably on WSSV, and occasionally on EUS and TiLV.

Strengths:

- Operational active surveillance nationwide program on WSSV.

Weaknesses:

- No nationwide active surveillance programs for a disease for which tilapia is susceptible to (main species chosen for aquaculture development in Mozambique), and for other wild or cultured fish (despite the suspected or confirmed presence of WOAHA listed pathogens in the country, notably TiLV and EUS, plus potentially bacterial pathogens which might lead to antimicrobial use, etc.).

Recommendations:

- Review WSSV surveillance data (prevalence remains quite high despite almost no activity in crustacean aquaculture), confirm reliability of results obtained (excluding false positive cases, linked to cross contamination at sampling point and/or at the laboratory), and review sampling programs accordingly to focus on WSSV “hotspots” and the understanding of WSSV continuous and relatively high-level replication in the environment.
- Describe in the draft legislation how AAHS activities in Critical Competencies are articulated. For example, mention that once the Risk Analysis will be conducted, and the National List of Aquatic Animal Diseases is established, surveillance activities will be performed based on defined priorities, will then be interpreted internally at INIP, and results will be presented and discussed with stakeholders, respecting the steps recommended by international standards and institutions¹⁸.
- Consider the possibility to collaborate and future twinning with TiLV “Reference Laboratories”, notably from Thailand, to determine the status of CEPAAQ broodstock to know if a compartment can be built in this location, from this stock.
- Build surveillance programs for pathogens of concern (both WOAHA listed and of national importance) focused on fish aquaculture industry, notably on Tilapia industry, including small stakeholders, based on risk analysis and allowing a sustainable development of this fast-expanding activity by controlling sanitary status of the stocks, starting with broodstock and fingerlings used in the country, and in particular by extension programs.
- Keep records of meetings and information sharing activities with stakeholders.

Evidence (listed in Appendix 6): 11, 13, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 77, 78, 79, 80, 81, 97.

¹⁸ <https://onlinelibrary.wiley.com/doi/full/10.1111/raq.12530> : *Guide for Aquatic Animal Health Surveillance* at https://www.woah.org/en/what-we-do/standards/codes-and-manuals/aquatic-code-online-access/?id=169&L=1&htmlfile=chapitre_aqua_animal_surveillance.htm.

II-5. Emergency preparedness and response	Levels of advancement
<i>The authority and capability of the AAHS to be prepared and respond rapidly to a sanitary emergency threat (such as a significant aquatic animal disease outbreak or food safety emergency).</i>	1. The AAHS have no field network or established procedure to determine whether a sanitary emergency exists nor the authority to declare such an emergency and respond appropriately.
	2. The AAHS have a field network and an established procedure to determine whether a sanitary emergency exists but lack the legal and financial support to respond appropriately. The AAHS may have basic emergency management planning, but this usually targets one or a few diseases and may not reflect the national capacity to respond.
	3. The AAHS have the legal framework and financial support to respond rapidly to sanitary emergency threats, but the response is not well coordinated through an effective chain of command. They may have national contingency plans for some aquatic animal diseases of concern, but they are not updated/tested.
	4. The AAHS have an established procedure to make timely decisions on whether a sanitary emergency exists. The AAHS have the legal framework and financial support to respond rapidly to sanitary emergencies through an effective chain of command. They have national emergency management plans for major aquatic animal diseases of concern, but they are not updated/tested.
	5. The AAHS have national emergency management plans for all aquatic animal diseases of concern, (and possible emerging diseases), that include coordination with national disaster agencies, relevant Competent Authorities, producers and other non-government stakeholders. Emergency management planning and response capacity is regularly tested, audited and updated, for example through simulation exercises that test the response at all levels. Following emergency events, the AAHS have a formal 'After-Action Review' process as part of their continuous improvement.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 1

Findings:

Disease outbreaks should in accordance with Aquaculture Regulations 45 of 2001 be reported/notified within five days after the occurrence, incineration of collected dead aquatic animals carried out, and their discharge into surroundings is prohibited. A suspension of activity of an aquaculture establishment might then be decreed if an epidemic is confirmed.

To date, with no passive surveillance for AA diseases in place, the AAHS is not able to ensure early detection and rapid response.

As for the active surveillance, only the WSSV surveillance program could occasionally detect outbreaks in wild and reared crustaceans, if they happen to occur during the sampling periods. However, since this campaign only happens once a year, it is very unlikely, and other infectious aetiologies of mortality might not be detected either.

The AAHS depend upon the private sector or public awareness to communicate when disease outbreaks in aquatic animals are observed (mass mortality, typical clinical signs, etc.), like it was the case for recent EUS like symptoms in some lakes in Niassa.

Moreover, there is not yet any legal framework and financial support in place which would be operational in case a disease outbreak is detected.

The WSSV outbreak in 2011 was reported and handled too late (23 days after occurrence). In absence of adequate emergency response plans and measures, the virus had spread to the whole facility, resulting in a massive viral multiplication in reared shrimp and wild crustacean populations of the surroundings.

Ultimately, this uncontrolled outbreak was responsible for the complete destruction of reared crustaceans, leading to stamping out and fallowing of the whole affected facility. This major crustacean disease consequently greatly affected the country's aquaculture production figures for more than ten years to date, and later the whole region.

There are legal provisions in animal health law regarding emergency preparedness and response, but no access to funding. Essential minimal requirements for contingency plans are mentioned in the new law, currently in preparation. Evidence of emergency response plans for WOA-listed aquatic animal diseases was not observed during the mission, nor contingency plans already in place.

Key Changes from 2011 to 2023:

- No key changes were observed.

Strengths:

- Experience from the WSSV outbreak showing a capacity to respond adequately to an aquatic animal disease outbreak, despite the long delay.

Weaknesses:

- No field network nor national contingency plan are operational.

Recommendations:

- Develop National Contingency Plans for species of interest (Tilapia as a priority, then shrimp or other crustaceans like crabs, etc.), with adequate legal framework and financial support.
- Organize simulation exercises to assess the operationality and efficiency of contingency plans in the field and implement continuous improvement.

Evidence (listed in Appendix 6): 98, 100, 101.

II-6. Disease prevention, control and eradication	Levels of advancement
A. Disease prevention <i>The authority and capability of the AAHS to prevent the spread of aquatic animal diseases through a combination of official controls and practices that reduce the risk of pathogenic agent exposure or transmission, including biosecurity.</i>	1. The AAHS have no capability to implement aquatic animal disease prevention programmes.
	2. The AAHS have established general prevention programmes including basic biosecurity measures but no verification of implementation and/or compliance.
	3. The AAHS have established prevention programmes and selected disease-specific programmes, including basic biosecurity and a method of verification for high-risk activities only, but no enforcement of the programmes or evaluation of the effectiveness of the practices. Industry practices generally do not exceed basic biosecurity practices.
	4. The AAHS have established general and disease-specific prevention programmes for many diseases based on their informally assessed potential impact, including basic and advanced biosecurity practices consistent with WOAHS international standards. A method of verification for unacceptable risk activities and ongoing evaluation of the effectiveness of practices are in place. Industry practices generally exceed regulated minimal biosecurity practices.
	5. Disease prevention programmes are effective.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 1

Findings:

Health status of aquatic animals at broodstock and larvae stages (fingerlings, post-larvae) prior to stocking in farms/hatcheries or to movement is not mandatory, and no official controls on this major transmission pathway are in place. However, some vertically integrated companies have sometimes developed on their own systematic analysis to prevent the spread of aquatic animal diseases.

Biosecurity is mentioned in the application form to be filled when aquaculture establishments are registered at ADNAP and INIP. However, there is currently no guidelines on Biosecurity Plans, and CA is not organizing visits of facilities to evaluate field implementation. The new legislation in preparation should provide the necessary legal background to organize these activities.

Field visits in private sector showed that small farmers do not have basic biosecurity measures in place. Even when visiting bigger private facilities, biosecurity was not always a major focus.

For example, in Tete, the broodstock centre, and the hatchery are located in the lake itself, at the same site as the grow out phase. Thus, the sanitary status of reared animals is highly dependent of the wild populations of the lake. In case there is a new pathogen emerging in aquatic animals of this water body, there is a high risk that all stocks of Tilapia might also be affected.

At CEPAQ centre, while some biosecurity systems are in place, the Team observed clear failures of these protections: birds were catching fish in the ponds under bird nets, and according to employees of the centre, some wild tilapia were observed in the water inlet canal, which was physically separated to the pond water by a big size metallic grid only.

In the remaining private sector involved in shrimp industry, according to the interview achieved, all post-larvae stocked at the existing farm are coming from biosecure broodstock centre and hatchery, and their health status (absence of WSSV checked) is systematically checked prior to movement and stocking.

Key Changes from 2011 to 2023:

- Since WSSV outbreak in 2011, disease prevention and biosecurity have been considered a priority, and considered when developing strategies for aquaculture and aquatic animal health in the country. Some recommendations of previous PVS missions have been implemented in the field for crustaceans.

Strengths:

- Conscientization of the public and private sectors involved in aquaculture of the importance of biosecurity in disease prevention.

Weaknesses:

- No legal capacity of biosecurity measures enforcement of CA.

Recommendations:

- Guidelines on biosecurity standards to be developed at national level, and implemented in aquaculture establishments, in the form of a Biosecurity plan based on design of the facilities and risk analysis. It is recommended to focus on broodstock centres and hatcheries as a starting point, considering that aquatic animals issued from these facilities usually represent a high risk of spread of aquatic animal diseases if their sanitary status is not established and under strict control.
- Include basic biosecurity equipment and SOPs in the design and management in aquaculture development programs, notably for small farmer.
- Visits/audits to be organized by INIP to evaluate the level of adoption of disease prevention measures by the aquaculture industry and recommend action plans for future improvement.
- Embark all stakeholders into the Progressive Management Pathway to Aquaculture Biosecurity (PMP/AB), through e-learning program: <https://elearning.fao.org/course/view.php?id=979>.

Evidence (listed in Appendix 6): 6

II-6. Disease prevention, control and eradication	Levels of advancement
B. Disease control or eradication <i>The authority and capability of the AAHS to control or eradicate nationally important aquatic animal diseases present in the country; for example, through a combination of treatments, domestic movement control, establishment of containment zones, biosecurity measures, isolation and/or killing and emergency slaughtering/stamping out.</i>	1. The AAHS have no capability to implement aquatic animal disease control or eradication programmes.
	2. The AAHS implement control or eradication programmes for some aquatic animal diseases and/or in some areas or populations ¹⁹ , but with little or no epidemiological, risk-based planning or evaluation of their effectiveness.
	3. The AAHS implement control or eradication programmes for some priority aquatic animal diseases in some areas or populations. There is variable, epidemiological, risk-based planning and evaluation of effectiveness, with limited progress towards programme goals.
	4. The AAHS implement nationwide control or eradication programmes for priority aquatic animal diseases with a high degree of epidemiological, risk-based planning, and continual evaluation of programme effectiveness. They have or are progressing towards programmes to self-declare freedom from relevant WOAHS-listed diseases. They can demonstrate some progress towards programme goals in reducing prevalence or eradicating disease.
	5. The AAHS implement control or eradication programmes for all priority aquatic animal diseases, with scientific evaluation of their effectiveness consistent with the relevant WOAHS international standards. They can demonstrate clear progress towards programme goals in reducing prevalence or eradicating disease, including achieving or progressing towards official recognition of freedom from relevant diseases.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 1

Findings:

The Team did not observe any disease control or eradication activities occurring during the mission, and none were reported during the last years.

However, during the 2011 WSSV outbreak in a shrimp farm in Quelimane, disease eradication procedures were applied, including emergency harvests, collection of dead crustaceans and destruction of this contaminated biomass, followed by stamping out and fallowing phases.

The recent surveillance program on WSSV include some samples from this very farm and surroundings, thus allowing an evaluation of effectiveness of the measures taken.

Key Changes from 2011 to 2023:

- Field experience acquired in disease control and eradication from the WSSV outbreak.
- Contribution to draft legislation and development of a National Aquatic Animal Health and Biosecurity Strategy which includes control and eradication programmes.

Strengths:

- Historical knowledge on procedures to be applied for eradication.

Weaknesses:

- No clear procedures of contingency plans established to be systematically applied in case of future outbreaks detected in aquaculture establishments or water bodies for wild aquatic animals.

¹⁹ It may be necessary to cross-reference this Critical Competency with the Critical Competencies on Zoning and Compartmentalisation, as appropriate.

Recommendations:

- Develop contingency plans, including SOPs for the design of containment zones,
- Proceed to simulation exercises with private sector stakeholders to be confronted to field reality in the application of contingency plan SOPs, and continuous improvement of procedures and training of stakeholders.

Evidence (listed in Appendix 6): 10, 100, 101.

II-7. Aquatic animal production food safety	Levels of advancement
<i>The authority and capability of the AAHS to assure the safety of aquatic animal products for domestic and export markets.</i>	1. Regulation, authorisation and inspection of relevant establishments are generally not undertaken in conformity with international standards.
A. Regulation, inspection (including audits), authorisation and supervision of establishments for the production and processing of aquatic animal products	2. Regulation, authorisation and inspection of relevant establishments and processes are undertaken in conformity with international standards at some selected premises (e.g., export premises).
<i>The authority and capability of the AAHS to establish and enforce sanitary and food hygiene standards for establishments that produce, process and distribute aquatic animal products.</i>	3. Regulation, authorisation and inspection of relevant establishments are undertaken in conformity with international standards at large premises that supply major cities and/or the national market.
<i>Includes the regulation and initial authorisation of establishments, and the ongoing inspection of establishments and processes, including the identification of and response to non-compliance, based on Hazard Analysis and Critical Control Point (HACCP) principles. It also includes external coordination between Competent Authorities, as may be required.</i>	4. Regulation, authorisation and inspection of relevant establishments and processes (and coordination, as required) are undertaken in conformity with international standards for premises supplying national and local markets. There are some reports of dealing with non-compliance.
	5. Regulation, authorisation, inspection and audits of relevant establishments and processes (and coordination, as required) are undertaken in conformity with international standards at all premises. There are documented cases of the identification of and effective response to non-compliance.

[Note: This critical Competency primarily refers to the inspection of processed aquatic animal products. It may, in some countries, be undertaken by an authority other than the AAHS.]

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 3

Strengths:

INIP has a strong legal framework to execute their mandate within food safety

Findings:

Most exported fishery products are processed on board industrial vessels. Processing of fishery products is also carried out in onshore processing establishments and consists mainly of products from artisanal and semi-industrial fishing suppliers. There are also establishments that process aquaculture products (shrimp and fish).

Fishery products processing establishments and fishing vessels are licenced by the competent authorities of Mozambique. The licencing process includes different authorities: ADNAP for commercial registration, INIP for sanitary licence. Although initially focused on industrial aquaculture and fisheries establishments, it should ultimately also include all establishment producing and processing artisanal products, with the help of IDEPA.

Checklists for sanitary inspection for licencing²⁰ and yearly inspections is available and include recommendations and follow up. Although penalties are rarely imposed the team observed evidence of follow up visits to confirm improvements requested.

A HACCP plan which includes own controls (hygiene and products) is requested for licencing.

²⁰ Terms of reference licensing www.mimaip.gov.mz/wp-content/uploads/2019/06/Termos-D

Sanitary licenses for vessels and establishments are renewed annually.

A list of all registered establishments and vessels is available and a single database is shared between the central and provincial level. Coordination between the various levels of the CA is very good and sampling plan and budget by province is done in consultation between province delegate and INIP central services.

Numbers of registered aquatic animal products establishments per region 2022:

Region	Processing	Distribution	fish markets
Maputo	1	90	3
Gaza	0	0	1
Inhambane	5	10	3
Sofa	7	30	4
Manica	0	0	1
Tete	0	126	0
Zambezia	1	7	3
Nampula	10	14	4
Niassa	0	0	0
C.thin	0	1	0
TOTAL	21	278	19

There are 13 establishments registered by the competent authority for export, of which 11 are approved to export to the European Union.

types	Amount
Number of AA processing products establishments	13
Total number of staff involved in activities related to fish/fishery products exported	90
Number of staff allowed to sign Export certificate	22
Number of staff performing official controls	50

Retail establishments are inspected by sanitary authorities from the provinces. Local street markets are not licenced or inspected. The only licensed artisanal fishing vessels are those that supply fish to licensed processing establishments. INIP has some activities on capacity building for local inspectors. Street vendors are not registered or inspected.

Sampling for hygiene (surface contamination, water and ice analysis) checks is done by MoH officers while products are analysed at INIP laboratory.

The country has four fishing ports for industrial and semi-industrial fishing. Although these fishing ports exist, shortcomings found in the support infrastructure (no dock, no unloading equipment, no ice factory) namely in the fishing port of Quelimane visited during the mission limit the landing of fish, while in Maputo port all facilities were available. The team did not visit any fishing market.

Key Changes from 2011 to 2023:

- All processing establishments are registered and licenced.

Strengths:

- Comprehensive legal framework for the inspection (including audits), authorisation and supervision of establishments for the production and processing of aquatic animal products.

- Good coordination between central and provincial level.

Weaknesses:

- Artisanal fishing vessels and local markets as well as most landing sites supplying domestic market are not registered or licenced.

Recommendations:

- Complete registration of all relevant establishments and processes for premises supplying national and local markets and implement an inspection plan based on risks for public health.

Evidence (listed in Appendix 6): 8, 38, 39, 40, 41, 42, 44, 48, 49, 64.

II-7. Aquatic animal production food safety	Levels of advancement
B. Inspection of collection/slaughter, processing and distribution of aquatic animal products <i>The authority and capability of the AAHS to inspect, manage, implement and coordinate aquatic animal production and food safety in relation to the collection, slaughter, processing and distribution of aquatic animal products.</i>	1. Inspection, management, implementation and coordination (as appropriate) are generally not undertaken in conformity with international standards, including collection of disease information.
	2. Inspection, management, implementation and coordination (as appropriate) are generally undertaken in conformity with international standards only for export purposes, including the collection of disease information.
	3. Inspection, management, implementation and coordination (as appropriate) are generally undertaken in conformity with international standards only for export purposes and for aquatic animal products that are distributed throughout the national market, including the collection of disease information.
	4. Inspection, management, implementation and coordination (as appropriate) are generally undertaken in conformity with international standards for export purposes and for aquatic animal products that are distributed throughout the national and local markets, including the collection of disease information.
	5. Inspection, management, implementation and coordination (as appropriate) are undertaken in full conformity with international standards for aquatic animal products at all levels of distribution (including national and local markets and direct sales), including the collection of disease information.

[Note: This critical Competency primarily refers to the inspection of processed aquatic animal products. It may, in some countries, be undertaken by an authority other than the AAHS.]

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 3

Findings:

Fishery products are sampled and analysed as part of “own checks” requirement for licencing and by INIP inspectors as required for the annual renewal of the sanitary licence of fishing vessels and processing establishments. Sampling plan depends on the establishment or vessel assessed risk level and is part of the quality plan of each business operator. Samples are collected by inspectors at province - district level and sent frozen to INIP laboratories in the province.

Samples are also taken for export certification purposes. The INAE (National institute for economic activities) verifies the legality of the economic exercise of the establishments and the Competent Authority controls and monitors the implementation of hygienic and sanitary requirements throughout the chain, from production to commercialization, including distribution to the local market. The team was informed there was never a food safety issue with aquatic products and found no evidence of investigations conducted by INIP. The team was informed that when a non-compliant result is found the product would be destructed. INIP has legal power to confiscate products at the establishments.

The INIP laboratory in Quelimane referred occasional results of above limit Sulfites in shrimp.

Labelling of products for export are in accordance with international standards (identification of origin, batch number and production expiry date).

No recall procedure or recall exercises were made involving aquatic products.

Transport /movement documentation is issued for all fishery products and live animals and checked at road posts between provinces. A new ministerial diploma has created a form specifically for live animals.

When asked about disease recognition on samples of fish for consumption the team was told that although lab staff have no specific training on disease diagnosis any abnormality observed during organoleptic examination will be reported to INIP for further investigations.

Ministry health officers do sample of products on retail to ensure the quality of products.

Key Changes from 2011 to 2023:

- No major changes observed.

Strengths:

- Comprehensive legal framework for the inspection (including audits), authorisation and supervision of establishments for the production and processing of aquatic animal products.

Weaknesses:

- Lack of inspection/monitoring controls for products sold in the local market from artisanal fisheries.
- Lack of coordination with INAE- MoH in particular on developing procedures for product recall.

Recommendations:

- Promote training of fish inspectors on recognition of aquatic diseases as a tool for AAH surveillance.
- Inspection should be in place for aquatic animal products that are distributed also throughout the local markets.

Evidence (listed in Appendix 6): 8, 38, 39, 40, 41, 42, 44, 48, 85, 86.

II-8. Veterinary medicines and biologicals for aquatic animals	Levels of advancement
<i>The authority and capability of the AAHS to regulate veterinary medicines and biologicals, to ensure their quality and safety, as well as their responsible and prudent use, including as medicated feed.</i> <i>This includes the marketing authorisation/registration, import, manufacture, quality control, export, labelling, advertising, distribution, sale (includes dispensing) and use (includes prescribing) of these products.</i>	1. The AAHS cannot regulate veterinary medicines and biologicals for aquatic animals.
	2. The AAHS have some capability to exercise regulatory and administrative control over the import, manufacture and market authorisation (registration) of veterinary medicines and veterinary biologicals to ensure their quality and safety but cannot ensure their responsible and prudent use for aquatic animals in the field.
	3. The AAHS exercise effective regulatory and administrative control over the market authorisation of veterinary medicines and biologicals and have some capacity to regulate these to ensure their responsible and prudent use for aquatic animals in the field, including reducing the risk from illegal imports ²¹ .
	4. The AAHS exercise comprehensive and effective regulatory and administrative control of veterinary medicines and biologicals, including market authorisation, responsible and prudent use for aquatic animals in the field, and reducing the risks of illegal distribution and use.
	5. The control systems for veterinary medicines and biologicals for aquatic animals are regularly audited, tested and updated when necessary, including via an effective pharmacovigilance programme.

[Note: This Critical Competency may in some countries be undertaken by an authority other than the AAHS.]

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Weaknesses:

In Mozambique no national medicines regulatory authority has yet been established.

There is thus no control over the production, sale or distribution of medicines or biologicals for veterinary use in aquatic animals.

Recommendations

Enabling legislation is a priority to exercise control over the importation, production, sale and use of veterinary medicines in terrestrial and aquatic animals.

The AAHS should closely collaborate with the Directorate of Veterinary Services (DNSV) of the Ministry of Agriculture in order to achieve this goal

PVS Evaluation (2011) - Level 1

Findings:

The control of veterinary drugs and biological products is regulated by the animal health regulation. The National Directorate for Livestock Development in the Ministry of Agriculture and Rural Development is the entity responsible for registration, market introduction as well as marketing authorization. The Division for the Registration of Medicines and Licensing of Veterinary Establishments is one of the divisions of the Department of Prevention, Control and Eradication of Diseases of the National Directorate for Livestock Development (DNDP) and 3 Qualified staff are responsible for Registration, Market introduction and inspection of veterinary products and medicines.

There is no production of veterinary medicines in Mozambique. All veterinary medicines are imported not as active principles but as formulations. A list of registered veterinary medicines exists but no veterinary medicine or biologicals for use in AA are registered. The import requirements are based on documentation and labelling. No quality checks are done on imported veterinary medicines. A list of licenced importers, wholesalers and sale points is also

²¹ Illegal veterinary medicines and biologicals importation and use covers risks from online drug sales and the import and/or sale of counterfeit or sub-standard drugs.

available. One of the requisites is the need for a technical director to be a veterinary registered by the SVB.

Each retailer is licensed by central veterinary authorities and inspection is conducted annually for license renewal. Inspectors provide recommendations (no documentation was available on the retailer visited by the team). Cold storage was available in the retailer establishment visited.

The Prescription of Veterinary products is established by the Ministerial Diploma n° 57/86 of October 29, this instrument is not specific for Aquatic Animals. Although the requirement for veterinary prescription exists the team observed that sale of terrestrial vet medicines is done without a prescription and no records of sale are available at the sale points or requested by the official services. There are no provisions for the possibility to use other animal species veterinary medicines for aquatic animals.

In the WOAHA ANIMUSE report system, Mozambique reported during round 3 (corresponding to 2017) the use of antimicrobials in aquatic animals, without providing more details regarding the species, the active substances used, the location or justification for this use. The Team was not informed about this use during the mission.

Key Changes from 2011 to 2023:

- There is licencing and inspection requirements for producers, importers, wholesalers, distributors and retailers of veterinary medicines.
- A list of registered veterinary medicines is available.

Strengths:

- There is licencing and inspection requirements for producers, importers, wholesalers, distributors and retailers of veterinary medicines.

Weaknesses:

- No veterinary prescription is required for any veterinary medicine.
- No veterinary medicine for aquatic animals is available for use in AA.
- No controls are in place on the sale and use of veterinary medicines.

Recommendations:

- Enabling legislation to exercise control over the sale and use of veterinary medicines in terrestrial and aquatic animals.

Evidence (listed in Appendix 6): 2, 4, 7, 59, 64, 117.

II-9. Antimicrobial resistance (AMR) and antimicrobial use (AMU)	Levels of advancement
<i>The authority and capability of the AAHS to manage AMU and AMR, and to undertake surveillance and control of the development and spread of AMR pathogens in aquatic animal production and aquatic animal products, as well as aquatic animal production environments, via a One Health approach²².</i>	1. The AAHS cannot regulate AMU and AMR and have not developed or contributed to an AMR action plan covering the aquatic animal health domain.
	2. The AAHS are contributing or have contributed to a national AMR action plan. The action plan has initiated some activities to collect AMU/AMR data or control AMR, e.g. awareness campaigns targeting veterinarians/aquatic animal health professionals or farmers on the prudent use of antimicrobial agents in aquatic animals. The use of antimicrobials for growth promotion and indiscriminate prophylaxis for disease prevention is discouraged.
	3. The AAHS have defined a national AMR action plan in coordination with the public health authorities and other stakeholders and are implementing some AMU/AMR surveillance and regulations. The use of antimicrobial agents for growth promotion and indiscriminate prophylaxis for disease prevention is prohibited.
	4. The AAHS are implementing a comprehensive AMR action plan based on risk, including AMR surveillance of the most important pathogenic agents for aquatic animal health or foodborne diseases, the monitoring of AMU, and the prudent use of antimicrobial agents in aquatic animals (especially the use of critically important antimicrobials). The use of antimicrobial agents for growth promotion and indiscriminate prophylaxis for disease prevention does not occur.
	5. An effective national AMR action plan covering the aquatic animal health domain is regularly audited, reviewed and updated by the AAHS with public health authorities and other stakeholders, using the results of AMU/AMR surveillance. The scale and type of antimicrobial use in aquatic animals poses minimal risk of AMR and alternative solutions for the control of diseases in aquatic animals are being implemented.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions: see results from II.8

PVS Evaluation (2011) - NA

Findings:

Mozambique is starting to develop a policy, surveillance strategy, and guidelines for AMR in animal health. The strategy was recently drafted and validated. The Action Plan for Health Security that include relevant aspects of AMR was also recently approved by the Government.

Some work coordinated with MISAU (i.e., Ministry of Health, MOH) within the scope of One Health to build laboratory capacity for AMR has started. Veterinary medicines residues testing on aquatic products for export is conducted by a laboratory in South Africa. The capacity of the Vet Lab to diagnose AMR is currently very weak and experimental.

The country, with support of an international donor, is doing a study to assess the knowledge and practice on prudent use of AM in poultry and aquaculture, the capacity of central and regional laboratories for the detection of antimicrobial resistant agents, and the legislation framework on AMR in animal health to assist the country developing an AMR strategy. No field activities have started.

A One Health platform composed by the MoH, MADER, MIMAIP, INIP, MASA, UEM, NMNH, WHO, WOA, NPHI, CDC, USAID, created in 2018, has established priorities in terms of

²² Recommended reading:

WHO Global Action Plan (2015) at: <https://www.who.int/publications/i/item/9789241509763> and *WOAH Strategy on Antimicrobial Resistance and the Prudent Use of Antimicrobials (2016)* at: www.woah.org/fileadmin/Home/eng/Media_Center/docs/pdf/PortailAMR/EN_OIE-AMRstrategy.pdf

zoonosis, and is currently developing a list of priority antimicrobial agents for veterinary and human use for monitoring its use and surveillance of AMR.

INIP is involved in an IAEA project on food safety covering AMR and contaminants. There are also plans under the One Health platform to implement a joint sampling system cross the sectors.

The use of antimicrobials in Mozambique's very small aquaculture industry is unlikely. There are no positive results on the veterinary residues testing done on export shrimps. However, the WOAHA ANIMUSE report system shows that Mozambique reported during round 3 (corresponding to 2017) the use of antimicrobials in aquatic animals. This data was not shown to the Team during the mission and the fish inspection services was not aware of the report.

No evidence of communication awareness campaigns was observed by the team during its visits.

Key Changes from 2011 to 2023:

- Creation of a One Health platform in 2013.

Strengths:

- Action Plan for Health Security that includes relevant aspects of AMR was approved.

Weaknesses:

- No control on sale/use of antimicrobials.
- Reduced laboratory capacity for AMR.
- No priority list for surveillance on AMR.

Recommendations:

- Define priorities and finalize the AMR component of the One Health policy currently under discussion in collaboration with other ministries.
- Actively contribute to the WOAHA ANIMUSE report system for the next collection round (the 9th collection round in 2023, and 10th in 2024) to include aquatic animals into the database.

Evidence (listed in Appendix 6): 7, 8, 83, 102, 117.

II-10. Residue testing, monitoring and management	Levels of advancement
<i>The capability of the AAHS to undertake residue testing and monitoring programmes for veterinary medicines (e.g., antimicrobials and hormones), chemicals, pesticides, radionuclides, heavy metals, toxins, etc. and respond appropriately to adverse findings.</i>	1. No residue testing for aquatic animal products is being undertaken.
	2. Some residue testing is being undertaken, such as for research or pilot purposes, and/or is conducted only on specific aquatic animal products for export.
	3. A comprehensive residue monitoring programme is conducted for all aquatic animal products for export and some for domestic consumption, based on limited risk analysis. Documented protocols exist for preventing residue risks (e.g., withholding periods for veterinary drugs) and for responding to breaches of Maximum Residue Limits.
	4. A comprehensive residue monitoring programme is conducted for all aquatic animal products for export and domestic consumption based on risk analysis. Effective protocols both reduce residue risks and respond to breaches of Maximum Residue Limits, including traceback and follow up.
	5. The residue monitoring and risk management programme is subject to routine quality assurance and regular evaluation/audit.

[Note: This critical Competency may in some countries be undertaken by an agency or agencies other than the AAHS.]

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Detailed residue monitoring programme for aquatic foods for human consumption.

PVS Evaluation (2011) - Level 2

Findings:

The National Residue Control Plan (PNCR) includes sampling of fishery products for detection of residues of veterinary drugs, environmental contaminants, including heavy metals and residues of prohibited or unauthorized substances in fishery products, as well as aflatoxins in feed.

The PNCR complies with the established Regulation for Hygienic Control Sanitation of fishery products, approved by Decree 80/2020 of September 18 (BR. N°172/ I series) and consists of a surveillance system to analyse chemical hazards in fishery products in compliance with EU regulations. A verification and inspection system by the Competent Authority of the self-control systems of aquaculture and fishery products processing companies, as well as a sampling program by the CA, is in place and is established every year by the INIP central services and implemented at provincial level. All registered fishery products establishments are included but the focus is for exporting facilities (establishments and vessels).

Penalties and follow up measures are described in PNCR, but the team did not see any evidence of positive analytical results or penalties application.

The only RASFF (EU rapid alerts system for food and feed) notifications in the last 3 years in fishery products from Mozambique were in 2020 for presence of mercury in swordfish.

Key Changes from 2011 to 2023:

- The PNCR is implemented in all registered establishments/vessels and not only those registered for export.

Strengths:

- A detailed residue monitoring programme for aquatic foods for human consumption with legal power to confiscate products and impose penalties.

Weaknesses:

- Control mostly limited to exported fishery products, notably to EU.
- No observed evidence of positive analytical results or penalties application.

Recommendations:

- Extend the PNCR to more domestic aquatic animal products.
- Ensure that penalties are applied in case of non-compliance, including for domestic sold aquatic animal products.

Evidence (listed in Appendix 6): 8, 9, 36, 42, 45.

II-11. Aquatic animal feed safety <i>The authority and capability of the AAHS to regulate aquatic animal feed safety, e.g. processing, handling, storage, distribution and use of both commercial and on-farm produced aquatic animal feed and feed ingredients.</i>	Levels of advancement
	1. The AAHS cannot regulate aquatic animal feed safety.
	2. The AAHS have some capability to exercise regulatory and administrative control over aquatic animal feed safety.
	3. The AAHS exercise regulatory and administrative control for most aspects of aquatic animal feed safety.
	4. The AAHS exercise comprehensive and effective regulatory and administrative control of aquatic animal feed safety.
	5. The control systems are regularly audited, tested and updated when necessary.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

N/A

Findings:

No aquatic animal feed is currently produced in Mozambique. Consequently, there are no predefined programs for the control of manufacturing practices, nor laboratory analysis and onsite inspections contemplated. All imported feed is requested to comply with standard technical forms provided by INIP, and a Health Certificate issued for all imported batches. Compliance is notably controlled during visits to private aquaculture production units, based on documents accompanying the order, and on labels of feed bags. No evidence of on-farm production of fish feeds has been observed during the mission.

Key Changes from 2011 to 2023:

- No assessment of this CC in 2011 (new version of PVS aquatic standards for PVS Follow Up).

Strengths:

- Control system in place for imported aquatic animal feed.

Weaknesses:

- No risk analysis (IRA) performed on imported aquatic animal feed.
- Controls on imported aquatic animal feed only based on documents provided by the provider, with no independent control of critical process e.g., GMP and compliance of feed ingredients.
- No random sampling by INIP, nor independent laboratory analysis to verify compliance.

Recommendations:

- Implement a random sampling program, with periodicity and quantities sampled based on total annual volumes imported and analyse critical feed parameters (for example proximal formulation, with humidity rate, absence of antimicrobials or heavy metals, etc.).
- For major aquatic animal feed producers, if possible, organize a visit/audit of feed plants abroad, or alternatively online interviews.

Evidence (listed in Appendix 6): 5.

II-12. Identification, traceability and movement control	Levels of advancement
A. Aquaculture establishment identification, batch and aquatic animal movement control	1. The AAHS do not have the authority or the capability to regulate the identification of aquatic animals, either by batch or by aquaculture establishment, or to trace and control their movements.
<i>The authority and capability of the AAHS, in coordination with producers and other stakeholders, to regulate the identification of aquatic animals, to trace their history and location(s), and to control domestic movements for the purpose of aquatic animal disease control, food safety, trade or other legal requirements under the AAHS mandate.</i>	2. The AAHS can identify some aquatic animals by aquaculture establishments or location, and control some movements, using traditional methods, and can demonstrate the ability to deal with a specific problem (e.g., to trace sampled or vaccinated aquatic animals for follow up, or to prevent theft).
	3. The AAHS implement a system for aquatic animal traceability and movement control for specific animal subpopulations (e.g., for export, at borders, in specified zones or markets), as required for traceability and/or disease control, in accordance with international standards.
	4. The AAHS implement appropriate and effective aquatic animal traceability and movement control procedures for some aquatic animal species at national level, in accordance with international standards.
	5. The AAHS carry out periodic audits of the effectiveness of their traceability and movement control systems. These systems have been demonstrated as effective in dealing with a problem (e.g., tracing a disease outbreak, residue or other food safety incident).

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 3

Findings:

Aquaculture establishments are registered, and their compliance of national requirements verified by ADNAP and INIP and can therefore be clearly identified and located. However, artisan farms, hatcheries and broodstock centres are treated differently compared to other establishments. Hatcheries are at the moment not registered, but such a requirement is in pipeline.

There is currently no formal system in place for traceability and movement control of live aquatic animals within the country. However, a new ministerial diploma has created a form specifically for live animals, which still needs to be fully implemented.

Some private companies can provide traceability of their animals, notably when they are vertically integrated. Minimal health or production records can also be provided by these stakeholders. However, small farmers cannot usually provide such information.

Key Changes from 2011 to 2023:

- No key changes were observed.

Strengths:

- A registration system for aquaculture establishments is in place and operational.

Weaknesses:

- Registration of hatcheries and broodstock centres are currently only partial, despite high risks associated to the sanitary status of their aquatic animal populations and disease spreading very little capacity to trace locations of offsprings/larvae in case of outbreak detection in one batch.

- No official control on live aquatic animal movements, potentially leading to difficulties in case of an outbreak, where traceability could be needed to destroy all batches of concern.

Recommendations:

- Implement full registration, identification of broodstock centres and hatcheries in the country as a priority.
- Implement a control of domestic movements of aquatic species fingerlings and/or larvae as a priority, then extend to all live aquatic animals.
- Make sure the new specific form created for live aquatic animals is implemented, pass the adequate legislation for transport/movement control, and make simulations of animal blocking, destruction or recall validating its operationality.

Evidence (listed in Appendix 6): 10, 37, 100, 101, 102.

II-12. Identification, traceability and movement control	Levels of advancement
B. Identification, traceability and control of aquatic animal products <i>The authority and capability of the AAHS, in coordination with other Competent Authorities (such as food safety authorities) and other stakeholders, as appropriate, to achieve whole-of-chain traceability, including the identification, tracing and control of aquatic animal products for the purpose of food safety, aquatic animal health or trade.</i>	1. The AAHS do not have the capability or access to information to identify or trace aquatic animal products.
	2. The AAHS can identify and trace some aquatic animal products through coordination between Competent Authorities, to deal with a specific problem (e.g. high-risk products traced back to premises of origin).
	3. The AAHS have implemented procedures to identify and trace some aquatic animal products, in cooperation with Competent Authorities, for food safety, aquatic animal health and trade purposes, in accordance with international standards.
	4. The AAHS have implemented national programmes enabling them to identify and trace all aquatic animal products and respond to threats, in coordination with Competent Authorities and in accordance with international standards.
	5. The AAHS periodically audit the effectiveness of their identification and traceability procedures, in coordination with Competent Authorities. The procedures have been demonstrated as being effective for traceback and response to a relevant food safety incident (e.g. foodborne zoonoses or residue incidents).

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Strengths:

A well-functioning tracing system for aquatic products and for prawn aimed for export.

Weaknesses:

There exists no traceability for aquatic animal products for the domestic market

PVS Evaluation (2011) – Level 3

Findings:

Functional traceability is well implemented and efficiently supervised by INIP for Mozambican aquatic animal products to be exported. Either originating from wild fisheries or from aquaculture, these products can be traced from date of catch or harvest, through processing, storage, up to export vessel, and accompanied by a Health Certificate issued by INIP based on samples randomly collected from products, and analysed in internal and external laboratories.

Imported aquatic animal products for local consumption are quite rare in Mozambique, and they are not submitted to a control by INIP.

Locally produced aquatic animal products destined for domestic consumption are traced through control points located in each province, where agents from several competent authorities, including customs and INIP, are cooperating.

At road posts between provinces, movement documentation issued for all fishery products are checked and products could potentially be blocked and destroyed. A new ministerial diploma has created a form specifically for live animals.

The licensing process, depending of the type of facility, includes:

- For a registration of a fishing vessel, a Submission of application is made, which needs contain proof of ownership, navigation systems, and a picture of the vessel. This is then scrutinised by the administration and visits by INIP and ADNAP.
- For a registration of establishments like processing plants, an application is received, the whole process being handled by INIP, and all establishments are registered with their own unique number in ADNAP.

- Finally, for a registration/licencing of a fish farm, a project description is submitted, and there is a guidance of which elements needs to be covered. Upon reception of the registration application, a multi-authority group is established (commission), with ADNAP, INIP and IDEPA involved.
- Applications received in 2023: two tilapia farms, and one crab farm. The last application for shrimp farming was 4 years ago but the company never started the production.
- For small farmers, requirements are less, and not all are registered. Only the registered ones to get access to a loan, and to IDEPA services (free fingerlings, technical support, etc.).
- Hatcheries and broodstock centres do not have to be registered, but a requirement to demand this is planned.

Key Changes from 2011 to 2023:

- There is a control system of domestic movement of aquatic animal products in place.

Strengths:

- Control of aquatic animal products for export is already in place, and fully functional.

Weaknesses:

- Absence of database compiling and providing easy access to all aquatic animal products movements.

Recommendations:

- Develop a data collection system, a database and procedures allowing to identify and eventually traceback aquatic animal products in case of food safety potential issues, zoonotic or aquatic animal health potential issues or risks.
- Regularly audit the implemented system to assess efficiency.

Evidence (listed in Appendix 6): 8, 38, 39.

II-13. Welfare of farmed fish	Levels of advancement
<i>The authority and capability of the AAHS to legislate and implement the WOAHA international standards for the welfare of farmed fish, as published in the Aquatic Code.</i> <i>This requires consultation and coordination with Competent Authorities, non-governmental organisations and other stakeholders, as appropriate.</i>	1. There is no national legislation or regulation of the welfare of farmed fish.
	2. There is national legislation or regulation of the welfare of farmed fish that covers some of the WOAHA international standards, with limited stakeholder or public awareness.
	3. The national legislation and regulations on the welfare of farmed fish cover most of the WOAHA international standards, with some awareness programmes and implementation, but are in conformity with international standards in only some sectors (e.g., for the export sector).
	4. Welfare of farmed fish programmes, supported by suitable legislation and regulations, are being implemented in conformity with relevant international standards and are applied to most sectors and species with stakeholder and public awareness ²³ . Documented compliance programmes, including consequences for non-compliance, are available.
	5. Welfare of farmed fish programmes, supported by suitable legislation and regulations, are being implemented in conformity with relevant international standards. Comprehensive national programmes are applied to all sectors and species with the active involvement of stakeholders. Welfare of farmed fish programmes, including non-compliance issues, are subject to regular audit and review, with documented cases of responding effectively to non-compliance.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2023) - Level 2

Findings:

The process of developing aquatic animal welfare legislation standards in the country has not been initiated, although importance of respecting animal welfare is mentioned in current legislation.

Regarding fish culture like Tilapia, the team was not able to observe their slaughter in processing plants. However, visits to some small farmers revealed that serious shortcomings may occur in the procedures for grow out phases.

Key Changes from 2011 to 2023:

- No key changes were observed.

Strengths:

Weaknesses:

- There are no national regulations on Aquatic Animal welfare.

Recommendations:

- Initiate the process of awareness raising and capacity building on Aquatic Animal welfare among stakeholders, specifically in transport, grow out and slaughter of farmed fish (following the recommendations of the WOAHA Aquatic Code), and develop species-specific standards.

²³ Recommended reading:

ISO Technical Specification TS/34700 (2016) at <https://www.iso.org/standard/64749.html>

WOAHA Global Animal Welfare Strategy (2017) at https://www.woaha.org/en/document/en_oie_aw_strategy/

WOAHA Guidelines on Disaster Management and Risk Reduction in Relation to Animal Health and Welfare and Veterinary Public Health: at <https://www.woaha.org/en/document/disastermanagement-ang/>

- Initiate the development of the corresponding standards within the new Aquatic Animal legislation for future enforcement.

Evidence (listed in Appendix 6):

III.3 Fundamental component III: Interaction with stakeholders

This component of the evaluation concerns the capability of the AAHS to collaborate with and involve non-governmental stakeholders in the implementation of programmes and activities. It comprises eight critical competencies.

Critical competencies:

Section III-1	Communication
Section III-2	Consultation with stakeholders
Section III-3	Official representation and international collaboration
Section III-4	Accreditation/authorisation/delegation
Section III-5	Veterinary Statutory Body (VSB)
	A. Veterinarians working in aquatic animal health
	B. Aquatic animal health professionals (non-veterinarians)
Section III-6	Participation of producers and other stakeholders in joint programmes
Section III-7	Aquatic animal health management and clinical services

Aquatic Code references:

- Points 6, 7, 9, and 13 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards/Communication.
- Chapter 3.2. on Communication.

Terrestrial Code references:

- Chapter 1.4. on Animal health surveillance.
- Article 3.2.3. on Policy and management.
- Article 3.2.4. on Personnel and resources.
- Article 3.2.5. on The veterinary profession.
- Article 3.2.6. on Stakeholders.
- Article 3.2.7. on Animal Health.
- Article 3.2.8. on Animal production food safety.
- Article 3.2.9. on Veterinary medicinal products.
- Article 3.2.11. on Animal welfare.
- Article 3.2.12. on International trade.
- Point 4 of Article 3.4.3. on General principles: Consultation.
- Article 3.4.5. on Competent Authorities.
- Article 3.4.6. on Veterinarians and veterinary paraprofessionals.
- Chapter 3.5. on Communication.

III-1. Communication ²⁴	Levels of advancement
<i>The capability of the AAHS to keep non- governmental stakeholders²⁵ aware and informed, in a transparent, effective and timely manner, of AAHS activities and programmes, and of developments in aquatic animal health, welfare of farmed fish and public health.</i> <i>This Competency includes communication with all non- government stakeholders, including farmers, aquaculture establishments, and trading groups, as well as relevant NGOs and the general public, for example through communication campaigns and the media, including social media.</i>	1. The AAHS do not inform stakeholders of AAHS activities and programmes.
	2. The AAHS have informal communication mechanisms with some stakeholders, e.g., with the larger commercial aquaculture or related companies.
	3. The AAHS maintain a dedicated and specialist communications function which communicates with stakeholders occasionally, but it is not always up to date or pro-active in providing information.
	4. The AAHS contact point for communication provides up-to-date information to most relevant stakeholders. This information is aligned with a well-developed communications plan, and accessible through the Internet and other appropriate channels targeted to the audience, and covers relevant events, activities and programmes, including during crises.
	5. The AAHS have a well-developed communication plan, and regularly provides information to all relevant stakeholders, well targeted to the audience, via the full range of communications media, including social media. The AAHS regularly evaluate and revise their communications plan.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

The AAHS were found to have informal communication mechanisms but no procedures or plan for communication to stakeholders when needed. However, there seems to be open access to get information when asking. There is no secrecy in the system, more a lack of awareness of the importance of transparently communicating relevant information.

PVS Evaluation (2011) - Level 2

Findings:

The national WOAHS Focal Point for Aquatic Animals, Dra Lucia Sumbana Santos, is also the Focal Point for Communication.

The team noticed a considerable improvement since 2011. Most of the relevant Ministries and governmental institutions have well maintained and informative websites and regular meetings with stakeholders provide a platform for information exchange on national and regional programmes and projects.

A CAP Committee for fisheries administration (aquaculture and fisheries) has been established consisting of representatives from INIP, IDEPA, INOM, ADENAP, INAMAR and DEPE, and stakeholders, mainly associations, from all levels of fishing and aquaculture industry, industrial, semi-industrial and artisan. The aquaculture stakeholders are underrepresented compared to those from wild fisheries. The Committee is regulated by law and meets four times a year by law. Environmental stakeholders are invited depending by the agenda. The Mozambican Association of Industrial Fisheries Shipowners (AMAPIC) informed that it is very satisfied with the communication from the CA. An example of a national programme discussed in the CAP is a joint INIP and IDEPA project to reduce waste from fisheries.

²⁴ Recommended reading: [WOAH Communication Handbook: Veterinary Services \(2015\)](https://www.woah.org/fileadmin/Center/eng/Media_Center/docs/pdf/EN_Guide_de_Communication_FINAL.pdf) at: https://www.woah.org/fileadmin/Center/eng/Media_Center/docs/pdf/EN_Guide_de_Communication_FINAL.pdf

²⁵ Communication and consultation with government stakeholders should be captured under CCI-6 on Coordination Capability of the Veterinary Services, and particularly CCI-6B on External Coordination.

The fisheries and aquaculture officers at central and local levels of the Competent Authority are well known to the most relevant stakeholders and have good communication. The FP is in regular contact with the local staff and visits the local offices several times every year.

The team observed that the flow of information between INIP and INEPA could be challenging.

It was informed in the baseline document, that strategic and plans for communication is included in the strategy for the development of aquaculture, but the Team was not presented any current communication plans, nor did we find any mentioning in the strategy document.

All the relevant Ministries and governmental institutions have well maintained and informative websites.

Key Changes from 2011 to 2023:

- Procedures for communication with stakeholders have been implemented.
- The Ministry website have been developed to better inform stakeholders about activities and programmes relevant to them.

Strengths:

- Well maintained and informative websites providing updated information on ongoing and new programmes and activities.
- The Competent Authorities and relevant public institutions have regular meetings with stakeholders, mainly associations, from all levels of fishing and aquaculture industry, industrial, semi-industrial and artisan, through the CAP- Committee.
- The country has appointed the FP for communication.

Weaknesses:

- The aquaculture stakeholders are underrepresented in the CAP compared to those from wild fisheries.
- Reaching artisan producers is a challenge.

Recommendations:

- Promote a more active role for the already existing associations of artisan producers.
- Promote a better representation of aquaculture stakeholders rearing various aquatic species in the CAP.
- Establish a national communication plan.

Evidence (listed in Appendix 6): 108-112, 113.

III-2. Consultation with stakeholders	Levels of advancement
<i>The capability of the AAHS to consult effectively with non-government stakeholders²⁶ on AAHS activities and programmes, and on developments in aquatic animal health and food safety.</i> <i>This Competency includes consultation with all non-government stakeholders, including farmers, the aquaculture sector, and trading groups or associations, as well as interested NGOs and members of the public.</i> <i>Unlike communication (CCIII-1), consultation is two-way and should involve mechanisms that not only inform but actively seek the views of consulted parties, for consideration and response.</i>	1. The AAHS have no mechanisms for consultation with non-government stakeholders.
	2. The AAHS maintain informal channels of consultation with some non-government stakeholders (e.g., only the larger commercial aquaculture or related companies).
	3. The AAHS hold formal consultations with non-government stakeholders, usually represented by industry groups or associations.
	4. The AAHS regularly hold workshops and meetings with non-government stakeholders, who are organised to have broad representation, such as through elected, self-financed industry groups or associations. Consultation outcomes are documented, and the views of stakeholders are considered and occasionally incorporated.
	5. The AAHS actively consult with non-government stakeholders, including representatives of smaller producers, on current and proposed activities and programmes, developments in aquatic animal health and food safety, and proposed interventions at WOH, Codex Alimentarius Commission, WTO SPS Committee, etc. The consultation results in improved, better-adapted activities and greater stakeholder support.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

PVS Evaluation (2011) - Level 2

Findings:

In 2020, there was a restructuring of services without consultation of interested institutions-research (INOM).

Mozambican Association of Aquaculturists (AMAUQA), Mozambican Association of Industrial Fisheries Shipowners (AMAPIC), Association of Semi-industrial Fisheries of Mozambique (ASSAPEMO) and associates of Kapenta Shipowners were listed as the main national organizations (AAHP, producers, etc.) involved in aquatic animal production (wild fisheries and aquaculture) in the baseline document. During the mission, the team only met with AMAPIC that was satisfied with the consultations and felt that they were listened to by the authorities.

A CAP Committee for fisheries administration (aquaculture and fisheries) has been established consisting of representatives from INIP, IDEPA, INOM, ADENAP, INAMAR and DEPE, and stakeholders, mainly associations, from all levels of fishing and aquaculture industry, industrial, semi-industrial and artisan. The aquaculture stakeholders are underrepresented compared to those from wild fisheries, and no artisan stakeholders are represented at all. The Committee is regulated by law and meets four times a year. Environmental stakeholders are invited depending on the items on the agenda. Mozambican Association of Industrial Fisheries Shipowners (AMAPIC) informed that it is very satisfied with the communication from the CA.

AQUAPESCA, currently the only operating shrimp farm in the country, informed that they had been consulted in the development of the new Animal Health law.

A consultation platform for One Health has been established in 2013, and meets once a year and have a rotating secretariat. The plan is to establish a permanent secretariat. The platform has a multisectoral representation consisting of members MISAU, MADER, MIMAIP, MTA and academia.

²⁶ Communication and consultation with government stakeholders should be captured under CCI-6 on Coordination Capability of the Veterinary Services, and particularly CCI-6B on External Coordination.

The Team did not find any evidence of records of workshops, meetings, and correspondence (including follow-up and decisions) or examples of stakeholders' input into interventions at WOAHA (and Codex Alimentarius Commission and WTO SPS Committee where applicable).

Key Changes from 2011 to 2023:

- Formal channels for consultations have been established and consultations are now also done on AAH.

Strengths:

- Formal channels for consultation with stakeholders have been developed.
- Stakeholders that are being consulted are being heard when developing legislation and national programmes.

Weaknesses:

- Deficiencies in consultations between authorities.
- Consultation outcomes are not formally documented, nor records kept.
- Limited representation of aquaculture stakeholders in the CAP Committee.
- No representation of small-scale stakeholders in industry groups or associations.
- Limited or no consultation with stakeholders on workshops, meetings, and correspondence (including follow-up and decisions) or examples of stakeholders' input into interventions at WOAHA (and Codex Alimentarius Commission and WTO SPS Committee where applicable).

Recommendations:

- The AAHS has progressed significantly on consulting with stakeholders since 2011. These mechanisms should be further developed by:
- Strengthen the Committee for fisheries administration (CAP) and the consultation platform for One Health ensures broad stakeholder representation by inviting more aquaculture stakeholders.
- Establish channels for consultations with artisan fishermen and farmers. This is particularly important as a main objective of the Strategy for development of aquaculture is to increase artisan aquaculture.
- Implement formal procedures for inter- authority consultation during drafting of new and amended AAH and welfare legislation and programmes.

Evidence (listed in Appendix 6): 57, 113

III-3. Official representation and international collaboration	Levels of advancement
<i>The capability of the AAHS to regularly and actively participate in, coordinate with and provide follow-up on relevant meetings and activities of regional and international organisations, including WOA, Codex Alimentarius Commission, WTO SPS Committee, World Health Organization (WHO), Food and Agriculture Organization of the United Nations (FAO) and Regional Economic Communities.</i>	1. The AAHS do not participate in or follow up on relevant meetings or activities of regional or international organisations.
	2. The AAHS sporadically participate in relevant meetings or activities and/or make a limited contribution.
	3. The AAHS actively participate ²⁷ in the majority of relevant meetings and activities and provide some feedback to national colleagues.
	4. The AAHS consult with non-government stakeholders and take into consideration their opinions when developing papers and making interventions in relevant meetings and in following up on meeting outcomes at the national or regional level.
	5. The AAHS consult with non-government stakeholders to provide leadership, to ensure that strategic issues are identified, and to ensure coordination among national delegations as part of their participation in relevant meetings, including following up on meeting outcomes at national and/or regional levels. The AAHS collaborate internationally by sharing information and assisting to build capacity where appropriate.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

The Team was informed that INIP regularly and actively participates in coordinates and provides follow up on relevant meetings of regional and international organisations such as:

Southwest Indian Ocean Fisheries Commission (SWIOFC)

2008 OIE Aquatic Meeting Maputo

OIE General Assembly (as part of the DNSV delegation)

SADC meetings

PVS Evaluation (2011) - Level 3

Findings:

The Delegate of Mozambique to WOA and the Focal Point for Aquatic Animals and Communication are actively engaged in WOA activities and do participate in relevant regional and global activities. Over the last two years they have attended:

The CA take active part in activities under SADC;

2019- Participation in the sub-regional Workshop on AMR antimicrobial resistance in aquaculture -Durban;

2022, 2023 – Participation in the sessions of the general assembly of WOA – France;

2022- Participation in the Eastern and Southern Africa workshop of aquatic animal health-Mozambique.

The team did not find any evidence of submission of comments to WOA or regional committees, nor a systematic coordination and consultation procedure for preparation of comments on reports of the WOA Specialist Commission.

Key Changes from 2011 to 2023:

- There are no major changes from 2011 to 2023.

²⁷ Active participation refers to preparation in advance of, and contributing during the meetings in question, including exploring common solutions and generating proposals and compromises for possible adoption.

Strengths:

- The Delegate of Mozambique to WOAHA and the Focal Point for Aquatic Animals and Communication are actively engaged in some WOAHA activities and do participate in relevant regional and global activities.

Weaknesses:

- Take no active part in the WOAHA standard setting process.
- No active consultation with interested parties concerning international and regional activities.

Recommendations:

- Establish a consultation procedure to facilitate participation of public and private stakeholders in the WOAHA standard setting process and to prepare for and report from international meetings.

Evidence (listed in Appendix 6): 113.

III-4. Accreditation/authorisation/delegation	Levels of advancement
<i>The authority and capability of the public sector of the AAHS to accredit/ authorise/ delegate to private sector or NGO expertise (e.g., private veterinarians, aquatic animal health professionals and laboratories, NGOs), to carry out official tasks on its behalf, usually via a formal agreement (i.e. public–private partnership)²⁸.</i>	1. The public sector of the AAHS has neither the authority nor the capability to accredit/authorise/delegate official tasks to the private sector or NGOs.
	2. The public sector of the AAHS has the authority and capability to accredit/authorise/delegate official tasks to the private sector or NGOs, but there are currently no accreditation/authorisation/delegation activities.
	3. The public sector of the AAHS develops accreditation/authorisation/delegation programmes for certain tasks using formal agreements, but these activities are not routinely reviewed.
	4. The public sector of the AAHS develops and implements accreditation/authorisation/delegation programmes using formal agreements, and these activities are routinely reviewed to maintain standards and manage performance.
	5. The public sector of the AAHS carries out audits of its accreditation/authorisation/delegation programmes, to maintain the trust of its trading partners and other stakeholders.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

According to existing legal provisions no accreditations of, delegation of official functions or authorizations of the private sector is undertaken.

PVS Evaluation (2011) - Level 1

Findings:

According to the existing legal provision, no mandates for the delegation/accreditation/authorization of AAH activities to the private sector accreditation exists despite limited public capacities. Memorandums of understanding only exist between CA and other public institutions such as CBC.

The team found evidence that some parts of the private industry have the capacity to support the CA. AQUAPESCA developed their own tests for WSD during the outbreak in 2011. The company also performs histopathology (used to be done by the university visited by the team), and additional testing to ensure market access and send samples to Europe for each production cycle.

Key Changes from 2011 to 2023:

- No major changes were observed from 2011.

Strengths:

- Parts of the private industry have the capacity to perform diagnostic activities.
- The CA has both the authority and capacity to accredit, authorise and delegate official functions to the private sector.

Weaknesses:

- No accreditations, delegation or authorization of official functions to the private sector have been explored or undertaken.

²⁸ Recommended reading:

The WOAH PPP Handbook: guidelines for public–private partnerships in the veterinary domain at: <https://www.woah.org/app/uploads/2021/03/oie-ppp-handbook-20190419-enint-bd.pdf>

Recommendations:

- The CA should map the AAH competency and capacity in the private industry to assess the possibility to delegate official functions. This could in particular be interesting to increase the diagnostic capacity.

Evidence (listed in Appendix 6): 113

III-5. Veterinary Statutory Body (VSB) ²⁹	Levels of advancement
<i>Regulation and professional standards for veterinarians and other aquatic animal health professionals working in aquatic animal health.</i> A. Veterinarians working in aquatic animal health <i>The authority and capacity of the VSB to effectively and independently maintain educational and professional standards for veterinarians working in aquatic animal health.</i> <i>Regulation includes licensing or registration of those veterinarians who meet educational standards, and the ongoing oversight of their professional competence and conduct.</i>	1. There is no VSB.
	2. The VSB exists but does not register or regulate any veterinarians working in aquatic animal health.
	3. The VSB registers and regulates veterinarians working in aquatic animal health, but they are subject only to generic veterinary educational and professional standards.
	4. The VSB or other official body for veterinary specialisation (e.g., College membership/fellowship system) has introduced some aquatic-animal-health-specific educational or professional standards applicable to veterinarians working in aquatic animal health.
	5. The VSB regulates and applies disciplinary measures to veterinarians working in aquatic animal health. Veterinarians working in aquatic animal health are required to undertake continuing education to maintain their professional registration.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

N/A

Findings:

The Vet association/order was established in 2002 and has 345 veterinarians registered, including some public employed veterinarians working on AA. The order has its own office (established three years ago) with three full time staff, and has representatives in all provinces. Funding is primarily through member fees but also through limited external funding. It launched its own website in 2023, with the objective of increasing its visibility.

The order develops an annual programme, organizes general assemblies every year, and has an ethical group that meets every week.

To become a member, the vet must prove at least one year of practice (of choice) after graduation and present a report of the practice period to the Order.

The Order informed that it had worked with other national bodies and FAO but did not seem to be aware of the WOA day-one competencies programme. Evaluation of rules/regulations for members is in process.

They expressed concerns that the vet title is being misused. Also, the fast development of the industry is considered a big challenge. They have specifically identified challenges with the curriculum on aquatic animals and wildlife. The order has so far not focused on AMR but has recently taken part in meetings as stakeholder in the process to develop the new national AMR policy.

The value of continued education is not yet taken into consideration by the VSB,

The Veterinarian medical prescriptions are mandatory by law, and only issued by vets. But in reality, this is not applied in the field.

20 vets are graduating each year in the country. A limited number of students are sent abroad to continue their training.

²⁹ Recommended reading:

Focus on Veterinary Statutory Bodies, Dec 2014 at: <http://www.woah.org/fileadmin/vademecum/pdf/Veterinary%20statutory%20bodies.pdf>

Key Changes from 2011 to 2023:

- This CC was not present in the first edition of the PVS Tool-Aquatic used in 2011. Therefore, the results of the reports cannot be compared.

Strengths:

- Existence of an Order, which status also allows Aquatic Animal Veterinarians to become members.

Weaknesses:

- The Order does not seem to pay enough attention to continuing education programs and involvement of Veterinarians into Aquatic Animal Health.

Recommendations:

- Follow up closely the development of Aquatic Veterinarian cursus (notably at UEM) and make sure that both the CA and VSB get involved in the training content of future Veterinarians working in Aquatic Animal Health.

Evidence (listed in Appendix 6): 19, 20, 21, 22, 23, 24.

III-5. Veterinary Statutory Body (VSB)	Levels of advancement
B. Aquatic animal health professionals (non-veterinarians) <i>The authority and capacity of an independent body (VSB or other body) to effectively maintain educational and professional standards for aquatic animal health professionals (non-veterinarians). Regulation includes licensing or registration of those aquatic animal health professionals who meet educational standards, and the ongoing oversight of their professional competence and conduct.</i>	1. There is no professional, regulatory body or informal system maintaining educational or professional standards for aquatic animal health professionals (non-veterinarians).
	2. There is no professional regulatory body registering aquatic animal health professionals, but an informal system, such as specialised post-graduate courses with aligned government or private-sector career pathways, does maintain a level of educational standards for aquatic animal health professionals.
	3. A professional regulatory body (either the VSB or other body) registers aquatic animal health professionals to maintain educational standards.
	4. A professional, regulatory body (either the VSB or other body) has the authority to maintain ongoing professional standards, but there have been no disciplinary measures applied to aquatic animal health professionals.
	5. A professional regulatory body (either the VSB or other body) applies disciplinary measures and requires that aquatic animal health professionals undertake continuing education to maintain their professional registration.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Findings:

There is no professional regulatory body regulating the aquatic animal health professionals operating in the country. While the graduates from Instituto Superior Politecnico de Gaza (ISPG) (which offers a four-year Bachelor's degree in Aquaculture that started in 2014) could be considered as aquatic animal health professionals, there is no body that regulates these professionals.

Key Changes from 2011 to 2023:

- This CC was not present in the first edition of the PVS Tool-Aquatic used in 2011. Therefore, the results of the report cannot be compared

Strengths:

- There is an alumni association at Instituto Superior Politecnico de Gaza (ISPG)

Weaknesses:

- There is no professional regulatory body regulating the aquatic animal health professionals operating in the country.

Recommendations:

- Explore with the government agency regulating professional groups to set up a body to regulate aquatic animal health professionals.

Evidence (listed in Appendix 6):

III-6. Participation of producers and other stakeholders in joint programmes	Levels of advancement
<i>The capability of the AAHS to develop joint programmes (public-private partnerships)³⁰ with regard to aquatic animal health, and food safety and/or welfare of farmed fish outcomes.</i>	1. Producers and other non-government stakeholders may comply with, but do not actively participate in, programmes.
	2. Producers and other non-government stakeholders are informed of programmes and informally assist the AAHS in programme delivery in the field (e.g., industry groups helping to communicate the programme to their membership).
	3. Producers and other non-government stakeholders formally participate with the AAHS in the delivery of joint programmes and advise of needed changes and improvements.
	4. Representatives of producers and other non-government stakeholders actively partner with the AAHS to plan, manage and implement joint programmes.
	5. Producers and other non-government stakeholders contribute resources and may lead the development and delivery of effective joint programmes with the AAHS. They also actively participate in their regular review, audit and revision.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

No evidence presented to the Team that there are any aquatic animal health programmes in existence, nor that producers and other stakeholders participate in the formulation and implementation of joint programmes.

PVS Evaluation (2011) - Level 1

Findings:

No public-private-partnerships programmes exists.

The Strategy for development of aquaculture contemplates roles for the public and private sectors, but does not contain any plans for the development of PPPs.

The team visited ProAzul Mozambique (Blue Economy Development Fund). ProAzul is a financial mechanism of the Government that works in partnership with the different sectors of the State, private sector and civil society so that strategic and financial resources are aligned with effective initiatives for the sustainable exploitation of inland waters, sea and coastline. The fund was established in 2019 and manages programmes and projects on illegal fishing, aquaculture, restauration of mangroves and training of governmental staff on aquaculture. ProAzul has the potential to become a substantial asset to the development of aquaculture in Mozambique through funding of public-private projects. However, the current selection of projects on aquaculture seems random and without a clear direction.

Key Changes from 2011 to 2023:

- The launch of the new aquaculture strategy opens up for new possibilities of PPPs as it promotes more involvement of the private sector.
- Pro Azul has been established and has the potential to contribute to an improved collaboration between the public and private sectors.

Strengths:

- Mozambique has several resourceful fishing and aquaculture companies and associations that have valuable knowledge and experience that could be shared with both the private and public.

³⁰ Recommended reading:

[The WOAH PPP Handbook: guidelines for public-private partnerships in the veterinary domain](https://www.woah.org/app/uploads/2021/03/oie-ppp-handbook-20190419-enint-bd.pdf) at <https://www.woah.org/app/uploads/2021/03/oie-ppp-handbook-20190419-enint-bd.pdf>

-
- There is funding available through ProAzul that could be targeted at establishing functional PPPs.

Weaknesses:

- There are no existing plans to develop PPP programmes.
- The Aquaculture strategy does not have any mentioning of PPPs.

Recommendations:

- Develop a PPP programme based on the needs and roles describes in the Strategy.
- The private sector should be actively involved in the development and implementation of Strategy activities.
- Coordinate the inputs from the different authorities responsible for aquaculture and AAH to ProAzul. Use the outcomes of the PVS follow up mission to identify priority areas.
- Use the outcomes of the PVS follow up mission to identify priority areas.

Evidence (listed in Appendix 6): 113, 114.

III-7. Aquatic animal health management and clinical services	Levels of advancement
<i>The availability and quality of aquatic animal health management and clinical services to meet the needs of aquaculture establishments, including their access to aquatic animal disease diagnosis, treatment and prevention.</i>	1. There are no/few aquatic animal health management or clinical services provided by either the public or private sector.
	2. Aquatic animal health management or clinical services are available to aquaculture establishments in some areas, but the quality and coverage are highly variable.
	3. Aquatic animal health management or clinical services are available to most aquaculture establishments from the public and/or private sector. In some areas there may be limited access or limited services.
	4. Aquatic animal health management or clinical services are available to all aquaculture establishments via an efficient network of qualified veterinarians/aquatic animal health professionals assisted by veterinary paraprofessionals/aquatic animal health technical personnel. Diagnoses are generally made before treatment, with supporting laboratory tests where appropriate, and professional standards are maintained by a well-functioning VSB or other professional authorities.
	5. Aquatic animal health management or clinical services are available to all aquaculture establishments through qualified veterinarians/aquatic animal health professionals, with appropriate diagnostic capability, treatments and the opportunity for specialist support if required.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

This was not a separate CC in the first edition of the PVS Tool- Aquatic used in 2011.

Findings:

Access to aquatic animal health management and clinical services to meet the needs of aquaculture establishments, public and private, is limited. There is currently no legal obligation for registered aquaculture establishments to have agreements with private aquatic animal health management or clinical services.

The public services have limited staff, competency, and financial resources for support on AAH management and clinical or diagnostic services.

The Competent Authority does not have laboratory services for the diagnosis of diseases in aquatic animals, however, the Biotechnology Center of the Eduardo Mondlane University (CB-UEM) has a laboratory that has provided services for the diagnosis of diseases in aquatic animals. The CB-UEM only has the capacity to provide limited services on a few diseases. The CA sends samples for surveillance purposes to Italy for tilapia lake virus and to Zambia for EUS.

Institute of Animal Sciences – Instituto de Investigacao Agraria de Mocambique (IIAM) is the national reference laboratory for terrestrial animal diseases and does also work on AMR. The Institute has previously been involved in diagnostics of WSD during the outbreaks in 2011. Two of their staff underwent training in the detection and surveillance of WSD in Arizona in 2010, financed by AQUAPESCA. The institute is no longer involved in aquatic animal diseases. One of the staff members being trained in the USA is deceased and the second is still working there, doing histopathology for terrestrial animal diseases.

In the country there are three laboratories specialized in analysing food products of aquatic origin, located in Maputo, Beira and Quelimane, these laboratories still do not have the installed capacity for the diagnosis of AAH diseases.

AQUAPESCA has developed their own tests for WSD during the outbreak in 2011 and performs histopathology. They do additional testing to ensure market access and send samples to Europe for each production cycle.

The Chicoa fish farm in Tete informed that they have a French veterinarian based in La Reunion Island, coming in twice a year for surveillance purposes. The farm management was

not sure for which disease the samples were tested for but informed that they so far have had no positive results.

INIP informed the Team that within the scope of PRODAP there is a process of adapting the Zambézia (Fish Inspection Laboratory) in Quelimane is under way to install capacity for diagnosing some diseases of aquatic animals.

The Animal Health law does not include an official list of notifiable AA diseases, but a list has been developed by INIP and is being enforced.

Key Changes from 2011 to 2023:

- No key changes can be identified as this CC was not part of the PVS Tool-Aquatic used in 2011.

Strengths:

- Has access to available funding for projects on aquatic animal health management or clinical services through ProAzul.

Weaknesses:

- The public services have limited staff, competency, and financial resources for support on AAH management and clinical services, diagnostic services.
- The country does not have any national reference laboratories.
- Access to aquatic animal health management and clinical services to meet the needs of aquaculture establishments, public and private, is limited.

Recommendations:

- The diagnostic capacity of AAH can be established in the existing three INIP Veterinary Public Health Laboratories of the LIP (Maputo, Beira and Quelimane), to optimize available human and physical laboratory resources.
- Explore the possibility to establish a formal collaboration between the Biotechnology Center of the Eduardo Mondlane University (CB-UEM) and Institute of Animal Sciences – Instituto de Investigacao Agraria de Mocambique (IIAM) to increase the diagnostic capacity on AA diseases.
- Explore the possibility to delegate AAH tasks to the private sector.

Evidence (listed in Appendix 6): 113

III.4 Fundamental component IV: Access to markets

This component of the evaluation concerns the authority and capability of the AAHS to provide support in order to access, expand and retain regional and international markets for animals and animal products. It comprises eight critical competencies.

Critical competencies:

Section IV-1	Aquatic Animal Health legislation A. Legal quality and coverage B. Implementation and compliance
Section IV-2	International harmonisation
Section IV-3	International certification
Section IV-4	Equivalence and other types of sanitary agreements
Section IV-5	Transparency
Section IV-6	Zoning
Section IV-7	Compartmentalisation

----- Aquatic Code references:

- Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards.
- Chapter 4.1. on Biosecurity for aquaculture establishments.
- Chapter 4.2. on Zoning and compartmentalisation.
- Chapter 4.3. on Application of compartmentalisation.
- Chapter 5.1. on General obligations related to certification.
- Chapter 5.2. on Certification procedures.
- Chapter 5.3. on WOH procedures relevant to the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization.
- Chapter 5.11. on Model health certificates for international trade in live aquatic animals and products of aquatic animal origin.

Terrestrial Code references:

- Chapter 3.4. on Veterinary legislation.
- Article 3.2.3. on Policy and management.
- Article 3.2.4. on Personnel and resources.
- Article 3.2.7. on Animal Health.
- Article 3.2.8. on Animal production food safety.
- Article 3.2.9. on Veterinary medicinal products.
- Article 3.2.11. on Animal welfare.
- Article 3.2.12. on International trade.

IV-1. Aquatic Animal Health legislation ³¹	Levels of advancement
<i>The effectiveness of AAH legislation and regulations.</i>	1. Aquatic animal health legislation is lacking, outdated or of poor quality. The AAHS do not have the authority or capability to develop and update AAH legislation.
A. Legal quality and coverage	2. Aquatic animal health legislation covers some fields of the AAH domain. The AAHS, working occasionally with expert legal drafters and lawyers, have some authority and capability to develop and update AAH legislation.
<i>The authority and capability of the AAHS to develop or update AAH legislation to ensure its quality and coverage of the AAH domain.</i>	3. Aquatic animal health legislation covers most fields of the AAH domain, including those fields under other Competent Authorities. The AAHS, working in formal partnership with expert legal drafters and lawyers, have the authority and capability to develop and update national AAH legislation, including through consultation with stakeholders, to ensure its legal quality and applicability.
<i>This Competency covers the quality of legislation, considering the principles of legal drafting, its impact, and suitability for implementation.</i>	4. Aquatic animal health legislation covers the entire AAH domain. The AAHS have the authority and capability to develop and update AAH legislation at the national (and sub-national where relevant) level, using a formal methodology which considers international standards, other relevant existing national legislation, consultation with stakeholders, legal quality and applicability, and regulatory impact.
<i>This Competency includes formal collaboration with other legal drafting professionals, other relevant Ministries and Competent Authorities, national agencies and decentralised institutions that share authority or have a mutual interest in relevant areas of the AAH domain. It also covers stakeholder consultation relevant to AAH legislation.</i>	5. AAH legislation comprehensively covers the entire AAH domain. The AAHS regularly evaluate and update AAH legislation at the national (and sub-national where relevant) level, with reference to ongoing effectiveness and changing international standards and science.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

A comprehensive and effective inspection and monitoring programme for compliance with INIP regulations for the export of aquatic products for human consumption was found to be in place.

INIP did not initiate prosecutions in a court of law, however the suspension – or even cancellation – of establishment licences are effective measures to ensure stakeholder compliance.

The identified measures only applied to the veterinary public health sector, as there exists no governmental mandate in Mozambique to address AAH issues.

PVS Evaluation (2011) - Level 2

Findings:

The quality of the drafting and amendments of legislation on food safety of AA products for export is suitable. A well-functioning system for legal drafting is in place.

The team identified the following relevant legislation in place:

³¹ Aquatic animal health legislation needs to be harmonised with other relevant legislation, such as 'veterinary (terrestrial animal health) legislation' and public health legislation. As there are many shared issues/links between terrestrial and aquatic animal health (for example notifiable disease reporting), duplication of legislation should be avoided, so as not to undermine the quality of legal drafting or create uncertainty about which law prevails.

Title	Subject
SISTAFE Law	System for administration of governmental budget
Draft for animal health regulation including aquatics	
Presidential Decree 17/2015 of March 25	Defines the attributions and competences of the Ministry of the Sea, Inland Water and fisheries
Resolution 3/2020 of March 13	Approves the Organic Statute of the Ministry of Agriculture and Rural Development
Decree 87/2021 of October 28	Creates the Oceanographic Institute of Mozambique (InOM)
Decree 26/2009 of 17 de Agosto	Approves the Animal Health regulation
Decree No. 71/2014, of November 28	Approves the Biosafety Regulation Relating to the Management of GMO
Decree 5/2016 of March 8	Approves the regulation for the verification and contracting of public works, supply of goods and provision of services to the state
Decree 13/2011 of July 21st	Creates the Mozambique VSB and approves its statutes
Decree 22/2013 of November 1st.	Approves the Fisheries Law
Decreto 71/2019 de 26 de Agosto, aprovado pelo CM/CM decree approved in 2019 reviewing organization and competencies of INIP	Adjusts the organization, operation and management regime of the National Institute for Fish Inspection, created by the Decree no. 18/2005, of 24 June.
Decree 80/2020 of September 8 (Chapter 4 - Hygiene-sanitary rules),	Approves the regulation for hygiene and health checks on fishery products
Diploma Ministerial 26/2023 de 02 de Fevereiro (Cap 2-Requisitos de higiene)	Ministerial Diploma 26/2023 of February 2 (Chapter 2-Hygiene requirements)
Diploma Ministerial 93/2007 e de 25 de Julho (Guião do programa de higiene)	Ministerial Diploma 93/2007 and 25 July (Hygiene Program Guide)
Diploma Ministerial 94/2007 e de 25 de Julho (Guião do programa de higiene)	Ministerial Diploma 94/2007 and 25th of July (Hygiene Program Guide)
Aquatic animals health regulation	
Diploma Ministerial 93/22 de 23 de Agosto/ Ministerial Diploma 93/22 of August 23	Approves the internal regulation of the Fish Inspection, IP
Guide to Sanitary Inspection	

In particular, the quality of the drafting and amendments of legislation on food safety of AA products for export is high.

The Animal health regulation (Decreto 26/2009 de 17 de Agosto) establishes the rules for the epidemiological surveillance and control of animal diseases. The regulation defines animal as mammal, bird, bees, reptiles and amphibious, it does not include aquatic animals. The draft animal health law of July 23 (presented as evidence 57) was drafted to address several recommendations done by the OIE PVS mission of October 2015. The scope of the new law is to manage animal health, the quality of animal products and subproducts, animal feed, animal welfare, husbandry, registration, export and import of veterinarian products and protect public health. The draft law explicitly includes terrestrial and aquatic animals.

The current AH law does not provide specific regulation of AAH diseases. However, the CA and INIP use the law as legal basis for AAH decisions, e.g., the listing of notifiable AA disease etc.

A well-functioning system for legal drafting is in place and the AAHS has both the authority and capability to develop and update legislation covering the whole AAH domain.

There is formal collaboration with other legal drafting professionals, other relevant Ministries and Competent Authorities, national agencies and decentralised institutions that share authority or have a mutual interest in relevant areas of the AAH domain.

Stakeholder consultations relevant to AAH legislation do take place through the CAP Committee for fisheries administration (aquaculture and fisheries) consisting of representatives from INIP, IDEPA, INOM, ADENAP, INAMAR and DEPE, and stakeholders, mainly associations. The focus of this committee seems to be focused mainly on wild fisheries and aquaculture stakeholders are underrepresented compared to those from wild fisheries. The Committee is regulated by law and meets four times a year by law. Environmental stakeholders are invited depending by the agenda. The Mozambican Association of Industrial Fisheries Shipowners (AMAPIC) informed that it is very satisfied with the communication with the CA.

A consultation platform for One Health has been established and meets once a year and have a rotating secretariat. The plan is to establish a permanent secretariat. The platform has a multisectoral representation consisting of members MISAU, MADER, MIMAIP, MTA and academia.

Key Changes from 2011 to 2023:

- It must be noted that the CC IV A has a different wording in the second edition of the tool compared to the tool used by the team for the evaluation in 2011. The scores from the two evaluations are therefore not be directly comparable.

Strengths:

- The AAHS have the necessary authority and capability to develop or update AAH legislation to ensure its quality and coverage of the AAH domain.
- The country has a well-functioning food safety legislation regulating AA products for export.
- A new Animal Health Law is in pipeline and both AA and AAH will be within the scope.
- A One Health platform has been established ensuring consultations with parts of the AA stakeholders.

Weaknesses:

- The current AH law does not include specific mentioning of AA.
- The coordination with other governments authorities is not always functioning for the development of AAH legislation.
- The legislation does not address the importance of basic AAH measures in artisanal operations.

Recommendations:

- The CA should ensure that the new AHL and its implementing regulations covers AA and AAH, including the small aquaculture farms and hatcheries.

Evidence (listed in Appendix 6): 1-5, 18-19, 38-41, 43-45, 56, 57, 60, 71.

IV-1. Aquatic Animal Health legislation	Levels of advancement
B. Implementation and compliance <i>The authority and capability of the AAHS to ensure implementation of and compliance with AAH legislation across the AAH domain through communications, compliance and inspection activities.</i> <i>This Competency includes formal collaboration with other relevant Ministries and Competent Authorities, national agencies and decentralised institutions that share responsibility for implementation or have a mutual interest in relevant areas.</i>	1. Aquatic animal health legislation is not implemented or is poorly implemented, and is not supported by communication, compliance or inspection activities.
	2. Aquatic animal health legislation is implemented through some communication and awareness-raising activities concerning stakeholders' legal obligations, but few compliance and inspection activities are conducted.
	3. Aquatic animal health legislation is implemented through a programme of communication and awareness-raising, and through formal, documented compliance and inspection activities. The AAHS undertake some legal action (e.g., administrative fines or prosecution) in instances of non-compliance in most relevant fields of activity.
	4. Aquatic animal health legislation is implemented across the entire AAH domain and is consistently applied. The AAHS work to minimise instances of non-compliance through multiple means, including through targeted communications, incentives and appropriate legal processes. They have documented reports of responding to non-compliance.
	5. Aquatic animal health legislation compliance programmes are regularly subjected to audit and review by the AAHS or external agencies.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Comprehensive and effective inspection and monitoring programme for compliance with INIP regulations for the export of aquatic products for human consumption.

Regulations for the export of aquatic products for human consumption was found to be in place.

INIP did not initiate prosecutions in a court of law, however the suspension – or even cancellation – of establishment licences are effective measures to ensure stakeholder compliance.

The identified measures only applied to the veterinary public health sector, as there exists no governmental mandate in Mozambique to address AAH issues.

PVS Evaluation (2011) - Level 3

Findings:

The flow of information between INIP and INOM could be challenging.

Official national plans, checklists and technical instructions have been developed to ensure implementation and compliance.

Title	Subject
National Action Plan against Antimicrobial Resistance (2019-2030)	Establishes a list of potential pathogens in aquatic animals
Plan for Food safety in Mozambique	Detailed plan of activities including budget for Food safety including inspection and control of food, AMR, residues control and Zoonotic diseases
National residue Control Plan	The National residue control plan aims to evaluate veterinary medicines residues in aquaculture products, heavy metals and other contaminants in fish products that are harmful to consumers
Plan of activities of the Department of Health Surveillance and Quarantine	

Decree 5/2016 of March 8	Approves the regulation for the verification and contracting of public works, supply of goods and provision of services to the state
Ministerial Diploma 93/22 of August 23	Approves the internal regulation of the Fish Inspection, IP
Formulario – vistoria sanitaria de farmas de aquacultura	Checklist for aquaculture inspection
Instrucao tecnica- AMOSTRAGEM E ENVIO DE AMOSTRASdocx	Technical instruction-sampling
Instrucao tecnica- GESTAO DE COMUNICACOES E ALERTAS	Technical instruction-notifications management
Instrucao tecnica-QUARENTENA	Technical instruction-Quarantine
Instrucao tecnica-VIGILANCIA SANITARIA	Technical instruction-Surveillance
Intrucao tecnica-ELABORACAO D O PLAO DE CONTIGENCIA	Technical instruction-Drafting of contingency plans

Like in 2011, comprehensive and effective inspection and monitoring programme for compliance with INIP regulations for the export of aquatic products for human consumption were found to be in place.

INIP did not show any examples where it had initiated prosecutions in a court of law, however the suspension – or even cancellation – of establishment licences do occur.

INIP informed that there is limited human, physical and financial resources for inspection and control of other parts of the AAH domain with the exemption of food safety.

Key Changes from 2011 to 2023:

- Governmental mandate in Mozambique to address AAH issues has been established.

Strengths:

- A comprehensive and effective inspection and monitoring programme for compliance with INIP regulations for the export of aquatic products for human consumption were found to be in place.
- Official national plans, checklists and technical instructions have been developed to ensure implementation and compliance.

Weaknesses:

- Limited human, physical and financial resources for inspection and control of other parts of the AAH domain with the exemption of food safety.

Recommendations:

- Identify the needs for human, physical and financial resources as part of the implementation of the Strategy.
- Develop a strategy for how to instances of non-compliance through multiple means, including through targeted communications, incentives and appropriate legal processes.
- Set up a system for documenting reports of responding to non-compliance.

Evidence (listed in Appendix 6): 7-10, 18, 40, 45, 58, 84, 99-101.

IV-2. International harmonisation	Levels of advancement
<i>The authority and capability of the AAHS to be active in the harmonisation of national AAH legislation and sanitary measures to ensure that they take into account international standards, and/or related regional directives or guidelines.</i>	1. National AAH legislation and sanitary measures under the mandate of the AAHS do not take international standards into account.
	2. The AAHS are aware of gaps, inconsistencies or non-conformities in national AAH legislation and sanitary measures, as compared to international standards, but do not have the capability or authority to rectify the problems.
	3. The AAHS monitor the establishment of new and revised international standards, and periodically review national AAH legislation and sanitary measures accordingly.
	4. The AAHS harmonise AAH legislation and sanitary measures and can demonstrate a level of alignment with changing international standards. The AAHS also review and comment on the draft standards of relevant intergovernmental organisations, and work through regional organisations, where available, to ensure better harmonisation with international standards.
	5. The AAHS actively and regularly participate at the international level in the formulation, negotiation and adoption of international standards ³² , and use these standards to harmonise national AAH legislation and sanitary measures.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Maritime fishing, aquaculture, health, commerce, customs and international food safety regulations (Codex, WHO, importing markets, EU, USA and others) have been harmonized under the Regulation for Inspection and Quality Assurance of Fishery Products (RIGQ) under decree 17/2001 of June 12th.

The INIP General Regulations on Hygiene of Foodstuffs⁸² have been compiled with due consideration of international norms and standards, including issues relating to animal welfare.

PVS Evaluation (2011) - Level 4

Findings:

The CA and the VA is actively following the WOA standard setting process by attending the World Assembly of delegates in Paris and are aware of amended and new standards. However, the country does not submit comments of the reports of the WOA Specialist Commissions.

The country has bilateral agreements for the export of fishery products in the field of food safety, aquatic animals including ornamentals intended to the European Union, China, Russia, South Africa, Namibia and other countries in which the sanitary requirements of equivalence are met- based on the Hygiene-Sanitary Regulation of Fish Products, approved by Decree 80/2020 of 8 September and other specific legislation and procedures. Additionally, there are technical equivalence protocols with South Africa. Thus, the country does harmonize the national AAH legislation and sanitary measures to meet the import requirements of their trading partners and international standards.

Staff from the CA has participated in regional trainings on relevant international standards, and/or related regional directives and guidelines.

The PNCR complies with the established Regulation for Hygienic Control Sanitation of fishery products, approved by Decree 80/2020 of September 18 (BR. Nº172/ I series) and consists of

³² Recommended reading:
the [WTO SPS Agreement](https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm): https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm

a surveillance system to analyse chemical hazards in fishery products in compliance with EU regulations.

Key Changes from 2011 to 2023:

- The INIP General Regulations on Hygiene of Foodstuffs have been compiled with due consideration of international norms and standards for AAH products for export.
- Animal welfare was not found to be addressed in the regulations in accordance with international standards.

Strengths:

- Has established bilateral trade agreements with several countries.
- Do participate at the WOAHA World Assembly of Delegates and regional WOAHA activities.
- Participate in regional AAH activities.

Weaknesses:

- Does not take active part in the standard setting process of WOAHA.
- The legislation does not include AA welfare regulations in accordance with international standards.

Recommendations:

- Use the experience from the bilateral agreements to further develop the AAH legislation and implementation of measures to prevent, early detect and control AA diseases.
- Submit comments on reports from the WOAHA Specialist Commissions. Active participation is believed to increase the understanding of the WOAHA standards and the importance of implementation.
- Implement AA welfare regulations in accordance with the WOAHA standards or equivalent.

Evidence (listed in Appendix 6): 46, 47, 57.

IV-3. International certification ³³	Levels of advancement
<i>The authority and capability of the AAHS to certify aquatic animals, aquatic animal products, services and processes under their mandate for export, in accordance with the national AAH legislation and regulations, international standards, and the requirements of the importing country.</i> <i>This refers to the country's AAH export certification processes. Issues such as the legislative basis, format and content of AAH certificates; who signs certificates and the confidence they have in what they are certifying; and the outcome in terms of meeting international standards and/or importing country requirements to facilitate exportation should all be considered.</i>	1. The AAHS have neither the authority nor the capability to certify aquatic animals and aquatic animal products for export.
	2. The AAHS have the authority to certify certain aquatic animals and aquatic animal products but are not always in compliance with the national AAH legislation and regulations, and international standards.
	3. The AAHS develop and carry out certification programmes for certain aquatic animals, aquatic animal products, services and processes under their mandate in compliance with international standards.
	4. The AAHS develop and carry out all relevant certification programmes for all aquatic animals, aquatic animal products, services and processes for export under their mandate in compliance with international standards.
	5. The AAHS carry out audits of their certification programmes to maintain national and international confidence in their system.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

The Team recognizes the high standard and level of veterinary health attestations for aquatic animal products for human consumption.

INIP carries out all relevant certification programmes for exported fishery products in the field of food safety and ornamental aquatic animals in accordance with international standards.

INIP has no regulatory functions in respect to certification of live aquatic animals.

PVS Evaluation (2011) - Level 4

Findings:

The standard if and level of veterinary health attestations for aquatic animal products for human consumption is still high as in 2011.

INIP still carries out all relevant certification programmes for exported fishery products in the field of food safety and ornamental aquatic animals in accordance with international standards.

INIP has no regulatory functions or the capability in respect to certification of live aquatic animals in accordance with international standards. This is due to critical deficiencies in key systems and mechanisms to document the AA health status as described in detail elsewhere in this report. The team was informed that accreditation program of the CA is in process.

Key Changes from 2011 to 2023:

- INIP now has certain regulatory functions in respect to certification of ornamental live aquatic animals.

Strengths:

- INIP has the capability and capacity to certify for exported fishery products in the field of food safety and ornamental aquatic animals in accordance with international standards.
- INIP has certain regulatory functions in respect to certification of ornamental live aquatic animals.

³³ Certification procedures should be based on relevant WOA and Codex Alimentarius standards.

Weaknesses:

- The CA is not capable of certifying aquatic animals for export in accordance with international standards.

Recommendations:

- The AAHS has shown that it has the capability and capacity to certify for exported fishery products in the field of food safety and ornamental aquatic animals in accordance with international standards. The CA should as a next step consider the demand for export of live AA. Export of live AA would require additional human and financial resources and strengthening of legislation to ensure health status of the exported animals.

Evidence (listed in Appendix 6): 37, 42, 46, 47, 57.

IV-4. Equivalence and other types of sanitary agreements	Levels of advancement
<i>The authority and capability of the AAHS to apply flexibility in negotiating, implementing and maintaining equivalence and other types of sanitary agreements with trading partners.</i> <i>As a reference, Article 4 of the WTO SPS Agreement³⁴ states:</i> <i>'Member Countries shall accept the sanitary or phytosanitary measures of other Member Countries as equivalent, even if these measures differ from their own or from those used by other Member Countries trading in the same product, if the exporting Member Country objectively demonstrates to the importing Member Country that its measures achieve the importing Member Country's appropriate level of sanitary or phytosanitary protection. For this purpose, reasonable access shall be given, upon request, to the importing Member Country for inspection, testing and other relevant procedures.'</i>	1. The AAHS have neither the authority nor the capability to negotiate or approve equivalence or other types of sanitary agreements with other countries.
	2. The AAHS have the authority to negotiate and approve equivalence and other types of sanitary agreements with trading partners, but no such agreements have been implemented.
	3. The AAHS have implemented equivalence and other types of sanitary agreements with trading partners on selected aquatic animals, aquatic animal products and processes.
	4. The AAHS actively pursue the development, implementation and maintenance of equivalence and other types of sanitary agreements with trading partners on all matters relevant to aquatic animals, aquatic animal products and processes under their mandate. They publish their existing sanitary agreements in the public domain.
	5. The AAHS actively work with stakeholders and take account of developments in international standards in pursuing equivalence and other types of sanitary agreements with trading partners.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Mozambique has entered into a trade agreement with the EU under the provisions of the Exclusive Partnership Agreement facility.

PVS Evaluation (2011) - Level 3

Findings:

The country has bilateral agreements for the export of fishery products in the field of food safety, aquatic animals including ornamentals intended to the European Union, China, Russia, South Africa, Namibia and other countries in which the sanitary requirements of equivalence meet- based on the Hygiene-Sanitary Regulation of Fish Products, approved by Decree 80/2020 of 8 September and other specific legislation and procedures. Additionally, there are technical equivalence protocols with South Africa.

The EU performed in 2013 an evaluation of the control systems in place governing the production of fishery products intended for export to the EU and the control of residues and contaminants in live animals and animal products.

Sanitary Certification Procedures for the import and export of fishery products and specific rules for Sanitary Certification are in place.

The Competent Authority has in place a programme to verify the compliance of activities within the scope of official controls on fishery products including aquatic animals, through internal audits and supervision.

The PNCR complies with the established Regulation for Hygienic Control Sanitation of fishery products, approved by Decree 80/2020 of September 18 (BR. Nº172/ I series) and consists of

³⁴ Recommended Reading:

[WTO SPS Agreement](https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm) - https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm

[SPS Information Management System](https://www.wto.org/english/tratop_e/sps_e/spsims_e.htm) - https://www.wto.org/english/tratop_e/sps_e/spsims_e.htm

a surveillance system to analyse chemical hazards in fishery products in compliance with EU regulations.

Key Changes from 2011 to 2023 (:

- Mozambique has in addition to the EU, now also bilateral agreements for the export of fishery products in the field of safe food, aquatic animals including ornamentals intended for China, Russia, South Africa, Namibia and other countries.

Strengths:

- Bilateral agreements for the export of fishery products in the field of safe food, aquatic animals including ornamentals intended to the European Union (set in link), China, Russia, South Africa, Namibia and other countries.
- Sanitary Certification Procedures for the import and export of fishery products and specific rules for Sanitary Certification are in place.

Weaknesses:

- The CA has the authority and capability to negotiate, implement and maintain agreements, but at the moment these agreements are limited to AA products.

Recommendations:

- Consider the demand for export of live AA. Export of live AA would require additional human and financial resources and strengthening of legislation to ensure health status of the exported animals.
- Also consider whether the establishment of disease-free compartments could kick-start the export market for live AA.

Evidence (listed in Appendix 6): 42, 46, 47.

IV-5. Transparency	Levels of advancement
	1. The AAHS do not notify.
	2. The AAHS occasionally notify.
	3. The AAHS notify in compliance with the procedures established by these organisations.
	4. The AAHS regularly inform interested parties of changes in disease status, regulations and sanitary measures and systems, as applicable to international trade.
	5. The AAHS, in cooperation with their stakeholders, carry out audits of their notification procedures.

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Mozambique notifies the OIE in compliance with laid down procedures.

However, due to institutional constraints, timely reporting by INIP (this includes the OIE Focal Point on AAH) is not always accomplished. The reason being, that INIP has to report AAD through the OIE Delegate and WAHIS contact point, based at the Directorate of Veterinary Services (DNSV). An example is the present outbreak report of WSD, which was transmitted 8 days following the confirmation of the test results due to communication constraints between the 2 government institutions involved (INIP & DNSV).

PVS Evaluation (2011) - Level 3

Findings:

The country has consistently submitted six-monthly reports to WOA. H.

Immediate notification of occurrence of notifiable AA disease has only submitted occasionally since 2010:

Events management

Animal type: AQUATIC		Country: Mozambique					
Country	Report number	Disease	Genotype/ Serotype/ Subtype	Reason	Start date	Report date	
☐ MozambiqueFUR_1		Aphanomyces invadans (Inf. with) (Epizootic ulcerative syndrome)		First occurrence in the country	2023/07/15	2023/08/2	
☐ MozambiqueFUR_2		White spot syndrome virus (Inf. with)		First occurrence in a zone or a compartment	2011/08/31	2013/07/2	

Notification and reporting of aquatic animal diseases to WOA. H. through WAHIS is done by the VA, Dr Zacarias Elias Massicame, based on information from the Focal Point for Aquatic Animals in INIP. The FP was not aware of the obligation for the country to update the outbreak information regularly in accordance with the requirements in the Aquatic Code.

³⁵ Recommended reading:

WAHIS user interface/database at: <https://wahis.woah.org/#/home>

SPS Information Management System at: https://www.wto.org/english/tratop_e/sps_e/spsims_e.htm

There is no functioning passive and active surveillance system in place and there is no available reference laboratory for AA disease in the country.

The Team noted that the recent immediate notification of infection with *Aphanomyces invadans* was based on a diagnostic method not recognised in the WOAHS Aquatic Manual as a confirmatory method.

Key Changes from 2011 to 2023:

- In the 2011 report, it was noted that the country notifies to WOAHS in compliance with the standards. This was not found to be the case in 2023 and it is also believed that it was not the case in 2011 based on information from WOAHS.

Strengths:

- Consistent submission of six-monthly reports to WOAHS.
- The VA is trained in the notification reporting of diseases to WOAHS and is aware of the notification and reporting obligations.

Weaknesses:

- There is no functioning passive and active surveillance system in place and there is no available reference laboratory for AA disease in the country. Nor is it a functioning notification system in place domestically.
- The FP has insufficient knowledge about the WAHIS system and the notification and reporting requirements and procedures.
- A disease has been notified to WOAHS based on diagnostic methods not recognised as confirmatory methods.

Recommendations:

- Focus on setting up a system to enable domestic notification of listed and emerging diseases:
 - Increase the diagnostic capacity to be able to detect AA diseases and develop passive and active surveillance systems.
 - Mozambique is advised to only notify diseases to WOAHS when they have been confirmed by recognised diagnostic methods for confirmation according to the Aquatic Manual. as any notification may have consequences on trade.
 - INIP and the Delegate/VA should optimize the internal coordination mechanisms to facilitate the timely reporting of aquatic animal disease outbreaks from the Focal Point for Aquatic Animal Health, through the Delegate, to the WAHIS data management.
 - To be efficient, this would require implementing early detection, fast samples collection and a reliable domestic laboratory capable of rapidly achieving confirmation of WOAHS listed diseases of concern and emerging diseases in a timely manner, to be able to take eradication or mitigation measures, and to implement contingency plans.

Evidence (listed in Appendix 6): 105-107.

IV-6. Zoning ³⁶	Levels of advancement
<i>The authority and capability of the AAHS to establish and maintain disease-free zones, as necessary and in accordance with the criteria established by WOAHS (and by the WTO SPS Agreement, where applicable).</i>	1. The AAHS do not have the authority or capability to initiate the establishment of disease-free zones.
	2. The AAHS have identified a geographical aquatic animal subpopulation or subpopulations as candidates to target for a specific health status, suitable for zoning.
	3. The AAHS are implementing biosecurity and sanitary measures with the intention of establishing a disease-free zone for selected aquatic animals and aquatic animal products.
	4. The AAHS have established at least one disease-free zone of selected aquatic animals and aquatic animal products with collaboration from producers and other stakeholders in alignment with WOAHS international standards.
	5. The AAHS can demonstrate the scientific basis for any disease-free zone and have gained recognition by trading partners that they meet the criteria established by WOAHS (and by the WTO SPS Agreement, where applicable).

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

Under present circumstances of a legal void with respect to AAH in Mozambique, the establishment of aquatic disease-free zones is not possible.

In the opinion of the Team there is at this stage neither the capability nor sufficient knowledge of the sanitary status in the country to establish disease free zones.

From the PVS WSSV report in 2011: the cost of establishing and maintaining free zones in the whole country might be high and out of reach considering the current situation of Mozambique with regard of the spatial distribution of WSSV. However, taking into account that some provinces seem to be far less infected than others (notably Cabo Delgado), it might still be a valuable option, especially if some remote areas easy to maintain WSSV free - like small islands where a wild *P. monodon* broodstock source exist - can be found. A similar case does exist in Andaman Islands, which are used as a source of WSSV free broodstock for Thailand and India.

PVS Evaluation (2011) - Level 1

Findings:

There is no legal framework to establish disease-free zones: biosecurity, insufficient surveillance systems, poor diagnostic capacity.

Key Changes from 2011 to 2023:

- No major changes from the 2011 report were identified.

Strengths:

- The CA has the authority to initiate establishments of disease-free zones.

Weaknesses:

- The CA and the industry have no capability and resources to initiate establishment of disease-free zones.

Recommendations:

- As part of the aquaculture strategy, explore the will from the industry to consider zoning in some remote areas easy to maintain WSSV free - like small islands where a wild *P. monodon* broodstock source exist. This would be mostly relevant to exporting establishments.

³⁶ One may need to cross-reference this CC with CCs on Disease prevention, control and eradication and Compartmentalisation as appropriate.

Evidence (listed in Appendix 6): 57.

IV-7. Compartmentalisation ³⁷	Levels of advancement
<i>The authority and capability of the AAHS to establish and maintain disease-free compartments as necessary, and in accordance with the criteria established by WOAHS.</i>	1. The AAHS do not have the authority or capability to initiate the establishment of aquatic animal disease-free compartments.
	2. The AAHS can identify aquatic animal subpopulations as candidate establishments with a specific health status suitable for compartmentalisation, in partnership with interested stakeholders.
	3. The AAHS, working in close partnership with interested stakeholders, ensure that planned biosecurity measures to be implemented will enable the establishment and maintenance of disease-free compartments for selected aquatic animals and aquatic animal products.
	4. The AAHS collaborate with producers and other stakeholders to define responsibilities and undertake actions that enable the aquaculture establishment to maintain disease-free compartments for selected aquatic animals and aquatic animal products, approved and regulated by the Competent Authority.
	5. The AAHS can demonstrate the scientific basis for disease-free compartments and have gained recognition by other countries that they meet the criteria established by WOAHS (and by the WTO SPS Agreement, where applicable).

Terrestrial and Aquatic Codes reference(s): Appendix 1

Results from Previous PVS Pathway Missions:

The establishment of aquatic disease-free compartments, being normally a private sector driven initiative, could offer a viable option for the export of aquatic sub-populations such as prawn and tilapia.

In view of the present outbreak of WSD and the urgent need to ensure economic survival and sustainability for the few existing aquatic animal farming establishments (brood stock and aquatic products) the possibility to establish and maintain disease free compartments is considered by the Team as a very high implementation priority.

PVS Evaluation (2011) - Level 2

Findings:

There is no legal framework to establish disease-free compartments: biosecurity, insufficient surveillance systems, poor diagnostic capacity.

Key Changes from 2011 to 2023:

- No major changes from the 2011 report were identified.

Strengths:

- The CA has the authority to initiate establishments of disease-free compartments.

Weaknesses:

- The CA and the industry have limited capability and resources to initiate establishment of disease-free compartments.

Recommendations:

- As part of the aquaculture strategy, explore the will from the industry to consider compartmentalised farms to safeguard and facilitate distribution of disease-free animals domestically and for export.

³⁷ One may need to cross-reference this CC with CCs on Disease prevention, control and eradication and Zoning as appropriate.

-
- Hatcheries with disease-free status will reduce the risk of introduction of diseases to aquaculture establishments and it is recommended to consider compartmentalisation as a central part of the aquaculture strategy.
 - For each major aquatic animal species chosen for aquaculture development strategy, develop one (or more) compartmentalised broodstock centre(s) from which hatcheries should source their breeders (except for vertically integrated stakeholders?). This could start rapidly with Nile Tilapia stocks, for example by upgrading CEPAQ facilities and biosecurity plan, and ensure their stocks is Specific Pathogen Free for known pathogens and cannot be diseases vectors either (i.e., case of EUS zoospores for breeders reared in open cages in lakes). Similarly for future projects of crustacean or molluscs aquaculture, this could ensure a healthy and sustainable development, strongly limiting the risks of having new disease outbreaks originating from breeders and larvae. This could be achieved by public sector, like for CEPAQ, and collaboration of InOM, IDEPA and INIP; or it can involve private sector stakeholders through Public Private Partnerships (PPPs).

Evidence (listed in Appendix 6): 57.

PART IV: CONCLUSIONS

During the WOAHPVS Evaluation of the AAHS of Mozambique in 2011, it was clearly evidenced that while “a high level of professional and technical expertise [...] has been implemented for post-harvest veterinary public health, food safety and traceability regarding aquatic animal products for human use”, there was still room for improvement in regards of the aquatic animal disease prevention, diagnostic, control and eradication.

The White Spot Syndrome Virus outbreak, which took place concomitantly to the 2011 mission illustrated the difficulties of Mozambique fisheries institutions to deal efficiently and in a timely manner to an aquatic animal disease emergency, leading to the wide spread of this pathogen into the environment, which is still at high prevalence today on the coastline.

The present WOAHPVS Follow-Up Evaluation of the AAHS of Mozambique showed that major progress has been made in some aspects of Aquatic Animal Health Services mandate, notably in active surveillance, and globally in all activities related to interaction with stakeholders and access to markets.

These laudable efforts should now be pursued and completed - despite challenges linked to limited human, physical and financial resources –, notably by:

- ❖ Adopting adequate legislation giving full mandate to INIP to enforce all AAHS activities in the field, complementing already existing draft legislations with additional aspects (i.e., risk analysis, passive surveillance, etc.), and promulgating them.
- ❖ Implementing new diagnostic tools at CB-UEM to improve the suitability of the National Laboratory Network for Aquatic Animal Diseases, and better respond to present and future stakeholders' requests to more specifically characterize fish diseases and detect fish pathogens.
- ❖ Developing new level I and level II diagnostic capacities to better support Mozambique's aquaculture strategy and based on priorities identified by risk analysis. These new capacities would dramatically improve the capacity of detection of emerging pathogens.
- ❖ Taking advantage of the recruitment of extensionists in districts to develop a passive surveillance program.
- ❖ Developing risk analysis, and risk-based surveillance programs.
- ❖ Developing and implementing biosecurity plans in facilities growing selected species for the aquaculture development strategy of Mozambique.
- ❖ Training private stakeholders and extensionists for early detection, therefore allowing an adequate infectious diseases control and eradication.
- ❖ Considering the opportunity to develop compartments (for broodstock centres, hatcheries and later grow out farms) for main selected species in the aquaculture development strategy of Mozambique.

AAHS should be considered as a key element to develop aquaculture in a sustainable way and should therefore be budgeted from the start when embarking in the development of a new aquaculture industry in Mozambique.

Building on the work achieved to design the aquaculture development strategy and the Aquatic Animal Health and Biosecurity strategy in Mozambique, which has been harmonized in the SADC region, new aquaculture industries should be analysed as complete supply chains, and not as independent production units. Technical committees at MIMAIP should involve IDEPA, INIP, ADNAP, InOM but also ProAzul, to review globally all risks, design action plans to eliminate or mitigate them, secure finances to do so, to grow steadily but surely.

PART V: APPENDICES

Appendix 1: *Terrestrial and Aquatic Codes* references for Critical Competencies

Critical Competences	<i>Terrestrial Code</i> references (2021 edition)	<i>Aquatic Code</i> references (2021 edition)
I-1.A	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.4. on Personnel and resources. ➤ Article 3.2.5. on The veterinary profession. ➤ Article 3.2.10. on Laboratories.	➤ Points 1–7, 9 and 14 of Article 3.1.2. on Fundamental principles of quality: Professional judgement/Independence/Impartiality/Integrity/Objectivity/Aquatic animal health legislation and regulations/General organisation/Procedures and standards/Human and financial resources.
I-1.B I-2.A I-2.B	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.4. on Personnel and resources. ➤ Article 3.2.5. on The veterinary profession. ➤ Article 3.2.10. on Laboratories.	➤ Points 1–5, 7 and 14 of Article 3.1.2. on Fundamental principles of quality: Professional judgement/Independence/Impartiality/Integrity/Objectivity/General organisation/Human and financial resources.
I-3	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.4. on Personnel and resources. ➤ Article 3.2.6. on Stakeholders.	➤ Points 1, 7 and 14 of Article 3.1.2. on Fundamental principles of quality: Professional judgement/General organisation/Human and financial resources.
I-4		➤ Point 2 of Article 3.1.2. on Fundamental principles of quality: Independence.
I-5	➤ Article 3.2.3. on Policy and management.	
I-6.A	➤ Article 3.2.1. on General considerations. ➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.5. on The veterinary profession. ➤ Article 3.2.6. on Stakeholders.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulation/General organisation/Procedures and standards.
I-6.B	➤ Article 3.2.1. on General considerations. ➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.4. on Personnel and resources. ➤ Article 3.2.5. on The veterinary profession. ➤ Article 3.2.6. on Stakeholders. ➤ Article 3.2.12. on International trade.	➤ Points 7 and 9 of Article 3.1.2. on Fundamental principles of quality: General organisation/Procedures and standards.
I-7	➤ Article 3.2.2. on Fundamental operating principles. ➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.4. on Personnel and resources. ➤ Article 3.2.5. on The veterinary profession. ➤ Article 3.2.6. on Stakeholders. ➤ Article 3.2.10. on Laboratories. ➤ Chapter 3.5. on Communication.	
I-8 I-9	➤ Article 3.2.4. on Personnel and resources.	➤ Points 6 and 14 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/Human and financial resources.
II-1.A	➤ Article 3.2.10. on Laboratories.	➤ Point 9 of Article 3.1.2. on Fundamental principles of quality: Procedures and standards.
II-1.B II-1.C	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.10. on Laboratories.	➤ Point 9 of Article 3.1.2. on Fundamental principles of quality: Procedures and standards.
II-2		➤ Article 4.1.8. on Risk analysis. ➤ Section 2. on Risk analysis.

II-3	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.7. on Animal Health. ➤ Article 3.2.8. on Animal production food safety. ➤ Article 3.2.9. on Veterinary medicinal products. ➤ Article 3.2.11. on Animal welfare. ➤ Article 3.2.12. on International trade.	➤ Points 6 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/Procedures and standards. ➤ Chapter 4.1. on Biosecurity for aquaculture establishments.
II-4.A II-4.B	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.7. on Animal Health. ➤ Article 3.2.12. on International trade.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organization/Procedures and standards. ➤ Chapter 1.4. on Aquatic animal health surveillance.
II-5	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.7. on Animal Health. ➤ Article 3.2.12. on International trade.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards. ➤ Chapter 4.1. on Biosecurity for aquaculture establishments. ➤ Chapter 4.6. on Contingency planning.
II-6.A	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.7. on Animal Health. ➤ Article 3.2.12. on International trade.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards. ➤ Chapter 4.1. on Biosecurity for aquaculture establishments. ➤ Chapter 4.4. on Disinfection of aquaculture establishments and equipment. ➤ Chapter 4.5. on Recommendations for surface disinfection of salmonid eggs. ➤ Chapter 4.8. on Handling, disposal and treatment of aquatic animal waste. ➤ Section 5. on Trade measures, importation/exportation procedures and health certification.
II-6.B	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.7. on Animal Health. ➤ Article 3.2.12. on International trade.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards. ➤ Chapter 4.1. on Biosecurity for aquaculture establishments. ➤ Chapter 4.7. on Farming in aquaculture. ➤ Chapter 4.8. on Handling, disposal and treatment of aquatic animal waste.
II-7.A	➤ Article 3.4.12. on Human food production chain. ➤ Chapter 6.2. on The role of Veterinary Services in food safety systems.	
II-7.B	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.4. on Personnel and resources. ➤ Article 3.2.7. on Animal Health. ➤ Article 3.2.8. on Animal production food safety. ➤ Article 3.2.9 on Veterinary medicinal products. ➤ Article 3.2.11. on Animal welfare. ➤ Article 3.2.12. on International trade. ➤ Chapter 6.2. on The role of Veterinary Services in food safety systems. ➤ Chapter 6.3. on Control of biological hazards of animal health and public health importance through ante- and post-mortem meat inspection.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards.
II-8	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.8. on Animal production food safety.	➤ Points 6 and 9 of Article 3.1.2. on Fundamental principles of quality: Veterinary legislation and regulations/Procedures and standards.

	➤ Article 3.2.9. on Veterinary medicinal products. ➤ Article 3.2.11. on Animal welfare.	
II-9	➤ Chapter 6.7. on Introduction to the recommendations for controlling antimicrobial resistance. ➤ Chapter 6.8. on Harmonisation of national antimicrobial resistance surveillance and monitoring programmes. ➤ Chapter 6.9. on Monitoring of the quantities and usage patterns of antimicrobial agents used in food-producing animals. ➤ Chapter 6.10. on Responsible and prudent use of antimicrobial agents in veterinary medicine. ➤ Chapter 6.11. on Risk analysis for antimicrobial resistance arising from the use of antimicrobial agents in animals.	➤ Points 6 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/Procedures and standards. ➤ Section 6. on Antimicrobial use in aquatic animals.
II-10	➤ Chapter 2.2. on Criteria applied by WOAHA for assessing the safety of commodities. ➤ Article 3.2.8. on Animal production food safety. ➤ Article 3.2.9. on Veterinary medicinal products.	
II-11		➤ Chapter 4.9. on Control of pathogenic agents in aquatic animal feed.
II-12.A II-12.B		➤ Point 6 of Article 3.1.2. on Aquatic animal health legislation and regulations. ➤ Chapters 5.5 to 5.9. on Control of aquatic animal health risks associated with transport of aquatic animals/Aquatic animal health measures applicable before and at departure/Aquatic animal health measures applicable during transit from the place of departure in the exporting country to the place of arrival in the importing country/Frontier posts in the importing country/Aquatic animal health measures applicable on arrival.
II-13		➤ Section 7. on Welfare of farmed fish.
III-1	➤ Article 3.2.4. on Personnel and resources. ➤ Chapter 3.5. on Communication.	➤ Point 13 of Article 3.1.2. on Fundamental principles of quality: Communication. ➤ Chapter 3.2. on Communication.
III-2	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.4. on Personnel and resources. ➤ Article 3.2.5. on The veterinary profession. ➤ Article 3.2.6. on Stakeholders. ➤ Chapter 3.5. on Communication.	➤ Point 13 of Article 3.1.2. on Fundamental principles of quality: Communication. ➤ Chapter 3.2. on Communication.
III-3	➤ Article 3.2.4. on Personnel and resources. ➤ Article 3.2.12. on International trade. ➤ Chapter 3.5. on Communication.	
III-4	➤ Article 3.2.6. on Stakeholders. ➤ Article 3.4.5. on Competent Authorities.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards.
III-5.A	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.5. on The veterinary profession. ➤ Article 3.4.6. on Veterinarians and veterinary paraprofessionals.	
III-5.B	➤ Article 3.4.6. on Veterinarians and veterinary paraprofessionals.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General

		organisation/Procedures and standards.
III-6	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.5. on The veterinary profession. ➤ Article 3.2.6. on Stakeholders. ➤ Article 3.2.7. on Animal Health. ➤ Article 3.2.8. on Animal production food safety. ➤ Article 3.2.9. on Veterinary medicinal products. ➤ Article 3.2.11. on Animal welfare. ➤ Point 4 of Article 3.4.3. on General principles: Consultation.	➤ Points 6 and 13 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/Communication.
III-7	➤ Chapter 1.4. on Animal health surveillance. ➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.7. on Animal Health. ➤ Article 3.2.9. on Veterinary medicinal products. ➤ Article 3.2.12. on International trade.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards.
IV-1.A	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.4. on Personnel and resources. ➤ Article 3.2.7. on Animal Health. ➤ Article 3.2.8. on Animal production food safety. ➤ Article 3.2.9. on Veterinary medicinal products. ➤ Article 3.2.11. on Animal welfare. ➤ Article 3.2.12. on International trade. ➤ Chapter 3.4. on Veterinary legislation.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards.
IV-1.B	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.4. on Personnel and resources. ➤ Article 3.2.7. on Animal Health. ➤ Article 3.2.8. on Animal production food safety. ➤ Article 3.2.9. on Veterinary medicinal products. ➤ Article 3.2.11. on Animal welfare. ➤ Article 3.2.12. on International trade.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards.
IV-2	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.7. on Animal Health. ➤ Article 3.2.8. on Animal production food safety. ➤ Article 3.2.9. on Veterinary medicinal products. ➤ Article 3.2.11. on Animal welfare. ➤ Article 3.2.12. on International trade.	➤ Point 6 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations.
IV-3	➤ Article 3.2.12. on International trade.	➤ Points 6, 7 and 9 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation/Procedures and standards. ➤ Chapter 5.2. on Certification procedures. ➤ Chapter 5.11. on Model health certificates for international trade in live aquatic animals and products of aquatic animal origin.
IV-4	➤ Article 3.2.12. on International trade.	➤ Points 6 and 7 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations/General organisation. ➤ Chapter 5.3. on WOH procedures relevant to the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization.
IV-5	➤ Article 3.2.3. on Policy and management. ➤ Article 3.2.7. on Animal Health.	➤ Point 6 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health

	➤ Article 3.2.12. on International trade.	legislation and regulations. ➤ Chapter 5.1. on General obligations related to certification.
IV-6		➤ Point 6 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations. ➤ Chapter 4.1. on Biosecurity for aquaculture establishments. ➤ Chapter 4.2. on Zoning and compartmentalisation.
IV-7		➤ Point 6 of Article 3.1.2. on Fundamental principles of quality: Aquatic animal health legislation and regulations. ➤ Chapter 4.1. on Biosecurity for aquaculture establishments. ➤ Chapter 4.2. on Zoning and compartmentalisation. ➤ Chapter 4.3. on Application of compartmentalisation.

Appendix 2: Glossary of terms

Terms defined in the Aquatic Animal Health Code that are used in this publication are reprinted here for ease of reference, as at 2023.

ANTIMICROBIAL AGENT

means a naturally occurring, semi-synthetic or synthetic substance that at in vivo concentrations, exhibits antimicrobial activity (kill or inhibit the growth of microorganisms). Anthelmintics and substances classed as disinfectants or antiseptics are excluded from this definition.

AQUACULTURE

means the farming of aquatic animals with some sort of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc.

AQUACULTURE ESTABLISHMENT

means an establishment in which amphibians, fish, molluscs or crustaceans for breeding, stocking or sale are raised or kept.

AQUATIC ANIMAL HEALTH PROFESSIONAL

means a person who, for the purposes of the Aquatic Code, is authorised by the Competent Authority to carry out certain designated tasks in a territory and has the appropriate qualifications and training to perform the designated tasks.

AQUATIC ANIMAL HEALTH SERVICES (AAHS)

means the combination of governmental and non-governmental individuals and organisations that perform activities to implement the standards of the Aquatic Code.

AQUATIC ANIMAL HEALTH STATUS

means the status of a country, zone or compartment with respect to a disease in accordance with the criteria listed in the relevant disease-specific chapter or Chapter 1.4. of the Aquatic Code.

AQUATIC ANIMAL PRODUCTS

means non-viable aquatic animals, parts of aquatic animals, or manufactured goods containing any material derived from aquatic animals that are intended for sale or trade.

AQUATIC ANIMAL WASTE

means entire carcasses of aquatic animals, parts of aquatic animals, or associated liquids which are intended for disposal.

AQUATIC ANIMALS

means all viable life stages (including eggs and gametes) of fish, molluscs, crustaceans and amphibians originating from aquaculture establishments or from the wild.

AQUATIC CODE

means the WOAHS Aquatic Animal Health Code.

AQUATIC MANUAL

means the WOAHS Manual of Diagnostic Tests for Aquatic Animals.

BASIC BIOSECURITY CONDITIONS

means a minimum set of conditions, as described in Article 1.4.6., required to ensure (a) biosecurity for a specific disease, in a country, zone or compartment. chapter.

BIOSECURITY

means a set of management and physical measures designed to mitigate the risk of introduction of pathogenic agents into, or spread within, or release from, aquatic animal populations.

BIOSECURITY PLAN

means a document that identifies potential pathways for the introduction of pathogenic agents into, or spread within, or release from, a zone, compartment or aquaculture establishment and describes the measures applied to mitigate the identified risk, in accordance with the recommendations in the Aquatic Code.

CASE

means an individual aquatic animal infected by a pathogenic agent, with or without clinical signs.

CASE DEFINITION

is a set of criteria used to distinguish a case animal or an epidemiological unit from a non-case.

CERTIFYING OFFICIAL

means a person authorised by the Competent Authority to sign health certificates for aquatic animals.

COMPARTMENT

means one or more aquaculture establishments under a common biosecurity management system containing an aquatic animal population with a distinct health status with respect to a specific disease or diseases for which required surveillance and control measures are applied and basic biosecurity conditions are met for the purpose of international trade. Such must be clearly documented by the Competent Authority(ies).

COMPETENT AUTHORITY

means a Governmental Authority of a Member Country having the responsibility in the whole or part of the territory for the implementation of certain standards of the Aquatic Code.

CONTINGENCY PLAN

means a documented work plan designed to ensure that all needed actions, requirements and resources are provided in order to eradicate or bring under control outbreaks of specified diseases of aquatic animals.

DISEASE

means clinical or non-clinical infection with one or more pathogenic agents.

EARLY DETECTION SYSTEM

means a system, as described in Article 1.4.7., which ensures the rapid recognition of signs that are suspicious of a listed disease, or an emerging disease, or unexplained mortality, in aquatic animals in an aquaculture establishment or in the wild, and the rapid communication of the event to the Competent Authority, with the aim of activating an investigation by the Aquatic Animal Health Services with minimal delay.

EMERGING DISEASE

means a disease, other than listed diseases, which has a significant impact on aquatic animal or public health resulting from:

- a) a change of known pathogenic agent or its spread to a new geographic area or species; or
- b) a newly recognised or suspected pathogenic agent.

EPIDEMIOLOGICAL UNIT

means a group of animals that share approximately the same risk of exposure to a pathogenic agent with a defined location. This may be because they share a common aquatic environment (e.g. fish in a pond, caged fish in a lake), or because management practices make it likely that a pathogenic agent

in one group of animals would quickly spread to other animals (e.g. all the ponds on a farm, all the ponds in a village system).

EVISCERATED FISH

means fish from which internal organs, excluding the brain and gills, have been removed.

FALLOWING

means, for disease management purposes, an operation where an aquaculture establishment is emptied of aquatic animals susceptible to a disease of concern or known to be capable of transferring the pathogenic agent, and, where feasible, of the carrying water. For aquatic animals of unknown susceptibility and those agreed not to be capable of acting as vectors of a disease of concern, decisions on fallowing should be based on a risk assessment.

FEED

means any material (single or multiple), whether processed, semi-processed or raw, as well as live organisms, which is intended to be fed directly to aquatic animals.

HAZARD

means a biological, chemical or physical agent in, or a condition of, an aquatic animal or aquatic animal product with the potential to cause an adverse effect on aquatic animal health or public health.

INCIDENCE

means the number of new outbreaks of disease within a specified period of time in a defined aquatic animal population.

INFECTED ZONE

means a zone in which a disease has been diagnosed.

INFECTION

means the presence of a multiplying or otherwise developing or latent pathogenic agent in a host. This term is understood to include infestation where the pathogenic agent is a parasite in or on a host.

INTERNATIONAL AQUATIC ANIMAL HEALTH CERTIFICATE

means a certificate, issued in conformity with the provisions of Chapter 5.11., describing the aquatic animal health and/or public health requirements that should be fulfilled prior to export of commodity.

INTERNATIONAL TRADE

means import, export or transit of aquatic animals, aquatic animal products, biological products and pathological material.

LISTED DISEASES

means diseases that are referred to in Chapter 1.3. of the Aquatic Code (Synonym: diseases listed by WOAH).

NOTIFICATION

means the procedure by which:

- a) the Competent Authority informs the Headquarters,
- b) the Headquarters inform Competent Authorities of Member Countries of the occurrence of a disease in accordance with the provisions of Chapter 1.1. of the Aquatic Code.

OUTBREAK

means an occurrence of one or more cases in an epidemiological unit.

PATHOGENIC AGENT

means an organism that causes or contributes to the development of a disease.

PROTECTION ZONE

means a zone established to protect the health status of aquatic animals in a free country or free zone, from those in a country or zone of a different aquatic animal health status, using measures based on the epidemiology of the disease under consideration to prevent spread of the pathogenic agent into a free country or free zone. These measures may include, but are not limited to, vaccination, movement control and an intensified degree of surveillance.

QUARANTINE

means maintaining a group of aquatic animals in isolation with no direct or indirect contact with other aquatic animals, in order to undergo observation for a specified length of time and, if appropriate, testing and treatment, including proper treatment of the effluent waters.

RISK

means the likelihood of the occurrence and the likely magnitude of the biological and economic consequences of an adverse event or effect to animal or human health.

RISK ANALYSIS

means the process composed of hazard identification, risk assessment, risk management and risk communication.

RISK ASSESSMENT

means the scientific evaluation of the likelihood and the biological and economic consequences of entry, establishment and spread of a hazard.

RISK COMMUNICATION

is the interactive exchange of information and opinions throughout the risk analysis process concerning risk, risk-related factors and risk perceptions among risk assessors, risk managers, risk communicators, the general public and other interested parties.

RISK MANAGEMENT

means the process of identifying, selecting and implementing measures that can be applied to reduce the level of risk.

SANITARY MEASURE

means a measure, such as those described in various chapters of the Aquatic Code, destined to protect aquatic animal or human health or life within the territory of the Member Country from risks arising from the entry, establishment and/or spread of a hazard.

SELF-DECLARATION OF FREEDOM FROM DISEASE

means declaration by the Competent Authority of the Member Country concerned that the country, zone or compartment is free from a listed disease based on implementation of the provisions of the Aquatic Code and the Aquatic Manual. [NOTE: The Member Country is encouraged to inform WOA of its claimed status and WOA may publish the claim but publication does not imply WOA endorsement of the claim.]

STAMPING-OUT POLICY

means the carrying out under the authority of the Competent Authority, on confirmation of a disease, of preventive aquatic animal health measures, consisting of killing the aquatic animals that are affected, those suspected of being affected in the population and those in other populations that have been exposed to infection by direct or indirect contact of a kind likely to cause the transmission of the pathogenic agent. All these aquatic animals vaccinated or unvaccinated, on an infected site should be killed and the carcasses destroyed by burning or burial, or by any other method that will eliminate the spread of infection through the carcasses or products of the aquatic animals destroyed.

This policy should be accompanied by cleansing and disinfection procedures as defined in the Aquatic Code. Following should be for an appropriate period determined by risk assessment.

SURVEILLANCE

means a systematic series of investigations of a given population of aquatic animals to detect the occurrence of disease for control purposes, and which may involve testing samples of a population.

SUSCEPTIBLE SPECIES

means species of aquatic animals that have been demonstrated as susceptible to infection with a specific pathogenic agent, in accordance with Chapter 1.5. of the Aquatic Code.

VETERINARIAN

means a person with appropriate education, registered or licensed by the relevant veterinary statutory body of a country to practise veterinary medicine/science in that country.

VETERINARY AUTHORITY

means the Governmental Authority of a Member Country having the primary responsibility in the whole territory for coordinating the implementation of the standards of the Aquatic Code by Competent Authorities.

VETERINARY STATUTORY BODY

means an autonomous authority regulating veterinarians and veterinary paraprofessionals.

WATER CATCHMENT

means an area or basin of land bounded by natural features such as hills or mountains, into which all run-off water flows.

ZONE

means an area in one or more countries containing an aquatic animal population with a specific aquatic animal health status with respect to a disease, in which surveillance and control measures and basic biosecurity conditions are applied. The zone should be defined by the Competent Authority.

Appendix 3: Country information (geography, administration, agriculture and livestock)

GENERAL

• Maps – general

1. General – national borders, major features (rivers, lakes, towns, roads, etc.)

Mozambique is located in eastern Africa, between latitudes 10°20' S and 26°50' S and has an area of approximately 783,000 km², of which around 4500 km² is marine. The continental shelf, up to the 200m isobath, has an area of 104 km². The coastline has a length of about 2700 km and is characterized by a diversity of habitats including sandy beaches, coastal dunes, coral reefs, estuaries, bays, mangrove forests and swamps, seagrass beds.

The land border, with a length of 4,330 km, is delimited to the North with Tanzania, to the West with Malawi, Zambia, Zimbabwe, South Africa (Province of Transval) and the Kingdom of Eswatini and to the South with South Africa (Province of Natal) - **Figure 1**.

2. Administrative – provinces/states, regions, districts

The administrative division of the country is made up of 11 Provinces (Cabo Delgado, Niassa, Nampula, Zambézia, Tete, Manica, Sofala, Inhambane, Gaza, Maputo and Maputo-city). Each province is divided into districts, which are subdivided into Administrative Posts and these in locations.

Its territorial waters extend up to 12 nautical miles and jurisdictional waters comprise 200 nautical miles. Mozambique has a large number of islands, of which the following can be highlighted, due to their historical and tourist interest:

- The Quirimbas Archipelago, which includes Ibo Island (Cabo Delgado Province).
- The Island of Mozambique, Cultural Heritage of Humanity (Nampula Province).
- Angoche Island (Nampula Province).
- The Bazaruto Archipelago, in the bay of the same name, which includes the islands of Bazaruto, Santa Carolina, Benguéra, Magaruque and Bangué (Inhambane Province)
- The islands of Inhaca, Elephants and Xefina in Maputo Bay (Maputo Province).

Figure 1-Geographical Location and Administrative Division of Mozambique



3. Topography, aquatic and agro-ecological zones

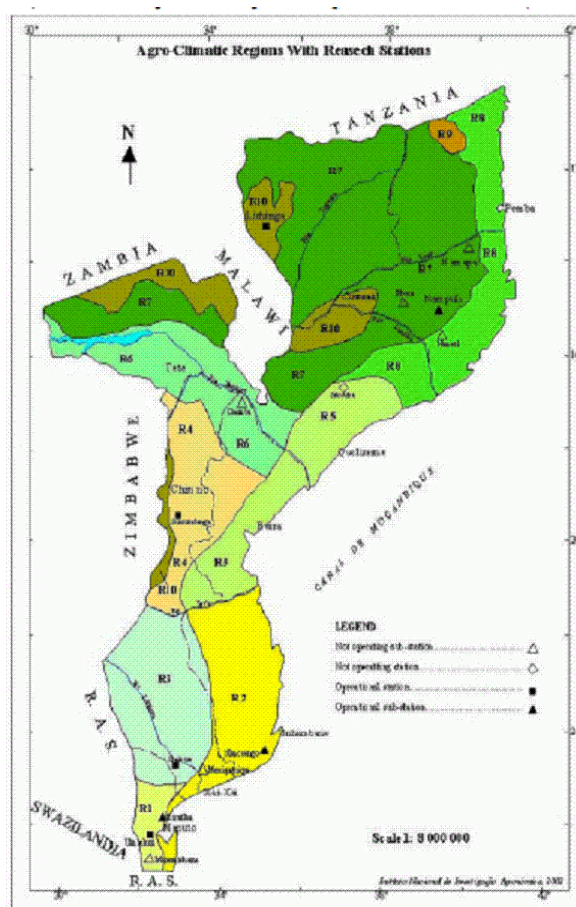
Most of the Mozambique territory is located in an inter-tropical zone, influenced by the monsoons of the Indian Ocean and the warm current of the Mozambique Channel, being, in general, tropical and humid, with a dry season that, in the Center /North, varies from four to six months while in the South, with a dry tropical climate, it lasts for six to nine months.

The climate varies from subtropical in the south to tropical in the centre and north. Average July (winter) temperatures are 21°C in Pemba in the north and 18°C in Maputo in the south. Average January (summer) temperatures are around 27°C along the coast but are lower in the highlands (21°C).

Precipitation is highly seasonal (most rainfall falls between October and April each year) and varies regionally, being higher in the north (1000-1800 mm per year) than in the south (400-1000 mm per year). A decreasing trend in precipitation has been observed in the East African region like a hole in the last four decades, while the occurrence of droughts has been steadily increasing. High variability in precipitation associated with tropical clones and the El Niño/La Niña phenomenon, resulting in floods and extreme droughts from time to time.

Topography (especially altitude), precipitation and soils define the main agricultural products in the 10 agroecological zones.

Figure 2.-Agroecological Zones



Source: FAO

Aquaculture and wild fisheries

- **Description of production system per main species produced**

1. Main Marine Fishery sites / Fishing Areas

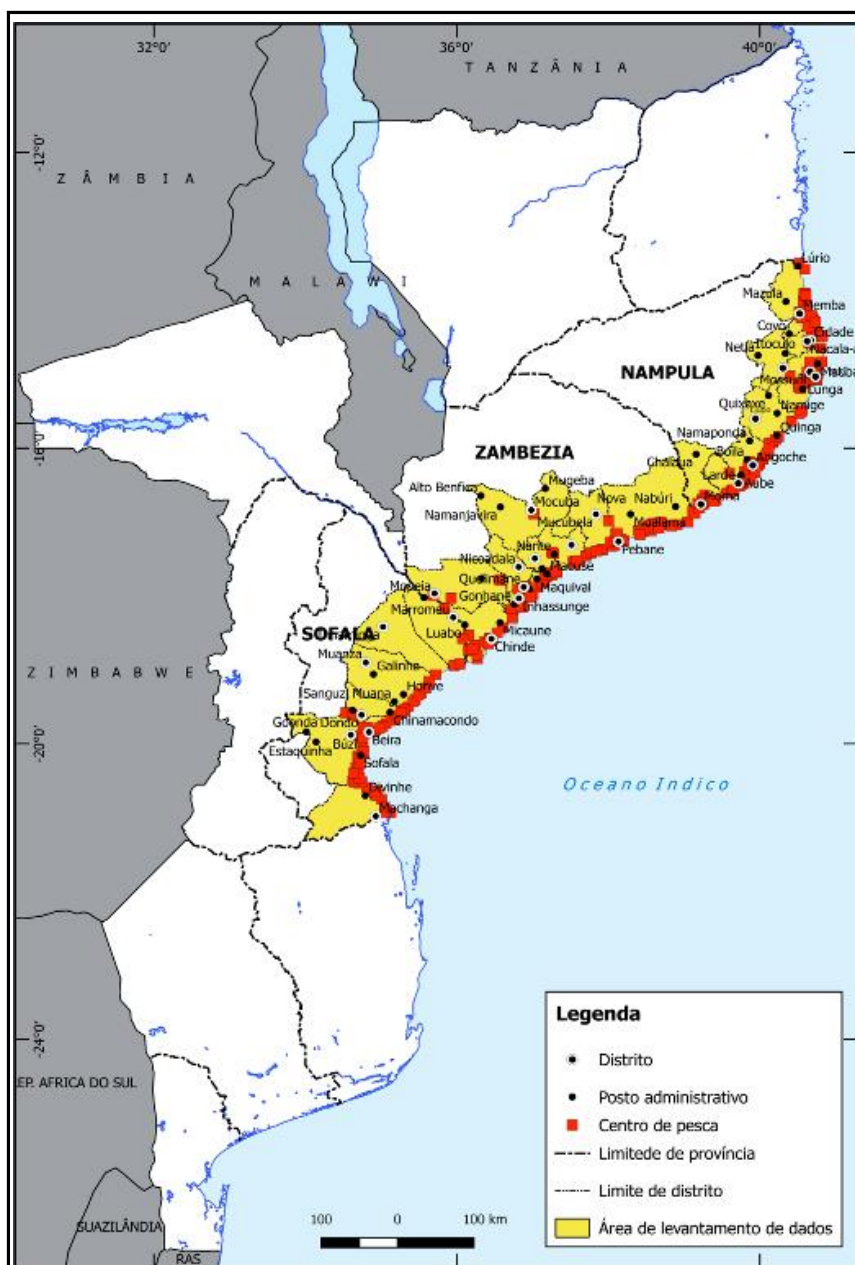
Mozambique has a vast fishing potential and diversity of resources. The coastal zone has three sections in which the fishing activity presents some differences:

- a. The north coast has a coastline of coral and rocky bottoms and a narrow continental shelf, with some sheltered bays and inland waters, and coastal islands, mainly in Cabo Delgado, and in some areas of the northern and central districts of Nampula;
- b. The central coast, from the southernmost districts of Nampula to the north of Govuro, constitutes the Bank of Sofala, is torn by numerous rivers and channels bordered by mangrove forests that provide sheltered estuarine areas and coastal beaches, sometimes protected by some coastal islands; It is,
- c. The south coast, in its central part with deep waters, goes from Govuro to the south of Maputo province, is spread out in some areas, has coastal bottoms with coral and rock banks, has some sheltered bays and is exposed to strong winds, especially from Inhambane to the southern end.

The different physical and ecological conditions on the three types of coasts determine the fauna and flora present and the fishing operations carried out. Some places, due to their specific geographical conditions, provide the concentration of certain marine species, with emphasis on the following:

- The mouths of the most important rivers, bays and adjacent marine areas are, as a rule, important fishing areas. In them, small pelagic and demersal fish and crustaceans from estuarine and coastal waters predominate. Of particular note are the mouths of the Rovuma, Zambezi and its delta, Pungué and Sofala bay, Save, Vilankulo and Inhambane bays, Limpopo and estuary and Maputo bay;
- The coastal islands located near the coast of Cabo Delgado, Nampula, Zambézia and Inhambane, are other areas where fishing activities are concentrated, which normally target demersal species from rocky bottoms and some large pelagics but also small pelagics and coastal lobsters;
- The coastal rocky bottoms along the entire coast of Cabo Delgado, in the north and center of Nampula and Inhambane provinces, where resources of demersal fish, cephalopods, molluscs, small pelagics, tuna and rock lobsters are found;
- Some oceanic banks and peaks, existing at varying distances from the coast, provide areas of concentration of tunas and, to a lesser extent, demersal species with commercial value. Of all these, the Banco de São Lázaro, on the coast of Cabo Delgado and Banco Almirante Leite in Maputo stand out;
- The Sofala Bank, extending over approximately 45,000 km² up to a depth of 200 m between parallels 15° 38' and 21°30' South, with a maximum width of 60 nautical miles in front of the Pungwe River in Sofala Province, representing 64% of the continental shelf of Mozambique. It contains the largest proportion of the country's marine resources, consisting of estuarine and coastal resources, with emphasis on small demersal fish, pelagic fish, mangrove crab and penaeid shrimp;
- Banco da Boa Paz, between coordinates 24° 30' S and 35° 30' East at 26° 30' South and 33° 00' East, where resources of small pelagic fish, demersal fish, cephalopods and deep-sea crustaceans are located, namely spiny lobster, prawns, crayfish and crab.

Figure 3. Areas of Largest Captures



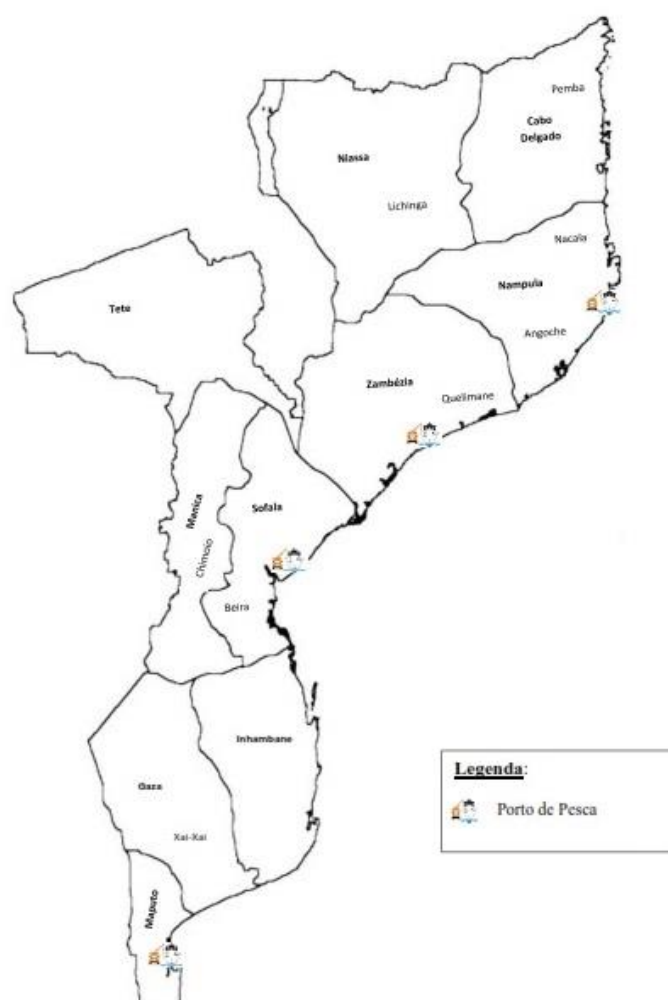
2. Location of fishing harbours, landing sites and wholesale fisheries products markets

The country has four fishing ports for industrial and semi-industrial fishing, namely, Angoche, Quelimane, Beira and Maputo. Some commercial ports, such as Nacala, have the capacity to dock vessels and disembark industrial fishing catches, but do not have facilities for unloading or preserving fish. The vessels that capture kapenta, in the Cahora Bassa reservoir, unload the fish on the jetties of the companies to which they belong.

Although these fishing ports exist, the shortcomings found in the support infrastructure, namely in the fishing port of Quelimane, limit the landing of fish from the industrial fleet, so that almost all of the industrial fishing on the Sofala Bank is landed in the Beira fishing port. The port of Angoche has been little used, due to its small size and the difficulties in land access to and from the interior, as land transport could transport fish from this port.

Another infrastructure to support fishing is the ice factories and refrigerated warehouses that are located in all strategic points for the entire fishing fleet. With regard to ports and shipyards, the artisanal fishing fleet does not use them for unloading fish or repairing and maintaining the respective vessels. These services have been carried out individually and informally.

Figure 4. Location of Fishing Ports



3. Main inland fisheries and aquaculture sites (marine, brackish and freshwater)

3.1 Main inland fisheries

The two most important inland water bodies – are Lake Niassa, shared with Tanzania and Malawi, and the Cahora Bassa reservoir. About 25 large rivers with permanent flow, running in a large part of the territory, numerous lakes, coastal and inland, and flood plains, provide fishing resources throughout much of the year. Among all the rivers, the Zambezi stands out for the volume of water it discharges into the Indian Ocean, in the strip between Zambézia and Sofala, estimated to be about two thirds of the total river discharges.

Fishing in inland waters also provides important fishing resources, whose families are also found in other water bodies of lesser importance, rivers and flood plains:

- Lake Niassa, with a total surface of 30,800 km², of which 6,400 km² are in the Mozambican part, with an estimated potential of around 7-8,000 tons of fish. The three major groups of commercially important species occur mainly in three families: Cichlidae (tilapia, utaca, mbuna), Bagridae (catfish, kampango) and Clariidae (claria) and;
- The Cahora Bassa reservoir, with an area of around 2,700 km², has an estimated potential of at least 27,000 tons, of which around 12,000 are kapenta (*Limnothrissa miodon*). The other most frequent species belong to five families: Characidae (tiger), Distichodontae (chenga), Cyprinidae (barbels, lips), Clariidae (claria) and Cichlidae (tilapias).

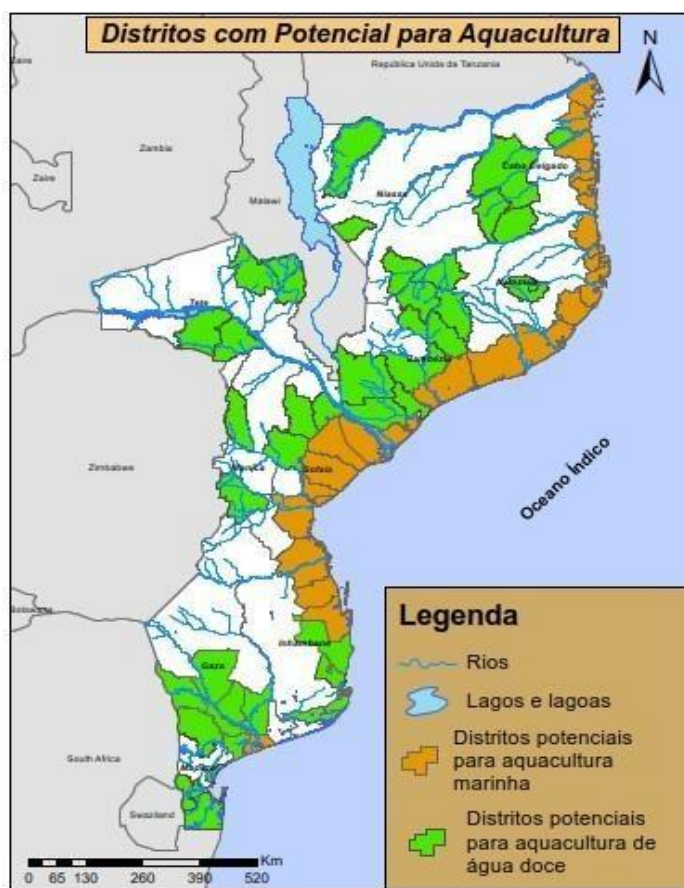
About 25 large rivers with permanent flow, running in a large part of the territory, numerous lakes, coastal and inland, and flood plains, provide fishing resources throughout much of the year. Among all the rivers, the Zambezi stands out for the volume of water it discharges into the Indian Ocean, in the strip between Zambézia and Sofala, estimated to be about two thirds of the total river discharges.

3.2 Aquaculture sites (marine, brackish and freshwater)

The total productive potential for aquaculture production is estimated at around 4,000,000 Tons/year, of which around 2,000,000 Tons/year for the production of fish in inland waters, and 2,000,000 Tons/year for the production of marine species. The total production area is estimated at 378,000 hectares, of which around 258,000 hectares for aquaculture in inland waters and 120,000 hectares for marine aquaculture. Figure 1 illustrates the potential districts for the practice of aquaculture in the country.

The main resources for aquaculture in inland waters are tilapia, carp, African catfish and freshwater shrimp and in marine waters fish, shrimp, crab, bivalves and algae.

Figure 5. Location of potential aquaculture and fishing zones in inland waters



Source EDA (2020-2030)

4. Main areas of aquaculture production per species

An aquaculture in Cameroon penaeids, mainly of the tiger (*P. monodon*) is currently practiced in a private company in a total area of about 1,500 ha in Zambézia province. However, studies already carried out indicate that the country has a land use potential of around 120,306.8 ha. This one potential refers to the cultivation of shrimp (penaeids), fish (*Argyrosomus regius*), seaweed, bivalves and other marine species, representing a potential of production of 1.3 million tons.

5. Description of production system per main species produced

In commercial aquaculture, the production system used is intensive with the production of shrimp (*P. monodon*) and fish species (*T. mozambicus* and *T. nilótica*). In non-commercial aquaculture, the system is extensive with the production of fish species (*T. mossambicus* and *T. nilótica*).

In extractive fishing (industrial and semi-industrial) the main species captured are fish (small pelagic *spp* and *dimersal spp*), shrimp from the *penaeidae* family and prawns from the *aristeidae* family and large pelagics from the *tuna* family. In artisanal fishing, the main species captured are small pelagic fish *spp.* and surface shrimp of the *penaeidae* family.

6. Summary Tables of aquatic animal production³⁸

Table 1. Summary of the production per region in 2022

Province	fish		Molluscs		crustaceans	
	Species	kg	Species	kg	Species	kg
Maputo	<i>Tilapia spp</i> ,	152,000	--	--	--	--
Gaza	<i>Tilapia spp</i> ,	1,612,000	--	--	--	--
inhambane	<i>Tilapia spp</i> ,	311,000	--	--	--	--
sofa	<i>Tilapia spp</i> ,	118,000	--	--	--	--
Manica	<i>Tilapia spp</i> ,	745,000	--	--	--	--
tete	<i>Tilapia spp</i> ,	1,805,000	--	--	--	--
Zambezia	<i>Tilapia spp</i> ,	242,000	--	--	<i>P. monodon</i>	190,000
nampula	<i>Tilapia spp</i> ,	160,000	--	--	--	--
Niassa	<i>Tilapia spp</i> ,	335,000	--	--	--	--
C. Thin	<i>Tilapia spp</i> ,	39,000	--	--	--	--
TOTAL	<i>Tilapia spp</i> ,	5,502,000	--	--	<i>P. monodon</i>	190,000

Source: MIMAIP- PESOE 2022 Balance Report

Table 2. Summary of the production per region in 2021

Province	Fish		Molluscs		crustaceans	
	Species	Kg	Species	kg	Species	kg
Maputo	<i>Tilapia spp</i>	148,000	--	--	--	--
Gaza	<i>Tilapia spp</i>	973,000	--	--	--	--
inhambane	<i>Tilapia spp</i>	229,000	--	--	--	--
sofa	<i>Tilapia spp</i>	103,000	--	--	--	--
Manica	<i>Tilapia spp</i>	465,000	--	--	--	--
tete	<i>Tilapia spp</i>	1,380,000	--	--	--	--
Zambezia	<i>Tilapia spp</i>	342,000	--	--	<i>P. monodon</i>	33,000
nampula	<i>Tilapia spp</i>	147,000	--	--	--	--
Niassa	<i>Tilapia spp</i>	323,000	--	--	--	--
C. Thin	<i>Tilapia spp</i>	14,000	--	--	--	--
TOTAL	<i>Tilapia spp</i>	4,123,000	--	--	<i>P. monodon</i>	33,000

Source: MIMAIP- PESOE 2022 Balance Report

³⁸Also include information on production of aquatic animals for ornamental and restocking purposes

Table 3. Summary of the production per region in 2018

Province	fish		Molluscs		crustaceans	
	Species	kg	Species	kg	Species	kg
Maputo	<i>Tilapia spp</i>	105,000	--	--	--	--
Gaza	<i>Tilapia spp</i>	602,000	--	--	--	--
inhambane	<i>Tilapia spp</i>	1081,000	--	--	--	--
sofa	<i>Tilapia spp</i>	180,000	--	--	--	--
Manica	<i>Tilapia spp</i>	376,000	--	--	--	--
tete	<i>Tilapia spp</i>	301,000	--	--	--	--
Zambezia	<i>Tilapia spp</i>	190,000	--	--	<i>P. monodon</i>	21,000
nampula	<i>Tilapia spp</i>	82,000	--	--	--	--
Niassa	<i>Tilapia spp</i>	257,000	--	--	--	--
C. Thin	<i>Tilapia spp</i>	56,000	--	--	--	--
TOTAL	<i>Tilapia spp</i>	3,251,000	--	--	<i>P. monodon</i>	21,000

Source: MIMAIP- PESOE 2022 Balance Report

Table 4. Number of hatcheries per region/ species (year)

Number of hatcheries per Species /Region						
Province	fish		Molluscs		crustaceans	
	Species	At the.	Species	At the.	Species	At the.
Maputo	<i>Tilapia spp</i>	--	--	--	--	--
Gaza	<i>Tilapia spp</i>	two	--	--	--	--
inhambane	<i>Tilapia spp</i>	two	--	--	--	--
sofa	<i>Tilapia spp</i>	two	--	--	--	--
Manica	<i>Tilapia spp</i>	1	--	--	--	--
tete	<i>Tilapia spp</i>	two	--	--	--	--
Zambezia	<i>Tilapia spp</i>	two	--	--	--	--
nampula	--	--	--	--	<i>P, monodon</i>	1
Niassa	<i>Tilapia spp</i>	1	--	--	--	--
C. Thin	<i>Tilapia spp</i>	--	--	--	--	--
TOTAL		12	--	--	--	--

Source : IDEPA

Table 5. Number of aquacultures on-growing sites per region /species

Number of on-growing sites per Species/State/Region						
Region	fish		Molluscs		crustaceans	
	Species	At the.	Species	At the.	Species	At the.
Maputo	<i>Tilapia spp</i>	61	--	--	--	--
Gaza	<i>Tilapia spp</i>	607	--	--	--	--
inhambane	<i>Tilapia spp</i>	1125	--	--	--	--
sofa	<i>Tilapia spp</i>	1070	--	--	--	--
Manica	<i>Tilapia spp</i>	1028	--	--		
tete	<i>Tilapia spp</i>	140	--	--		
Zambezia	<i>Tilapia spp</i>	1751	--	--	<i>P, monodon</i>	1

nampula	<i>Tilapia spp</i>	646	--	--	--	--
Niassa	<i>Tilapia spp</i>	681	--	--	--	--
C. Thin	<i>Tilapia spp</i>	-	--	--	--	--
TOTAL		8902	--	--		

Source : IDEPA

7. Description of main wild fisheries activities

Extractive fishing has the objective of capturing, with or without processing on board, or harvesting fishery resources in maritime and continental waters. Extractive fishing can be classified as artisanal, semi-industrial and industrial, depending on the complexity of the means used to capture and preserve it on board.

- i. Artisanal fishing where vessels have a maximum length of 10m; have autonomy conditions of not less than 24 hours, being motorized; if propelled by engines, they cannot have a propulsive power greater than 100 hp or 74 kW; operate up to three miles from the coast or base anchorage, when on an open deck and without mechanical means of propulsion.
- ii. Semi-industrial fishing where the vessels are longer than 10m and less than 20m; have autonomy of not less than 48 hours; they can operate along the coast in national maritime waters up to a distance of 30 miles from the coast; and may have refrigeration means that allow the conservation of ice and fish on board, as well as systems for freezing fish on board, in freezing chambers, provided they are separated from refrigeration.
- iii. Industrial fishing where the vessels are 20m or more in length; autonomy greater than 15 days; they may operate without any distance limitation in relation to the coastline, being forbidden to fish within the three miles, except when expressly provided for in the article relating to certain fishing gear and fisheries; have a processing facility and adequate means of preserving fish, with freezing separate from cold storage or refrigeration, as well as storage for food for the crew.

It is estimated that the potential for fishing products in Mozambique is around 332 thousand tons, with the main resources being shrimp from shallow waters (on the Sofala Bank and Maputo Bay), deep-sea crustaceans (on the continental slope of the centre and south zone), horse mackerel and mackerel (in the Sofala Bank) and demersal fish (in the south and north zone).

Table 6. Fisheries related activities per region for 2022

Region	At the. landing sites	At the. fishing vessels		total catch ***	At the. of Ice factories
		Trawlers	Purseiners		
Maputo	33	45	1	16,222	1
Gaza	12	0	0	18,073	0
inhambane	52	0	0	45,270	3
sofa	45	50	6	60,940	02
Manica	9	0	0	17,572	0
tete	43	297*	-	102,823	-
Zambezia	52	10	02	33,494	0
nampula	40	8	two	83,686	4
Niassa	3	0	0	26,093	0
C.thin	18	0	0	28,465	0
TOTAL	307	409	11	432,637	10

source *Kapenta

8. Description of aquatic animal products, slaughter, processing, distribution activities

In addition to the processing that is carried out on board industrial vessels, the processing of fishery products is carried out in onshore processing establishments and consists mainly of products from artisanal and semi-industrial fishing suppliers, however, there are also establishments that process aquaculture products (shrimp and fish). The distribution of products is carried out by the companies that own the establishments and the products are intended for export and for the domestic market.

Table 7. Numbers of registered aquatic animal products establishments per region 2022

Region	Slaughter facilities	Processing	Distribution*	fish markets
Maputo	0	1	90	3
Gaza	0	0	0	1
inhambane	0	5	10	3
sofa	0	7	30	4
Manica	0	0	0	1
tete	0	0	126	0
Zambezia	0	1	7	3
nampula	0	10	14	4
Niassa	0	0	0	0
C.thin	0	0	1	0
TOTAL	0	21	278	19

INIP source

*: i.e., means of transport of fishery products.

9. Summary of aquatic animals and aquatic animal products import/export data:

Table 8. Imports of animals and animal products in 2022

Species/products	Quantity ³⁹ (products)	countries of origin	ports of entry
horse mackerel	57 739	Namibia, Russia, New Zealand	Beira, Maputo and Nacala
Shrimp	16	south africa	Beira, Maputo and Nacala
Crab	14	south africa	Beira, Maputo and Nacala
Cod	355	EU	Beira, Maputo and Nacala
Fish	3 450	China	Beira, Maputo and Nacala
Caned fish	1 460	EU	Beira, Maputo and Nacala
Sardine	582	EU	Beira, Maputo and Nacala
Portion	2 273	Mauritius and Zimbabwe	Beira, Maputo and Nacala
Tuna	980	EU	Beira, Maputo and Nacala
Squid	50	south africa	Beira, Maputo and Nacala
Octopus	4	south africa	Beira, Maputo and Nacala
Others	120	EU, South Africa and China	Beira, Maputo and Nacala
TOTAL	67,043.32	-	-

Source: INIP

³⁹Number of Live animals. Kg/Ton of products

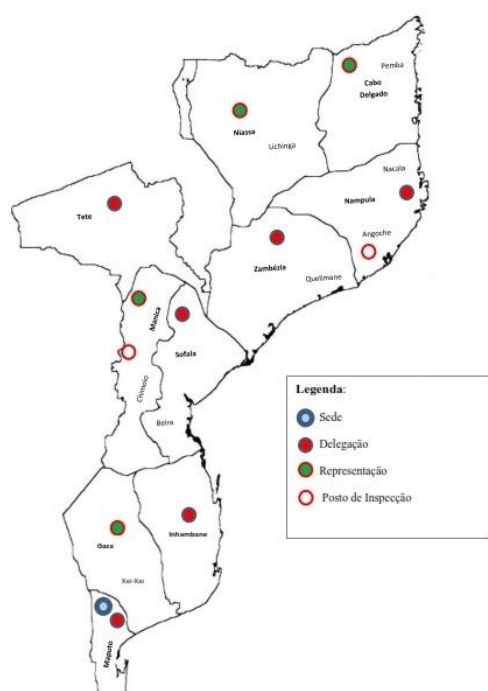
Table 9. Exports of animals and animal products in 2022

Species/products	Quantity (tons)	countries of destination	ports of exit
Lobster	136	EU	Maputo, Beira,
Live lobster	111	China	Beira and Maputo
Crab	314	EU	Maputo, Beira, Nampula, Quelimane
Live crab	1 455	China	Maputo, Beira, Nampula and Pemba
Shrimp	1 323	EU	Maputo, Beira, Nampula, Quelimane
Shrimp	2 157	EU	Maputo, Beira, Nampula, Quelimane
Crayfish	120	EU	Maputo, Beira, Nampula, Quelimane
Fish	1 484	China	Maputo, Beira, Nampula, Quelimane
Tuna	159	EU	Border
Kapenta	919	Zambia, Zimbabwe	tete
Cephalopods	699	EU	Maputo, Beira, Nampula, Quelimane
Fish (tilapia)	572	Zimbabwe	tete
Aquaculture shrimp	169	EU	Quelimane
Others	129	EU, OP	
Total	9 747		

INIP source

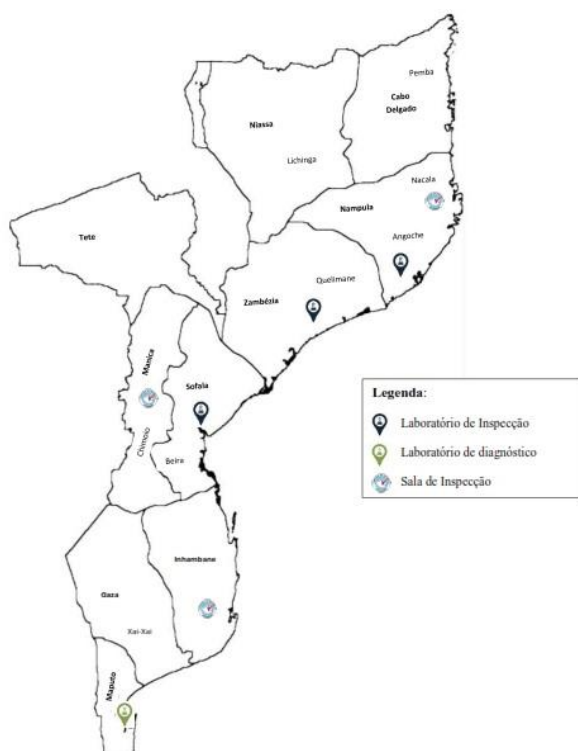
10. Maps related to the Aquatic Animal Health Services (AAHS) and location of facilities

Figure 6. Location of headquarters, central, regional, district and local offices of AAHS



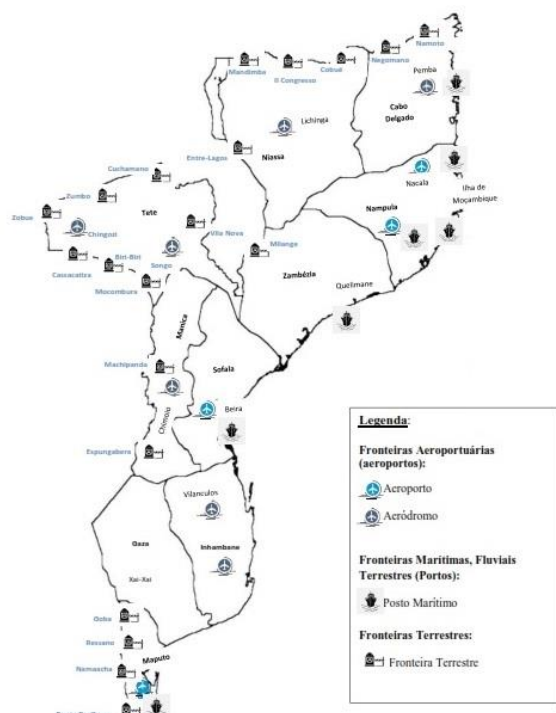
Location of central and regional/local laboratories used for diagnosis of aquatic animal health diseases

Figure 7. Map of the location of the laboratories (INIP) and CB-UEM



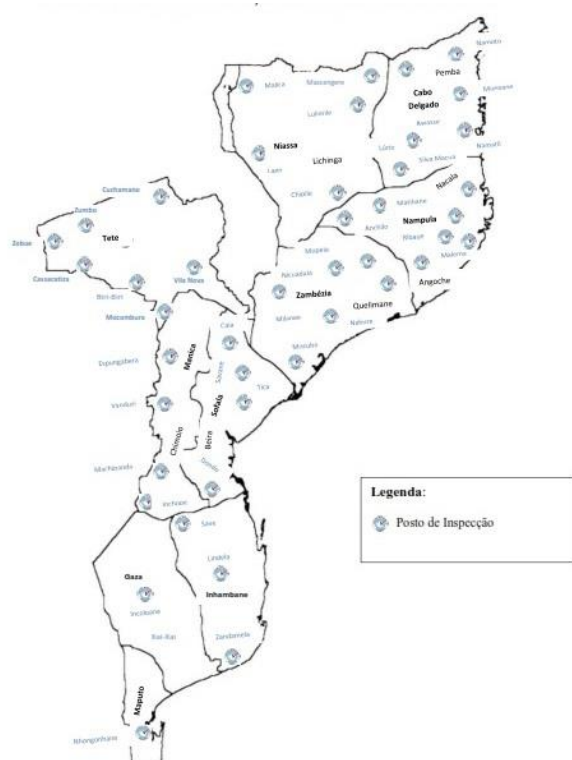
Location of border inspection posts (air and seaports, land crossings)

Figure 8. Map of border posts



11. Internal animal movement flow map not available
12. Location of internal animal movement control points

Figure. 9. Map of Internal Movement Control Posts



13. Human population data at last census with date

Economic indicators
Economic data 2022

National GDP	1,223 Billion MT
National GDP Growth	3,8%
Fisheries contribution to national GDP	3%
Aquaculture GDP	Data not available
Economic value of fisheries and aquaculture	Data not available
Annual public sector contribution to fisheries and aquaculture	387,269,000 MT and 152,708,000 MT for the provinces.
Annual budget of the Veterinary Services or Aquatic Animal Health Services	34,579,000 of which 3,500,000 MT was allocated to AAH

Appendix 4: Timetable of the mission; sites / facilities visited, and list of resource / contact persons met or interviewed

Opening meeting

Date: 03 de Julho de 2023

Location & Jurisdiction	Institution – Agency – Group - Association	PERSON(s) met and interviewed	POSITION	Activities and CC Relevance	
Maputo	WOAH PVS	Ana Afonso	Perito da WOAHPVS Análise	ana.afonso@fsa.europa.eu	+393482107954
	WOAH PVS	Marc Le Groumellec	Perito da WOAHPVS Análise	legroumellec@gmail.com	+261320719581
	WOAH PVS	Stian J.	Perito da WOAHPVS Análise	stijofish@gmail.com	+4740226203
	WOAH PVS	Ronello Abila	Perito da WOAHPVS Análise	r.abila@woah.org	+66844374449
	MADER: DNDP	Américo da Conceição	Autoridade Veterinária em Moçambique	mecodaconceicao@yahoo.com	846216418
		Zacarias Massicame	Representante da DNDP	zmassicame@yahoo.co.uk	824496690
		Abel Chilungo	Representante da DNSAB	abegochi@gmail.com	863929660
	MIMAIP: INIP	Lúcia Sumbane Santos	Directora Geral	lucysantosmz@gmail.com	844011060
		Carlos Riquixo	Director Geral Adjunto	criquixo@yahoo.co.uk	829754620
		Argentina Cossa	Directora do SLS	cossaargentina@yahoo.com.br	824496690
		Sónia Bianca Pereira	Directora do SCSQ	soniabiancamz@gmail.com	842588929
		Celina Malichocho	Directora do SLIP	cmalichocho@gmail.com	824273690
		Saquibibi Valgy Ibraimo	Chefe do DLSIA	sakibibi@gmail.com	848495525
		Vasco Lebre Malate	Chefe do DVSQ	vascolebre@gmail.com	867333263

Field visits, meetings and interviews

Date: Julho - 03, 04, 05 (Maputo); 06, 07, 08 (Zambézia); 10,11,12 (Tete); 13 (Gaza); 14 (Maputo)

NB: Equipe designada para acompanhar todas as visitas

Location & Jurisdiction	Institution – Agency – Group - Association	PERSON(s) met and interviewed	POSITION	Activities and CC Relevance	
	WOAH PVS	Ana Afonso	Perito da WOAHPVS Análise	ana.afonso@efsa.europa.eu	+393482107954
	WOAH PVS	Marc Groumellec	Perito da WOAHPVS Análise	legroumellec@gmail.com	+261320719581
	WOAH PVS	Stian J.	Perito da WOAHPVS Análise	stijofish@gmail.com	+4740226203
	WOAH PVS	Ronello Abila	Perito da WOAHPVS Análise	r.abila@woah.org	+66844374449
	MADER	Zacarias Massicame	Representante da DNDP	zmassicame@yahoo.co.uk	824496690
	MIMAIP: INIP	Lúcia Sumbane Santos	Directora Geral	lucysantosmz@gmail.com	844011060
		Saقيبibi Valgy Ibraimo	Chefe do DSLIA	sakibibi@gmail.com	848495525
		Vasco Lebre Malate	Chefe do DVSQ	vascolebre@gmail.com	867333263

Date: 03 de Julho - Maputo

Location & Jurisdiction	Institution – Agency – Group - Association	PERSON(s) met and interviewed	POSITION	Activities and CC Relevance	
Maputo	Delegação do INIP Maputo	Celina Malichocho	Directora dos SLIP	cmalichocho@gmail.com	824273690
		Jovita Bangalane	Delegada da Delegação do INIP - Maputo	jocaniju@yahoo.com.br	847138903
		Dulce Pondaca	Responsável pelo Sector da Sensorial do SLIP de Maputo	dlinda2007@yahoo.com.br	865007622
		Fabião Jorge	Coordenador da Qualidade	fjogek@gmail.com	828779730
		Celeste Mourana	Responsável pelo Sector da Microbiologia do SLIP de Maputo	Celestemourana2015@gmail.com	872215015
		Fabião Zandamela	Responsável pelo Sector da Química do SLIP de Maputo	zandamelafabiao@gmail.com	848236876

	InOM	Lourenço Zacarias	Pesquisador de Biologia Molecular	lorencombe@gmail.com	848938411
		Luísa Simbine das Neves	Pesquisador de Biologia Molecular	lsimbine40@yahoo.com	879213105
	ADNAP	Cassamo Hassane	Director Geral	cassamo.hassane@gmail.com	879396010
		Ricardo Jorge	Director SOA	riworks123@yahoo.com	852205788
		José Manuel Júnior	Chefe de D...	jose.junior.j164@gmail.com	848072513
		Galhardo Naene	Chefe de DLP	gnaene@gmail.com	874410849

Date: 04 de Julho - Maputo					
Location & Jurisdiction	Institution – Agency – Group - Association	PERSON(s) met and interviewed	POSITION	Activities and CC Relevance	
	IDEPA	Paula Santana Afonso	Directora Geral	psafonso.Idepa@gmail.com	823091540
		Sónia Nobre	Técnica de SCPCP	sonianobremz@mail.com	844119342
		Ilídio Banze	Especialista da Cadeia de Valor da PRODAPE	llidiobanze@gmail.com	824215300
	Porto de Pesca Maputo	Miguel Timane	Assessor da Direcção do Porto de Pesca	Matimane62@yahoo.com	847070039
		Jaime Mazivila	Chefe de Manutenção	Jaimesmazivila67@gmail.com	842084757
		Hélio Cando	Chefe de Controlo de Qualidade	heliocando@hotmail.com	842040714
		Albino Magona	Director do Porto de Pesca de Maputo	amagonaffp@yahoo.com	840533497
	Pesca do Sul	Carla Costa	Chefe de Controlo de Qualidade do Estabelecimento de Processamento	-----	828534850
		Carlos Silva	Gerente da Empresa	pesul@tvcabo.co.mz	823014150
	UEM – Fac. Veterinária	Cesaltina Tchamo	Directora da Faculdade Veterinária	ctchamo@yahoo.com.br	846230380
		Manecas Baloi	Docente da Faculdade Veterinária	cmbaloi@gmail.com	842381935

Date: 05 de Julho - Maputo					
Location & Jurisdiction	Institution – Agency – Group - Association	PERSON(s) met and interviewed	POSITION	Activities and CC Relevance	
Maputo	CB-UEM	Amelia Mondlane	Investigadora do CB-UEM	halilamondlane@gmail.com	844611064
		Joaquim Saide	Director do CB-UEM	joasaide@gmail.com	823065530
	LCA/DC A	Afonso Sussuro	Investigador Assistente e Chefe de Repartição do Anatomia Patológica	a.sussura@yahoo.com	840424848
		António Sumbana	Investigador Auxiliar e Chefe de DNA	manitosumbana@gmail.com	840200744
	PROAZ UL	Mateus Tembe	Administrador	mateustembe@proazul.com	843803924
		Rennan Rocha	Consultor	rennan.rocha@proazul.com	852696919

Date: 06 e 07 de Julho – Zambézia					
Location & Jurisdiction	Institution – Agency – Group - Association	PERSON(s) met and interviewed	POSITION	Activities and CC Relevance	
Zambézia	Delegação do INIP Zambézia	Horácio Gundana	Delegado da Delegação do INIP – Zambézia	hmgundana78@gmail.com	874380768
		Edson Carlos Tembe	Chefe de DAL Departamento de Analises Laboratoriais	edsoncarlostembe@gmail.com	875847271
		Jorge Machau	INIP-Zambézia Chefe do DAF	jorgemacheu@gmail.com	847599393
		Latifo Maembo	INIP-Zambézia Chefe do DLS	Latifomaembo@gmail.com	842543780
	DPAP SPAE Zambézia	Agnelo Bissane	Chefe de Departamento Provincial de Pesca no SPAE	bissanell@yahoo.com.br	867909051
		Neide Valente Nobre	Chefe de Departamento de Pecuária no SPAE Zambézia	neidelofortevalente@gmail.com	875847271
		Honória M. Elizeu	Chefe do Departamento de Pecuária no DPAP Zambézia	Honorieliseu69@gmail.com	861400105
		Américo Sumale	DPAP Zambézia chefe de Departamento Provincial de Pesca e Aquacultura	americo2005@yahoo.com	847918796
	Porto de Pesca de Quelimane	Euritse do Rosário	Técnica Porto de Pesca de Quelimane	euritserosario@gmail.com	848291703
		Joaquim Madeira	Director Porto de Pesca de Quelimane	jnaciomadeira@gmail.com	879913230
		Domingos Adelino	Técnico Porto de Pesca de Quelimane	domingosronaldoadelino@gmail.com	872924759

	Aquapescas	Leonardo G.	Representante da Empresa	Leonardo.GAD@aquapescas.com	-----
		François Grosse	Representante da Empresa	francoisgrosse@aquapescas.com	-----
		Maria D.	Chefe de Controlo de Qualidade	Mariadzedz@aquapescas.com	-----
	Kustamoz	Cesário Mendiante	Chefe de Controlo de Qualidade	rzamandinte@gmail.com	847792110
		Pedro Expósito	Representante da Empresa	Pedroexposito72@gmail.com	865026170

Date: 10, 11 e 12 de Julho – Tete					
Location & Jurisdiction	Institution – Agency – Group - Association	PERSON(s) met and interviewed	POSITION	Activities and CC Relevance	
Tete	Delegação do INIP Tete	Carlos Morais	Delegado da Inspeção do Pescado de Tete	carlsmorais@gmail.com	848904622
		Maria Khodiasse	Chefe do DCSQ	mariakhodiasse@yahoo.com.br	874141160
		Luis Manteiga	Chefe do DLS	luisaugustosapo@gmail.com	844565163
		Francisco Picardo	Técnico do DCSQ	frapicardo@gmail.com	828621640
		Maria Macuanjo	Chefe do Posto de Inspeção do Pescado de Chitima	mmateusmacuanjo@gmail.com	846148231
	DPA	Odete Naftal	Directora Provincial da Agricultura e Pescas (DPAP)	naftalodete@gmail.com	847590506
	SPAEE	Pedro Francisco Zuze	Coordenador do Departamento de Pescas do SPAEE	zuzebtc@gmail.com	842657855
		Jacinta Mtaia	Directora dos SPAEE Tete	jacyucm@yahoo.com.br	842911984
	IDEPA	Maria Clara Fole	Delegada do IDEPA- Tete	clarafalo@yahoo.com.br	845405379
	InOM	Claque. Maunde	INOM- Coordenador/investigador da Delegação do InOM Tete	claquemaunde@yahoo.com.br	844869770
		Dario Benete	Técnico da CFF	dbenete@gmail.com	848672873

	Chicoa Fish Farm (CFF)	Paulo Raul	Técnico da CFF	paulofinishiraul@gmail.com	870860332
		R. F. Raul	Técnico da CFF	Rikdickenson@gmail.com	862866301
		Augusto Firmino	Técnico da CFF	firmino@chicoafish	842220324

Date: 12 de Julho – Maputo

Location & Jurisdiction	Institution – Agency – Group - Association	PERSON(s) met and interviewed	POSITION	Activities and CC Relevance	
Maputo	OMVM	Ana Flávia	Bastonária da OMVM	deazinhei@gmail.com	842581280
		Alberto Manhiça	Desenho Gráfico da OMVM	Albertomanhica01@gmail.com	842219212
		Izélia Cossa	Secretaria da OMVM	izeliaarmando@gmail.com	849471663

Date: 13 de Julho – Gaza

Gaza		NB: mais um membro juntou-se a equipe designada para acompanhar todas as visitas, acima referida			
		Moetapele Letshweny	Representante da WOAHS-SADC	m.letshwenyo@woah.org	+26771606431
	Tilapia Fabril (Aqua cultura Artesanal)	Manecas Baloi	Responsável técnico: CEPAQ	cmbaloi@gmail.com	842381935
		Nelson Tamele	Responsável pela Tilapia Fabril	-----	845904057
		Aida Custodio Muchanga	Responsável do sector das Pescas no SDAE Gaza	aidalatoria@gmail.com	840237500
	CEPAG	Rafael Rafael	Representante do CEPAQ	Rafitorafael2009@hotmail.com	828319380
	ISPG	Luís Comissario	Director da Divisão de Agricultura	comissarioluis@yahoo.com.br	876308134
		Miguel Horácio	Director do Curso de Engenharia em Aquacultura	miguel.chele@ispg.mc.mz	879595289

Closing meeting

Date: July 14th, 2023

Location & Jurisdiction	Institution – Agency – Group - Association	PERSON(s) met and interviewed	POSITION	Activities and CC Relevance	
Maputo	WOAH-SRR-SA	Moetapele Letshweny	Representante da WOAHS-SADC	m.letshwenyo@woah.org	+26771606431
	WOAH PVS	Ana Afonso	Perito da WOAHS-PVS Análise	ana.afonso@efsa.europa.eu	+393482107954

	WOAH PVS	Marc Le Groumellec	Perito da WOAH-PVS Análise	legroumellec@gmail.com	+261320719581
	WOAH PVS	Stian Johnsen	Perito da WOAH-PVS Análise	stijofish@gmail.com	+4740226203
	WOAH PVS	Ronello Abila	Perito da WOAH-PVS Análise	r.abila@woah.org	+66844374449
	MADER (Ministério da Agricultura e Desenvolvimento Rural)	Américo da Conceição	Autoridade Veterinária em Moçambique	mecodaconceicao@yahoo.com	846216418
		Zacarias Massicame	Representante da DNDP	zmassicame@yahoo.co.uk	824496690
		Abel Chilungo	Representante da DNSAB	abegochi@gmail.com	863929660
	MIMAIP: INIP	Lúcia Sumbane Santos	Directora Geral	lucysantosmz@gmail.com	844011060
		Carlos Riquixo	Director Geral Adjunto	criquixo@yahoo.co.uk	829754620
		Argentina Cossa	Directora do SLS	cossaargentina@yahoo.com.br	824496690
		Sónia Bianca Pereira	Directora do SCSQ	soniabiancamz@gmail.com	842588929
		Celina Malichocho	Directora do SLIP	cmalichocho@gmail.com	824273690
		Saquibibi Valgy Ibraimo	Chefe do DLSIA	sakibibi@gmail.com	848495525
		Vasco Lebre Malate	Chefe do DVSQ	vascolebre@gmail.com	867333263
	MIMAIP: InOM	Rosa Lourenço	Investigador da Aquacultura	rosalourenco@gmail.com	827725690
		Emília Mutemba	Investigador da Aquacultura	emiliamutemba@gmail.com	847637958
		José Murama	Investigador da Aquacultura	tabwarabwajp@gmail.com	828902884
	MIMAIP: IDEPA	Paula Santana Afonso	Directora Geral	Psafonso.idepa@gmail.com	823091540
		Isabel Manga	Especialista da Aquacultura da PRODAPE	Isabelmanga2000@gmail.com	862126145
		Açucena Jamine	Chefe de Dep de Comercializaco Pesqueira	ajamine@yahoo.com.br	870920920
		Liliana Ferrão	Tecnica dos Servicos Centrais de Promocao de Desenvolvimento da Pesca e da Aquacultura	lilianaferrao88@gmail.com	852531819
	MIMAIP: ADNAP	Lucinda Manguê	Directora Geral Adjunta	lucindamangue@gmail.com	824727820
		Ricardo Jorge	Director de SOA	riworks123@yahoo.com	852205788

Appendix 5: Air travel itinerary

ASSESSOR	DATE	From	To	Flight No.	Departure	Arrival
Marc Le Groumellec	25/06/2023	Mahajanga	Antananarivo	TZ 821	18:15	19:30
	01/07/2023	Antananarivo	Addis Ababa	ET 0852	14:50	19:30
	02/07/2023	Addis Ababa	Maputo	ET 0819	09:40	13:45
	14/07/2023	Maputo	Addis Ababa	ET 0818	14:50	20:50
	15/07/2023	Addis Ababa	Antananarivo	ET 0852	08:50	13:40
	16/07/2023	Antananarivo	Mahajanga	TZ 820	17:30	18:40
Ana Afonso	01/07/2023	Milan	Addis Ababa	ET739	22 :30	06 :05
	02/07/2023	Addis Ababa	Maputo	ET 819	09:40	13:45
	22/07/2023	Maputo	Lisbon	TP284	08 :30	18 :25
Stian Johnsen	01/07/2023	Oslo	Addis Ababa	ET 0715	19:45	06:20
	02/07/2023	Addis Ababa	Maputo	ET 0819	09:40	13:45
	15/07/2023	Maputo	Addis Ababa	ET 0818	14:50	20:50
	15/07/2023	Addis Ababa	Oslo	ET 0714	23:40	08:45
Ronello Abila	01/07/2023	Bangkok	Doha	QR 833	21:05	23:55
	02/07/2023	Doha	Maputo	QR 1361	02:30	09:25
	15/07/2023	Maputo	Doha	QR 1362	13:25	22:30
	16/07/2023	Doha	Bangkok	QR 834	02:00	13:00

Appendix 6: List of documents used in the PVS AAHS evaluation

	Baseline evidence		Portuguese title	English title	Subject	CC
1	Anexo 01	PT	Decreto presidencial 17/2015 de 25 de Março	Presidential Decree 17/2015 of March 25	Defines the attributions and competences of the Ministry of the Sea, Inland Water and fisheries	I-6A
2	Anexo 02	PT	Resolução 3/2020 de 13 de Março	Resolution 3/2020 of March 13	Approves the Organic Statute of the Ministry of Agriculture and Rural Development	I-6B
3	Anexo 03	PT	Decreto 87/2021 de 28 de Outubro	Decree 87/2021 of October 28	Creates the Oceanographic Institute of Mozambique (InOM)	I-6B
4	Anexo 04	PT	Decreto 26/2009 de 17 de Agosto	Decree 26/2009 of 17 de Agosto	Approves the Animal Health regulation	IV-1A
5	Anexo 05	PT	Decreto n.º 71/2014, de 28 de Novembro	Decree No. 71/2014 , of November 28	Approves the Biosafety Regulation Relating to the Management of GMO	II-11
6	Anexo 06	PT	Estratégia de sanidade de organismos aquáticos e biossegurança (2023-2033)	Health strategy for aquatic organisms and biosecurity (2023-2033)		I-5 II-6
7	Anexo 07	PT	Plano Nacional de Acção contra Resistência Antimicrobiana (2019-2030)	National Action Plan against Antimicrobial Resistance (2019-2030)		I-5 II-9
8	Anexo 08	PT	Plano para a Segurança Sanitária de Moçambique	Plan for Food safety in Mozambique	Detailed plan of activities including budget for Food safety including inspection and control of food, AMR, residues control and Zoonotic diseases	I-5 II-7 A II-7B II-9 II-10
9	Anexo 09	PT	Plano Nacional de controlo de Resíduos	National residue Control Plan		I-5 II-10
10	Anexo 10	PT	Plano de actividades dos Departamento de Vigilância sanitária e Quarentena Serviços	Plan of activities of the Department of Health Surveillance and Quarantine		I-5 I-6A II-3
11	Anexo 11	PT	Relatório sobre Monitoria do WSD 2022	WSD 2022 Monitoring Report	White spot syndrome virus (WSSV) prevalence in wild and aquaculture crustacean populations from Mozambique, assessed by molecular diagnosis	I-5
12	Anexo 12	PT	Relatório de suspeita no âmbito da vigilância passiva- 2021	Suspicion Report -2021		II-4A
13	Anexo 13	EN	Final report of Detection of TiLV-Mozambique November 2022	Final report of Detection of TiLV-Mozambique November 2022		II-4B
14	Anexo 14	PT	Decreto 6/2023 de 10 de Fevereiro	Decree 6/2023 of February 10	Establishes rules for implementing the 2013 Economic and Social Plan and State Budget	I-7 I-8
15	Anexo 15	PT	Lei do SISTAFE	SISTAFE Law	System for administration of government budget	I-4 I-5 I-7 I-8
16	Anexo 16	PT	Decreto 14/2020 de 23 de Dezembro	Decree 14/2020 of December 23	Establishes principles and norms for the organization and functioning of the state's financial administration system	I-4 I-5 I-7 I-8
17	Anexo 17	PT	Manual de Administração Financeira do Estado	State Financial Administration Manual		I-4 I-5 I-7 I-8
18	Anexo 18	PT	Decreto 5/2016 de 8 de Março	Decree 5/2016 of March 8	Approves the regulation for the verification and contracting of public works, supply of goods and provision of services to the state	I-4 I-7 I-8

19	Anexo 19	PT	Decreto 13/2011 de 21 de Julho	Decree 13/2011 of July 21st	Creates the Mozambique VSB and approves its statutes	III-5A
20	Anexo 20	PT	Código de ética OMVM	VSb code of ethics		III-5A
21	Anexo 21	PT	Regulamento eleitoral da OMVM	VSb electoral rules		III-5A
22	Anexo 22	PT	Regulamento de admissão OMVM	VSb Admission Rules		III-5A
23	Anexo 23	PT	Regulamento de estágio OMVM	VSb Internship Regulation		III-5A
24	Anexo 24	PT	Regulamento de admissão	VSb admission regulation		III-5A
25	Anexo 25a	PT	Resultados de análise WSD – Sofala 2020	WSD analysis results – Sofala 2020		II-4B
26	Anexo 25aa	PT	Resultados de análise WSD – Sofala 2021	WSD analysis results – Sofala 2021		II-4B
27	Anexo 25aaa	PT	Resultados de análise WSD – Sofala 2022	WSD analysis results – Sofala 2022		II-4B
28	Anexo 25b	PT	Resultados de análise WSD – Nampula 2020	WSD analysis results – Nampula 2020		II-4B
29	Anexo 25bb	PT	Resultados de análise WSD – Nampula 2021	WSD Analysis Results – Nampula 2021		II-4B
30	Anexo 25bbb	PT	Resultados de análise WSD – Nampula 2022	WSD Analysis Results – Nampula 2022		II-4B
31	Anexo 25c	PT	Resultados de análise WSD – Zambézia 2020	WSD analysis results – Zambezia 2020		II-4B
32	Anexo 25ccc	PT	Resultados de análise WSD – Zambézia 2022	WSD analysis results – Zambézia 2022		II-4B
33	Anexo 26	PT	Relatório do laboratório EUSE 2021	EUSE 2021 lab report		II-4B
34	Anexo 27	PT	Relatório do Laboratório TiLV 2019	TiLV Laboratory Report 2019		II-4B
35	Anexo 28	PT	Estatuto geral de Funcionários e Agentes do Estado (EGFAE)	General Statute of public Employees		I-4
36	Anexo 29	PT	Metodologia analítica para o plano nacional de controlo de resíduos	Analytical methodology for the national residue control plan		II-10
37	Anexo 30	PT	Regras específicas de certificação sanitária	Specific health certification rules		IV-3
38	Anexo 31	PT	Decreto 80/2020 de 8 de Setembro (Cap.4 – Regras higio-sanitarias),	Decree 80/2020 of September 8 (Chapter 4 - Hygiene-sanitary rules),	Approves the regulation for hygiene and health checks on fishery products	II-7A II-7B
39	Anexo 32	PT	Diploma Ministerial 26/2023 de 02 de Fevereiro (Cap 2- Requisitos de higiene)	Ministerial Diploma 26/2023 of February 2 (Chapter 2-Hygiene requirements)	Approves specific hygienic and sanitary procedures for the production of fishery products	II-7A II-7B
40	Anexo 33	PT	Diploma Ministerial 93/2007 de 25 de Julho (Guião do programa de higiene)	Ministerial Diploma 93/2007 and 25 July (Hygiene Program Guide)	Approves the health licensing procedures for onshore processing establishments	II-7A II-7B
41	Anexo 34	PT	Diploma Ministerial 94/2007 de 25 de Julho (Guião do programa de higiene)	Ministerial Diploma 94/2007 and 25th of July (Hygiene Program Guide)	Approves the sanitary licensing procedures for vessels	II-7A II-7B
42	Anexo 35	PT	Procedimento de Certificação sanitária de produtos de origem aquática	Sanitary certification procedure for products of aquatic origin		II-7A II-7B
43	Anexo 36	PT	Decreto 22/2013 de 1 de Novembro.	Decree 22/2013 of November 1st.	Approves the Fisheries Law	IV-1A

44	Anexo 37	PT	Diploma Ministerial 93/22 de 23 de Agosto	Ministerial Diploma 93/22 of August 23	Approves the internal regulation of the Fish Inspection, IP	II-7A II-7B
45	Anexo 38	PT	Guia de condução de Inspeção sanitária	Guide to Sanitary Inspection		IV-1B
46	Anexo 39	PT	Acordo com Autoridade da Africa do Sul	Agreement with South African Authority		IV-2 IV-3 IV-4
47	Anexo 40	PT	Acordo com Autoridade da Namibia	Agreement with Namibian Authority		IV-2 IV-3 IV-4
	Evidence pre mssion					
48	1	PT	2013-6766_FINAL	EC-FVO Audit 2013 – control systems in place for production of fishery products		I – 5 II-7A II-7B
49	2	PT	126083-PORTUGUESE-WP-PUBLIC-SwioFish-Brochure-Port-KJ-Mar6	World Bank 2018, Subsistence means for fishing communities		II-1A II-1B
50	3	PT	Estregetia-para-o-Desenvolvimento-de-Aquacultura-EDA-27.06	MIMAIP 2020-2030 Aquaculture development strategy		I-4 I-5
51	4	EN	FAO Fisheries & Aquaculture Fishery and Aquaculture Country Profiles - The Republic of Mozambique	FAO 2019– country report 2019		II-1B
52	5	EN	FAO report White spot Mozambique	TECHNICAL WORKSHOP ON THE DEVELOPMENT OF A STRATEGY FOR IMPROVING BIOSECURITY (AQUATIC ANIMAL HEALTH) IN THE SUBREGIONAL COUNTRIES OF THE MOZAMBIQUE CHANNEL (MADAGASCAR, MOZAMBIQUE AND THE UNITED REPUBLIC OF TANZANIA) Maputo, Mozambique, 2--4 April 2013		II-1B II-2 II-4A
53	6	PT	PLANO-DIRECTOR-DE-ESTATISTICA-2012-2019	Fisheries ministry plan for statistics 2012 – 2019		I-5
	Evidence mssion					
54		PT	Termos de Referencia PROJECTOS DE_AQUACULTURA versao_final	Requirements for licencing of a aquaculture project-development licence		I-7A
55		PT	Regulamento-de-aquacultura (RAQUA)- Dez 2021	Aquaculture regulation Dec 2021-	Establishes the licencing and functioning of aquaculture facilities includes definitions, biosecurity traceability imposing of live animals feed penalties and measures in case of disease outbreak	I-7A
56		PT	Regulamento-geral-de-aquacultura (Nov 2001)			IV-1A
57		PT	AH law Lei de Sanidade Animal Maio de 2023	Draft for animal health regulation including aquatics		IV-1A

58		PT	Plano Gestao da Albufeira de Cahora Bassa 2023-2027 - 01-07-2022	Cahora Bassa dam management plan -	Includes the plan for aquaculture development mapping of areas suitable for aquaculture, support to small producers, etc....)	I-5
59		PT	Lista de empresas registadas na DNDP – comercio de medicamentos e produtos veterinarios para concurso 2022	Veterinary products and medicines retailers registry (2022)		II-8
60		PT	Regulamento da Comissao Nacional da Administracao Pesqueira (Set 2021)	National committee for Fisheries Administration regulation	It includes Fisheries and Aquaculture technical committees and a secretariat	IV-1A
61		PT	Agenda anotada 10.05.23 CTAQ	Agenda for the aquaculture technical committee		I-6B
62		PT	Agenda anotada 10.05.23 CPT	Agenda for the fisheries technical committee		I-6B
63		EN	Abstract Tilapia Lake Virus in Southern Mozambique. Myth or truth		Scientific publication by CEPAQ director	II-4B
64		PT	Produtos Veterinarios Medicamentosos importados no 2017 a 2023	List of imported veterinary medicines		II-8
65		PT	Planos estudos curso de medicina veterinaria 2012	Vet curriculum		I-2A
66		PT	Planos tematicos curso de medicina veterinaria 2012	Vet curriculum		I-2A
67		PT	Plano analitico da unidade curricular 1.	Aquaculture subject – vet curriculum -	Includes AAH and biosecurity	I-2A
68		PT	Plano Analítico da Unidade Curricular	Aquaculture subject – vet curriculum		I-2A
69		PT	Curriculum de Licenciatura em Medicina Veterinaria 2012	Vet curriculum		I-2A
70		PT	Curriculo de Mestrado em aquacultura Homologado	MSc Aquaculture		I-2A
71		PT	L0640A3 Beira (2022-03-18)	ISO certificate Beira		II-1C
72		PT	L0640A2 Quelimane (2022-03-18)	ISO certificate Quelimane		II-1C
73		PT	L0640A1 Maputo (2022-03-18)	ISO certificate Maputo		II-1C
74		PT	Certificado de acreditacao dos LIPs	Laboratory certification Maputo		II-1C
75		PT	lista de Parametros analisados	Analysis catalogue	Food, water and surfaces microbiological and chemical analysis	II-7A II-7B
76		PT	Quelimane -WOAH 2023		Includes details on capacity building and other information about aquaculture in Zambezia	
77		PT	Formulário de envio de amostras para análises patológicas	Form for pathology samples		II-4B
78		PT	Boletim de Resultados 03_2021	Analysis results		II-4B
79		PT	Boletim de Resultados 03_2021-1			II-4B
80		EN	English Version Formulário de envio de amostras para análises patológicas(1)			II-4B
81		PT	Memorando de Entendimento CB-UEM e INIP	Memorandum of understanding CB UEM and INIP		I-6B

82		PT	PVS Salaries e operations 2018 a 2022	INIP committed and paid budget 2018-2022		I-5 I-7 I-8
83		PT	Resumo da oficina de trabalho – Prioritizacao de doencas zoonoticas usando abordagem One Health para oonehealth approach evolvemento multisectorial em Mocambique – 20180427 https://www.cdc.gov/onehealth/pdfs/mozambique-report-portuguese-508.pdf	Workshop summary – prioritization of zoonotic diseases – oonehealth approach	INIP participated (Saquibbi Ibrahim) and OIE Mozambique (dercilia Arone) No aquatic diseases listed	II-9
84		PT	Formulario – vistoria sanitaria de farmas de aquacultura	Checklist for aquaculture inspection	Paper copy	IV-1B
85	photo		frozen shrimp label			II-7B
86	photo		INIP verification doc -internal market			II-7B
87	photo		INIP quality policy			II-1C
88	photo		IDEPA small scale farming			II-1B
89	photo		Fisheries and aquaculture census			II-1B
90	photo		INIP final inspection visit			II-7A
91	photo		INIP sanitary authorization establishment			II-7A
92	photo		INIP inspection visit			II-7A
93	photo		INIP Maputo laboratory certification			II-7A II-1C
94	photo		Services fishing harbour			II-7A
95	photo		INIP lab results products			II-7A
96	photo		certificate attendance training course processing			II-7A
97		PT	Instrucao tecnica- AMOSTRAGEM E ENVIO DE AMOSTRAS.docx	Technical instruction-sampling		II-4B
98		PT	Instrucao tecnica- GESTAO DE COMUNICACOES E ALERTAS	Technical instruction-notifications management		II-5
99		PT	Instrucao tecnica- QUARENTENA	Technical instruction-Quarantine		II-3
100		PT	Instrucao tecnica-VIGILANCIA SANITARIA	Technical instruction-Surveillance		II-5
101		PT	Intrucao tecnica- ELABORACAO D O PLAO DE CONTIGENCIA	Technical instruction-Drafting of contingency plans		II-5
102		PT	Reg. San de animais aquaticos	Aquatic animals health regulation		I-9 II-3 II-9
103		PT	2015 Estatuto MIMAIP official Gov journal	Estatuto Orgânico do Ministério do Mar, Águas Interiores e Pescas/ organization of MIMAIP	Establishes competencies of MIMAIP and its various directorates	I-5 I-6A I-6B
104		PT	Decreto 71 INIP Criacao, APROVADO PELO CM	Council of ministers decree -INIP	CM decree approved in 2019 reviewing organization and competencies of INIP	I-6A
105		EN		Overview of immediate notifications of WOA listed diseases through WAHIS		IV-5

106		EN		Six-monthly report to WOA on aquatic animal disease situation – second semester 2022		IV-5
107		EN		Overview submission of six-monthly reports to WOA 2005-2022		IV-5
108		PT		INIP website	www.inip.gov.mz	III-1
109		PT		MINAIP website	https://www.mimaip.gov.mz	III-1
110		PT		INFRAPESCA website	https://infrapesca.gov.mz	III-1
111		PT		AGRICULTURA website	https://www.agricultura.gov.mz	III-1
112		PT		ADNAP website	https://www.adnap.gov.mz	III-1
113		EN	PVS-Texto Finalissima -09-06-2023 -English	Baseline document	Baseline document on AAHS-Mozambique	I-1 I-2A I-2B I-3 I-6 I-7 III-1 III-2 III-3
114		EN		Website ProAzul	https://www.proazul.gov.mz	III-6
115		EN	Centro de Biotecnologia - at the Eduardo Mondlane University	Website CB-UEM	http://www.cb.uem.mz/	II-1A
116		EN	Mozambique: Fishing prohibited in lakes Chiúta, Chirua and Amaramba in Niassa	Website Club of Mozambique	https://clubofmozambique.com/news/mozambique-fishing-prohibited-in-lakes-chiuta-chirua-and-amaramba-in-niassa-241957/?fbclid=IwAR0T2p1U3X1HZXGMmFXu9sKHnC772gWe0seMnNRxGYxBsKee-mRQJ44DP8	II-4A
117		EN	WOAH ANIMUSE report system for Mozambique	WOAH – PowerPoint Presentation	https://www.woah.org/en/article/animuse-monitoring-antimicrobial-use-in-animals/	II-8 II-9
118		PT	Boletim Estatístico da Pesca e Aquacultura 2009-2020	Fisheries and aquaculture statistics 2009-2020	Boletim Estatístico da Pesca e Aquacultura 2009-2020	I-6

Appendix 7: Organisation of the PVS evaluation of the AAHS of Mozambique

Assessors Team:

- Team leader: Dr Marc Le Groumellec
- Technical expert: Dr Stian Johnsen, Dr Ana Afonso
- Observer/Facilitator: Dr Ronello Abila

References and Guidelines:

- Terrestrial Animal Health Code (especially Chapters 3.1. and 3.2.)
- Aquatic Animal Health Code
- *Tool for the Evaluation of Performance of AAHS*
 - Human, financial and physical resources,
 - Technical capability and authority,
 - Interaction with interested parties,
 - Access to markets.

Dates: 3-14 July 2023

Language of the audit and reports: English

Subject of the evaluation: AAHS as defined in the Aquatic Animal Health Code

- Included / Not included in the country's VS
- Inclusive / Not inclusive of other institutions / ministries responsible for activities of VS

Activities to be analysed: All activities related to animal and veterinary public health:

- Field activities:
 - Aquatic animal health (epidemiological surveillance, early detection, disease control, etc)
 - quarantine (all country borders),
 - veterinary public health (food safety, veterinary medicines and biological, residues, etc)
 - control and inspection,
 - others
- Data and communication
- Laboratory diagnostic
- Research
- Initial and continuous training
- Organisation and finance
- Other to be determined...

Persons to be present: see provisional Appendix 3

Sites to be visited: see provisional Appendix 4

Procedures:

- Consultation of data and documents
- Comprehensive field trips
- Interviews and meetings with VS/AAHS staff and interested parties,
- Analyse of practical processes

Provision of assistance by the evaluated country

- Completion of missing data as possible
- Translation of relevant document if required
- Administrative authorisation to visit designated sites
- Logistical support if possible

Reports:

- a fact sheet or powerpoint will be presented at the closing session
- a report will be sent to WOAHS for peer-review no later than one month after the mission
- the current levels of advancement with strengths, weaknesses and references for each critical competence will be described,
- general recommendations may be made in agreement with the VS/AAHS.

Confidentiality and publishing of results

The results of the evaluation are confidential between the country and WOAHS and may only be published with the written agreement of the evaluated country.