

BACKGROUND INFORMATION DOCUMENT (BID)

**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) STUDY FOR
THE PROPOSED AQUACULTURE PROJECT AND ASSOCIATED ACTIVITIES
NEAR HENTIES BAY TOWN IN THE ERONGO REGION, NAMIBIA**

PROJECT PROPONENT:

BLUE RIDGE AQUACULTURE AFRICA (PTY) LTD



ENVIRONMENTAL ASSESSMENT PRACTITIONER/CONSULTANT:

ENVIROPLAN CONSULTING CC

March 2024

1 PROJECT BACKGROUND

Blue Ridge Aquaculture Africa (Pty) Ltd hereinafter to as *Blue Ridge* or *the Proponent* proposes to construct and operate an aquaculture project (farm) near Henties Bay Town in the Erongo Region (the *Project*). The project is located near the turn off of C34 road (Swakopmund-Henties Bay-Uis) about 5km north of Henties Bay Town, but falls within the undeveloped extended boundaries of the Town as shown on the locality in Figure 1. The site footprint is 25 hectares (25Ha) or 250,000m².

The propose project will entail the farming of Tilapia by means of Recirculating Aquaculture Systems (RAS) which is a technological approach to aquaculture where the entire process is brought indoors into a highly controlled environment. RAS technologies have been in use globally for over 40 years. The RAS systems entails the following components (Blue Ridge Aquaculture Africa, 2024):

- Grow-out tank – large culture tanks with a constant flow of clean water where fish are raised
- Solids removal – the excess to feed and fecal material from fish are removed via mechanical filtration. This process is vital for fish welfare and the stability of other water purification processes.
- Biofiltration - Beneficial bacteria convert ammonias into nitrogen in a process called nitrification.
- Oxygenation / Dissolved gas control - First, carbon dioxide is removed then pure oxygen is injected into the returning water. The reoxygenated water is returned to the grow-out tank.
- Wastewater recovery - As a secondary filtration system, wastewater from the drum filter is filtered by biological processes and ultra-filtration membranes. Once filtered, the “permeate” effluent is re-used within the grow-out tanks.

RAS offers reduced impacts to the environment with no water pollution or disease transfer relative to open system aquaculture production methods when best practices are implemented which includes the following:

- Ideal growing conditions,
- Feed optimization,
- Low environmental impact,
- Location flexibility,
- Production monitoring, and
- Low food miles and no seasonality.

The details on the project description per project phase are provided under Chapter 2.

The Proponent through their operations pride themselves in the execution of UN Sustainable Development Goals (SDGs) such as SDG1 (no poverty), SDG2 (zero hunger), SDG6 (clean water and sanitation), SDG8 (Decent work and economic growth), SDG9 (industry, innovation and infrastructure), SDG12 (responsible consumption and production), SDG14 (life below water) and SDG15 (life on land).



Figure 1: The locality map of the proposed Blue Ridge Aquaculture Africa project in Erongo Region

1.1 Why an Environmental and Social Impact Assessment (ESIA) Study

The proposed project (development) and its associated activities are listed activities that cannot be undertaken without an Environmental Clearance Certificate (ECC) in accordance with the Namibia's Environmental Assessment Policy, Environmental Management Act (EMA) No. 7 of 2007 and its 2012 Environmental Impact Assessment (EIA) Regulations. In this respect, proposed development and associated activities require a specific Environmental and Social Impact Assessment (ESIA) Study prior to implementation.

The relevant listed activities that trigger the ESIA Study are as follows:

Listed Activity 7. Agriculture and Aquaculture Activities

- 7.1 Construction of facilities for aquaculture production, including mariculture and algae farms where the structures are not situated within an aquaculture development zone declared in terms of the Aquaculture Act, 2002.
- 7.2 The declaration of an area as an aquaculture development zone in terms of the Aquaculture Act, 2002.

Anticipated associated listed activities to the main project

Listed Activity 8: Water Resource Developments

- 8.1 The abstraction of ground or surface water for industrial or commercial purposes.

Listed Activity 10. Infrastructure

- 10.1 The construction of-
 - (a) Oil, **water**, gas and petrochemical and other **bulk supply pipelines**.

Subsequently, Blue Ridge Aquaculture Africa has appointed EnviroPlan Consulting (independent Environmental Consultants) to conduct an independent ESIA for the proposed project to ascertain potential environmental and social impacts (both positive and negative) and establish how to improve or mitigate these impacts.

The ESIA study will present the description and analysis of the physical and biological shall address relevant environmental, social and climate change issues within the area, including any changes anticipated before project implementation. The description shall also integrate human conditions including population characteristics and trends, natural resource access and ownership and land use patterns biophysical and socio-economic baseline investigations relating to the proposed project.

All identified impacts will be described and addressed in the Environmental and Social Impact Assessment report and mitigated in the Management Plan (ESMP). These will be in compliance with the Environmental Management Act (No. 7 of 2007), the Environmental Assessment regulations of 2012, and International Finance Corporation (IFC) standards.

1.2 Aims & Objectives of the ESIA Process

The aims and objectives of the ESIA process are to:

- Comply with Namibia’s Environmental Assessment Policy, Environmental Management Act (No. 7 of 2007) with its 2012 EIA Regulations, other national legislations governing the project activities and the International Finance Corporation (IFC) Standards.
- Consult stakeholders, all interested and affected parties (I&APs) such as local communities, directly affected local authorities to ensure that their inputs are considered.
- Record all comments of I&APs and present such comments, as well as responses provided by communities, in the Comments and Responses Report, which will be included in the ESIA report.
- Set up a grievance redressal system.
- Identify and review the institutional, policy and regulatory framework applicable to the project. This will include national, regional and international policies, legislations and IFC requirements relevant to the project. This will cover environmental, social, climate change, health and safety and other aspects to which the project will have to comply with.
- Identify both negative and positive environmental and social impacts (land use requirements and ownership for the planned development) of the proposed development and assess alternatives (location, technological suitability and no-go option).
- Assess the significance of issues and concerns raised
- Develop a clear, concise and practical Environmental and Social Management Plan (ESMP) addressing the following key areas:
 - Waste Management Plan
 - Grievance Redress Mechanism
 - Stakeholder Engagement
 - Pollution Prevention and control
 - Ecosystems and Biodiversity management
- Develop Environmental Control and Monitoring procedures to ensure that the developed ESMP is implemented by the contractors during construction and Blue Ridge Aquaculture Africa during the operational and maintenance phase. The monitoring plan will designate roles and responsibilities, monitoring frequency and indicators for ESMP implementation and compliance enforcement.

2 PROJECT DESCRIPTION

The project activities will be implemented in three phases, namely, the planning and design, construction and operations and maintenance phases. These phases and the required resources and services are presented under the following subsections.

2.1 Planning and Design

This is the phase during which all design parameters required for the project implementation are drafted and finalized in preparation for the construction phase. It is also during this phase that cost analysis of the different aspects project (including the ESIA study) are done. These aspects include but not limited to technical, administration and finances as well as finalization of land use agreements (ownership or leasehold) with custodians.

The construction contractor will also be appointed towards the end of this phase to commence with the construction works once all aspects are considered and finalized.

The site layout or proposed process flow of the project is shown in Figure 2 below.

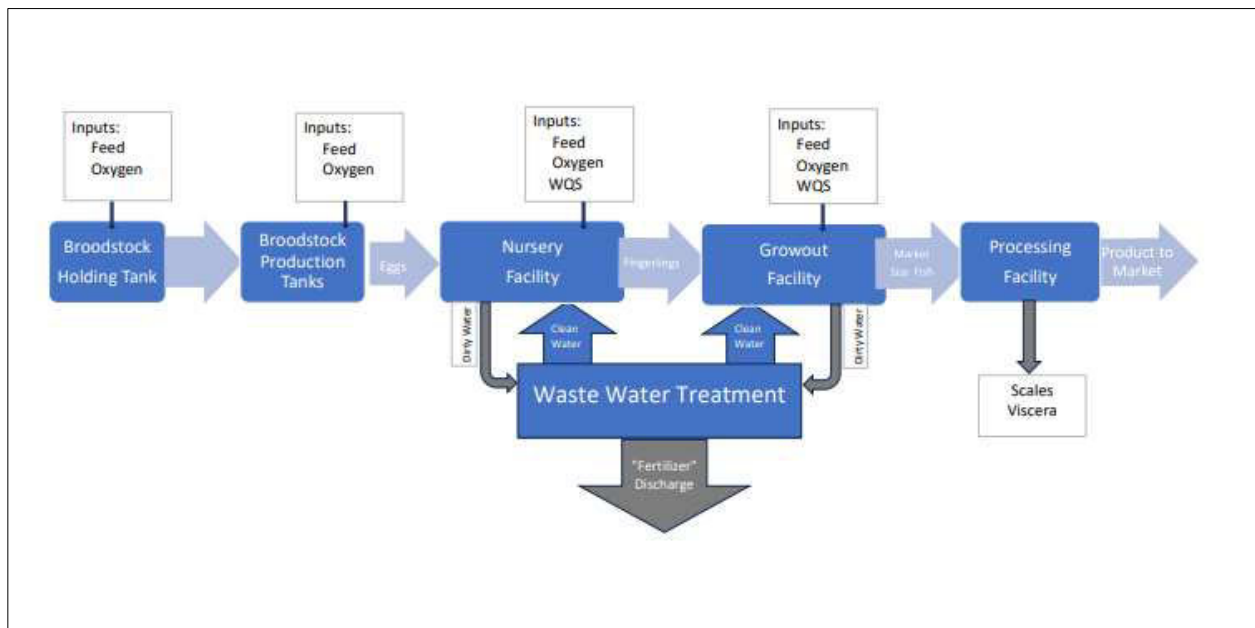


Figure 2: The process flow for the aquaculture facility near Henties Bay (source: Blue Ridge Aquaculture Africa (Pty) Ltd, 2024)

2.2 Site Preparation and Construction Phase

Once the ECC is issued and obtained from MEFT, the Proponent will prepare the site for construction and the actual commencement of construction works onsite. The construction activities will include earthworks; excavation, concrete civil works as well as structure and infrastructure erection and installation, respectively using manual labour as far as possible. A contractor will be appointed to carry out the site construction.

The appointed contractor will have and make arrangements for the logistics of their own workforce (including accommodation) but not to be accommodated onsite. It is anticipated that the construction works force will be accommodated in Henties Bay and commute to site. Blue Ridge Aquaculture Africa and their appointed contractor will be required to adhere to the health, safety and environment requirements for construction and operation (as well as maintenance) to be presented in the Draft ESMP for the project.

The construction works is anticipated to take between 3 to 6 months and will be limited to normal working hours, i.e., 08h00 and 17h00 (from 08am to 5pm).

For security purposes, the site will be fenced off to restrict access to authorized personnel only, prevent vandalism and theft as well as wildlife invasion onsite since the site near the boundaries of the Dorob National Park.

2.3 Operations and Maintenance Phase

This is the phase during which the aquaculture facility and its associated infrastructures will be operational and maintenance conducted by the Blue Ridge Aquaculture Africa maintenance team, as and when necessary.

The proposed project (aquacultural) activities and processes as provided by Blue Ridge (2024) are as follows:

2.3.1 Broodstock

The project operational activities will commence with the selection of its broodstock and harvesting of the eggs produced via the breeding process.

Blue Ridge began its genetics / broodstock program in 1997 and the program is currently in its 20th generation. Their unique, non-GMO (non-genetically modified organism) strain of hybrid tilapia allows the Blue Ridge to achieve performance results well above industry standards. The Proponent Blue Ridge uses traditional husbandry methods with modern genetic modelling systems. Figure 3 below displays typical broodstock species used in the Blue Ridge aquaculture Africa farms.



Figure 3: The Blue Ridge broodstock (source: Blue Ridge Aquaculture Africa (Pty) Ltd, 2024)

2.3.2 Hatchery

In March 2021, the Blue Ridge opened its new hatchery and nursery with advanced RAS technology. Blue Ridge employees collect eggs from its broodstock every 7 days and transfer those eggs to hatching jars (Figure 4) where they take a day or two to hatch. The hatched fish are then transported to a larger tub before growing large enough to enter the nursery.



Figure 4: The Blue Ridge hatchery (source: Blue Ridge Aquaculture Africa (Pty) Ltd, 2024)

As the fish mature, they progress through several tanks within the nursery facility and subsequently the grow-out tanks in the production facility.

2.3.3 Nursery

The nursery ensures the Company has an abundant amount of high-quality fingerlings to stock the grow-out tanks. Other RAS companies buy their eggs or fingerlings, and face the risk of disease or sub-adequate fingerlings.

The new facility allows for grading fish according to size / maturity without manual sorting processes. State-of-the-art water filtration and water re-use technologies have been implemented in the nursery to promote more sustainable, efficient operations. The typical utilized nursery for aquaculture is shown in Figure 5 below.



Figure 5: The Blue Ridge nursery (source: Blue Ridge Aquaculture Africa (Pty) Ltd, 2024)

2.3.4 Grow-out Tanks

Blue Ridge currently has 42 rectangular grow-out tanks in its Martinsville (Virginia) facility that produce 5 million pounds of tilapia per year.

The Proponent has several automated processes that promote the growth of the fish over the 23 weeks spent in the facility. Fish are harvested directly from the grow-out tanks (Figure 6) via automated sorting machines to ensure that the fish are large enough for sale.



Figure 6: The grow-out tanks (source: Blue Ridge Aquaculture Africa (Pty) Ltd, 2024)

2.3.5 Feed Mill and Distribution

The two crucial parts of the Blue Ridge operations are its integrated feed mill, which ensures a high-quality supply of feed, and distribution platform, which delivers the live fish to major metropolitan markets. However, from initial engagements between the Proponent and Namibia's Ministry of Fisheries and Marine Resources (MFMR), the delivery of live fish is not allowed for the project (at least for now and could maybe re-considered in future).

Blue Ridge opened its own feed mill in 2017 to supply the Company's internal feed demand (current and future) while also ensuring food safety and feed quality. The feed mill incorporates innovations in the areas of facility design, system integration, product traceability, and local ingredient supply.

The facility allows the Company to develop diets that best meet the nutritional requirements of their fish while also having the ability to test and develop new feeds.



Figure 7: Blue Ridge Feed Mill (source: Blue Ridge Aquaculture Africa (Pty) Ltd, 2024)

In terms of distribution in the USA, there is a wholly-owned subsidiary of Blue Ridge Aquaculture (Rolling River Live Haul), the transportation company dedicated to the distribution of Blue Ridge’s product in Virginia.



Figure 8: The distribution of Tilapia (source: Blue Ridge Aquaculture Africa (Pty) Ltd, 2024)

This allows for Blue Ridge to deliver an uninterrupted supply of live tilapia daily to live fish distributors in major metropolitan markets on the East Coast of the U.S. and Canada. Rolling River Live Haul makes it possible for Blue Ridge to have total control of its supply chain and biosecurity of its tilapia in the USA.

It is therefore, anticipated that the Proponent will establish the same supply chain for its products in Namibia or establish partnerships with local supply chain businesses to promote economic growth.

2.4 Required Resources and Services

The following services and infrastructure as provided below will be required for the project activities:

- Human resources: During the construction and operation of the Project, about one hundred and forty-six (146) people will be employed, i.e., fifty (50) during construction and ninety-six (96) during the operational and maintenance phase (Phase 1) and about two-hundred (200) people expected to be employed during Phase 2.

Construction works Accommodation: During the construction of the proposed project, workers will be accommodated in Henties Bay upon arranging with the existing accommodation facilities or setting a camp upon obtaining consent from the Henties Bay Town Council.

- Administration and Control buildings: there will be site offices for the operations and maintenance workforce.
- Water supply: Water for construction will be supplied by a desalination plant to be and as back up, the Proponent will have a water supply connection from Henties Bay Town (upon arrangements with the Municipal Council). Where the Municipality cannot supply, the Proponent will approach NamWater to supply the backup line directly to the site from construction throughout to the operational phase.

About 150,000 litres of water per month will be required for the construction.

- Water supply for operations: approximately 400,000 litres of water will be used per day. This includes water for drinking, ablution facilities and other general uses onsite.
- Accessibility (roads): The site is easily accessible from the C34 (Swakopmund-Henties Bay-Uis) road. Therefore, the project vehicles will access the site from the C34 turn off. However, the Proponent will need to create an access road from the C34 to site. A permit for the access from the public road (C34) will be required from the Roads Authority of Namibia (to be obtained prior to project implementation).
- Power supply: during construction, power will be supplied by generators, whereas during the operational phase, the site will be connected to the nearest power grid by the Erongo Regional Electricity Distributor (ErongoRED). An application to connect the site will be made by the Proponent to reach an agreement with the nearest ErongoRED offices in Swakopmund and or Head Office in Walvis Bay Region.
- Fuel Supply (machinery and equipment): it is anticipated that there will fuel use onsite during construction works to refuel project machinery and vehicles.
- Waste management: the different waste will be handled as follows:
 - Sewage: Portable toilets (minimum 2) will be provided onsite during construction and emptied according to manufacturers' instructions. For the operational phase, there will be flushing toilets to be used by the project staff and visitors.
 - General and domestic waste: Solid waste containers will be made available onsite for different waste storage during construction and operational phases. The waste will be disposed of at the nearest approved solid waste management facility in the Erongo Region (Henties Bay or Swakopmund, depending on the capability and agreements with the authorities).
 - Hazardous waste: All vehicles, machinery and fuel consuming equipment onsite will be provided with drip trays to capture potential fuel spills and waste oils.

- The waste fuel/oils used during the construction phase will be carefully stored in standardized containers for disposal at the nearest approved hazardous waste management facility in the country (with the approved sites of that nature being in Walvis Bay and Windhoek only).
- Health and Safety: Adequate and appropriate Personal Protective Equipment (PPE) will be provided to all construction personnel while on and working onsite. At minimum, two fully-equipped first aid kits will be readily available onsite and two to three personnel trained on administering first aid.
- Potential Accidental Fire Outbreaks: A minimum of two well-serviced fire extinguishers will be readily available onsite during construction and each building structure will be equipped with a fire extinguisher for the operational phase.

3 THE PUBLIC PARTICIPATION PROCESS AND CONSULTATION

The Public Participation Process (PPP) is an integral part of the Environmental and Social Impact Assessment process by providing a platform for all Interested and Affected Parties (I&APs) to obtain information about the proposed project, to review project documentation, to provide input and voice any concerns regarding the project.

A series of public meetings will be conducted and these meetings will avail an opportunity to comment, ask questions and raise any concerns regarding the project implementation. All comments will be recorded and considered in the Scoping Report Environmental Management Plan that will be submitted to the Ministry of Environment, Forestry and Tourism (MEFT) for review. In addition, conditions for environmental compliance monitoring will also be derived from the public meeting and stakeholders' recommendations.

3.1 Public Participation Modes: Consultation Meetings

This Public Consultation process forms an important component of the Environmental Assessment process. It is defined in the EIA Regulations (2012), as a "process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters". As a Stakeholder or I&AP, you can participate through the following:

- Providing comments and concerns and or suggestions in response to the newspaper adverts, public printed notices and in the public consultation meetings
- Attending scheduled public consultation meetings as presented in
- Table 1.

Table 1: The list of consultation meetings for the Aquaculture project near Henties Bay

Date and Time	Activity	Venue/Place
Thursday, 04 April 2024: 09h30	Stakeholder Consultative Meeting	Atlantic Villa Guesthouse Conference Room, Plover Street in Swakopmund
Thursday, 04 April 2024: 14h00	Public Consultative Meeting	Roman Catholic Church Hall in Henties Bay

4 POTENTIAL ENVIRONMENTAL ASPECTS AND SOCIAL IMPACTS

The potential positive (benefits) and negative (adverse) impacts associated with the proposed development and its associated activities are presented below.

4.1 Positive

- Employment creation to both skilled, semi-skilled and unskilled (casual labour)
- Environmental preservation through the use of less freshwater, land resources and fewer greenhouse gas emissions required to produce good through aquaculture compared to traditional agriculture
- A domestic supply of healthy, sustainable protein. ¹Aquaculture has the potential to significantly address nutritional challenges, especially in developing countries with persistent micronutrient deficiencies, considerable nutritional reliance on aquatic foods (including wild capture and aquaculture), declining marine catches due to overfishing, climate change, and reduced local nutrient supply due to rising exports.
- Blue Ridge beneficial impact to the environment through the:
 - 91% reduction of food miles relative to imported, for instance, Tilapia
 - 95% water reuse facility
 - 365 days of indoor growing (eliminating weather and seasonal constraints)
 - 20 times reduction of land area usage relative to traditional aquaculture
- Contribution to the national economic development through payment of taxes (revenues).

4.2 Negative impacts

The preliminary adverse or negative impacts identified for the proposed project are as follows (pending consultation meetings and site assessment)

- Physical soil disturbance resulting in compaction and erosion as well as pollution during construction,
- Impacts on local fauna and flora owing to project implementation
- Visual impact (aesthetic value): contrasting surroundings due to erection of project structures and installation of infrastructures

¹ Shepon, A., Gephart, J. A., Golden, C. D., Henriksson, P. J. G., Jones, R. C., Koehn, J. Z & Eshel, G. (2021). Exploring sustainable aquaculture development using a nutrition-sensitive approach. *Global Environmental Change: Science Direct*. Available online <https://www.sciencedirect.com/science/article/abs/pii/S0959378021000649#preview-section-abstract>

- Impacts on surface and groundwater resources (quality owing to pollution from accidental spillages of fuels and oils during construction) as well as potential pollution from mishandling and mismanagement of fish medication substances during operations.
- Air quality impact owing to dust generation and emissions from vehicles and machinery around the site
- Waste generation (littering)
- Potential social conflicts owing to land use change
- Cultural, heritage and archaeological impacts during site preparation for construction
- Vehicular traffic safety during the construction phase
- Occupational and community health and safety risks/hazards during the construction and operational phases
- Cumulative impacts of the project operation (Environmental Compliance Monitoring and reporting to be done).

5 Environmental and Social Impact Assessment Reporting

5.1 Environmental and Social Scoping/Impact Assessment Report

After the baseline assessment to identify the potential impacts relevant to the assessment/study has been completed, an Environmental Scoping Report (ESR) will be compiled. The extent or depth of assessment will be (based on legislative requirements, international conventions, expert knowledge and public involvement), to identify alternative solutions that avoid, mitigate or compensate adverse impacts on biodiversity (including the option of not proceeding with the development).

The ESR will include the findings of alternative designs or project route(s) which avoid the impacts, as well as safeguards and incorporating grievance redressal mechanisms in the design of the project, or providing compensation for adverse impacts.

The ESR will also detail proposed mitigation options for all identified impacts. The final ESR with inputs from Blue Ridge Aquaculture will be shared with public, I&APs and stakeholders for review and commenting.

The finalised ESR will determine the need for further specialist assessments, and where there is no need for further assessments (specialists) a detailed practical and concise ESMP will be developed.

5.2 Environmental and Social Management Plan

Environmental and Social Management Plan (ESMP) is a tool utilised to mitigate and/ or enhance the potential impacts of the proposed aquaculture project. Therefore, a project specific and practical Environmental and Social Management Plan (ESMP) will be developed by Environmental Assessment Practitioner after the consultation and public participation process. The objective of the ESMP will be to ensure compliance with the EMA No. 7 of 2007, Equator Principles, the IFC Performance Standards on Environmental and Social Sustainability.

To ensure that the ESMP is effectively implemented and full compliance of the ESMP, an Environmental Control and Monitoring (ECM) will also be developed

The Proponent will ensure that the stakeholder/public consultation, grievance redressal and community-Blue Ridge Aquaculture liaison, periodic compliance monitoring, auditing and reporting will be conducted by the Environmental Consultant, together with the appointed Environmental Control Officer (ECO) for the contractor responsible for the construction and operation of the proposed project.

The final ESR/ESIA Report, ESMP and specialist assessment reports (if any) will be submitted to the Environmental Commissioner at the Ministry of Environment, Forestry & Tourism (MEFT). The process of the ESIA process (or simply EIA process in Namibia) is presented in Figure 9.

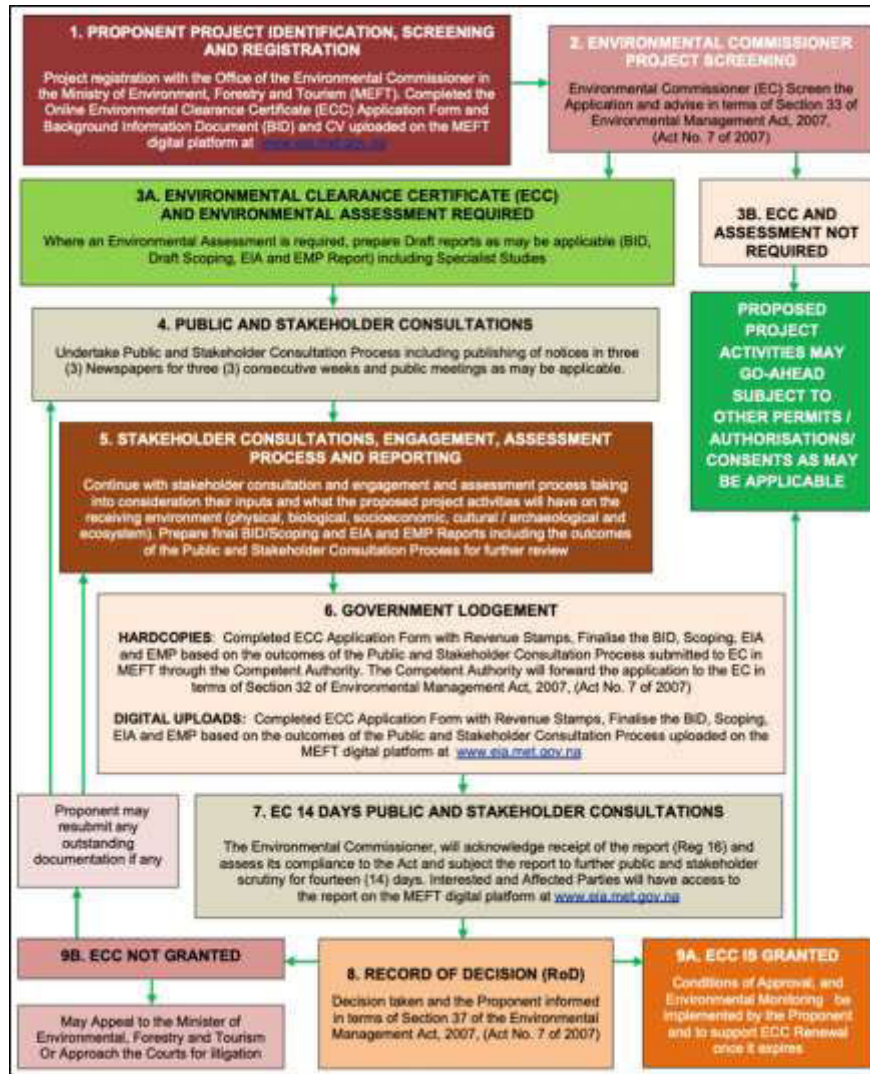


Figure 9: The EIA Process in Namibia to be followed for the project ESIA Study

5.3 Mode of Communication for Participation and Submitting Comments

Should you wish to send us your inputs, concerns and/or comments to be considered in the ESIA Report, please send them to EnviroPlan Consultants in writing **before end of the day on Tuesday, 30 April 2024** using the contact details below:

Contact Person: Mr. T. E. Kasinganeti and or Ms. F. Shagama

Email: info@enviroplanconsult.com

Mobile No.: +264 81 363 4904 / 264 81 749 9223 (via WhatsApp or SMS for recording purposes)



REGISTRATION AND COMMENTS FORM

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT: THE PROPOSED AQUACULTURE ACTIVITIES NEAR HENTIES BAY TOWN IN THE ERONGO REGION, NAMIBIA

Kindly complete this Form in Detail and return to:

Email: info@enviroplanconsult.com

PERSONAL DETAILS

Name & Surname.....

Postal Address:Email:

Town or Village Name: Mobile No:

Does the proposed project affect you in any way?

YES / NO

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Do you have any points of concern or support regarding the proposed projects? If "yes", please briefly list these in point format:

YES / NO

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Do you wish this project to proceed?

YES / NO

SIGNATURE:
