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SOLOMON ISLANDS AGRICULTURE AND RURAL TRANSFORMATION PROJECT
(P173043)

SITE-SPECIFIC

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

For

The Refurbishment of the Adaliua Pig Breeding Facility, Central Kwara'ae, Malaita Province

Prepared by: SIART PMU

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1. INTRODUCTION

1.1. Background

1. The Solomon Islands Agriculture and Rural Transformation (SIART) Project, implemented by the Ministry of Agriculture and Livestock (MAL) with financial support from the World Bank, focuses on revitalizing and modernizing the country's agricultural sector. This Site-Specific Environmental and Social Management Plan (ESMP) has been prepared to manage potential environmental and social risks associated with the planned renovation of the Adaliua Pig Breeding Facility, located in Malaita Province. The pig breeding facility is currently operational but is in a dilapidated state, having suffered significant deterioration over recent years. While still functional, it currently holds only around 16 pigs, which is slightly below its intended capacity of 20 breeding heads, and urgently requires refurbishment to restore its infrastructure and support expanded breeding operations effectively.

2. This project supports MAL's goal to strengthen its pig breeding improvement program by enhancing the infrastructure necessary for animal breeding, upgrading production capacities, and increasing the resilience of agricultural practices in the Solomon Islands.

3. The proposed renovation and upgrades of the Adaliua Pig Breeding Facility align with the Solomon Islands Agriculture Sector Growth and Investment Plan (2021 – 2030), which aims to foster agricultural productivity, ensure food and nutritional security, and promote economic growth and prosperity for all Solomon Islanders. The SIART Project also seeks to establish sustainable pig and poultry slaughter facilities, incentivize private sector involvement, and promote best practices in hygiene, thereby addressing critical aspects of animal protein production and boosting domestic sales of pork and poultry.

4. In alignment with international environmental and social standards, particularly those of the World Bank, this site specific ESMP outlines measures designed to mitigate environmental and social impacts that may result from construction and operational activities at the Adaliua facility. The ESMP further ensures that the sub-project activities comply with relevant national regulations and safeguard policies, prioritizing sustainable development and community well-being. Through this ESMP, MAL reaffirms its commitment to responsible agricultural development and adherence to environmental and social best practices.

1.2. Environmental and Social Management Plan Objectives and Scope

1.2.1. Objective

5. The objective of the ESMP is to identify and assess the environmental and social (E&S) risks associated with the sub-project activities and to outline effective mitigation measures to minimize potential impacts. Additionally, the ESMP provides a framework for implementing these measures and offers clear guidance for the preparation of Contractor Environmental and Social Management Plans (C-ESMPs) to ensure compliance with safeguard requirements.

1.2.2. Scope

6. The scope of work includes the refurbishment of existing pig breeding infrastructure, establishment of pig and poultry slaughter facilities, and implementation of best-practice hygiene and biosecurity measures. Additionally, the sub-project will create supportive environments to increase multiplier farms, provide incentives for private sector involvement, and promote adherence to hygiene standards. These improvements align with the Solomon Islands Agriculture Sector Growth and Investment Plan (2021-2030), focusing on modernizing and commercializing the agricultural sector to benefit local communities and enhance the country's food and nutrition security.

1.3. Integration of the SS-ESMP

7. The SIART Project Management Unit (PMU) is responsible for ensuring that this Site-Specific Environmental and Social Management Plan (SS-ESMP) is fully embedded within all phases of the subproject—design, construction, and operation. To achieve this, the SS-ESMP will be included as part of the bid documentation for all physical works associated with this infrastructure investment.

8. The SIART PMU will also ensure that all procurement documents and contractual specifications undergo rigorous review against the SS-ESMP and the relevant World Bank standard procurement documents. This process will guarantee that all necessary environmental and social safeguard measures are incorporated from the bid stage and consistently applied throughout the subproject lifecycle.

9. Through these integration measures, the SS-ESMP will be clearly understood and prioritized by all responsible parties, ensuring effective implementation and the successful management of environmental and social risks at each sub-project stage.

1.4. Development, Review and Clearance of the CESMP

10. The implementation of this subproject will include the preparation of the Contractor's Environmental and Social Management Plan (CESMP) by the Contractor using this document as guidance. There is also a requirement for a dedicated Environment, Social, Health & Safety officer to be appointed by the Contractor as soon as possible after contract award so that the officer can be tasked with preparation of the CESMP and subsequent implementation.

1.5. Disclosure of the ESMP

11. To ensure transparency and stakeholder engagement, the Site-Specific ESMP for the Adaliua Pig Breeding Facility renovation will be disclosed to relevant stakeholders and the public. This disclosure process aims to inform affected communities, local authorities, and other stakeholders about the environmental and social management measures planned for the subproject.

12. The SIART Project Management Unit (PMU) will facilitate the following steps for effective disclosure:

1. **Public Access**: The site specific ESMP document will be made publicly available on the Ministry of Agriculture and Livestock (MAL) website and the World Bank's project portal, ensuring accessibility to all interested parties.
2. **Local Dissemination**: Hard copies of the site specific ESMP will be distributed to the MAL's offices in Honiara, Malaita Province, and local government offices near the subproject site. These copies will also be accessible at community centres and other public locations to ensure that community members can review the document.
3. **Community Consultation Meetings**: The PMU will organize consultation meetings with local stakeholders, including community leaders, landowners, and representatives from relevant government agencies. During these meetings, the content of the site specific ESMP will be presented, and feedback from the community will be encouraged to ensure concerns are addressed before subproject implementation.
4. **Feedback Mechanism**: A dedicated channel is being established to collect feedback and address questions from stakeholders and community members regarding the site specific ESMP. This has included contact information for the PMU officer responsible for handling inquiries and grievances. This feedback mechanism forms part of the SIART Grievance Redress Mechanism (GRM).

13. These disclosure activities will be conducted before subproject implementation to allow time for community feedback and to incorporate stakeholder input into subproject planning and execution. By ensuring open access to the site specific ESMP and facilitating inclusive consultations, the SIART PMU aims to promote stakeholder engagement, enhance transparency, and strengthen the subproject's alignment with community and environmental and social standards.

2. DESCRIPTION OF THE SUB-PROJECT

2.1. Main Components of the Subproject and Current Status

14. This section provides a comprehensive status of the Adaliua Pig Breeding Facility components based on the site assessment that was carried out on 9 January 2024. Grounded on this assessment and in consultation with the project engineer, action items were deduced in-line with the technical scope of works for this refurbishment work.

2.1.1. Components and status

1. **Pig Pens (Housing Units)**

    - **Description:** There are two structures or housing units designed to house pigs, including stalls, walls, and roofing that provide shelter and space for feeding, resting, and movement. One is used for farrowing, where sows give birth and nurse their piglets, and the other is used for grower pigs, which are reared until they reach a marketable or appropriate age and weight.

    - **Status:** Functional but showing signs of wear. Some repairs and routine maintenance are required to improve the overall condition and ensure long-term use.

2. **Waste Management System (Septic Tank)**

    - **Description:** A septic tank that treats wastewater and solid waste generated by the facility.

    - **Status:** Fully operational, routinely maintained, and de-sludged. It is in good condition, ensuring proper waste treatment and minimizing environmental risks.

3. **Composting Facility (Organic Waste Treatment)**

    - **Description:** Previously, a composting house treated organic solid waste, such as pig manure, to produce organic fertilizer for the crop farm.

    - **Status:** The composting house was recently dismantled and repurposed as a storage shed at the crop farm. Plans are in place for its reconstruction, ensuring the organic waste treatment system can be reinstated to support sustainable fertilizer production.

    - The construction of a new composting house at the Adaliua Pig Breeding Facility will improve waste management in the following ways:
        - **Preventing Soil Contamination** – Proper composting will ensure that organic waste is processed in a controlled manner, reducing the risk of nutrient leaching into the soil.
        - **Enhancing On-Site Waste Utilization** – The facility will allow for efficient recycling of pig manure into organic fertilizer, reducing waste accumulation and the need for off-site disposal.
        - **Minimizing Odor and Pest Issues** – A structured composting system will help control odours and prevent attraction of flies and rodents, improving hygiene and working conditions.

- **Supporting Sustainable Agriculture** – The compost produced can be used to enhance soil fertility in nearby crop farms, promoting sustainable and cost-effective farming practices.
- **Ensuring Compliance with Best Practices** – The composting facility will align with environmental and agricultural guidelines by managing waste in an eco-friendly manner, reducing the facility's overall environmental footprint.

Overall, the new composting house will contribute to a cleaner, more sustainable, and productive pig breeding facility.

4. **Water Supply System**
    - **Description:**
        - Borehole water source, with a pump and storage tank of 9 cubic meters (9,000 L) for groundwater supply.
        - Rainwater harvesting system with two 5000 L tanks that collect water from pig pen rooftops.
    - **Status:** Both systems are in good condition and provide reliable water sources.
        - Note: Monitoring of water quality for the borehole is not necessary as it is used only for washing and cleaning, not for drinking.
5. **Drainage System**
    - **Description:** The drainage system consists of channels designed to collect and manage wastewater from the pig pens, runoff, and excess rainwater, ensuring proper flow and maintaining cleanliness within the facility.
    - **Status:** The system is in good condition, with routine desilting and clearing of dirt and obstructions to maintain effective water flow and waste management. Planned works will focus solely on maintaining and enhancing the facility's drainage system to ensure optimal function.
    - **Risk Assessment:** Based on anecdotal evidence, there have been no recorded instances of flooding impacting the facility site. The distance from the Fiu River (100 meters) and the site's elevation significantly reduce any potential flood risk, which is considered low.
6. **Feed Storage and Site Office Building**
    - **Description:** A combined storage building and site office used for storing feed, tools, and administrative activities.
    - **Status:** In good condition but requires expansion to separate storage functions from office activities, as the current space is insufficient for dual purposes.
7. **Fencing and Perimeter Infrastructure**

- **Description:** Structures to secure the facility, keep pigs confined, and prevent unauthorized access.
- **Status:** Functional but likely requires minor repairs and maintenance to ensure the facility remains secure.

8. **Access Roads and Pathways**
   - **Description:**
     - Fiu Road: Provides road access to the facility and connects to the main road network.
     - Internal Pathway: Facilitate movement within the facility for feeding, cleaning, and general operations.
   - **Status:** Both Fiu Road and the internal pathway are in good condition.
     - Fiu Road is well maintained, ensuring reliable access to the site.
     - The facility pathway is also well maintained, clear, and functional for day-to-day operations.

2.1.2. Proposed Activities under the Project

15. The Solomon Islands Agriculture and Rural Transformation (SIART) Project will support renovation and construction works at the Adaliua Pig Breeding Facility to improve its functionality, sustainability, and efficiency. The proposed activities under this project are outlined below:

1. Renovation of Existing Pig Housing Units

- The two existing pig pens will be renovated to ensure they meet proper standards for housing pigs, including structural repairs to stalls, walls, and roofing.
- Maintenance works will enhance durability and improve space for feeding, resting, and movement.
- Special attention will be given to the farrowing pen to ensure safe and hygienic conditions for nursing sows and piglets.

2. Expansion of Feed Storage and Site Office Building

- The current storage and office building will be expanded to create distinct areas for feed storage and administrative activities.
- The expansion will ensure better organization of feed supplies, tools, and record-keeping operations.

3. Construction of a New Composting House

- A new composting facility will be built to reinstate organic waste treatment and sustainable fertilizer production.

- The composting house will facilitate proper composting of pig manure to:
    - Prevent soil contamination by controlling nutrient leaching.
    - Enhance waste utilization through organic fertilizer production.
    - Minimize odour and pest issues, improving overall hygiene.
    - Support sustainable agricultural practices by providing organic fertilizer for nearby farms.
    - Ensure compliance with environmental best practices for waste management.

4. Construction of a New Guard House

- A dedicated guard house will be constructed to enhance security and monitoring at the facility.
- This will ensure controlled access and help maintain proper oversight of daily operations.

5. Drainage System Improvement

- The main drainage system from the pig pens to the septic tank will be cleaned and maintained to ensure unimpeded wastewater flow.
- Routine desilting and clearing of obstructions will be carried out to prevent water stagnation and maintain cleanliness.
- Given the site's elevation and distance from the Fiu River (100 meters), the flood risk remains low, but proper drainage maintenance will further mitigate any potential issues.

6. Septic Tank Maintenance

- The existing septic tank, which is fully operational, will undergo desludging to maintain its efficiency in treating wastewater and solid waste.
- Routine maintenance will ensure continued compliance with environmental and sanitation standards.

7. Minor Repairs and Maintenance of Fencing and Perimeter Infrastructure

- Security fencing will undergo minor repairs and maintenance to enhance the safety of the facility and prevent unauthorized access.
- This will help maintain a controlled and secure environment for pig breeding operations.

8. General Site Improvements

- Routine maintenance of the internal facility pathways will ensure safe and efficient movement for feeding, cleaning, and operational activities.
- Fiu Road, which provides external access to the facility, will continue to be maintained for reliable transportation.

More details of the proposed renovation and construction works can be found in the Scope of Works in sections 2.5.1 and 2.5.2.

2.2. The Sub-Project Screening

2.2.1. Environmental and Social Risk Classification (ESRC)

16. The proposed refurbishment and improvement subproject for the Adaliua Pig Breeding Farm is classified under a 'Moderate' Environmental and Social Risk Classification (ESRC). This classification reflects an overall moderate level of both environmental and social risks, with potential impacts that are site-specific, primarily temporary, and predominantly reversible. Mitigation measures can be readily designed and implemented to manage these risks effectively. In addition, the PMU ES team is fully resourced and qualified to provide oversight on the ES requirement of the project.

2.2.2. Key Characteristics of the Site

17. A comprehensive site assessment and impact screening (**Appendix 1**) were conducted on January 9, 2024. Key findings indicate that the proposed site for the pig breeding facility lacks sensitive environmental or cultural features that would require additional protective measures. Specifically, the site does not include any of the following:

- **Cultural Heritage Sites**: No areas of cultural or historical significance were identified within or near the subproject site.
- **Protected Areas and Buffer Zones**: The subproject site does not lie within or adjacent to any designated protected areas or buffer zones.
- **Wetland, Mangrove, or Estuarine Ecosystems**: The site is devoid of wetland or mangrove areas and is located at a sufficient distance from the Fiu River to avoid estuarine influence.
- **Special Biodiversity Conservation Areas**: There are no special conservation areas, habitats for endangered species, or biodiversity protection zones within the subproject vicinity. The Gwaabuki Conservation Area is located in North Malaita, approximately 50 km away. The Kira Forest Biodiversity Conservation Area, KFBCA, in East Are'Are is approximately 85 km away and Baru Conservation Alliance in East Kwaio is 60 km away.

2.2.3. Habitat Condition

18. The site is situated in a highly modified and degraded environment, largely due to prolonged human activity and agricultural use over several decades. As a result, native vegetation has been almost entirely replaced by invasive secondary vegetation and grasses, and no primary or pristine habitats remain.

2.2.4. Primary Environmental and Social Risks and Management Needs

19. The principal environmental and social risks anticipated during the construction/renovation phase include:

Environmental Risks:

Dust and Noise Generation from construction machinery and equipment. These impacts are expected to be:

- **Nature:** Primarily site-specific and temporary, with no long-term effects.
- **Severity:** Generally low and manageable with standard mitigation practices.
- **Mitigation Potential:** Dust and noise can be effectively controlled through well-established management measures, such as regular watering of exposed surfaces to minimize dust and

using noise-dampening techniques for machinery or scheduling noisy activities during daytime hours to minimize disturbance to nearby communities.

Social Risks:

Community Disturbance and Worker-Community Interaction due to construction activities and workforce presence. These risks include:

- **Nature:** Potential short-term disruptions to local livelihoods, movement, and daily activities, particularly for communities near the construction sites.
- **Severity:** Moderate, depending on the proximity of settlements and the scale of construction activities.
- **Mitigation Potential:** Risks can be minimized through proactive community engagement, clear communication of work schedules, establishment of grievance mechanisms, and enforcement of a Code of Conduct for workers to prevent social conflicts and ensure respectful interactions with local communities.

2.2.5. Likelihood of Additional Risks

20. Other potential environmental risks and social risks such as construction-related waste e.g., plastic packaging, metal scraps, or cement bags and temporary disruption to access and noise, although possible, are not anticipated to have significant impacts due to the degraded nature of the site and the temporary nature of construction activities within a controlled and secured site. These risks are expected to be low, with impacts confined to the immediate subproject site and readily mitigable through standard construction-phase environmental and social management practices.

2.3. Location

21. The Adaliua Pig Breeding Facility is situated approximately 5.6 kilometres north of Auki town in Malaita Province, Solomon Islands. The facility's precise geographic coordinates are Latitude 8°43'39.17"S and Longitude 160°42'9.69"E.

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24. Figure 1 shows the location of the facility with reference to Auki town, **Figure 3** displays the precise location of the facility on the island of Malaita and **Figure 3** indicates the location of Malaita island (country context) where the facility is being located.

25. Originally established by the Taiwanese Technical Mission (TTM), the facility was developed to enhance local pig breeding capabilities. However, it has experienced considerable deterioration since the TTM ceased operations in the Solomon Islands approximately six years ago. This subproject site now requires significant renovation to restore its function and support the Ministry of Agriculture and Livestock's pig breeding improvement objectives under the SIART Project. The facility's rural location is accessible by local roads from Auki, positioning it to serve

both local farmers and the surrounding community.

Figure 1: Location of the Adaliua Facility with reference to Auki Town

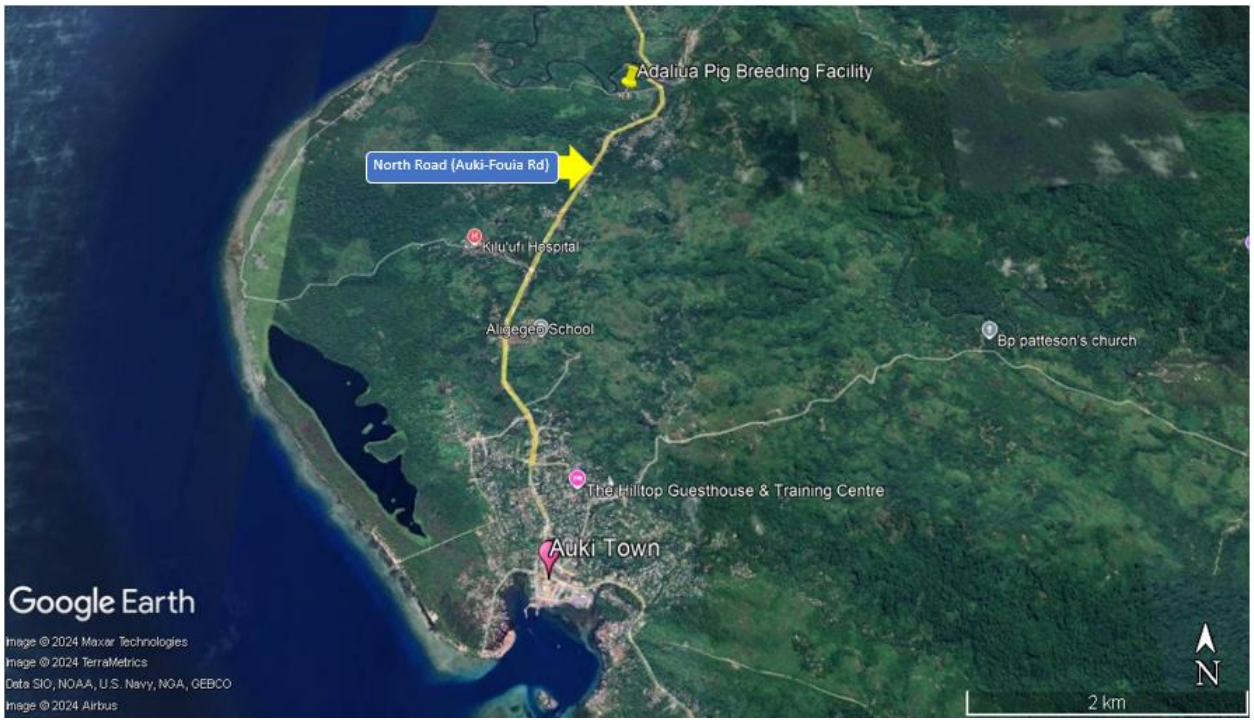

Figure 2: Imagery showing location of facility, north of Auki town, Malaita Province

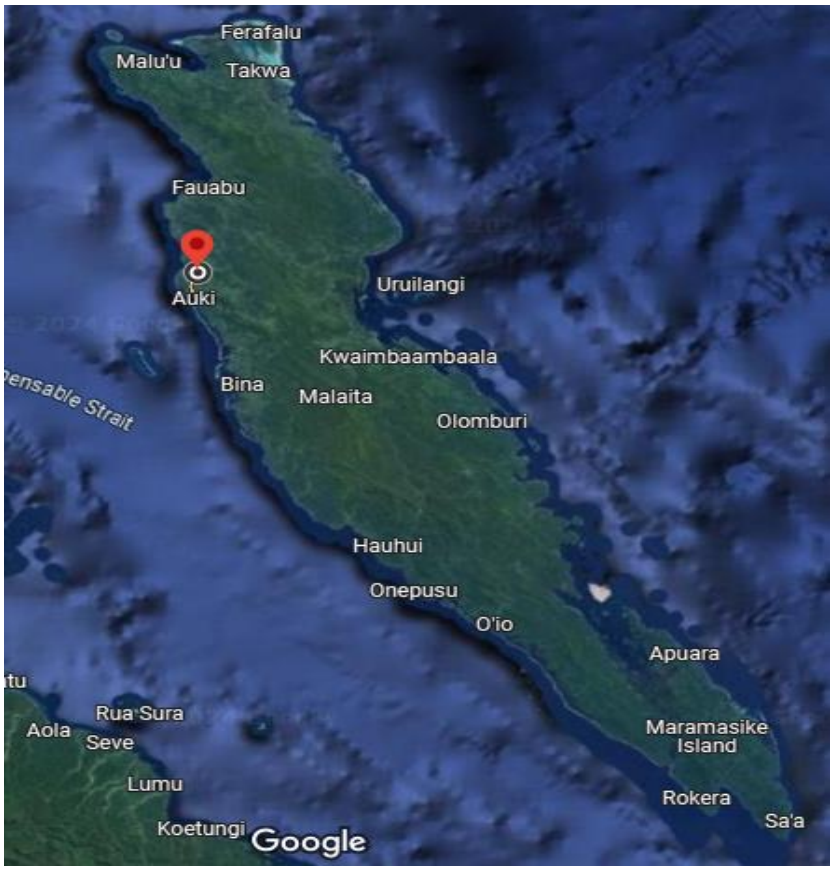

Figure 3: Subproject location on the island of Malaita, Solomon Islands

2.4. Site description

26. The Adaliua Pig Breeding Facility is situated on a flat expanse of land along the Fiu Plains in Central Kwara'ae,

Malaita Province, approximately 5.6 kilometers north of Auki town as highlighted in section 2.3 (and roughly 360 meters from the main north road (Auki-Fouia Road). The site lies in an area once characterized by lowland coastal forest, though it has been substantially modified for agricultural purposes mainly coconut plantation (

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29. Figure 4) since the 1960s to accommodate the island's increasing agricultural demands, particularly copra. As a result, no primary or pristine native vegetation remains on-site, and the habitat is now largely degraded and built up for agricultural activities (Error! Reference source not found.). The landscape primarily features maintained grasses used for site landscaping, with invasive species dominating nearby secondary vegetation.

Figure 4: Historical imagery of the subproject site before development (coconut plantation area).

30. The facility is currently operational and includes several key infrastructures: an office building, a pig breeding building designed to accommodate 20 breeding pigs, though it currently houses 16 and a farrowing and weaning building that can accommodate up to 8 sows at a time. Supporting infrastructure also includes a borehole with water storage tank, a security guard house, and a well-designed drainage system that utilizes a septic tank for wastewater treatment. Organic solid waste is managed through composting; however, the composting building was recently demolished, and its materials repurposed to construct a storage shed at the nearby crop farm.

Figure 5: The general habitat of the sub-project site, being a built-environment

31. In terms of surrounding land use, the area designated as Adaliua farm includes crop farming areas, a taro

pack-house, and the pig breeding facility itself. Approximately 200 meters to the east is St. Mary Church, with a small residential area of about five households, and the Adaliua village lies about 300 meters away, comprising roughly 15 households **(Figure 6).** The Fiu River is situated about 100 meters away, buffered by thick bushland of secondary vegetation and gardens that provides some natural separation from the facility. The water supply for the pig breeding facility is sourced from rainwater, which is harvested and stored in two 5,000-liter tanks, as well as from a borehole **(Figure 7).** Water from the borehole is pumped by a borehole pump and stored in a concrete storage tank measuring 3 meters by 2 meters by 1.5 meters. Importantly, there are no known rare or endangered species within the sub-project site, and no additional land acquisition will be necessary for the facility's operation as the Ministry of Agriculture and Livestock (MAL) holds a valid 50-year lease, effective from 1st August, 2017 (**refer to Appendix 2**).

Figure 6: Imagery showing aerial view of the subproject area

Figure 7: Water Storage facility- A- 2 x 5000 L rota tanks that store rainwater; B- Concrete tank and borehole pump for storage and uptake of groundwater.

32. The Adaliua facility, shown in the aerial view above, is strategically located within an area suited for agricultural activities. Neighbouring this facility are two key structures: a storage building owned by the Ministry of Agriculture and Livestock (MAL) and a Taro pack-house. The Taro pack-house represents a collaborative initiative between the Solomon Islands Government (SIG) and private partners, serving as a processing and storage facility for taro produce, which supports local agricultural productivity.

33. Approximately 500 meters west of the Adaliua pig breeding facility lies the MAL crops farm. This farm, established by the Taiwanese Technical Mission (TTM) in the 1990s, has played a significant role in promoting agricultural development in the region. The area surrounding these facilities is primarily dedicated to agriculture, reflecting the government's commitment to strengthening the sector through both livestock and crop production initiatives.

2.5. Scope of Work for the Refurbishment of the Adaliua Pig Breeding Facility

2.5.1. General Conditions Applied to Works

34. The "General Conditions Applied to the Works" is essential because it establishes clear standards, procedures, and legal protections for both parties (the contractor and the client), minimizing risks, ensuring quality and safety, and promoting operational efficiency throughout the construction process. This structured framework (**Table 1**) reduces ambiguities and supports timely, compliant subproject completion.

Table 1: General Conditions Framework

Copy Right	: All documents remain the copy right of Ministry of Agriculture and Livestock
Allow for	: Temporary Works – profiling, Shuttering, lockable, storage shed on Site.
Demolition	: All demolishing work shall be performed in compliance to SI Building Code or Similar standards. All debris and demolished materials shall be properly disposed off by contractor at an approved site. Contractor to seek approval from Malaita Provincial Council and responsible authority prior to demolishing work.
Builder	: To inform the Relevant Malaita Provincial Authority and the Architect for Specific approvals before commencement/continuance
Subcontractor	: Subcontractor shall not be permitted without prior written consent of the PMU Project Manager
Notices	: Builder shall post notice of dangerous works and obtain all necessary licenses and permits for his building operations. Contractor to procure, purchase and supply materials for the subproject Notice Board and ensuring the dimensions are as per specified in the Activity Schedule.
Protect	: Open trenches, holes etc. Properly flagged and fenced to avoid injury. contractor to isolate all hazard and risk at subproject site and ensuring safety practices is observed at all times
Adjoining owners	: The surrounding neighbouring owners shall be informed of the construction works of noisy or dirty works, beware of demolishing of existing facility.
Site	: Shall only be used for the specific works outlined in the scope of work; that include demolishing and replace new of all defects at the office space, the pig farm houses and Guard hut.

Site Condition	: Keep site dry with open drains, clear away rubbish at the end of each day
Site Access	: Allow at all reasonable times for the architect/ Engineer and other relevant party
Holidays etc	: Allow for time lost to public holidays and normal rain.
Normal working hours	: Between: 8:00am and 5:00pm Monday to Friday, 700am and 1:00pm Saturday. There shall be NO work on Sunday.
All materials	: Shall be new and in perfect condition and left so in completion. Demolished materials shall not be re-used for the refurbishment works.
Acceptance	: Contractor shall reject materials delivered to site that are not in perfect condition
Materials on site	: Contractor shall protect from rain/direct sunlight, damage and use in order of delivery
Local Supply	: Contractor to obtain material such as timber from approved sources in Honiara, Solomon Islands
Standard	: The term 'Standard' shall mean of a type commonly available
Customs and duty	: Unless otherwise scheduled, all costs shall be duty paid in Solomon Islands
Tools	: Use of handy tools such as mitres, squares, levels and proper electrical tools are a condition of contract
Work	: Provide everything reasonably required to bring construction to full function
Subcontract	Unless otherwise with written approval of the Project Manager.
Dimensions	: Take all dimensions from actual work confirm with architect or Engineer at site if in doubt
Actual Work	: Unless otherwise scheduled and with the permission of the Architect/Engineer/Project Manager
Make good	: Means restore work to a standard equal to that immediately surrounding
Cart Away	: cart away salvaged materials and stock at an approved location or removed from site.
Clean Up	: Polish glass, mirrors, with non-abrasive cleaner, oil movable hardware, clean labels of all fittings, tag all key : Cart away builders' debris, temporary works, leave site clean and tidy
Hand-Over	: handover certificate shall be issued upon completion and handing over
Guarantees	: Pass on all guarantees for materials and fittings to Owner
Certifications	: Pass on certificate of occupation to Owner
As Built	: Provide as built drawings to Owner where work significantly varies from contract

Replace	: Replace damaged boundary markers (if any) to approval of the Survey Authority.
Restore	: Ensure restoring damaged roads, kerbing, footpath etc. damaged during course of construction if any.
Daywork	: contractor shall provide reasonable rates where work does not cover for in the contract.

2.5.2. General maintenance and Renovation work

35. The scope of work in **Table 2** below defines the specific tasks and deliverables required to complete the subproject. It outlines a clear understanding of what is expected to enabling efficient planning and execution by the contractor with supervision by the SIART PMU.

Table 2: Scope of works for refurbishment of the Adaliua Pig Breeding Farm Facility

Fencing, gate entrance, and clean up	: General clean up shall be around the perimeter fence including the entrance gate (Cleaning to include both inside and outside of fence) : Gravelling of Driveway and main entrance shall be of river gravel or suitable approved material with compaction finish. : A pedestrian footpath (100mm Thickness x 1200mm Wide x 10 shall be constructed from Main entry to connect with Existing Footpath. Footpath construction works shall be after the gravelling of main entrance area.
Waste management System	: Waste management system shall include both cleaning of the piggery drainage (Figure 8) and flushing pipe of the existing toilet that serves the guard hut. Ensure all accumulated sediments and debris are removed and cleaned thoroughly. : Existing toilet house to be replaced with new one.

Drinking Water Supply And Kitchen	: Drinking water shall be supplied from Rainwater tanks. Repairs shall be for all Guttering system including down pipes and connection pipes leading to all existing Tanks. : Procure and supply of new 10,000L Rotomold Tank including pipes to supply rainwater for living quarter. : A kitchen counter set shall be installed with single sink and tap with accessories connecting to drinking water supply from the new 10,000L Tank installed. (See drawings for details). : Kitchen works shall include all plumbing system, pipes and connectors for grey water.
Pig pen wash water	: Builder to procure Two Sump pumps, with 1x 32mm Dia Roll poly pipe, and Solar system (2x300 Watts Solar panel and 3KV Inverter system to power the Sump pumps). Builder to procure and supply ¾ Inch water pipe (polly pipe) and re-rigged the pipe network for wash water in to their original status. Ensure all wash water is channelled to their proper outlet.
Power Supply	: Power to be connected in 3-phase from main grid. : A GPO to be mounted at the feed mixing area. : Builder to procure and supply 1000kg capacity Feed mixer. : All lighting (bulbs and Tubes) to be replaced new.
Cross Walk Repairs	: Builder to repair and re-screeding of Cross walk (Footpath) connecting the two-piggery house.
Roofing	: Defects on the roof (On the NE side of the farrowing-weaning section) to be repaired. Builder to replace roofing iron which has defect of 25cm diameter hole. Procure and supply Roofing material to replace new the NE section with 3 x 16feet, 24G Corrugated Iron Roofing.
Farrowing and Weaning Unit	: Builder to Procure and Supply - 7 x Rear door latches for the farrowing crates - 10 x stainless steel drinking nipple sized for Weaner Pigs - 2 feed carts on Casters - 1 x Cart on Casters for transporting weaner pigs - 8 x Self-Feeders for Weaner pigs - 2 x Sow Feeder to be attached to the Pen's Side Bars
Tools	Builder to procure and Supply - 3xShovels - 3xfloor scrapers - 3x brooms - 10m Nylon Water Hoses x 3 Sets
Boar and Sow Breeding Unit	Builder to remove 7 single sow stalls and replace with one large sow pen (4mx8m Single Pen) - Procure and Supply of 3xDrinking bowls for Sow pens
Feed Area	General Clean-up; Builder to remove junked equipment stored in the feed area. Extension Roof (Over Hang) to be constructed over loading/Off-loading area.

	Builder to procure and Supply - 1 t/Day horizontal ribbon Mixer - 1x New 5kg Weighing Scale - 1 x 200kg mechanical floor scale - 2 x feed carts on casters to transport feed to sow and grower pig pens - Timber Materials to replace old Railings of the loading deck. Timber sizes to match the old ones (**Figure 10 and** **Figure** 11)
Living quarters	Builder to procure, supply and make new the following - 4x Windows with screened louvered windows (Size to match the existing). See drawing for details. - Construct kitchen counter with Tap and Sink with all plumbing works (pipes to match existing grey water pipes) - 1x Small Refrigerator to hold food and medicine - Set of Paravet kit for Livestock animal (Pigs) - Replace new of all lightings (bulbs and Tubes) and mounting new ceiling fan - Replace all Doors including locks and windows, Louvers and Louver frames to be replaced new. - Security ampli-mesh to cover all existing window - 1 x Set Aluminium wash basin to cover floor of shower room - Tiling (300mm x 300mm Non-Slippery) for all flooring of 2 toilets and 2x shower rooms, including wall tiling (200mmx100mm) to prevent walls from water/wet. - All plumbing works including replacement of existing pipes from both shower and Toilet (**Figure 10 and** **Figure** 11)
Guard Dwelling House	- Replace all window screen, (insect screen with Security ampli-mesh), replace louver and louver frames including accessories - Construct additional roof over front awning. - Procure and supply of 5000L rotomold Tank for rainwater collection of drinking (**Figure** 11 **and** Figure 12).
Composting house	-Constructing new composting house which is 10.8 meters long with six units for composting of organic waste (**Figure** 13)

Toilet and Sanitation	- Renovate and make new the existing Toilet for Guard dwelling house. - Connect all water system including pipe networking and connectors with accessories.

Figure 8: Wastewater management system

Figure 9: Existing Plan and New Plan of the Office/Dwelling Area/Storage and Feed Mixing building

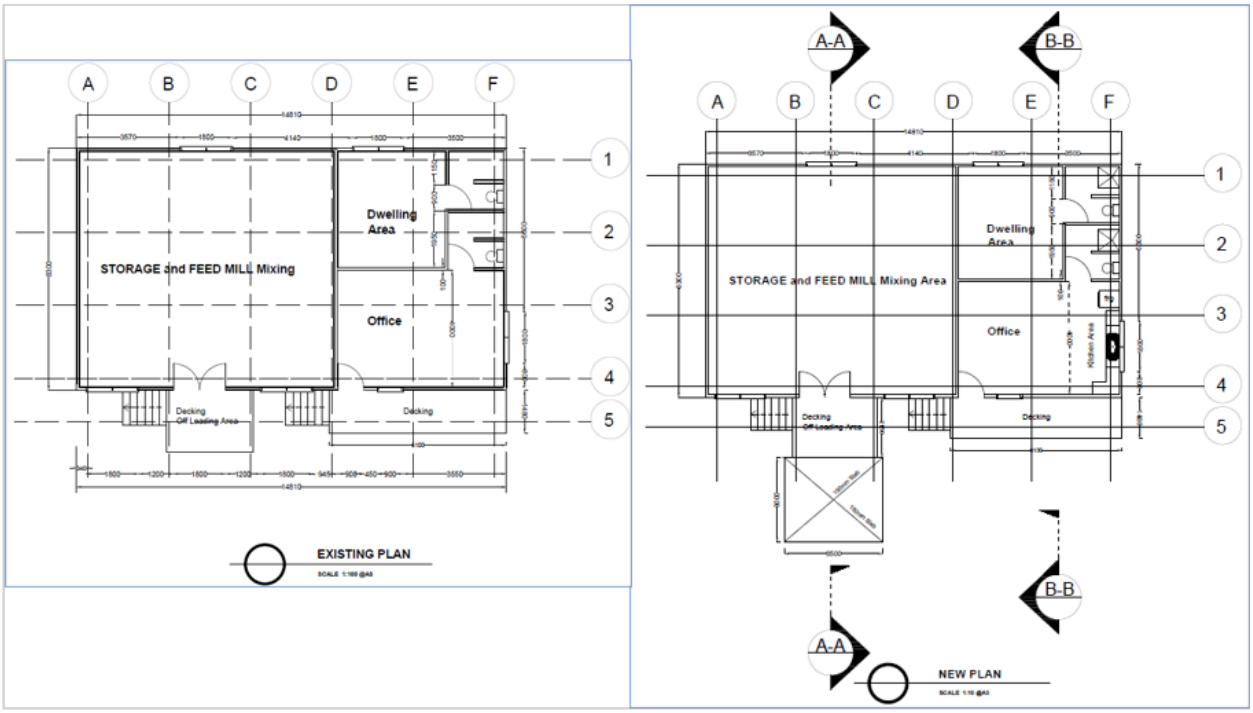


Figure 10: Side view (eastward and westward view) of the Office/Dwelling Area/Storage and Feed Mixing building

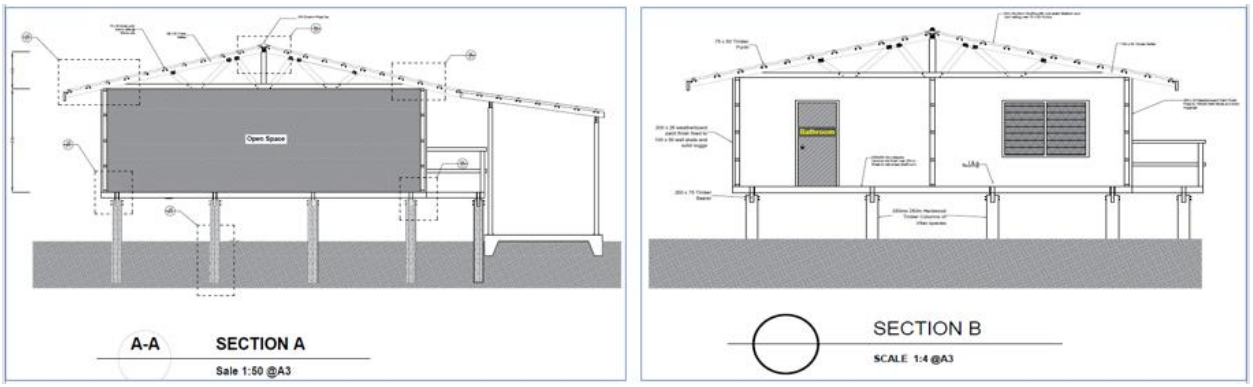


Figure 11: Proposed Plan of the Guard House

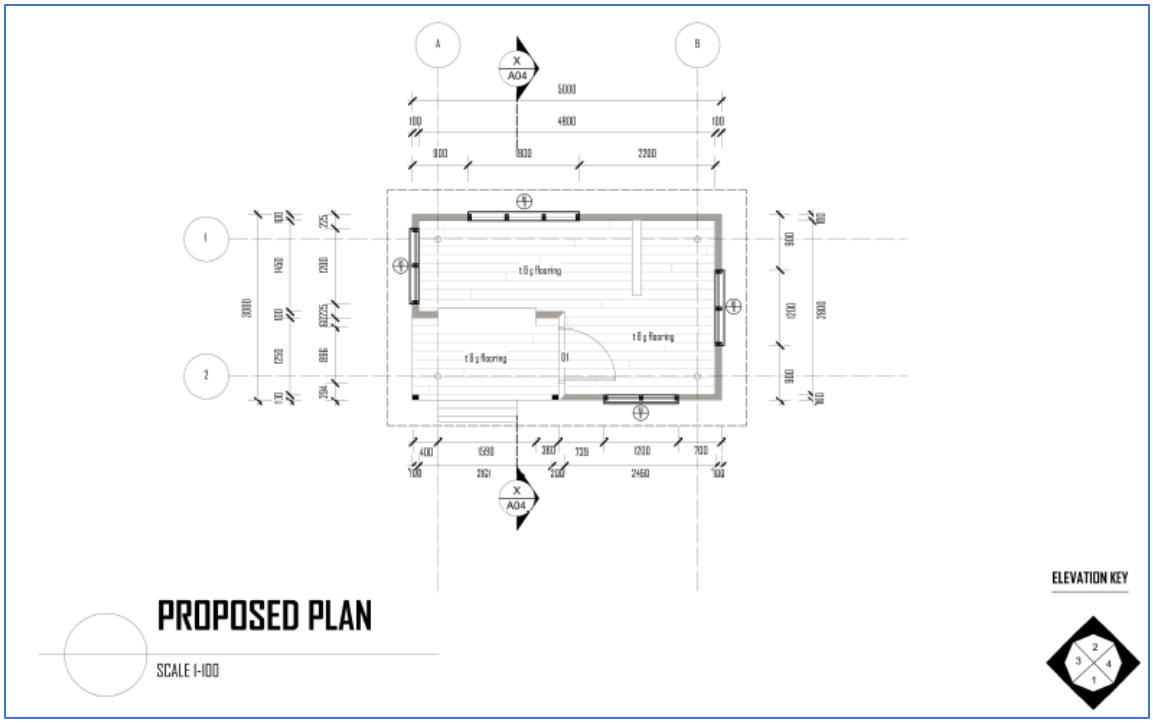


Figure 12: Elevations of the proposed Guard House

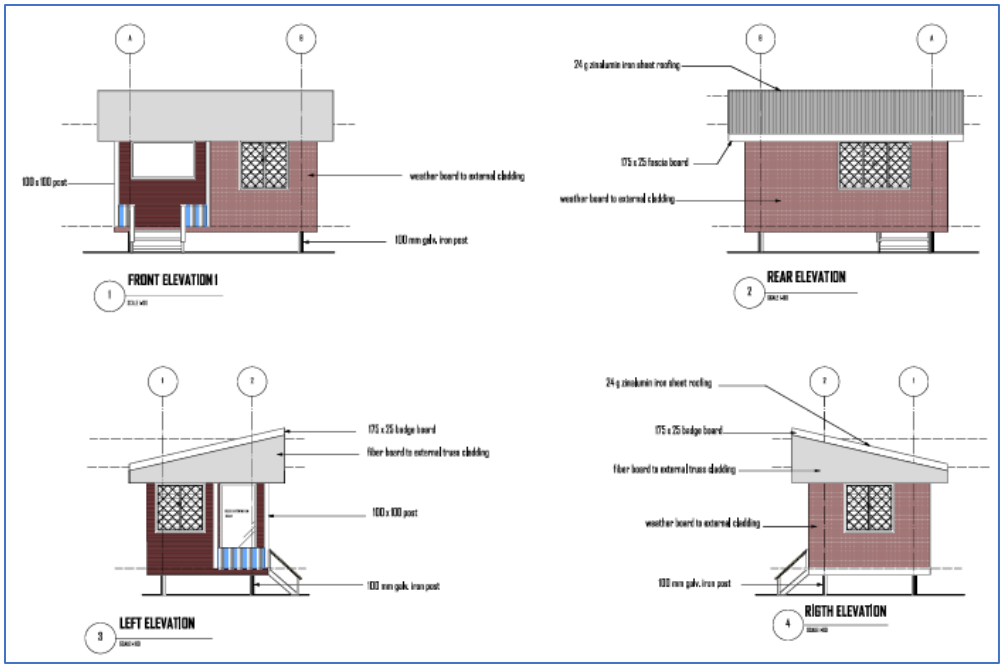
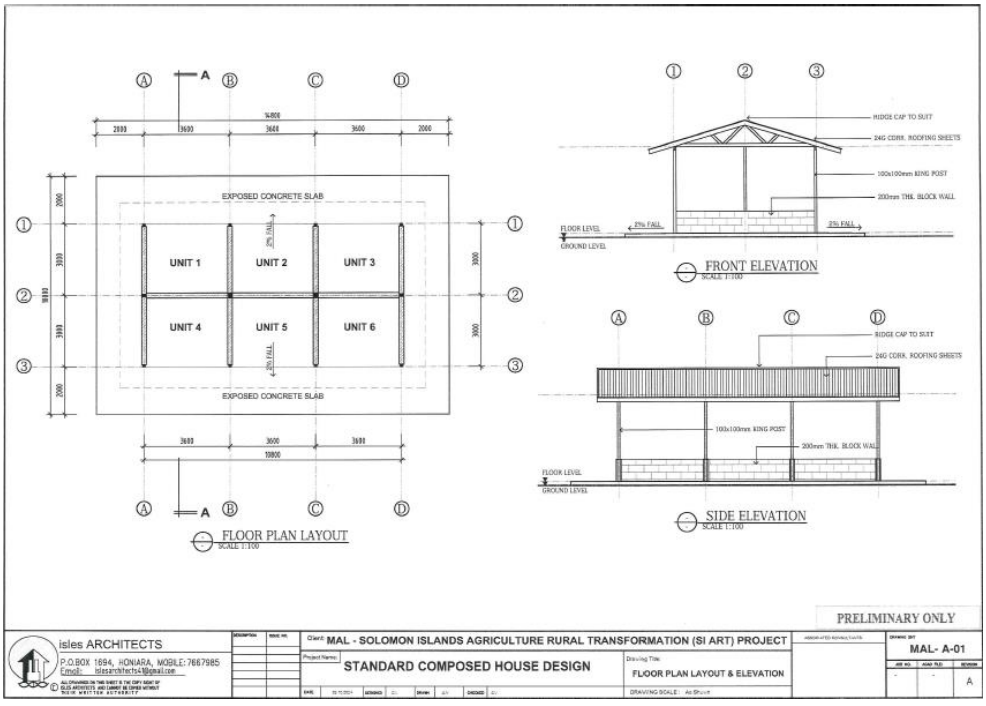


Figure 13: Floor Plan and Elevation of the Composting house



2.6. Sub-project design

36. The overall pig breeding farm facility was designed to be climate resilient. The refurbishment of the pig breeding facility will strengthen the national pig breeding improvement program by upgrading the facility's infrastructure and expanding its production capacity. Enhancements will improve breeding success rates, lower animal mortality, increase domestic supply of high-quality pork, and contribute to both food security and

economic growth in the Solomon Islands.There was proper drainage system for the facility that traps stormwater and collect wastewater which are stored in a septic tank which is in a good condition. Maintaining of shrubs around the perimeter of the facility's area and grasses that provide green landscaping for the area had ensured no surface runoffs at the site.

2.7. Resilience Design Features

37. The Adaliua pig breeding facility incorporates several resilient design features suited to its small-scale, simple layout. Key elements include:

I. **Reliable Water Supply**: A borehole and water (groundwater and harvested rainwater) storage tanks ensure a continuous water supply, supporting both animal needs and facility hygiene, especially during dry seasons.
II. **Efficient Waste Management**: A septic tank system treats wastewater, minimizing environmental impact, while composting facilities handle organic solid waste, allowing for environmentally friendly waste recycling on-site.
III. **Strategic Drainage System**: The facility's drainage is well-structured to prevent waterlogging and manage runoff effectively, reducing risks of flooding or contamination.
IV. **Adaptable Infrastructure**: Facility structures, such as the repurposed composting building materials now used in a storage shed, reflect a practical and flexible approach to resource use, supporting long-term sustainability and adaptability in response to changing needs. All materials selected for the refurbishment will be climate-resilient and purpose-specific, chosen to withstand local environmental conditions and ensure the long-term durability of the facility. These materials will not only enhance the facility's resilience to climate impacts, such as humidity, heat, and rainfall, but also support its functional needs, ensuring each component meets the specific requirements of its intended use.

38. These features enhance the facility's ability to operate reliably, withstand environmental challenges, and manage resources effectively.

2.8. Construction force, equipment and duration of work

39. The subproject for the refurbishment of the Adaliua Pig Breeding Facility will be awarded as a Central Tender Board competitive bidding contract according to the Solomon Islands Government procurement policy. It however, has to be cleared by the WB procurement team before it can be put out for tender. Construction equipment, machines and power tools will be required in order to achieve the scope of works outlined in Section 2.5. There will be approximately 10 people likely to be required for this work and additional 10 unskilled labour that may be sourced from the area. Ten people are skilled labours that include drivers, construction manager/supervisor, carpenters, electricians, plumbers and the PMU Engineer who shall be the overall contract supervisor. The other ten who are unskilled labour will work as cooks, carriers and security guards. The duration of work will be 6 months (

40.

41.

42. Table 3).

Table 3: Schedule of work

Activity	Qtr 1- 2025			Qtr 2- 2025			Qtr 3- 2025			Qtr 4 - 2025		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
submission to World Bank , comments, NOL												
Bidding												
NOL, Negotiation and sign contract												
Advance Payment (10%)				A								
Contract implementation/Construction Supervision												

2.9. Materials requirement

43. Building materials especially woods or timbers are available from licensed suppliers in Auki or nearby areas, therefore, will be sourced from there. However, it is a practice for funded buildings in Malaita that woods and hardware materials are all sourced from licensed suppliers in Honiara. There is no need for gravel use in this refurbishment work.

3. LEGAL AND INSTITUTIONAL FRAMEWORK

3.1. National Legal Framework

44. The SIG has various legislations and regulations that govern how to protect and preserve the environment. Laws concerning the protection and preservation of the environment is found in a number of acts and is the responsibility of a number of different government agencies according to their scope of duty. Key laws and regulations applicable to this subproject, particularly to environmental and social risks and impacts assessment, and management, are detailed below:

3.1.1. The Environment Act 1998 and Regulations 2008

45. The planned refurbishment work for the Adaliua pig breeding facility does not require a development consent from the Environment and Conservation Division (ECD) or a Building Permit from Malaita Province. This is because the facility is an existing, operational development, and the work will be limited to rehabilitation, upgrades, or improvements rather than new construction or significant alteration.

46. Under the Environment Act 1998 and Regulations 2010, only new projects or substantial modifications that could impact the environment are classified as "Prescribed Developments" and thereby require a formal development consent process. Since this refurbishment does not introduce major changes or potential environmental impacts, it does not fall under the prescribed development category outlined in the Act and Regulations. Thus, the subproject can proceed without the additional requirement of development consent or a building permit.

3.2. World Bank's Institutional Framework

3.2.1. World Bank's Environmental and Social Framework (ESF)

47. The World Bank's institutional framework relevant to this refurbishment activity is guided primarily by its Environmental and Social Framework (ESF), which sets out standards and requirements to ensure projects are sustainable and do not adversely impact the environment or local communities. Key among these are the Environmental and Social Standards (ESS), particularly ESS1 (Assessment and Management of Environmental and Social Risks and Impacts), which requires an assessment of potential risks, even for refurbishment or upgrading activities, to identify any possible adverse effects and implement mitigation measures as needed. In this case, a Site-Specific Environmental and Social Management Plan (ESMP) is required to address risks related to construction activities, such as waste management, air quality, and community health.

48. Additionally, ESS2 (Labor and Working Conditions) and ESS4 (Community Health and Safety) are relevant, ensuring that labour standards are met and that potential risks to nearby communities are minimized. For this refurbishment activity, compliance with these standards helps ensure that the improvements align with World Bank ESSs, promoting both environmental responsibility and community well-being during and after construction.

3.2.2. WB Occupational Health and Safety (OHS) Policies

58. The World Bank's OHS policies, outlined under ESS2 and further detailed in the General and Industry Sector Environmental, Health, and Safety (EHS) Guidelines at http://www.ifc.org/ehsguidelines, emphasize worker protection during project implementation, and Good International Industry Practices (GIIPs). They require hazard identification, provision of personal protective equipment (PPE), safe handling of tools, and adequate training for workers. For the Adaliua refurbishment, the construction contractor must adhere to these OHS guidelines to ensure a safe working environment, particularly during the use of power tools and other small-

scale machinery.

3.2.3. WB Environmental, Health, and Safety (EHS) Policies

59. The EHS Guidelines provide practical measures for minimizing risks related to environmental impacts, community health, and worker safety during construction and operational phases. These guidelines, also accessible at http://www.ifc.org/ehsguidelines, include waste management practices, pollution prevention, and noise and dust control measures, and Good International Industry Practices (GIIPs). For the Adaliua refurbishment, the contractor must adhere to these guidelines and GIIPs, ensuring compliance with industry standards and the implementation of effective environmental safeguards. Sector-specific standards for agricultural and livestock activities are particularly relevant, supporting the development of improved and sustainable facilities.

4. ENVIRONMENTAL AND SOCIAL CONDITIONS OF THE SUB-PROJECT AREA

4.1. Physical Environment

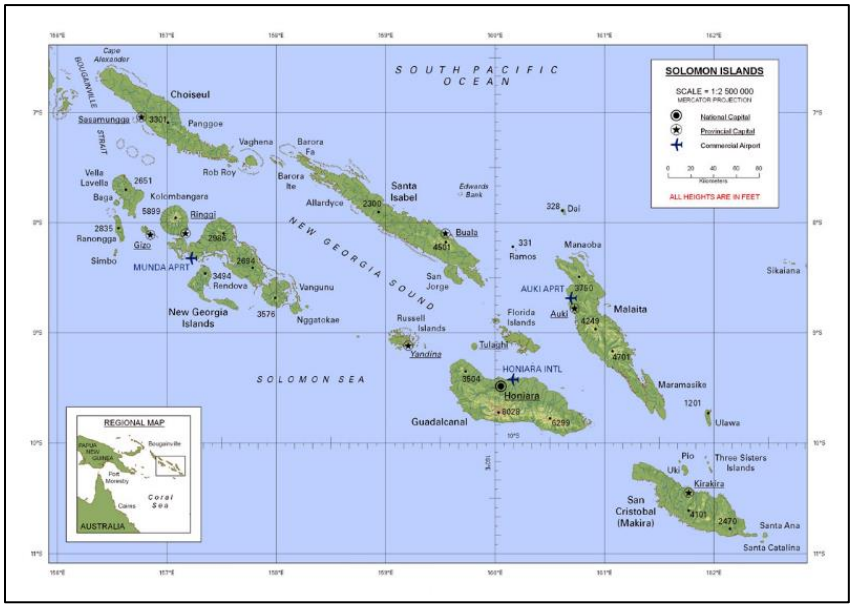
49. This status of existing conditions is produced based on the site visit undertaken on 9th January 2024 to Malaita during field observations and utilizing some secondary sources. The following sections provide baseline information on the physical environment.

4.1.1. Geography and Elevation

50. The Solomon Islands is indeed the largest archipelagic nation in the Pacific, stretching across roughly 1,500 km from east to west and comprising almost 1,000 islands. Major islands include Guadalcanal, Malaita, Isabel, Choiseul, Makira, and New Georgia (**Figure 14**). The country is bordered by several nations: Papua New Guinea lies to the west, Nauru to the north, Tuvalu and Fiji to the east, and Vanuatu to the south.

51. In Malaita Province, the primary landmasses are Malaita and Maramasike, along with Ndai Island and the atolls of Ontong Java and Sikiana. The province's landscape is characterized by a rugged, mountainous interior, with hills and narrow coastal terraces. Coastal areas often have swamps, adding to the region's diverse geographical features. The total land area of Malaita Province is approximately 4,200 km², with Malaita itself being the province's largest island.

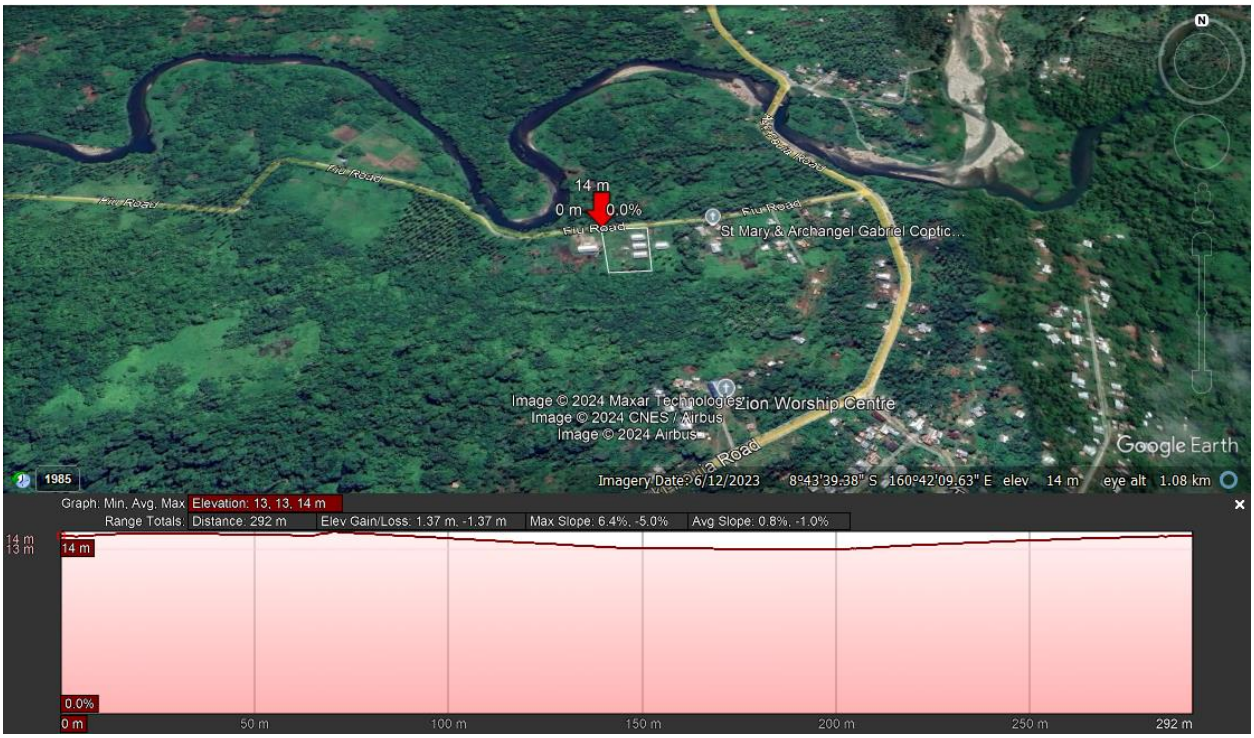
Figure 14: Geographic location of Malaita



52. The site is situated at an average elevation of 13 meters above mean sea level, indicating a moderately raised location relative to surrounding areas. Within the site, there are minor variations in elevation, with an elevation gain of up to 1.37 meters in certain areas and a corresponding elevation loss of 1.37 meters in others, reflecting small-scale undulations in the terrain. The site's slope is gentle, with an average upward slope of 0.8% and a downward slope of -1.0%, indicating that the land is almost level but has a slight inclination. These mild

slopes and minimal elevation changes suggest that the site is relatively flat, providing favourable conditions for developments requiring stable, nearly level ground (**Figure 15**).

Figure 15: Elevation of the subproject site



4.1.2. Climate and Rainfall

53. Malaita's climate is significantly influenced by the seasonal shifts of the equatorial trough. Throughout the Solomon Islands, temperature and humidity are consistently high, with temperatures ranging from 22°C to 31°C year-round. Rainfall, however, varies greatly across the provinces due to diverse topographical features, though it tends to be abundant in all months. For instance, Auki experiences an annual average rainfall of around 3,200 mm—considerably more than Honiara's 1,858 mm—with even the driest periods remaining notably wet.

54. **Figure 16** illustrates the monthly distribution of precipitation in Malaita[1]. The data reveal the following key observations:

I. **Consistently High Rainfall**: Rainfall levels in Malaita remain high throughout the year, with all months recording over 250 mm of precipitation. This indicates a persistently wet climate with no pronounced dry season, characteristic of a humid, tropical environment.
II. **Peak Rainfall Period**: July and August exhibit the highest monthly rainfall, with precipitation levels slightly exceeding 350 mm. This suggests a mid-year peak in rainfall, potentially marking a wetter phase in the annual cycle.
III. **Moderate Decline in Certain Months**: While rainfall remains substantial year-round, there is a modest decline in April, September, October, and November, with levels around 300 mm. These months show slightly lower precipitation compared to the peak months, though the difference is minimal.

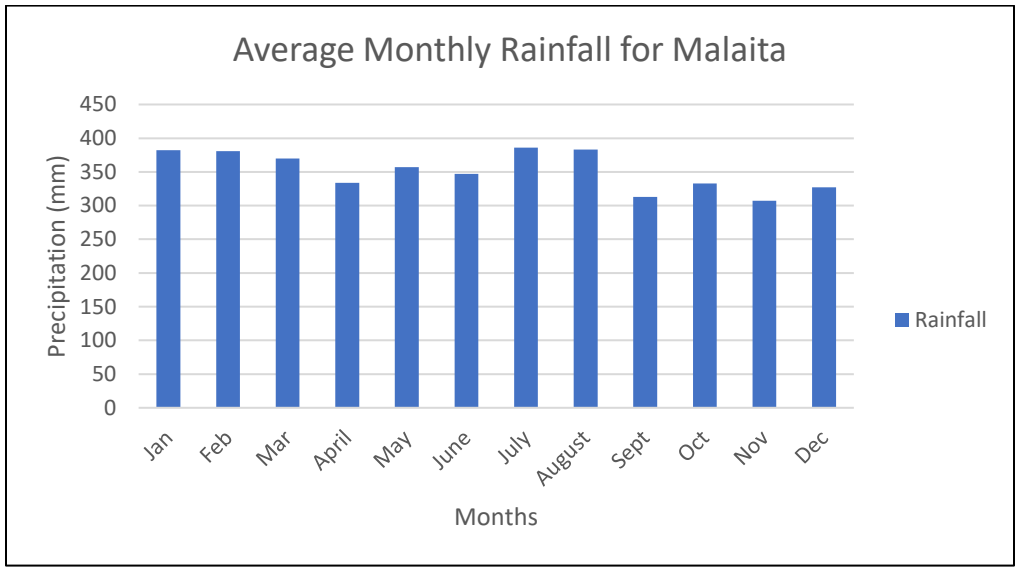
[1] Solomon Islands Met-Service, MECDM.

IV. **Implications for Climate and Environment**: The consistently high rainfall supports the characterization of Malaita as a region with a humid tropical climate. Such a climate is conducive to lush vegetation but may pose challenges for water management, soil stability, and infrastructure resilience, given the prevalence of frequent, heavy rainfall.

55. Notably, the data indicate that Malaita experiences significant rainfall throughout the year, with minor seasonal fluctuations, underscoring the need for robust environmental and infrastructural strategies to manage the impacts of a consistently wet climate.

56. As discussed above, the climate in Malaita is particularly wet because it lies within the Intertropical Convergence Zone, also known as the "Doldrums," which brings variable weather. With the sun directly overhead in November and February, solar impact is strongest. Trade winds, typically from the southeast, dominate during the Southern Hemisphere's winter months from April to August, while during the summer, Malaita occasionally experiences the outer effects of monsoonal winds.

Figure 16: Average monthly rainfall for Malaita. Data of rainfall observation obtained from Auki met-services office from 1991-2021.



4.1.3. Natural Hazards

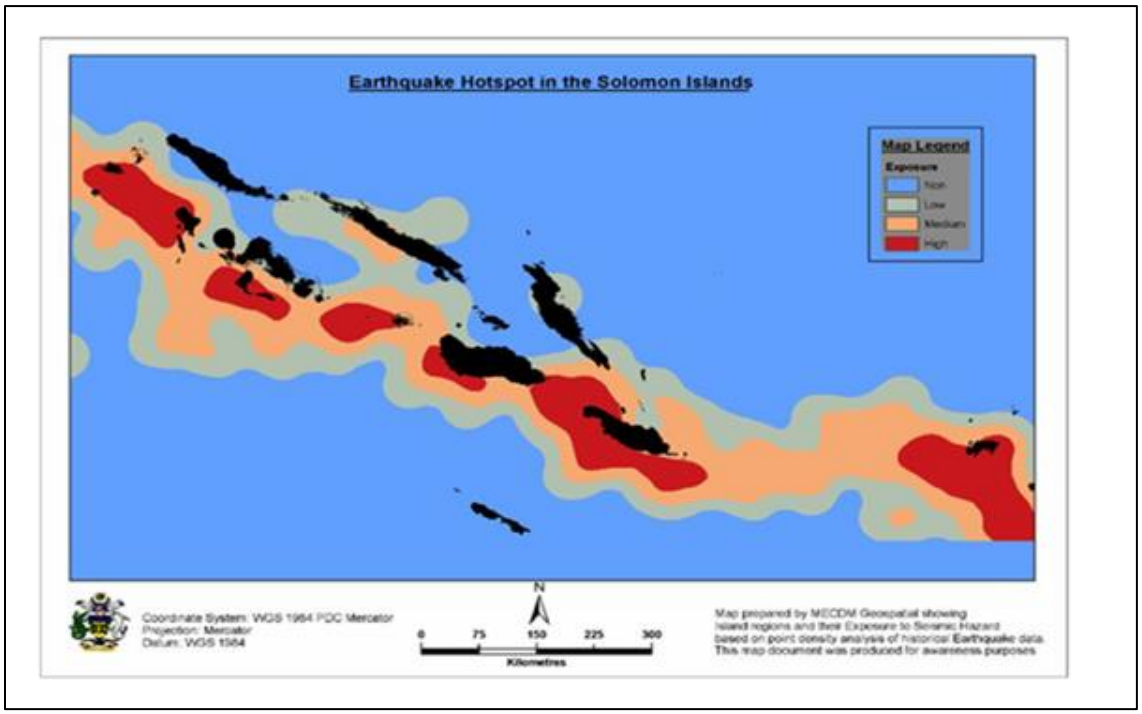
57. Extreme events like tropical cyclones are relatively rare in the Solomon Islands, and limited data makes it challenging to assess any trends in their frequency or intensity. However, a 2011 report by the Australian Bureau of Meteorology (BOM) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) projected a moderate decline in tropical cyclone occurrences across the southwest Pacific Ocean, including the Solomon Islands, throughout the 21st century. Although global projections suggest a decrease in tropical cyclone frequency, the intensity of those that do occur is expected to rise, indicating a potential increase in severe tropical cyclones in the future[2]. According to the Solomon Islands' Second National Communication to the United Nations Framework Convention on Climate Change (UNFCCC), 41 tropical cyclones passed within 400 kilometers of Malaita from 1969 to 2010, averaging one per season[3]. The number of cyclones varies significantly from year to year, sometimes with no cyclones, but in other years with as many as five, especially during El Niño periods.

[2] PACCSAP report, 2015.
[3] SNC, 2017

58. The most devastating cyclone to affect Malaita was Cyclone Namu in 1986, which left approximately 15,000 people homeless, with 50 individuals missing and five reported dead. The cyclone caused widespread damage to houses, schools, infrastructure, and agriculture, predominantly impacting central, southern, and western parts of Malaita, while northern areas like Auki including Adaliua which is part of greater Auki, were less affected[4]. Malaita also has relatively low exposure to earthquakes and related geohazards, as shown by regional earthquake hazard map on **Figure 17**. Although the Solomon Islands lie within a seismically active zone, Malaita's position on the Ontong Java Plateau (OJP), a tectonic formation situated away from the Pacific Ring of Fire's direct influences, reduces its susceptibility to tremors and landslides. For instance, while some areas in southern Malaita felt an earthquake along the Makira Trench recently, no significant damage was reported.

59. According to the Adaliua farm manager, there have been no recorded incidents of flooding or inundation affecting the area since its establishment. Additionally, there are no historical records indicating that the area has ever experienced flooding. The only significant historical record related to natural hazards in the area is the *Situation Report on Cyclone Namu*, published on May 21, 1986. Cyclone Namu was the most severe natural disaster to impact Malaita, but there is no documented evidence linking it to flooding at the Adaliua farm site or the Auki area.

Figure 17: Earthquake Hazard Map of the Solomon Islands (source: MECDM)



4.1.4. Water course and water body

60. The Fiu River located approximately 100 meters from the subproject site (refer to **Figure 6 in Section 2.4**), serves as the main watercourse in the area, flowing directly into Fiu Bay along the Pacific Ocean coast. As a key natural feature, the Fiu River plays an essential role in local hydrology, supporting the surrounding ecosystem and providing vital water resources to nearby communities. Its proximity to the ocean allows for natural drainage into Fiu Bay, creating a dynamic connection between the river and marine environments, which can impact both inland and coastal ecological systems. Though there is a sufficient distance of the river to the subproject site, it is imperative that safeguards measures are in-placed to prevent any potential impacts on water quality and

[4] Solomon Islands Cyclone Namu May 1986 UNDRO Situation Reports 1-8, 21May 1986.

aquatic life.

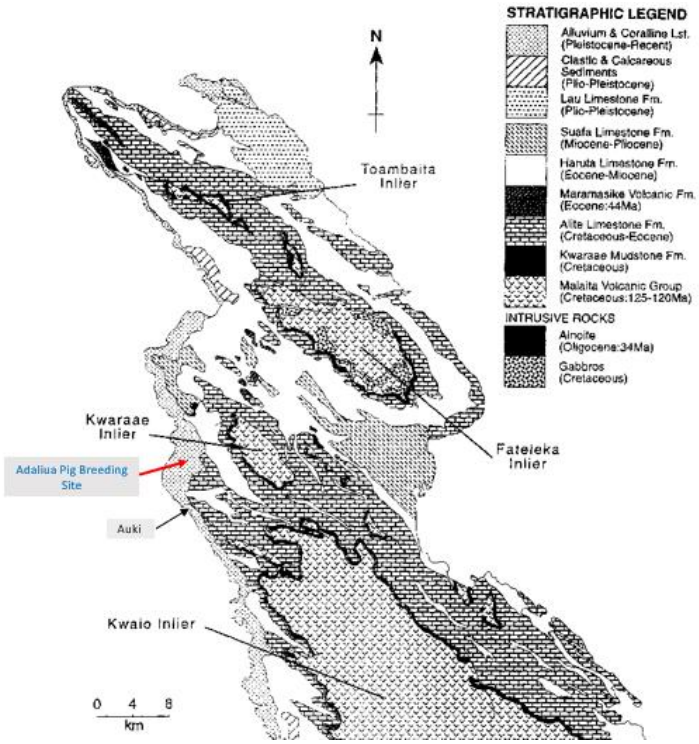
4.1.5. Geology and Soil

61. The Solomon Islands are formed from a diverse array of crustal units collectively known as the "Solomon Block." This geological block developed through the accumulation of crustal material within an intra-oceanic setting since the Cretaceous period. The bedrock primarily consists of Cretaceous basaltic sequences, categorized into three main terrains:

I. **Ontong Java Plateau Terrain (OJPT)**: This terrain, associated with mantle plume activity, includes the islands of Malaita, Ulawa, and northern Santa Isabel.
II. **South Solomon MORB Terrain (SSMT)**: Linked to mid-ocean ridge formation, this terrain encompasses Choiseul and Guadalcanal islands.
III. **Makira Terrain**: This unique terrain exhibits characteristics of both mid-ocean ridge basalts (MORB) and plume-related plateau formations.

62. In the Auki town area, where the Adaliua sub-project site is situated, coastal geology predominantly consists of alluvial deposits and coralline limestone, with further inland formations comprising Cretaceous-aged alite limestone and more recent Haruta limestone from the Plio-Pleistocene epoch (**Figure 18**). Site observations reveal that the sub-project area specifically features a coralline limestone base with alluvial deposits typical of river floodplains, consisting of sandy loam and clayey soils. These soils are well-suited for agriculture but may have moderate permeability and compaction due to prolonged use and landscape modification.

Figure 18: Geology of north-central Malaita modified from Patterson, 2004[5].



[5] Patterson, 2004

4.2. Biological Environment

63. The subproject site is largely devoid of vegetation, with no remaining native or indigenous plant species. The original vegetation was cleared many years ago when the area was converted into a coconut plantation. As a result, the habitat is now highly modified and degraded, classified as a built environment (**Figure 19**). The flora is dominated by a variety of invasive species, including vines, grasses, herbs, and shrubs, which have proliferated due to the disturbed conditions.

4.2.1. Flora Composition

64. The site hosts a range of invasive plant species, particularly along its periphery. The main types of vegetation present in the area include but not limited to the followings:

- **Herbs**: Common herbaceous plants observed include but not limited to the Asian spider-flower (*Cleome viscosa*)-introduced for landscaping, wild passion fruit vines (*Passiflora foetida*), and mile-a-minute vine (*Persicaria perfoliata*). There are also presence of herbaceous cinnamon ferns and bracken ferns. All these are invasive species common in highly disturbed areas.
- **Subshrubs**: Species such as the spiny sensitive plant (*Mimosa pudica*) that covers most of the area with characteristic of a creeper, and young sensitive plants (*Mimosa invisa*) are also present mainly along the site boundaries. These are invasive species.
- **Shrubs**: Periwinkle (*Catharanthus roseus*) is prominent among the shrubs observed- introduced for landscaping.
- **Grasses**: Grasses include Bermudagrass (*Cynodon dactylon*) and common sharp grasses (*Imperata cylindrica*)- invasive species.
- **Coconut Trees**: Three coconut trees (*Cocos nucifera*) grow at the edge of the site, remnants from the former plantation- Introduced species.

4.2.2. Fauna

65. Due to the heavily altered and invasive-dominated vegetation, the fauna within the site is sparse and limited. The degraded habitat supports a minimal variety of wildlife, as invasive plant species tend to provide poor resources for native fauna.

4.2.3. Conservation Assessment

66. Field observations confirm that none of the plant species present hold significant conservation value. All recorded species are exotic or invasive in origin, contributing to the low ecological value of the site.

67. In summary, the subproject site is a modified environment with degraded, non-native vegetation, primarily consisting of invasive herbs, grasses, and shrubs, with minimal habitat value for native fauna.

Figure 19: Overview of vegetation type of the subproject site

4.3. Socio-economic Environment

68. Based on the 2019 Census Report[6], the data from the table on socio-economic indicators for Malaita provides insight into various demographic, urbanization, household, employment, and education statistics. Discussed below is an interpretation of socio-economic indicators (**1. Population and Demographics**

- **Total Population:** 172,740
- **Male:** 86,691 (50.2%)
- **Female:** 86,049 (49.8%)
- **Annual Population Growth Rate:** 0.9%
- **Population Density:** 40.9 persons/km²

Analysis:
Malaita has a relatively balanced gender distribution. However, the population growth rate (0.9%) is lower than the national average, indicating slower population expansion. With a density of 40.9 people per km², Malaita is more densely populated compared to some other provinces, which could create challenges in resource allocation, infrastructure development, and land use planning.

2. Urbanization

- **Urban Population:** 7,020
- **Percentage Urban:** 4.1%

Analysis:
Malaita remains predominantly rural, with only 4.1% of its population living in urban areas. This suggests limited urban infrastructure and services, possibly leading to lower access to modern amenities, economic opportunities, and government services compared to urbanized regions such as Honiara.

3. Household Statistics

[6] 2019 Population and Housing Census: National Report, vol 1

- **Total Households:** 32,332
- **Average Household Size:** 5.3

Analysis:
Household sizes are relatively large, which is common in rural areas where extended family living is more prevalent. This could indicate a high dependency ratio, meaning that a significant portion of the population may be dependents (children and elderly) relying on working-age family members.

4. Employment and Unemployment

- **Total Employment:** 58,324 (33.8% of the total population)
- **Male Employment:** 29,579
- **Female Employment:** 28,745
- **Total Unemployment:** 3,890
    - Male: 2,119
    - Female: 1,771

Analysis:
With only 33.8% of the total population employed, a significant portion of Malaita's residents may be involved in informal or subsistence activities. The relatively low unemployment figures (3,890 people) suggest that most of the working-age population engages in some form of work, although it may not be formal employment. The male and female employment numbers are nearly equal, indicating relatively balanced workforce participation.

5. Education

- **School Enrolment Rate (Ages 6-12):** 52.9%
    - Male: 53.2%
    - Female: 50.6%
- **Educational Attainment (Population aged 12 and older):**
    - No School Completed: 27.8%
    - Primary Education: 47.4%
    - Secondary Education: 20.2%
    - Tertiary Education: 3.5%
    - Vocational/Professional Training: 0.8%

Analysis:
The school enrolment rate for children aged 6-12 is relatively low at 52.9%, suggesting that nearly half of the children in this age group are not enrolled in school. There is also a significant proportion of the population (27.8%) that has not completed any formal schooling, which could contribute to lower

literacy and employment opportunities. The small percentage (3.5%) of people with tertiary education highlights the limited access to higher education, which may impact the availability of skilled professionals in the province.

6. Literacy Rate

- **Overall Literacy Rate:** 73.8%
    - Male: 79%
    - Female: 68.6%

Analysis:
The literacy rate is relatively low, with a notable gender disparity—men (79%) have a higher literacy rate than women (68.6%). This suggests that women may face more barriers to education, which could affect their economic opportunities and participation in formal employment.

7. Key Takeaways and Implications

1. **Predominantly Rural Population:** With only 4.1% urbanization, most of Malaita's population relies on subsistence farming and informal employment.
2. **Education Gaps:** The high percentage (27.8%) of individuals with no formal education and the low school enrolment rate for children indicate significant challenges in access to education.
3. **Employment vs. Underemployment:** While the unemployment rate is low, the high dependence on informal or subsistence work suggests underemployment may be an issue.
4. **Gender Disparities in Literacy:** The lower literacy rate among women could limit their access to economic and leadership opportunities.
5. **Large Household Sizes:** The average household size of 5.3 suggests a high dependency ratio, which could put pressure on household incomes and social services.

This analysis of socio-economic indicators for Malaita highlights areas that require targeted policy interventions for the province, including improving access to education, promoting gender equality in literacy and employment, and supporting economic diversification beyond subsistence activities.

69. Table 4) for Malaita including Auki which the Adaliua facility is a part of:

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8. **Employment vs. Underemployment:** While the unemployment rate is low, the high dependence on informal or subsistence work suggests underemployment may be an issue.
9. **Gender Disparities in Literacy:** The lower literacy rate among women could limit their access to economic and leadership opportunities.
10. **Large Household Sizes:** The average household size of 5.3 suggests a high dependency ratio, which could put pressure on household incomes and social services.

This analysis of socio-economic indicators for Malaita highlights areas that require targeted policy interventions for the province, including improving access to education, promoting gender equality in literacy and employment, and supporting economic diversification beyond subsistence activities.

Table 4: Selected socio-economic indicators for Malaita province that includes Auki (2019 Census Report)

INDICATORS	MALAITA
Total Population	172,740
Male	86,691
Female	86,049
Ave. Annual Population Growth Rate (%)	0.9
Population Density (pop/km2)	40.9
Urbanization	
Urban Population	7,020
Percent Urban	4.1
Household	
Number of Households	32,332
Average Size of Households	5.3
Employment total	58,324
Male employment	29,579
Female employment	28,745
Unemployment total	3,890
Male	2,119
Female	1,771
Education	
School enrolment rate, 6-12 yrs (%)	52.9%
Male	53.2%
Female	50.6%
% of pop aged 12 and older with	
No school completed	27.8%
Primary education	47.4%
Secondary education	20.2%
Tertiary Education	3.5%
Vocational/professional training	0.8%
Literacy rate	73.8%
Male	79%
Female	68.6%

70. Malaita Province offers various government and social facilities, including hospitals, schools, churches, a bank, markets, and shops, primarily concentrated in Auki. Solomon Power supplies electricity in Auki and electric poles already reached Adaliua. Most rural people access water from stream/river or well. Educational and healthcare services include Auki Clinic, Kilufi'i Hospital, and local schools under provincial government and church authorities.

71. Approximately 33% of Malaita households depend on natural sources like rivers and unprotected wells

for drinking water, and only 10% have access to sanitary toilets, primarily in urban centres[7]. Waste disposal practices are informal, with many using open spaces or nearby bodies of water, partly due to unresolved land disputes for proper landfill site near Auki. The subproject site has no culturally significant sites, and most Malaita residents, mainly farmers, stand to benefit from the sub-project's focus on enhancing pig breeds.

4.4. Legal ownership of the land

72. The Adaliua land, designated as Perpetual Estate (PE) under title number PN:151-007-0020, is owned by Mr. Geoffrey Angii and Mr. Cyprian Olia. They have leased this land to the Commissioner of Lands, who acts as the lessee on behalf of the Solomon Islands government, as government ministries themselves do not hold land titles. A formal lease agreement exists between the government and the PE title holders, securing the land for state use (**see Appendix 2).** Additionally, Mr. Angii and Mr. Olia have signed a land commitment letter, affirming their full support for the government's refurbishment of the pig breeding facility on Adaliua land, demonstrating strong backing for the subproject's implementation (**see Appendix 3**).

4.5. Sensitive Receptors

73. The Adaliua Pig Breeding Facility is fully fenced and secured. Located approximately 30 meters outside the facility is a taro pack-house. To the east, around 200 meters away, is St. Mary Church, which is surrounded by a small residential area consisting of about five households. Further east, approximately 300 meters from the facility, is Adaliua Village, home to roughly 15 households. These residential and community structures fall within a 300-meter safety radius of the facility (**Figure 20**).

74. To the north, the Fiu River flows approximately 100 meters from the facility, separated by a dense buffer of secondary vegetation and cultivated gardens, providing a degree of natural separation. The Fiu-Auki Road runs adjacent to the northern perimeter fence of the project site. Residents from Fiu Village, including school children traveling to Auki for education and villagers seeking medical care at Kilufi Clinic, primarily use buses or private transport. The distance from the Fiu community to Auki township is approximately 9 kilometres.

Figure 20: Imagery showing sensitive receptors 300 meters safety radius of the project site

[7] Solomon Water IEE, May 2020.

5. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACT IDENTIFICATION

75. Since this subproject involves refurbishment work on existing pig breeding and related facilities, the environmental impacts are anticipated to stem from human presence, construction equipment, and the nature of the renovation activities at the site and its surrounding vicinity. These identified impacts are preliminary and will require further review and specific assessment for each activity as work progresses. Initial screening indicates that the main environmental impacts during construction stage are mainly solid construction waste and hazardous waste such as paints and noise emanating from the use of power tools and equipment.

76. Social impacts include occupational health and safety risks for workers, potential effects on nearby communities (such as the spread of communicable diseases, including COVID-19, HIV/AIDS, and STIs), and impacts associated with an introduced worker.

77. To address these concerns, the contractor and individual workers will adhere to the Company's Code of Conduct for consistency with other subproject activities under SIART. Company's Code of Conduct in Appendix

6 and the Individual Code of Conduct in **Appendix 7** respectively, which serves as instruments for management of the potential social risks and impacts associated with the project. This section also outlines mitigation strategies for all identified environmental and social impacts, as part of the World Bank-funded SIART project implemented by the Ministry of Agriculture and Livestock (MAL).

5.1. Potential Design Phase Impacts

78. Even at the design phase of the refurbishment work for the Adaliua Pig Breeding Facility, there are potential impacts that can influence the subproject's environmental and social outcomes. These include:

I. **Design-Related Environmental Considerations**: Decisions made in the design phase have long-term environmental impacts, such as resource depletion and high carbon emissions from material choices, pollution and land degradation from inadequate waste management systems, and increased greenhouse gas emissions from inefficient energy use. To mitigate these impacts, the project should prioritize sustainable and locally sourced materials to reduce resource depletion and carbon emissions, implement effective waste management systems such as recycling and proper disposal to prevent pollution and land degradation, and incorporate energy-efficient technologies like solar power and LED lighting to lower greenhouse gas emissions.

II. **Climate Change Sustainability Design:** The Adaliua Pig Breeding Facility incorporates climate change sustainability design features to enhance resilience and efficiency. Its concrete-based, cyclone-resistant structures reduce vulnerability to extreme weather, while the efficient drainage system connected to a septic tank prevents waterlogging and contamination. The facility's groundwater extraction and storage system ensure water security, and the use of modern structural materials minimizes maintenance needs and long-term waste. Additionally, natural ventilation and lighting lower energy consumption, reducing the facility's overall carbon footprint and improving sustainability.

III. **Health and Safety Planning**: The design phase is crucial for incorporating health and safety features that will protect workers, animals, and the community during refurbishment and operational phases (see Health and Safety Plan in **Annex 5**). Thoughtful design of ventilation, sanitation system, and safe handling areas for animals can minimize risks of disease transmission and improve overall facility hygiene.

IV. **Animal Welfare Provisions**: The design should account for the welfare of the animals by planning for adequate space, proper ventilation, lighting, and effective waste management. Poor design choices may lead to overcrowding, poor air quality, or insufficient access to clean water, which can stress the animals and compromise their health.

V. **Community and Stakeholder Concerns**: Early engagement with the local community and stakeholders during the design phase can help identify and address potential social impacts, such as changes to site accessibility and eligibility or concerns about increased activity around the facility. Addressing these concerns through inclusive design planning can enhance community support and minimize future conflicts.

VI. **Operational Efficiency and Cost Management**: Effective design can optimize the facility's layout, making future operations more efficient and cost-effective. This includes planning for easy access to maintenance areas, adequate storage for feed and supplies, and well-placed animal enclosures, which reduces resource wastage and improves functionality.

79. Incorporating these considerations at the design phase helps ensure the refurbishment work is sustainable, minimizes potential negative impacts, and aligns with both environmental and operational goals.

5.2. Potential Preconstruction Impacts

80. Pre-construction impacts of the refurbishment work at the currently operational Adaliua Pig Breeding Facility, though limited in scope given it is an existing facility, may still affect the environment, local community, and operations at the site. These impacts include:

I. **Site Preparation Disturbances**: Initial site preparations, such as clearing or rearranging existing structures, may generate noise and minor dust, affecting both the facility's livestock and nearby residents. Increased activity can momentarily disturb the few pigs currently housed, possibly affecting their stress levels and health.
II. **UXO**: UXO clearance is not needed for this subproject because it involves renovation work on an existing, previously developed site where the likelihood of encountering unexploded ordnance is very low to negligible. Given the minimal risk of UXO presence, pre-emptive clearance is deemed unnecessary.
III. **Waste Management and Disposal**: Any waste materials resulting from pre-construction activities, like removing old fixtures or equipment, need careful management. Improper disposal could lead to environmental contamination, attracting pests or disturbing soil quality near the site.
IV. **Utility Disruptions**: Temporary disconnections of utilities (such as water and electricity) may be required, potentially affecting facility operations and animal care. Advanced planning for these disruptions is essential to minimize adverse effects on the livestock.
V. **Traffic and Accessibility**: Increased vehicle movement around the site due to deliveries of materials and machinery may affect local traffic and reduce access for nearby residents or workers. Ensuring a clear transport and access plan can help mitigate congestion and maintain site safety.
VI. **Community and Worker Health and Safety**: Preliminary activities may involve an influx of workers and equipment, raising potential health and safety risks. Proper communication, clear signage, and initial safety measures are important to prevent accidents and minimize impacts on the community and workers.

81. By addressing these pre-construction impacts with effective planning and safeguards, the subproject can minimize disruptions and prepare the site efficiently for the refurbishment phase.

5.3. Potential Construction or Refurbishment Phase Impacts

82. The construction or refurbishment phase of the Adaliua Pig Breeding Facility can have several environmental and social impacts, despite being a relatively controlled renovation of an existing site. Key potential impacts include:

I. **Noise and Vibration**: Construction activities, including the use of machinery and tools, can generate noise and vibrations. This may stress the pigs on-site and disturb nearby communities, potentially leading to complaints or disruptions if not managed effectively.
II. **Air Quality (Dust and Emissions)**: Dust from demolition, material handling, and construction can impact air quality within and around the facility, affecting animal health and worker respiratory health. Additionally, emissions from construction vehicles and equipment may contribute to temporary air pollution.
III. **Waste Generation**: Refurbishment activities can produce construction debris, old materials, and general waste that require proper disposal. Inadequate waste management may lead to environmental contamination or attract pests, affecting both the facility and surrounding areas.

IV. **Soil and Water Contamination**: Construction materials, chemicals, or accidental spills (such as oil or fuel) could contaminate nearby soil and water sources, especially if not carefully managed. This could affect local groundwater quality, which may be a concern for neighboring households or agricultural areas.

V. **Occupational Health and Safety Risks**: Refurbishment works bring occupational risks, such as exposure to hazardous materials, potential accidents from equipment use, and injury risks for workers. Ensuring workers have adequate training, protective gear, and safety measures is critical.

VI. **Impact on Animal Health and Welfare**: Increased activity, noise, and human presence can stress the pigs at the facility. Measures should be in place to shield the animals from disruptions, such as temporary relocation or establishing buffer zones.

VII. Contamination (Virus) Risk to pigs: During the renovation works at the pig breeding facility, there is a risk of viral contamination from construction workers to the pigs. The fact that the workers will be doing minor renovation works in the pig pens increases the likelihood of pathogens being transferred through contaminated footwear, clothing, or equipment. This can pose significant health risks to the pigs, potentially leading to outbreaks of viral diseases, which can have devastating effects on the herd and the overall operation of the facility.

VIII. **Increased Traffic and Accessibility Issues**: The movement of construction vehicles and materials to and from the site may increase local traffic, affecting accessibility for community members and potentially posing safety risks if not well-managed.

IX. **Community Health and Safety Risks**: The presence of workers and increased activity may pose health risks to the community, including potential exposure to communicable diseases. Clear boundaries and health protocols (e.g., respect for cultural norms and community members, COVID-19 safety measures) are necessary to protect both workers and community members.

X. **Water Use and Demand**: Construction activities may temporarily increase water usage, impacting the facility's water supply and potentially stressing local resources if not planned carefully.

83. Mitigating these impacts through careful planning, such as implementing dust control measures, noise barriers, waste management plans, and strict health and safety protocols, will help minimize the negative effects of the refurbishment phase on the environment, animals, and the surrounding community.

5.4. Potential Operational Phase Impacts

84. During the operational phase of the Adaliua Pig Breeding Facility, several environmental, social, and economic impacts may arise. Key potential impacts include:

I. **Waste Management and Pollution**: Waste generated from pig manure, bedding, and wastewater from cleaning operations can lead to environmental pollution if not properly managed. Nutrient runoff and leachate may contaminate nearby soil and water source, affecting local groundwater quality at the site and potentially impacting nearby agricultural land. For this subproject, wastewater is properly managed and treated through the existing septic system which is currently operational and in good state.

II. **Odor and Air Quality**: The facility may produce strong odours from pig waste and emissions from regular operations, which can affect air quality and potentially disturb nearby communities. Effective ventilation systems and regular waste removal are essential to minimize odours and reduce complaints.

III. **Water Use and Demand**: Pig breeding facilities require significant water for drinking, cleaning, and sanitation. Increased water demand may strain local resources, particularly during dry

periods, and could impact groundwater availability if there is more uptake and use of water for the facility's operation.

IV. **Noise**: Noise from pig activity, feeding operations, and facility machinery can affect both the animals' well-being and nearby residents. If noise levels are consistently high, it could lead to stress for the pigs and discomfort for the surrounding community.

V. **Animal Health and Disease Management**: Maintaining pig health is critical, as disease outbreaks (e.g., swine flu or other zoonotic diseases) could impact animal welfare, facility productivity, and potentially threaten public health. Proper biosecurity measures, regular health screenings, and vaccination programs are essential to prevent and control disease.

VI. **Soil and Groundwater Contamination**: Nutrient runoff from manure can lead to soil degradation and groundwater contamination. Implementing effective containment measures is important to prevent long-term soil damage.

VII. **Community Health and Safety**: The presence of a large pig population and facility operations may pose health risks to nearby communities, particularly if waste and odour management are inadequate. Biosecurity measures, public health awareness, and controlled access to the facility can help mitigate health concerns.

VIII. **Economic and Employment Impacts**: Positively, the facility's operation can contribute to the local economy by generating employment and supporting the local agricultural industry with quality pig breeds. It can also provide secondary benefits to local businesses that supply feed, veterinary services, and other operational needs.

IX. **Resource Consumption and Energy Use**: Facility operations may consume substantial energy, increasing greenhouse gas emissions if energy is sourced from non-renewable sources. Renewable energy options, such as solar, could be considered to reduce the facility's carbon footprint.

X. **Animal Welfare and Ethical Considerations**: Ensuring humane treatment and proper living conditions for the pigs is crucial. Poor welfare practices can lead to animal stress, affecting growth and breeding outcomes and potentially raising ethical concerns among stakeholders.

XI. **Mishandling Anti-B25 Solution concentrate:** The current operation uses the Anti-B25 solution for cleaning the facility's surfaces. It is a disinfectant or antimicrobial cleaning agent used to sanitize surfaces of Adaliua Pig Breeding Facility. The solution was formulated to eliminate bacteria, viruses, fungi, and other pathogens that may pose risks to animal health and facility hygiene. It was brought in as concentrate and diluted to neutral level before being used for cleaning surfaces in the breeding facility. The decision to use Anti-B25 over other disinfectants was that the product has been used for sanitizing surfaces of the pig breeding facility since it was established by the Taiwanese Technical Mission (TTM) since 2015, and that MAL staff are familiar with. In addition, it was due to its broad antimicrobial efficacy, safety after dilution, compatibility with animal environments, biosecurity compliance, cost-effectiveness, and environmental considerations—all critical factors in maintaining a clean and disease-free pig breeding facility.

The Anti-B25 concentrate can pose significant health, environmental, and operational risks if mishandled. Direct skin or eye contact can cause burns or irritation, while inhalation may irritate the respiratory system. Environmentally, spills or improper disposal can contaminate water bodies, harm aquatic life, disrupt soil ecosystems, and potentially bioaccumulate in the food chain. The concentrate may also corrode equipment or react with other chemicals, creating hazards. Additionally, some formulations may be flammable, increasing fire risks. Currently, there was no report of mishandling or impacts of using this solution as the operators were highly trained on handling this solution and they knew very well the dilution ratio used for this.

85. Effective operational planning and management practices, such as waste treatment systems, biosecurity protocols, and community engagement, are essential to minimize these impacts and promote sustainable and ethical operation of the Adaliua Pig Breeding Facility.

6. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

86. This section contains the detailed mitigation measures that are required for the various phases of the proposed subproject to the extent that they are described in Section 2 of this ESMP. Table 4 details the mitigation matrix.

6.1. Proposed Mitigation Measures

87. Based on the identified Environmental and Social (E&S) Risks and impacts described in Section 5, the following key measures are proposed to address the E&S risks and impacts as they arise during design, pre-construction, construction or refurbishment, and operational stages. Below is summary of specific key mitigation measures that will be carried out throughout all stages of the subproject.

6.1.1. Design Phase

I. Design-Related Environmental Considerations

- Mitigation Measures:

- Material Selection: Prioritize environmentally friendly, non-toxic, and recyclable materials to minimize the ecological footprint.
- Energy Efficiency: Incorporate energy-saving systems, such as LED lighting, solar panels, and efficient ventilation, to reduce energy demand.
- Water and Waste Treatment: Install water recycling or rainwater harvesting systems, along with effective wastewater treatment facility (septic tank), to manage water use and prevent contamination of surrounding soil and water sources.
- Waste Reduction: Designate areas for waste sorting and storage to facilitate recycling and safe disposal, reducing overall waste impact.

II. Climate Change, Disaster Risk & Resilience

- Mitigation Measures:
  - Cyclone & Seismic Resilience: Use reinforced concrete for structural durability.
  - Drainage Management: Maintain the existing efficient drainage system.
  - Water Security: Utilize groundwater extraction and storage.
  - Energy Efficiency: Integrate natural ventilation and lighting.
  - Heat Adaptation: Use heat-reflective roofing and shade structures.
  - Emergency Preparedness: Designate safe zones for livestock and staff (refer to Annex 10 for Emergency Response Plan).

III. Health and Safety Planning

- Mitigation Measures:
  - Ventilation and Air Quality: There is no changes to existing design with good allowance of ventilation systems to the structures that provide adequate airflow that reduce airborne pathogens and maintain a healthy environment for both workers and animals.
  - Sanitation Systems: Integrate wash stations, disinfection points, and safe waste disposal areas to prevent disease spread and ensure high facility hygiene standards.
  - Animal Handling Areas: There is a designated handling and isolation zones for sick or new animals to reduce disease transmission risks.
  - Safety Training and Equipment: Ensure that the facility layout allows for safe operations and emergency exits, and design spaces that facilitate easy access for training sessions on biosecurity and safety protocols. Literally this has been factored in the existing design.

IV. Animal Welfare Provisions

- Mitigation Measures:
  - Adequate Space and Enclosures: Design enclosures to avoid overcrowding, allowing animals sufficient room to move, which promotes physical and mental well-being.
  - Proper Ventilation and Lighting: Ensure ventilation systems prevent heat build-up and reduce stress in animals, while natural or low-stress lighting systems maintain appropriate day-night cycles.
  - Water and Feed Access: Include easy-to-access feeding and watering stations that are regularly sanitized, ensuring animals always have clean food and water. Literally, this was factored in the existing design and currently implemented.

- Waste Management within Enclosures: Plan for frequent waste removal and establish drainage systems to keep enclosures clean and dry, preventing contamination and disease.

V. Community and Stakeholder Concerns

- Mitigation Measures:
  - Community Engagement: Conduct informational meetings with local stakeholders to discuss potential impacts and benefits of the refurbishment, fostering transparency and trust. Literally this was carried out in the past before the facility was established at the concerned site. Almost everybody in Malaita knew about and have benefited from the operation of this pig breeding facility.
  - Environmental and Social Considerations in Design: Incorporate feedback from the community to improve design and site accessibility and address any specific concerns about noise, odour, or other disturbances.
  - Grievance Redress Mechanism: Establish a system where community members can voice concerns or complaints during the construction and operational phases, ensuring any issues are addressed promptly.
  - Traffic and Safety Management: Currently, the facility has a good design for entry and exit points. This has been proven to minimize traffic disruption and enhance safety for nearby residents.

VI. Operational Efficiency and Cost Management

- Mitigation Measures:
  - Efficient Layout Planning: Arrange animal enclosures, feed storage, and waste disposal areas in a way that minimizes movement and maximizes operational efficiency.
  - Maintenance Accessibility: Design facility structures with easy access to critical areas for regular maintenance and repair, reducing operational downtime.
  - Resource Optimization: Use automated systems where feasible (e.g., automatic feeders or waterers) to reduce labor costs and minimize waste.
  - Training on Cost-Efficient Practices: Design spaces for training sessions on efficient resource use, ensuring workers understand best practices for cost and resource management.

88. These mitigation measures provide a proactive approach to addressing potential impacts at the design phase, promoting a more sustainable, efficient, and community-friendly operation at the Adaliua Pig Breeding Facility. All of these mitigation measures have been factored to the existing design and have proven to be effective.

6.1.2. Pre-Construction Stage

I. Site Preparation Disturbances

Mitigation Measures:

a. **Noise Control**: Schedule noisy activities during times least likely to disturb residents and animals (i.e., daytime hours only 8am-5pm), and use noise-dampening equipment where possible.
b. **Dust Suppression**: Apply water spray or dust control measures during site clearing and preparation to limit dust dispersion.
c. **Animal Stress Reduction**: Temporarily relocate the animals if feasible, or create a buffer area around their enclosure to minimize exposure to noise and dust. Increase monitoring of animal health for signs of stress.

II. UXO

Mitigation Measures:

a. If any UXO is discovered, the contractor will immediately secure the area, arrange evacuation of nearby residences, and notify the Royal Solomon Islands Police Force (RSIPF). Work will only continue once RSIPF confirms it is safe. Further guidance is available in the subproject's Chance Find Procedure in **Appendix 4**.

III. Waste Management and Disposal

Mitigation Measures:

a. **Segregation and Proper Disposal**: Separate waste types (e.g., recyclables, hazardous materials) for appropriate disposal. Arrange for regular removal of waste to prevent accumulation.

   Facility workers will manage waste by segregating it into compostable pig manure, which will be processed on-site; recyclable materials, which will be sent to Honiara; and non-recyclable solid waste, which will be disposed of at the approved dumpsite near Auki. This approach promotes responsible waste management and sustainability.

b. **Temporary Storage Sites**: Designate a secure area for temporary waste storage to contain waste materials and prevent pest attraction.
c. **Waste Disposal Contracts**: Contract a licensed waste disposal service to handle and dispose of waste safely, adhering to environmental guidelines to prevent contamination.

IV. Utility Disruptions

Mitigation Measures:

a. **Advanced Scheduling**: The facility currently operates independently using on-site utilities for water and electricity, as there are no Solomon Water or Solomon Power connections. Therefore, the contractor will carefully schedule any necessary utility disconnections and reconnections during refurbishment to ensure minimal disruption to operations and animal care.
b. **Temporary Backup Systems**: Provide temporary or installing portable generators to provide electricity and securing temporary water storage tanks to ensure a continuous water supply during any disruptions, to maintain essential services during outages.

c. **Communication with Staff**: Notify all facility personnel and nearby residents in advance of planned utility interruptions to allow for proper preparation.

V. Traffic and Accessibility

Mitigation Measures:

a. **Transport and Access Plan**: Develop a site-specific traffic plan to organize delivery schedules and reduce peak-hour traffic impacts (Traffic Management Plan in Annex 1).
b. **Signage and Designated Routes**: Set up clear signage to direct vehicles and pedestrians around the site, minimizing disruptions and promoting safe access for workers and residents (Traffic Management Plan in **Annex 1**).
c. **Off-Peak Deliveries**: Schedule deliveries and movement of machinery during off-peak hours to lessen congestion and reduce impacts on local accessibility (Traffic Management Plan in **Annex 1**).

VI. Community and Worker Health and Safety

Mitigation Measures:

a. Inclusion of appropriate health and safety system wherever necessary. Health and Safety Plan (Annex 5) and OHS Plan (Annex 11) for the project are being prepared.
b. **Safety Signage and Barriers**: Install warning signs, safety barriers, and restricted access zones around the site to protect workers and community members.
c. **Personal Protective Equipment (PPE)**: Require all workers to wear PPE, including masks, gloves, and protective clothing, to prevent injuries and promote hygiene.
d. **Health Screenings**: Conduct health screenings for workers before site entry to prevent potential transmission of communicable diseases to the community or livestock (See Biosecurity Plan in **Annex 2**).
e. **Community Engagement**: Provide information to the local community on construction schedules and safety measures to keep them informed and prevent accidental intrusions into work areas. Also carry out awareness to project affected communities about the project grievance redress mechanism (GRM) on how to raise complaints and address them.

89. These mitigation measures aim to minimize the potential adverse impacts during the pre-construction phase, enhancing safety, environmental protection, and community relations at the facility.

6.1.3. Construction Stage

I. Noise and Vibration

Mitigation Measures:

a. **Noise Control Measures**: Use low-noise equipment where possible and install noise-dampening barriers around work areas.

b. **Scheduling**: Conduct high-noise activities during times least disruptive to animals and nearby residents (during daytime hours only 8am-5pm). Monitor noise levels to ensure they remain within acceptable limits.

II. Air Quality (Dust and Emissions)

Mitigation Measures:

a. **Dust Suppression**: Dust control will be managed by regularly spraying water on exposed surfaces and construction areas, especially during dry and windy conditions. Limit dust-prone activities on windy days.

b. **Emissions Control**: Emissions are expected to be minimal, as the renovation work will primarily utilize power tools rather than heavy machinery. Consequently, emission control measures are not a primary concern; however, proper maintenance of power tools will be ensured to further minimize any potential emissions.

III. Waste Generation

Mitigation Measures:

a. **Waste Segregation**: Sort waste into categories (e.g., recyclables, non-recyclables, hazardous) for appropriate disposal or recycling (refer to **Annex 3** and **Annex 6** for Solid Waste and Wastewater Management Plan, and Hazardous Material Management Plan respectively).

b. **Secure Disposal Sites**: Arrange timely disposal at approved waste facilities to prevent accumulation, contamination, and pest attraction.

c. **Drain and Septic Tank**: To mitigate the impacts of desilting drain and desludging organic waste from the septic tank, ensure that waste is carefully removed and taken to the composting house to undergo the composting process or transported to an approved disposal site to prevent environmental contamination. Additionally, implement safety protocols for workers handling waste, including personal protective equipment (PPE) and safe waste containment during transport (**Annex 4**).

IV. Soil and Water Contamination

Mitigation Measures:

a. **Spill Prevention**: Store chemicals and fuels in secure, contained areas with spill kits available on-site (see Spill Response and Control Plan in **Annex 7**).

b. **Runoff Management**: Install silt fences and containment measures to prevent construction runoff from reaching soil and water sources.

V. Occupational Health and Safety Risks

Mitigation Measures:

a. **Safety Training**: Provide training on handling hazardous materials and safe equipment operation.

b. **Personal Protective Equipment (PPE)**: Ensure all workers have and use PPE, including hard hats, gloves, masks, and safety boots.

VI. Impact on Animal Health and Welfare

Mitigation Measures:

a. **Buffer Zones**: Set up physical barriers or buffer zones between construction areas and animal enclosures to reduce stress from noise and activity.

b. **Temporary Relocation**: Where feasible, temporarily relocate animals to a quieter area during high-disturbance activities (further detail in **Annex 2**).

c. To mitigate the risk of contamination, the following measures will be implemented:

- ✓ **Biosecurity Protocols**: Establish strict biosecurity measures, including requiring all construction workers to change into clean clothing and footwear before entering the pig breeding area. Workers must undergo a thorough hand sanitization process (further detain in **Annex 2**).
- ✓ **Controlled Access**: Limit access to the pig breeding facility to essential personnel only. Signage will be displayed to inform workers and visitors of biosecurity protocols, emphasizing the importance of preventing contamination.
- ✓ **Disinfection Stations**: Set up disinfection stations at entry points to the pig breeding facility, where workers can sanitize their hands and footwear before entering. Use effective disinfectants that are proven to eliminate viral pathogens.
- ✓ **Training and Awareness**: Conduct training sessions for construction workers on biosecurity practices and the importance of preventing disease transmission to the pigs. Clear communication about the potential risks and protocols will enhance compliance and effectiveness.
- ✓ **Regular Monitoring**: MAL will implement routine health checks on the pigs during the renovation phase to quickly identify any signs of illness and take prompt action if contamination is suspected.

VII. Increased Traffic and Accessibility Issues

Mitigation Measures:

a. **Traffic Management Plan**: Develop a site-specific traffic plan to schedule deliveries during off-peak hours and use designated access routes (**Annex 1**).

b. **Signage and Safety Measures**: Place clear signage to direct vehicles and pedestrians safely around the site and minimize disruptions.

VIII. Community Health and Safety Risks

Mitigation Measures:

a. **Clear Boundaries**: Establish secure boundaries with warning signs and restricted access areas to protect community members from hazardous areas (Annex 5).

b. **Health Protocols**: Implement health protocols, including COVID-19 guidelines and cultural respect measures, to reduce health risks and foster positive community relations.

IX. Water Use and Demand

Mitigation Measures:

a. **Water Conservation Measures**: Use water-efficient techniques during construction, such as reusing greywater where applicable.

b. **Temporary Water Storage**: Install water storage tanks to ensure a steady supply for critical needs.

90. This mitigation management plan aims to reduce the environmental and social impacts during the construction phase, ensuring safe, sustainable, and community-conscious refurbishment at the Adaliua Pig Breeding Facility.

6.1.4. Operational Stage

I. Waste Management and Pollution

- **Mitigation Measures**:
  - **Waste Segregation and Composting**: Collect and compost pig manure in designated areas to produce organic fertilizer, reducing nutrient runoff and environmental pollution (Annex 3).
  - **Wastewater Management**: The facility's water for cleaning is sourced from an on-site borehole, ensuring a reliable water supply for daily operations. All wastewater generated from cleaning processes is directed into a drainage system and then disposed of in the septic tank, where it undergoes preliminary treatment before being released into an adjacent soak hole for final filtration and absorption into the soil (Annex 3).

II. Odor and Air Quality

- **Mitigation Measures**:
  - **Ventilation Systems**: Install and maintain effective ventilation to control airflow and disperse odors, keeping air quality in and around the facility acceptable.
  - **Regular Waste Removal**: Schedule frequent manure and waste removal to prevent odor buildup and ensure timely cleaning of animal enclosures.

III. Water Use and Demand

- **Mitigation Measures**:

- **Water Conservation Practices**: There is an on-site borehole where water is sourced and stored in a concrete tank at the site. This is a way of conserving water for use in cleaning the facility.
- **Rainwater Harvesting**: There is gutter system around roof of the three buildings at the site for rainwater collection and stored in 2 x 5000 L rotomould tanks to supplement water supply, especially during dry seasons, reducing dependence on local groundwater. For this refurbishment, 2 x 10,000 L rotomould tank will be installed to supplement rainwater storage.

IV. Noise

- **Mitigation Measures**:
  - **Noise Buffer Zones**: Establish buffer zones or plant vegetation around the facility to absorb and reduce noise levels reaching nearby communities. There is however, enough vegetation between the facilities and the nearest community with sufficient distance.
  - **Operational Schedule**: Minimize noisy operations during times that could disturb animals and nearby residents, promoting a stable, low-stress environment for the pigs.

V. Animal Health and Disease Management

- **Mitigation Measures**:
  - **Biosecurity Protocols**: Enforce strict biosecurity measures, including disinfection points, restricted entry zones, and quarantine for new or sick animals (**Annex 2**).
  - **Regular Health Screenings and Vaccinations**: Implement routine health checks, vaccination programs, and pest control to prevent disease outbreaks and ensure animal welfare (**Annex 2**).

VI. Soil and Groundwater Contamination

- **Mitigation Measures**:
  - **Containment Systems**: Construct containment areas for manure and install impermeable liners to prevent nutrient leaching into soil and groundwater.

VII. Community Health and Safety

- **Mitigation Measures**:
  - **Public Health Awareness**: Engage with local communities to raise awareness of health and safety protocols, including waste and odour management practices.
  - **Facility Access Control**: Limit facility access to authorized personnel only and provide handwashing and sanitation stations to prevent disease spread.

VIII. Economic and Employment Impacts

- **Mitigation Measures**:
  - **Employment Opportunities**: Prioritize hiring from the local community to promote job creation and support the local economy.

- **Local Supplier Partnerships**: Source feed, veterinary services, and other supplies from nearby businesses to stimulate regional economic growth.

IX. Resource Consumption and Energy Use

- **Mitigation Measures**:
  - **Renewable Energy Sources**: Integrate solar panels or other renewable energy sources to reduce reliance on non-renewable energy and lower greenhouse gas emissions.
  - **Energy-Efficient Practices**: Install energy-efficient lighting, insulation, and equipment to minimize energy consumption in daily operations.

X. Animal Welfare and Ethical Considerations

- **Mitigation Measures**:
  - **Humane Housing and Handling**: Ensure that pig enclosures are spacious, well-ventilated, and designed to allow natural behaviours, reducing stress. This have been factored to the existing design of the current facility.
  - **Regular Welfare Assessments**: Conduct routine assessments of animal welfare, adjusting practices to address any issues that may arise and ensure ethical treatment.
  - Biosecurity Protocols: Enforce strict biosecurity measures, including disinfection points, restricted entry zones, and quarantine for new or sick animals (Annex 2).
  - Regular Health Screenings and Vaccinations: Implement routine health checks, vaccination programs, and pest control to prevent disease outbreaks and ensure animal welfare (Annex 2).

XI. Mishandling Anti-B25 Solution concentrate

- **Mitigation Measures:**
  - To mitigate the risks of mishandling the Anti-B25 Solution (concentrate), it is crucial to store Anti-B25 in well-sealed containers in cool, ventilated areas, away from incompatible substances. Workers should wear appropriate personal protective equipment (PPE) such as gloves, goggles, and respiratory protection when handling it. Spills must be contained immediately as per the Spill Control and Response Plan (SCRP) (Annex 7), and waste should be disposed of in compliance with local regulations. Proper training in handling and emergency response, along with adhering to dilution guidelines, can significantly reduce health and environmental impacts while ensuring safe operations

91. These mitigation measures are designed to address the operational impacts comprehensively, ensuring a sustainable, community-friendly, and ethical approach to managing the Adaliua Pig Breeding Facility.

6.2. Mitigation Matrix for Environmental and Social Impacts

92. The below **table** is a comprehensive mitigation matrix for the environmental and social impacts during the various stages of the subproject, which includes the design, preconstruction, construction, and operational phases. This matrix outlines potential impacts, mitigation measures, implementing locations, estimated costs, executing agencies, and supervising agencies. Notably, community engagement and stakeholder is especially important throughout the subproject phases, and the Social Safeguards Officer should ensure that engagement is ongoing and culturally appropriate until the completion of the refurbishment work. MAL through its Malaita Province Extension Office will continue with the community engagement and stakeholder consultations

throughout the operational stage.

Table 5: Mitigation Matrix Table

ENVIRONMENTAL & SOCIAL ISSUES / POTENTIAL ENVIRONMENTAL/SOCIAL IMPACT	PROPOSED MITIGATION MEASURE OR ENHANCEMENT MEASURE	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
DESIGN/PRECONSTRUCTION MOBILIZATION STAGE					
1. Land degradation due to poor site selection	- Ensure selection of environmentally suitable sites.	Subproject Site	Design cost	Subproject Design Team back in the days before the facility was constructed at the site	MAL
2. Loss of biodiversity (vegetation or fauna)	- The facility is located and operated on an existing site. Before, the facility was constructed, the local biodiversity was surveyed and the site is mainly coconut plantation and private land allowed to be cleared for the facility. There is negligible to minimal impact.	Design Stage	Design cost	Subproject Design Team back in the days before the facility was constructed at the site	MAL
3. Inadequate stakeholder engagement	- Engage with local communities and stakeholders to ensure inclusivity and take into account suggested inputs into subproject designs.	Subproject Area	SIART operational cost	SIART project team	PMU- Social Safeguards Officer (SSO)
4.Complaints due to subproject-related impacts	• SIART PMU and the contractor: (i) establish the approved project's grievance redress mechanism (GRM); (ii) publicize the existence of the project's GRM through public awareness campaigns, website, billboards, public notifications, etc.; (iii) ensure that the names and contact numbers of representatives of the contractors and SIART PMU are placed on notice boards at agreed locations and, posters, brouchers or website.	Location of the sub-project community	Part of contractors' bid cost	Contractor	PMU- Social Safeguards Officer (SSO)
5. Disturbance to local communities (noise, access, etc.)	- Develop a Communication and Consultation Plan.	Subproject Site	Included in design cost	Community Engagement Team	PMU- Social Safeguards Officer (SSO)

ENVIRONMENTAL & SOCIAL ISSUES / POTENTIAL ENVIRONMENTAL/SOCIAL IMPACT	PROPOSED MITIGATION MEASURE OR ENHANCEMENT MEASURE	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
6.Renovation/Construction preparation stage- Environmental management budget & Incorporate environmental management into contract documents	-Confirm budgets for the implementation of environmental management measures and environmental supervisory responsibilities.	Subproject site	Included in design cost	Contractor's Construction supervisor; SIART PMU-Project Engineer	SIART PMU-Project Engineer
Solid Waste management: - Generation of construction waste (e.g., cement bags, metal, timber offcuts) - Potential soil and water contamination from improper disposal - Risk of illegal dumping by contractors - Additional domestic waste (food scraps, packaging, plastic waste) from contractor's temporary use of the existing office/storage building - Increased wastewater generation from cooking, washing, and restrooms at the site office.	- Develop a Solid Waste Management Plan (SWMP) for proper waste segregation and disposal (**Annex 3**). - Identify designated waste storage areas and disposal sites before construction starts. - Require contractor compliance with waste disposal regulations and monitoring. - Provide waste bins and regular collection for domestic waste to prevent odour, pests, and littering. - Ensure the existing sanitation facilities can handle additional demand or install temporary backups if needed	Subproject Site	Included in design cost	Contractor's Construction supervisor; SIART PMU-Project Engineer	SIART PMU-Project Engineer
Wastewater Management: - No nearby surface water sources, but groundwater is extracted and stored in a tank for use. - Increased greywater and sewage from contractor's temporary use of the site. - The current septic tank is in excellent working condition and effectively treats wastewater. - Risk of improper disposal of additional wastewater affecting groundwater quality.	- Ensure proper wastewater containment to prevent any risk of groundwater contamination - The existing drainage system is well-designed and fully functional, efficiently collecting runoffs and wastewater - Maintain the existing drainage system and septic tank to ensure continued efficiency and prevent overloading. - Direct all wastewater from pig pens into the existing drainage system and septic tank to prevent contamination. All household wastewater from washing and cooking and sanitation are directed into a separate septic tank.	Subproject Site	Included in design cost	Contractor's Construction supervisor; SIART PMU-Project Engineer	SIART PMU-Project Engineer

ENVIRONMENTAL & SOCIAL ISSUES / POTENTIAL ENVIRONMENTAL/SOCIAL IMPACT	PROPOSED MITIGATION MEASURE OR ENHANCEMENT MEASURE	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
Climate Change & Disaster Risk Resilience: - Demand for water during construction (for concrete mixing) of a composting house. - Extreme heat may affect workers' health and productivity. - Risk of supply chain disruptions for building materials during extreme weather events. - Given no historical flooding records, improper site preparation could cause temporary waterlogging during heavy rain. - Given low seismicity and cyclone-resistant building design, structural safety risks are minimal.	- Design and incorporate rainwater harvesting and efficient water-use systems early. - Ensure shaded rest areas and hydration stations are included in site plans. - Identify alternative material suppliers and ensure buffer stock is available. - Include proper stormwater drainage in site design before construction begins. - Engineer has checked integrity of concrete foundation and confirmed compliance with cyclone and earthquake standards. -Emergency Response Plan was prepared for the refurbishment and operation of the facility (**Annex 10**)	Subproject Site	Included in design cost	Contractor's Construction supervisor; SIART PMU-Project Engineer	SIART PMU-Project Engineer
CONSTRUCTION STAGE					
1. Dust and air pollution	- Implement dust suppression measures (water spraying, barriers).	Construction Site	Included in design cost	Construction Contractor	PMU-Environmental Safeguards Officer (ESO)
2. Noise pollution from power tools and equipment	- Use quieter equipment, limit work hours to daytime-hours only, and establish noise barriers if necessary.	Construction Site	Included in design cost	Construction Contractor	PMU-ESO
3. Runoff, wastewater	- Proper drainage and septic tank - Drainage and septic tank are routinely cleaned (desludged/desilted) to maintain operational capacity	Construction Site	Included in design cost	Construction Contractor	PMU-ESO
4. Worker health and safety risks (e.g., accidents, exposure)	- Ensure PPE use, regular safety drills, and health screenings.	Construction Site	Included in design cost	Contractor Safety Officer	PMU-ESO
5. Community disturbance (influx of workers, traffic)	- Implement traffic management plans, establish workers' accommodation.	Nearby Communities	Included in design cost	Construction Contractor	PMU-SSO

ENVIRONMENTAL & SOCIAL ISSUES / POTENTIAL ENVIRONMENTAL/SOCIAL IMPACT	PROPOSED MITIGATION MEASURE OR ENHANCEMENT MEASURE	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
6.Natural Disasters, i.e., Cyclones, Earthquakes	-If a cyclone strikes, within 24 hours, construction must cease, construction materials secured, and any potential contaminant must be covered and or removed. -In case of an emergency, activate the Emergency Response Plan (ERP) in **Annex 10**.	Construction Site	Minimal (part of standard construction practice)	Contractor	PMU-Engineer/ESO
7.Construction waste management (Solid waste & Liquid waste)- plastics, tins, cans, bottles, metals, woods, glass as well as sewage at accommodation and construction site	- The contractor will be required to: (i) provide garbage bins and facilities within the subproject site for temporary storage of construction waste and domestic solid waste (Annex 3); (ii) separate solid waste into hazardous, non-hazardous and reusable waste streams and store temporarily on-site in secure facilities with weatherproof flooring and roofing; (iii) ensure that wastes are not haphazardly dumped within the subproject site and adjacent areas; (iv) regular disposal of wastes to an approved dumpsite; (v) prohibit burning of all types of wastes; (vi) remove the construction wastes from the sites after work completion; (vii) prohibit the disposal of solid wastes into drainage ditches and public areas; (viii) prohibit the burning of construction and domestic wastes; (ix) ensure that workers are provided with a sanitary system to prevent fouling of surrounding soils. Sanitary system must be of sufficient size for the number of workers and must take into account the disposal situation at the local dumpsite. (iix) septic tank and soak away must be established at the contractor's workers accommodation and sludges must be regularly cleared. At the work site, a portaloo must be provided for use by workers. -Observance of the Contractor's Workers' Environmental Code of Conduct (**Appendix 7**)	Location of works	Part of contractors' bid cost	Contractor	PMU-Engineer/ESO

ENVIRONMENTAL & SOCIAL ISSUES / POTENTIAL ENVIRONMENTAL/SOCIAL IMPACT	PROPOSED MITIGATION MEASURE OR ENHANCEMENT MEASURE	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	-A Waste Management Plan will be prepared as part of the CESMP that will ensure all solid wastes including domestic and construction wastes are to be disposed- off at an approved dumpsite (**Annex 3**).				
8.Hazardous materials releases.	To prevent accidental releases, where required, the contractor will implement the following: (i) provide, if required, fuel and oil depot with impermeable flooring with sump where wash water and sludge can be collected for proper disposal; (ii) servicing of equipment should only be carried out in specified areas adequately equipped to avoid leaks and spills that could contaminate soil; (iii) chemicals, hazardous substances and fuel will be stored on-site within an enclosed and covered secure area that has an impervious floor and impervious bund around it; (iv) equipment maintenance areas and fuel storage areas will be provided with drainage leading to an oil-water separator that will be regularly skimmed of oil and maintained to ensure efficiency; (v) regularly check containers for leakage and undertake necessary repair or replacement; (vi) ensure all storage containers are in good condition with proper labelling; and (vii) store waste oil, used lubricant and other hazardous wastes in tightly sealed containers to avoid contamination of soil and water resources; Measures for clean-up and handling of contaminated materials include: (i) undertake immediate clean-up of spills, (ii) oil stained wastes and used oil should be collected and disposed of through recyclers / authorized waste handlers and disposal in authorized waste facilities; (iii) ensure availability of spill clean-up materials such as absorbent pads, (iv)	Location of works	Part of contractors' bid cost	Contractor	PMU-Engineer/ESO

ENVIRONMENTAL & SOCIAL ISSUES / POTENTIAL ENVIRONMENTAL/SOCIAL IMPACT	PROPOSED MITIGATION MEASURE OR ENHANCEMENT MEASURE	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	restoration of temporary work sites will include removal, treatment, and proper disposal of oil contaminated soils, (v) discharge of oil contaminated water into the environment will be prohibited; and (vi) construction personnel designated to handle of fuels/hazardous substances will be trained particularly in spill control procedures (**Annex 6** and **Annex 7**). **Annex 8** is also crucial in auditing the hazardous waste at the project site.				
9.On-site air pollution due to construction activities	The contractor will be required to do the following: (i) regular water spraying of exposed work areas and other construction-related facilities to minimize dust generation, when required; (ii) construction materials stockpiles and spoils with potential for significant dust generation to be covered or sprayed with water, as appropriate, to prevent fine materials from being blown; (iii) prohibit use of equipment and vehicles that emit dark sooty emissions; (iv) hauling trucks transporting loose construction materials such as sand, gravel, and spoils to be provided with tight tarpaulin cover or other suitable materials to avoid spills and dust emission; and (v) prohibit burning of all types of wastes generated at the construction site, as well as other subproject-related facilities and activities.	Location of works	Minimal (part of standard construction practice)	Contractor	PMU-Engineer/ESO
10.Vehicular traffic congestion and hindrance to public access	The contractor to: (i) provide traffic management personnel to direct the flow of traffic in the vicinity of the construction site especially the subproject vehicles transporting construction materials to and from the location of works;	Location of works	Part of contractors' bid cost	Contractor	PMU- Engineer
11.Community engagement and grievances	Implement SIART Project Stakeholder Engagement Plan (SEP);	Location of works	Part of contractors' bid cost	Contractor	PMU- SSO

ENVIRONMENTAL & SOCIAL ISSUES / POTENTIAL ENVIRONMENTAL/SOCIAL IMPACT	PROPOSED MITIGATION MEASURE OR ENHANCEMENT MEASURE	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	Maintain a grievance response mechanism at the MAL/SIART project website; workers grievances must be addressed to ensure continuity of works; Ensure that public consultation and disclosure communication is completed at regular intervals to ensure that the public are fully aware of the SIART project program of activities and the GRM process. Consultation should include all aspects of the sub-project including the stages of construction works on the office building; Signage should be used in public areas around the subproject sites advising the complaints procedure and contact details of key subproject individuals responsible for responding to issues raised.				
12.Community health and safety	The contractor to: (i) use barriers and install signage to keep the public away from constructions site and excavation site; (ii) provide security personnel in hazardous area to restrict public access; (iii) operate construction night light at the vicinity of construction site; (iv) increase workers' HIV/AIDS and sexually transmitted disease (STD) awareness, including information on methods of transmission and protection measures; and (v) workers to respect community protocols and abide by the workers' code of conduct.	Location of works	Part of contractors' bid cost	Contractor	SIART PMU-Engineer
13.Occupational health and safety at work sites	The contractor to implement good practices on occupational health and safety at the construction sites by: (i) ensuring that its workers are trained on first aid and that first aid kit is available at all times on site, (iii) providing the workers with potable water and adequate sanitation facilities, (iv) providing the	Location of works	Part of contractors' bid cost	Contractor	SIART PMU-Engineer

ENVIRONMENTAL & SOCIAL ISSUES / POTENTIAL ENVIRONMENTAL/SOCIAL IMPACT	PROPOSED MITIGATION MEASURE OR ENHANCEMENT MEASURE	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	workers with personal protective equipment (PPE) to minimize exposure to a variety of hazards, and (v) providing firefighting equipment and fire extinguishers in any site where fire hazard and risk are present.				
14. Potential social issues due to influx of workers	Measures include: (i) induction of the workers on requirements of the subproject regarding community health and safety, grievance redress mechanism, and Stakeholder Engagement Plan; (ii) implementation of protocols concerning the workers contact between the local communities and observance of GBV code of conduct and Company Code of Conduct in **Appendix 5 and 6**; (iii) implementation of a communicable disease awareness and prevention program on the risk of disease spreading including sexually transmitted diseases and HIV/STDs and (iv) the work site will be secured by a fence and provided with warning signs to control unauthorized access and prevent entry of the public.	Location of works	Part of contractors' bid cost	Contractor	SIART PMU-Engineer
OPERATIONAL STAGE					
1. Climate Change	Wind adaptation- fully retrofitted and was designed with its sitting and orientation facing the north side, making the roof correctly angled and slopes down to face the prevailing wind direction which assist in reducing uplift-related problems. Extreme rainfall (high intensity rainfall)- gutter around roof perimeter to trap roof runoff and rainwater harvested. Excessive roof runoff is trapped in concrete drain around the eaves of the building and are taken away to prevent pooling or surface flooding.	Facility Site	MAL operational cost	MAL	MAL Executive

ENVIRONMENTAL & SOCIAL ISSUES / POTENTIAL ENVIRONMENTAL/SOCIAL IMPACT	PROPOSED MITIGATION MEASURE OR ENHANCEMENT MEASURE	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	Energy efficiency- the building will have a set-up of LED bulbs to provide lighting. This type of light bulb is the most energy efficient lighting option available. Their use help reduce GHG emissions even further.				
2. Sustainability of the building	It shall be the responsibility of MAL to ensure maintenance, repair, replacement, and refurbishment when the need arise; MAL to ensure operational energy use and operational water use are taken care of.	Facility Site	MAL operational budget	MAL	MAL Executive
3. Safety of office	Ensure the Pig breeding site a fully fenced and one or two guards to be employed by MAL to secure the premises.	Facility Site	MAL operational budget	MAL	MAL Executive
4. Drainage Maintenance	Ensure drains are cleared of sediment and detritus build up on a regular basis and after significant rain events; Ensure that vegetation are cleared from drains;	Facility Site	MAL operational budget	MAL	MAL Executive
5. Waste generation (solid, liquid, hazardous)	- Establish proper waste management systems (recycling, disposal).	Facility Site	MAL operational budget	MAL	MAL Executive
6. Water consumption and wastewater generation	- Implement water rationing utilizing borehole water for washing and cleaning surfaces and rainwater harvesting for drinking and cooking, and wastewater treatment (septic tank remain operational).	Facility Site	MAL operational budget	MAL	MAL Executive
7. Noise from ongoing operations	- Set up noise mitigation measures (barriers, limited work hours) if necessary.	Facility Site	MAL operational budget	MAL	MAL Executive
8. Socioeconomic impacts (e.g., employment, local economy)	- Promote local hiring, and establish community development programs.	Local Communities	MAL operational budget	MAL	MAL Executive
9. Accidental spill of Anti-B25 solution	Apply simple and environmentally friendly cleaning methods and reagents for pig breeding facility. This Eco-Friendly Cleaning method is recommended: ✓ Remove organic debris before applying cleaning agents ✓ Use non-toxic, biodegradable disinfectants	Piggery facilities	MAL operational budget	MAL	MAL Executive

ENVIRONMENTAL & SOCIAL ISSUES / POTENTIAL ENVIRONMENTAL/SOCIAL IMPACT	PROPOSED MITIGATION MEASURE OR ENHANCEMENT MEASURE	IMPLEMENTING LOCATION	ESTIMATED MITIGATION COSTS	EXECUTING AGENCY	SUPERVISING AGENCY
	✓ Ensure proper ventilation after cleaning ✓ Rotate cleaning agents to prevent microbial resistance Before using any cleaning agent, use high pressure steam/hot water to kill bacteria without using chemicals, scrub with brushes to breakdown biofilms and then use environmentally friendly cleaning reagents such as: ✓ Vinegar (Acetic Acid) Solution- natural disinfectant against bacteria and fungi. ✓ Baking Soda (Sodium Bicarbonate)- Mild abrasive that helps remove dirt and grease and neutralizes odours in pig facilities ✓ Hydrogen Peroxide (H_2O_2, 3-5%)- A powerful yet eco-friendly disinfectant that breaks down into water and oxygen, and kills bacteria, viruses, and fungi.				

6.3. Monitoring Plan

93. The Monitoring Plan (**Table 6**) for the Adaliua Pig Breeding subproject is tailored to address key environmental and social safeguards across the design, preconstruction, construction, and operational stages. Each stage has its unique focus and monitoring frequency, with KPIs, responsible parties, and reporting requirements specified for effective oversight.

94. During the construction phase, any non-compliance to environmental and social mitigation measures identified through routine monitoring will be advised to the Contractor's supervisor in writing by the contractor's Environmental, Health and Safeguards Officer (EHSO) in the first instance. The non-compliance notification will identify the problem, including the actions the Contractor needs to take and a time frame for implementing the corrective action. The PMU Environmental and Social officers will also carry out contractor compliance monitoring to ensure relevant mitigation measures reflected in the CESMP are implemented by the contractor and prepare monitoring reports as required. Recurring instances of non-compliance by the contractor will be referred to the Project Engineer for follow up action.

95. During the operational phase, the facility's oversight will transition to a dedicated team comprising the Operations Manager, the MAL Livestock Department, and the MAL Executive. This team will be responsible for ensuring that all facility activities adhere to Good International Industry Practice (GIIP) standards, as well as national and international regulations.

96. The oversight team will implement continuous monitoring procedures to maintain compliance, manage risks, and uphold quality standards. Their combined expertise will ensure that the facility operates safely, sustainably, and efficiently, aligning with best practices in livestock management and industry standards.

Table 6: Monitoring Plan

Environmental / Social Parameter	Monitoring Activity	Frequency	Key Performance Indicators (KPIs)	Responsible Agency	Reporting Requirements
Design Phase					
Site Selection and land use eligibility	- Environmental assessment (ESMP-this report)	One-time, during design	- Environmentally suitable site selected	PMU-Engineer/ESO/SSO	ESMP
Stakeholder Engagement	- Consultations with community and key stakeholders	Periodic, during design	- Community support and minimal conflicts	PMU- SSO	Stakeholder Consultation Report in ESMP
Risk and Hazard Identification	- Preliminary assessment of environmental and social risks	One-time, during design	- Complete risk/Impact identification and mitigation strategies (Table 5)	PMU ESO/SSO	ESMP
Pre-Construction Phase					
Site Preparation	- Monitor erosion and surface runoff and transporting of materials to site- Traffic management	Weekly during prep activities	- No visible erosion or unapproved clearing, Traffic Management Plan	Contractor supervisor	Weekly Environment, Health and Safety monitoring report
Worker Health and Safety	- Inspect site for PPE availability and safe practices	Weekly	- 100% PPE compliance and training records	Contractor's Environment, Health & Safety Officer (EHSO)	Weekly Environment, Health and Safety

Environmental / Social Parameter	Monitoring Activity	Frequency	Key Performance Indicators (KPIs)	Responsible Agency	Reporting Requirements
					monitoring report
Community Engagement	- Ongoing consultations to update the community on upcoming work	Monthly	- Low level of grievances and community concerns	Contractor supervisor/PMU-SSO	Monthly Environment and Social Safeguards Report (Monthly Progress Report)
Waste Disposal Setup	- Inspect waste disposal areas and containment measures	One-time setup, then monthly	- Adequate disposal sites in place	Contractor supervisor/PMU-Engineer/ESO	Monthly Environment and Social Safeguards Report (Monthly Progress Report)
Site Specific Risks/Impacts Identified (CESMP)	CESMP document	One-time during pre-construction	Approved CESMP	Contractor with support by PMU-ESO	CESMP
Construction Phase					
Dust and Air Quality	- Monitor dust suppression and air quality	Daily/Weekly	- Minimal visible dust and air quality within limits	Constractor's EHSO	Monthly Monitoring Report
Noise Pollution	- Measure noise levels at the subproject boundary	Weekly	- Noise levels within permissible limits	PMU-ESO	Monthly Monitoring Report
Solid and Liquid Waste Management	- Inspect waste collection, segregation, and disposal practices	Weekly	- Proper waste management practices followed	Contractor supervisor	Monthly Monitoring Report
Hazardous wastes including leakage and spillage of oil; metal off-cuts; glasses and Others hazardous wastes	Check if proper bins/containers are arranged for storage of waste of these types; Check if waste bins are labelled appropriately for its purpose; Check if PPEs are used properly during waste handling; Check that hazardous wastes are disposed and discharged properly to the environment without causing any negative impact;	Weekly	Spillage of oil, Public complaints.	Contractor's supervisor	Monthly Report
Worker Health and Safety	- Monitor PPE usage, conduct safety drills, and hygiene practices	Weekly	- Zero serious incidents, high PPE compliance	Contractor EHSO	Weekly Safety Report

Environmental / Social Parameter	Monitoring Activity	Frequency	Key Performance Indicators (KPIs)	Responsible Agency	Reporting Requirements
Community Relations	- Record and address grievances related to construction disturbances	Weekly	- Grievance resolution rate, low number of complaints	PMU-SSO	Monthly Grievance Report
Workers Grievances					
Operational Phase					
Effluent and Wastewater Management	- Check drainage to ensure no obstruction	Quarterly	- Effluent levels within permitted discharge limits	Operations Manager	Quarterly Report
Odor and Air Quality	- Monitor odour levels and air quality surrounding the facility	Monthly	- Odor complaints low, air quality meets standards	Operations Manager	Quarterly Monitoring Report
Worker Health and Safety	- Regular health screenings, safety training, and equipment checks	Monthly	- Low incident rate, high training attendance	Operations Manager	Quarterly Report
Community Health and Safety	- Conduct awareness sessions on zoonotic disease prevention	Biannually	- Community reports fewer health-related issues	MAL Livestock Department	Biannual Community Health Report
Economic Impact and Employment	- Monitor local employment rates and vendor satisfaction	Quarterly	- High percentage of local hires, positive vendor feedback	MAL Management	Annual Report

6.4. Contractor's Environmental and Social Management Plan

99. The Contractor's Environmental and Social Management Plan (CESMP**)** will be a detailed, site-specific document developed by the contractor to operationalize and expand on the mitigation measures and requirements outlined in this Site-Specific Environmental and Social Management Plan (SS-ESMP)**.** The CESMP will include specific sub-plans tailored to address the identified risks and impacts of subproject activities. These sub-plans will provide practical, actionable steps to ensure environmental and social safeguards are effectively implemented during the refurbishment of the Adaliua Pig Breeding Facility.

6.4.1. Key Requirements for the CESMP

(a) **Alignment with the SS-ESMP:**
The CESMP must build upon the SS-ESMP, ensuring that all risks, impacts, and mitigation measures identified in the SS-ESMP are effectively addressed.

(b) **Site-Specific Details:**
The CESMP must include detailed methodologies, timelines, and roles/responsibilities specific to the subproject site, reflecting real-world conditions.

(c) **Incorporation of Sub-Plans:**
The contractor will expand on the relevant sub-plans annexed to the SS-ESMP, tailoring them to site-specific conditions. The key sub-plans will include:

- **Traffic Management Plan:** Outlines strategies and measures to ensure the safe and efficient movement of vehicles, pedestrians, and equipment within and around the

subproject site. It identifies potential risks, sets up controls like signage, barriers, and detours, and provides procedures for minimizing disruptions and ensuring safety during construction or other activities affecting traffic flow.

- **Hazardous Materials Management Plan:** Detailed procedures for handling, storage, and disposal of hazardous materials such as diesel fuel, paint, medical waste, and Anti-B25 solution.
- **Waste Management Plan:** Specific measures for managing solid and liquid waste, including segregation, collection, and disposal.
- **Emergency Response Plan:** Site-specific procedures for responding to spills, fires, and medical emergencies, with a focus on minimizing harm to workers, communities, and the environment.
- **Occupational Health and Safety (OHS) Plan:** Measures to ensure worker safety, including the use of Personal Protective Equipment (PPE), training, and risk mitigation protocols.

(d) **Legal and Regulatory Compliance:**
The CESMP must comply with national environmental laws and standards, as well as the World Bank Environmental and Social Standards (ESS), particularly ESS1 (Assessment and Management of Environmental and Social Risks) and ESS3 (Resource Efficiency and Pollution Prevention).

(e) **Monitoring and Reporting:**
The CESMP will establish protocols for regular monitoring, documentation, and reporting of environmental and social performance. This includes daily site inspections, maintaining records of hazardous material usage/disposal, and preparing periodic reports for submission to the supervising authority.

6.4.2. Implementation and Approval

100. Before commencing construction activities, the contractor must submit the CESMP to the SIART ESO and SSO for review and approval. The CESMP will be a living document, updated as necessary to adapt to changing site conditions or unforeseen challenges.

101. By requiring the contractor to prepare the CESMP and expand on the sub-plans, this process ensures that site-specific risks are comprehensively addressed and that environmental and social safeguards are operationalized effectively.

102. PMU Environmental and Social Safeguards Officers will implement their own work plans to conduct regular monitoring and inspections of the contractor's activities. This oversight is to ensure that the contractor adheres to the approved CESMP and complies with both World Bank (WB) and Solomon Islands Government (SIG) safeguard requirements. Furthermore, the PMU will provide capacity development and induction training for the contractor before actual refurbishment works begin.

7. ESMP IMPLEMENTATION

103. The environmental assessment has determined that the subproject will have less than significant (minor) impacts on the local environment. The SS-ESMP includes: (i) implementation arrangement, mitigating measures to be implemented, and (iii) required monitoring associated with the mitigating measures. It also describes institutional roles and responsibilities during pre-construction, construction, and operation phases.

7.1. Institutional Arrangement

104. The MOFT is the Project executing agency and MAL is the implementing agency, operating through the SIART PMU which consists of various experts. A summary of the environmental management responsibilities for the SIART Project's activities is presented in **Table 7**.

Table 7: Summary of environmental management responsibilities in the subproject

Project Implementation Agency	Roles and Responsibility
Ministry of Finance and Treasury (executing agency)	• Guide and monitor overall project execution Financial and procurement oversight. • Ensure flow of funds to the implementing agency and the timely availability of counterpart funding. • Review and coordinate bid evaluations.
Ministry of Agriculture and Livestock (MAL)	• Responsible for overall project implementation and monitoring at the implementing agency level. • Ensure adequate funding available for the PMU. • Submit semi-annual and annual monitoring reports to WB. • Assist in resolving complaints brought through the GRM that have not been resolved at lower levels.
SIART Project Management Unit	• Responsible for overall office building construction supervision and monitoring E&S compliance monitoring by the contractor. • Responsible for overall project management, implementation and monitoring. • Responsible for supervision of construction progress by the contractor. • Prepare the SS-ESMP and submit to WB for clearance. • Ensure environmental safeguard concerns are incorporated in the detailed design for renovation. • Ensure updated environmental assessments and SS-ESMP are integrated into bid documents • Disclose safeguard documents, as appropriate • Conduct awareness and consultations as per the project's SEP. • Submit semi-annual monitoring report to be embedded in the Project progress report submitted to WB. • Review and clear off contractor's CESMP. • Evaluate the contractors' overall work schedules relative to the requirements of the approved CEMP.

Project Implementation Agency	Roles and Responsibility
	• PMU ESO to provide training for contractors' environment health and safety officer to ensure they understand the SS-ESMP requirements. • Ensure contractor's implementation of SS-ESMP/CESMP. • Ensure corrective action requests/instructions to contractor for non - conformances or breaches of the contract or CESMP are undertaken. • Compile project's environmental compliance performance upon completion of the construction activities monthly reports. • Implement the GRM and maintain records of complaints/grievances. Ensure the contractor observes the GRM requirements • Ensure contractor compliance with required resources for mitigation measures as reflected in the CESMP and prepare monitoring reports as required.
Project Steering Committee (PSC)	• Providing strategic and policy direction and oversight for Project implementation in accordance with the provisions of project Financing Agreement and the Project Implementation Manual. • Project Steering Committee is chaired by the Permanent Secretary of MAL and include at least one representative from each of the following ministries: (i) Ministry of Finance and Treasury; (ii) Ministry of National Planning and Development Coordination; (iii) Ministry of Infrastructure Development; (iv) Ministry of Health and Medical Services; (v) Ministry of Provincial Government and Institutional Strengthening; and (vi) Ministry of Education, as well as the provincial secretary of each of the Project Provinces.
Provincial Project Team (PPT)	• The PPT involve in overall coordination of the Project activities within the respective Project Province
Contractor	• Prepare and submit prior to construction the CESMP for review by PMU's ESO and clearance from WB. • Understand the SS-ESMP requirements and allocate necessary resources (budget and staff) for implementation. • Designate and maintain a full -time Environmental Health and Safety Officer (EHSO) to ensure compliance with all requirements concerning environmental, health and safety, and labour regulations during construction • EHSO also to provide capacity building and training for workers on SS-ESMP requirements as required. • Implement construction activities with the required mitigation measures • Conduct environmental monitoring as required by SS-ESMP and approved CESMP

Project Implementation Agency	Roles and Responsibility
	• Act promptly on complaints and grievances concerning the construction activities in accordance with the project's GRM and ensure that the contractor's GRM register is kept up to date. • Submit monthly progress reports on CESMP/SS-ESMP implementation to PMU.
ECD-MECDM	• Processing application for development consent which may include a Public Environment Report (PER)/Environment Impact Statement (EIS) or a Development Proposal seeking exemption from the development consent process and may grant development consent with or without conditions. • Monitors construction progress for compliance with the terms of the issued development consent (if a DC is granted with conditions). The ECD-MECDM had exempted MAL from the DC process but will still require the MAL and the contractor to carry out environmental monitoring as per this SS-ESMP. • Monitors implementation of the mitigation measures in the SS-ESMP in random basis.

7.2. ESMP Monitoring and Reporting

105. Throughout the construction period, the SIART PMU Engineer who shall act as the Supervision Engineer will include results of monthly ESMP monitoring based on the Monitoring Checklist provided in **Appendix 8**, along with the details of any incidents report by the Contractor, in a monthly report for submission to the SIART Project Manager, MAL Executive and WB Project Support Team. The format of the monthly report shall be agreed with all agencies but is recommended to include the following aspects:

- ✓ Description and results of the SS-ESMP monitoring activities undertaken during the month (this will include results of daily CESMP monitoring by the contractor);
- ✓ Status of implementation of relevant environmental and social mitigation measures pertaining to the works;
- ✓ Key environmental problems or social issues encountered and actions taken to rectify problems;
- ✓ Summary of non-compliance notifications issued to the Contractor during the month, actions taken and non-compliances closed out;
- ✓ Summary of complaints received, actions taken and complaints closed out;
- ✓ Key environmental and social issues to be addressed in the coming month;
- ✓ Training records along with gender and age disaggregated employment statistics;
- ✓ Health and Safety Indicators;
- ✓ Summary of consultation / stakeholder engagement undertaken;
- ✓ Copies of ESMP inspection reports (including LMP requirements);
- ✓ Summary of reported incidents, actions taken and recommendations for follow up, and;
- ✓ Before subproject implementation photos, during subproject implementation photos, and completion photos of works.

106. The contractor needs to keep a day-to-day record of all happenings in relation to the execution of works.

This day-to-day record is to include any environmental events that may arise in the course of the day, including incidents and response, complaints and inspections completed.

107. There are monitoring requirements associated with this SS-ESMP that are applicable once SIART has concluded, and normal office operations has begun. At this operational stage, there is no safeguard monitoring and it is recommended that Safeguards Monitoring be incorporated into existing MAL operational processes and cost. This SS-ESMP should be updated as and when necessary to reflect the SIART environmental and social monitoring and reporting processes before the completion of the subproject.

108. The SIART PMU is responsible for quarterly progress reports to the WB. This quarterly progress report will include a section on safeguard compliance and issues. This section will cover (as a minimum):

- ✓ The overall compliance with implementation of the ESMP;
- ✓ Any environmental or social issues arising as a result of project works and how these issues will be remedied or mitigated, and;
- ✓ OHS performance.

7.3. Estimated Budget for ESMP Implementation

109. The expenses for implementing the environmental and social management measures outlined in the SS-ESMP matrix are incorporated into the project's design costs, construction contracts, and operational budgets. The final budget allocation for these safeguards has been determined collaboratively by the PMU Engineer and the Environmental and Social Safeguards Officers.

110. The total budget for managing environmental and social risks during the construction phase is estimated at **SBD$70,000**. This amount is included in the contractor's Bill of Quantities (BOQ) to cover activities such as induction training on environment, health, and safety for the contractor; preparation and implementation of the Contractor's Environmental and Social Management Plan (CESMP); and environmental monitoring during construction. Monitoring activities include air quality, noise, and vibration assessments to ensure compliance, along with health and safety provisions such as first aid kits, construction signboards, banners, and provisional safety equipment (e.g., helmets, gloves, reflective vests, straps, and construction boots).

111. Given the small scale of the project, workers are expected to reside in Auki and commute to the site. The contractor will provide safe drinking water and sanitation facilities on-site. During the operational phase, the estimated cost for managing environmental and social risks including training is **SBD$20,000** per quarter. **Table 8** outlines the activities for each project phase and specifies the parties responsible for budgeting these costs.

Table 8: Budget Table for the implementation of the ESMP

Project Stage	Activity	Cost	Responsibility	Status
Design Stage	Desludging septic and desilting drains	Design cost	PMU	Complete
Pre-Construction Stage	Preparation of ESMP	Project operational cost	PMU	Complete
	ESMP disclosure	Project operational cost	PMU	Not yet
Construction Stage	Induction training for contractor (environment, health & safety)	Included in construction cost Training on SEA/SH by specialised service provider- **SBD$10,000**	PMU	Not yet
	Preparation and implementation of CESMP and environmental monitoring	CESMP preparation - **SBD$20,000**	Contractor	Not yet
		CESMP Monitoring - **SBD$20,000**	Contractor	Not yet
		CESMP Implementation (mitigation cost) - To be quoted by contractor as it is part of construction cost.	Contractor	Not yet
	Training & Capacity Building	Project Construction/Operational Cost **(SBD$20,000)**	Contractor & PMU	Not yet
Operational Stage	First Aid	Ministerial operational cost	Operation Manager-MAL/Private Investor	Not yet
	Office sustainability (e.g., maintenance)	Ministerial operational cost	Operation Manager-MAL/Private Investor	Not yet
	E&S risk management Monitoring and Reporting (Quarterly)	Ministerial operational cost	Operation Manager-MAL/Private Investor	Not yet
	Environmental, Health, and Safety Monitoring, Risk Management and Trainings (such as E&S risk management costs and health and safety training)	Ministerial operational cost (**SBD$20,000 per quarter**)	Operation Manager-MAL/Private Investor	Not yet

7.4. Stakeholder Engagement Plan

112. The SIART Stakeholder Engagement Plan (SEP) will be implemented for the refurbishment works on the pig breeding facility. Stakeholder engagement will be ongoing for the duration of the project. Throughout the implementation of these works, ongoing and meaningful stakeholder engagement will be critical to the review of detailed designs, the selection of mitigation options for identified social and environmental impacts and the prioritisation of investments for funding and implementation scheduling. It is important that the affected communities including women and vulnerable groups are made aware about the proposed development. It shall

be the role of the Social Safeguards Officer (SSO) to carry out such consultations. SIART PMU will be responsible for ensuring meaningful consultations be carried out throughout all stages of the sub-project.

7.4.1. Key outcome of SIART Consultations to Date

113. A team from the SIART PMU, MAL and World Bank have met with the Deputy Premier of Malaita Province, Provincial Secretary and officers of the Planning Department to discuss about Overview of SIART Project and its objectives, Proposed activities in Malaita Province, Renovation of the Adaliua Pig Breeding Facility, Benefits to local farmers, the provincial government, and the Solomon Islands economy. Representing the Malaita Provincial Government (MPG) in the absence of the Hon. Premier (Martin Fini) were the Deputy Premier of Malaita Province (Mr Joe Hereau) and Deputy Provincial Secretary (Mr David Filia Tuita) and three other Planning Department Officers (see Minutes of Meeting in **Appendix 10**). The premier appreciates the team's courtesy to the Provincial Office. The outcome of this engagement is summarised below;

Key Points Discussed - 13th June 2023

1. **Introduction of the SIART Project**
    - The team provided an overview of the Solomon Islands Agriculture and Rural Transformation (SIART) Project, highlighting its focus on improving agricultural productivity and rural livelihoods.
2. **Proposed Renovation of Adaliua Pig Breeding Facility**
    - The team outlined the planned refurbishment of the Adaliua Pig Breeding Facility as a key initiative under the SIART Project.
    - Renovation aims to enhance pig meat production, benefiting local farmers and contributing to Malaita Province's agricultural output.
3. **Expected Benefits**
    - Improved pig breeding infrastructure will support local farmers by increasing production capacity.
    - The initiative will create financial benefits, generate employment opportunities, and strengthen the economic collaboration between Malaita Provincial Government and the Solomon Islands Government.
4. **Engagement with Malaita Provincial Government**
    - The Malaita Provincial Government acknowledged the potential economic and social benefits of the project and expressed support for its implementation.
    - Concerns regarding project timelines, resource allocation, and community engagement were briefly discussed, with commitments made for ongoing dialogue.

114. The consultation meeting with representatives of the Malaita Provincial Government was successfully completed on the 13th June 2023. The Deputy Premier on behalf of the Province and the people of Malaita stressed that they welcome the proposed refurbishment of the Adaliua Pig Breeding Facility. He stressed the importance of having the facility to be fully operational and highlighted the importance of long-term sustainability of the pig breeding operation. There is a strong appreciation to the World Bank for their continuous support especially for the very important proposal and the good works of the SIART PMU.

115. Furthermore, a community consultation activity was conducted on December 14, 2024, that focused on

informing households within a 300-meter radius of the Adeliua farm in Malaita about the proposed renovation of the Pig Breeding Facility under the World Bank-funded Solomon Islands Agriculture Rural Transformation (SIART) Project (see Community Consultation Report in **Annex 8**). The consultation team, comprising the Chief Field Officer (CFO) for Malaita Province and the Social Safeguard Officer (SSO), visited the Zion Worship Centre and Adeliua village, consulting six identified locations through random selection. Participants expressed support for the revival of the facility, highlighting its potential to generate employment and provide access to improved pig breeds, which could enhance local piggery production. Questions were raised about the project's timeline, the construction of a new MAL office in Auki, and the relationship between SIART and the WINROCK project, with responses clarifying project details, funding differences, and plans for further consultations.

116. The consultation process was positively received, with participants appreciating the direct engagement approach, contrasting it with the lack of prior community involvement during the Taiwanese farming era. They emphasized the importance of early communication to reduce grievances and improve community understanding of the subproject's benefits, such as employment opportunities and access to piglets. Despite challenges such as photo consent refusals, absent household members, and unoccupied homes, the activity successfully engaged the community. Future consultations during the construction phase were proposed to ensure broader participation and continued awareness.

7.5. Consultation Plan

117. Public consultation and disclosure are an important aspect of the project. Public consultation and disclosure communication will be completed at regular intervals with full involvement of SIART PMU Social Safeguards Officer (SSO) to ensure that the public are fully aware of the works. Consultations will be conducted after this document is finalized, and it will be an on-going process. It should include all aspects of the sub-project including the construction or refurbishment works site and the nearby residents and business houses. Consultation shall include raising awareness of the project GRM, how to complain and how complaints will be managed. In all instances, consultations will be designed to ensure free, prior and informed consent of the affected community with the aim to maintain the broad community support for the sub-project. **Table 9** below provides an indicative consultation Plan for the sub-project.

Table 9: Indicative Consultation Plan

No.	Consultation activity	Targeted audience	Responsibility
Pre-construction Stage			
1	Consultation on proposed project	Premier/Provincial Secretary and executive members.	PMU, WB team
2	Consultation on preparation of ESMP	Provincial government- PS, Heads of Departments of the province, affected communities within 300 meters safety radius.	Environmental and Social Safeguards officers
3	ESMP disclosure	Provincial government, Churches, Hospital, Business houses, Residents	Environmental Safeguards officer and Social Safeguards Officer.
Construction Stage			
4	Induction training (CESMP,	Contractor workers	Environmental and Social

No.	Consultation activity	Targeted audience	Responsibility
	community health & safety, safety at work, community protocol and governance		Safeguards officers
5	Community/public awareness-health and safety	Auki residents	Social Safeguards officers
6	HIV/AIDS/STI awareness, SEA/SH, CAE, GBV	Contractor workers, Auki residents	Social Safeguards officers
7	Grievance Redress Mechanism	Contractor workers, residents (Zion Worship Center at St. Mary and Adaliua community), provincial government	Social Safeguards officer
Operation Stage			
8	Sustainability awareness	MAL officers, MAL management	MAL Executive

7.6. ESMP Disclosure

118. As required by Solomon Islands law and World Bank policies, the Site-Specific Environmental and Social Management Plan (SS-ESMP) will be publicly disclosed to ensure transparency and stakeholder engagement. The Ministry of Agriculture and Livestock (MAL), as the agency responsible for project preparation, will facilitate this process through the following steps:

1) **Disclosure Platforms**

   - The SS-ESMP will be hosted on the SIART project page within the official MAL website.
   - In accordance with national regulations, the Environment and Conservation Division (ECD) of the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) will also publicly disclose the SS-ESMP, alongside other environmental and social reports.

2) **Public Awareness**

   - A public flyer and/or radio advertisement will inform the public about the availability of the disclosed instrument, ensuring widespread awareness.
   - The SIART Project Management Unit (PMU) will provide additional copies of all safeguard instruments at accessible locations, such as the Malaita MAL Extension Office, to ensure that affected groups and local Non-Governmental Organisations (NGOs) can easily access them.

3) **International Disclosure**

- Upon approval, the SS-ESMP will also be disclosed on the World Bank website, further ensuring international accessibility and transparency.

119. These measures will ensure that the SS-ESMP is readily available to all stakeholders, including affected communities, NGOs, and the general public, promoting inclusive participation and accountability in the project's implementation

7.7. Grievance Redress Mechanism

7.7.1. Purpose

120. The purpose of the Grievance Redress Mechanism (GRM) is to address and record any complaint that may arise during the implementation of the SI ART Project. GRM works within the existing legal and cultural frameworks, providing an additional opportunity to resolve grievances at the community and project level. This GRM is prepared in accordance to the requirements of the Project's Stakeholder Engagement Plan (SEP) and World Bank's Environmental and Social Framework (ESF). It shall be the role of the PMU Social Safeguards Officer to manage the GRM Register where all grievances are recorded (Flow chart in

121. **Figure** 22).

7.7.2. Objectives

122. The key objectives of the GRM are:

- ✓ To address complaints and grievances through consultation with all stakeholders including inform stakeholders of the solutions.
- ✓ Ensure transparency and accountability throughout the implementation of project amongst relevant stakeholders including project beneficiaries.
- ✓ Record, categorize and prioritize the grievances.
- ✓ To promote relations between the project implementers, executers and beneficiaries.

7.7.3. Fundamental Principles

123. The design of the GRM employed the following fundamental principle:

- **Openness and transparency** – The Project will record all complaints submitted, including their outcomes and details of time taken to consider and resolve the complaints. A regularly updated summary of this record will be posted on the project website. The project will take all complaints and view them as opportunities for project improvement.
- **Fairness** – All grievances will be accepted as submitted in good faith and will be assessed on their merits without regard to the complainant's identity or status. All complaints will be evaluated objectively in relation to relevant regulations and operational guidelines of the ART project. Where applicable, the standards of the World Bank's ESF will be applied to the resolution of grievances.
- **Accessibility** – The Project will make every effort to ensure that all project-affected persons and other stakeholders have access to the GRM. To this end, the GRM will accept grievances submitted verbally, in writing, by any suitable means of communication. Complaints may be made by or on behalf of an individual, an organization, or an institution such as media.
- **Responsiveness and effectiveness** – The Project will endeavor to process and respond to all grievances in a timely and effective manner. Receipts of all submissions will be acknowledged

within 5 working days. Consideration of valid complaints by the GRM will occur within 30 working days, giving time for collecting and examining evidence if required. Additional time may be required for negotiation with aggrieved parties, but the resolution should not exceed 45 working days.

- **Anonymity and confidentiality** – Individuals or institutions submitting complaints may request anonymity, in which case their names will not be made public. Confidentiality will also be observed during the period when the GRM is considering a case (e.g., the source and any person, contractors, or entity accused of wrongdoing should be protected).

7.7.4. Community

124. Local communities in the Solomon Islands have existing traditional and cultural ways of resolving issues. It is expected that some disputes at the community level will be resolved using these mechanisms, without the involvement of the contractor(s), and or Government representatives at local and national level.

7.7.5. Awareness

125. The GRM will be publicized among stakeholder group such as affected communities, government agencies and civil society organizations. Signs must be erected at the sites of all works providing the public with updated project information and summarizing the GRM process, including contact details of the PMU Social Safeguards officer (who is the PMU GRM focal person). Anyone will be able to lodge a complaint through a number of methods (including the complaints form, in person, by telephone in either English or Solomon Islands Pidgin). The PMU must provide a GRM that makes every effort not inhibit the lodgement of a complaint. The PMU Social Safeguard officer who will log the details, will maintain the Complaints and Grievance Register. This information will be included in PMU progress reports to the World Bank.

7.7.6. GBV/SEA/SH

126. The risk of Sexual Exploitation and Abuse/Sexual Harassment is considered low for the project as the scale of work is small and would only be requiring local contractor with a relatively small workforce to construct the infrastructure. The contractor however still needs to ensure that any GBV/SEA/SH related grievances are handled by qualified trained professionals who can ensure adherence to anonymity and sensitivity requirements associated with such grievances. If the contractor doesn't have the required capacity/personal certified to handle these types of grievances, they will refer it to GBV/SEA/SH relevant service providers in Auki such as the Christian Care Center and the Safenet (network) for further processing/action and care. There are also trained personals in Auki working through the Red Cross Solomon Islands Office. Therefore, SIART will work closely with the Red Cross as first responders and also the Christian Care Centre and the Safenet (that includes the RSIPF and the Medical Services in Auki). If necessary, other specialised services can be sought from Honiara where these services are also readily available.

7.7.7. Step-by-Step Procedure for Managing Complaints During Construction

127. The following are the general step by step procedure for receiving and managing complaints during construction. This will be adjusted suitable to the context of the works and the location of the subproject site. Other layers of focal points can be added as necessary. The PMU will provide approval to the GRM processes that the contractor will be implementing.

Step 1: Notification of Complaints Directly to the Contractor

- **Contractor's on-site Engineer's Decision**: The contractor's on-site Engineer or site supervisor will

receive, record and ensure the complaints are resolved as possible include limitation of noise, suppression of dust and other construction works related complaints.

- **Communication**: The actions carried out by the contractor to resolve the compliant will be communicated back to the complainant within seven days.

Step 2: Forwarding to MAL Provincial Office:

- **Complicated complaints:** For grievances that that are beyond the contractor's capacity to resolved, the contractor's on-site Engineer will escalate the unresolved complaint through the necessary MAL provincial office GRM focal points to be resolved at the provincial level by the CFO

Step 3:

PMU Environment and Social Safeguards officers: Serious issues that cannot be resolved by CFO should be promptly referred to SIART PMU Environment and Social Safeguards officers who will within 10 working days to resolve the matter.

General public can bring serious claims and issues relating to the project to PMU Social Safeguards officer (PMU GRM focal person). If the complainant still disagrees with the Environment and Social Safeguards Officers' effort to solve the grievance the PMU Environment and Socia Safeguard officers will develop a brief report accompanied by relevant grievance documents of that matter to be forwarded to the PMU Project Manager.

Step 4:

PMU Project Manager:

The Project Manager will deliberate on the brief report and the accompanied grievance documents sent to him/her by the PMU Environment and Social Safeguards Officers and may opt to consult with them if deemed necessary. A resolution will then be reached and communicated back to the aggrieved person. The project manager has 10 working days to resolve the matter. If the issue cannot be resolved or resolution is not accepted by the complainant, the project manager with the support of the Environment and Social Safeguards Officers will develop and inform the PS on a Plan of Action (PoA) to be taken.

Step 5:

MAL Permanent Secretary:

The PS MAL is required to address the concern within 1 month. The PMU SS officer will draft a revised PoA to resolve the issue based on the PS MAL determination and take this PoA to the complainant for resolution. In circumstances where measures outlined in the PoA fail to satisfy the complainant, the aggrieved party is free to take his/her grievance to the Ombudsman's Office for mediation and a decision by the Ombudsman. The CFO will be advised to communicate and update the complainant relating to the resolution of the grievance. If the resolution at this stage is not accepted by the complainant, the PS MAL will forward his decision together with a PoA to World Bank Office in Honiara for further deliberation.

Step 6:

Appeals Process

Informing the AP: If the complaint is dismissed, the AP is informed of their rights to escalate the issue to the relevant courts of the country.

Copy of Decision: If it is a complaint in relation to environmental impacts, a copy of the decision is sent to the Environmental Compliance Unit of the Environment and Conservation Division (ECD) within the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM).

7.8. GRM During Operation

128. The complaint will be referred directly to the PS of MAL through writing or by email. The PS of MAL will assign relevant officer (s) to deal with such complaints. During operation, the same conditions apply; i.e., there would be no fees attached to the AP for making a complaint, the complainant is free to make the complaint which will be treated in a transparent manner and the AP will not be subject to retribution for making the complaint.

7.9. Record or Register of Feedback and Complaints

129. The contractor will maintain a GRM register at the site office. However, the main project GRM register is kept in Microsoft Excel in the SIART PMU and managed by the Social Safeguards Officer (SSO). See example of template below (**Figure 21**).

Figure 21: Example of the GRM Register kept at the SIART PMU

SIART PROJECT GRIEVANCE REDRESS MECHANISM (GRM) LOG REGISTRY [2022 - 2026]															
m			STEP 2 - DETAILS OF COMPLAINT					STEP 3 - ASSESSING & TAKING PROPOSED ACTIONS				STEP 4 - RESOLVING & CLOSURE OF COMPLAINT		
Complainte ntry	*Date received*	*Mode of receipt (letter/walk-in/email/ mobile/PMU landline phone/verbal/suggestion box/ Facebook*	*Name of complainant/ request anonymity (RA)*	*Type*	*Date complaint received by Provincial Project Team (PPT) - CFO/EOs/YPs & ABPOs/CRPs/CAC reps*	*Date complaint received by National Office - PMU/PM/PS/MAL*	*Details of complaint (name of ABPO/contractor/community/public/ description of issue (what, who, when, where, how)*	*Name of persons involved in trying to solve the problem (eg: a community leader)*	*Action planned taken to address the matter*	*Was the problem solved? (Yes/No)*	*If no, when was the problem referred to the next level? (Referral) What happened? Note: NA = Not Applicable*	*Date to discuss resolving the matter (who/where) & what actions were taken (eg: consultations, meetings etc)*	*the final outcome/how long it takes to resolve the particular issue*	*Date the complaint was closed*

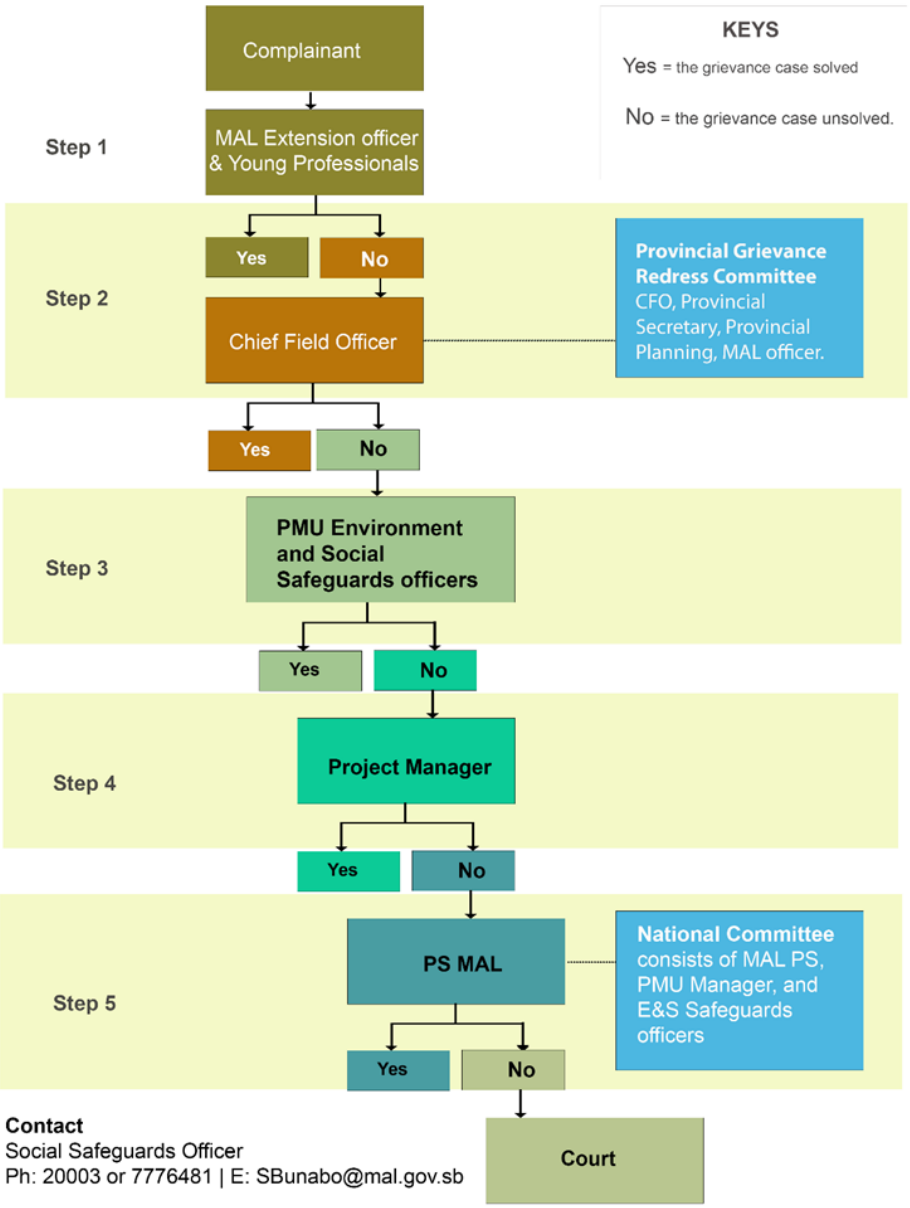
7.10. Workers Grievance Mechanism

130. As required by the Project's Labour Management Procedure, a worker's grievance mechanism (GM) is necessary for this subproject to cater for contractor workers and service providers such as surveyors' complaints. The procedure for handling the workers grievance is outlined under Table 4 of the LMP. During the development of the CESMP, the contractor will adopt this GM and develop clear processes including focal points before disclosure to ensure that the GM is accessible by all workers without the any fear of reprisal. This GM will be subjected to the approval of the PMU ES.

Figure 22: GRM Flow Chart

Ministry of Agriculture and Livestock

SIART PROJECT GRIEVANCE REDRESS MECHANISM



8. CONCLUSION

131. The sub-project covered in this Site-Specific Environmental and Social Management Plan (SS-ESMP) offers

significant benefits to Malaita Province, particularly through the enhancement of pig breeding operations and the overall improvement of pig farming practices. These improvements are expected to contribute to economic growth, provide financial opportunities for local farmers, and support the agricultural sector in the province.

132. The environmental screening process conducted for this sub-project has identified the minor environmental and social issues associated with the proposed activities and provided appropriate measures to address them. Based on the assessment, there are no significant negative environmental or social impacts or risks that cannot be effectively mitigated or managed.

133. The SS-ESMP serves as a foundational document for the preparation of the Contractor's Environmental and Social Management Plan (CESMP). This ensures that all mitigation measures and safeguards are operationalized at the implementation stage. The monitoring and reporting of the approved CESMP by the contractor, with oversight from the Project Management Unit (PMU), will ensure that the sub-project is implemented in an environmentally and socially acceptable manner.

134. Initial consultations with the Malaita Provincial Government have been undertaken to align the sub-project with local needs and expectations. Moving forward, the PMU's Social Safeguards Officer (SSO) will lead community consultations prior to the commencement of construction activities and will continue to do so throughout the construction phase. These consultations will be carried out in collaboration with the contractor's Environmental, Health, and Safety Officer (EHSO) to ensure transparency, address community concerns, and maintain compliance with environmental and social safeguards.

135. In summary, the implementation of this sub-project is expected to deliver tangible benefits to Malaita Province while ensuring adherence to environmental and social safeguards through a well-structured approach to planning, implementation, monitoring, and stakeholder engagement

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APPENDICES

APPENDIX 1: IMPACTS SCREENING FORM

Date: January 9, 2024 **Screened by:** Frank Omelanga, CFO Malaita Province

IMPACTS SCREENING FORM

Filled in by Provincial MAL Officer: Frank Omelanga, CFO Malaita Province

Checked and Verified by the Provincial MAL Chief Field Officer/Environmental and Social Safeguards Consultant: Steve Sae

Sub-project name and a brief description: Adaliua Pig Breeding Facility

- The proposed site for the pig breeding facility has an area of approximately 0.5 Ha.
- The facility is currently operational.
- The facility has been deteriorated due to lack of financial support for maintenance.
- There are 3 main buildings at the site. The first one near the main Fiu road is the office building, and 2 buildings are breeding and farrowing houses.
- The planned pig breeding at Tenaru on Guadalcanal is now shifted to Adaliua in Malaita.
- The land leased by the government is still valid.
- There is good access road to the site and availability of electricity.
- Water source is not a problem, as there are two 5,000 L Rota-tanks which are used to store harvested rain water and water source from a borehole that fed water to a 9,000 L concrete tank at the site.

Location of Facility and Province: Adalaliua, Central Kwara' ae, Malaita Province.

Subject	**Screening Questions**	**Yes**	**No**	**Note/Comment (column to be completed with additional information where the response to a screening question is yes)**
CONSTRUCTION PHASE				
	Will the subproject:			**(guidance are given below)**
1. Vegetation cover, trees, insects, animal	Remove vegetation cover, cut down trees for timber or site clearance?		No	There is no rare plant species or forest in the area, hence no trees for timber. The area is covered mainly by invasive grasses such as *Imperata cylindrica* (Cogon grass) including creepers/vines such

				as *Persicaria perfoliate* and invasive legumes such as *Mimosa diplotricha.* None of which have any significant conservation values.
	Affect cropland with waste and wastewater?		No	Solid waste from the facility is stored in a septic tank which is in a good condition.
	Disturb wildlife, insects such as snakes?		No	There is no crucial wildlife in the area. It is part of a built environment with visible development footprint.
2. natural resources	Be located near forest or least disturbed /nature reserve area?		No	No forest area nearby and the site has a highly modified habitat
3. Landscape	Cause significant changes to, or negatively affect the landscape of the area?		No	The site has development footprint, thus, there will be no significant changes to landscape. The impact will be positive as the refurbishment will transform the landscape with significant benefits to the community/society.
4.Solid waste	Generate solid waste such as excavated soil, unused materials	Yes		There will be some excavated soils excavated soil, unused material like overburdens. These solid wastes will be stored properly and soils will be re-used for filling. Solid wastes that are un-used will be disposed off properly at the approved dump-site.
5. Hazardous wastes	Generate hazardous waste such as batteries, unused paints, oil, lubricant etc.	Yes		Some hazardous materials will be used during actual refurbishment work which include paints and lubricants. However, there will be a Hazardous Waste Material Management Plan that will be in placed to provide procedure on how to manage and dispose

				off hazardous waste. The interior part of the facility will not be painted as part of SOP for pig breeding facility.
6.Wastewater	Generate wastewater from the site? e.g. lubricant etc.	Yes		There is potential for wastewater emanating from concrete mixing machine including lubricants. However, this will be properly controlled with ditches surrounding the concrete mixing site to trap the waste water and disposed-off correctly. A Waste Management Plan will be in place with practical measures to manage or mitigate potential impacts of wastewater.
7.Dust and smoke	Cause increased dust level at the site, or generate smoke		No	The sub-project will not cause increased dust level. No smoke is expected to be generated from this sub-project.
8.Noise and vibration	Generate high noise and vibration	Yes		Noise level for the proposed renovation work can be rated at low to medium. Noise emanating from operating power tools can be very high but there is sufficient distance between the facilities and the nearest community. Work will happen during daylight hours only. Vibration is rated negligible.
9. Erosion risks	Disturb slopes?		No	There is no slope at the site. This is a flat area.
10. Water quality	Cause water pollution by construction waste and materials loaded at the construction site		No	There are no waterways at the site and no existence of sink holes.

11. Local flooding	Increase localised flooding risk by temporary/permanent loading of construction materials/wastes		No	The sub-project does not pose any flooding risk due to lack of presence of surface water at the site. The Fiu river is located at sufficient distance away from the site.
12. Water quantity	a. Withdraw groundwater in a coastal area that may lead to the risk of salinity intrusion		No	For the construction of the pig breeding facilities, it will not involve withdrawing of groundwater in a coastal area.
	b. Extract or use a large amount of water in local river/streams may cause shortage to water supply to other users in the locality?		No	For the construction of the pig breeding facilities, it will not in any way involve withdrawing of groundwater. During operational phase, harvested rainwater and groundwater (borehole) will be used to operate the pig breeding facilities.
13. Social disturbance	a. Disrupt local traffic/ transportation/ pedestrian traffic		No	The subproject will not disrupt local traffic/transportation or pedestrian traffic.
	b. Disrupt the operation of local water supply system		No	It will not affect operation of local water supply system.
	c. Disrupt the operation of local irrigation system		No	There is no existence of any irrigation system in the area. Hence, this is not a concern.
	d. Disrupt the operation of local drainage system		No	The site is far from residential areas. The construction of the facilities will not disrupt operation of any local drainage.
	e. Disrupt local farming activities		No	There is no existence of local farming activities within or nearby the sub-project site
	f. Disrupt community meetings/social events		No	There are no community meetings/social events buildings or halls in the vicinity of the site.

	g. Affect community security?		No	The subproject will not affect community security.
14. Safety to community	Cause safety risk to the community		No	The construction work will not pose safety risk to the community as the site will be fully barricaded and manned by security guards to ensure any person who wanders to the site is deterred. There will be no unauthorized entry to the work site.
15. Public health	Cause concerns on public health/ sanitation /hygiene in the local community		No	The construction of the facilities will not cause any concern on public health in the vicinity of the construction site. A toilet shall be provided for conveniency of the workers.
16.Worker's health & safety	Cause workers health and safety concerns		No	All workers will be supplied with full PPE and will be provided with food and water for drinking.
17.PCR	Impact cultural sites such as church, historical site, graveyard, etc.		No	The site is devoid of any cultural sites such as church, tambu site or graveyard. It is a land owned by the Government and it has development footprint.
18. Community support	Does the project enjoy broad community support?	Yes		Consultation was carried out by the PMU with the Malaita Provincial Government and with the MAL Extension officers and it was highlighted that the pig breeding facilities be refurbished.
19. Sustainability	Does the community have a plan for the management and maintenance of assets after implementation?	NA		This is not a community project but a national project which is fully supported by both the national and the provincial government. The government will bear the responsibility for maintenance of the asset.

				However, once the operation of the facilities becomes a public-private partnership, then the investor will be responsible for management and maintenance of the facilities.
20. Land acquisition	Does the subproject involve voluntary land acquisition		NO	The Solomon Islands Government holds a valid lease of the Adaliua land.
Others:		NA		
OPERATION PHASE				
	Will the subproject:			
1. Water/soil pollution	Generate wastewater from the site? e.g. slaughterhouse wastewater, fertilizer runoff etc.	Yes		There will be wastewater from washing or cleaning the breeding facility. Wastewater containing organic slurry.
2. Waste	Generate solid waste e.g. slaughterhouse waste	Yes		Solid waste from the pig breeding facility include manure, spilled feed, minor animal residue, carcasses, medical waste.
3. Nuisance noise, odour	Result in noise or odour impacts to nearby receivers (houses, schools, community facilities etc.)		No	There is sufficient distance of the facility to nearby receivers. Thus, nuisance noise and odour can be considered negligible.
4. unhygienic conditions, public health risks		Yes		Accumulated manure, leftover feed, and waste can attract flies, rodents, and other disease vectors. These vectors can spread diseases such as leptospirosis and brucellosis to both humans and animals. Inadequate disposal of carcasses and afterbirth materials can be a breeding ground for harmful bacteria and viruses.

				The build-up of manure and inadequate waste treatment can lead to unpleasant odours that affect the quality of life for residents.
5. Worker's health & safety	Require training and health and safety management for workers to allow for safe operation	Yes		Workers need to be trained on managing simple but important risks such as slipping, tripping, falling, ergonomic risk, indoor air pollution, fire safety, workplace health and safety/OHS.
6. visual impacts		Yes		Improve landscape and infrastructure.
7. Conflict with downstream water users?			No	No waterways in the area
8. Others				NA

Conclusion: Based on the above screening preparation of the below ESF documents/instruments is recommended:

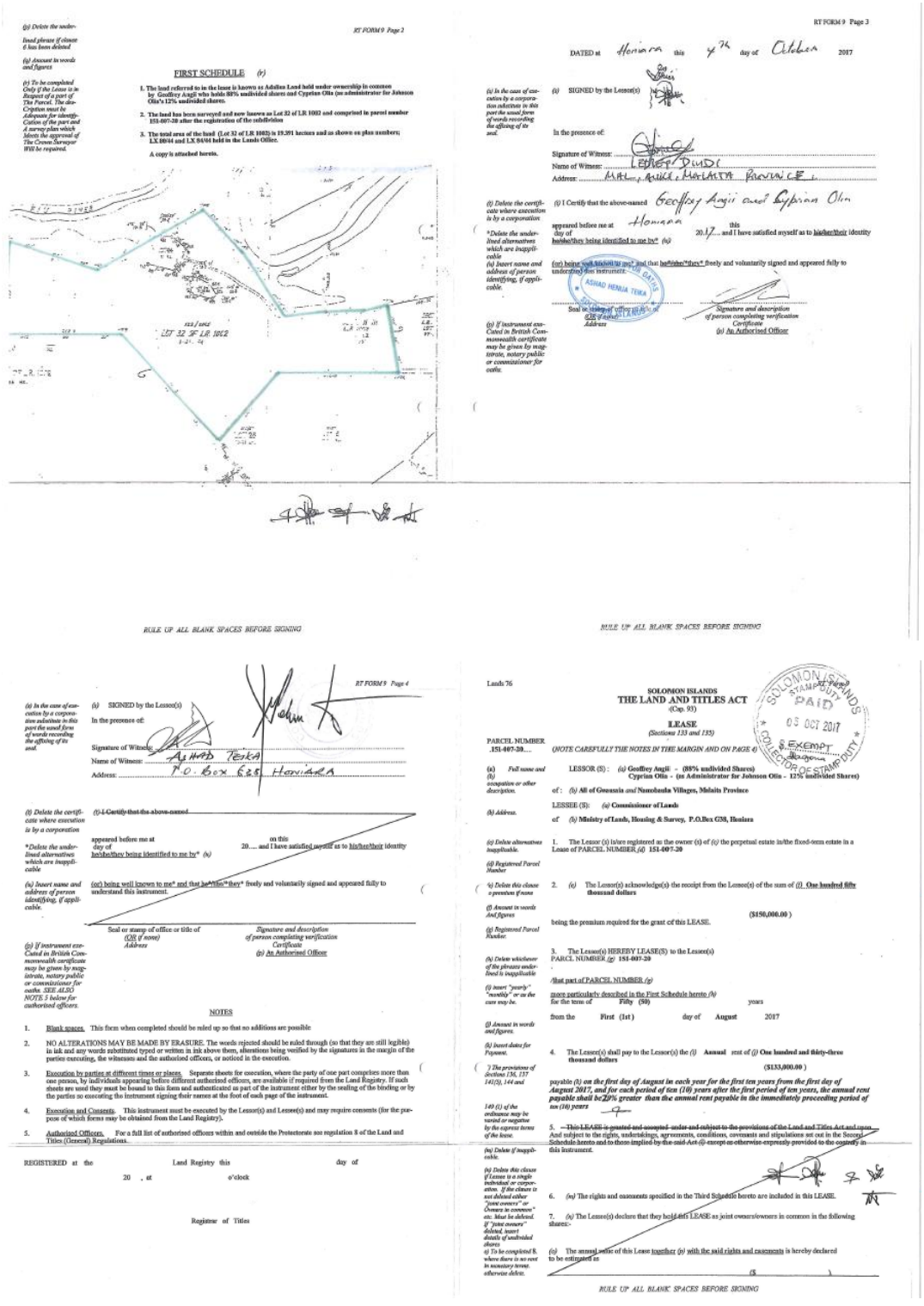
- ECOP (in the ESMF) (Solomon Islands & WB)
- ESIA/ESMP (Solomon Islands/WB)

  ESMP is required
- Full EIA incorporating ESMP (Solomon Islands)
- Waste or Wastewater Management Plan

  Solid Waste and Wastewater Management Plan is required
- Land Commitment Letter (in the ESMF)

  Land Commitment Letter signed by lessor.

APPENDIX 2: LAND LEASE INSTRUMENT



RT FORM 9 Page 2

FIRST SCHEDULE (r)

1. The land referred to in the lease is known as Adultas Land held under ownership in common by Geoffrey Angii who holds 88% undivided shares and Cyprian Olin (as administrator for Johnson Olin's 12% undivided shares.
2. The land has been surveyed and now known as Lot 32 of LR 1002 and comprised in parcel number 151-007-20 after the registration of the subdivision
3. The total area of the land (Lot 32 of LR 1002) is 19.391 hectares and as shown on plan numbers; LX 88/44 and LX 84/44 held in the Lands Office.

A copy is attached hereto.

LOT 32 OF LR 1002

RT FORM 9 Page 3

DATED at Honiara this 4th day of October 2017

(a) SIGNED by the Lessor(s)

In the presence of:

Signature of Witness:

Name of Witness: LEONEY DUDI

Address: MALAITA PROVINCE

(i) I Certify that the above-named Geoffrey Angii and Cyprian Olin

appeared before me at Honiara this day of 2017... and I have satisfied myself as to his/her/their identity being identified to me by* (k)

(or) being well known to me* and that he*/she*/they* freely and voluntarily signed and appeared fully to understand this instrument.

Seal or stamp of office or title of (Oft if none) Address

Signature and description of person completing verification Certificate

(j) An Authorised Officer

RULE UP ALL BLANK SPACES BEFORE SIGNING

RULE UP ALL BLANK SPACES BEFORE SIGNING

RT FORM 9 Page 4

(a) SIGNED by the Lessee(s)

In the presence of:

Signature of Witness:

Name of Witness: ASHAD TEIKA

Address: P.O. Box 635, Honiara

(i) I Certify that the above-named

appeared before me at on this day of 20.... and I have satisfied myself as to his/her/their identity being identified to me by* (k)

(or) being well known to me* and that he*/she*/they* freely and voluntarily signed and appeared fully to understand this instrument.

Seal or stamp of office or title of (Oft if none) Address

Signature and description of person completing verification Certificate

(j) An Authorised Officer

NOTES

1. Blank spaces. This form when completed should be ruled up so that no additions are possible
2. NO ALTERATIONS MAY BE MADE BY ERASURE. The words rejected should be ruled through (so that they are still legible) in ink and any words substituted typed or written in ink above them, alterations being verified by the signatures in the margin of the parties executing, the witnesses and the authorised officers, or noticed in the execution.
3. Execution by parties at different times or places. Separate sheets for execution, where the party of one part comprises more than one person, by individuals appearing before different authorised officers, are available if required from the Land Registry. If such sheets are used they must be bound in this form and authenticated as part of the instrument either by the sealing of the binding or by the parties so executing the instrument signing their names at the foot of each page of the instrument.
4. Execution and Consents. This instrument must be executed by the Lessor(s) and Lessee(s) and may require consents (for the purpose of which forms may be obtained from the Land Registry).
5. Authorised Officers. For a full list of authorised officers within and outside the Protectorate see regulation 8 of the Land and Titles (General) Regulations.

REGISTERED at the Land Registry this day of 20 , at o'clock

Registrar of Titles

Lands 76

SOLOMON ISLANDS
THE LAND AND TITLES ACT
(Cap. 93)

LEASE
(Sections 133 and 135)

SOLOMON ISLANDS STAMP DUTY PAID 05 OCT 2017 $ EXEMPT COLLECTOR OF STAMP DUTY

(NOTE CAREFULLY THE NOTES IN THE MARGIN AND ON PAGE 4)

PARCEL NUMBER 151-007-20....

(a) Full name and (b) occupation or other description.

LESSOR (S) : (a) Geoffrey Angii - (88% undivided Shares)
Cyprian Olin - (as Administrator for Johnson Olin - 12% undivided Shares)

of : (b) All of Gwassia and Namohaha Villages, Malaita Province

LESSEE (S): (a) Commissioner of Lands

of (b) Ministry of Lands, Housing & Survey, P.O.Box G30, Honiara

(b) Address.

(c) Delete alternatives inapplicable.

1. The Lessor (s) is/are registered as the owner (s) of (c) the perpetual estate in/the fixed-term estate in a Lease of PARCEL NUMBER (d) 151-007-20

(d) Registered Parcel Number

(e) Delete this clause a premium if none

2. (a) The Lessor(s) acknowledge(s) the receipt from the Lessee(s) of the sum of (f) One hundred fifty thousand dollars

($150,000.00)

(f) Amount in words and figures

being the premium required for the grant of this LEASE.

(g) Registered Parcel Number.

3. The Lessor(s) HEREBY LEASE(S) to the Lessee(s) PARCEL NUMBER (g) 151-007-20

(h) Delete whichever of the phrases underlined is inapplicable

/that part of PARCEL NUMBER (g)

more particularly described in the First Schedule hereto (h)

(i) insert "yearly" "monthly" or as the case may be.

for the term of Fifty (50) years

from the First (1st) day of August 2017

(j) Amount in words and figures.

(k) Insert dates for Payment.

4. The Lessee(s) shall pay to the Lessor(s) the (i) Annual rent of (j) One hundred and thirty-three thousand dollars

($133,000.00)

) The provisions of Sections 136, 137 141(3), 144 and

149 (1) of the ordinance may be varied or negative by the express terms of the lease.

payable (k) on the first day of August in each year for the first ten years from the first day of August 2017, and for each period of ten (10) years after the first period of ten years, the annual rent payable shall be 20% greater than the annual rent payable in the immediately proceeding period of ten (10) years

(m) Delete if inapplicable.

5. ~~This LEASE is granted and accepted~~ under and subject to the provisions of the Land and Titles Act and upon And subject to the rights, undertakings, agreements, conditions, covenants and stipulations set out in the Second Schedule hereto and to those implied by the said Act (l) except as otherwise expressly provided to the contrary in this instrument.

(n) Delete if inapplicable.

(o) Delete this clause if Lessee is a single individual or corporation. If the clause is not deleted either "joint owners" or Owners in common" etc. must be deleted. If "joint owners" deleted, insert details of undivided shares)

6. (m) The rights and easements specified in the Third Schedule hereto are included in this LEASE.

7. (n) The Lessee(s) declare that they hold this LEASE as joint owners/owners in common in the following shares:-

(o) To be completed B. where there is no rent in monetary terms otherwise delete.

(o) The annual rent of this Lease together (p) with the said rights and easements is hereby declared to be estimated as

($)

RULE UP ALL BLANK SPACES BEFORE SIGNING

APPENDIX 3: LAND COMMITMENT LETTER

Date: 7/8/24

To: The Permanent Secretary
Ministry of Agriculture and Livestock (MAL)
Honiara, Solomon Islands.

Dear Sir,

RE: LAND AVAILABILITY FOR THE MAL SIART PROJECT – ADALIUA LAND

This letter serves to confirm our commitment as the Perpetual Estate (PE) owners that, this specific land at Adaliua is available for the project. The given land is to be used for pig breeding and slaughter facilities as proposed by MAL under the SIART Project.

The PE title holders of Adaliua land are; Mr. Geoffery Angii and Mr. Cyprian Olia, do confirm our commitment, by putting our hand hereto.

This piece of land (PN: 151-007-0020) is confirmed to be free from dispute with MAL being responsible to administrate the infrastructure and free to use the said land purposely to provide/improve/expand the provision of services, directly provided by the infrastructure. The PE landowners fully agreed that this commitment is irrevocable.

1. Name of landowner: Cyprian Olia
2. Name of landowner: Desmond Angii

Signature: Signature:

Date: 7/8/24   Date: 7/8/24

Witnessed by MAL Provincial Project Team (PPT)

Dennis Frank Tefei
for: Chief Field Officer (CFO)   Signature

Witnessed by Malaita Provincial Government (MPG) Representative

Peter Herehura
Provincial Secretary (PS) DPS   Signature

MALAITA PROVINCIAL GOVERNMENT
Date: 7/8/24
Sign:..................

APPENDIX 4: CHANCE FIND PROCEDURE

The following Chance find Procedure (CHF) would be applicable if artifacts or objects are exposed during the construction phase. The contractor and relevant stakeholders will follow the procedures described below:

Stop the construction activities in the area of the chance find.

Delineate the discovered site or area.

Notify village leaders and secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a nightguard or other relevant protection shall be present.

Notify the Community Extension Worker or Extension Officer, who in turn would notify the Provincial MAL (within 72 hours).

Contact the responsible authorities who would be in charge of protecting and preserving the site before deciding on the proper procedures to be carried out. This would require a preliminary evaluation of the findings to be performed by the Ministry of Culture and tourism. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage, including the aesthetic, historical, scientific or research, social and economic values.

Ensure that decisions on how to handle the finding be taken by the responsible authorities. This could include changes in the layout (such as when the finding is an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage

Implementation for the authority decision concerning the management of the finding shall be communicated in writing; and

Construction work will resume only after authorization is given by the responsible authorities concerning heritage protection.

During the project supervision, the two E&S Consultants shall monitor the above regulations relating to the treatment of any chance find encountered are observed. Relevant findings will be recorded and included in the progress reports for submitting to the World Bank for review.

There is also the potential to encounter UXO during construction. While construction sites are expected to be swept for and cleared of UXOs, a chance finds procedure for handling the UXOs in accordance with national legislation will be the responsibility of the contractor. Ultimately, MAL or the project staff will be responsible for the supervision and monitoring of the contractor.

APPENDIX 5: GBV CODE OF CONDUCT AND ACTION PLAN

CODES OF CONDUCT AND ACTION PLAN FOR IMPLEMENTING

ESHS AND OHS STANDARDS, AND

PREVENTING GENDER BASED VIOLENCE (GBV)/SEXUAL EXPLOITATION AND ABUSE (SEA)/SEXUAL HARASSMENT(SH) ON

SOLOMON ISLANDS AGRICULTURE AND RURAL TRANSFORMATION PROJECT

Background

The purpose of these *Codes of Conduct and Action Plan for Implementing ESHS and OHS Standards, and Preventing Gender Based Violence/SEA/SH* is to introduce a set of key definitions, core Codes of Conduct, and guidelines for application on WB financed SIART Project that:

i. clearly define obligations on all project staff (including sub-contractors and day workers) with regard to implementing the project's environmental, social, health and safety (ESHS) and occupational health and safety (OHS) requirements, and;
ii. help prevent, report and address Gender Based Violence (GBV)/SEA/SH within the work site and in its immediate surrounding communities.

The application of these Codes of Conduct will help ensure the project meets its ESHS and OHS objectives, as well as preventing and/or mitigating the risks of GBV/SEA/SH on the project and in the local communities.

These Codes of Conduct are to be adopted by all those working on the project—including subcontractors—and are meant to:

i. create awareness of the ESHS and OHS expectations on the project;
ii. create common awareness about GBV/SEA/SH and:
    (a) ensure a shared understanding that GBV/SEA/SH has no place on the project; and,
    (b) create a clear system for identifying, responding to, and sanctioning GBV/SEA/SH incidents.

Ensuring that all project staff understand the values of the project, understanding expectations for all employees, and acknowledging the consequences for violations of these values, will help to create smoother, more respectful and productive project implementation thereby helping ensure that the project's development objectives will be achieved.

Definitions

The following definitions apply:

ESHS and General Project

Environmental, Social, Health and Safety (ESHS): an umbrella term covering issues related to the impact of the project on the environment, communities and workers.

Occupational Health and Safety (OHS): OHS is concerned with protecting the safety, health and welfare of people engaged in work or employment, and the surrounding communities. The

enjoyment of these standards at the highest levels is a basic human right that should be accessible by each worker.

Key Documents:

- **Project Environmental and Social Management Plan (ESMP):** The safeguards document prepared prior to project approval by the WB identifying the activities to be undertaken, key risks (based on ESIA if available), and their mitigation measures.
- **Contractors Environmental and Social Management Plan (CESMP):** the plan prepared by the contractor outlining how they will implement the works activities in accordance with the project's environmental and social management plan (ESMP). The CESMP also contains a number of management plans, in particular, the OHS Management Plan.
- **Codes of Conduct:** the Codes of Conduct adopted for the project (or individual companies) covering the commitment of the contractor, and the responsibilities of managers and individuals with regards to ESHS, OHS and GBV/SEA/SH.

Key Project Actors:

- **Consultant:** is as any firm, company, organization or other institution that has been awarded a contract to provide consulting services to the project, and has hired managers and/or employees to conduct this work.
- **Contractor:** is any firm, company, organization or other institution that has been awarded a contract to conduct infrastructure development works for the project and has hired managers and/or employees to conduct this work. This also includes sub-contractors hired to undertake activities on behalf of the contractor.
- **Manager:** is any individual offering labour to the contractor or consultant, on or off the work site, under a formal or informal employment contract and in exchange for a salary, with responsibility to control or direct the activities of a contractor's or consultant's team, unit, division or similar, and to supervise and manage a pre-defined number of employees.
- **Employee:** is any individual offering labour to the contractor or consultant within country on or off the work site, under a formal or informal employment contract or arrangement, typically, but not necessarily (e.g. including unpaid interns and volunteers), in exchange for a salary, with no responsibility to manage or supervise other employees.

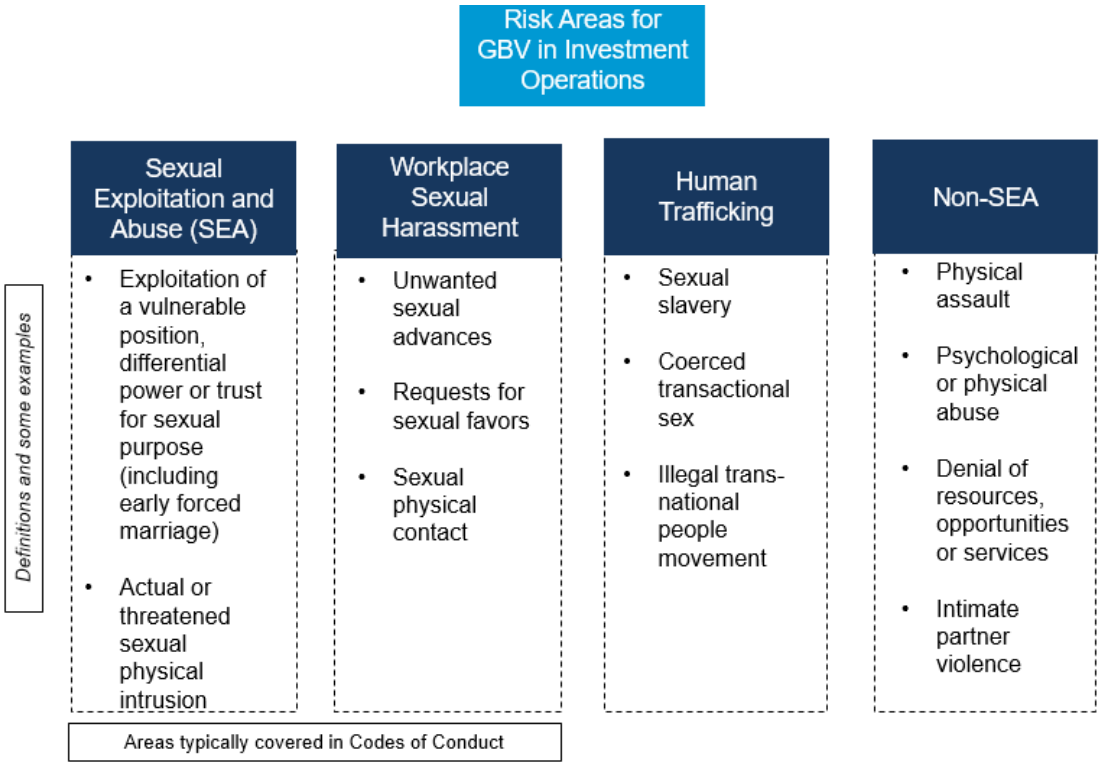
Grievance Redress Mechanism (GRM): is the process established by a project to receive and address complaints related to the project—not just GBV/SEA/SH but related to any aspect of the project. The GRM needs to: (i) allow for multiple channels to receive complaints; (ii) be readily accessible, allowing complaints to be made in different ways; and, (iii) have appropriate protocols or mechanisms to refer complaints to GBV service providers as uncertified/untrained individuals should refrain from trying to address GBV/SEA/SH related complaints.

Work Site: is the area in which infrastructure development works are being conducted, as part of the project. Consulting assignments are considered to have the areas in which they are active as their work sites.

Work Site Surroundings: is the 'Project Area of Influence' which are any area, urban or rural, directly affected by the project, including all human settlements found in it.

Key definitions: With reference to the focus areas for in Figure 1, there are a number of key definitions for understanding GBV/SEA/SH:

Figure 1: Examples of GBV/SEA/SH



Note: Types of GBV that may be Exacerbated by Investment Operations

Codes of Conduct Focus

These Codes of Conduct specifically focus on the following forms of GBV - Sexual Exploitation and Abuse (SEA) and Sexual Harassment as they represent high risk areas in the context of investment operations.

- **Gender Based Violence (GBV):** is an umbrella term for any harmful act that is perpetrated against a person's will and that is based on socially ascribed (that is, gender) differences between male and female individuals. GBV includes acts that inflict physical, mental, or sexual harm or suffering; threats of such acts; and coercion and other deprivations of liberty, whether occurring in public or in private life.

Sexual Exploitation and Abuse (SEA): Sexual exploitation is a facet of GBV that is defined as any actual or attempted abuse of a position of vulnerability, differential power, or trust for sexual purposes, including but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another. In the context of WB supported projects, SEA occurs against a beneficiary or member of the community.

- **Sexual abuse** is further defined as the actual or threatened physical intrusion of a sexual nature whether by force or under unequal or coercive conditions.

- **Child sexual abuse:** is defined by the age of the survivor. It includes different forms of sexual violence, involves either explicit force or coercion or cases in which the survivor cannot consent because of his or her age. Sexual activity with anyone below the age of 18, except in cases of pre-existing marriage, constitutes child sexual abuse. Mistaken belief regarding the age of the child and/or receipt of consent from the child is not a defence.

Sexual harassment: occurs between personnel and staff on the project and involves any unwelcome sexual advance or unwanted verbal or physical conduct of a sexual nature. (e.g. looking somebody up and down; kissing; whistling and catcalls; in some instances, giving personal gifts). The distinction between the SEA and sexual harassment is important so that agency policies and staff trainings can include specific instruction on the procedures to report each.

- **Sexual favours:** is a form of sexual harassment and includes making promises of favourable treatment (e.g. promotion) or threats of unfavourable treatment (e.g. loss of job) dependent on sexual acts or other forms of humiliating, degrading or exploitative behaviour.

Child protection: Is an activity or initiative designed to protect children from any form of harm, particularly arising from child abuse and exploitation.

- **Child:** is used interchangeably with the term 'minor' and refers to a person under the age of 18. This is in accordance with Article 1 of the United Nations Convention on the Rights of the Child.

- **Child Abuse and Exploitation:** the physical, sexual or psychological harm of children including using for profit, labour, sexual gratification, or some other personal or financial advantage. This also includes other activities such as using computers, mobile phones, or video and digital cameras appropriately, and never to exploit or harass children or to access child pornography through any mediums

- **Grooming:** are behaviours that make it easier for a perpetrator to procure a child for sexual activity. For example, an offender might build a relationship of trust with the child, and then seek to sexualize that relationship (for example by encouraging romantic feelings or exposing the child to sexual concepts through pornography).

- **Online Grooming:** is the act of sending an electronic message to a recipient who the sender believes to be a minor, with the intention of developing a relationship of trust that can be abused by procuring the recipient to engage in or submit to sexual activity with another person, including but not necessarily limited to the sender. This includes engaging in online sexual activities, such as messages, videos and photos with sexual content either sent to or procured from a child.

Other definitions: In addressing the issues raised above related to GBV/SEA/SH there are a number of considerations which need to be clearly defined:

Rape: non-consensual penetration (however slight) of the vagina, anus or mouth with a penis, other body part, or an object.

Consent: refers to when an adult makes an informed choice to agree freely and voluntarily to do something. In accordance with the United Nations Convention on the Rights of the Child, the WB considers that consent cannot be given by children under the age of 18, even if national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defence. There is **no** consent when agreement is obtained through:

- The use of threats, force or other forms of coercion, abduction, fraud, manipulation, deception, or misrepresentation,
- The use of a threat to withhold a benefit to which the person is already entitled, or,
- A promise made to the person to provide a benefit.

Perpetrator: the person(s) who commit(s) or threaten(s) to commit an act or acts of GBV/SEA/SH.

Survivor/Survivors: the person(s) adversely affected by GBV/SEA/SH. Women, men and children can be survivors of GBV.

GBV/SEA/SH Service Provider: is an independent organization trusted by the local communities with the skills and resources to provide support to survivors of GBV/SEA/SH, as well as training to reduce the risks of GBV/SEA/SH.

Third-Party Monitor (TPM) or Independent Verification Agent (IVA): an organization commissioned to independently monitor and report on the effectiveness of the implementation of the GBV/SEA/SH activities on the project. TPMs are financed independent of the project; IVAs are financed by the project.

Investigation and resolution of GBV/SEA/SH allegations:

- **GBV/SEA/SH Allegation Procedure:** is the prescribed procedure to be followed when reporting incidents of GBV/SEA/SH.
- **Accountability Measures:** are the measures put in place to ensure the confidentiality of survivors and to hold contractors, consultants and the client responsible for instituting a fair system of addressing cases of GBV/SEA/SH.
- **Response Protocol:** are the mechanisms set in place to respond to cases of GBV/SEA/SH.

APPENDIX 6: COMPANY CODE OF CONDUCT

Implementing ESHS and OHS Standards

Preventing Gender Based Violence (GBV), Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH)

The contractor is committed to ensuring that the project is implemented in such a way which minimizes any negative impacts on the local environment, communities, and its workers. This will be done by respecting the environmental, social, health and safety (ESHS) standards, and ensuring appropriate occupational health and safety (OHS) standards are met. The contractor is also committed to creating and maintaining an environment where children under the age of 18 will be protected, and where Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) have no place. Improper actions towards children, SEA and SH are acts of Gender Based Violence (GBV) and as such will not be tolerated by any employee, sub-contractors, supplier, associate, or representative of the contractor.

Therefore, to ensure that all those engaged in the project are aware of this commitment, the contractor commits to the following core principles and minimum standards of behaviour that will apply to all contractor employees, associates, and representatives, including sub-contractors and suppliers, without exception:

General

1. The contractor—and therefore all employees, associates, representatives, sub-contractors and suppliers—commits to complying with all relevant national laws, rules and regulations.
2. The contractor commits to full implementing its CESMP as approved by the client.
3. The contractor commits to treating women, children (persons under the age of 18), and men with respect regardless of race, colour, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status. Acts of GBV/SEA/SH are in violation of this commitment.
4. The contractor shall ensure that interactions with local community members are done with respect and non-discrimination.
5. Demeaning, threatening, harassing, abusive, culturally inappropriate, or sexually provocative language and behaviour are prohibited among all contractor employees, associates, and its representatives, including sub-contractors and suppliers.
6. The contractor will follow all reasonable work instructions (including regarding environmental and social norms).
7. The contractor will protect and ensure proper use of property (for example, to prohibit theft, carelessness or waste).

Health and Safety

8. The contractor will ensure that the project's OHS Management Plan is effectively implemented by contractor's staff, as well as sub-contractors and suppliers.
9. The contractor will ensure that all persons on-site wear prescribed and appropriate personal protective equipment, preventing avoidable accidents, and reporting conditions or practices that pose a safety hazard or threaten the environment.
10. The contractor will:
    i. prohibit the use of alcohol during work activities.
    ii. prohibit the use of narcotics or other substances which can impair faculties at all times.

11. The contractor will ensure that adequate sanitation facilities are available on site and at any worker accommodations provided to those working on the project.
12. The contractor will not hire children under the age of 18 for construction work, or allow them on the work site, due to the hazardous nature of construction sites.

Gender Based Violence (GBV)

13. Acts of GBV/SEA/SH constitute gross misconduct and are therefore grounds for sanctions, which may include penalties and/or termination of employment and, if appropriate, referral to the Police for further action.
14. All forms of GBV/SEA/SH, are unacceptable, regardless of whether they take place on the work site, the work site surroundings, at worker's camps or within the local community.
15. Sexual harassment of work personnel and staff (e.g. making unwelcome sexual advances, requests for sexual favours, and other verbal or physical conduct of a sexual nature) are acts of GBV and are prohibited.
16. Sexual favours (e.g. making promises of favourable treatment such as promotions, threats of unfavourable treatment such as losing a job, payments in kind or in cash dependent on sexual acts) and any form of humiliating, degrading or exploitative behaviour are prohibited.
17. The use of prostitution in any form at any time is strictly prohibited.
18. Sexual contact or activity with children under 18—including through digital media—is prohibited. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.
19. Unless there is full consent[8] by all parties involved in the sexual act, sexual interactions between the contractor's employees (at any level) and members of the communities surrounding the work place are prohibited. This includes relationships involving the withholding/promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex (including prostitution). Such sexual activity is considered "non-consensual" within the scope of this Code.
20. In addition to contractor sanctions, legal prosecution of those who commit acts of GBV/SEA/SH will be pursued if appropriate.
21. All employees, including volunteers and sub-contractors are highly encouraged to report suspected or actual acts of GBV/SEA/SH by a fellow worker, whether in the same contractor or not. Reports must be made in accordance with project's GBV/SEA/SH Allegation Procedures.
22. Managers are required to report and act to address suspected or actual acts of GBV/SEA/SH as they have a responsibility to uphold contractor commitments and hold their direct reports responsible.

Implementation

[8] **Consent:** refers to when an adult makes an informed choice to agree freely and voluntarily to do something. There is **no** consent when agreement is obtained through the use of threats, force or other forms of coercion, abduction, fraud, manipulation, deception, or misrepresentation; the use of a threat to withhold a benefit to which the person is already entitled, or; a promise made to the person to provide a benefit. In accordance with the United Nations Convention on the Rights of the Child, the WB considers that consent cannot be given by children under the age of 18, even if national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defence.

To ensure that the above principles are implemented effectively the contractor commits to:

23. Ensuring that all managers sign the project's 'Manager's Code of Conduct' detailing their responsibilities for implementing the contractor's commitments and enforcing the responsibilities in the 'Individual Code of Conduct'.
24. Ensuring that all employees sign the project's 'Individual Code of Conduct' confirming their agreement to comply with ESHS and OHS standards, and not to engage in activities resulting in GBV, child endangerment or abuse, or sexual harassment.
25. Displaying the contractor and Individual Codes of Conduct prominently and in clear view at workers' camps, offices, and in in public areas of the workspace. Examples of areas include waiting, rest and lobby areas of sites, canteen areas and health clinics.
26. Ensuring that posted and distributed copies of the contractor and Individual Codes of Conduct are translated into the appropriate language of use in the work site areas as well as for any international staff in their native language.
27. Ensuring that an appropriate person is nominated as the contractor's 'Focal Point' for addressing GBV/SEA/SH issues, and names and contact of specialized local GBV/SEA/SH Service Provider.
28. Ensuring that an effective GBV/SEA/SH Action Plan is developed in consultation with the specialized GBV/SEA/SH service provider which includes as a minimum:
    i. **GBV/SEA/SH Allegation Procedure** to report GBV/SEA/SH issues through the project Grievance Redress Mechanism ;
    ii. **Accountability Measures** to protect confidentiality of all involved ; and,
    iii. **Response Protocol** applicable to GBV/SEA/SH survivors and perpetrators .
29. Ensuring that the contractor effectively implements the agreed final GBV/SEA/SH Action Plan, providing feedback to the specialized GBV/Sea/SH service providers for improvements and updates as appropriate.
30. Ensuring that all employees attend an induction training course prior to commencing work on site to ensure they are familiar with the company's commitments to ESHS and OHS standards, and the project's GBV/SEA/SH Codes of Conduct.
31. Ensuring that all employees attend a mandatory training course once a month for the duration of the contract starting from the first induction training prior to commencement of work to reinforce the understanding of the project's ESHS and OHS standards and the GBV/SEA/SH Code of Conduct.

I do hereby acknowledge that I have read the foregoing Company Code of Conduct, and on behalf of the company agree to comply with the standards contained therein. I understand my role and responsibilities to support the project's OHS and ESHS standards, and to prevent and respond to GBV/SEA/SH. I understand that any action inconsistent with this Contractor Code of Conduct or failure to act mandated by this Contractor Code of Conduct may result in disciplinary action.

Contractor name: _____

Signature: _____

Printed Name: _____

Title: _____

Date: _____

APPENDIX 7: INDIVIDUAL CODE OF CONDUCT SIART

Implementing ESHS and OHS Standards

Preventing Gender-Based Violence

I, _____, acknowledge that adhering to environmental, social, and health and safety (ESHS) standards, following the project's occupational health and safety (OHS) requirements, and preventing Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH) is important.

I understand that failure to follow ESHS and OHS standards, or to partake in activities constituting GBV/SEA/SH—be it on the work site, the work site surroundings, at workers' camps, or the surrounding communities—constitute acts of gross misconduct and are therefore grounds for sanctions, penalties, or potential termination of employment. Prosecution by the Police of those who commit GBV/SEA/SH may be pursued if appropriate.

I agree that while working on the project I will:

1. Consent to a Police background check.
2. Attend and actively partake in training courses related to ESHS, OHS, and GBV as requested by the project.
3. Will wear my personal protective equipment (PPE) at all times when at the work site or engaged in project related activities.
4. Take all practical steps to adhere to the project's environmental and social management requirements.
5. Implement the contractor's OHS Management Plan.
6. Adhere to a zero-alcohol policy during work activities, and refrain from the use of narcotics or other substances which can impair faculties at all times.
7. Treat women, children (persons under the age of 18), and men with respect regardless of race, color, language, religion, political or other opinion, nationality, ethnicity, or social origin, property, disability, birth or other status.
8. Not use language or behaviour towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
9. Not sexually exploit or abuse project beneficiaries and members of the surrounding communities.

10. Not engage in sexual harassment of work personnel and staff —for instance, making unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature is prohibited. E.g., looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; in some instances, giving personal gifts.

11. Not engage in sexual favors —for instance, making promises of favorable treatment (e.g. promotion), threats of unfavorable treatment (e.g. loss of job) or payments in kind or in cash, dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior.

12. Not use prostitution in any form at any time.

13. Not participate in sexual contact or activity with children under the age of 18— including grooming or contact through digital media. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.

14. Unless there is the full consent[9] by all parties involved, I will not have sexual interactions with members of the surrounding communities. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex (including prostitution). Such sexual activity is considered "non-consensual" within the scope of this Code.

15. Consider reporting through the GRM or to my manager any suspected or actual GBV/SEA/SH by a fellow worker, whether employed by my company or not, or any breaches of this Code of Conduct.

With regards to children under the age of 18:

16. Bring to the attention of my manager the presence of any children on the construction site or engaged in hazardous activities.

17. Wherever possible, ensure that another adult is present when working in the proximity of children.

18. Not invite unaccompanied children unrelated to my family into my home unless they are at immediate risk of injury or in physical danger.

19. Not use any computers, mobile phones, video, and digital cameras or any other medium to exploit or harass children or to access child pornography (see also "Use of children's images for work related purposes" below).

20. Refrain from physical punishment or discipline of children.

[9] **Consent** is defined as the informed choice underlying an individual's free and voluntary intention, acceptance, or agreement to do something. No consent can be found when such acceptance or agreement is obtained using threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the World Bank considers that consent cannot be given by children under the age of 18, even if national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense.

21. Refrain from hiring children for domestic or other labor below the minimum age of 14 unless national law specifies a higher age, or which places them at significant risk of injury.

22. Comply with all relevant local legislation, including labor laws in relation to child labor and World Bank's safeguard policies on child labor and minimum age.

23. Take appropriate caution when photographing or filming children .

Use of children's images for work related purposes

When photographing or filming a child for work related purposes, I must:

24. Before photographing or filming a child, assess and endeavour to comply with local traditions or restrictions for reproducing personal images.

25. Before photographing or filming a child, obtain informed consent from the child and a parent or guardian of the child. As part of this I must explain how the photograph or film will be used.

26. Ensure photographs, films, videos, and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner. Children should be adequately clothed and not in poses that could be seen as sexually suggestive.

27. Ensure images are honest representations of the context and the facts.

28. Ensure file labels do not reveal identifying information about a child when sending images electronically.

Sanctions

I understand that if I breach this Individual Code of Conduct, my employer will take disciplinary action against me which could include:

1. Informal warning.

2. Formal warning.

3. Additional Training.

4. Loss of up to one week's salary.

5. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.

6. Termination of employment.

7. Report to the Police if warranted.

I understand that it is my responsibility to ensure that the environmental, social, health, and safety standards are met. I will adhere to the occupational health and safety management plan. I will avoid actions or behaviors that could be construed as GBV/SEA/SH. Any such actions will be a breach of this Individual Code of Conduct. I do hereby acknowledge that I have read the foregoing Individual Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, and GBV/SEA/SH issues. I understand that any action inconsistent with this Individual Code of Conduct or failure to act mandated by this Individual Code of Conduct may result in disciplinary action and may affect my ongoing employment.

Signature: _____

Printed Name: _____

Title: _____

Date: _____

APPENDIX 8: CONTRACTOR'S WORKERS ENVIRONMENTAL CODE OF CONDUCTS

Note: Workers Environmental Code of Conducts will also be integrated into the bidding/contractual document

DO:	DO NOT:
◆ USE THE TOILET FACILITIES PROVIDED – REPORT DIRTY OR FULL FACILITIES	◆ REMOVE OR DAMAGE VEGETATION WITHOUT DIRECT INSTRUCTION.
◆ CLEAR YOUR WORK AREAS OF LITTER AND BUILDING RUBBISH AT THE END OF EACH DAY – use the waste bins provided and ensure that litter will not blow away.	◆ MAKE ANY FIRES.
◆ REPORT ALL FUEL OR OIL SPILLS IMMEDIATELY & STOP THE SPILL FROM CONTINUING.	◆ POACH, INJURE, TRAP, FEED OR HARM ANY ANIMALS – this includes birds, frogs, snakes, etc.
◆ SMOKE IN DESIGNATED AREAS ONLY AND DISPOSE OF CIGARETTES AND MATCHES CAREFULLY. (Littering is an offence.)	◆ ENTER ANY FENCED OFF OR MARKED AREA.
◆ CONFINE WORK AND STORAGE OF EQUIPMENT TO WITHIN THE IMMEDIATE WORK AREA.	◆ DRIVE RECKLESSLY OR ABOVE SPEED LIMIT
◆ USE ALL SAFETY EQUIPMENT AND COMPLY WITH ALL SAFETY PROCEDURES.	◆ ALLOW WASTE, LITTER, OILS OR FOREIGN MATERIALS INTO THE STREAM
◆ PREVENT CONTAMINATION OR POLLUTION OF STREAMS AND WATER CHANNELS.	◆ LITTER OR LEAVE FOOD LYING AROUND.
◆ ENSURE A WORKING FIRE EXTINGUISHER IS IMMEDIATELY AT HAND IF ANY "HOT WORK" IS UNDERTAKEN e.g. welding, grinding, gas cutting etc.	◆ CUT TREES FOR ANY REASON OUTSIDE THE APPROVED CONSTRUCTION AREA
◆ REPORT ANY INJURY OF WORKERS OR ANIMALS.	◆ BUY ANY WILD ANIMALS FOR FOOD;
◆ DRIVE ON DESIGNATED ROUTES ONLY.	◆ USE UNAPPROVED TOXIC MATERIALS, INCLUDING LEAD-BASED PAINTS, ASBESTOS, ETC.;
◆ PREVENT EXCESSIVE DUST AND NOISE	◆ DISTURB ANYTHING WITH ARCHITECTURAL OR HISTORICAL VALUE
	◆ USE OF FIREARMS (EXCEPT AUTHORIZED SECURITY GUARDS)
	◆ USE OF ALCOHOL BY WORKERS DURING WORK HOURS
	◆ WASH CARS OR MACHINERY IN STREAMS OR CREEK
	◆ DO ANY MAINTENANCE (CHANGE OF OILS AND FILTERS) OF CARS AND EQUIPMENT OUTSIDE AUTHORIZED AREAS
	◆ DISPOSE TRASH IN UNAUTHORIZED PLACES
	◆ HAVE CAGED WILD ANIMALS (ESPECIALLY BIRDS) IN CAMPS
	◆ WORK WITHOUT SAFETY EQUIPMENT (INCLUDING BOOTS AND HELMETS)
	◆ CREATE NUISANCES AND DISTURBANCES IN OR NEAR COMMUNITIES

	◆ USE RIVERS AND STREAMS FOR WASHING CLOTHES ◆ DISPOSE INDISCRIMINATELY RUBBISH OR CONSTRUCTION WASTES OR RUBBLE ◆ SPILL POTENTIAL POLLUTANTS, SUCH AS PETROLEUM PRODUCTS ◆ COLLECT FIREWOOD ◆ DO EXPLOSIVE AND CHEMICAL FISHING ◆ USE LATRINES OUTSIDE THE DESIGNATED FACILITIES; AND ◆ BURN WASTES AND/OR CLEARED VEGETATION.

APPENDIX 9: SIART INFRASTRUCTURE INVESTMENT WEEKLY CESMP INSPECTION

SUBPROJECT:	The Rehabilitation of Adaliua Pig Breeding Facility	**IMPLEMENTING AGENCY:**	MAL
DATE:		**CONTRACTOR:**	
PREPARED BY:		**SUPERVISION ENGINEER**	

Inspection Participants: (insert names and positions)

CESMP Items (edit as necessary based on approved CESMP for relevant subproject)	**Applicable**		**Compliance**	**Issues**	**Status (R)/(O)**	**Action Required/Taken**	**Target/ Actual Date**
	Yes	**No**					
1. Mitigation & Management Measures: Construction Phase							
Soil Erosion: - Silt fences and diversion drains in place - Replanting and restoration work completed							

CESMP Items (edit as necessary based on approved CESMP for relevant subproject)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
Water Accumulation and Disposal Agreements: • Good housekeeping around the work sites • Waste collected in defined area on impermeable ground or containers • Separation of waste into (i) Recyclable waste (i.e. certain plastics, metals, rubber etc. that can be recycled); (ii) Organic biodegradable waste (i.e. waste that will decay / break down in a reasonable amount of time, such as green waste, food waste; (iii) Inorganic non-recyclable waste (i.e. waste that cannot decompose / break down and which cannot be recycled) and, (iv) Hazardous waste (i.e. asbestos, waste oil etc.) • Hazardous waste stored in safe and appropriate manner. • Waste management plan in place and operating for proper disposal							
Soil and Water Pollution: • Appropriate spill response plan/kit in place for waste area • No visible spills on soil or uncovered ground • Drainage and soakage systems clear and fit for purpose • Surface water monitoring on a quarterly basis							

CESMP Items (edit as necessary based on approved CESMP for relevant subproject)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
Dust and Materials Transport: • Stockpiles covered or kept wet when not in use • Visual inspection of ambient dust conditions on site and at nearby sensitive locations • Truck transports are covered • No evidence of aggregate spills on haulage route							
Noise: • Workers wearing ear protection as required • Noise level maximum of 45dB between 2200-0700 • No complaints received relating to noise							
Air Pollution: • Equipment operating without excessive emissions							
Fuel and Oil Storage: • Substances stored in self-bunded vessels or within bund on impermeable surface • Spill kit complete and accessible • Spill training completed • No evidence of spills on the ground							
Traffic Management Plan (TMP) Implementation: - TMP under effective implementation							

CESMP Items (edit as necessary based on approved CESMP for relevant subproject)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
Community and Local Business Consultation: • Public signage of complaints procedure • Signs and fences restrict or direct pedestrians and public where appropriate.							
Materials Supply: - Quarry establishment and operations in fully compliance with ESMP - All quarries licensed to supply materials - All imported materials with appropriate biosecurity clearances if necessary.							
Laydown Area: - Laydown areas established on pre-approved sites - Laydown areas dust levels managed efficiently - Traffic management plan correctly implemented at laydown site - Water run off management systems operating correctly - Dust management effectively implemented							

CESMP Items (edit as necessary based on approved CESMP for relevant subproject)	Applicable		Compliance	Issues	Status (R)/(O)	Action Required/Taken	Target/ Actual Date
	Yes	No					
Workers Camp (if applicable): • Camp established in accordance with Code of Practice in ESMP. • Septic system cleaned and fully operational. • Waste stored in an appropriate location in a clean and tidy manner, segregated by waste type. • Workers living and recreational areas clean and properly equipped. • OHS, HIV/AIDS, GBV, Human Trafficking, SEA and other information available							
Monitoring - Weekly safeguards compliance report completed							

Compliant, Minor Non-Compliance, Significant Non-Compliance Status: (R) Resolved Issues, (O) Ongoing Issues

Notes:

Required Actions:

Environmental Specialist: **Signed:** **Date:**

APPENDIX 10: MINUTES OF MEETING

Subject: SIART Project Consultation with Malaita Provincial Government
Date: 13th June
Time: 10 am – 11 am
Venue: Malaita Provincial Government Administration Office

Participants

Malaita Provincial Government Administration

- Permanent Secretary (PS)
- Deputy Premier
- Officers of the Provincial Planning Department

Visiting Team

- **Ministry of Agriculture and Livestock (MAL):**
  - Elda Leah Wate (Deputy Secretary Corporate)
  - Ofer Dotan (Technical Adviser)
  - Alistair Talua (Acting Director Planning)
- **SIART Project Team:**
  - Louisa Fakaia (former Project Manager)
  - Niniu Oligao (Communication Officer)
  - Steve Sae (Environmental Safeguards Officer)
- **World Bank:**
  - Son Thanh Vo
  - Kara Mouyis
  - Allen

Agenda:

1. Overview of the SIART Project
2. Proposed Renovation of the Adaliua Pig Breeding Facility
3. Benefits to Local Farmers, Provincial Government, and the National Economy
4. Discussion on Project Implementation

Discussion Points:

1. **Introduction of SIART Project:**
   - Overview presented on SIART's goal to enhance agricultural productivity and improve rural livelihoods.
2. **Proposed Renovation of Adaliua Pig Breeding Facility:**
   - Plans for refurbishment were outlined, aiming to enhance pig meat production and agricultural output in Malaita.
3. **Expected Benefits:**

- Improved infrastructure will support farmers, increase production capacity, and create economic opportunities.
- Employment opportunities and strengthened collaboration between MPG and the Solomon Islands Government were emphasized.

4. **Engagement and Concerns:**
    - MPG expressed strong support for the project, appreciating the anticipated economic and social benefits.
    - Concerns were raised about project timelines, resource allocation, and ensuring effective community engagement.
5. **Deputy Premier's Remarks:**
    - Stressed the importance of the facility's long-term sustainability and operational effectiveness.
    - Expressed gratitude to the World Bank for their continued support and acknowledged the efforts of the SIART PMU.

Outcomes and Agreements:

- MPG affirmed support for the project and its implementation.
- Commitments were made to maintain ongoing dialogue on timelines, resource use, and community involvement.
- Appreciation was expressed for the project's potential impact on farmers, the economy, and provincial development.

Meeting Conclusion:
The meeting concluded with mutual acknowledgment of the project's significance and a shared commitment to its success.

Minutes Prepared By: Niniu Oligao, Communications Officer
Date: 13th June 2023.

APPENDIX 11: COMMUNITY CONSULTATION REPORT

This is a report of the community consultation activity conducted with a few identified households surrounding the Adeliua farm in Malaita, on December 14, 2024.

The consultation is purposely to inform communities about the proposed renovation works to improve the Pig Breeding facility at Adeliua Farm, under the Solomon Islands Agriculture Rural Transformation (SIART) Project, funded by the World Bank.

The duration of the consultation activity was only a day and the method used to identify the homes was based on random selection. The consultation team consists of the Chief Field Officer (CFO) for Malaita Province and the Social Safeguard Officer (SSO). Two (2) places were visited in which consultation was conducted namely; Zion Worship Centre and Adeliua village. Of these, six (6) locations were identified within the 300m radius of the Adeliua farm. Those who were consulted have shared some valuable thoughts and a few concerns relating to the proposed Pig Breeding facility.

Comments/issues raised during the consultation;

1. **Provision of employment opportunities** – the previous Adeliua farm during the Taiwan era which provided employment opportunities for locals had ceased. Support for the reviving of Adeliua farm through the Pig Breeding Facility had been expressed verbally. It will help provide employment opportunities for the locals and also farmers will have access to buy piglets which in turn, will help boost increase in the production of their piggery farms.
2. **Information about the SIART Project** – Is the SIART project will also build a new MAL office in Auki? When will the Adeliua farm be revived after being closed a few years ago? Is SIART work close with the WINROCK project in Malaita? Prefer face-to-face consultation approach than public notices and have shown support for the Pig breeding facility subproject. Waiting to see its implementation.
   Response:
   Yes, a new MAL office will be constructed in Auki under the SIART Project. The timing of when the Adeliua farm will be revived depends on the submission and approval of all necessary environmental & social safeguards and infrastructure documentations submitted to the World Bank. The SIART project is under a different funding arrangement with World Bank, whereas, the WINROCK project is under the USAID funding. Their objectives and activities also vary in nature.
3. **Supportive of the consultation process** – the consultation process which informed communities in advance about the planned activities to renovate the pig breeding facility at Adeliua farm was a good approach. Communities need to be aware first of the subproject plans before the activities are implemented. This helps to avoid or reduce complaints and/or grievances coming from communities.
4. **Community consultation, a good approach** – this is the first time we have witnessed such approach where officers come in person and inform communities before the start of a project. This has never happened in the past during the former Taiwanese farming era with MAL. This is a good approach – by informing communities about what is going to happen, the start date of the subproject and in what ways community members can benefit from such projects. By the way,

how is the community going to benefit from this subproject? Is it necessary for the whole community to be present to hear the awareness?

Response:

Community members and especially farmers have the opportunity to buy new breeds of piglets to increase their piggery farms productions, once the facility becomes operational. And, the locals will have access to employment opportunities at the farm. Also, the message can be shared with anyone in the community who is not present during the consultation. Similar consultation program will be organized with community members later, when the construction phase (renovation works) begins.

A few challenges had occurred during the consultation. At locations 3 & 4, household members were hesitant to give consent to take their photos. At location 3, only the wife (mother) and children were at home, while her husband was away for work. She was not willing to take her photo. That is respected and a shot was taken at their home instead. At location 4, the owner was absent and those present were not willing to take their photos as well, but listened attentively to the brief information about the planned renovation works for Adeliua Pig Breeding Facility. However, representatives of the remaining four (4) households gave their consent verbally for their photos to be taken. Secondly, as the festive season was drawing close, a lot of people were out from their homes preparing for the festive activities. Thirdly, a few houses along the road corridor which should be covered were newly built and still empty. Only homes that were occupied were eligible to be visited.

The table below indicates the six (6) locations where consultations were held

Location	Name	Description	Contact
1	Zion Worship Centre (ZWC)	Within the 300m radius to Adeliua farm	Levi Jr. Lauasi Contact (phone): 7893873
2	Zion Worship Centre	Within the 300m radius to Adeliua farm	Contact Pr. Levi Lauasi 7481206
3	Zion Worship Centre	Within the 300m radius of Adeliua farm	Contact Nester Manasa (7510966)
4	Adeliua village	Within the 300m radius of Adeliua farm	Contact Roseline Koóramo 7105592
5	Adeliua village	Within the 300m radius of Adeliua farm	Contact Joana Angii (7424150) & Ellen Ado
6	Adeliua village	Within the 300m radius of Adeliua farm	Contact Augustine Naumae & Joses Jr Kaki 7720878

Photos

Location 1 – Zion Worship Centre (ZWC)

Location 2 – Zion Worship Centre (ZWC)

Location 3 – Zion Worship Centre (ZWC)

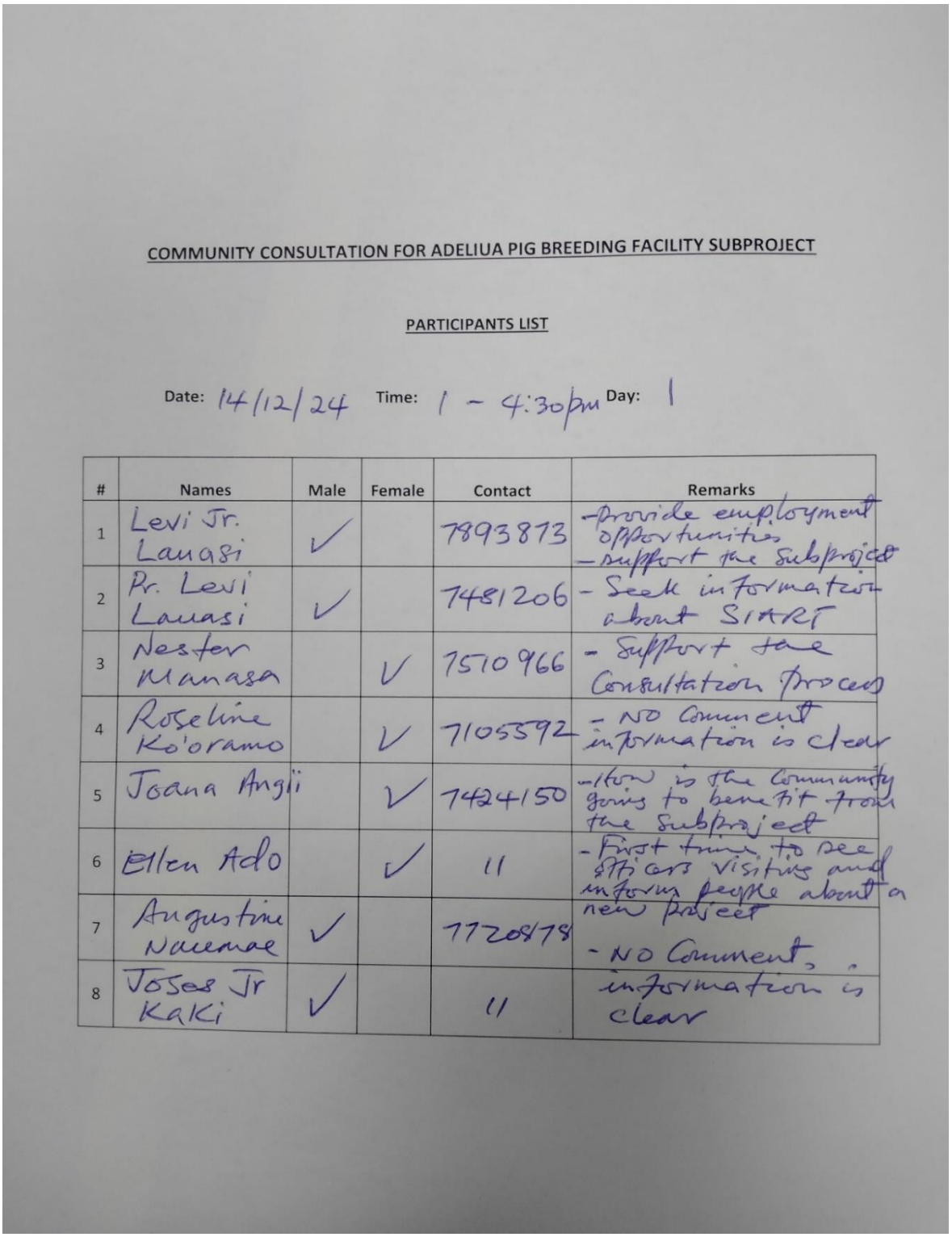
Location 4 – Entry into Adeliua village

Location 5 – Adeliua village

Location 6 – Adeliua village

Map of Consultation

Participants List



COMMUNITY CONSULTATION FOR ADELIUA PIG BREEDING FACILITY SUBPROJECT

PARTICIPANTS LIST

Date: 14/12/24 Time: 1 - 4:30pm Day: 1

#	Names	Male	Female	Contact	Remarks
1	Levi Jr. Lauasi	✓		7893873	-Provide employment opportunities -support the subproject
2	Pr. Levi Lauasi	✓		7481206	- Seek information about SIAPT
3	Nester Manasa		✓	7510966	- Support the Consultation Process
4	Roseline Ko'oramo		✓	7105592	- NO Comment information is clear
5	Joana Angii		✓	7424150	-How is the Community going to benefit from the subproject
6	Ellen Ado		✓	11	- First time to see officers visiting and informing people about a new project
7	Augustine Naemae	✓		7720878	- NO Comment,
8	Josea Jr Kaki	✓		11	information is clear

ANNEXES

ANNEX 1: TRAFFIC MANAGEMENT PLAN (TMP) FOR ADALIUA PIG BREEDING FACILITY RENOVATION

1. Project Overview

- **Project**: Refurbishment of the Adaliua Pig Breeding Facility
- **Location**: Adjacent to Fiu Road, Central Kwara'ae, Malaita
- **Purpose**: To ensure safe and efficient traffic flow along Fiu Road during renovation activities, minimizing disruption to local communities and public transport services.
- **Scope**: The TMP covers the management of traffic impacts associated with the transport of renovation materials and workers to the project site.

2. Key Considerations

- **Single Access Road**: Fiu Road is the only access route to the project site.
- **Community Use**: Fiu Road is frequently used by residents of nearby Fiu communities for daily transit.
- **Public Transport Services**: Buses operate along Fiu Road, providing transportation between Auki and Fiu communities.
- **Project Vehicles**: Only a few project vehicles will be used for material transport during the renovation.

3. Traffic Management Objectives

- Ensure the safety of all road users, including community members, public transport passengers, and project personnel.
- Minimize traffic disruptions along Fiu Road.
- Facilitate the efficient movement of project vehicles without impeding public access or transit services.

4. Traffic Management Measures

a. **Scheduling of Project Vehicle Movements**

To minimize disruptions to the local community, particularly students commuting to school, the project will implement the following measures:

-
- Timing of Vehicle Movements:
  - Project vehicles, including material delivery trucks, will be scheduled outside of peak public transport hours (early morning and late afternoon) to reduce interference with community travel.

- Special consideration will be given to school commuting hours (approximately 7:00 AM – 8:30 AM and 2:30 PM – 4:00 PM), ensuring that project-related vehicle movements do not pose risks to students traveling to and from school.
- Minimal Construction Traffic:
  - Since this is a small-scale renovation project, only a limited quantity of materials is required. This will only necessitate one or two tandem truckloads for material delivery, significantly reducing traffic impact on the community

b. **Signage and Communication**
   - **Temporary Signage**: Place clear and visible signage along Fiu Road to inform the public of construction activities and any potential delays.
   - **Speed Limits**: To enhance safety near residential and community areas along Fiu Road, all project vehicles shall adhere to a reduced speed limit. In particular, during the haulage of building materials, drivers must strictly maintain a maximum speed of 30 km/h in public areas to minimize risks to pedestrians, local traffic, and nearby communities. Compliance with these speed limits is essential to ensuring road safety and reducing disturbances in populated areas.
   - **Community Notices**: Issue advance notices to Fiu community members, local businesses, and public transport operators regarding expected traffic changes.

c. **Traffic Control During High Activity Periods**
   - **Traffic Controllers and spotter**: Deploy trained personnel to manage and direct traffic when materials are being transported, especially at times of increased vehicle movement.
   - **Access for Public Transport**: Ensure public transport services have priority access and uninterrupted travel along Fiu Road.

d. **Safety Measures for Local Communities**
   - **Designated Crossing Points**: Mark safe crossing points along Fiu Road for pedestrian use where appropriate.
   - **Vehicle Safety Checks**: Conduct regular maintenance checks on all project vehicles to prevent breakdowns and minimize road disruptions.

5. Emergency Response Protocols

- **Incident Management**: In the event of a road incident involving project vehicles, traffic controllers will immediately secure the site and alert emergency services as required.
- **Communication**: Notify the community promptly in the case of any major delays or disruptions along Fiu Road.

6. Monitoring and Review

- **Monitoring**: The TMP implementation will be regularly monitored to ensure compliance with safety measures and effectiveness in reducing community disruption.
- **Review**: Adjustments to the TMP will be made based on feedback from community members and the performance of traffic management strategies during the renovation period.

ANNEX 2: HEALTH AND SAFETY/BIO-SECURITY PLAN FOR PIGS AT ADALIUA PIG BREEDING FACILITY DURING RENOVATION

1. Objective

To safeguard the health of workers, the community, and the pig population at the Adaliua Pig Breeding Farm Facility by implementing measures that prevent the introduction and spread of communicable diseases and ensure safe and bio-secure construction/renovation activities.

2. Health and Safety Protocols for Workers

a. Health Screenings and Monitoring

- Pre-Entry Health Screenings: Conduct mandatory health screenings for all workers before entering the site, focusing on symptoms of communicable diseases.
- Daily Monitoring: Perform daily health checks for workers, including temperature checks and symptom assessments, to quickly identify any potential signs of illness.

b. Training and Awareness

- Health and Safety Training: Provide comprehensive training to workers on health, safety, and bio-security protocols, emphasizing personal hygiene and disease prevention.
- Bio-Security Awareness: Educate workers on the importance of bio-security practices to prevent disease transmission to pigs.

c. Hygiene and PPE Requirements

- Personal Protective Equipment (PPE): Require workers to wear designated PPE, including masks, gloves, and clean coveralls, which should be removed and disinfected upon leaving the site.
- Handwashing and Sanitizing Stations: Install handwashing stations and provide hand sanitizers at key site access points and near livestock areas. Workers should wash and sanitize hands before and after entering pig enclosures.

3.Bio-Security Measures for Pigs

a. Controlled Access to Pig Enclosures

- Restricted Access: Limit entry to pig enclosures to only authorized and trained personnel. Set up clear boundaries between construction areas and pig enclosures.
- Footwear Disinfection: Require all individuals entering pig enclosures to disinfect footwear at entry and exit points using footbaths or disinfectant mats.

b. Disease Prevention in Livestock

- Quarantine Protocol for New Pigs: Any new pigs introduced to the facility must undergo a quarantine period before being integrated with the existing livestock.

- Vaccinations: Ensure all pigs are vaccinated according to veterinary recommendations to strengthen immunity against common diseases.
- Waste Management: Properly manage and dispose of waste materials to reduce the risk of contamination and maintain a clean environment around pig enclosures.

4.Site Sanitation and Disinfection Procedures

a. Daily Cleaning Protocols
   - Clean and disinfect all high-contact areas, including tools, equipment, and entry points to pig enclosures, on a daily basis.
   - Ensure proper disposal of all waste, including construction debris and potential contaminants, to maintain hygiene standards.

b. Weekly Deep Cleaning
   - Conduct weekly deep cleaning of areas around the pig enclosures and adjacent facilities to further reduce contamination risks.
   - Use approved disinfectants safe for livestock settings, especially around feeding areas.

5. Emergency Response and Reporting Procedures

a. Response to Suspected Illness in Pigs
   - Isolation of Affected Animals: Immediately isolate any pig showing signs of illness from the main population.
   - Veterinary Notification: Promptly inform a qualified veterinarian and follow their guidance for containment, testing, and treatment.

b. Worker Illness Reporting
   - Symptom Reporting: Instruct workers to report any illness or symptoms immediately to their supervisor.
   - Removal and Recovery: Workers showing signs of communicable diseases must not enter the site until they have been medically cleared.

6.Monitoring, Documentation, and Review

a. Daily Log Maintenance
   - Record all health screening results, hygiene compliance checks, and incidents in a daily log for accountability and traceability.

b. Regular Inspections and Adjustments
   - Conduct regular inspections to ensure compliance with the plan and address any potential bio-security gaps.

- Review and adjust protocols as needed based on new health guidelines or veterinary advice.

ANNEX 3: SOLID WASTE AND WASTEWATER MANAGEMENT PLAN

Solid Waste and Wastewater Management Plan for the Renovation of Adaliua Pig Breeding Facility, Central Kwara'ae, Malaita Province

Project Overview: The Adaliua Pig Breeding Facility is undergoing a small-scale renovation to upgrade infrastructure and restore operational capacity. The refurbishment of this facility, part of the Solomon Islands Agriculture and Rural Transformation (SIART) Project, is located on previously converted agricultural land, with minimal primary vegetation and a degraded environment dominated by invasive vegetation. The anticipated waste generation from this renovation work is expected to be minimal.

1. Objectives

- **Minimize environmental impact:** Ensure that waste generated from the renovation activities is properly managed to prevent soil, water, and air pollution.
- **Efficient waste handling and disposal:** Establish a clear process for the collection, segregation, storage, and disposal of waste.
- **Compliance with Environmental Standards:** Adhere to relevant World Bank safeguards and local regulations for waste management.

2. Types of Waste Generated

1. **Solid Waste:**
    - **Construction debris:** Small amounts of materials like wood, metal scraps, cement bags, and plastic packaging.
    - **Organic waste:** Plant trimmings and soil from minor landscaping adjustments.
    - **General waste:** Domestic-type waste from on-site workers, including food wrappers and beverage containers.
2. **Wastewater:**
    - **Greywater:** Limited to water used for cleaning tools, light equipment, and washwater from workers.
    - **Potential wash-off:** Minor runoff from surfaces due to dust suppression or tool rinsing.

3. Solid Waste Management

a. Waste Segregation:

- **Non-biodegradable waste (e.g., plastic, metal, cement bags):** Collect in designated bins, separate from other waste types.
- **Biodegradable waste (e.g., plant trimmings, wood):** Collect separately, potentially composting or reusing as mulch on-site.
- **Hazardous Waste (if any paint or chemical cleaners are used):** Store separately in leak-proof containers for proper disposal following safety guidelines.

b. Collection and Storage:

- Use clearly marked containers for each waste type at the site.
- Ensure waste is stored in secure, covered areas to prevent scattering by wind or access by animals.

c. Disposal:

- **Non-biodegradable and hazardous waste:** Dispose of through licensed waste contractors to appropriate landfill sites or recycling facilities.
- **Biodegradable waste:** If feasible, compost organic waste on-site. Otherwise, transport to a designated composting site or green waste area.
- **Recyclable materials (e.g., metals):** Reuse or recycle with local facilities whenever possible to minimize landfill use.

4. Wastewater Management

a. Wastewater Containment and Reuse:

- Install portable containment systems for greywater to prevent discharge onto soil or into nearby water sources.
- Reuse greywater on-site where applicable (e.g., dust suppression), ensuring that it is filtered to remove any contaminants.

b. Avoidance of Soil and Water Contamination:

- Use washwater sparingly and avoid hosing down areas unnecessarily.
- Ensure any cleaning or rinsing is done in designated areas with containment measures to prevent runoff.

c. Disposal of Excess Wastewater:

- For any greywater or residual washwater that cannot be reused, contain it for safe disposal, preferably in alignment with local waste management guidelines.

5. Monitoring and Compliance

- **Daily Inspections:** Conduct daily checks to ensure waste is segregated correctly and stored securely.
- **Waste Log:** Maintain a waste log documenting waste type, quantity, and disposal method.
- **Worker Training:** Train workers on proper waste segregation, handling, and disposal practices.
- **Incident Reporting:** Report any accidental spills or mismanagement immediately and take corrective action.

6. Health and Safety Considerations

- **Personal Protective Equipment (PPE):** Provide gloves, masks, and other PPE for workers handling waste.
- **Sanitation Facilities:** Ensure access to clean washrooms and handwashing stations to maintain hygiene on-site.
- **Emergency Spill Kits:** Keep spill kits on-site for immediate response to any accidental releases of wastewater or hazardous materials.

7. Community and Stakeholder Engagement

- Inform nearby communities of waste management practices and any potential impacts.
- Address any concerns regarding waste disposal routes or potential nuisance promptly to ensure transparency and maintain good relations.

ANNEX 4: HEALTH AND SAFETY PROTOCOL FOR WORKERS HANDLING WASTE AND SLUDGE FROM DRAIN AND SEPTIC TANK

Project Context:
This protocol provides guidelines to ensure the safety and health of workers handling waste, particularly sludge from drains and the septic tank, during the renovation of the Adaliua Pig Breeding Facility. Handling sludge poses specific health risks due to potential exposure to pathogens, hazardous substances, and unpleasant odours. This document outlines safety measures to mitigate these risks.

1. Objectives

- Protect Worker Health and Safety: Minimize the risk of illness or injury related to sludge handling and disposal.
- Ensure Compliance with Safety Standards: Follow local occupational health and safety regulations and World Bank safeguard standards.
- Promote Safe Waste Disposal Practices: Implement best practices for handling, transporting, and disposing of sludge.

2. Potential Hazards

Workers handling sludge and waste are at risk of:

- Biological hazards: Exposure to pathogens like bacteria, viruses, and parasites.
- Chemical hazards: Contact with harmful substances present in sludge or wastewater.
- Physical hazards: Risks related to manual handling, slips, trips, and falls.
- Odor and gas exposure: Inhalation of methane, hydrogen sulfide, and other gases.

3. Personal Protective Equipment (PPE)

Workers must wear appropriate PPE to prevent exposure and injury. Required PPE includes:

- Gloves: Heavy-duty, waterproof, chemical-resistant gloves to protect against contact with sludge and waste.
- Face Masks/Respirators: Use masks with filters for gas and odor protection (e.g., N95 or higher for dust/particulate, organic vapor respirators for gases).
- Eye Protection: Safety goggles or face shields to prevent splashes from entering the eyes.
- Protective Clothing: Waterproof coveralls or aprons to avoid direct skin contact with waste and sludge.

- Boots: Non-slip, waterproof boots that can be cleaned and disinfected.
- Hard Hats and Ear Protection (as needed): Hard hats should be worn in construction zones or areas where there is a risk of falling debris.

4. Safety Procedures

a. Pre-Task Preparation:

- Health Check: Ensure all workers handling sludge are medically fit for the task and have no open wounds or skin conditions that could be aggravated by exposure.
- Site Inspection: Conduct a site walkthrough to identify and address any hazards.
- PPE Inspection: Check that all PPE is in good condition and fits each worker properly.
- Briefing: Provide a task-specific briefing on potential hazards, safety measures, and the task workflow.

b. Sludge Removal and Handling:

- Equipment Setup: Use shovels, pumps, or vacuum equipment designed for sludge handling to minimize direct contact.
- Avoid Manual Contact: Minimize hand contact with sludge; handle it using tools whenever possible.
- Controlled Transfer: Transport sludge in sealed containers or bags to prevent spillage and odor release.

c. Ventilation and Gas Monitoring:

- Work in Ventilated Areas: If working in confined or enclosed spaces, ensure adequate ventilation.
- Gas Detection: Use portable gas detectors to monitor levels of hazardous gases like methane and hydrogen sulfide. If unsafe levels are detected, suspend work until ventilation or gas extraction is improved.

5. Hygiene and Decontamination Procedures

a. Handwashing Stations:

- Set up handwashing stations equipped with soap and water near the work area. Workers must wash hands immediately after handling waste or sludge, and before eating or drinking.

b. Decontamination Area:

- Designate an area for cleaning and decontaminating PPE and tools used in sludge handling. Workers should follow proper decontamination procedures before removing PPE to avoid contaminating clean areas.

c. Showers and Change Rooms:

- Provide shower facilities for workers to use after handling sludge. Ensure separate areas for removing contaminated PPE to prevent cross-contamination.

6. Waste Disposal and Spill Management

a. Waste Disposal:

- Dispose of collected sludge and any contaminated PPE according to local regulations. For hazardous sludge, use approved disposal sites or services.
- Maintain records of waste amounts, disposal methods, and locations to ensure compliance.

b. Spill Containment and Cleanup:

- Spill Kits: Keep spill kits readily available with absorbent materials, neutralizers, and containment tools.
- Response Procedure: Immediately contain any sludge spills to prevent spreading. Clean up using proper PPE, and dispose of contaminated materials according to regulations.

7. Health Monitoring and First Aid

a. Health Monitoring:

- Conduct regular health checks on workers who frequently handle sludge, monitoring for signs of respiratory issues, skin infections, or gastrointestinal symptoms.
- Encourage workers to report any illness or symptoms promptly for early intervention.

b. First Aid Procedures:

- Provide access to a fully stocked first aid kit.
- Train workers in basic first aid procedures, emphasizing responses for exposure incidents such as skin contact or accidental ingestion.

8. Emergency Preparedness and Incident Reporting

a. Emergency Response Plan:

- Develop and communicate a response plan for potential emergencies (e.g., gas exposure, chemical spills, severe injury).

- Designate an assembly area and evacuation routes if work occurs in enclosed areas or near confined spaces.

b. Incident Reporting:

- Report any exposure incidents, equipment malfunctions, or near-misses promptly. Document each incident, analyse it, and implement corrective measures to prevent recurrence.

9. Training and Capacity Building

- Initial Training: Provide mandatory training on safe handling practices, PPE usage, potential hazards, and response protocols before workers handle sludge or waste.
- Refresher Courses: Conduct regular refresher courses on health and safety measures to keep workers updated.
- Hands-on Demonstrations: Offer practical demonstrations on how to use spill kits, gas detectors, and other essential equipment.

ANNEX 5: HEALTH AND SAFETY PLAN FOR THE REFURBISHMENT OF ADALIUA PIG BREEDING FACILITY, CENTRAL KWARA'AE, MALAITA PROVINCE

Project Overview:
The refurbishment of the Adaliua Pig Breeding Facility aims to restore infrastructure and operational capacity under the Solomon Islands Agriculture and Rural Transformation (SIART) Project. This small-scale refurbishment will include general maintenance, minor repairs, and waste management activities. This Health and Safety Plan outlines measures to safeguard workers and nearby communities from potential hazards.

1. Objectives

- Promote Worker Safety: Minimize health risks and prevent workplace injuries.
- Comply with Regulations: Adhere to World Bank safeguards and local occupational health and safety standards.
- Enhance Safety Awareness: Foster a culture of safety through training and accountability.

2. Roles and Responsibilities

- Project Manager: Oversee safety plan implementation, conduct safety audits, and ensure compliance with health and safety standards.
- Site Supervisor: Enforce safety protocols on-site, conduct daily safety briefings, and report incidents.
- Health and Safety Officer (HSO): Identify hazards, conduct risk assessments, monitor safety compliance, and provide first aid.
- Workers and Subcontractors: Follow all health and safety protocols, report hazards or unsafe conditions, and use PPE appropriately.

3. Risk Assessment and Control Measures

a. Identified Hazards:

- Physical Hazards: Falls, slips, trips, and minor construction-related injuries.
- Biological Hazards: Exposure to pathogens in sludge and wastewater, especially during septic tank maintenance.
- Chemical Hazards: Exposure to cleaning chemicals or potential chemical spills.
- Ergonomic Hazards: Strain from lifting or handling heavy materials.

b. Control Measures:

- Elimination/Substitution: Reduce use of hazardous chemicals and avoid manual handling of sludge where possible by using equipment.
- Engineering Controls: Ensure adequate ventilation in enclosed spaces and use barriers to prevent unauthorized access.
- Administrative Controls: Implement work rotation to avoid fatigue, restrict entry to hazardous areas, and conduct regular safety briefings.
- Personal Protective Equipment (PPE): Provide gloves, masks, boots, and coveralls for sludge handling, and eye protection for tasks with a risk of splashes.

4. Site Safety Protocols

a. Site Access and Security:

- Access Control: Limit site access to authorized personnel only. Secure all hazardous zones with clear signage.
- Visitor Log: Maintain a log for all site visitors and require PPE for anyone entering restricted areas.
- Perimeter Fencing: Erect temporary fencing around high-risk areas to prevent unauthorized access.

b. Equipment and Machinery Safety:

- Inspect all machinery and tools before use, ensuring they are in good working condition.
- Train workers on safe tool handling and reinforce a zero-tolerance policy for operating equipment without permission or training.
- Require proper PPE, such as gloves and safety goggles, for handling machinery.

c. Sludge and Waste Management:

- Ensure that only trained workers handle sludge, following the Health and Safety Protocol for handling waste and sludge drain and septic tank (outlined separately in Annex 4).
- Store waste materials in labelled containers and follow disposal procedures for each waste type, particularly for any hazardous waste.

5. PPE Requirements

- Basic PPE for All Workers: Hard hats, gloves, safety boots, and high-visibility vests.
- Task-Specific PPE:

- Waste Management (e.g., sludge handling): Waterproof coveralls, chemical-resistant gloves, face masks, and rubber boots.
- Chemical Use: Chemical-resistant gloves, safety goggles, and aprons.
- Construction Activities: Hearing protection for high-noise tasks, respiratory masks for dust protection.

6. Emergency Preparedness and Response

a. Emergency Contact Information:

- Display emergency contact numbers prominently on-site, including local medical services, fire department, and project safety officers.

b. Emergency Response Plan:

- Evacuation Plan: Establish and communicate evacuation routes and assembly points.
- Spill Containment and Cleanup: Store spill kits on-site to manage chemical or waste spills immediately.
- First Aid: Ensure a first aid kit is easily accessible and stocked with necessary supplies. Designate trained first aid personnel to respond to minor injuries.

c. Fire Safety:

- Install fire extinguishers at key locations and ensure all workers are trained in their use.
- Conduct fire drills to prepare workers for emergency evacuation procedures.

7. Training and Capacity Building

a. Safety Orientation:

- Conduct a mandatory safety orientation for all workers, covering the overall safety plan, potential hazards, emergency response, and PPE requirements.

b. Task-Specific Training:

- Provide specialized training for high-risk tasks such as sludge handling, chemical handling, and equipment operation.
- Conduct periodic safety drills to reinforce safe practices and emergency preparedness.

c. Daily Safety Briefings:

- Hold daily briefings to update workers on specific tasks, potential hazards for the day, and necessary control measures.
- Reinforce proper PPE use and encourage reporting of unsafe conditions.

8. Health and Hygiene Provisions

- Sanitation Facilities: Ensure access to clean restrooms and handwashing stations.
- Decontamination Area: Provide an area for workers to clean off sludge and hazardous waste and decontaminate PPE.
- Hygiene Protocols: Require workers to wash hands before eating, drinking, or using shared facilities, especially after handling waste or chemicals.

9. Monitoring, Reporting, and Review

a. Monitoring and Inspections:

- Conduct daily site inspections to ensure compliance with safety protocols. The Health and Safety Officer will document any unsafe practices and enforce corrective actions.

b. Incident Reporting:

- All incidents, near-misses, and unsafe conditions must be reported immediately to the Site Supervisor or HSO.
- Maintain a log of incidents, identifying root causes, corrective actions, and any follow-up measures.

c. Review and Improvement:

- Review the Health and Safety Plan regularly, particularly after any incident, to incorporate improvements and lessons learned.
- Engage workers in feedback sessions to identify potential safety enhancements.

10. Community and Stakeholder Engagement

- Inform neighboring communities about refurbishment activities, including work hours, safety measures, and emergency response.
- Establish a contact point for community concerns, ensuring transparency and responsiveness to any safety issues that may impact nearby residents.

ANNEX 6: HAZARDOUS MATERIALS MANAGEMENT PLAN

Refurbishment of Adaliua Pig Breeding Facility

1. Introduction

This Hazardous Materials Management Plan (HMMP) outlines the procedures for handling, storage, use, and disposal of hazardous materials during the refurbishment of the Adaliua Pig Breeding Facility. The identified hazardous materials include diesel fuel from service trucks, paint for the small guard house, medical equipment for the pigs, and Anti-B25 solution used for cleaning facility surfaces. The plan aims to minimize risks to workers, the environment, and the local community.

2. Objectives

1. Ensure safe handling, storage, and disposal of hazardous materials.
2. Prevent spills, leaks, or contamination of soil, water, and air.
3. Comply with national regulations and World Bank environmental and safety standards.
4. Promote awareness and training among workers on hazardous material management.

3. Identified Hazardous Materials and Risks

1. **Diesel Fuel**
    - **Source:** Service trucks transporting materials.
    - **Risks:** Spills, fire hazards, and contamination of soil and water.
2. **Paint**
    - **Source:** Used for guard house refurbishment.
    - **Risks:** Emission of volatile organic compounds (VOCs), improper disposal of paint containers.
3. **Medical Equipment for Pigs**
    - **Source:** Needles, syringes, and other medical waste.
    - **Risks:** Injuries from sharps and biohazard contamination.
4. **Anti-B25 Solution**
    - **Source:** Cleaning surfaces.
    - **Risks:** Skin irritation, toxic fumes, and environmental contamination through improper disposal.

4. Management Measures

4.1 Storage and Handling

- **Diesel Fuel:**
    - Store in labeled, leak-proof containers at a designated fuel storage area, away from ignition sources.
    - Use drip trays when refueling or transferring fuel.
- **Paint:**
    - Store in a well-ventilated, dry area, away from heat and direct sunlight.
    - Keep lids tightly closed when not in use.
- **Medical Equipment:**
    - Use puncture-proof containers for sharps disposal.
    - Store used medical waste in clearly labeled, sealed containers until disposal.
- **Anti-B25 Solution:**
    - Store in original, labeled containers in a secure, cool, and dry location.
    - Ensure handling with appropriate PPE (gloves, goggles, and masks).

4.2 Use

- **Diesel Fuel:**
    - Conduct refueling operations on impermeable surfaces to prevent soil contamination.
- **Paint:**
    - Apply paint in well-ventilated areas to reduce worker exposure to VOCs.
- **Medical Equipment:**
    - Dispose of used equipment immediately after use in designated containers.
- **Anti-B25 Solution:**
    - Dilute the concentrate as per manufacturer guidelines before use.
    - Avoid overspray or runoff during cleaning.

4.3 Spill Prevention and Response

- A spill response and control plan has been developed (see Annex 7), and there will be readily available spill kits at the site.
- Train workers on immediate spill containment and clean-up.
- Report significant spills to the site supervisor and relevant authorities.

4.4 Waste Disposal

- **Diesel Fuel:** Collect and store used or contaminated fuel in secure containers for disposal by a licensed waste handler.
- **Paint:** Dispose of leftover paint and empty containers as per hazardous waste guidelines.
- **Medical Equipment:** Transport sharps and medical waste to authorized facilities for safe disposal.
- **Anti-B25 Solution:** Collect and neutralize residues before disposal, ensuring no discharge into nearby water bodies.

5. Worker Training and Awareness

- Conduct training sessions on hazardous material identification, handling, and emergency response.
- Ensure all workers are familiar with Material Safety Data Sheets (MSDS) for the hazardous materials in use.

6. Monitoring and Reporting

- Regularly inspect storage areas and equipment for leaks or damage.
- Keep a log of hazardous materials usage and disposal activities.
- Report incidents, spills, or non-compliance immediately to the project manager.

7. Emergency Response Plan

1. **For Fuel and Chemical Spills:**
    - Contain the spill using absorbent materials.
    - Remove contaminated soil and dispose of it appropriately.
2. **For Fire:**
    - Use suitable fire extinguishers (e.g., Class B for fuel and paint).

- Evacuate the area and notify emergency services if necessary.

3. **For Medical Waste Incidents:**
    - Handle sharps injuries following biohazard protocols.
    - Isolate contaminated materials and follow proper disposal procedures.

8. Compliance and Regulations

This HMMP complies with the Solomon Islands' environmental and health safety regulations, as well as World Bank Environmental and Social Standards (ESS 3).

9. Plan Review

This HMMP will be reviewed and updated regularly to address new risks or changes in project activities.

ANNEX 7: SPILL CONTROL AND RESPONSE PLAN

Context:

This Spill Control and Response Plan addresses potential spills involving fuel (from service trucks) and the concentrated "Anti-B25 Solution," used as a surface cleaner at the Adaliua Pig Breeding Facility. Although both materials are of low toxicity and used in controlled quantities, this plan aims to mitigate environmental impacts and ensure worker safety. *Note: The concentrated Anti-B25 Solution will be diluted according to its Material Safety Data Sheet (MSDS) prior to use.*

1. Objectives

- **Prevent Environmental Contamination:** Contain and mitigate soil and water contamination from potential fuel or Anti-B25 Solution spills.
- **Ensure Worker Safety:** Protect workers from exposure to hazardous substances and maintain safe handling practices.
- **Comply with Regulatory Standards:** Follow best practices in spill management according to World Bank safeguards and local regulations.

2. Key Personnel and Roles

- **Spill Response Coordinator (SRC):** The current Adaliua Pig operation manager that is highly trained to manage the facility, who will oversee spill response activities.
- **Response Team:** Trained workers responsible for spill containment, cleanup, and disposal as outlined in this plan.
- **Environmental Health and Safety Officer (EHSO) of the Contractor:** Ensures compliance with safety protocols, monitors air quality in confined spaces if needed, and provides emergency medical assistance.

3. Identified Potential Spills

- **Fuel Spills:** Primarily from service trucks, with potential for minor leaks.
- **Anti-B25 Solution Concentrate Spills:** Spillage due to mishandling or accidental release during transfer, posing risks due to its concentrated form.

4. Spill Prevention Measures

- **Regular Vehicle Maintenance:** Inspect service trucks regularly for fuel leaks and repair promptly to prevent spills.

- **Dilution of Anti-B25 Solution as per MSDS:** The concentrated Anti-B25 Solution will be diluted with water according to MSDS guidelines prior to use, reducing its hazardous potential.
- **Safe Storage and Handling:** Store the Anti-B25 concentrate in secure, labelled containers in a designated area. Only trained personnel should handle and dilute the solution.
- **Secondary Containment:** Use spill trays for fuel storage areas and Anti-B25 concentrate storage areas to prevent spread in the event of a spill.

5. Spill Response Protocol

a. Initial Response Steps

1. **Alert and Assess:**
    - Immediately notify the SRC of any spill.
    - Assess the spill type (fuel or Anti-B25 Solution) and volume to prioritize containment.
2. **Evacuate Area if Necessary:**
    - For large spills or those in confined spaces, evacuate non-essential personnel.
    - Restrict area access until spill is contained and deemed safe.
3. **Ensure Personal Protective Equipment (PPE):**
    - Fuel Spills: Responders should wear gloves, safety goggles, and protective boots.
    - Anti-B25 Solution Spills: Responders should use chemical-resistant gloves, goggles, aprons, and respiratory protection if fumes are present.

b. Containment Procedures

1. **Fuel Spill Containment:**
    - Use absorbent pads, sand, or soil to limit spread.
    - For larger spills, deploy spill booms or barriers for containment.
2. **Anti-B25 Solution Containment:**
    - If concentrated Anti-B25 Solution is spilled, use chemical-resistant absorbents to contain the spill.
    - Create a barrier using spill pads or booms around drains or water sources to prevent runoff.

c. Clean-up and Disposal

1. **Fuel Spill Clean-up:**

- Collect fuel-soaked absorbents and place them in designated hazardous waste containers.
- Remove contaminated soil as needed and store it securely for proper disposal.

2. **Anti-B25 Solution Clean-up:**
    - Dilute small residues with water if authorized by local guidelines for safe removal.
    - Absorb larger spills using appropriate materials and dispose of in labelled hazardous waste containers.
3. **Waste Disposal:**
    - Ensure all waste is labelled with material type and disposed of in accordance with local environmental regulations.

d. Decontamination

1. **Personal Decontamination:**
    - Workers involved in clean-up should wash thoroughly post-clean-up.
    - Clean all PPE and tools used in the response following standard decontamination practices.
2. **Site Decontamination:**
    - The SRC should confirm thorough cleaning of the spill area before resuming activities.

6. Emergency Contact Information

- **Spill Response Coordinator (SRC):** Name: Eliuda Haeo; contact: 7745117
- **Contractor's Environmental Health and Safety Officer (EHSO):** [Name and contact] – this should be provided by the contractor.
- **Nearest Medical Facility:** Kilufi Hospital, Auki (Contact: +677 40100).
- **Environmental Authority:** Environment and Conservation Division; contact: 26036

7. Post-Spill Reporting and Documentation

- **Incident Report:** Complete and submit a detailed report, including cause, material type, response actions, and outcomes to the Project Manager of SIART and Permanent Secretary of MAL within 24 hours.
- **Review and Analysis:** Perform a post-incident analysis to identify and address any gaps in spill prevention or response measures.

- **Documentation:** Keep detailed records of spill incidents, including actions taken and disposal documentation, for future reference and compliance.

8. Training and Drills

- **Spill Response Training:** Train all personnel handling fuel or Anti-B25 Solution on spill response, including proper PPE use and waste disposal procedures.
- **Quarterly Drills:** Conduct regular drills to ensure response readiness and reinforce familiarity with procedures.

9. Community Safety and Awareness

- **Community Notification:** Notify nearby community members if a spill presents any risk of contamination.
- **Complaint Mechanism:** Establish a reporting line for community concerns about spills or spill response activities.

ANNEX 8: ENVIRONMENTAL, SOCIAL, AND HEALTH & SAFETY AUDIT REPORT FOR ADALIUA PIG BREEDING FACILITY

Name of Project: Solomon Islands Agriculture and Rural Transformation (SIART) Project
Sub-project: Rehabilitation of the Adaliua Pig Breeding Facility

1. Introduction

This audit report assesses the environmental, social, and health & safety (ESHS) conditions of the Adaliua Pig Breeding Facility. The facility was established in 2015 and is subject to routine maintenance and operational improvements. The audit focuses on identifying compliance with environmental regulations, social impact considerations, and workplace safety practices. The audit was done through consultation with the Project Engineer and the farm manager and through several visits to the site with the project engineer and with World Bank Specialists in 2024 when carrying out engineering and technical scoping of the site. Discussions were also held at the site during those visits.

2. Facility Components and Status

2.1 Pig Pens (Housing Units)

- **Description:** Two structures house pigs, including stalls, walls, and roofing that provide shelter, feeding space, and movement. One unit is designated for farrowing, while the other is used for grower pigs.
- **Status:** Functional but showing signs of wear; requires minor repairs and routine maintenance for continued use.
- **ESHS Concerns:** Potential risks include hygiene management, animal welfare, and structural integrity. Maintenance is required to ensure biosecurity and minimize occupational hazards.

2.2 Waste Management System (Septic Tank)

- **Description:** A septic tank treats wastewater and solid waste generated by the facility.
- **Status:** Fully operational, routinely maintained, and in good condition.
- **ESHS Concerns:** No significant environmental risks observed. Proper desludging and monitoring should continue to ensure compliance with waste management best practices.

2.3 Composting Facility (Organic Waste Treatment)

- **Description:** The facility previously housed a composting house that processed organic waste into fertilizer. It has been repurposed as a storage shed, with plans for reconstruction.
- **Status:** Not operational; planned reconstruction will restore organic waste treatment.
- **ESHS Concerns:** Temporary loss of composting capabilities could lead to improper manure disposal. Plans should include sustainable waste management strategies and the project will include the re-construction of a composting house.

2.4 Water Supply System

- **Description:** The facility has both a borehole water source with a pump and storage tank, as well as a rainwater harvesting system with two 5,000L tanks.
- **Status:** Both systems are in good condition and provide reliable water sources.
- **ESHS Concerns:** Borehole water is used solely for cleaning, so water quality monitoring is not necessary. However, proper drainage should be ensured to prevent potential contamination of other water sources.

2.5 Drainage System

- **Description:** Consists of channels designed to collect wastewater and manage runoff, ensuring proper flow.
- **Status:** Well-maintained with routine desilting and clearing.
- **ESHS Concerns:** No recorded instances of flooding, and flood risk is considered low due to site elevation and distance from Fiu River (150m). Routine maintenance should continue.

2.6 Feed Storage and Site Office Building

- **Description:** A combined building for feed storage and administrative functions.
- **Status:** Functional but requires expansion to separate storage from office space.
- **ESHS Concerns:** Limited space could compromise feed storage hygiene and workplace safety. Expansion plans should include proper ventilation and segregation of storage functions.

2.7 Fencing and Perimeter Infrastructure

- **Description:** Structures to secure the facility and prevent unauthorized access.
- **Status:** Functional but requires minor repairs.
- **ESHS Concerns:** Minor repairs should be conducted to ensure security and prevent animal escape or unauthorized entry.

3. Environmental, Social, and Health & Safety (ESHS) Compliance

3.1 Environmental Compliance

- The Solomon Islands ratified the Waigani Convention in 2001 and Stockholm Convention in 2004. As a Party, the Solomon Islands has enacted national regulations that integrate those Conventions (that prevent and control hazardous chemicals and wastes) into its legal framework. These laws establish mechanisms for asbestos management and compliance.
- Buildings that are built after the ratification of the Waigani Convention did not contain Asbestos minerals. Therefore, the facility does not contain asbestos, as the material was widely prohibited before construction.
- Waste management practices are in line with industry standards.

- Water and drainage systems are operational, with no environmental contamination observed.
- Future composting system reinstatement should align with sustainable waste management principles.

3.2 Social Compliance

- No land acquisition issues, as the facility operates under a valid lease.
- No complaints have been recorded from nearby communities.
- Engagement with local stakeholders should continue to address concerns and promote good relations.

3.3 Health & Safety Compliance

- No major safety hazards observed, but minor facility repairs are required.
- Proper animal handling and hygiene measures are in place.
- Adequate signage, protective gear, and training for workers should be reinforced.

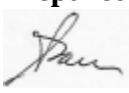
4. Recommendations and Action Plan

- Conduct minor repairs on pig pens, fencing, and perimeter infrastructure.
- Expand the feed storage and office building for better functionality.
- Reconstruct the composting facility to reinstate organic waste treatment.
- Continue routine maintenance of drainage and water supply systems.
- Maintain ongoing engagement with local communities and ensure workers' health and safety training is up to date.

5. Conclusion

The Adaliua Pig Breeding Facility is generally in good condition, with a low risk of environmental and social issues. The building materials used for the facility do not have asbestos. Regular maintenance and minor repairs are needed to ensure long-term sustainability, compliance with best practices, and improved workplace safety. Future improvements, such as the reinstatement of the composting facility and expansion of storage areas, will enhance operational efficiency and environmental performance.

Prepared by:



Steve Sae
Environmental Safeguards Officer
SIART Project
11th February, 2025.

ANNEX 9: OPERATION MANUAL FOR ADALIUA PIG BREEDING FACILITY REFURBISHMENT

1. Introduction

This Operation Manual provides Occupational Health and Safety (OHS) measures, pest management strategies, and biosecurity protocols to ensure the safety of workers, animals, and the surrounding community during both the renovation and operational phases of the Adaliua Pig Breeding Facility.

2. Occupational Health and Safety (OHS) Measures

2.1 Renovation Phase

2.1.1 Worker Safety Protocols

- Conduct OHS induction training for all personnel before starting work.
- Provide Personal Protective Equipment (PPE), including safety boots, gloves, hard hats, and eye protection.
- Establish first aid stations and ensure trained personnel are available.
- Implement hazard communication procedures (signage for dangerous areas, restricted access zones).
- Require daily toolbox safety meetings before work begins.
- Conduct regular site inspections to ensure compliance with safety protocols.
- Enforce safe material handling procedures for cement, metal, and other construction materials.

2.1.2 Hazard Management

- Conduct risk assessments before work begins and after major changes in activities.
- Implement fall protection measures for working at heights (scaffolding, harnesses).
- Ensure safe handling and disposal of hazardous materials (chemicals, waste).
- Provide fire prevention measures (fire extinguishers, emergency exits).

2.2 Operational Phase

2.2.1 Workplace Safety

- Train staff on safe animal handling and emergency response procedures.
- Maintain hygiene stations at facility entry points (handwashing, boot disinfection).
- Ensure all feeding, housing, and cleaning equipment is in safe working condition.
- Implement a waste management system to avoid contamination and disease spread.

- Conduct regular safety drills for fire, injury, and animal escape scenarios.

2.2.2 Emergency Response Plan

- Establish a designated emergency contact list (veterinarians, medical response teams, management).
- Train staff on first aid response and ensure emergency kits are stocked.
- Develop a fire response plan, including evacuation routes and fire suppression systems.

3. Pest Management Strategies

3.1 Renovation Phase

- Implement **rodent control measures** (traps, baits, exclusion techniques).
- Store construction materials properly to prevent pest nesting.
- Regularly inspect **storage areas** for signs of infestation.
- Ensure waste and food debris are removed promptly.

3.2 Operational Phase

- Maintain strict sanitation measures to eliminate food sources for pests.
- Use integrated pest management (IPM) strategies, including physical barriers, biological control, and targeted pesticide use.
- Conduct monthly pest control inspections and maintain records.
- Train staff to identify and report pest issues immediately.

4. Biosecurity Protocols

4.1 Renovation Phase

- Restrict access to facility premises to authorized personnel only.
- Require biosecurity training for all workers.
- Establish vehicle and equipment sanitation zones at entry points.
- Prevent contact between renovation workers and existing pigs.
- Ensure materials brought into the facility are free from contaminants.

4.2 Operational Phase

- Implement a visitor control policy (mandatory footbaths, protective clothing).
- Establish quarantine zones for new or sick pigs.
- Enforce strict animal movement controls to prevent disease introduction.

- Train staff in disease recognition and response.
- Maintain detailed health records for all animals.

5. Waste Management Plan

- Install waste disposal bins at designated locations.
- Segregate organic waste, hazardous waste, and general waste.
- Use composting and biogas technology where applicable.
- Regularly clean and disinfect waste disposal areas.

6. Monitoring and Compliance

- Establish a monitoring schedule for safety, pest management, and biosecurity measures.
- Assign responsible personnel for record-keeping and compliance checks.
- Conduct quarterly OHS and biosecurity audits.
- Implement corrective actions where non-compliance is observed.

7. Conclusion

This Operation Manual ensures that the Adaliua Pig Breeding Facility remains a safe, biosecure, and well-maintained facility during both the renovation and operational phases. Adherence to these measures will safeguard workers, animals, and the surrounding community, ensuring sustainable and responsible pig breeding operations.

Approval & Review
Date: _____
Approved by: _____
Review Date: _____

ANNEX 10: EMERGENCY RESPONSE PLAN (ERP)- ADALIUA PIG BREEDING FACILITY

1. Introduction

The Emergency Response Plan (ERP) outlines procedures to manage emergencies at the Adaliua Pig Breeding Facility when it becomes fully operational. It aims to ensure the safety of personnel, livestock, and infrastructure while minimizing environmental and operational disruptions.

2. Emergency Scenarios

Potential emergencies include:

- **Fire** (electrical faults, accidental fires)
- **Extreme Weather** (cyclones, heavy rain, strong winds)
- **Disease Outbreak** (animal health risks, zoonotic diseases)
- **Water Contamination** (groundwater or tank pollution)
- **Structural Failure** (building collapse, drainage failure)
- **Security Threats** (theft, vandalism)

3. Emergency Response Team (ERT)

- **Facility Manager** – Overall coordinator, liaises with authorities and ensures personnel safety and medical response
- **Veterinarian** – Handles disease outbreaks and animal welfare
- **Maintenance Team** – Assesses structural and utility failures
- **Security Personnel** – Manages site security threats

4. Emergency Procedures

A. Fire Response

- Activate fire alarm or blowing a whistle, and evacuate personnel
- Use fire extinguishers for small fires; call emergency services for large fires
- Shut down electrical systems if safe to do so
- Relocate animals to designated safe zones

B. Extreme Weather Response

- Secure loose equipment and materials before storms
- Ensure drainage systems are clear and functional
- The piggery houses are cyclone-resistant shelters where the pigs can safely dwell
- Monitor weather alerts and evacuate if necessary

C. Disease Outbreak Response

- Isolate affected animals immediately
- Notify the veterinarian and relevant authorities
- Disinfect affected areas and enforce biosecurity protocols
- Monitor and test livestock to contain the outbreak

D. Water Contamination Response

- Stop the use of contaminated water sources
- Conduct water quality testing
- Provide alternative water supply (e.g., bottled or treated water)
- Identify and eliminate the source of contamination

E. Structural Failure Response

- Evacuate affected areas immediately
- Assess damage and restrict access
- Engage engineers for inspections and repairs
- Secure alternative shelter for livestock if needed

F. Security Threat Response

- Notify security personnel immediately
- Secure valuable assets and livestock
- Contact law enforcement if necessary
- Implement perimeter checks and surveillance

5. Communication & Reporting

- Facility manager to notify authorities and stakeholders
- Document all incidents for review and future prevention
- A list of emergency contacts (local health services, veterinary services, fire department, etc.) will be maintained at prominent locations throughout the facility to ensure rapid communication in case of an emergency.

6. Training & Drills

- Conduct regular emergency response drills
- Train staff on fire safety, first aid, and disease management
- Review and update the ERP annually

7. Recovery & Review

- Assess damage and initiate repairs
- Provide support to affected personnel and animals
- Conduct post-incident analysis to improve future responses

8. Safe Zones for Livestock and Staff

- Designate specific safe zones for staff and livestock in case of emergencies
- Ensure safe zones are easily accessible
- Regularly inspect and maintain safe zones for readiness

9. Conclusion

This ERP ensures a structured and efficient response to emergencies, protecting lives, property, and the environment at the Adaliua Pig Breeding Facility.

ANNEX 11: OCCUPATIONAL HEALTH AND SAFETY (OHS) PLAN FOR REFURBISHMENT AND OPERATION OF ADALIUA PIG BREEDING FACILITY

1. Introduction

This OHS Plan outlines the health and safety measures for both the refurbishment and operation of the Adaliua Pig Breeding Facility, as part of the Solomon Islands Agriculture and Rural Transformation (SIART) Project. The plan is designed to ensure the safety and health of workers and the surrounding community, as well as protect the environment, throughout both the refurbishment and ongoing operational phases.

2. Project Overview

- **Project Name**: Refurbishment and Operation of Adaliua Pig Breeding Facility
- **Location**: Adaliua Farm, Central Kwara'ae, Malaita (5.6 km north of Auki Town)
- **Project Type**: Refurbishment of existing infrastructure including upgrading of pig breeding facilities, waste management systems, and operational health and safety measures.
- **Power Source**: The facility currently uses a diesel generator for power and solar lighting for low-power illumination.

3. OHS Objectives

- Ensure the safety and health of all workers and operational staff throughout both the refurbishment and ongoing operation.
- Identify and mitigate risks associated with the construction phase and operational activities, including those related to energy generation and power systems.
- Adhere to national and international safety regulations, industry best practices, and environmental standards.
- Establish clear protocols for emergency response and incident management.
- Promote continuous safety awareness and training.

4. Roles and Responsibilities

- **Project Manager (PM)**: Oversees the implementation of the OHS Plan and ensures compliance with safety regulations during both refurbishment and operation. Responsible for overall safety on-site.
- **Health and Safety Officer (HSO)**: Responsible for the daily monitoring of health and safety conditions, ensuring that safety protocols are followed, conducting safety audits, and coordinating with operational staff on health and safety matters.
- **Supervisors**: Ensure that workers and operational staff adhere to safety protocols, report hazards, and follow safe working practices.

- **Contractors and Workers**: Follow the OHS plan, use required PPE (Personal Protective Equipment), and report unsafe practices or incidents.
- **Operational Staff**: Ensure safety measures are followed during day-to-day facility operations, including animal care, waste management, and equipment operation.

5. Hazard Identification and Risk Assessment

The primary risks during both the refurbishment and operation phases are detailed below, with specific attention to diesel generator use and solar lighting systems:

Hazard	Risk	Control Measures
Diesel Generator	Carbon monoxide poisoning, burns, noise exposure, fuel spills	- Ensure proper ventilation in areas where the diesel generator is used. - Install fire extinguishers near the generator. - Provide workers with hearing protection when operating in noisy areas. - Conduct regular generator maintenance and checks. - Store fuel away from ignition sources and in well-ventilated areas.
Fuel Handling	Spills, leaks, or exposure to hazardous fuels	- Train staff in proper fuel handling and emergency spill response. - Use spill containment systems and absorbent materials to manage fuel spills.
Solar Lighting	Risk of electrical shock, damage to solar panels	- Use proper insulation and weatherproofing for solar power systems. - Ensure that solar panels are installed in safe, accessible locations to avoid accidents.
Worksite Environment	Slips, trips, falls during refurbishment	- Keep work areas clean and well-lit with solar-powered lights where needed. - Use appropriate footwear. - Clear debris from walkways.
Construction Activities	Injuries from machinery and tools	- Proper training for machinery operators. - Regular maintenance of equipment.

Hazard	Risk	Control Measures
Manual Handling	Musculoskeletal injuries from lifting heavy items	- Use mechanical aids for heavy lifting. - Provide training in lifting techniques.
Exposure to Chemicals	Respiratory or skin irritation from chemicals (e.g., cleaning agents, waste treatment chemicals)	- Use appropriate PPE (gloves, masks, etc.). - Ensure good ventilation in enclosed spaces.
Working at Heights	Falls from scaffolding or ladders	- Install guardrails on scaffolding. - Use fall protection equipment.
Animal Handling	Animal bites, injuries during handling or maintenance	- Provide training for safe animal handling. - Use appropriate PPE such as gloves.
Noise Exposure	Hearing loss from machinery or operational noise	- Provide ear protection for workers. - Conduct regular noise assessments.
Waste Management	Exposure to hazardous waste or contamination	- Use PPE when handling waste materials. - Segregate and dispose of waste properly.
Electrical Hazards	Electric shock from faulty electrical systems	- Ensure proper wiring and installation of solar and backup systems. - Lock-out/tag-out procedures for electrical work.
Heat Stress	Dehydration, heat exhaustion during operation	- Provide drinking water. - Implement work-rest cycles during hot weather.

6. Health and Safety Training

- **Induction Training**: All workers, contractors, and operational staff will receive an induction that covers site-specific hazards, including the safe use of the diesel generator and solar lighting systems, as well as general safe working procedures.
- **Ongoing Training**: Safety meetings and refresher training will be conducted regularly to address new risks and reinforce safe practices.
- **Generator Operation Training**: Specific training on the safe operation of diesel generators, including fuel handling, maintenance, and emergency procedures, will be provided.
- **Solar Power System Training**: Staff will receive training on maintaining and operating the solar lighting systems safely, including troubleshooting and basic repairs.

7. Personal Protective Equipment (PPE)

- **Refurbishment Phase**:
    - Hard hats, high-visibility vests, steel-toed boots, safety gloves, goggles, and hearing protection (where necessary) will be worn during construction.
- **Operation Phase**:
    - PPE will include gloves, masks, aprons, and boots for animal handling, as well as ear protection for workers exposed to high noise levels.
    - Protective clothing will also be used when handling waste or chemicals.

8. Emergency Response Plan

- **Medical Emergencies**: First aid kits will be available at key locations. Trained first aid personnel will be on-site during working hours. In case of severe injury or medical emergency, an ambulance will be called, and the Auki Hospital is the nearest healthcare facility.
- **Fire Emergencies**: Fire extinguishers will be placed in easily accessible locations. Fire drills will be conducted regularly, particularly focusing on fires related to the diesel generator and fuel storage.
- **Diesel Spill Response**: Spill kits will be available near the generator storage area to manage any fuel spills.
- **Solar Power System Malfunctions**: Procedures will be established for dealing with solar panel system malfunctions or electrical faults, ensuring that any repairs are done by qualified personnel.
- **Evacuation**: Clearly marked emergency exits and evacuation routes will be established. Workers will be trained in emergency evacuation procedures.

9. Safety Inspections and Audits

- **Refurbishment Phase**: Regular safety inspections will be carried out by the Health and Safety Officer (HSO) and project supervisor. All safety deficiencies will be addressed immediately.
- **Operational Phase**: Monthly health and safety audits will be conducted to ensure compliance with safety standards and identify areas for improvement.
- **Reporting Incidents**: All incidents, including near misses, will be reported using an Incident Report Form and reviewed during safety meetings to improve safety protocols.

10. Reporting and Documentation

- **Incident Reporting**: All accidents, injuries, and safety concerns must be reported immediately. All reports will be documented and analysed to prevent recurrence.
- **Safety Documentation**: Regular safety meetings will be documented, and all safety audits, inspections, and training records will be maintained for accountability and compliance.

11. Site Safety Signage

- Clear signage will be displayed throughout the facility to indicate hazards such as high-voltage areas, fuel storage zones, and animal handling areas.
- Specific signage for PPE requirements will be posted in designated areas where the use of personal protective equipment is mandatory.

12. Conclusion

The OHS Plan for both the refurbishment and operation of the Adaliua Pig Breeding Facility aims to ensure a safe and healthy working environment throughout the lifecycle of the project. By adhering to this plan, workers will be protected from identified risks, including those related to energy generation and power systems, and the surrounding community will also be safeguarded from operational hazards. Continuous safety training, risk assessments, and adherence to safety measures will ensure the success of both the refurbishment and the operation of the facility.

Approval and Acknowledgement

This OHS Plan is approved by:
Project Manager Name:
Signature:
Date:

All workers and contractors involved in the project are required to acknowledge and follow the contents of this plan by signing below:
Worker/Contractor Name:
Signature:
Date: