Republic of Mozambique

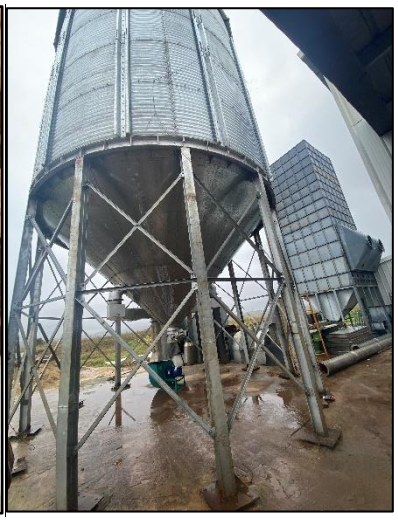
MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

INCLUSIVE AGRI-FOOD VALUE CHAIN DEVELOPMENT PROGRAM (PROCAVA)

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

FINAL REPORT

VOLUME I

Prepared for: Ministry of Agriculture and Rural Development

Prepared by: Priscila V. Fenias

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Inclusive Agri-Food Value-Chain Development Programme

(PROCAVA)

Environmental and Social Impact Assessment (ESIA)

Final Report

Volume I

Proponent:
Ministério da Agricultura e Desenvolvimento Rural (MADER)
Address: Praça dos Heróis Moçambicanos, Cidade de Maputo - Moçambique
C.P. 1406 Phone Number: +258 21468200 || Linha Verde: +258
843438999 Fax: +258-21-4874121 E-mail: geral@agricultura.gov.mz

Consultant:
Priscila V. Fenias
Address: Av. Namaacha n˚68, Maputo Provincia
E-mail: priscilalaurinda@gmail.com

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Visão geral do projecto

O Banco Africano de Desenvolvimento pretende co- financiar o Programa de Desenvolvimento da Cadeia de Valor Agroalimentar Inclusiva (PROCAVA) financiado pelo International Fund for Agricultural Development *(IFAD).* Este programa visa acelerar a transformação do Sector Agrário por meio de um crescimento competitivo, inclusivo e sustentável, garantindo a integração da agricultura familiar e do sector privado nas cadeias de valor produtivas da avicultura.

O programa está alinhado com os esforços do Governo de Moçambique (GdM) para reduzir a pobreza a nível nacional, aumentar a produção agrícola e promover o emprego, em particular para os jovens e mulheres. Este esforço culminou na elaboração da Estratégia Nacional de Agricultura (PEDSA) e do seu Plano Nacional de Investimento no Sector Agrário (PNISA -2022 a 2027,) no âmbito da Estratégia Nacional de Redução da Pobreza (PRSP).

Através do PEDSA, o Governo identificou seis Corredores de Desenvolvimento Agrícola, nomeadamente: (i) Corredor Pemba-Lichinga, para a produção de batata, trigo, feijão, milho, soja, algodão, tabaco e aves; (ii) Corredor de Nacala com potencial para cultivo de mandioca, milho, algodão, frutas, aves e amendoim; (iii) Corredor do Vale do Zambeze para arroz, milho, batata, gado, aves e algodão; (iv) Corredor da Beira para milho, trigo, legumes, soja, arroz, gado e aves; (v) Corredor do Limpopo para arroz, legumes, gado e aves; e (vi) Corredor de Maputo que se concentraria em arroz, legumes, gado (carne vermelha) e aves. O projecto está alinhado com o programa nacional de agricultura, o SUSTENTA.

O objectivo de desenvolvimento (OD) do PROCAVA é acelerar a transformação do Sector Agrário por meio de um crescimento competitivo, inclusivo e sustentável, garantindo a integração da agricultura familiar e do sector privado nas cadeias de valor produtivas da avicultura (incluindo milho e soja). O projecto está alinhado com a Agenda 2063 da União Africana (UA) e os Objectivos de Desenvolvimento Sustentável (ODS). O PROCAVA contribuirá para cinco Objectivos de Desenvolvimento Sustentável, a saber:

Meta 1: Sem Pobreza,

Meta 2: Fome Zero,

Meta 5: Igualdade de Gênero,

Meta 9: Desenvolvimento da Indústria, Infraestrutura; e

Meta 13: Medidas urgentes para combater as mudanças climáticas e seu impacto.

Os objetivos específicos do projecto incluem:

(i) Apoiar o desenvolvimento de uma cadeia de valor integrada de milho-soja-ave, para aumentar a produção, o processamento e o acesso ao mercado para permitir o retorno do investimento e a máxima lucratividade;

(ii) Aumentar a resiliência e resposta do país aos choques climáticos, melhorando a infraestrutura resiliente ao clima e a adaptação dos beneficiários;

(iii) Políticas de apoio e capacitação para criar um ambiente apropriado para o desenvolvimento de Micro Pequenas e Medias Empresas (MPME) e atrair o sector privado .

Área de Implementação

Considerações Gerais

Moçambique situa-se na parte sudeste do continente Africano, entre os paralelos 10/27' e 26/52' de latitude Sul e entre os meridianos 30/12' e 40/51' de longitude Este. Seus Limites são:

- Norte da Tanzânia;
- Oeste- Malawi, Zâmbia, Zimbabwe e Suazilândia; e
- África do Sul-Sul.
- A leste o Oceano Índico, numa extensão de 2.470 km. A superfície do seu território é de 799.380 km².

O país está dividido em 11 Províncias: a Norte, Niassa, Cabo Delgado e Nampula, a Centro, Zambézia, Tete, Manica e Sofala, a Sul, Inhambane, Gaza, Maputo e Cidade de Maputo.

O território moçambicano, como toda a região sul do continente africano, não apresenta grande variedade paisagística. Do litoral para o interior distinguem-se três tipos de relevo:

- A planície costeira que ocupa grande parte do território (40%). Esta é a região natural onde se observa a maior concentração populacional;
- Planalto com altitudes entre 200 e 1.000 metros;
- As grandes terras altas e montanhas que ocupam uma pequena parte do território nacional, com altitudes superiores a 1.000 metros.

A área de implementação do projecto é considerada de grande vulnerabilidade aos efeitos das mudanças climáticas.

Uma parte significativa do território moçambicano situa-se em zonas propensas à ocorrência de calamidades naturais, nomeadamente cheias, secas e ciclones.

Este projecto será implementado nas províncias de Niassa, Nampula, Zambezia e Sofala, onde o Banco previamente financiou projectos ligados a componentes de produção de milho e soja, e construção de fábricas de ração para o processamento de matéria prima e criação de corredores e zonas agrícolas especiais.

Para a componente de fábricas de ração, o foco recai sobre as províncias da Zambézia e Niassa por serem zonas de grande produção de milho e soja e já possuírem fábricas de ração financiadas no âmbito de outros projectos.

A construção de infraestruturas, como casas de matança de aves de corte, está prevista para as províncias de Niassa, Nampula, Zambezia e Sofala.

Componentes do Projecto

Componentes	***Descrição***
Componente 1: Produção resiliente ao clima e melhoria da produtividade (das cadeias de valor de milho, soja, aves): USD 17,4 milhões (52,7%)	**Subcomponente 1: Desenvolvimento da Cadeia de Valor Agrícola (USD 6,0 milhões).** Esta subcomponente visa contribuir para melhorar a produção e produtividade da cadeia de valor da avicultura e das culturas de matérias-primas associadas (soja e milho). Também melhorará as ligações com as diferentes partes interessadas (fornecedores de insumos e compradores de produtos/produtos) das cadeias de valor alvo.
	Subcomponente 2: Mudanças Climáticas e Sistema de Agricultura Digital (USD 6,3 milhões): Esta subcomponente abordará algumas das ameaças climáticas que o país enfrenta relacionadas a inundações, secas e desertificação na parte sul e inundações e ciclones na Parte Centro e Norte afectando a produção agrícola e o desenvolvimento das cadeias de valor. Sob esta componente, o projecto comprará e instalará 2 radares de alta tecnologia. O projecto também instalará e gerenciará um Sistema Digital de Agricultura.

	Subcomponente 2: Fortalecimento dos Sistemas de Desenvolvimento de Sementes (USD 3,1 milhões) – as intervenções envolverão o apoio ao desenvolvimento de sistemas de sementes através do fortalecimento da capacidade do Instituto de Investigação Agrária de Moçambique (IIAM) para desenvolver 2000ha para a produção de sementes reprodutoras e básicas de Milho e Soja cada um, bem como organizar e supervisionar os agricultores emergentes participantes, organizações de agricultores e produtores externos para produzir sementes básicas; Acesso a Insumos Agrícolas – Os agricultores interessados em adquirir sementes e fertilizantes melhorados serão apoiados por meio de um mecanismo único de doação de compartilhamento de custos. Apoiar os agro-revendedores para melhorar o fornecimento de insumos. O projecto também apoiará a distribuição de sementes certificadas para agricultores que usam o SUSTENTA.
	Subcomponente 3: Construir Infraestrutura Avícola (2,0 Milhões): Fornecimento de instalações necessárias para produção e abastecimento de ração, produção de pintos de corte de um dia; armazenar; em processamento; comercialização da produção do projecto; diagnóstico de doenças e tratamento dos pintos. Construção de 4 incubadoras com capacidade para 10.800 pintos de um dia por semana e 4 abatedouros com capacidade para 1.000 BPH.
Componente 2: Agregação de valor, Infraestrutura resiliente ao clima relacionada ao mercado e vínculos; US$ 9,55 (28,7%)	**Subcomponente 1: Abordagem de mercado (USD 4,05 milhões) :** O Projecto adotará uma abordagem voltada para o mercado, vinculando pequenos produtores nas cadeias de valor-alvo a processadores, agregadores e arranjos de compradores nas áreas de demanda. Vai focar na melhoria da prontidão dos produtores de milho, soja e aves para se envolverem em esquemas de fomento e/ou estruturas de contrato de agricultura e aumentar sua capacidade de atender aos requisitos de quantidade e qualidade dos processadores.

	O projecto usará as fábricas de processamento de ração construídas sob os projectos financiados pelo Banco para apoiar a implementação da cadeia de valor de aves.
	Subcomponente 2: Desenvolvimento de infraestrutura e mecanismos de financiamento para o desenvolvimento da cadeia de valor avícola (USD 5,5 milhões). Um dos principais desafios para o sector avícola é o acesso a financiamento acessível. Os Bancos Comerciais não estão dispostos a financiar os produtores porque não são comercialmente viáveis. Mesmo que o governo introduza um mecanismo de garantia de risco, isso não resulta em menor custo de empréstimo – as taxas de juros permanecem altas. O Projecto considerará, portanto, apoiar os produtores a serem orientados comercialmente, conectando a produção com a demanda do mercado, por meio de contratos garantidos e acordos de compra, capacitando-os para executar operações comerciais de aves e preparar propostas de negócios viáveis. Ele considerará um fundo de doação rotativa para fornecer aos beneficiários do projecto, organizados em cooperativas de orientação comercial e fornecedores de insumos, acesso a doações reembolsáveis para comprar insumos, construir infraestrutura resiliente ao clima e adquirir equipamentos de processamento primário. As actividades específicas incluirão estudo de viabilidade/assessoria para estruturação do fundo; estabelecimento do fundo de Subsídio Rotativo para o Sector Avícola; selecção competitiva da gestão do Fundo; Assistência Técnica/capacitação para as Pequenas e Medias Empresas (PME) beneficiárias em gestão empresarial e financeira.
Componente 3: Reforço Institucional e de Políticas e Apoio à Implementação UC	**Subcomponente 1: Apoio ao Desenvolvimento de Políticas e Estratégias (USD 2,09 milhões):** A componente conduzirá vários estudos estratégicos internos: (1) para fornecer as políticas e estratégias do país e padrões de desenvolvimento do sector avícola; (2) dimensão de gênero da cadeia de valor avícola e adaptação e

6,09 milhões (18,3%)	resiliência. Outros estudos serão identificados durante a implementação do projecto. O projecto também fornecerá iniciativas de capacitação em medidas de higiene e biossegurança para produção de aves, processamento de alimentos e gestão de negócios.
	Subcomponente 2: Implementação do Projecto, incluindo treinamento, salvaguardas ambientais e sociais, auditoria e gerenciamento de projectos (USD 4,0 milhões): todas as actividades de coordenação e monitoria do projecto, incluindo aquelas relacionadas à gestão administrativa e financeira, bem como aquisições serão realizadas sob esta subcomponente, incluindo treinamento. Procurará assegurar a condução e gestão eficiente do projecto, centrando-se nos resultados de impacto e prestando especial atenção à capacitação, integração do género e comunicação. Inclui gerenciamento de projectos, bem como implementação e monitoramento do PGAS. Esta componente também incluirá custos operacionais e de auditoria. O projecto irá recrutar vários estagiários para apoiar o projecto e criar capacidade no país.

Quadro Institucional e Legal

Instrumento Legal	**Breve Descrição**	**Relevância para o Projecto**
Lei do Ambiente (Lei n.º 20/97 de 1 de Outubro)	Princípios de precaução (artigo 4º) e proibição da poluição (artigo 9º)	O Projecto pode poluir se não forem tomadas medidas de precaução. Visa prevenir os impactos e sua gestão.
Lei das Águas (Lei das Águas 16/91 de 3 de agosto)	Quem poluir é responsável pela reconstituição dos danos causados (artigo 55.º).	O Projecto deve evitar a poluição da água.

Instrumento Legal	Breve Descrição	Relevância para o Projecto
Direito do Trabalho (Lei n.º 23/2007, de 1 de agosto)	Contém cláusulas relativas à Saúde e Segurança dos trabalhadores (Artigo 59). "os empregadores devem proporcionar aos seus trabalhadores boas condições físicas e morais e zelar pelo cumprimento das normas de higiene e segurança no trabalho, bem como investigar as causas dos acidentes de trabalho e das doenças profissionais, adotando as medidas adequadas à sua prevenção".	Todos os aspectos de saúde e segurança devem ser considerados.
Processo de AIA (Decreto 54/2015, de 31 de Dezembro)	Processo de categorização, nível e conteúdo dos estudos ambientais exigidos em diferentes categorias, processo de participação, revisão, etapas do licenciamento ambiental (Elaboração, Construção e Operação), responsabilidades, fiscalizações, taxas e penalidades.	Relevante para o processo de elaboração do EIAS, PGAS e sua implementação.
Auditorias Ambientais (Decreto n.° 25/2011 de 15 de Junho).)	Define a auditoria ambiental como um instrumento de gestão e avaliação sistemática dos sistemas e documentação implementados para garantir a proteção do meio ambiente. Seu objetivo é avaliar a conformidade dos processos operacionais e de trabalho com o plano de gestão ambiental, incluindo	Podem ser realizadas auditorias ambientais em obras de reabilitação/melhorias em matadouros

Instrumento Legal	Breve Descrição	Relevância para o Projecto
	os requisitos ambientais legais nas políticas trabalhistas.	
Regulamento sobre a inspeção ambiental (Decreto nº 11/2006, de 11 de Junho)	Tipos de inspecções	O Projecto poderá ser fiscalizado pelo MTA em caráter ordinário ou extraordinário.
Normas de Qualidade Ambiental e de Emissões de Efluentes (Decreto n.º 18/2004, de 2 de Junho, alterado pelo Decreto n.º 67/2010, de 31 de dezembro)	Proíbe "a disposição no solo, fora dos limites legalmente estabelecidos, de substâncias nocivas que possam contribuir para a sua degradação". Estabelece padrões de qualidade ambiental e emissão de efluentes	O projecto prevê a geração de efluentes, emissões, ruídos, com impactos no solo, ar e água, que deverão respeitar essas normas.
Acidentes e Doenças Profissionais (Decreto n.º 62/2013, de 3 de Junho)	Estabelece o regime jurídico dos acidentes de trabalho e das doenças profissionais, aplicável aos trabalhadores nacionais e estrangeiros.	O Projecto terá que cumprir estes requisitos para os trabalhadores.
Direito de Família (Lei nº 10/2004)	Reitera a igualdade de gênero e fornece direitos a mulheres e homens para administrar bens conjugais e ter direitos iguais para transferir e herdar bens.	O projecto deve garantir o acesso as oportunidades por parte de potenciais beneficiáriose a não descriminação baseada no gênero

Instrumento Legal	Breve Descrição	Relevância para o Projecto
Violência contra a Mulher (Lei nº 29/2009)	Criminaliza a violência baseada no género e a violência doméstica (artigo 1.º) e considera-a crime público (artigo 21.º). A lei reconhece a violação dentro do casamento pelo cônjuge e pune-a (artigo 17.º). Assim como penaliza o envolvimento sexual com conhecimento de doença infecciosa com penas até 12 anos de prisão (artigo 18.º)	Garantir que todos instrumentos, informação e programas de sensibilização estão ao alcance de todos os beneficiários directos e provedores de serviços de modo a evitar situações de Violencia contra a mulher.

Salvaguardas Operacionais do Banco Africano de Desenvolvimento

O Banco Africano de Desenvolvimento criou uma política ambiental e social conhecida como Sistema Integrado de Salvaguardas (ISS) em 2013. O ISS consolida e renova as salvaguardas ambientais e sociais existentes do Banco Africano de Desenvolvimento e descreve os objectivos comuns das salvaguardas do Banco e estabelece princípios políticos. Além disso, o Banco adoptou cinco Salvaguardas Operacionais (OSs), limitando seu número ao necessário para atingir as metas e o óptimo funcionamento do ISS. Os SOs destinam-se a:

- Integrar melhor as considerações de impactos ambientais e sociais;
- Evitar que os projectos afectem adversamente o meio ambiente e as comunidades locais ou, quando a prevenção não for possível, minimizar, mitigar e/ou compensar os efeitos adversos e maximizar os benefícios do desenvolvimento;
- Considerar sistematicamente o impacto das alterações climáticas na sustentabilidade dos projectos de investimento e o contributo dos projectos para as emissões globais de gases com efeito de estufa;
- Delinear as funções e responsabilidades do Banco e de seus mutuários ou clientes na implementação de projectos, obtenção de resultados sustentáveis e promoção da participação local; e

- Auxiliar os países membros regionais e mutuários/clientes a fortalecer seus próprios sistemas de salvaguardas e sua capacidade de administrar riscos ambientais e sociais.

Salvaguarda Operational	***Accionado***	***Justificação***
OS 1: Avaliação Ambiental e Social	***Sim***	A Salvaguarda Operacional 1 é um requisito obrigatório para projectos financiados pelo AfDB para seus mutuários. As demais salvaguardas apóiam a implementação da primeira e indicam requisitos específicos relacionados a diferentes questões ambientais e sociais, incluindo gênero e vulnerabilidade, que são acionados se o processo de avaliação mostrar que o projectos terá certos riscos. Esta OS estabelece exigência de categorização de projectoscom base no risco ambiental e social, e igualmente os requisitos para avaliação ambiental e social; Definir instrumentos para avaliação e gestão dos impactos A&S (ESIA, RAP, ESMP).
OS 2: Reassentamento Involuntário: Aquisição de Terra, Deslocamento da População e Compensação	***Não***	A política não é acionada. No âmbito deste projecto não está prevista qualquer expropriação de terrenos. No entanto, a expansão das áreas agrícolas (limpeza da vegetação e preparação do solo) pode resultar na necessidade de reassentamentos. Durante a triagem ambiental e social de subprojectos especificos, esta possibilidade será analisada e caso se confirme, deverá ser elaborado o Plano Abreviado de Reassentamento em conformidade com esta OS2.

OS 3: Biodiversidade, Recursos Renováveis e Serviços Ecossistêmicos	***Sim***	Não se espera que as actividades do projecto tenham impacto significativo sobre qualquer ambiente natural local, nem mesmo sobre serviços ecossistêmicos. No entanto, determinadas actividades poderão envolver supressão de vegetação. Nesses casos, o projecto deverá observar os requisitos desta OS.
OS 4: Prevenção e Controle de Poluição, Materiais Perigosos e Eficiência de Recursos	***Sim***	Visa gerenciar e reduzir poluentes, incluindo resíduos perigosos e não perigosos, para que não representem riscos nocivos à saúde humana e ao meio ambiente; e Defina uma estrutura para o uso eficiente de todos os materiais e recursos naturais de um projecto, especialmente energia e água.
OS 5: Condições de Trabalho, Saúde e Segurança	***Sim***	O uso de agroquímicos pode impor alguns riscos Esta OS visa • Proteger os direitos dos trabalhadores; • Promover a conformidade com os requisitos legais nacionais e fornecer requisitos complementares de due diligence onde as leis nacionais são omissas ou inconsistentes com a Salvaguarda Operacional; • Proteger a força de trabalho da desigualdade, exclusão social, trabalho infantil e trabalho forçado; e • Estabelecer requisitos para fornecer condições de trabalho seguras e saudáveis.

Arranjos Institucionais e de Implementação

O MADER, através da Direcção Nacional de Cooperação e Mercado (DCM), será a agência executora e o Fundo de Desenvolvimento Agrário (FAR) será responsável por supervisionar a implementação global do Programa. O MADER também fará a ligação e trabalhará com outros Ministérios e parceiros cujos mandatos tenham uma relação directa com o alcance dos objectivos de desenvolvimento do PROCAVA. A nível provincial e distrital, a coordenação técnica do Programa será realizada pelas unidades relevantes do MADER. Essas unidades incluem o Departamento Provincial de Serviços Veterinários (DPSV), as Direcções Distritais de Serviços Económicos (SDAE) e os Institutos Nacionais de Investigação Agrária (IIAM).

O PIU do projecto, deve trabalhar em coordenação com o Departamento de Salvaguardas Ambientais e Sociais (GSSA), para garantir a correta implementação e elaboração dos instrumentos de gestão ambiental e social a serem utilizados no projecto.

Potenciais Impactos Ambientais e Sociais

As actividades do projecto (principalmente nas Componentes 1 e 2) são passíveis de gerar impactos ambientais e sociais significativos, que incluem:

i) Solos expostos à erosão por alteração do padrão de drenagem local, relacionada com obras de construção;
ii) Perda de habitat e distúrbios da biodiversidade como resultado de actividades de construção/reabilitação/expansão relacionadas a sistemas de irrigação e casas de matança de aves de corte;
iii) Risco de exposição dos agricultores a agroquímicos como resultado de manuseio inadequado e métodos de descarte inadequados;
iv) Poluição do ar por emissões de operações de processamento de horticultura e aves, que podem usar caldeiras a vapor e sistemas de aquecimento;
v) Poluição da água como resultado da descarga de fertilizantes, diferentes produtos químicos usados para o maneio de pragas; e
vi) Risco de acidentes de trabalho.

Os impactos positivos do projecto incluem o aumento da produtividade das áreas agrícolas, bem como o aumento da renda das famílias directamente afectadas visadas pelo projecto.

As tabelas abaixo resumem a avaliação dos principais impactos do Projecto. Os impactos negativos são codificados em amarelo ou vermelho, enquanto os impactos positivos são codificados em tons de verde.

Resumo dos Impactos do Projecto na Fase de Construção

Descrição do Impacto	Nível de Significância		
	Pré-mitigação	Pós-mitigação	Principais Medidas de Mitigação
Ruído de actividades de construção	Baixo	Insignificante	• Limite de velocidade para veículos de construção pesada de 30 km/h próximo a áreas residenciais; • As actividades de construção devem ser limitadas ao dia durante a semana, sempre que possível.
Aumento da erosão e compactação do solo	Baixo	Insignificante	• Restringir a limpeza de vegetação e remoção de solo arável das áreas estritamente necessárias à construção; • Remoção e armazenamento de solo arável antes das actividades de terraplanagem, para posterior reutilização em intervenções de reposição.
Perda de vegetação e do habitat.	Alto	Moderado	• Limitar o desmatamento a áreas estritamente necessárias.
Aumento do risco de transmissão de doenças sexualmente transmissíveis devido à mobilização e afluxo da força de trabalho para as áreas do projecto.	Moderado	Baixo	• Criar programas de saúde e sensibilização dos trabalhadores e da comunidade.
Aumento de conflitos comunitários devido a a chegada dos trabalhadores	Moderado	Baixo	• Implementar um Plano de Recrutamento Local para garantir que os processos de aquisição sejam conduzidos de forma transparente e justa, em coordenação com as autoridades locais e líderes comunitários;

Descrição do Impacto	Nível de Significância		
	Pré-mitigação	Pós-mitigação	Principais Medidas de Mitigação
			• O proponente deve desenvolver um Plano de Comunicação para interagir com as comunidades, informando-as sobre a natureza e o cronograma das actividades e estabelecendo canais de comunicação para gerenciar os conflitos sociais que possam surgir.
Problemas de segurança devido ao aumento de tráfego rodoviária	Baixo	Insignificante	• Veículos pesados de construção devem respeitar o limite de velocidade de 30 km/h próximo a áreas residenciais; • Instalar sinais de trânsito oficiais temporários nas estradas locais em torno dos locais de trabalho antes e depois da execução, em conjunto com as autoridades de trânsito locais.
Aumento do poder econômico local	Baixo	Baixo	• A aquisição de bens e serviços pelo Empreiteiro deve priorizar fornecedores locais sempre que possível.

Tabela 2. Resumo dos Impactos do Projecto na Fase Operacional

Descrição do Impacto	Nível de Significância		
	Pré-mitigação	Pós-mitigação	Principais Medidas de Mitigação
Emissões de ruído	Baixo	Baixo	• Dentro da área do projecto, colocar os equipamentos ruidosos o mais longe possível das áreas residenciais vizinhas; • Realizar manutenções regulares para minimizar ao máximo as emissões de ruído.

Descrição do Impacto	Nível de Significância		
	Pré-mitigação	Pós-mitigação	Principais Medidas de Mitigação
Poluição da água .	Baixo	Insignificante	• Manter os equipamentos de trabalho em bom estado mecânico, sem vazamentos, excesso de óleo e lubrificante; • Inspeccionar regularmente equipamentos que possam conter contaminantes; • Desenvolver e implementar o Plano de Gestão de Resíduos.
Mudança permanente de Paisagem	Baixo	Insignificante	• Minimizar o número de estradas de acesso permanentes às áreas de construção.

Consultas Públicas

A consulta pública é uma exigência dos instrumentos de salvaguarda ambiental, tanto do Banco como da legislação moçambicana. Os objetivos da Consulta Pública são informar as partes afectadas sobre o projecto e dar-lhes a oportunidade de expressar suas preocupações e opiniões. Os objectivos gerais deste processo são:

- Assegurar a consulta prévia das partes interessadas nas principais fases do Estudo de Impacto Ambiental e Social (ESIA), de forma a melhorar os seus resultados e aumentar a credibilidade do processo;
- Assegurar o cumprimento dos requisitos nacionais e internacionais para o engajamento das partes interessadas.

A reunião de consulta pública foi realizada em Gurué, (Zambézia), Cuamba, Marrupa e Lichinga, (Niassa) e Rapale (Nampula).

Em Nampula, as consultas decorreram de 9 a 11 de Julho; de 12 a 14 na Província da Zambézia de 2023, e em Setembro de 2021 no Niassa.

Foram consultadas 43 pessoas, sendo 36 homens e 7 mulheres, representantes de agricultores, intermediários e cooperativas de produção de milho e soja.

O conteúdo da reunião de apresentação pública é o seguinte:

- Descrição do Projecto;
- Actividades do projecto;
- Áreas de Projecto;
- Benefícios para as Comunidades Locais.

Principais questões levantadas na reunião:

- A omissão de preços do milho e soja pelos comerciantes;
- Áreas de Produção: O facto de as áreas atribuídas a cada produtor não permitirem atingir as metas em termos de rendimento esperado;
- Implementação do Projecto: Se o projecto proposto dará algum valor monetário diretamente aos produtores locais.
- Acesso a equipamentos agrícolas modernos
- Disponibilidade de melhores sementes, especialmente para soja.

Dúvidas/Observações	**Respostas/Comentários**
Baptista Bernardo: Para os produtores locais, a maior preocupação esta ligada aos preços praticados pelos intermediários que compram o milho e a soja e os vendem para a indústria processadora. Os acordos assinados indicam um preço que não é igual ao praticado ou pago ao agricultor que presta o serviço. Pede que na fase operacional da fábrica de ração e nos acordos entre as associações e a fábrica, os	SDAE: O distrito tem iniciativas paralelas para melhorar as condições e práticas da agricultura que incluem meios mecanizados através do programa SUSTENTA, o grande desafio a nível distrital e a adesão dos agricultores a este apoio.

produtores sejam diretamente envolvidos nas negociações. ***Artas Evaristo***: Um dos grandes desafios para os agricultores locais é a disponibilidade de sementes de soja no distrito, que atualmente passa por uma grave escassez.	
O Banco Africano de Desenvolvimento ajudará na construção?	O objetcivo da consulta é informar sobre o projecto e colectar sensibilidades, não para tomar decisões de implementação
Outra preocupação seria quanto ao período de implementação. Ainda não sabemos as datas, ou quando será executado. Quando exatamente pretendemos implementar o projecto?	A decisão de quando iniciar o projecto ficará clara após a aprovação do projecto pela diretoria do Banco. Os instrumentos de salvaguarda ambiental fazem parte do processo de aprovação. Portanto, neste momento ainda não é conhecido.
UCM- Cuamba: As principais culturas produzidas são milho e soja. Num futuro próximo será introduzido um gergelim; ● A fábrica de ração já operou em caráter experimental no passado, e parou por motivos internos em 2019; ● A capacidade de produção da fábrica de ração é de 8 toneladas/dia. ● Já foi realizado estudo de impacto ambiental e viabilidade econômica da fábrica. A UCM está em busca de parcerias para a operação da fábrica. Já tivemos contatos com alguns interessados; ● A fábrica está em pleno funcionamento e com maquinário completo	-

Para informações relacionadas com a cadeia de avicultura e matadouros, foram consultados especialistas da área, do ministério responsável, a faculdade de veterinária, a Associação Moçambicana de Avicultores (AMA) e a Direcção da empresa Novos Horizontes, uma referência neste ramo, sediada na província de Nampula.

Plano de Gestão Ambiental e Social (PGAS)

Para o projecto proposto, são mencionados abaixo os impactos previstos com significância moderada e alta, e suas respectivas medidas de mitigação.

- ***Mudança na qualidade do solo como resultado da escavação e movimentação do solo*****. Medidas de mitigação:** Isolar as áreas de actividades do matadouro para minimizar a dispersão de poeira; Mantenha as áreas de trabalho com solos húmidos para reduzir o nível de poeira; Todos os trabalhadores envolvidos na construção devem possuir equipamentos de protecção (como luvas, máscaras, uniformes, etc.); Todos os locais identificados para depósito temporário de resíduos sólidos devem ser bem sinalizados e possuir sistema de drenagem capaz de remover com segurança eventuais substâncias contaminantes; Perdas de concreto/betão depositadas directo no solo,devem ser imediatamente removidas.

- ***Destruição de Habitats e Recursos Naturais Devido à Construção de Acampamentos*****. Medidas de Mitigação:** Árvores com (diâmetro> 200mm) ou outras árvores comerciais não devem ser removidas a menos que aprovadas pelo Engenheiro Residente (RE) . O RE e Oficial de meio Ambiente (ESO) devem certificar-se de que tal remoção é inevitável; Materiais de construção não devem ser depositados em áreas húmidas ou corpos de água; O empreiteiro deve notificar ao ER se quaisquer sepulturas ou artefactos arqueológicos forem descobertos durante a limpeza do local. O trabalho deve ser interrompido até que as autoridades competentes sejam notificadas e tenham inspecionado o local e dado a aprovação para prosseguir com os trabalhos.

- ***Aumento do Risco de Segurança devido à Abertura de Novas Vias de Acesso*****. Medidas de Mitigação:** Os empreiteiros serão obrigados a preparar uma Declaração de Método sobre a construção de qualquer nova infra-estrutura ou modernização das existentes. O

método proposto para reabilitação após a conclusão da obra; Os empreiteiros devem cumprir toda a legislação e regulamentos aplicáveis em matéria de segurança rodoviária e transporte; Caso a estrada seja fechada ao trânsito, o empreiteiro deverá notificar previamente as autoridades competentes e a comunidade através dos meios de comunicação; O acesso ao estaleiro de obras e áreas de trabalho e rotas de transporte devem ser indicados em e aprovados pelo RE; O acesso ao estaleiro e áreas de trabalho deve ser por estradas existentes, sempre que possível; O empreiteiro deve manter as estradas com drenagem adequada.

- ***Contaminação de Solos por Resíduos Sólidos e Líquidos Domésticos*. Medidas de mitigação:** Todos os trabalhadores contratados devem descartar os resíduos adequadamente em contentores ou áreas identificadas; O empreiteiro deverá fornecer recipientes para o descarte de resíduos durante o período de construção e indicar o local e horário. Os recipientes devem ser tapados para evitar a proliferação de insectos; A contratada deverá fornecer instalações sanitárias para os trabalhadores, de acordo com os regulamentos; Proibir a incineração de qualquer resíduo no local; Estabelecer um programa de colecta de resíduos.

- ***Mudanças nos Padrões Normais do Solo Devido à Poluição e Erosão*. Medidas de mitigação:** O empreiteiro deverá proteger todas as infraestruturas hidráulicas contra a erosão, conforme definido no plano de trabalho; O empreiteiro deverá restringir o uso de maquinaria pesada ao período seco. Nos meses de Dezembro e Janeiro, o uso das máquinas deve ser condicionado de acordo com a pluviosidade, a fim de reduzir os danos ao solo; O empreiteiro deve tomar todas as medidas razoáveis para controlar a erosão e deve especificar e fornecer o método para o controle da água da chuva; Tomar todas as precauções para evitar erosão ou deslizamento de terra nas encostas e deve criar taludes compatíveis com a natureza do solo; O empreiteiro deverá preparar, para aprovação do Engenheiro Residente, um plano de trabalho relativo à disposição de resíduos sanitários e outros, de forma que não resulte em qualquer forma de poluição ou perigo para humanos e animais; Tomar todas as precauções para evitar derrames e vazamentos de materiais com potencial para poluir os recursos terrestres; A limpeza dos equipamentos e veículos deverá

ser realizada em áreas designadas para manutenção que deverão ser construídas para tal pela contratada; O empreiteiro deve dispor os produtos perigosos de forma que não fiquem em contacto directo com o solo para evitar derrames; O empreiteiro será responsável de qualquer tipo de poluição causada por suas actividades e deverá pagar indenizações aos afectados sempre que tais eventos ocorrerem.

- ***Contaminação de Solos por Resíduos Sólidos e Líquidos*. Medidas de mitigação:** O empreiteiro deve fornecer recipientes de coleta de lixo dentro das instalações do projecto; No caso de resíduos orgânicos, separar os materiais de alto risco e de baixo risco; Treinar trabalhadores para segregação de resíduos; Relativamente aos resíduos não orgânicos, assegurar a recolha e armazenamento temporário dos resíduos em contentores ou sacos fechados; A contratada deve estabelecer um aterro sanitário para suas operações, onde os resíduos não orgânicos devem ser tratados**;** Reduzir a produção de resíduos através da gestão; todos os animais recebidos devem ter tido sua última alimentação entre 6 e 10 horas para reduzir o volume de excrementos após o transporte ou no abate; Os resíduos orgânicos de alto risco devem ser tratados de forma diferenciada, evitando enterrá-los. Em caso de queima, devem ser incinerados a temperatura superior a 500 ^{0}C; Instalar triturador para descarte de resíduos orgânicos de baixo risco em tanque fechado a 10 metros de profundidade.

Cláusulas de Ambiente, Saúde e Segurança (EHS) para Contratos de Obras

***Relacionamento com as comunidades*:** Respeito à diversidade cultural e aos modos de vida das comunidades locais; Respeito pelos locais ou locais de culto, símbolos religiosos, insígnias, cemitérios, etc; Respeito pelos horários de silêncio e restrições de acesso, de acordo com os hábitos das comunidades locais; Ter cuidado ao circular veículos em zonas povoadas e zonas agrícolas de forma a minimizar a emissão de poeiras, geração de ruído e vibrações, e impactos nas zonas de cultivo/machambas e outras actividades produtivas; Informar e integrar ao máximo as pessoas da comunidade para evitar conflitos entre os trabalhadores e a população local; Distanciar-se de qualquer acto de Violência Baseada no Género, incluindo qualquer abuso ou tentativa, poder diferencial ou confiança, para fins sexuais, incluindo lucrar monetariamente, social ou politicamente com a exploração sexual de outrem; Não usar linguagem ou comportamento em

relação a mulheres, crianças ou homens que seja inapropriado, agressivo, abusivo, sexualmente provocativo, humilhante ou culturalmente inapropriado; Participar activamente em treinamentos prácticos relevantes e ler os conteúdos disponíveis relacionados a aspectos ambientais e sociais, incluindo questões de saúde e segurança, exploração e abuso sexual, assédio sexual e outros conteúdos que possam ser relevantes para o projecto; Actuar com zelo, ética e profissionalismo, em todas as actividades que realizar .

Conscientização sobre o HIV/SIDA: A contratada deve conscientizar seus funcionários sobre o respeito aos usos, costumes e tradições das populações da região onde está sendo realizada a obra e sobre os riscos e formas de prevenção das Infecções Sexualmente Transmissíveis; O empreiteiro deve realizar programas de conscientização e testes voluntários usando um provedor de serviços local.

Mão de Obra Local: O empreiteiro deve optal (excepto pessoal técnico) pelo recrutamento do número máximo de trabalhadores locais, incluindo mulheres; Na falta de pessoal qualificado no local, é permitida a contratação de pessoal da área mais próxima da área de trabalho.

Proteção do Trabalhador: O empreiteiro deve fornecer ao pessoal do local de trabalho os equipamentos de trabalho em bom estado de conservação e todos os acessórios de segurança e proteção adequados à actividade (capacetes, botas, cintos, máscaras, luvas, óculos, etc.); A empreiteiro deve zelar pelo uso adequado dos equipamentos de proteção, devendo ser feito controle permanente para esse fim e, em caso de infração, aplicação de advertência e até demissão aos infractores.

Gestão de Achados Fortuitos: O procedimento de “achados fortuitos” descreve as acções que devem ser tomadas após a descoberta de um lugar ou elemento arqueológico, incluindo a sua investigação e avaliação por um arqueólogo ou outro técnico devidamente qualificado; Se um património ou sítio arqueológico for encontrado ou descoberto durante a construção, os trabalhos devem parar imediatamente e o MADER ou o seu representante no local deve ser notificado da descoberta; Marcar o local com fita vermelha e determinar a posição GPS, se possível; Determinar se o trabalho pode prosseguir sem danificar o achado; Determinar e marcar uma área de tampão; Designar um especialista qualificado (arqueólogo) para avaliação de campo do achado fortuito; Definir medidas de mitigação apropriadas, dependendo da relevância das descobertas. Estes

podem incluir proteção in situ, escavação e posterior remoção ou simples remoção do local, conforme aplicável.

Capacitação

O projecto avaliará a capacidade ambiental e social e preparará um programa de treinamento para fortalecer a capacidade de coordenação, planeamento, implementação e monitoramento de questões ambientais e sociais. Para a implementação bem-sucedida deste ESIA, os requisitos de capacitação serão principalmente na forma de programas de treinamento e workshops de sensibilização para PIU, Empreiteiros, Engenheiros Supervisores e comunidades locais.

Funções e Responsabilidades de Implementação do ESIA/PGAS

Função	**Resposnabilidade**
MADER (Proponente)	• Assegurar que os requisitos do ESIA/ESMP são cumpridos durante a fase de construção, bem como certificar às agências reguladoras, que as salvaguardas ambientais relevantes estão a ser cumpridas. • Contratação da Empreiteira e do Engenheiro Residente. • Assegurar a instrução do processo pelos Serviços Provinciais do Ambiente para os diferentes subprojectos. • Certificar que as Especificações Ambientais e Sociais e a cópia do ESIA/ESMP estejam incluídas na documentação de licitação para possíveis contratantes.
Empreiteiro	• Contratado pelo cliente para executar as obras de reabilitação do matadouro e fábricas de rações existentes. • Entidade responsável pelo cumprimento e implementação das medidas aqui definidas e pela responsabilidade ambiental de todas as atividades. • Contratação de um Oficial Ambiental (EO) • Contratado pelo empreiteiro para se juntar à equipe do empreiteiro para implementar o ESIA/ESMP.

Engenheiro Residente (RE)	Estabelecer e zelar para que sejam cumpridas as fiscalizações ambientais e demais acções exigidas pelo SPA/MTA. Estabelecer e manter comunicações regulares e proactivas com o Empreiteiro. Analisar e comentar os relatórios ambientais produzidos pelo Empreiteiro. Certificar que o ESIA/ESMP seja revisado e actualizado conforme necessário.

Mecanismo de Queixas e Reclamações

Um Mecanismo de Reclamações será estabelecido para o projecto para tratar de quaisquer problemas e ajudar a resolvê-los antes do uso do sistema formal de reclamações legais. Por meio deste mecanismo, as partes interessadas e afectadas poderão comunicar preocupações, danos ou conflitos ocorridos durante as obras ou qualquer outra atividade relacionada ao projecto, incluindo aspectos relacionados a preocupações ambientais, Violência Baseada no Gênero (GBV) e qualquer conflito com trabalhadores .

A PIU será responsável pelo estabelecimento, comunicação e gestão do GRM.

Os Princípios e procedimentos gerais do Mecanismo de Queixas e Reclamações são:

- ✓ A comunicação verbal deve ser em línguas locais, mas todos os registros escritos de comunicações devem ser em português;
- ✓ Uma resposta inicial deve ser dada às comunidades em um prazo de 10 dias. Procedimentos detalhados para corrigir queixas devem ser divulgados entre as partes interessadas que devem ter capacidade para usá-los;
- ✓ Medidas devem, portanto, ser implementadas para garantir que as soluções sejam alcançadas por consenso com base na negociação e no acordo;
- ✓ Pessoas específicas devem ser escolhidas para representar suas comunidades durante a implementação do projecto, especialmente para apresentação de reclamações. Estes homens e mulheres serão o primeiro nível de recepção da queixa e resolução informal.

Os Formulários de Registro de Reclamações devem ser fornecidos pelas delegações provinciais e pelos Provedores de Serviços, disponibilizando-os em instituições locais, como escolas, hospitais

e por meio de líderes comunitários. Os representantes da comunidade devem ser incentivados a explicar esse mecanismo sempre que necessário e em nenhum momento deve ser desencorajado o registro de uma reclamação.

Relatórios sobre reclamações devem ser apresentados regularmente em reuniões mensais. Os relatórios de reclamações devem conter os registos das reclamações, respostas, acção de reparação e encerramento de todas as reclamações com datas e partes responsáveis claramente indicadas. Cada uma das etapas a seguir deve ser limitada a um máximo de 15 dias desde o recebimento de uma reclamação até a comunicação de uma decisão.

Custo de Implementação

#	Item	Total (USD)
1	Custo de sensibilização e treinamento da implementação de salvaguardas ambientais, monitoramento pelos oficiais	300 000,00
2	Capacitação institucional da equipa de coordenação	65 000,00
3	Licenças ambientais e outras licenças (DUAT etc)	8 000,00
4	Auditoria Ambiental Independente (Auditor)	4500,00
5	Performances anuais de auditoria ES	23 632,50
6	Auditoria de conclusão do projecto de desempenho Ambiental e Social	7 877,50
Total		**324 530,00**

EXECUTIVE SUMMARY

Project overview

The African Development Bank intends to co-finance the Inclusive Agri-Food Value Chain Development Program (PROCAVA) financed by the International Fund for Agricultural Development (IFAD). This program aims to accelerate the transformation of the Agrarian Sector through competitive, inclusive and sustainable growth, ensuring the integration of family farming and the private sector in the productive value chains of poultry.

The program is in line with the Government of Mozambique (GoM) efforts to reduce poverty nationwide, increase agricultural production and promote employment, particularly for youth and women. This effort culminated in the elaboration of the National Agriculture Strategy (PEDSA) and its National Investment Plan in the Agrarian Sector (PNISA -2022 to 2027,) within the scope of the National Poverty Reduction Strategy (PRSP).

Through PEDSA, the Government identified six Agricultural Development Corridors, namely: (i) Pemba- Lichinga Corridor , for the production of potatoes, wheat, beans, corn, soybeans, cotton, tobacco and poultry; (ii) Nacala Corridor with potential for growing cassava, maize, cotton, fruits, poultry and peanuts; (iii) Zambezi Valley Corridor for rice, maize, potatoes, livestock, poultry and cotton; (iv) Beira Corridor for maize, wheat, legumes, soybeans, rice, livestock and poultry; (v) Limpopo corridor for rice, vegetables, livestock and poultry; and (vi) Maputo Corridor which would focus on rice, vegetables, cattle (red meat) and poultry. The project is aligned with the national agriculture program, SUSTENTA.

The development objective (DO) of PROCAVA is to accelerate the transformation of the Agricultural Sector through competitive, inclusive and sustainable growth, ensuring the integration of family farming and the private sector in the productive value chains of poultry (including corn and soy). The project is aligned with the African Union (AU) Agenda 2063 and the Sustainable Development Goals (SDGs). PROCAVA will contribute to five Sustainable Development namely:

Goal 1: Without Poverty,

Goal 2: Zero Hunger,

Goal 5: Gender Equality,

Target 9: Industry Development, Infrastructure.

Target 13: Urgent measures to combat climate change and its impact.

The specific objectives of the project include:

(iv) Support the development of an integrated corn-soy-poultry value chain to increase production, processing and market access to enable return on investment and maximum profitability.

(v) Increase the country's resilience and response to climate shocks by improving climate-resilient infrastructure and beneficiaries' adaptation.

(vi) Support and training policies to create an appropriate environment for the development of Micro Small and Medium Enterprises (MSME) and attract the private sector.

Implementation Area

General considerations

Mozambique is located in the southeastern part of the African continent, between parallels 10/27' and 26/52' South latitude and between meridians 30/12' and 40/51' East longitude. Its Limits are:

- Northern Tanzania;
- West- Malawi, Zambia, Zimbabwe and ESwatini.
- South-South Africa.
- To the east, the Indian Ocean, in an extension of 2,470 km. The surface of its territory is 799,380 km².

The country is divided into 11 Provinces: to the North, Niassa, Cabo Delgado and Nampula, to the Center, Zambézia, Tete, Manica and Sofala, to the South, Inhambane, Gaza, Maputo, and Maputo City.

The Mozambican territory, like the entire southern region of the African continent, does not present a great variety of landscapes. From the coast to the interior three types of relief can be distinguished:

- The coastal plain that occupies a large part of the territory (40%). This is the natural region where the highest population concentration is observed.
- Plateau with altitudes between 200 and 1,000 meters.
- The large highlands and mountains occupy a small part of the national territory, with altitudes greater than 1,000 meters.

project implementation area is considered highly vulnerable to the effects of climate change.
A significant part of Mozambican territory is located in areas prone to the occurrence of natural disasters, namely floods, droughts and cyclones.

This project will be implemented in the provinces of Niassa, Nampula, Zambezia and Sofala, where the Bank has previously financed projects linked to maize and soybean production components, and construction of feed factories for processing raw materials and creating corridors and agricultural zones specials.
For the component of feed factories, the focus is on the provinces of Zambezia and Niassa, as they are areas of great production of corn and soybeans and already have feed factories financed under other projects.
The construction of infrastructure, such as houses for slaughtering poultry, is planned for the provinces of Niassa, Nampula, Zambezia and Sofala.

Project components

Components	***Description***
Component 1: Climate-resilient production and productivity improvement (from corn, soy, poultry value chains): USD 17.4 million (52.7%)	**Subcomponent 1: Agricultural Value Chain Development (USD 6.0 million).** This sub-component aims to contribute to improving the production and productivity of the poultry value chain and associated raw material crops (soy and corn). It will also improve linkages with different stakeholders (input suppliers and output/output buyers) from the target value chains.
	Subcomponent 2: Climate Change and Digital Agriculture System (US$6.3 million): This subcomponent will address some of the climate threats the country faces related to floods, droughts and desertification in the southern part and floods and cyclones in the central and northern parts affecting the agricultural production and the development of value chains. Under this component, the project will purchase and install 2 high-tech radars. The project will also install and manage a Digital Agriculture System.

	Subcomponent 2: Strengthening Seed Development Systems (USD 3.1 million) – interventions will involve supporting the development of seed systems through strengthening the capacity of the Mozambican Agricultural Research Institute (IIAM) to develop 2000ha for production of breeding and basic seeds of Corn and Soybean each , as well as organizing and supervising participating emerging farmers, farmer organizations and external producers to produce basic seeds; Access to Agricultural Inputs – Farmers interested in purchasing improved seeds and fertilizers will be supported through a unique cost-sharing donation mechanism. Support agro-dealers to improve the supply of inputs. The project will also support the distribution of certified seeds to farmers using SUSTENTA.
	Subcomponent 3: Build Poultry Infrastructure (2.0 Million) : Provision of necessary facilities for feed production and supply, production of day-old broiler chicks; store; processing; commercialization of the project 's output ; disease diagnosis and treatment of chicks. Construction of 4 incubators with a capacity for 10,800 chicks one day a week and 4 slaughterhouses with a capacity for 1,000 BPH.
Component 2: Value Added, Market-Related, Climate-Resilient Infrastructure and Linkages; US$ 9.55 (28.7%)	**Subcomponent 1: Market approach (USD 4.05 million) :** The Project will take a market-driven approach, linking smallholder producers in target value chains with processors, aggregators and buyer arrangements in demand areas. will focus in improving the readiness of corn, soy and poultry producers to engage in outgrower schemes and/or agriculture contract structures and increasing their ability to meet processors' quantity and quality requirements. The project will use the feed processing plants built under the Bank financed projects to support the implementation of the poultry value chain.

	Sub-component 2: Development of infrastructure and financing mechanisms for the development of the poultry value chain (USD 5.5 million). One of the main challenges for the poultry sector is access to affordable finance. Commercial Banks are unwilling to finance producers because they are not commercially viable. Even if the government introduces a risk guarantee mechanism, it does not result in a lower cost of borrowing – interest rates remain high. The Project will therefore consider supporting producers to be commercially oriented, linking production with market demand, through secured contracts and purchase agreements, enabling them to run commercial poultry operations and prepare viable business proposals. It will consider a revolving endowment fund to provide project beneficiaries, organized into business-oriented cooperatives and input suppliers, access to reimbursable grants to purchase inputs, build climate-resilient infrastructure and purchase primary processing equipment. Specific activities will include a feasibility study/assistance for structuring the fund; establishment of the Revolving Subsidy Fund for the Poultry Sector; competitive selection of Fund management; Technical Assistance/training for Small and Medium-Sized Companies (SMEs) beneficiaries in business and financial management.
Component 3: Institutional and Policy Strengthening and Implementation Support UA 6.09 million (18.3%)	**Subcomponent 1: Support to Policy and Strategy Development (USD 2.09 million):** The component will conduct a number of in-house strategic studies: (1) to provide country policies and strategies and poultry sector development patterns; (2) gender dimension of the poultry value chain and adaptation and resilience. Other studies will be identified during project implementation. The project will also provide capacity building initiatives on hygiene and biosecurity measures for poultry production, food processing and business management.

	Project Implementation, including training, environmental and social safeguards, auditing and project management (USD 4.0 million): all project coordination and monitoring activities, including those related to administrative and financial management, as well as procurement will be carried out under this subcomponent, including training. It will seek to ensure the efficient conduct and management of the project, focusing on impact results and paying special attention to capacity building, gender mainstreaming and communication. It includes project management as well as ESMP implementation and monitoring. This component will also include operational and audit costs. The project will recruit several interns to support the project and build capacity in the country.

Institutional and Legal Framework

Legal Instrument	**Brief Description**	**Relevance to the Project**
Environmental Law (Law No. 20/97 of 1 October)	Precautionary principles (Article 4) and prohibition of pollution (Article 9)	The Project may pollute if precautionary measures are not taken. It aims to prevent impacts and their management.
Water Law (Water Law 16/91 of August 3)	Whoever pollutes is responsible for restoring the damage caused (Article 55).	The Project must avoid water pollution.
Labor Law (Law No. 23/2007, of August 1)	It contains clauses relating to the Health and Safety of workers (Article 59). "employers must provide their workers with good physical and moral conditions and ensure compliance with hygiene and safety standards at work, as	All aspects of health and safety must be considered.

Legal Instrument	Brief Description	Relevance to the Project
	well as investigate the causes of accidents at work and occupational diseases, adopting appropriate measures for their prevention".	
EIA Process (Decree 54/2015, of December 31)	Categorization process, level and content of environmental studies required in different categories, participation process, review, environmental licensing stages (Elaboration, Construction and Operation), responsibilities, inspections, fees and penalties.	Relevant to the process of preparing the ESIA, ESMP and its implementation.
Environmental Audits (Decree No. 25/2011 of 15 June)	It defines the environmental audit as a management tool and systematic evaluation of the systems and documentation implemented to guarantee the protection of the environment. Its purpose is to assess compliance of operational and work processes with the environmental management plan, including legal environmental requirements in labor policies.	Environmental audits can be carried out in rehabilitation/improvement works in slaughterhouses
Regulation on environmental	Types of inspections	The project may be inspected by the MTA on an ordinary or extraordinary basis.

Legal Instrument	Brief Description	Relevance to the Project
inspection (Decree No. 11/2006, of 11 June)		
Environmental Quality and Emissions Standards (Decree No. 18/2004, of June 2nd, amended by Decree No. 67/2010, of December 31st)	It prohibits "the disposal in the soil, outside the legally established limits, of harmful substances that may contribute to its degradation". Establishes environmental quality and effluent emission standards	The project foresees the generation of effluents, emissions, noise, with impacts on the soil, air and water, which must comply with these standards.
Occupational Accidents and Illnesses (Decree No. 62/2013, of 3 June)	Establishes the legal regime for accidents at work and occupational diseases, applicable to national and foreign workers.	The Project will have to fulfill these requirements for workers.
Family Law (Law No. 10/2004)	It reiterates gender equality and provides rights for women and men to manage marital assets and have equal rights to transfer and inherit assets.	The project must guarantee access to opportunities by potential beneficiaries and non-discrimination based on gender
Violence against Women (Law No. 29/2009)	It criminalizes gender-based violence and domestic violence (Article 1) and considers it a public crime (Article 21). The law recognizes rape within marriage by the spouse and punishes it (Article 17). Just as it penalizes sexual involvement with knowledge of an infectious	Ensure that all instruments, information and awareness programs are available to all direct beneficiaries and service providers in order to avoid situations of violence against women.

Legal Instrument	Brief Description	Relevance to the Project
	disease with sentences of up to 12 years in prison (article 18.º)	

African Development Bank Operational Safeguards

The African Development Bank created an environmental and social policy known as the Integrated Safeguards System (ISS) in 2013. The ISS consolidates and renews the existing environmental and social safeguards of the African Development Bank and outlines the common objectives of the Bank's safeguards and sets out political principles. In addition, the Bank has adopted five Operational Safeguards (OSs), limiting their number to what is necessary to achieve the goals and optimal functioning of the ISS. OSes are intended to:

- Better integrate considerations of environmental and social impacts.
- Prevent the projects adversely affect the environment and local communities or, where prevention is not possible, minimize, mitigate and/or compensate for adverse effects and maximize development benefits.
- Systematically consider the impact of climate change on the sustainability of investment projects and the contribution of projects to global greenhouse gas emissions.
- Outline the roles and responsibilities of the Bank and its borrowers or clients in implementing projects, achieving sustainable results, and promoting local participation; It is
- Assist regional member and borrower/client countries to strengthen their own safeguard systems and their capacity to manage environmental and social risks.

Operational Safeguard	***Triggered***	***Justification***
OS 1: Environmental and Social Assessment	***Yes***	Operational Safeguard 1 is a mandatory requirement for AfDB- funded projects for their borrowers. The remaining safeguards support the implementation of the first and indicate specific requirements related to different environmental and social issues, including

		gender and vulnerability, which are triggered if the assessment process shows that the project will have certain risks. This SO establishes requirements for categorization of projects based on environmental and social risk, and also the requirements for environmental and social assessment. Define instruments for assessing and managing E&S impacts (ESIA, RAP, ESMP).
OS 2: Involuntary Resettlement: Land Acquisition, Population Displacement and Compensation	***No***	The policy is not triggered. Under this project, no expropriation of land is foreseen. However, the expansion of agricultural areas (vegetation clearing and soil preparation) may result in the need for resettlements. During the environmental and social screening of subprojects specific cases, this possibility will be analyzed and if confirmed, the Abbreviated Resettlement Plan must be prepared in accordance with this SO.
OS 3: Biodiversity, Renewable Resources and Ecosystem Services	***Yes***	The project activities are not expected to have a significant impact on any local natural environment, not even on ecosystem services. However, certain activities may involve clearing vegetation. In such cases, the project must comply with the requirements of this OS
OS 4: Pollution Prevention and Control, Hazardous Materials and Resource Efficiency	***Yes***	Aims to manage and reduce pollutants, including hazardous and non-hazardous waste, so that they do not pose harmful risks to human health and the environment.

		Define a framework for the efficient use of all materials and natural resources in a project, especially energy and water.
OS 5: Labor Conditions, Health and Safety	***Yes***	The use of agrochemicals may pose some risks. This OS aims. • Protect workers' rights; • Promote compliance with national legal requirements and provide supplemental due diligence requirements diligence where national laws are silent or inconsistent with Operational Safeguards. • Protect the workforce from inequality, social exclusion, child labor and forced labor. • Establish requirements to provide safe and healthy working conditions.

Institutional and Implementation Arrangements

MADER, through the National Directorate of Cooperation and Market (DCM), will be the executing agency and the Agrarian Development Fund (FAR) will be responsible for supervising the overall implementation of the Program. MADER will also liaise and work with other Ministries and partners whose mandates are directly related to the achievement of the development objectives of PROCAVA. At provincial and district level, the technical coordination of the Program will be carried out by the relevant MADER units. These units include the Provincial Department of Veterinary Services (DPSV), the District Directorates of Economic Services (SDAE) and the National Institutes of Agricultural Research (IIAM).

The project PIU, must work in coordination with Environmental and Social Safeguards Department (GSSA), to ensure the correct implementation and elaboration of the environmental and social management instruments to be used in the project.

Potential Environmental and Social Impacts

Project activities (mainly in Components 1 and 2) are likely to generate significant environmental and social impacts, which include:

vii) Soils exposed to erosion due to alteration of the local drainage pattern, related to construction works.

viii) Habitat loss and disturbance of biodiversity as a result of construction/rehabilitation/expansion activities related to irrigation systems and poultry slaughterhouses.

ix) Risk of exposure of farmers to agrochemicals as a result of inappropriate handling and inappropriate disposal methods.

x) Air pollution from emissions from horticultural and poultry processing operations, which may use steam boilers and heating systems.

xi) Water pollution as a result of fertilizer discharge, different chemicals used for pest management.

xii) Risk of accidents at work.

The project's positive impacts include increased productivity in agricultural areas, as well as increased household incomes directly affected people targeted by the project.

The tables below summarize the evaluation of the Project's main impacts. Negative impacts are coded in yellow or red, while positive impacts are coded in shades of green.

Summary of Project Impacts in the Construction Phase

Impact Description	Significance Level		Main Mitigation Measures
	Pre-mitigation	Post mitigation	
Noise from construction activities	Low	Insignificant	• Speed limit for heavy construction vehicles of 30 km/h near residential areas. • Construction activities should be limited to weekdays whenever possible.
Increased erosion and soil compaction	Low	Insignificant	• Restrict the clearing of vegetation and removal of arable soil from areas strictly necessary for construction. • Removal and storage of arable soil before earthmoving activities, for subsequent reuse in replacement interventions.
Loss of vegetation and habitat.	High	Moderate	• Limit deforestation to strictly necessary areas.
Increased risk of transmission of sexually transmitted diseases due to workforce mobilization and population influx	Moderate	Low	• Create health and awareness programs for workers.
Increase of conflicts due to influx of workers to project areas	Moderate	Low	• Implement a Local Recruitment Plan to ensure procurement processes are conducted transparently and fairly, in coordination with local authorities and community leaders. • The proponent must develop a Communication Plan to interact with communities, informing them about the nature and timing of activities and establishing communication channels to manage social conflicts that may arise.
Safety issues due to increase of road traffic	Low	Insignificant	• Heavy construction vehicles must respect the 30 km/h speed limit near residential areas. • Install temporary official road signs on local roads around job sites before and after

Impact Description	Significance Level		Main Mitigation Measures
	Pre-mitigation	Post mitigation	
			execution, in conjunction with local traffic authorities
Increased local economic power	Low	Low	• The procurement of goods and services by the contractor should prioritize local suppliers whenever possible.

Table 2. Summary of Project Impacts in the Operational Phase

Impact Description _	Significance Level		Main Mitigation Measures
	Pre-mitigation	post mitigation	
Noise emissions	Low	Low	• Within the project area, place noisy equipment as far away as possible from neighboring residential areas. • Perform regular maintenance to minimize noise emissions as much as possible
Water pollution .	Low	insignificant	• Keep work equipment in order, without leaks, excess oil and lubricant. • Regularly inspect equipment that may contain contaminants. • Develop and implement the Waste Management Plan
Change permanent of Landscape	Low	insignificant	• Minimize the number of permanent access roads to construction areas

Public Consultations

Public consultation is a requirement under the environmental safeguard's instruments, both of the Bank and Mozambican legislation. The objectives of the Public Consultation are to inform affected parts about the project and give them the opportunity to express their concerns and opinions. The general objectives of this process are:

- Ensure prior consultation of interested parties in the main phases of the Environmental and Social Impact Assessment (ESIA), in order to improve its results and increase the credibility of the process.
- Ensure compliance with national and international requirements for stakeholder engagement.

The public consultation meeting for ESIA was held in Gurué, (Zambezia), Cuamba, Marrupa and Lichinga, (Niassa) and Rapale (Nampula).

In Nampula, the consultations took place from the 9th to the 11th of July, from the 12th to the 14th of 2023, in the Province of Zambézia and in September 2021 in Niassa.

A total of 43 people were consulted, of which 36 were men and 7 were women, representing farmers, intermediaries and cooperatives for the production of maze and soy.

The content of the public presentation meeting is as follow:

- Project Description;
- Project activities;
- Project Areas;
- Benefits for Local Communities.

Main issues raised at the meeting:

- The omission of prices of soy and maze by merchants;
- Project Implementation: Whether the proposed project will provide any monetary value directly to local producers.
- The issue of prices by traders;
- Access to modern agriculture equipment
- Availability to better seeds, especially for soy.

Questions/Observations	Answers/Comments
Baptista Bernardo: As part of local farmers, the prices practiced by intermediaries who buy corn and soybeans and sell them to the processing industry are of great concern. The signed agreements indicate a price that is not the same as the one practiced or paid to the farmer who provides the service. It asked that in the operational phase of the feed factory and the agreements between the associations and the factory, the farmers be directly involved in the negotiations. ***Artas Evaristo***: One of the great challenges for local farmers is the availability of soy seed in the district, which is currently experiencing serious shortages. ***Baptista Bernardo***: asks for support from the local authorities in creating a cooperative or association of producers to safeguard the interests of the group, which is often marginalized at the stage of marketing the product.	SDAE: The district has parallel initiatives to improve the conditions and practices of agriculture that include mechanized means through the SUSTENTA program, the great challenge at the district level and the adherence of farmers to this support.
Will the African Development Bank help with the construction?	The purpose of the consultation is to inform about the project and gather sensitivities, not to make implementation decisions.
Another concern would be regarding the implementation period. We still not aware of dates, or when it will be executed. When exactly do we intend to implement the project?	The decision of when the project starts, will be clear after the approval of the project by the Bank board. The environmental safeguard instruments

	are part of the approval process. Therefore, at this time is not yet known.
UCM- Cuamba: The main crops produced are maize and soybeans. In near future will be introduced a sesame; ● The feed factory has already operated on an experimental basis in the past, and stopped due to internal reasons in 2019; ● The only thing the university resents for the operation of the factory is the soy roasting machine; ● The production capacity of the feed factory is 8 tons/day. ● An environmental impact and economic feasibility study for the factory has already been carried out. • UCM is currently looking for partnerships for the operation of the factory. We have already had contacts with some interested parties; ● The factory is in full working condition and with complete machinery.	-

For information related to poultry and slaughterhouses, specialists in the area were consulted, from the ministry in charge, the veterinary faculty, the Mozambican Association of Aviculturists (AMA) and the Management of the company Novos Horizontes, a reference in Nampula.

Environmental and Social Management Plan (PGAS)

For the proposed project, predicted impacts with moderate and high significance are mentioned below, and their respective mitigation measures.

- ***Change in soil quality as result of excavation and soil movement.*** **Mitigation measures:** Isolate slaughterhouse activity areas to minimize dust dispersion; Keep work areas with wet soils to reduce the level of dust; All workers involved in construction must have protective equipment (such as gloves, masks, uniforms, etc.); All locations identified for temporary deposit of solid waste must be well signposted and must have a drainage system capable of safely removing any potential contaminating substances; Concrete losses must be immediately removed;

- ***Destruction of Habitats and Natural Resources due to Site Construction*****. Mitigation measures:** In a degraded forest or area with large trees (diameter> 200mm) or other commercial trees shall not be removed unless approved by the Resident Engineer (RE). The RE and Environment and Social Officer (ESO) must satisfy themselves that such removal is unavoidable or absolutely essential; No soil, vegetation or construction materials shall be damped in wetlands or water bodies; The contractor shall notify the RE if any previously unidentified graves or artefacts of archaeological cultural significance are uncovered during site clearance. Work shall be stopped while the appropriate authorities are notified and have inspected the site and given approval to proceed.

- ***Increasing Safety Risk due to the Opening of New Access Roads*****. Mitigation measures:** The contractors will be required to prepare a Method Statement on the construction of any new infrastructure or upgrading the existing ones. The proposed method for rehabilitation after the completion of the construction work; The contractors shall comply with all applicable legislation and by-laws regard to road safety and transport; In a case that the road shall be closed to traffic, the contractor shall notify the appropriate authorities and community in advance using mass media means; , Access to the construction site and work areas and haul routes are to be shown on a site plan and approved by the RE; Access to the construction site and work areas shall utilize existing road and trucks, where possible. Upgrading access road shall be undertake within the existing confines of the road unless otherwise agreed with the RE; The contractor shall maintain the haul roads includes adequate drainage and side drainage, dust control and restriction of edge use as per the environmental specification.

- ***Contamination of Soils by Solid Waste and Domestic Liquids*. Mitigation measures:** All contractor workers must dispose of waste properly in containers or identified areas; The contractor must provide containers for the disposal of waste during the construction period and indicate the place and time for meals. Containers must be covered to prevent the proliferation of insects; The contractor shall provide sanitary facilities in quantity and quality for the workers, in accordance with the regulations; Prohibit the incineration of any waste on site; Establish a waste collection program.

- ***Changes in Normal Soil Patterns Due to Pollution and Erosion*. Mitigation measures:** The contractor shall protect all hydraulic infrastructures against erosion by protecting slopes, compacting soils, vegetation and/or stabilizing with gabions, as defined in the implementation plan; The contractor shall restrict the use of heavy machinery to the dry period. In the months of December and January, the use of machines must be conditioned according to rainfall, in order to reduce soil damage; The contractor shall take all reasonable measures to control erosion and shall specify and provide the method for the control of rainwater for the approval of the Resident Engineer; The contractor shall take all precautions to avoid erosion or landslide in the slopes and shall create slopes compatible with the nature of the soil. The contractor shall prepare for the approval of the Resident Engineer, a declaration of methods concerning the disposal of sanitary and other wastes, in such a way that it does not result in any form of pollution or danger to humans and animals; The contractor is required to take all precautions to avoid spills and leaks of materials with potential to pollute land resources; The cleaning of equipment and vehicles must be performed in designated maintenance areas that should be built for such purposes by the contractor; The contractor must arrange the dangerous products in such a way that they are not in direct contact with the soil in order to prevent spills; The contractor shall be responsible for cleaning up any kind of pollution caused by his activities and shall pay compensation to affected persons whenever such events occur;

- **Contamination of Soils by Solid and Liquid Waste. Mitigation measures:** The contractor must provide waste collection containers within project premises; In the case of

organic waste, separate high-risk and low-risk materials; train workers for waste segregation; In relation to non-organic waste, ensure the collection and temporary storage of waste in closed containers or bags; The contractor must establish a sanitary landfill for its operations where non-organic waste must be treated**;** Reduce waste production through management; all animals received must have had their last feeding between 6 and 10 hours to reduce the volume of excrement after transport or at slaughter; High-risk organic waste must be treated in a different way, avoiding burying it. In case of burning, they must be incinerated at a temperature above 500 ^{0} C; Establish a shredder for low-risk organic waste disposal in a closed tank at a depth of 10 meters; Reprocess as much of the low-risk and high-risk material as possible.

Specific EHS Clauses to Works Contracts

Relationship with communities**:** Respect for cultural diversity and the ways of life of local communities; Respect for sites or places of worship, religious symbols, insignia, cemeteries, etc; Respect for quiet times and access restrictions, in accordance with the habits of local communities; Be careful when moving vehicles in populated areas and agricultural areas in order to minimize the emission of dust, generation of noise and vibrations, and impacts on areas of cultivation/machambas and other productive activities; Inform and integrate people in the community as much as possible to avoid conflicts between workers and the local population; Distancing from any act of Gender-Based Violence, including any actual or attempted abuse of a position of vulnerability, differential power or trust, for sexual purposes, including profiting monetarily, socially or politically from the sexual exploitation of another; Not use language or behavior towards women, children or men that is inappropriate, aggressive, abusive, sexually provocative, demeaning or culturally inappropriate; Actively participate in relevant on-the-job training and read available content related to environmental and social aspects, including health and safety issues, sexual exploitation and abuse, sexual harassment and other content that may be relevant to the Project; Act with zeal, ethics and professionalism, in all activities that are carried out.

STD - HIV awareness: The contractor must make its staff aware of the respect for the uses, customs, and traditions of the populations in the region where the work is being carried out and, on the risks, and ways of preventing Sexually Transmitted Infections; Contractor shall conduct

awareness raising and voluntary testing programs using a local service provider.

Local Labour: The contractor must prioritize (except technical staff) the recruitment of local workers, including women; Failing to find qualified personnel on site, it is allowed to hire personnel from the area closest to the work area.

Worker Protection**:** The contractor must provide the workplace staff with work equipment and all safety and protection accessories appropriate for the activity (helmets, boots, belts, masks, gloves, goggles, etc.); The contractor must ensure the adequate use of protective equipment, and permanent control must be carried out for this purpose and, in the case of violation, warnings and even dismissals must be applied to violators.

Management of chance finds**:** The "chance findings" procedure describes the actions that must be taken after the discovery of an archaeological site or element, including its investigation and evaluation by an archaeologist or other duly qualified technician, to avoid and/or reduce the risks of the project on cultural heritage, in line with international best practices; If a heritage or archaeological site is found or discovered during construction, work must stop immediately and MADER or its representative at the site must be notified of the discovery; Mark the site with a red tape and determine the GPS position, if possible; - Determine whether the work can proceed without damaging the find; - Determine and mark an exclusion area; - Appoint a qualified specialist (archaeologist) for field evaluation of the fortuitous find; Inspect the site and assess the scientific or cultural importance of the findings; - If the findings are of scientific or cultural importance, they must be reported to the National Directorate of Cultural Heritage; Define appropriate mitigation measures, depending on the relevance of the findings. These may include in situ protection, excavation and subsequent removal or simple removal from the site, as applicable.

Capacity Building

The project will assess environmental and social capacity and prepare a training program to strengthen capacity in coordinating, planning, implementing, and monitoring environmental and social issues. For the successful implementation of this ESIA/ESMP, the capacity building requirements will mostly be in the form of training programs and sensitization workshops for the PIU, Contractors, Supervising Engineers, and local communities.

Roles and Responsibilities for Implementation of ESIA/ESMP

Role	Responsibilities
MADER (Proponent)	• Ensuring that the ESIA/ESMP requirements are met during the construction phase, as well as for certifying to the regulatory agencies, MADER that relevant environmental safeguards are being met during and after project implementation. • Hiring the Contractor and the Resident Engineer. • Ensure instruction of the process for all subprojects. • Ensure that the ESIA/ESMP is provided to the Supervisor/Engineer for reference at the start of the contract. • Ensure that E&S Specifications and copy of the ESIA/ESMP is included in the bid documentation issued to prospective contractors where the preparation of a sub-project of the ESIA/ESMP is to be delegated to the Contractor and also include Environmental and Social Clauses in Contractor's Contracts;
Contractor	• Responsible for complying with and implementing the measures defined herein and for ensuring that all the activities are environmentally sound.
Resident Engineer	• Establish and ensure that any environmental supervision and other actions required by SPA/MTA are accomplished. • Establish and maintain regular and proactive communications with the Contractor. • Review and comment on environmental reports produced by Contractor. • Report to MADER on the state of the environmental management the project; • Ensure that the ESIA/ESMP is reviewed and updated as necessary.

Grievance Redress Mechanism

A Grievance Redress Mechanism will be established for the project to address any issues and to help solve prior to use of the formal legal grievance system. Through this mechanism, the affected stakeholders will be able to communicate and concerns, damages or conflicts occurring during the construction works or any other project-related activity, including aspects related with environmental concerns, gender-based violence (GBV) and any conflict with contractor workers.

Contractors and engineers will be aware of managing conflicts and communities involved must know their rights and obligations, how to obtain legal advice and representation, and how to seek redress against what they regard as unfair practices by contractor or its workers.

The PIU will hold responsibility for the establishment, communication and management of the GRM.

General principles and procedures must be established by the Projects and publicized including:

- ✓ Verbal communication should be in locally relevant languages, but all records of communications must be in Portuguese.
- ✓ An initial response must be provided to the communities in a period of 10 days. Detailed procedures to redress grievances and the appeal process should be disseminated among stakeholders who should be empowered to use them.
- ✓ Measures must thus be put in place to ensure that solutions are reached by consensus based on negotiation and agreement.
- ✓ As appropriate per sub Project area, specific people should be chosen to represent their local communities during the implementation of the project, especially for grievance presentation and the redress process. These men and women will provide a first level of listening and informal resolution.

Each implementing agency, through their PIU will create awareness that they may also use for the communication of grievances for informal resolution. Efforts must be made to ensure the representation of women and youth with whom leaders will consult to offer tangible solutions.

Grievance Register Forms must be provided by province delegations and Service Providers by making them available at local institutions such as schools, hospitals, and through community

leaders. Community representatives should be encouraged to explain this redress mechanism whenever needed and at no time should filing a grievance be discouraged.

Reports on grievances must be regularly presented at monthly meetings. Grievance reports should track complaints, responses, redress action and close-out of all community grievances with dates and responsible parties clearly indicated. Each of the following steps should be limited to a maximum of 15 days from receiving a grievance to communicating a decision.

Implementation Cost

#	Item	Total Cost (USD)
1	Sensitization and training cost of environmental safeguards implementation, monitoring by the extension services officers.	300 000,00
2	Institutional capacity building for the coordination team	65 000,00
3	Environmental license permits and other permits (Lavra, DUAT etc)	8 000,00
4	Independent Environmental auditing (Auditor)	4500,00
5	Annual ES audit performances	23 632,50
6	Project Completion audit of ES performance	7 877,50
Total		**324 530,00**

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ABBREVIATIONS AND ACRONYMS

AFDB	African Development Bank
AMA	National Poultry Association
DCM	National Directorate of Cooperation and Market
E&S	Environmental and Social
ESIA	Environmental and Social Impact Assessment
FAO	Food and Agriculture Organization
GRM	Grievance Redress Mechanism
IFAD	International Fund for Agriculture Development
ISS	Integrated Safeguards Systems
MADER	Ministry of Agriculture and Rural Development
MTA	Ministry of Land and Environment
MOPHRH	Ministry of Public Works, Housing and Water Resources
PIU	Project Implementation Unit
PROCAVA	Inclusive Agro-Food Value Chain Development Program
SDAE	District Directorates of Economic Services
SPAE	Provincial Economic Activities Services

1. INTRODUCTION

1.1 General Considerations

The Government of Mozambique through the Ministry of Agriculture and Rural Development (MADER) is preparing the Inclusive Agro-Food Value Chain Development Program. The project will be implemented in the provinces of Maputo, Gaza, Inhambane, Sofala, Manica, Tete, Zambezia, Nampula, Cabo Delgado and Niassa where the Bank has implemented some of its pilot projects that can be leveraged by this project. The project will target smallholder farmers, emergent and private farmers that are working in the selected value chains under an out-growers' schemes. Thus, the main objective of the proposed project is to accelerate the transformation of the Agrarian Sector through competitive, inclusive, and sustainable growth, ensuring the integration of family farming and the private sector into productive poultry value chains (including maize and soybean).

The specific objectives of the project include:

(vii) Support the development of an integrated maize-soybean-animal poultry value chain to increase production, processing, and access to market to allow return on investment and maximum profitability.

(viii) Enhance the country's resilience and response to climate shocks, by improving climate resilient infrastructure and adaptation of the beneficiaries.

(ix) Support policies and capacity building to create an appropriate environment for MSME development and attracting private sector.

According to the Bank's Integrated Safeguards System (ISS) as well as the Mozambican Regulation on the Environmental Impact Assessment Process (Decree No. 54/2015, from 31 of December), the project requires an Environmental and Social Impact Assessment. This assessment aims to:

- Identify the environmental and social impacts and design the minimization or mitigation measures of adverse environmental and social impacts of the project;
- Set an action plan of environmental and social management measures to be implemented; and
- Ensure compliance of the ESIA/ESMP with the governmental regulation and African Development Bank Integrated Safeguards System.

This ESIA was based on field investigations, meetings with the Proponent, Interested and Affected Parties (I&AP) and representatives of key institutions, as well as community leaders and public consultation. The methodological approach included a literature review, as well as references to relevant legislation, from agriculture sector, and the environmental and social guidelines from the Bank.

This report includes the Main Environmental and Social Impact Assessment (ESIA), as well as the Environmental and Social Management Plan (ESMP) and the Public Participation Process Report.

1.2 Project Proponent

The project will be implemented by the Ministry of Agriculture and Rural Development (MADER) as the lead Executing Agency. MADER will be responsible for overseeing the overall implementation of the Project, while also liaising and working with other Ministries and partners whose mandates have a direct bearing on the achievement of the PROCAVA goal and development objective.

Address	Praça dos Heróis Moçambicanos, Cidade de Maputo - Moçambique C.P. 1406
Contact Person	Olga Faftine
Contact Number	+258 21468200; +258 843438999
E-mail	geral@agricultura.gov.mz

1.3 Environmental Consultant

The ESIA process is being undertaken by Priscila V. Fenias, a Mozambican Environmental Engineer, with Eleven (11) years of professional experience mostly dealing with environmental and social (E&S) aspects, as consultant, field officer and environmental safeguard specialist, undertaking Environmental Impact Assessments (EIAs), Environmental Management Plans (EMPs), monitoring systems, and health and safety specially on the Road, Energy and Health sectors.

Environmental Consultant	Priscila V. Fenias
Address	Av. Namaacha n˚68, Maputo Provincia
Contact Number	+258 86 6732966
E-mail	priscilalaurinda@gmail.com

The members of the ESIA team responsible for drafting this report, their relevant experience and roles within the team are listed in table below.

Name	**Role**	**Qualifications and Experience**
Priscila V. Fenias	**Team leader**	Environmental Engineer, Environmental Safeguards Specialist with Eleven (11) years of professional experience.
Emelda Simbine	**Poultry value chain development**	Degree in veterinary medicine, specialist in food technology with more than 10 years in research area.
Alfredo Duvane	**Agronomist**	Graduated in agronomy, researcher and professor at the Faculty of Agronomy and Forest Engineering at Eduardo Mondlane University.
Isaura Massango	**Social Safeguard Specialist**	Psychologist, with several years of experience in social and community development projects.
Francisco Mussa	**Environmental, Health and Safety (H&S) Specialist**	Petroleum engineer, with several years of experience in implementing Environmental and Safety Plans in bank financed projects.

Flavio Monjane	**Climate Change Specialist**	Meteorologist with several years of experience in FAO financed programs and humanitarian crisis management.

1.4 Objective of the ESIA and Structure

The main objective of this Environmental and Social Impact Assessment (ESIA) is to identify all potential environmental and social impacts and risks of the project proposed activities, (considering physical, biological, and socio-economic environment), identify and analyse options that may avoid or minimise potential negative impacts and provide inputs for an effective environmental and social management plan (ESMP) to address impacts and residual risks. Specific objectives are as follow:

i. Identify the environmental and social impacts and design the minimization or mitigation measures of adverse environmental and social impacts of the project, in order to avoid, reduce or compensate negative impacts and optimize positive impacts;
ii. Set out the action plan of environmental and social management measures to be implemented by the project implementer;
iii. Elaboration of an Environmental and Social Management Plan (ESMP) for the project, including monitoring program, and
iv. To ensure compliance of the ESIA/ESMP with the governmental regulation and the Integrated Safeguards System of the African Development Bank.

The structure of this ESIA report is presented in the table below.

Chapter/section	**Content**
Chapter I – Introduction	Provides a background to the proposed Project and the ESIA
Chapter II - Legal and Administrative Framework	Outlines the legal framework which the ESIA is undertaken and identifies other environmental legislation, standards and guidelines applicable to the Project.

Chapter III - Project Description	Discusses the components of the Project and Intervention area.
Chapter IV - Project Areas of Influence	Defines the areas of direct and indirect influence of the Project
Chapter V - Environmental and Social Baseline	Describes the biophysical and socio-economic baseline of the Project's areas of influence.
Chapter VI – Methodology	Describes the methodology for assessing socio-environmental impacts
Chapter VII - Identification and Assessment of Impacts	Evaluates the possible impacts that may be caused by project activities
Chapter VIII - Monitoring, Supervision and Report	Establishes the responsibility, type and frequency of monitoring reports
Chapter IX - Environmental and Social Performance Audit	Establishes the responsibility, type and frequency of environmental and social audits
Chapter X - ESIA Implementation Cost	Estimates the costs of implementing programs and preparing instruments for environmental and social safeguards
Chapter XI - Conclusion and Recommendations	Presents the main findings of the ESIA report and recommendations for the following phases of the Project.

2. LEGAL AND ADMINISTRATIVE FRAMEWORK

2.1 Applicable National Legislation

Since the 90s, Mozambique has been undertaking an enormous legal and institutional reform movement to improve the country's ability to manage environmental issues and turn it into a more sustainable process. The reform has been under implementation in the form of:

(a) Adherence to and adoption of various international and regional environmental protection and conservation conventions and protocols;

(b) Approval of a significant set of legislation with direct and indirect implications to environmental protection;

(c) Creation of specific public institutions or strengthening of existing institutions dedicated to both environmental and social management.

The country has adhered to a number of international conventions and protocols for the protection of the environment, and as a result continues cto improve the legislation on many sustainable development issues in the country to ensure that Mozambicans enjoy quality living conditions.

The Ministério de Terra e Ambiente, MTA (Ministry of Land and Environment) is the Government institution responsible for ensuring the preservation and responsible use of natural resources including land, the coordination of environmental activities and environmental licensing.

At **Provincial level**, MTA is represented by the Direcção provincial de Terra e Ambiente, and SPTA (Serviços Provinciais de Terra e Ambiente).

At **district level**, MTA's representation will be within the Serviços Distritais de Planeamento e Infraestruturas SDPI (District Services for Infrastructure and Planning) within the Ministry of Public Works, Housing and Water Resources (MOPHRH).

MTA is also responsible for handling issues related to land use planning, as well as any issue related to environmental protection.

This section provides a summary of environmental protection and related policies, laws and regulations in Mozambique, particularly those of relevance to the Project.

The Constitution (2004)

The 2004 Constitution of the Republic of Mozambique gives all citizens the right to live in a safe environment as well as the obligation to preserve it. The key objective of the clause related to the environment in the Constitution is to provide a legal framework for a proper use and management of the environment and its components, for the achievement of sustainable development in the country. This achievement involves proper management of the environment for the creation of conditions that guarantee health and well-being, socio-economic and cultural development of communities and the conservation of natural resources.

The state is also required by the Constitution to guarantee the sustainable use of natural resources and ecological stability for future generations and to promote land use planning in order to ensure that activities take place in the correct locations and that such activities contribute to balanced socio-economic development. The 2004 Constitution also creates an obligation on communities to protect the environment.

Environmental Legislation (Resolution 5/95)

The 1995 National Environment Policy in Mozambique, Resolution nº 5/95, establishes the basis of all environmental legislation in the country. According to its Article 2.1, the main objective of this policy is to ensure sustainable development in order to maintain an acceptable balance between socioeconomic development and environmental protection. To achieve the above objective, the policy must ensure, among other requirements, the management of natural resources in the country and the environment in general - in order to preserve their functional capacity and production for present and future generations.

Environmental Law (20/97)

The 1997 Environmental Law (Law no 20/97) sets the environmental foundations for the policy and institutional framework for environmental management in Mozambique. The Law establishes the scope, institutions and appropriate management tools to deal with environmental management issues.

The MTA is the main government entity with the responsibility for coordination of government actions related to environment. MTA has the following competencies:

- Inter-sectorial coordination of environmental issues;

- Wildlife, Forestry and Ecosystems protection and conservation;
- Promotion of Rural Development;
- Research planning and environmental management;
- Territorial planning and land management;
- Environmental impact assessments;
- Environmental education and dissemination of information; and
- Inspection and control.

In terms of principles to be followed for sustainable development, the Environmental Law of 1997 establishes the following:

- Use and rational management of natural resources;
- Recognition and value of community knowledge and traditions;
- Environmental management based on preventive systems;
- Integrative management;
- Citizen participation; and
- Responsibility.

Standards of Environmental Quality and Emission of Effluents (Decrees 18/2004 of 2 June, amended by Decree 67/2010 of 31 December)

Establishes standards for environmental quality and effluent emissions, aiming at the control and maintenance of the permissible levels of concentration of pollutants in the environment. According to this decree, there should be no discharges, accumulation of waste or actions that imply the contamination of water bodies as well as discharges of effluents without previous treatment.

Ministerial Diploma 180/2004 - Regulation on the quality of water for human consumption

Sets the parameters for water quality intended for human consumption and the means to carry out its control, aiming to protect health the harmful effects resulting from any contamination that may occur in the water System supply, from capture to the consumer.

Decree no. 30/2003, of 1 July - Regulation of Public Water Distribution and Wastewater Drainage Systems

Defines the technical conditions that the public water distribution systems in Mozambique must obey, in order to ensure their overall good functioning, preserving the public health and the safety of users and facilities. This instrument applies to public drinking water distribution systems, which have, at least, storage and distribution network infrastructure.

Public Consultations Process (Ministerial Diploma 130/2006 and Decree 54/2015)

This legal instrument defines the basic principles related to public participation, methodologies and procedures that should be used. It considers public participation an interactive process that begins in the design phase and continues throughout the lifetime of the project. For Category A+, A, and B activities, public consultations are compulsory; whilst for Category C is not required.

Environmental Impact Assessment (Decree 54/2015)

The Environmental Impact Assessment (EIA) is recognized to be a vital procedure for an effective development planning and is therefore a determinant watershed for environmental protection in the country.

It includes provisions for ESIA, Environmental and Social Management Plans (EMP), and environmental auditing. Mozambique's EIA is regulated by the Decree 54/2015 of December 31. The EIA regulation establishes four EIA categories, namely:

- **Category A+:** For projects with likely significant environmental and social impacts where decision-making is reserved for the central level, and where a full ESIA is required to be undertaken and supervised by Independent Specialists Reviewers with verifiable experience;
- **Category A:** For projects with likely significant impacts where decision making is reserved for the central level, in these instances a full ESIA is required;
- **Category B:** For projects with impacts considered less significant or which require less complex mitigation measures, decisions are made at provincial level, for instance, when a simplified ESIA is required;
- **Category C:** Is for small projects that may not require an ESIA, but must follow the regulations for environmental impact assessment. For these projects, decisions are also made at provincial

level. The decree 54/2015 of December 31 therefore has decentralized the levels of decision making in the ESIA process, transferring decision powers from the national level to the DPTAs, which are the entry points for development projects applications.

The procedure is composed of 4 phases:

a) Screening

The first step is to register the project with MTA, through the DPTA of the province where the project will be implemented. The registration is done by submitting a Preliminary Environmental Information Sheet, in accordance with the established in Decree nº 54/2015. The project registration can be done by the project proponent or by consultants duly registered with MTA.

The next step is to submit the process instruction to provide elements to MTA with which to categorize the project according to the following categories:

- Category A +: Subject to an Environmental Impact Study and supervision by independent expert reviewers, with proven experience;
- Category A: the project must undergo a detailed Environmental Impact Study (EIA);
- Category B: the project must be submitted to a Simplified Environmental Study (EAS);
- Category C: the project is exempt from EIA or EAS, however, subject to the submission of good environmental management procedures to MTA.

The proponent, through a Consultant accredited with MTA is responsible for the preparation and submission of a Process Instruction report with the objective of obtaining a categorization validation by MTA.

Environmental assessment authorities (DPTA, SPTA, MTA) may, in due course, request a visit to the project's implementation sites to assess the initial socio-environmental conditions.

Pre-evaluation

If any investment is likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented the project is classified as category A+. The ESIA will be more stringent than if the investment has impacts which are less adverse, site-specific, mostly reversible and

where adequate mitigation measures can be designed (Category B). For investments with multiple sub-projects, this screening is often done in the form of a checklist of potential impacts.

An ESMP Proposal of measures, which is normally an integral part of the ESIA is carried in order to avoid, mitigate and/or eliminate adverse effects both at the planning, design and installation stages, and during operation and eventual decommissioning of the project.

Scoping Definition:

The Scoping phase explores fundamental issues and identifies any potentially significant positive and negative environmental (and social) impacts associated with the proposed development, helping to determine the scope of the Environmental and Social Impacts Assessment.

The timeline for scoping for the development of terms of reference for category B projects is established at 15 working days, EPDA (Environmental Feasibility Study and Scope Definition) 30 working days for category A projects, and between 40 and 50 working days for category A+ projects.

The timeline review for EIA A projects is 45 working days, A+ is 60 working days and for simplified EIA for B projects is 30 working days.

Public Participation is mandatory for projects in category A+, A and B, according to the decree nr. 54/2015.

For integration of EIA into decision making there are three phases of licensing:

1) A temporary license after approval of the EPDA/Scoping report-Optional (valid for 2 years);
2) A license for installation of the project, after de EIA and the resettlement plan (if applicable) are approved (valid for 2 years)
3) An operational license when there is full compliance with the EIA and full completion of the Resettlement plan (if applicable) (valid for 5 years).

The EIA process is further regulated by the General Directive for Environmental Impact Studies (Ministerial Diploma n º 129/2006 of July 19) which provides guidance on the assessment of the environmental and social effects of projects.

The Mozambican Environmental Law also establishes that an EIA must be undertaken for all development projects, policies, plans and programs that may have a significant impact on the environment, and recognizes the need to guarantee the participation of local communities and to utilize their knowledge and human resources in the protection of the environment. Within the context of project ESIA, a Ministerial Diploma no 130/2006 of July 19 was introduced to stress the need for and importance of public participation process, which seeks to integrate non experts views into ESIA decision-making process, by allowing individuals and civil society to voice their concerns with regards to environmental sustainability of proposed projects.

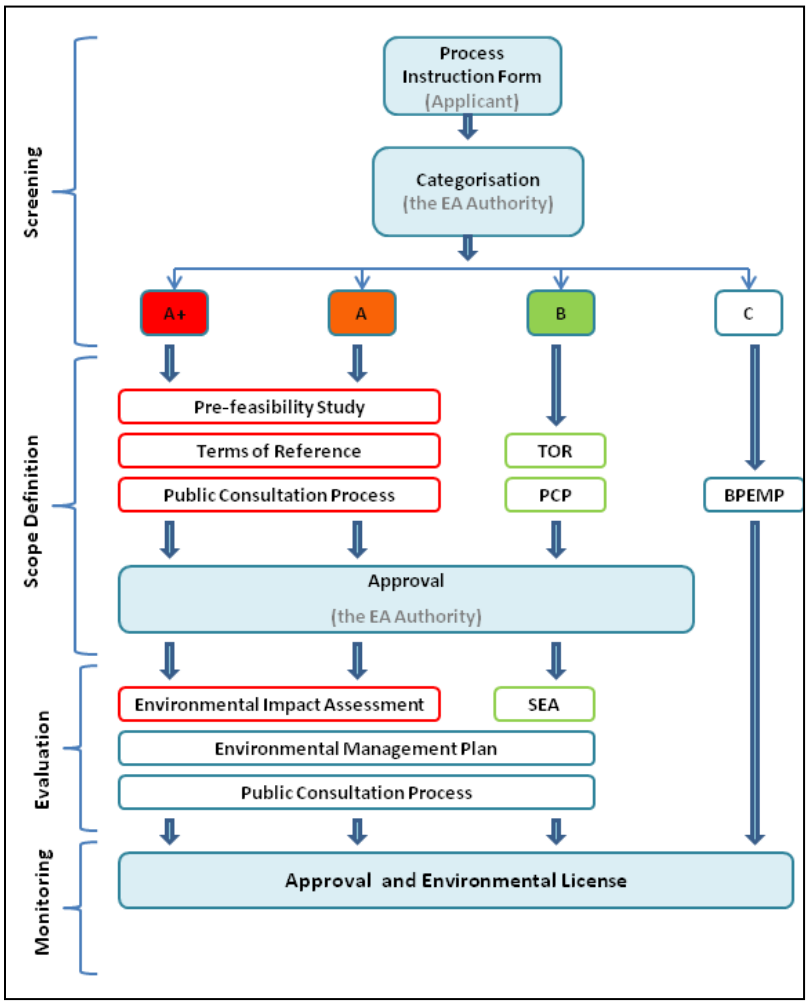


Figure 1: ESIA process as per decree nr 54/2015 of December 31

Resolution 5/95 - National Environmental Policy

The national environmental policy represents the basis for the sustainable development of Mozambique. The main objective is to ensure the sustainable development of the country considering its specific conditions, through an acceptable and realistic compromise between socio-economic progress and environmental protection.

Decree 25/2011 - Regulation on the Environmental Audit Process

The Regulation establishes that activities with the potential to interfere with the environment must be subject to public environmental audits (carried out by the licensing entity or private ones. This is an important instrument of management and systematic, documented and objective evaluation of the functioning and organization of the process management system for controlling and protecting the environment, whose main objectives are necessarily to assess compliance with the requirements stipulated in the ESMP, identify any case of non-compliance and determine whether the objectives and targets have been achieved.

Decree 11/2006 - Regulation for Environmental Inspections

The Regulation on Environmental Inspections establishes the legal mechanisms for inspection of public and private activities that may cause negative impacts on the environment. The above regulation has as its main objective to regulate the activity of supervision, control and inspection, in relation to the compliance of environmental protection standards at national level.

Ministerial Decree 129/2006 – General Guidelines for Environmental Impact Studies

The Directive serves as a minimum basis to guide the environmental impact assessment process, and the process documents must follow the structure included therein and the necessary information requirements. Defines the format, general structure and content of the Environmental and Social Impact Assessment report.

Regulation on the Management of Substances that Deplete the Ozone Layer, Resolution No. 78/2009 of December 22

The Regulations restrict the importation and use of chemicals that deplete the ozone layer. This Resolution, consisting of 3 articles, deals with the prohibition of import, export, production, marketing and transport of substances damaging the ozone layer.

Decree 83/2014 - Regulation for Hazardous Waste Management

This decree establishes the rules for the production and management of hazardous waste in national territory and the device is applicable to all natural and legal individuals, public and companies involved in hazardous waste management. The device establishes, among other requirements, the prior environmental licensing of the facilities, as well as equipment intended for the storage, transport, deposition, treatment, use, or disposal of hazardous waste in the country, certification of operators and transporters of hazardous waste and obligations of producers, transporters and operators of hazardous waste, as well as methods of treatment, disposal and disposal of hazardous waste.

Law for the Protection, Conservation and Sustainable Use of Biological Diversity - Law No. 16/2014 of June 20th (Amended by Law 5/2017 of May 11th)

Establishes the basic principles and norms on the protection, conservation, restoration and sustainable use of biological diversity in conservation areas, as well as the framework of an integrated administration, for the sustainable development of the country. Defines types of conservation areas Defines that each conservation area must have a Management Plan that constitutes a management guide. These plans are official documents (similar to land use plans). It also defines responsibilities for the recovery and restoration of biological diversity, infractions and penalties.

Regulation for the Control of Invasive Alien Species, Decree No. 25/2008 of 1 July

It establishes legal norms that prevent the introduction of evasive exotic species that threaten ecosystems, habitats or species in its territory, insofar as they include the control and elimination of such species. It is prohibited to carry out restricted activities involving invasive exotic species, without prior authorization (Art.º 8).

Resolution 10/95 – Land National Policy

The State must provide the land for an investment and is responsible for land use and physical planning, although plans can be made by the private sector.

Land use rights (Law No. 19/1997)

Establishes the rights of land use, including details on customary rights and procedures for acquisition and use of land titles by communities and individuals. The law recognizes and protects the rights acquired through inheritance and occupation (customary rights and duties of good faith), except for legally defined reserves or areas where land has been legally transferred to another person or institution.

Law 19/1997 – Land Law

This Law defines land use and benefit rights, including details on customary rights and procedures for the acquisition of DUATs (Direito de Uso e Aproveitamnto de Terra) by communities and individuals, as well as recommending a consultation-based acquisition process that recognizes customary rights in order to identify the requests of communities and community members without land titles. The Law also defines that the DUAT can be acquired through occupation by national natural persons, who, in good faith, have been using the land for at least ten years, and by local communities that acquire the right to use and benefit from the land in the form of ownership. According to the law, all citizens have equal rights and duties, with women having equal rights with men in terms of access to land, as well as housing.

Decree 31/2012 – Regulation for the Resettlement Process Resulting from Economic Activities

This regulation establishes basic rules and principles on the resettlement process resulting from economic activities, whether public or private. The same regulation mentions that its observance and safeguards for social issues arising from the demand for natural resources, given that the country has been dictating the need for more physical spaces for the installation of economic enterprises, which may at some point imply the resettlement of the population without observing socioeconomic and cultural aspects. The decree grants primacy to district governments in approving resettlement plans after the opinion of the sector responsible for territorial organization and in consultation with other key sectors, namely agriculture, local administration, public works and housing.

The same decree establishes non-recommended areas, namely: areas with significant environmental impacts such as erosion, floods, protected areas according to the legislation.

Ministerial Decree 181/2010 – Guidelines for the Expropriation Process Resulting from Territorial Planning

This instrument reiterates the provision contained in Chapter 10 of Decree No. 23/2008 of 1 July, which indicates that the expropriation of land for the benefit of public interests must be made public by the Council of Ministers, upon proposal by the proponent.

Defines compensation payment methods, form for calculating compensation for properties (based on typology, importance, quality, location and depreciation), trees (based on age, growing period, average annual production, selling price) and annual crops (based on production per hectare).

Law 10/88 – Cultural Heritage Law

It aims to protect material and non-material assets of the Mozambican cultural heritage. Material cultural assets include monuments, groups of buildings with historic, artistic, or scientific importance, places or locations (with archaeological, historic, aesthetic, ethnologic or anthropologic interest) and natural elements (physical and biological formations with particular

interest from an aesthetic or scientific point of view). If archaeological objects are found during sub-projects implementation, this law shall apply and the contractor shall communicate the finding to the appropriate cultural heritage agency, immediately.

Law 23/2007 – Labour Law

This law governs work relations between employers and domestic and foreign workers in all industries. The law includes principles of safety, hygiene and health of workers. Under the law, an employer must provide their employees, good physical condition, environmental and moral work, inform them about the risks of their work, and instruct them about compliance with the standards for hygiene and safety at work. The employer must also provide first aid to workers in the event of accidents, sudden illness, poisoning, or feeling unwell.

Regulation of the Legal Regime for Accidents at Work and Occupational Diseases, Decree No. 62/2013 of April 4

The Regulation on the Legal Regime for Occupational Accidents and Illnesses establishes the legal regime for accidents at work and occupational illnesses, as well as the rules relating to accidents at work. The Regulation applies to national workers, as well as foreign workers, on behalf of third parties, as well as directors, directors, managers or equivalent. However, it does not apply to employees and agents of the State, or of Local Authorities (article 2).

Establishes the legal regime for accidents at work and occupational diseases, applicable to national and foreign employees. Characterizes accidents at work and occupational diseases, the responsibilities of employers and workers in terms of health and safety at work; including institutions responsible for accidents and occupational diseases.

The employer is obliged to guarantee occupational health and safety conditions for workers to prevent accidents at work. It should also develop training actions for workers on the rules for preventing accidents and occupational diseases in the construction and operation phase of the project.

Law 3/2022 of February 10 – Public Health Law

Establishes mechanisms for the protection and promotion of health, prevention and control of diseases, as well as threats and risks to Public Health and revokes Law No. 8/82, of 23 June, the Law that Establishes the Regime Law on Crimes Against Public Health.

Decree No. 26/2009 of 17 August (approves the animal health regulation)

The objectives of this Regulation are: a) To protect public health; b) Protect the domestic and export markets for animals, products of animal origin and others that may be directly or indirectly affected by animal diseases; c) Serve as a basis for carrying out epidemiological surveillance, control and eradication of diseases of great economic importance and/or for public health; serve as a basis for compensation for losses caused by animal disease; e) Serve as a basis for the observance of animal welfare conditions. In the case of poultry slaughterhouses, Mozambique does not have specific legislation, and for this purpose animal health regulations and good international practices for the sector must be used.

National water policy

The National Water Policy (Resolution No. 42/2016, of December 30) which revokes the 2007 policy, comes from the need to adapt the regulatory framework of the water sector to the objectives of Sustainable Development, namely Number 6 which is to ensure the availability and sustainable management of water and sanitation for all. It defines its main objectives in the medium and long term. For the purposes of this study, the following stand out:

- Efficient use of water for economic development (including irrigation)
- The promotion of water conservation in the management of water resources;
- reducing vulnerability to floods and droughts;
- The promotion of peace and regional integration, including the integrated management of rivers.

Irrigation Strategy

The Irrigation Strategy (EI) was approved by the Council of Ministers on 21 December 2010 and is based on 6 pillars, of which the following should be mentioned:

- Development of Infrastructure, Management and Use of Irrigated Areas;

- Development of a favorable environment for the private sector, including irrigators; It is
- Transversal Aspects (climate changes, water pollution, gender, HIV and diseases typical of aquatic environments).

National Irrigation Program (PNI) 2017-2042

The National Irrigation Program (Resolution No. 45/2016 of December 30th), approved by the Council of Ministers on December 21st, 2016, was prepared in such a way as to be in line with other regulatory instruments in the Country and in the Agrarian Sector, such as the Government's Five-Year Plan (PQG), the Strategic Plan for Agrarian Development (PEDSA), the National Investment Plan for the Agrarian Sector (PNISA); the Irrigation Strategy (EI), and the National

Water Resources Management Strategy (ENGRH).

The general objectives of the PNI are:

- Establish a national instrument for action, management and support for the development of irrigation with strategic options Establish a framework and plans for development and investment in irrigation in the context of watersheds and agricultural development corridors;
- Ensure sustainable expansion of irrigated agriculture including national and efficient use of land and water resources
- Contribute to Mozambique's socio-economic development.

Water Law

The Water Law (Law nº 16/91 of 3 August) aims, according to its Article 2, to define a series of parameters linked to the water resources management policy, the general legal regime of protection, conservation, inventory, use and exploitation, control and inspection of water resources, as well as the definition of powers attributed to the Government in relation to public water domain.

Regulation on the Management of Pesticides

This regulation (Decree nº 6/2009) arises from the need to regulate the management of pesticides in the country, in order to guarantee public health and the quality of the environment, under the provisions of article 9 of Law nº 20/97 of 1 October - Environmental Law, Its objectives and scope of application are defined in its Article 2: o Ensure that all processes involving work or handling of pesticides are carried out without prejudice to public, animal and environmental health.

Regulation on the Management of Fertilizers The regulation on the Management of Fertilizers (Decree nº 11/2013, of April 10)

Aims to ensure the quality of fertilizers circulating in the country, observing the principles of protection of public, animal and environmental health. The same applies to the registration, production, export, import, transport, use, donation, commercialization, distribution, handling and management of fertilizers, by natural or legal persons.

Climate change

Mozambique remains extremely vulnerable to climate variability and change. Droughts, severe flooding, and coastal storms are increasing in frequency and severity. This has affected the country's economic performance. Increased variability of weather and climate patterns could slow and even reverse the progress made on poverty reduction in recent years in Mozambique. While uncertainties remain, it seems likely that climate and weather variability will increase exerting important impacts on the water sector and related livelihoods. The environmental legal framework is overall referred to as the need for balanced development and recognized the vulnerability of Mozambique to Climate Change. In 2010 the country approves the National Climate Change Adaptation and Mitigation Strategy (NCCAMS), which represents a turning point in Mozambique's response to the challenges of climate change, indicating a clear set of strategic actions to be implemented so that Mozambique can ensure a more prosperous, resilient and sustainable future.

2.5. Banks Operational Safeguards and E&S Assessment Procedures (ESAP)

The Bank's operational safeguards are hinged on a total of 13 crosscutting policies covering a range of issues such as Gender, poverty, civil society organizations climate change and others. The main African Development Bank Safeguard Policy document guiding the preparation of this project is the Integrated Safeguards System (ISS) which was approved by the Bank Board in 2013. The ISS includes a component stipulating the Bank's Environmental and Social Assessment Procedures (ESAP) which guides all steps to be fulfilled by the Bank and any borrowing or grant receiving entity. The main purpose of ISS is to improve decision-making and project results in order to ensure that Bank-financed projects, plans and programs are environmentally and socially sustainable as well as in line with Bank's policies and guidelines. A major environmental assessment task in project lending operations is the screening of projects to determine to which environmental category a project shall be assigned. The categorization is based on the Project Brief prepared on the basis of baseline information provided by the Borrower and will be based on the process developed in the ESAP. The Project Brief, which is prepared at pipeline entry stage of a project in its life cycle, shall include contextual information and data on key environmental and social aspects of the project. Projects shall be mandatorily assigned to one of following four categories:

(i) **Category 1**: Category 1 projects are likely to induce significant and/or irreversible adverse environmental and/or social impacts, or to significantly affect environmental or social components;

(ii) **Category 2**: Category 2 projects are likely to have detrimental site-specific environmental and/or social impacts that are less adverse than those of Category 1 projects. Likely impacts are few in number, site-specific, largely reversible, and readily minimized by applying appropriate management and mitigation measures

(iii) **Category 3:** Require no environmental assessment;

(iv) **Category 4**: Involve investment of Bank's funds through Financial Intermediaries (FIs) in subprojects that may result in adverse environmental and/or social impacts.

Based on the process of screening and categorization under this regulation the Bank has categorized this project as category 1 entailing the development of the ESIA/ESMP and the applicable procedures. The ESIA/ESMP aims to enhance the project benefits and (in order of priority) prevent, minimize, mitigate, or compensate for adverse impacts.

The ESIA/ESMP has been developed to ensure environmental and social due diligence for the project. Based on this, the table below identifies and justifies the Bank OS that will be triggered the activities described above.

Table 1: AfDB set of Operational Safeguards

Operational safeguard	***Triggered***	***Justification***
OS 1: Environmental and Social Assessment	***Yes***	The Operational Safeguard 1 is a mandatory requirement for projects funded by the AfDB to its borrowers. The remaining safeguards support the implementation of the first and indicate specific requirements related to different environmental and social issues, including gender and vulnerability, which are triggered if the evaluation process shows that the project will have certain risks. Establishes requirement of project categorization based on the environment and social risk; Define instruments for assessment and management of ES impacts (ESIA, RAP, ESMP).
OS 2: Involuntary Resettlement: Land Acquisition, Population Displacement and Compensation	***No***	The policy is not triggered. Under this project is not expected any land expropriation. However, expansion of agriculture areas (vegetation cleaning and soil preparation) my result in minor resettlement issues
OS 3: Biodiversity, Renewable Resources and Ecosystem Services	***Yes***	The project activities are not expected to have a significant impact on any local natural environment, not even on ecosystem services. However, certain activities may involve clearing

		vegetation. In such cases, the project must comply with the requirements of this OS.
OS 4: Pollution Prevention and Control, Hazardous Materials and Resource Efficiency	***Yes***	• Manage and reduce pollutants resulting from the project— including hazardous and nonhazardous waste—so that they do not pose harmful risks to human health and the environment; and • Set a framework for efficiently using all of a project's raw materials and natural resources, especially energy and water.
OS 5: Labour Conditions, Health and Safety	***Yes***	This OS will be targeted due to the construction activities that will be done. Form the agriculture side the use of agrochemicals will impose some risks if measures are not taken to the health of the users • Protect workers' rights; • Promote compliance with national legal requirements and provide supplemental due diligence requirements where national laws are silent or inconsistent with the OS; • Protect the workforce from inequality, social exclusion, child labour, and forced labour; and • Establish requirements to provide safe and healthy working conditions

3. PROJECT DESCRIPTION

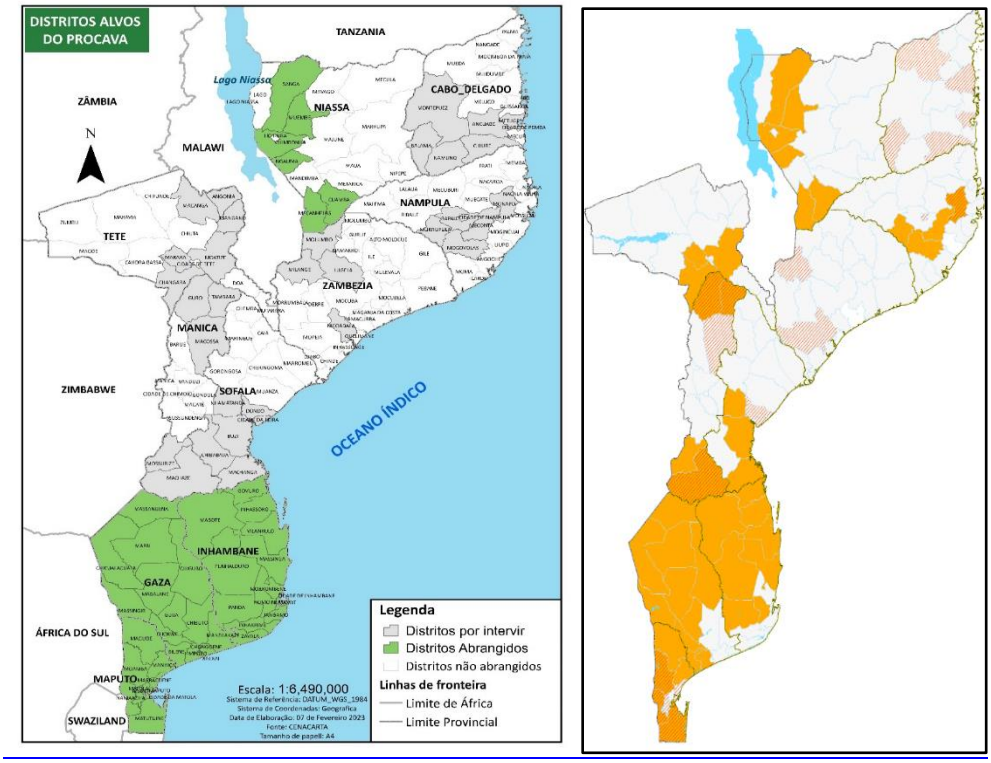
3.1 Context

The PROCAVA seeks to sustainably contribute to poverty reduction, improve food and nutrition security, increase incomes and build resilient livelihoods for inclusive rural transformation in Mozambique. The premise for this intervention is the food security challenges which Mozambique is facing due to rapidly growing population, evolving food patterns and increasing demand for animal proteins. Current production is not enough to meet the prevailing demand levels, from both the quality and quantity perspective. The country's food production capabilities is further weakened by climatic shocks. To address these, the Project applies a three-pillar approach: to improve production and productivity of the maize, soybean and poultry value chains; build market-related climate-resilient infrastructure, create market linkages and add value; while strengthening local capacity to implement and manage the project.

As a result of the project, Mozambique will achieve increased production, processing, and access to market for the maize-soybean-animal poultry value chains, increased net income from climate-resilient Agri-Food Value Chains by rural women, men and youth, increased access to financial services for target value chain farmers and agribusinesses, enhanced resilience and response to climate shocks and an enabling environment for agri-SME development and increased private sector participation in the target value chains.

3.2 Project Location

The project will be implemented in the provinces of Maputo, Gaza, Inhambane, Sofala, Manica, Tete, Zambezia, Nampula, Cabo Delgado and Niassa where the Bank has implemented some of its pilot projects that can be leveraged by this project. The project will target smallholder farmers, emergent and private farmers that are working in the selected value chains under an out-growers' schemes.



3.3 Project Justification

The Bank has comparative advantage in development of agriculture, in line with the Bank's Ten-Year Strategy (TYS: 2013-2022), particularly in its operational focus areas (private sector infrastructure) and areas of special emphasis (agriculture and food security). This project is aligned with the Banks' Feed Africa Strategy for Agriculture Transformation in Africa (2016-2025)), "Industrialise Africa" and "Improve the quality of life for the people of Africa". The project recognizes interlinkages among private producers, emergent and smallholder farmers for reducing hunger, supporting sustainable agriculture, promoting gender equality social services, industrialization, innovation, and infrastructure development for ending rural poverty and tackling climate change. The project is also expected to provide an enabling economic environment for private sector development and participation.

The Bank must intervene to contribute to the expansion of the demand for agricultural products as the current production is not enough to meet the food needs of the country, from both the quality and quantity perspectives. This is attributed to the increasing population, increasing incomes, evolving urban markets, and the growing private investments in the country's agri-food and tourism sectors and exacerbated by climatic shocks to which many parts of the country are

subjected. This, therefore, requires measures to be taken to replace the prevalent unsustainable crop/livestock practices with appropriate technologies, climate resilient management practices and agricultural production systems.

The investments will also complement previously Bank financed projects such as the Baixo Limpopo and climate Resilience project (BLICRP); Pemba Lichinga Integrated Development (SPAZ); Agriculture Value Chain and Youth Empowerment Project (AVACYEP); Job Creation and Livelihood Improvement Project (PROGER) which have invested in promotion of soya and maize production, constructing feed stock production infrastructures, processing facilities; Unilurio Skills for Agriculture and Industry Project for laboratory and certification facilities. The project will also include actions related to the Technologies for African Agricultural Transformation (TAAT) an initiative of the Bank to help African countries significantly increase agricultural and livestock productivity and production rapidly and at scale by adopting existing technologies including high yielding seed varieties.

3.4 Project Components

Components	***Description***
Component1: Climate Resilient Production & Productivity Improvement (of target value chains of maize, soybean, poultry): USD 17.4 million (52.7%)	**Sub-component 1: Agriculture Value Chain Development (USD 6.0 million).** This sub-component aims at contributing to improve production and productivity of poultry value chain and associated feed stock crop (soyabean and maize). It will also improve backward and forward linkages of farmers to different stakeholders (input suppliers and produce/product buyers) of the target value chains.
	Sub-component 2: Climate Change Information and Digital Agriculture System (USD 6.3 million): This sub-component will address some of the climate threats the country is facing related to floods and drought and desertification in the Southern part and floods and cyclones in the Central and Northern part affecting agriculture production and development of value chains. Under this component the project will purchase and install 2 high tech radars and climate

	proof market road. The project will also install and manage a Digital Agriculture System.
	Sub-Component 2: Strengthening of Seed Development Systems (USD 3.1 million)– interventions will involve supporting the development of seed systems by strengthening the Mozambique Agricultural Research Institute's (IIAM) capacity to develop 2000 ha for producing breeder and foundation seeds of Maize and Soyabeans each as well as organizing and supervising participating emerging farmers, farmer organizations and out-growers to produce basic seed; Access to Agricultural Inputs – Farmers interested in acquiring improved seeds and fertilizers will be supported through a one-off cost sharing grant mechanism. Support agro-dealers for improving input supply. The project will also support the distribution of certified seeds to farmers using SUSTENTA.
	Sub-Component 3: Construct Poultry Infrastructure (2.0 Million): Provision of necessary facilities for feed production and supply, production of broiler day old chicks; storage; processing; marketing of the produce of the project; disease diagnosis and treatment of the chicks. Construction of 4 hatchery facilities with a capacity for 10800 day-old chick a week and 4 slaughter houses with a capacity for 1000 BPH.
Component 2: Value addition, Market-Related Climate-Resilient Infrastructure and Linkages; USD 9.55 (28.7%)	**Sub-Component 1: Market Approach (USD4.05 million):** The Project will take on a market-oriented approach, by linking smallholder producers in the target value chains to processors, aggregators, off-taker arrangements in the demand areas. It will focus on improving the readiness of maize, soybean and poultry producers to engage in out-grower schemes and/or contract farming structures and enhance their capacity to meet quantity and quality requirements of processors. The project will use the feed processing mills

	constructed under the Bank funded projects to support the implementation of the poultry value chain.
	Sub-component 2: Development of infrastructure and Financing mechanisms for the development of poultry value chain (USD 5.5 million). One of the key challenges for the poultry sector is access to affordable finance. Commercial Banks are unwilling to finance producers because they are not commercially viable. Even if the government introduces a risk guarantee mechanism, this does not result in lower cost of borrowing – interest rates remain high. The Project will therefore consider supporting the producers to be commercially oriented by connecting production with market demand, through guaranteed contract arrangements and offtake agreements, building their capacity to run commercial poultry operations, and prepare viable business proposals. It will consider a revolving grant fund to provide project beneficiaries, organized in commercially oriented cooperatives and input suppliers access to reimbursable grants to purchase inputs, build climate-resilient infrastructure and procure primary processing equipment. Specific activities will include feasibility study/advisory to structure the fund; establishment of the Poultry Sector Revolving Grant fund; competitive selection of the Fund management; TA/capacity building for recipient SMEs on business and financial management.
Component 3: Institutional and Policy Strengthening and Implementation Support UA 6.09 million (18.3%)	**Sub-Component 1: Supporting the Development of Polices and Strategies (USD 2.09 million):** The component will conduct several in-house strategic studies: (1) to provide the country policies and strategies, and standards poultry sector development; (2) gender dimension of poultry value chain and adaptation and resilience. Other studies will be identified during the project implementation. The project will also provide capacity building initiatives on hygiene and

	biosafety measures for poultry production, food processing, business management.
	Sub-component 2: Project Implementation including training, E&S safeguards, Audit and project management (USD 4.0 million): all the coordination and monitoring activities of the project, including those related to administrative and financial management, as well as procurements will be carried out under this sub-component including training. It will seek to ensure the efficient conduct and management of the project, focusing on impact results, and paying special attention to capacity building, gender mainstreaming and communication. It includes project management as well as ESMP implementation and monitoring. This component will also include operating costs and audit. The project will recruit several internship staff to support the project and create capacity in the country.

Table 2: Project Components

3.5. Project Implementation Arrangements

MADER through the National Directorate for Cooperation and Market (DCM), will be the executing agency and the Development Fund of the Extension and Rural Development (FAR) will be responsible for overseeing the overall implementation of the Programme. MADER will also liaise and work with other Ministries and partners whose mandates have a direct bearing on the achievement of the PROCAVA goal and development objective.

PROCAVA has a Project Implementation unit, with specialists for Livistoock, Vegetables and Casava. At a central level there are also Environmental and Climate change specialist, Gender and inclusion and social safeguards specialists.

In four provinces, namely: Maputo, Gaza, Inhambane and Niassa, the safeguards implementation is in charge of the local officers, for the same specialties as the PIU.

PROCAVA safeguards unit is under Agrarian Development Fund, and works in coordination with MADER safeguards department, on elaboration and validation of safeguards instruments.

For sub-activities that need to be licenced under MTA, de Unit, works in two distinct ways: With consultants for activities under category A, and for B and C activities the unit specialists coordinate with interested parties the screening process and elaboration of an Environmental and Social Management Plans. The unit has a deep understanding of financer requirements and policies, for safeguards implementation.

For this project, activities related to the operational phase are the main concern when it comes to the unit ability to respond to such demand. Although, the unit assures that is more than capable of implementing the E&S safeguards requirements, they should hire an environmental safeguard assistant or officer to reinforce the PIU for this particular project.

The project PIU, must work in coordination with Environmental and Social Safeguards Department (GSSA), to ensure the correct implementation and elaboration of the environmental and social management instruments to be used in the project.

At the provincial and district levels, technical coordination of the Programme will be undertaken by MADER's relevant units. Such units include the Provincial Department of Veterinary Services (DPSV) the District Directorates of Economic Services (SDAE) and the National Agriculture Research Institutes (IIAM). However, the design process has established that many of these institutions have various capacity limitations and, accordingly, their capacities will be augmented, under Subcomponent 3.1, based on a needs assessment. The existing PROCAVA structures will serve for the activities financed under AfDB funds. The existing National Programme Steering Committee (NPSC) serve as the governing body of the Programme. The NPSC is chaired by the Minister of MADER and composed of membership from institutions with direct relevance to the achievement of PROCAVA's goal and development objective. Regional Programme Consultative Groups (RPCGs) will be progressively set up in each of the three regions of the country (Southern, Central and Northern) following PROCAVA's phasing approach. the Programme Implementation Unit (PIU) will be based at DCM to address implementation issues, debate constraints limiting PROCAVA's effective implementation, reviewing the Programme's approaches, progress, strategies and AWPBs and serve as a forum for coordinating government bodies, and other relevant entities and organizations operating in the PROCAVA area jointly with the PROCAVA team based at FAR. The TAAT and the IIAM teams will work together to build a partnership complementing collaboration between leading research partners for delivery of agriculture technologies. The

TAAT team will support the Government to accelerate implementaiton and deployment of agronomy and the right varieties to farmers.

4. PROJECT AREAS OF INFLUENCE

General Considerations

The ESIA Regulations define the Area of Influence (AoI) as the geographical space directly or indirectly affected by an activity's environmental impacts. Despite this seemingly straightforward definition, in practice the definition of a project's AoI is not an easy task, given that the AoI is a function of a large number of factors which have changing and varying degrees of influence on the areas surrounding the project throughout the course of the project's lifecycle. The AoI can therefore be thought of as the sum of a number of fluctuating factors. The geographical extent of some of these can be partially quantified (e.g. the area of vegetation cut down), while the extent of others is very difficult to measure (e.g. direct and indirect economic effects).

Project impacts also change over time, e.g. a project employing hundreds of workers during construction, but only a small number once operational, has a very different social AoI in those two phases. A further consideration is the presence of other organizations or developments - each with their own AoI - within the AoI of the proposed project, making it very challenging to assign an AoI to each individual development. To this end it is often useful to consider and/or adopt existing units, such as shorelines, catchments, cadastral boundaries (national, provincial, local), linear infrastructure (notably railway lines, roads, rivers, canals etc.) when defining the AoI. Considering the above, determining the AoI therefore requires informed but subjective judgment, based on available information and the knowledge of previous and similar project impacts, combined with practical findings.

4.1. Area of Direct Influence (ADI)

The Project's ADI is made up of two components:

- The footprint area, i.e., the area occupied by the Project's infrastructure; and
- The area where direct impacts from the construction and operational activities will be felt.

The footprint includes the area occupied by the slaughterhouses, feed factories, farms to be established. In the construction phase, the footprint also includes ancillary infrastructure such as

temporary access roads and construction camp sites. It is expected that these ancillary infrastructures will be located in the immediate vicinity of the Project site, but their exact location is not known at this stage. Within the footprint area, several activities will be implemented such as soil stripping, vegetation clearing, earth movements, etc., but they will be contained to their footprint.

When considering the Project's direct impacts outside of the footprint area, it is useful to separate the biophysical and socioeconomic impacts. Therefore, the Project's ADI is delineated as follows:

- **Biophysical environment:** it is expected that all direct biophysical impacts resulting from Project construction and operation will be limited within a corridor centred, with maximum width of 1km, this is due to the high probability of air pollution, especially during construction and operation phase.
- **Socioeconomic environment:** the communities around the different project infrastructures. Even if employment and economy stimulation may extend to other communities, direct socioeconomic impacts are expected to be felt mostly by the villages and communities closer.

4.2. Area of Indirect Influence (AII)

The Project's AII is the geographic area where indirect impacts are likely to be felt, or in other words, where secondary impacts resulting from direct ones are felt. In terms of the biophysical environment, few or no indirect impacts are expected.

Socioeconomic indirect impacts will likely be felt, namely associated with creation of job opportunities, mobilization of workforce, development of informal commercial activities, etc. These indirect impacts are likely to be experienced closer to the project implementation area. The Project's AII is defined as follows:

- Biophysical environment: 2 km radius;
- Socioeconomic environment: the limits of the districts where the project will be implemented.

5. ENVIRONMENTAL AND SOCIAL BASELINE

5.1 Physical Environment

5.1.1. Climate

In Mozambique the climate varies from subtropical in the south to tropical in the center and north. Most of the national territory annually receives over 400mm of precipitation, with the rainy season occurring from October to April. In the coastal zone, rainfall can reach an average of 900 mm per year. The north of the country is more humid, except for the Upper Zambezi region in Tete, which is drier and hotter.

The northern region of the country has a tropical climate, predominantly humid in the higher altitude areas (to the northwest) becoming progressively more arid as altitude and proximity to the sea decrease. In general, the northern region (mainly Nampula Province) is prone to the occurrence of tropical cyclones.

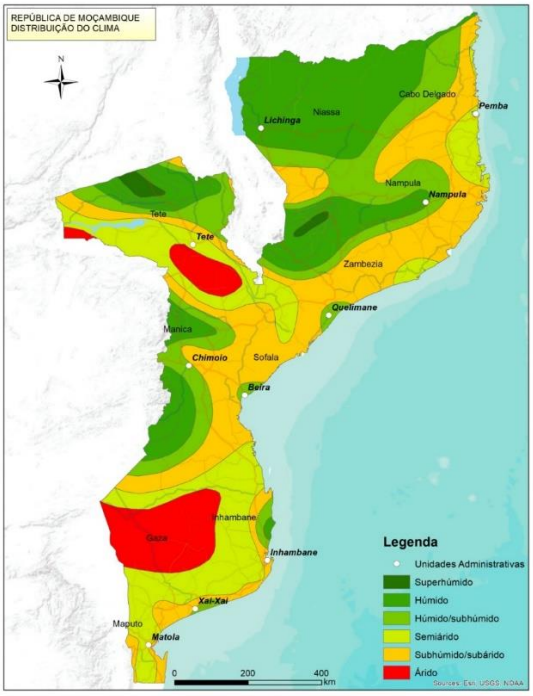


Figure 2: Climate in the project targeted area

Temperature

The minimum temperatures can be observed along the north coast, while the lowest are found in Gaza province. This region also has the widest temperature range in the country. The country has a simple seasonal temperature profile with a low in July (winter) and a peak in November for T max. and, in December, for T min.

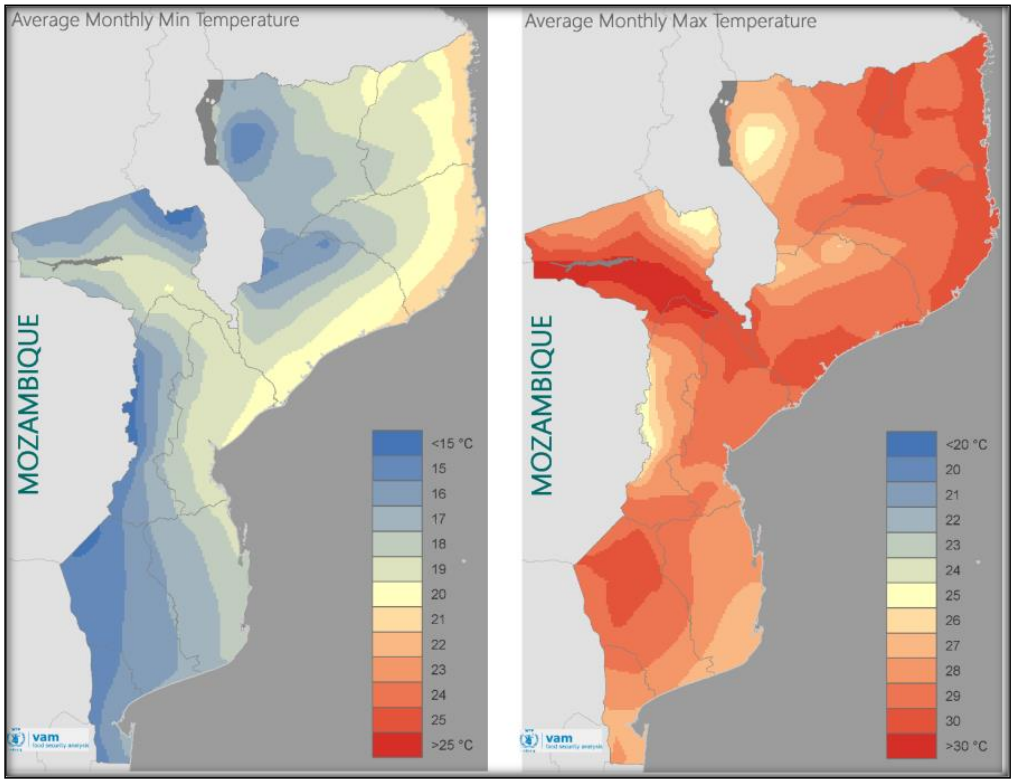


Figure 3: Average monthly minimum and maximum temperature in the project targeted area

Rainfall

The rainy season in Mozambique extends from October to May, with the possibility of small amounts outside this range. Most of the rainfall occurs between November and April. The period of greatest rainfall extends from December to January, with January being the month of greatest rainfall across the country. There is a clear increase from south to north in the average amount of rainfall and a much smaller increase inland towards the coast. The provinces with the longest dry period are: Maputo, Gaza and Tete.

The rainy season extends from October to May, although most of the precipitation is concentrated between November and April (see diagram below).

Areas with less rainfall include the southern provinces of Maputo, Gaza and Inhambane, as well as the southern half of Tete. In the western part of Gaza, rainfall is weaker, with a seasonal amount of 500mm. High rainfall zones include the four northern provinces, Cabo Delgado, Niassa, Nampula and Zambézia. In the latter case, seasonal quantities can reach just over 2,000mm.

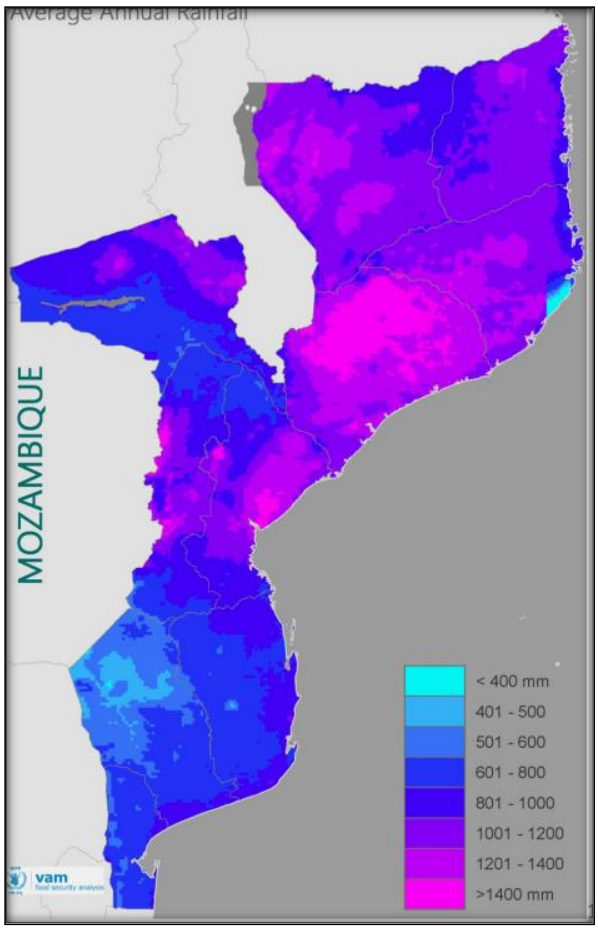


Figure 4: Precipitation

Growing season calendars

Represent the start and end dates of adequate and sufficient moisture conditions to allow the growth of agricultural crops and natural vegetation; the length of the growing season is defined by the difference between these two dates. Moisture conditions derive from the use of the simplified water balance model, which considers available rainfall at each time stage and calculates how much is evapotranspiration and how much is stored in the soil. At each time stage, the water available to crops and vegetation is derived from current precipitation plus water held in the soil during the previous time period. The growing season is considered to start (end) when the available water exceeds (below) 35% of the potential evapotranspiration, according to the classic procedures used by the FAO in the analysis of the water requirement of agricultural crops.

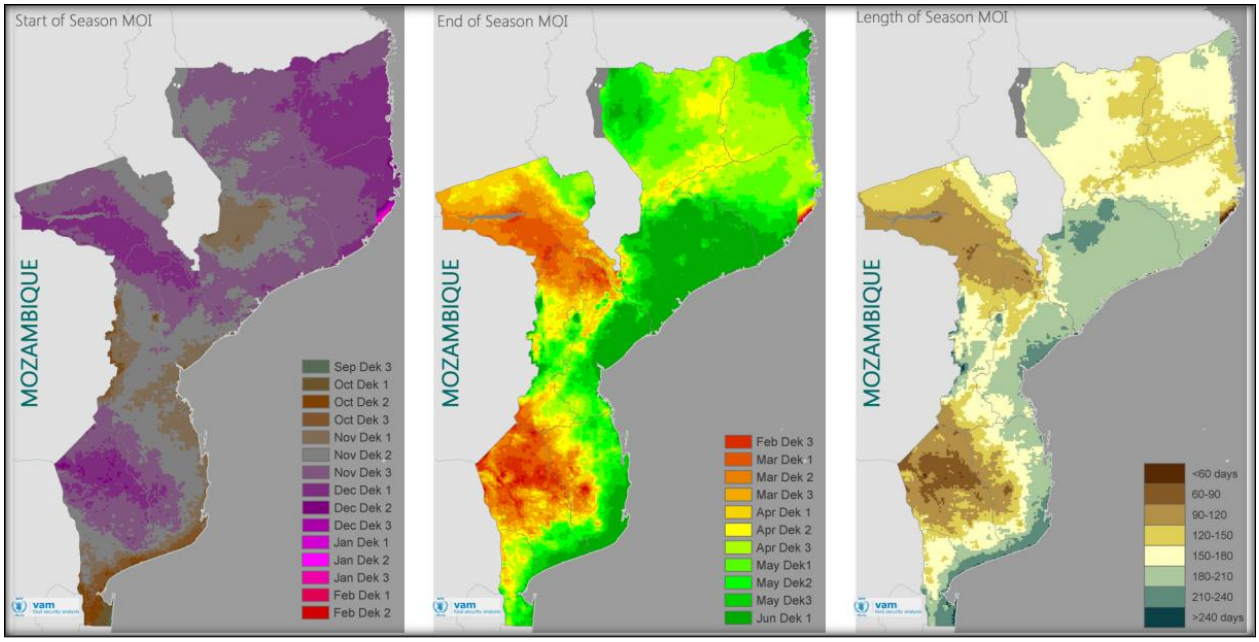


Figure 5:Growing season calendar

Climate Vulnerability

Mozambique is considered the third most vulnerable country in Africa to climate change. In recent decades there has been an increasing frequency and intensity of occurrence of climate disasters, namely floods and cyclones that have resulted in climate disasters, with loss of life, loss and destruction of infrastructure and social equipment and serious socioeconomic impacts.

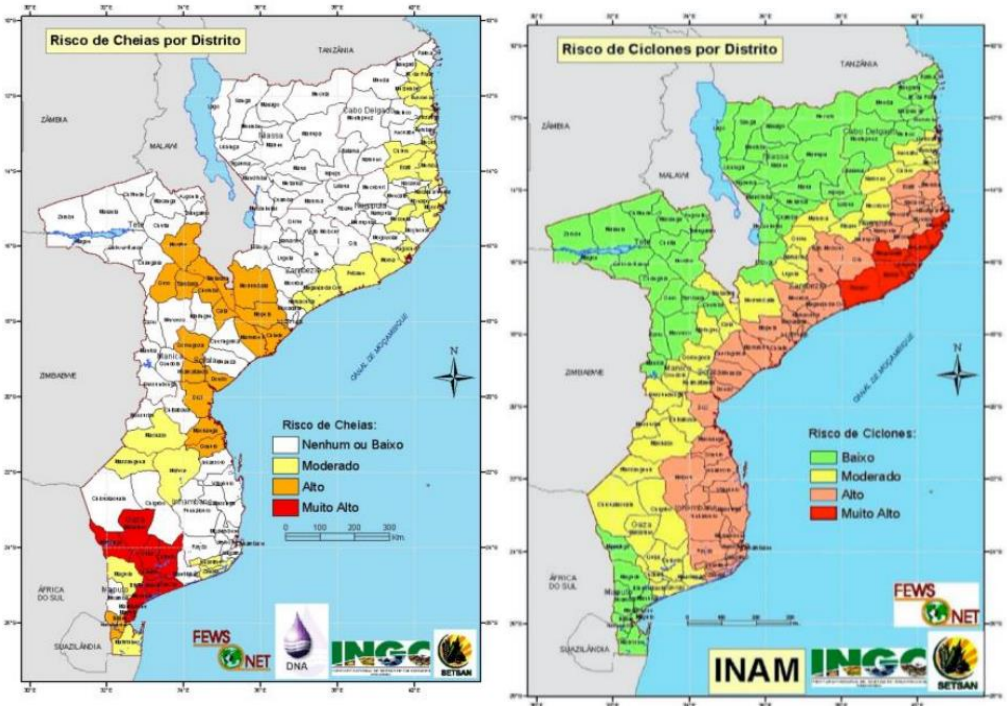


Figure 6: Climate Vulnerability

5.2 Geomorphology, Geology and Soils

Mozambique has two major geological units, the Precambrian and the Phanerozoic. The Phanerozoic is essentially made up of sedimentary rocks that formed between 300 and 700 million years ago. These rocks also include eruptive formations such as basalt and rhyolite. The Phanerozoic presents the four (4) subdivisions: Jurassic, Cretaceous, Quaternary and Karroo. The karroo has huge deposits of coal, germanium, perlites, agates and bentonites. Therefore, relief and soils are generally related to geological and tectonic developments.

The specific geological, topographical and soil characteristics become locally differentiated.

Mozambique has a wide variety of soils typical of tropical regions. In general, in the mineralogical composition of Mozambican soils, ferruginous and aluminous materials predominate, which is why they are considered pedalpheric or ferralitic.

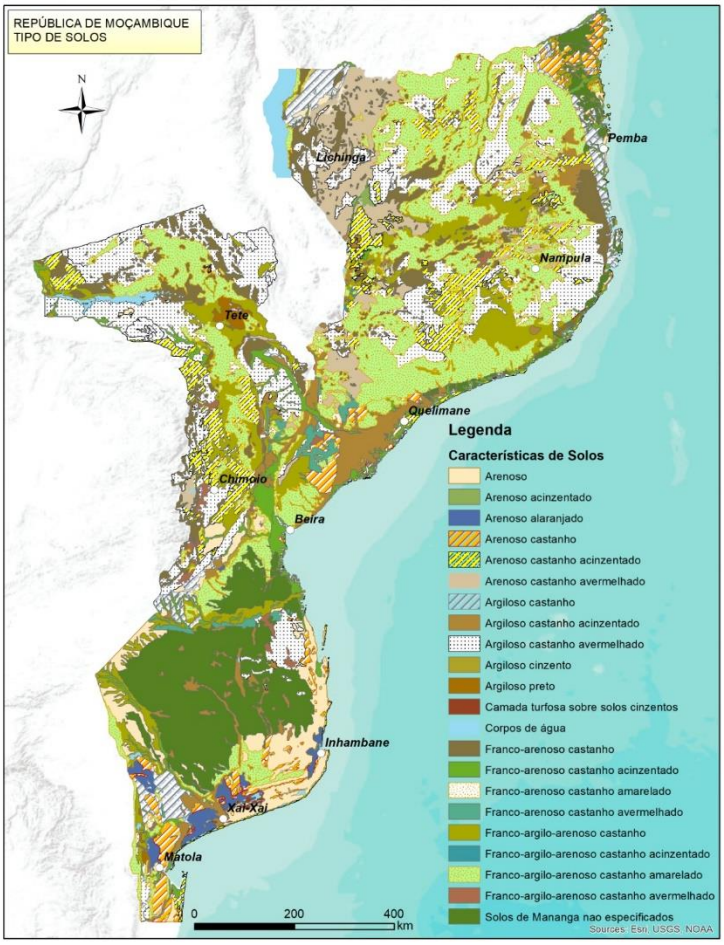


Figure 7: Geomorphology

5.3 Water Resources

Mozambique has a considerable network of river basins with the most important rivers shared by more countries in the region. These rivers drain their waters into the Indian Ocean. The average discharge of rivers in Mozambique is estimated at around 216 billion cubic meters of water per year. About 116 billion cubic meters, equivalent to approximately (54%) of the contribution of all rivers in the country comes from neighboring countries. The Zambezi River flows into central Mozambique and contributes about 88 billion cubic meters of water per year.

5.3.1. Natural Lakes and Artificial Reservoirs

The main lakes in Mozambique are Lake Niassa and Lake Chiúre, located in the north of the country. Lake Niassa is shared with Malawi and Tanzania, and Lake Chiúre with Malawi. Lake

Niassa has an area of 30,000 km2 of which only 7,000 km2 belong to Mozambique, while Lake Chirua has a total area of 1,000 km2 of which 7 km2 are located in national territory. Lake Niassa, in particular, is rich in biological resources, especially fisheries. This fact gives this lake enormous tourist and economic potential. Mozambique, still does not intensively explore the resources of this lake, practicing small-scale fishing at the moment.

In the south of the country and along the coastline, there are several lakes and ponds, many of which have water of an unsuitable quality for human consumption due to the high level of salinity. In addition to these natural lakes, there are artificial reservoirs resulting from the dams. The main reservoirs are Cahora Bassa, Massingir and Pequenos Libombos. The Cahora Bassa and Massingir reservoirs are important from the point of view of fish production, with the "Kapenta" and "Tilapia" fisheries being the most important in the Cahora Bassa and Massingir reservoirs, respectively. The Pequenos Libombos reservoir provides drinking water to the cities of Maputo and Matola.

5.3.2. Groundwater

The potential groundwater resource is estimated to range from 17 billion to 32 billion cubic metres. In Mozambique there are three favorable hydrogeological units for the exploitation of this resource, which are somehow related to the main types of rock formations that occur in our country. These units are: Aquifers related to the geological formations of the Cristalino Complex, which occur in the Central-North and North areas of the country, covering the provinces of Cabo Delgado, Niassa, Tete, Nampula, Manica, Zambézia and part of Sofala. The aquifers of these formations generally produce 1 to 2 cubic meters per hour. The aquifers that occur in the Karroo formations are related to clayey sands and conglomerates of sedimentary series, occurring only in the provinces of Tete and Niassa. Other aquifers in this group are related to volcanic and basaltic rocks and occupy an extensive area throughout the country, from Tete to Maputo. The aquifers are related to the Post-Karroo sedimentary formations, which occur in most of the country, but the water quality is poor for both human consumption and livestock due to the high level of salinity. In general, the occurrence of this resource in Mozambique is limited to the fact that in 60% of the country impermeable rocks predominate.

Another aspect to consider is the fact that part of the productive aquifers occurs in sedimentary basins with water with a high level of salinity. The aquifers along the rivers are the ones that offer

the best quality water. In Mozambique groundwater is essentially used for domestic purposes, being the main source of water in rural areas and for some urban centers namely the cities of Pemba, Tete, Xai-Xai and Chókwè. It is also considered as a supplementary source for water supply to some cities, as is the case of Maputo and Quelimane.

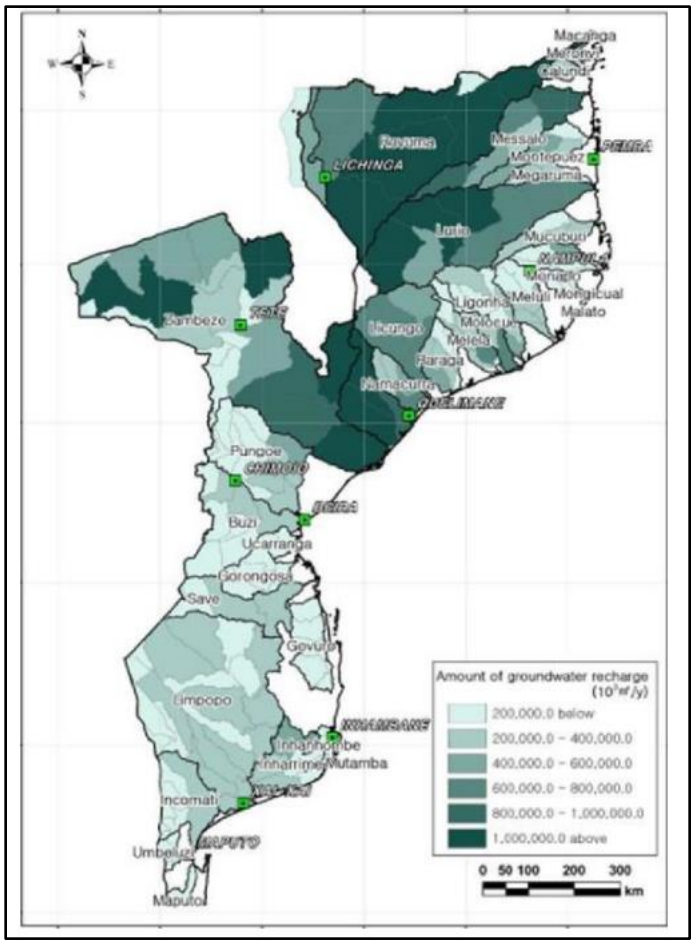


Figure 8: Groundwater

5.3.4. Water availability

The population of Mozambique is estimated at around 27 million inhabitants and is growing at a rate of 2.3% per year. The availability of water to meet the different needs of the population is around 6,250 m3 /inhabitant/year, considering the availability of water within the country and around 13,500 m3 /inhabitant/year of water drained from neighboring countries. Although Mozambique has many rivers, the rate, per capita water availability is lower than the average for

Africa, a fact that is aggravated by the differentiated geographical and seasonal distribution throughout the country and the frequent cycles of floods and droughts in the country.

5.3.5. Current use of water resources

Water from rivers is used for domestic purposes, to satisfy people's basic needs, for agriculture, for industry and for energy production. Current total water consumption in urban and rural areas is estimated at around 100 million m3/year, including consumption for purposes other than domestic use. Water consumption in urban areas represents about ¾ of total consumption. Most water supply systems operate far below their rated capacities.

The dominant agriculture practiced in the country is subsistence and is practiced by the family sector. This type of agriculture does not use irrigation, it is dependent on rain. Mechanized agriculture, which is generally irrigated, represents a very small proportion of the country's annual agricultural production. The irrigated area is estimated at around 3.3 million hectares, but only around 45.3 thousand are currently being used. Water requirements range from 11,500 m3 to 12,000 m3 per hectare per year. Thus, the amount of water needed to satisfy mechanized agriculture in Mozambique is estimated at around 1.2 million m3 per year.

5.4 Biotic Environment

5.4.1. Flora and Habitats

In Mozambique, native forests are spread over around 62 million hectares, which corresponds to 78% of the country's total area, of which 20 million are commercially viable and 8.5 million are in flora and fauna conservation areas. The main vegetation in the country is the miombo that occupies more than 2/3 of the national territory. Other important vegetation types include the Mopane savannahs, coastal forests and acacia savannahs in the south of the country, in addition to the halophyte vegetation of the Changane River valley.

Data from the last forest inventory carried out in 2006 reveal that Niassa has the largest forested area in the country, with around 9.4 million hectares, representing a forested area above the national average of around 77%. In terms of productive forest area, of the national total of 26.9 million hectares, around 6 million hectares correspond to the productive forest area in Niassa, making this province the one with the greatest timber production capacity, with around 23% of country total.

In the provinces of Zambézia, the main types of natural vegetation include (semi-) evergreen humid montane forests and montane grasslands and humid miombo; middle miombo, which occupy most of these provinces; dried miombo; and undifferentiated deciduous dry forests, in small patches in the coastal zone. The evergreen forest presents a density of the arboreal layer, with trees with thick trunks, with wide canopies that rise to a height of approximately 10 to 20 m. In general, the leaves are small and deciduous, rarely wide and evergreen.

The most common type of vegetation in Sofala province is the Miombo forest and covers a large part of the country.

Close to rivers, the most predominant species are native palms, such as Phoenix and Reclinata hyphaene coriacea, reed (Phragmitesaustralis) and leguminous bush (Albizia adianthifolia). The area along the project is dominated by grass (Hyparrhenia dissoluta). Other species prevalent along the road include Bauhinia galpinii, Ochocarpus capassa, Commiphora africana, indigenous Bamboo (Oxytenanthera abyssinica), Combretum molle, Terminalia sericea, Tricodesma zeylanicum and Acacia sp.

Nampula province is characterized by an number of forests in the interior and mangroves along the coast especially in the districts of Angoche and Mogincual.

5.4.2. Artificial forest

The Government of Mozambique and the World Bank are launching a series of landscape-level interventions involving community-level plantation forestry and out-grower schemes through the Mozambique Forest Investment Program (MozFIP) (World Bank 2018a). These are initially focused on 160 communities in nine districts in Zambezia and seven districts in Cabo Delgado.

There are currently around 46,000 ha of artificial forest of exotic species in Mozambique, which corresponds to 4.6% of the country's reforestation potential, estimated at 1,000,000 ha. The plantations of exotic species are mainly composed of species of the genus Pinus and Eucalyptus and were established with the following objectives:

- Resolution of the energy crisis of the 1980s;
- Supply to the local timber industry (pine plantations in Manica);
- Environmental protection (casuarina plantations on the Costa do Sol).

5.4.4. Fauna

Mozambique has a considerable diversity of species of terrestrial fauna, which include mammals, birds, reptiles, amphibians and insects. The terrestrial fauna is uncharacterized, essentially due to poaching and the degradation of many of its habitats. The areas with the lowest population concentration are generally those with a better conservation status of their habitats and greater security and tranquility for wildlife and as a consequence a greater concentration and diversity of species, examples being the provinces of Niassa, Cabo Delgado and Tete.

More than 300 species of plants are on the IUCN Red List, 22% of which are confirmed as being endemic. Mozambique is also home to many species of endangered birds as well as sea turtles and dugongs.

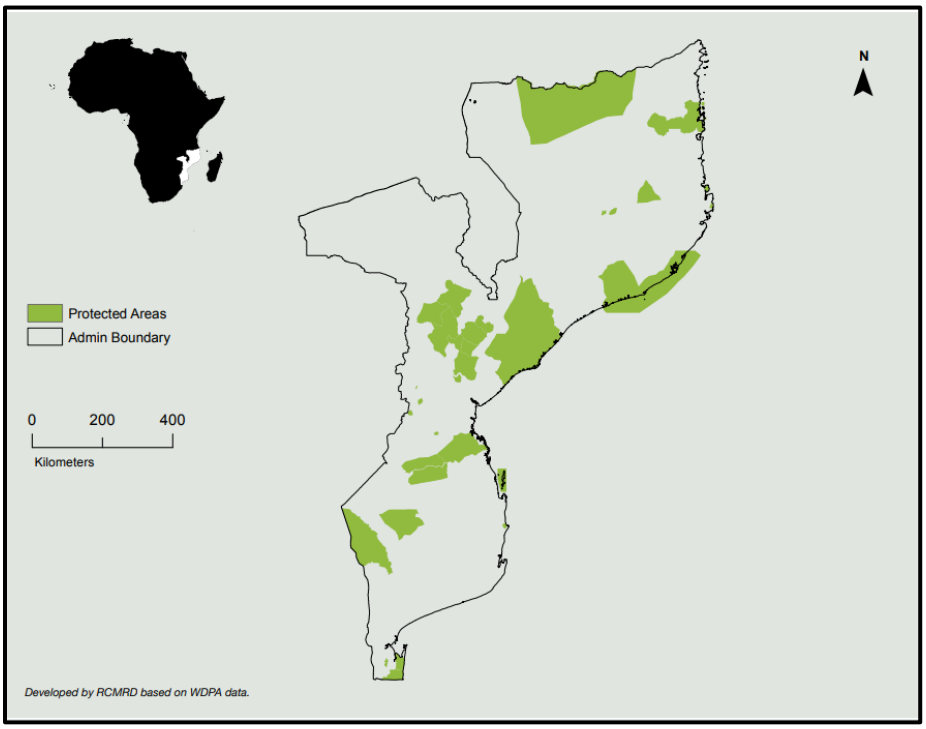


Figure 9: Mozambique protected areas

5.4.5 Livestock

Mozambique has agro-ecological conditions as well as food and genetic resources conducive to the development of livestock activity. It is estimated that the suitable pasture area reaches around 12 million ha. There are currently around 3,064,715 farms in the country, of which 99.7% are

small. Small holdings correspond to the family sector and hold more than 90% of the herds of the different species, except for cattle and sheep.

Livestock plays a vital role for the rural population. 65% of rural households have chickens, 25% have small ruminants (mainly goats), 12% have pigs and 6% have cattle (TIA, 2007).

Poultry farming is of significant importance in the world production of animal protein. According to FAO (2006), chicken meat is responsible for more than 30% of the total animal protein consumed in the world and it is the segment that, in recent decades, has shown the greatest transformations in the technical-productive sector, still being a of the fastest and lowest cost alternatives for the production of animal protein, meeting the food and nutritional demands of several countries.

For Mozambique, this productive activity is vital, as it is one of the main sources of animal protein for consumption, available to the population. Mozambique is an essentially agricultural country, where the practice of livestock activity is considered complementary, for survival, especially in regions where agriculture is less secure. Among the livestock activities carried out in the country, poultry farming makes the greatest contribution to the nutrition of low-income families. Poultry farming is also one of the segments of agriculture that most contributes to job creation, due to its short production cycle.

Table 3: Slaughterhouses in Mozambique

Location		**Designation**	**Slaughterhouses**	**Installed Capacity (Chickens/day)**	**Contacts**
North	**Nampula**	New Horizons + Frango King	Two	12 500	84 5705022 - Mr. Timothy
			Two	**12 500**	
Center	**Tete**	AviPaula	1	1 500	82 5028470
			1	**1 500**	
	Sofala	Nguki	**1**	10000	
			1		
South	**Maputo**	HIGHEST	1	14,000	84 3893914 or 84 3012456
		Honeycombs from Mozambique	1	14,000	82 3283820
		Mozambique FarmsARMS	1	12,000	84 9012054

Location		Designation	Slaughterhouses	Installed Capacity (Chickens/day)	Contacts
	Gaza	Tongasse	1	12,000	84 3007454
		Lopes and Heirs	1	3000	84 3899164
			5	**55,000**	
TOTAL			**9**	**79,000**	

Maputo	5
Manica	1
Nampula	2
Niassa	1
Total	**9**

Table 4: Slaughterhouses Distribution per Province

5.4.6 Conservation Areas

In Mozambique, according to the Forestry and Wildlife Law (11/99), protection areas are classified into three categories, namely:

- National Parks,
- National Reserves;
- Areas of Use and Sociocultural Value.

Additionally, the Land Law (19/97), contains some provisions on protected and semi-protected areas which include the strip along the seacoast and along islands, bays and estuaries up to a distance of 100 meters inland, the strip around of water as well as the range of up to 250 meters along the banks of dams and reservoirs.

The National Agency for Conservation Areas, managed by the National Administration of Conservation Areas (ANAC), has classified 7 national parks, namely Quirimbas (Cabo Delgado), Gorongosa (Sofala), Mágoè (Tete), Bazaruto (Inhambane), Limpopo (Gaza), Zinave (Gaza) and Banhine (Gaza), and 12 national reserves, of which Niassa, Gilé, Marromeu, Lake Niassa, Chimanimani, Pomene, Malhazine, Ponta de Ouro and the Biological Reserve of Inhaca, the Total Protection Zone of Cabo de São Sebastião, and the Environmental Protection Area of Ilhas

Primeiras and Segundas. Other categories of conservation areas are also within ANAC's management framework, such as official game reserves and game farms for the development of game tourism, as well as the 3 Community Conservation Areas of Mitchéu, Tchuma Tchato and Chipanje Chetu, and the Forest Reserves.

Table 5: National Park areas in Mozambique

National designation	No.	Area (km²)
National Park	6	33 569
Game Reserve	2	1 683
National Reserve	2	44 981
Special Reserve	1	1 040
Hunting Reserve	14	38 887
Natural Reserve	1	1
Faunal Reserve	1	20
Forest Reserve	13	5 286
Environmental Protection Area	1	24 589
Not Reported	1	1 148

Source: UNEP-WCMC & IUCN (2019n).

5.5 Socioeconomic Environment

Addressing socio-economic issues is of particular importance, given the fact that the sustainable use of natural resources and the conservation of Biological Diversity cannot be isolated from the impact of population growth and the consequent increase in demand for products supplied by natural resources. Natural resources, nor can economic development stimulated by investment be isolated from the need to define strategies to minimize potential impacts on the environment. Additionally, the treatment of this aspect creates opportunities to analyze in a more objective way the viability of some actions that will be proposed.

5.5.1 Demographics and Socio-economic Conditions

The population of Mozambique is approximately 27 million inhabitants, with a male/female ratio of approximately 93.5 (INE, 2017). Rapid growth is expected in the next century reaching 42 million in 2030, 67 million in 2050 and 135 million by the end of the century (UN DESA, 2017). Most of the country's population is young, with 65% of citizens under the age of 24. Life

expectancy has risen sharply since the early 1990s, rising from 43.9 to the current 54.4 years, projected to be 78.9 years in 2100 (INE, 2017).

The data also indicate that 71.2% and 62%, respectively, of the urban and rural population is poor with ultra-poverty indicators between 53 and 65% in the provinces of Sofala, Inhambane and Tete. In general, the central region is the poorest with 75% of the poverty rate, as opposed to 66 and 65% in the North and South zones. However, it is important to underline that the strata of poverty are differentiated because the distribution of wealth is not equitable.

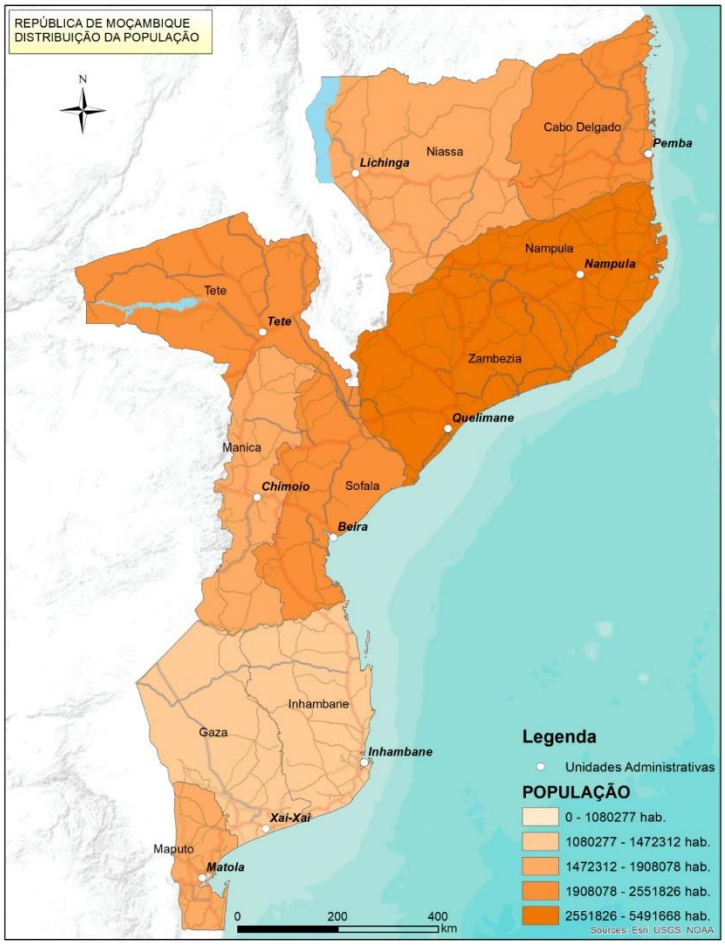


Figure 10: Demographic

5.5.2 Gender Issues

Mozambique has demonstrated impressive economic growth and a declining poverty rate over the last 20 years, yet 46% of the population still lives in poverty. The uneven availability of basic services, especially in health and education, and obstacles to sustainable employment are at the

root of this economic disparity. Women and girls are the most exposed to these inequalities in everyday life. Almost half of teenagers are mothers or married before they turn 18, which reduces choices and opportunities - not just for mothers - but also for the new generation of children. Women and girls regularly face discrimination and inequality in access to health, training, education and financial resources that impede their full participation in public life.

Mozambique has one of the highest levels of illiteracy in the world. The illiteracy rate among women reflects a serious problem of gender inequality. Despite these indices, Mozambique has a relatively high number of women in positions involving decision-making at national and local levels, in the Assembly of the Republic and in the Municipal Assemblies. In the Government constituted after the last general elections, women are represented in a proportion that compares favorably with countries with higher development indices.

The Gender Policy and Implementation Strategy, approved in August 2018, is a revision of the previous policy dated 2007 and aims to contribute to strengthening actions for equal rights and opportunities between men and women. Being transversal, it defines the principles and objectives for each strategic axis whose implementation is the responsibility of the Government, but also of civil society and the private sector.

5.6 Cultural Heritage

One of the most valuable features of Mozambique is its cultural diversity which, coincidentally, also accompanies its biological diversity.

The Mozambican society is multilingual, multi-ethnic, multi-racial and socially stratified. There are several ways in Mozambique of social, cultural, political and religious organization, there are many faiths, languages, customs, traditions and various forms of educational. The main feature of Mozambican cultural heritage is its diversity. Cultural expressions and manifestations are rich and plural, especially those linked to layers "popular." The official language in Mozambique is Portuguese. According to INE are present in the country 30 linguistic groups.

Portuguese is spoken as mother tongue for 6% of the population, while the Bantu languages are spoken by 93%. Portuguese is best known in urban areas [55%] than in rural areas [45%]. Most [61%] of Portuguese speakers are men. The Bantu languages are those spoken more often [90%] over the Portuguese.

5.7 Education

Mozambique achieved Independence on June 25, 1975, having inherited a 93% illiteracy rate, in addition to marked socioeconomic inequalities. The civil war that followed the first years of independence, in addition to considerably destroying the social and educational infrastructure, had a devastating effect on the population and, consequently, on the economy.

For the year 2021, a total of 7,896,349 (seven million, eight hundred and ninety-six thousand, three hundred and forty-nine) students were enrolled in the entire general education subsystem, two of which, 6,649,572 (Six million and six and forty-nine thousand, five hundred and seventy-two thousand) students in primary education and 1,246,777 (one million, two hundred and forty-six thousand, seven hundred and seventy-seven) students in secondary education. This universe of students is distributed in 22,649 (twenty-two thousand, six hundred and forty-nine) primary schools and 1,408 (one thousand, four, one hundred and eight) secondary schools, totaling 24,057 (twenty-four thousand and fifty and seven schools) (MOZAMBIQUE. MINEDH, 2021).

Table 6: Education Infrastructures distribution

Província	2020			2021		
	EP1	EP2	% EPC	EP1	EP2	% EPC
Niassa	1.152	590	51,2%	1.186	590	49,7%
C. Delgado	810	541	66,8%	737	506	68,7%
Nampula	2.285	1.114	48,8%	2.296	1143	49,8%
Zambézia	3.551	2.714	76,4%	3.605	2897	80,4%
Tete	1.290	598	46,4%	1.320	632	47,9%
Manica	879	589	67,0%	882	597	67,7%
Sofala	953	939	98,5%	958	950	99,2%
Inhambane	871	829	95,2%	877	835	95,2%
Gaza	779	476	61,1%	788	485	61,5%
Maputo	561	413	73,6%	579	438	75,6%
C. Maputo	184	165	89,7%	182	166	91,2%
Total	13.315	8.927	67,0%	13.410	9.239	68,9%

5.8 Health

The Health Units (US) of the National Health System (SNS) are organized into four levels of health care provision, namely:

- **1st level:** Rural (type I and II) and urban Health Centers (HCs): Basic and less complex services are provided at this level, aimed at preventing health problems in the community;

- **II.th level:** Rural and District Hospitals: These HU provide secondary health services and are the first reference levels for patients whose diagnosis and treatment solutions are not found at the primary level;
- **III.th level**: Provincial and General Hospitals: They provide tertiary health services and act as a reference for the two previous levels (I and II);
- **IVth level:** Central Hospitals: They have diversified and specialized services serving as a reference for the three previous levels (I, II and III).

Table 7: Health Infrastructure distribution

Província	Nível Primário					Nível Secundário				Nível Terciário	Nível Quaternário					TOTAL DE US
	Centros e Postos de Saúde				Total de CS e Postos de Saúde	Hospitais			Sub-Total	Hospitais	Hospitais				Total Hospitais	
	CS Urbano	CS Rural	Total CS	Postos de Saúde		H. Distritais	H. Rurais	H. Gerais		H. Provin-ciais	H. Centrais	H. Especia-lizado	H. Militar	Sub-Total		
Niassa	17	176	193	0	193	3	0	0	3	1	0	0	0	0	4	197
Cabo Delgado	16	106	122	6	128	2	2	0	4	1	0	0	0	0	5	133
Nampula	31	189	220	14	234	5	2	1	8	0	1	1	0	2	10	244
Zambézia	25	212	237	28	265	6	0	1	7	0	1	0	0	1	8	273
Tete	6	132	138	3	141	2	3	0	5	1	0	0	0	0	6	147
Manica	8	115	123	3	126	4	0	0	4	1	0	0	0	0	5	131
Sofala	14	127	141	29	170	1	4	0	5	0	1	0	0	1	6	176
Inhambane	25	114	139	5	144	3	2	0	5	1	0	0	0	0	6	150
Gaza	9	112	121	29	150	1	4	0	5	1	0	0	0	0	6	156
Maputo Província	12	90	102	18	120	1	1	1	3	1	0	0	0	0	4	124
Maputo Cidade	28	2	30	1	31	0	0	4	4	0	1	1	1	4	8	39
Total	191	1,375	1,566	136	1,702	28	18	7	53	7	4	2	1	8	68	1,770

Fonte: SISMA- DIS/DPC/MISAU

5.9 Housing

Mozambique is increasing affordable housing to accommodate population growth, replace inadequate housing, and reduce slum housing. State funds built 4,000 units. The government has distributed 13,176 plots and 1,556 credit facilities for home renovation and expansion, but socioeconomic challenges and a humanitarian crisis are hindering these efforts.

Recurring climate factors (including droughts, floods and storms) worsen housing conditions. Mozambique scores moderately low in the Climate Resilience Index score. Cyclical floods and tropical cyclones are a threat to the country's macroeconomic stability and financial system—affecting public infrastructure works, productivity levels, and the ability for borrowers to meet their debt obligations to the banking sector.

According to data from the 2017 Census, Mozambique now has more than 27 million inhabitants, most of them still reside in rural areas (67%), a trend that has been reversing over the last few decades.

The majority of the national population lives in the so-called 'huts' (70%), which in recent ten years (2007-2017) had an increase of more than 20%, and he owns his house (90%), although the regime of lease has increased by 2% in the same period. Despite the growing investment in the extension of the water and electricity supply network, a significant part of the population still has no access to water drinking water (49%) and resorting to fossil fuels, such as firewood and oil (20%). Finally, regarding the sanitation, there are still those who do not have a latrine (23%) or, if they do, it is not improved (37%).

5.10 Roads and Transport

Mozambique has a classified road network of around 30,000 km, of which only around 20% are paved roads.

- Primary Roads, which connect the Capital Cities and main Ports with about 5,866 Km;
- Secondary Roads that connect the primary roads, the Capital Cities to the sea and river ports with about 4,792 Km;
- Tertiary Roads, connecting secondary roads, District Headquarters, Administrative Posts, with undertakings; economic: agriculture, mining and commercialization with about 12,161 km;
- Local roads, connecting population centers with about 6,530 km.

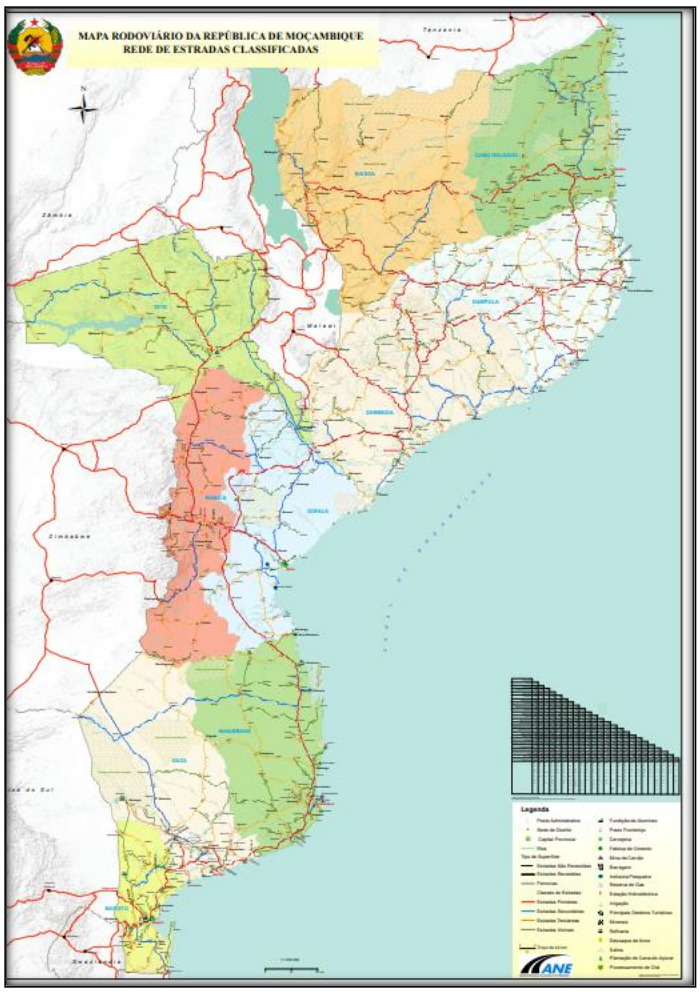


Figure 11: Mozambique roads network

5.11 Water Supply and Sanitation

With a weight in the State Budget (OE) of only 2.5%, the Water and Sanitation sector continues to receive fewer resources when compared to other priority areas, namely Education, Health and Agriculture and Rural Development.

There are imbalances between urban and rural areas in terms of access to potable water, with benefits for the former. While 22.1% of the population residing in urban areas consume unsafe water, this indicator increases to 64.0% in rural areas. There is also disparity between provinces in terms of the proportion of their populations with access to drinking water, with Zambézia (38%), Nampula (46%) and Niassa (48%) at the lowest end and Gaza (48%) at the highest end (80%), Maputo Province (93%) and Maputo City (99%) (MOPH,2020). It is also possible to note disparity

in the area of sanitation between urban and rural areas where the proportion of the population with adequate access is 56% and 11%, respectively.

In Mozambique there are serious gaps in terms of Wastewater Treatment infrastructure, with domestic wastewater being mostly sent to septic tanks. Currently, in the country there are only Wastewater Treatment Stations (WWTP), in the Maputo-Matola metropolitan area and in the city of Beira, both with operational deficiencies. This WWTP no longer has the capacity to treat the quality of waste produced by the city of Maputo, Matola, Marracuene and part of Boane.

The other modern WWTP in Beira City (the only one of its kind in Mozambique) which opened in 2010, which may have been disturbed by the cyclones that hit the City. As part of the Urban Sanitation project in 4 cities, three more WWTPs will be built, namely in the cities of Tete, Quelimane and Nampula.

The remaining cities do not have WWTPs, wastewater being discharged directly onto the ground or into bodies of water, with the expected negative consequences.

Urban solid waste is generally deposited in dumps, which are relatively controlled in provincial capitals. There are no controlled landfills or solid urban waste incineration stations. There are some service providers in the country, licensed to provide services related to solid waste management. It should be noted that there is only one hazardous waste treatment plant in the country, located in the Maputo metropolitan area.

5.12 Energy

Access to grid electricity increased from 34% in 2020 to 40% in 2022 (as of July and total on-grid and off-grid access is 44%). However, 17.5 million Mozambicans still do not have access to electricity, both in rural and urban areas. In 2020, only 4.5% of the rural population had access to electricity compared to 75% of the urban population electrified. Thus, access to electricity in rural areas needs to increase rapidly for the Government to achieve its target of electrifying all Mozambican households by 2030.

Around 95% of Mozambican households rely on biomass energy for cooking. The most common cooking fuels and technologies are firewood (used by 64% of the adult population), charcoal (charcoal) (22%), mains electricity (8%), LPG liquefied petroleum gas (3%), solar energy (1%), kerosene (1%), private generator (0.1%), and others (1%). 2% either do not cook or use any systems/fuels.

The most common forms of lighting in rural areas include kerosene lamps (17% of the adult population), solar energy (14%), candles (12%), flashlights and batteries (7%), and other forms (including fire) (17%). 18% of the adult rural population does not use any type of lighting. As income increases, the use of kerosene, candles, lanterns, and other sources (including fire) decreases, while the use of grid electricity increases.

In urban areas, mains electricity is the most common form of lighting (68%) followed by candles (7%), kerosene lamps (7%), solar energy (4%), lanterns (2%) and others (7 %). 5% do not have access to any type of lighting.

Mozambique is a country characterized by agriculture where more than 70% of the population depends on agriculture for survival. Thus, access to energy is essential to feed and mechanize agricultural processes along the value chain, i.e., production (irrigation), harvesting (using machines), post-harvest storage (cooling units) and transformation (drying and milling).). It is also important for increasing the efficiency of agricultural processes, reducing post-harvest losses and for processing and preserving food.

5.13 Economic Activities

5.14.1 Agriculture

The agricultural sector in Mozambique is mainly made up of the family sector, which practices subsistence agriculture. There are more than 4,268,585 farms in our country, of which 4,222,639 are small, 45,320 are medium and 626 are large.

Mozambique is an agricultural country with over 70% of the population dependent on agriculture for their livelihoods in 2019. Agriculture is also the second largest contributor to the national GDP, after the services industry. In 2019, it represented 24% of GDP. Overall, there has been a decline in the agricultural workforce from 82% in 2000 to 70% in 2019, but the percentage is still significantly high. The agricultural sector is also made up of women who represent the majority of the workforce. In 2019, the sector employed 80% of the female workforce. The Mozambican agricultural sector is dominated by 3.2 million small farmers who produce 95% of agricultural production. The main crops cultivated by small farmers are:

- Staple food crops such as maize, cassava, rice and pigeon peas for mainly domestic consumption;
- Cash crops such as cotton tobacco, oilseeds and tea;
- Tree crops such as cashew and coconut, in most coastal areas.

Agriculture is the mainstay of Mozambique's economy, and the sector has great potential for growth. Subsistence agriculture continues to employ the vast majority of the country's workforce. Agriculture employs more than 80 percent of the labour force and provides a livelihood for most of the country's 27 million inhabitants. However, despite favourable climatic conditions, with high potential for food self-sufficiency and even food surplus, Mozambique is still a net importer of food. Total annual cereal import requirements average 0.89 million tons (0.14 million of maize, 0.39 of rice and 0.36 of wheat). Mozambique must also import substantial quantities of meat and livestock products. The country's low agricultural productivity results from of a lack of appropriate technology and support. In addition, produce markets are generally distant, unreliable, and uncompetitive for smallholder farmers, who depend on traditional farming methods, low-yield seed varieties, and manual cultivation techniques.

Alternative sources of income outside agriculture are few. Poor rural people have few options to cope with shocks. Mozambique is broadly differentiated by topography (especially altitude), rainfall and temperature, soil type, and texture and proximity to the coast, offering a wide range of production opportunities; agricultural potential is high despite frequent droughts and floods. The arid and semiarid areas (mostly in the south and south-west) are characterized by poorer soils and scarce rainfall and are subject to recurrent droughts and floods. The sub-humid zones (mostly in the center and the north), the humid highlands (mostly the central provinces), and the good rainfall and fertility soils of northern and parts of central provinces are generally characterized by agricultural surpluses. Ten broad agro ecological zones are generally recognized, based on agro-ecological conditions:

- **R1**: The inland Maputo and South Gaza region predominantly cassava, maize, and cattle producing zone;
- **R2**: Coastal region south of Save River is mainly a cassava, cashew nut, and coconut production zone;

- **R3**: Central and North Gaza and the West Inhambane zone, described as one of the most arid parts of Mozambique, is suitable for sorghum and millet production;
- **R4**: The medium-altitude region of Central Mozambique is a predominantly maize, sorghum, cassava, and cowpeas production zone;
- **R5**: The low-altitude region of Sofala and Zambezia is dominated by rice cultivation;
- **R6**: The semiarid Region of the Zambezi Valley and Southern Tete Province, inclusive of the driest parts of the Zambezi watershed is mainly a sorghum, millet, and cassava production zone;
- **R7**: The medium-altitude region of Zambezi, Nampula, Tete, Niassa, and Cabo Delgado is mainly dominated by cassava and differentiated into sub-regions by maize and sorghum;
- **R8**: The coastal littoral of Zambezi, Nampula, and Cabo Delgado is mainly characterized by cassava and millet production;
- **R9**: The northern region of Cabo Delgado, inclusive of the plateaus of Mueda and Macomia, is a maize, sorghum, cowpea, and cassava producing zone; and
- **R10**: The high-altitude region of Zambezi, Niassa, Angonia, and Maravia, including the planaltic regions, is known as a maize, millet, common beans, and potato zone (IFAD, 2005).

5.14 Land Use and Natural Resources

Agricultural land makes up 52.7% of the total land area, but only 7.2% of the total land area is arable. The remaining 47.3% of the land area is occupied by forest.

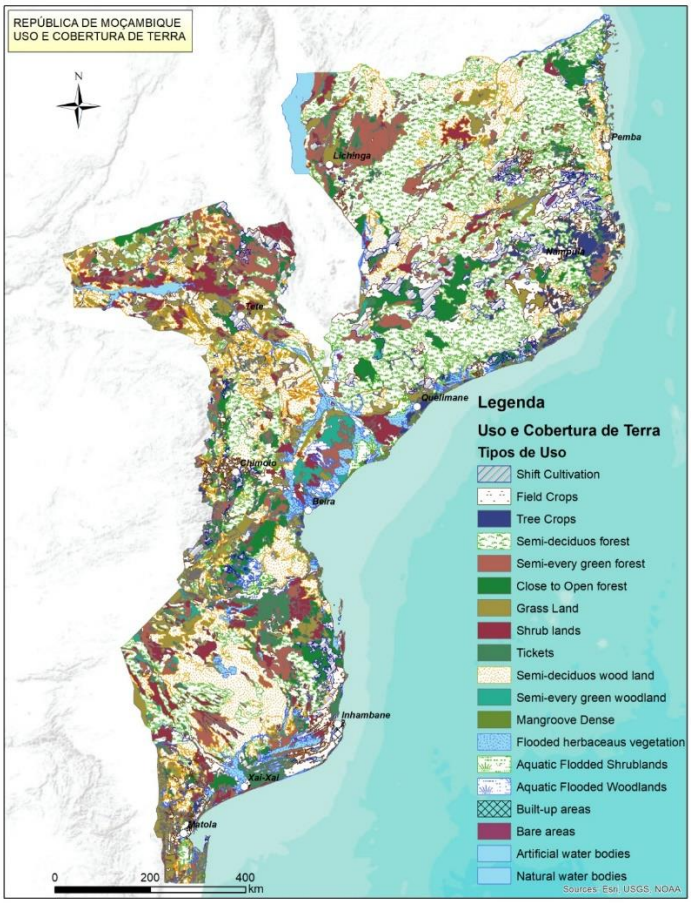


Figure 12: Land use

6. METHODOLOGY FOR IDENTIFICATION AND ASSESSMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS

6.1. Definition of Impacts and their types

An impact is any environmental or social change, or perceived change, adverse or beneficial, in whole or in part, as a result of an organization's activities, products or services. Any project can generate a wide range of potential impacts and of different types, some can be direct while others can be more complex and more difficult to identify. The table below lists the different types of impacts of a project or activity.

Table 8: Type of Impacts

Impact Type	Description
Direct	Impacts that result from the direct interaction between a given project activity and the receiving environment (eg generation of dust that affects air quality).
Indirect	Impacts that result from other (non-project) activities that are facilitated as a result of the project or impacts that occur as a result of the subsequent interaction of direct project impacts with each other.
Cumulative	Impacts that act in conjunction with potential current or future impacts of other existing or proposed activities in the area/region, which affect the same resources and/or receptors.

6.2.Impact Identification and Assessment Methodology

The identification of the Project's socio-environmental impacts was based on the assumptions of the current environmental reference situation likely to suffer significant changes during the works of rehabilitation and operation of the slaughterhouses, storage places and hatchery facilities.

The assessment of the project's impacts was carried out in accordance with the combinations of classification parameters for socio-environmental impacts established by the General Directive for EIA (Ministerial Diploma no. 129/2006, of 19 July) presented in Table below, using the

Methodology of List of Impacts (Check-List), and considering two options for the project: (i) option “without” and (ii) option with project.

The Impact Listing Method is a very practical EIA tool, easy to use and useful in EIAs for identifying relevant impacts, thus being one of the most used methods in EIA. The methodology consists of identifying and listing the impacts, based on environmental diagnoses carried out in the biophysical and socioeconomic environments. The method lists the impacts resulting from the construction and operation phases of a project, categorized as positive or negative, according to the type of modification that is being introduced in the environmental system, and has the comparative advantage of gathering the most likely impacts of a project.

The assessment of the socio-environmental impacts also took into account the environmental conditions in the phase prior to the construction works, as well as the impacts that cannot be avoided or mitigated. The most significant changes caused by the project will be described in relation to social issues (level of employment, diseases, among others) and infrastructure (basic sanitation, liquid effluents, atmospheric emissions, solid waste, noise and traffic).

To facilitate the assessment of the project's impacts, they were divided into beneficial and/or adverse impacts; local (in the directly affected area) or diffuse (in the area of influence); of large, medium or low magnitude; reversible and irreversible; temporary or short, medium and long term; and impacts of difficult, medium or high potential for mitigation/resolution.

The assessment of the environmental impact took into account the different factors and their incidence times (time span). Having this impact assessment been detailed and for each relevant environmental component in the areas of influence of the activity, considering, among others, the following aspects:

- **Physical environment**: air quality, noise levels and vibrations; susceptibility to erosion processes; drainage network; occurrence of floods among others;
- **Biotic environment**: type of flora; terrestrial and aquatic fauna;
- **Socioeconomic Environment**: current land use; landscape changes; consequences of the insertion of the activity for the local community; possible overload on public assets and

infrastructure; health, education and housing conditions in communities; any changes in way of life; future effects associated with the occurrence of floods; effects of the demobilization of the construction site; reflections of the insertion of the activity in the local and regional economy; demand forecast for labor, goods and services; increase in job offers; reflections on income; tax collection; eventual interferences in the historical and cultural values of the region.

The assessment also took into account the environmental conditions in the phase prior to the construction works, as well as the impacts that cannot be avoided or mitigated. The most significant changes caused by the project were described in relation to social issues (level of employment, diseases, among others) and infrastructure (basic sanitation, liquid effluents, atmospheric emissions, solid waste and noise).

The impacts were divided, to facilitate the evaluation in: Beneficial and adverse impacts; Local (in the directly affected area) or diffuse (in the area of influence); large, medium or small magnitude; Reversible and irreversible; Temporary or short, medium and long term; and impacts of difficult, medium or high potential for mitigation/resolution.

In the presentation of the impact assessment results with the impact identification methodology, as well as the criteria adopted for the interpretation and analysis of their interactions; valuation, magnitude and importance of impacts; detailed description of the impacts on each relevant environmental factor considered in the environmental diagnosis; and finally, a conclusive summary of the main impacts that may occur with the implementation of the project.

Mitigation measures capable of eliminating and/or reducing negative impacts and/or their relevance, and compensation measures for impacts that cannot be mitigated, were proposed. The positive impacts will be valued by proposing measures to enhance the identified beneficial effects.

The following table presents the criteria and parameters for evaluating the project's impacts in accordance with the General Directive for EIA (Ministerial Diploma no. 129/2006, of 19 July).

Table 9: Project Impact Assessment Criteria and Parameters

Criteria	Scale	Description
Statute	Positive	Beneficial environmental change
	Negative	Adverse environmental change
Probability	Unlikely	Low chance of occurrence
	Likely	There is a possibility of occurrence
	Certain	When its occurrence is certain
Extension	Regional	The impact occurs at the regional or provincial level
	In the surrounding area	The impact occurs on the outskirts of the project area
	Local	The impact occurs in project intervention sites
Duration	Short term	Impact occurs in a period of less than 6 (six) months
	Mid-term	Impact occurs over a maximum period of 10 years
	Long term	Impact that occurs over a period of more than 10 years
	Permanent	Impact that occurs even after the service life
Intensity	High	Severe changes occur in the environment and social
	Average	Relevant environmental and social changes occur
	Low	Minor environmental and social changes occur
	Null	There are no changes in the environment and social

The assessment of the significance of the impact is carried out through a combination of the various criteria announced above. The significance scale will be determined by six points defined in the Table below.

Significance Scale Determination

Significance Scale	Description
Very High (very significant impact)	High magnitude and usually permanent alteration of the natural and/or social environment occurs, and results in serious or very serious effects, or beneficial or very beneficial effects. Long-term time scale.

High (very significant impact)	These impacts will normally result in long-term effects on the social and/or natural environment. They are usually regional in scale and medium-term duration or local in scale and long term duration.
Moderate (significant impact)	These impacts normally result in medium to long term impacts on the social and/or natural environment, they are generally medium term.
Low (little significant impact)	These impacts will typically be medium to short term on the social and/or natural environment. These impacts are not substantial and are likely to have little real effect.
Very Low (residual impact)	These impacts are of reduced magnitude but limited to the site of direct implantation of the project and the construction phase.
Null (null impact)	These impacts have zero magnitude with any combination of spatial scope and duration.

7. IDENTIFICATION AND ASSESSMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

7.1.Potential Impacts and Mitigation Measures for the Construction Phase

7.1.1 Physical environment

Impact: ***Dust emission due to excavation and earth movement***					
Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Low

Mitigation measures

- Isolate slaughterhouse activity areas to minimize dust dispersion;
- Keep work areas with wet soils to reduce the level of dust;
- All workers involved in construction must have protective equipment (such as gloves, masks, uniforms, etc.);
- All locations identified for temporary deposit of solid waste must be well signposted and must have a drainage system capable of safely removing any potential contaminating substances;
- Concrete losses must be immediately removed;
- The contractor should avoid moving earth on windy and rainy days .

Impact: ***Change in soil quality as result of excavation and soil movement***					
Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Moderate

Mitigation measures

- Isolate slaughterhouse activity areas to minimize dust dispersion;
- Keep work areas with wet soils to reduce the level of dust;
- All workers involved in construction must have protective equipment (such as gloves, masks, uniforms, etc.);

- All locations identified for temporary deposit of solid waste must be well signposted and must have a drainage system capable of safely removing any potential contaminating substances;
- Concrete losses must be immediately removed;
- The contractor should avoid moving earth on windy and rainy days.

Impact: ***Destruction of Habitats and Natural Resources due to Site Construction***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Moderate

Mitigation measures

- In an degraded forest or area with large trees (diameter> 200mm) or other commercial trees shall not be removed unless approved by the Resident Engineer (RE). The RE and Environment and Social Officer (ESO) must satisfy themselves that such removal is unavoidable or absolutely essential.
- No soil, vegetation or construction materials shall be damped in wetlands or water bodies.
- The contractor shall notify the RE if any previously unidentified graves or artefacts of archaeological cultural significance are uncovered during site clearance. Work shall be stopped while the appropriate authorities are notified and have inspected the site and given approval to proceed.

Impact: ***Increasing Safety Risk due to the Opening of New Access Roads***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Moderate

Mitigation measures

- The contractors will be required to prepare a Method Statement on the construction of any new infrastructure or upgrading the existing ones. The proposed method for rehabilitation after the completion of the construction work;

- The contractors shall comply with all applicable legislation and by-laws regard to road safety and transport;
- In a case that the road shall be closed to traffic, the contractor shall notify the appropriate authorities and community in advance using mass media means; , Access to the construction site and work areas and haul routes are to be shown on a site plan and approved by the RE;
- Access to the construction site and work areas shall utilize existing road and trucks, where possible.
- Upgrading access road shall be undertake within the existing confines of the road unless otherwise agreed with the RE;
- The contractor shall maintain the haul roads includes adequate drainage and side drainage, dust control and restriction of edge use as per the environmental specification.
- Movement of vehicle is to be confined to identify road as far as possible.

Impact: ***Destruction of Habitats due to Exploration of borrow Pits***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Low

Mitigation measures

- ✓ The contractor must submit a mining plan, approved by MIREM (Ministry of Mineral Resources and Energy), before the beginning of any exploration of a borrow pit. The plan must cover the following topics
- ✓ The use of opened and operational borrow areas;
- ✓ Land use in the vicinity;
- ✓ Mitigation measures for natural vegetation clearance;
- ✓ The depth and quality of available surface soil
- ✓ The estimated depth of the underground water.

Access roads

- ✓ Borrow areas should be adjacent to those of the activities to reduce travel over long distances on undisturbed land. In the event that the borrow areas are not adjacent to the activities, existing access roads will be used to gain access to and loan areas. If existing access routes do not provide adequate or convenient access to the lending area, then a plan will be submitted to the relevant authorities containing clear and well-defined information on the new access;
- ✓ The contract should include a clause according to which borrow pits, quarries and access roads are considered part of the project so that the supervisor can exercise authority over them in the same way as in other areas where the work is being carried out;
- ✓ Construction contracts must contain a clause requiring the contractor to prepare a mining exploration and closure plan for approval by the authority responsible for mineral resources at Provincial level prior to the commencement of any development and to perform all work on the premises in accordance with the plan. The Plan should address all issues relevant to environmental protection and minimization of impacts due to ancillary works (quarries and borrow areas). The information provided in the declaration shall include, but are not limited to the following:
    - ✓ The site plan showing the location and proposed extension of the quarry, access roads and any other facilities that can be installed. Details of all rural properties, vegetation and land use. Distance from the place to the nearest settlement;
    - ✓ Measures to minimize erosion along the access road and drainage system.
    - ✓ Measures to make quarries safe at the end of the construction activities and to rehabilitate agricultural land which has been affected by the construction and operation of access roads;
    - ✓ The surface soil and the soil above the aggregate to be excavated must be safeguarded and placed in separate heaps in a flat and stable area. The depth of the surface soil to be taken and the storage locations will be identified in the plan diagrams as the final drawings become available;

- ✓ Where feasible, excavation should be avoid, and in cases of identifying an underground water source it should be protected and improved for future water uses by communities;
- ✓ Drainage and erosion associated with each lending operation should be controlled to minimize disruption of the land and future accidents to communities.

Restoration and rehabilitation of borrow areas

- ✓ After use and abandonment of the site, appropriate rehabilitation, drainage and erosion control measures shall be implemented to reduce erosion and help natural regeneration;
- ✓ Landfills shall be levelled, and slopes reduced to 25% and surface soil replenished and spread over the landfill;
- ✓ Root material and removed vegetation shall be spread over the topsoil to promote natural re-vegetation;
- Where practicable, future potential uses of the site will be accommodated; The contractor shall maintain the haul roads includes adequate drainage and side drainage, dust control and restriction of edge use as per the environmental specification;
- Movement of vehicle is to be confined to identify road as far as possible.

7.1.2 Biotic environment

Impact: ***Contamination of Soils by Solid Waste and Domestic Liquids***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	High

Mitigation measures

- All contractor workers must dispose of waste properly in containers or identified areas;
- The contractor must provide containers for the disposal of waste during the construction period and indicate the place and time for meals. Containers must be covered to prevent the proliferation of insects;

- The contractor shall provide sanitary facilities in quantity and quality for the workers, in accordance with the regulations,
- Prohibit the incineration of any waste on site.
- Establish a waste collection program;

Impact: ***Changes in Normal Soil Patterns Due to Pollution and Erosion***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Moderate

Mitigation measures

- The contractor shall protect all hydraulic infrastructures against erosion by protecting slopes, compacting soils, vegetation and/or stabilizing with gabions, as defined in the implementation plan;
- The contractor shall restrict the use of heavy machinery to the dry period. In the months of December and January, the use of machines must be conditioned according to rainfall, in order to reduce soil damage.
- The contractor shall take all reasonable measures to control erosion and shall specify and provide the method for the control of rainwater for the approval of the Resident Engineer;
- The contractor shall take all precautions to avoid erosion or landslide in the slopes and shall create slopes compatible with the nature of the soil.
- The contractor shall prepare for the approval of the Resident Engineer, a declaration of methods concerning the disposal of sanitary and other wastes, in such a way that it does not result in any form of pollution or danger to humans and animals;
- The contractor is required to take all precautions to avoid spills and leaks of materials with potential to pollute land resources;
- The cleaning of equipment and vehicles must be performed in designated maintenance areas that should be built for such purposes by the contractor;

- The contractor must arrange the dangerous products in such a way that they are not in direct contact with the soil in order to prevent spills;
- The contractor shall be responsible for cleaning up any kind of pollution caused by his activities and shall pay compensation to affected persons whenever such events occur;

Impact: ***Impacts on*** *Vegetation* ***and Fauna due to Influx of New Workers***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Low

Mitigation measures

- Prohibit his workers to hunt, disturb wild animals or to collect firewood. Any worker found to be hunting should be subject to disciplinary action;
- Provide for all influx workers an adequate housing facility and not allow any of its workers to take building material from the forest;
- Have an awareness and education campaigns against bush fires;
- Provide energy to workers, such as paraffin stoves;
- The contractor shall avoid spills of waste waters and hazardous to the rivers and other water courses to avoid affecting aquatic life and compromising the quality for other water users.

Impact: ***Water contamination***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Moderate

Mitigation measures

- ✓ Camp sites and workshops shall be located not less than 100 m away from any water course;
- ✓ The contractor shall have required permits from ARAs to collect water from the rivers to be use at work site. For drinking water and other domestic uses at camp site, the

contractor shall establish a proper water supply system that does not impact the community water needs;

- ✓ In working with water drainage and hydraulic structures all effort should be made to avoid pollution of water resources, wherever possible, or to minimize its effects;
- ✓ When working on the bridges the contractors shall require all permission to the ARA and shall maintain a minimal ecological water flows that allows the survival of the aquatic life;
- ✓ All activities involving transfer, storage of chemicals with potential for contamination shall follow all best practices in handling this material and be confined well identified areas.
- ✓ The landfill and access areas must be properly sealed, having sufficient drainage to safely remove any potential contaminants; Disposal waters from the camps should not be damped into any river or water body.
- ✓ In any case a spill occur the contractor shall immediately isolated the area and inform the engineer and take all measures to clean the area.

A clause should be included in the construction contract, which requires the contractor to prepare, for approval by the Engineer, a detailed Environmental Construction Plan of the Camps prior to its construction that covers the other camp sites. The plan shall contain clear provisions on the management of solid, sanitary and other wastes against pollution or danger to human or animal health and forms of water supply, as describe above;

- A clause should be included in the construction contract which makes it clear that the contractor will be responsible, at his expense, to clean the polluted area (for the satisfaction of the Engineer) and to pay full compensation to the affected people.

Impact: ***Air pollution***					
Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Low
Mitigation measures					

- The contractor should avoid doing noisy jobs at night near settlements. Whenever it's possible the contractor shall avoid performing any construction work during night (6 PM on) in the section crossing community settlements;
- The contractor must apply dust suppression measures. Road section in construction (gravel pavement) shall be sprayed regularly to reduce the level of dust ;
- Regular maintenance of vehicles and equipment to minimize carbon emissions in the atmosphere. The contractor shall maintain equipment in a good mechanical condition;
- Equipment and vehicles transporting material should be covered and work with material during winding days must be limited.
- The contractor shall adopt good construction and management practices for the operations of borrow pits;
- When working close to schools and hospitals contractors shall adopt specific temporary traffic management and safety measures, including:
    - Introduce more rigid traffic speeds control (not more than 30 km/h) and humps;
    - Suspension of construction activities in specified timeframe from the start and end of the school day;
    - Any vehicles transporting material shall be covered to avoid dispersion of material to the air;
- Whenever possible, days with high windy velocity shall be avoid manipulating gravel and water spry shall be more constant;
- The contractor must provide protective equipment to workers. All worker performing activities in a dusty, noise, vibration environment shall, wear personnel protective equipment (glass, gloves, boots, masks, ear protectors, etc.).

7.1.3 Socioeconomic environment

Impact: ***Risk to Health and Safety of project workers and Communities due to Daily Construction Works***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Low

Mitigation measures

- ✓ The contractor shall comply with the Occupational Health and Safety (OHS) requirements in the ESMP, AfBD policies and National law;
- ✓ The Contractor shall submit for approval by the Engineer an OHS Management Plan. Civil works shall not be permitted to commence until the Engineer has approved the OHS Management Plan prepared by the Contractor specifically for the project. The Safety Officer is mobilized and on site, and all employees have undergone site specific induction training.
- ✓ The Contractor shall appoint a full-time certified Safety Officer at the Site, with qualifications acceptable to the Engineer. The Safety Officer shall be responsible for supporting implementation of the OHS Management Plan through technical advice, guidance, mentoring, and training under the guidance of the Contractor's Project Manager. This person shall have the authority to issue instructions and take protective measures to prevent accidents whilst promoting a safety culture in the project;
- ✓ The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel and affected stakeholders. In collaboration with local health authorities, the Contractor shall ensure that first aid facilities and locations of are available at all times at the Site, including appropriate vehicles to transport Contractor's Personnel to medical facilities in the event of an emergency.
- ✓ The Contractor shall post in clearly accessible places information on how to transport injured Contractor's and Employer's Personnel to medical facilities, including the precise location and contact details of such medical facilities, name and details of the site designated Safety Officer;

- ✓ The Contractor shall inform and educate employees on safety and health and must maintain safety and health of workers and local populations and take appropriate measures for this purpose;
- ✓ The Contractor shall ensure that suitable arrangements are made for all necessary welfare facilities and hygiene procedures are in place for the prevention of the spreading of diseases;
- ✓ The Contractor shall ensure that all workers on the site have appropriate PPE of an appropriate standard including:
  - (i) Impact resistant safety eyewear;
  - (ii) Safety footwear with steel toe, sole and heel;
  - (iii) High visibility clothing;
  - (iv) Long sleeves and long pants suitable for operating environment;
  - (v) Safety helmet with provision of sun protection as necessary;
  - (vi) Gloves (carried and worn when manual handling);
  - (vii) Hearing protection when working in close proximity to noisy equipment and in all underground environments.
- ✓ The Contractor shall verbally notify the Engineer immediately of any incident where serious harm has occurred, with written details being forwarded within 24 hours of the incident occurring.
- ✓ Within 5 working days at the end of the month the Contractor will be required to report to the Engineer on their performance.
- ✓ Regarding road safety, the Contractor, shall limit vehicle speed on site by installing signs and flag bearers. In residential areas, the Contractor shall establish the schedule and route for heavy vehicles, which must circulate outside the sites to minimize noise, dust, risk of accidents and traffic congestion;
- ✓ The Contractor shall ensure that the speed limit for all vehicles on public roads will be a maximum of 60 km/h on rural roads and 40 km/h in urban areas and through villages.

Drivers exceeding these limits shall be subject to disciplinary action up to and including dismissal;

- ✓ The contractor shall install speed bumps or water spraying in settlements in order to reduce the risk of accidents and reduce dust;
- ✓ Vehicles of the Contractor shall, at all times, comply with the requirements of the road Code in force, particularly regarding weight of the laden vehicle.

- During the dry season the contractor must regularly spray water on dusty roads/tracks used by its transport equipment to avoid dust, especially in populated areas.

Impact: ***Loss or Destruction of Cultural Heritage***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Low

Mitigation measures

- The projects are basically rehabilitation and upgrading of existing infrastructures, so the need for land appropriation is not foreseen. However, in any case that a house or farm with crops/fruit trees has to be expropriate a fair compensation will be given to those affected;
- The contractor in liaison with the local authorities, namely administration and SDPI will agree on the compensation and grievances mechanism.
- The Contractor shall take all necessary measures to respect the culture and cultural sites (cemeteries, sacred sites and tree species/forests, etc.) existing in the vicinity projects area. For this purpose, he must first identify locations before starting the works.
- If, during construction, remains of places of interest for worship, historic or archaeological value are discovered, the Contractor shall follow these procedures: (i) stop work in the area, (ii) immediately notify the Project Manager who must take steps to protect the site to avoid destruction by defining a protection perimeter on the site within which no activity shall be carried, and (iii) to refrain from removing objects and relics. The work must be suspended within the scope of protection until ARPAC has given permission to continue.

- Cemeteries and sacred sites should not be disturbed by construction, unless an agreement is reached with the affected communities.
- The contractor should provide specific training and information on these matters to the field technical staff.

Impact: ***Increased Risk of STDs/HIV/AIDS***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Low

Mitigation measures

- ✓ During the work mobilization stage, the Contractor shall conduct an HIV-AIDS campaign through a service provider approved by the Engineer, and shall undertake specific measures to reduce the risk of contamination among the Contractor's Personnel and the local community, to promote early diagnosis and to assist affected individuals;
- ✓ The Contractor shall not discriminate against people with HIV-AIDS as part of the campaign;
- ✓ The approved service provider shall prepare an action plan for awareness to be submitted to the RE.

The action plan will clearly indicate:

(i) The types and frequency of education activities to be done;

(ii) The target groups (as a minimum to all the Contractor's employees, all Sub-Contractors and Consultants' employees, and all truck drivers and crew making deliveries to Site for construction activities as well as immediate local communities);

(iii) Condoms shall be provided; STD including HIV/AIDS screening, diagnosis, counselling and referral to a dedicated national program, (unless otherwise agreed) of all Site staff and labour shall be provided.

- ✓ The campaign shall be conducted while the Contractor is mobilized in accordance with the approved approach. It shall be addressed to all target groups identified concerning

the risks, dangers and impact, and appropriate avoidance behaviour with respect to, of STD in general and HIV/AIDS in particular.

During the construction phase the Contractor, through the service provider, shall inform and educate staff on the risks of HIV/AIDS. He must make sufficient and good quality condoms available to staff. Local communities should also be informed about the risks of HIV/AIDS. The contractor shall make staff available for a total of at least half day per month for formal trainings.

Impact: ***Increased Employment and Income Opportunities***					
Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Positive	Local	Low	Long-term	Moderate

Incremental Measures

- The contractor must inform their need of workers locally and shall offer similar opportunities to both (male and female) and non-discriminatory level of salaries;
- The Contractor is forbidden to employ children as the coordination for local employment arrangements should be facilitated by local authorities;
- The contract shall employ people from surrounding communities to increase their resilience and protect livelihoods;
  - ✓ The contractor should hire locally 100% of the unskilled work force and give equal opportunities to both women and men for all project phases (rehabilitation and maintenance), a contract clause shall oblige the contractors to employ have at least 25% women in the worker force;
  - ✓ Contractors shall put in place an incentive plan to stimulate women to be employed in the construction activities;
  - ✓ Contractor shall have gender sensitive recruitment strategies to ensure that there is no gender disparity;

- ✓ The contractor and subcontractors must strictly observe the current law on child protection;
- ✓ Employers should encourage their employees to make local purchases in order to increase income for some families in the area;
- ✓ A program to enhance this positive impact should be institutionalized, through which service providers encourage local workers to make savings for small business investments.
- ✓ The contractor shall stimulate its workers to establish a syndicate, to facilitate dispute settlements between them.

- It is recommended to create a framework for linking the employer and the community to facilitate the work of the employer and ensure the resolution of labour disputes that may arise, such as unfair dismissals.

Impact: ***Change in Air Quality***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Low

Mitigation measures

- All workers, machine operators, must wear individual protection equipment such as glasses, masks, boots, overalls, ear plugs;
- Use, whenever possible, equipment that reduces the level of noise emission;
- Isolate the current slaughterhouse activity areas to minimize dust dispersion;

Impact: ***Risk of Occupational Health and Safety Accidents***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Short-term	Low

Mitigation measures

- All workers must wear personal protective equipment (PPE) specific to each work area;
- The contractor must monitor the use of PPE and record all incidents and accidents that occur;
- The contractor must ensure a first aid kit on site and provide transport in case of need to transfer the worker to the nearest hospital unit. Should bear the costs of treatment if applicable;
- The contractor must avoid creating dangerous situations for workers in the surrounding areas;
- Proper signalization for imminent danger (excavated areas), work areas, equipment parking places, if applicable.

7.2 Potential Impacts for the Operation Phase

General considerations

The operation of the slaughterhouse and incubator after its expansion will generate positive and negative impacts in the physical and socioeconomic environments. These impacts will not be new, as the activities already existed, but the dimension may change.

With this slaughterhouse, a greater integration of small breeders in the poultry sales chain is expected, through the creation of a safe market and at competitive prices. In parallel with the expansion of the slaughterhouse, it encourages the poultry breeders to better organize themselves and carry out a management that improves the quality of their products.

However, the slaughterhouse and hatchery operation brings negative environmental impacts, with emphasis on waste and effluent management, production of odors and extraction of groundwater, as well as its contamination, GHG gas emissions.

Particular attention should be given to the production of different types of waste, solutions to prevent the negative impacts of this waste, monitoring and reuse of waste when applicable. The measures proposed here are those that present the best results and are the least expensive.

7.2.1. Physical environment

Change in Soil Quality

Contamination of Soils by Solid and Liquid Waste

Slaughterhouse activities can generate substantial amounts of organic waste. The dead chicken represents about 75% of the l weight of the carcass. Therefore, of the amount slaughtered daily (2000 birds/day) about 15 to 20% represents waste. The amount of waste depends on its conversion into a by-product.

The residues can be obtained from healthy birds these are of low risk, and others of high risk of animals dead for reasons other than slaughter, chicken or its parts rejected by the inspection or suspected of diseases and in this last group are included the hatchery waste other than hatched eggshells. Although in Mozambique, Avian Influenza disease is not common, it is important to consider it due to the potential to be transmitted to humans, so it should be considered part of high-risk organic waste.

All organic waste (regardless of its degree of risk) requires special care in its temporary storage. Procedures must be adopted for isolating the area where they will be stored. In addition to organic risk waste from the slaughterhouse and incubator, there are wastes from the use of cleaning, sanitizing and sterilizing products and materials.

Poor treatment of the waste described above can result in soil and water contamination. Failure to correctly separate the effluents from the waste in the plucking section, and the consequent flow through the pipes , could clog and reduce the flow of effluents result in the silting of the ponds (feathers, sludge and grease) and consequent transhipment of the same and loss of effluents to adjacent soils and their consequent contamination. In addition to this organic waste, other types of solid waste will be produced in the packaging and packaging sector of products and by-products, which may be of plastic, cardboard, paper origin, as well as domestic waste that includes leftover food. In addition to aspects of soil contamination, this waste that is not properly treated can cause odors, focus on insects, rodents, contributing to the spread of diseases, affecting public health. In addition to these products, the mineral coal combustion process for boilers can generate enormous amounts of ash.

Impact: ***Contamination of Soils by Solid and Liquid Waste***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	High	Long-term	High

Mitigation measures

The proposed mitigation measures for waste management are short to medium term and may require additional investments. However, the company should consider them in its expansion and growth process.

- The contractor must provide waste collection containers within project premises.
- In the case of organic waste, separate high-risk and low-risk materials.
- train workers for waste segregation ;
- In relation to non-organic waste, ensure the collection and temporary storage of waste in closed containers or bags;
- The contractor must establish a sanitary landfill for its operations where non-organic waste must be treated
- Reduce waste production through management; all animals received must have had their last feeding between 6 and 10 hours to reduce the volume of excrement after transport or at slaughter;
- High-risk organic waste must be treated in a different way, avoiding burying it. In case of burning, they must be incinerated at a temperature above 500 ^{0}C;
- Establish a shredder for low-risk organic waste disposal in a closed tank at a depth of 10 meters;
- Reprocess as much of the low-risk and high-risk material as possible. And consider the possibility of using low-risk materials for use in alternative treatments such as:
    - Production of biogas in order to reduce energy costs, coal use and associated emissions;

Impact: ***Contamination by hazardous chemicals***					
Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Long-term	Low

Mitigation measures

- Register all chemicals used;
- Store chemicals in an well-ventilated room with a concrete floor. Products must be sorted according to their degree of toxicity;
- Train staff in the use and handling of chemical products (disinfectants, insecticides, rodenticides), using personal protective equipment and clothing;
- Mixing and transfer chemical products should be done by trained people in well-ventilated and brightened areas, using suitable containers for the purpose;
- Empty containers should whenever possible be returned to the supplier of the product and should not be used for another purpose (storing potable water) and should be handled as hazardous waste. Containers contaminated with chemical products must be disposed of in accordance with the rules indicated on the container;
- Whenever possible, avoid purchasing chemical products in excess of what is needed, and rotate stock using the "*first-in, first-out*" system in order to prevent products from becoming obsolete. All expired pesticide should not be used under any circumstances;
- In case of out-of-date products, a destruction plan must be implemented which includes the rules for containment, storage and destruction in accordance with national and international rules (FAO, Stockholm convention, Rotterdam and Basel).

Water Quality

One of the great potentials for water contamination can be due to poor treatment of effluents. These effluents are mainly characterized by high organic load, high fat content, pH fluctuations due to the use of acidic and basic cleaning agents, high contents of nitrogen, phosphorus, salt and pathogenic microorganisms. The dump temperature varies around relatively high, due to the vapors used in plucking. This temperature, associated with the chemical and biological

composition of the effluent, favors the bactericidal activity of natural treatment systems. These when fresh can cause odors and methane emissions into the atmosphere.

Slaughterhouse discharges have high BOD (biochemical oxygen demand) and COD (chemical oxygen demand) values, parameters used to quantify the organic pollutant load in effluents, suspended solids, fat and floatable material. They are highly putrescible effluents that can cause odors. The effluent after slaughter can have an organic BOD load of approximately 92,000 mg/L, which can be reduced by approximately 35 a50% if the blood is recovered or separated. At this stage, degradation of the quality of surface and groundwater may occur, as a result of spillage, due to the rupture of the collectors that transport the effluents produced. This impact could be more significant if it represents the contamination of groundwater abstractions that supply the Slaughterhouse, and reach surface water courses by direct runoff or infiltration.

Impact: ***Water Contamination due to Poor Waste Management***					
Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	High	Long-term	Moderate

Mitigation measures

- All liquid effluents from the slaughterhouse must be collected into a Wastewater Treatment System;
- Establish a collection system for all slaughterhouse effluents to separate feathers and/or fat. The system can be simple Grids with manual cleaning, or more advanced technology with vibrating screens or static screens
- With the suspended solid waste removed, the effluents are collected through protected channels into a second box where the sediment and suspended material not collected in the first sieve is cleaned;
- The system must allow, at least, the treatment of liquid effluents according to the following categories:
    - Removing suspended solids, reducing the organic load reflected in terms of BOD for subsequent processes and recovering by-products that can be processed in rendering

plants. The equipment generally used for this type of treatment is: sieves, floaters, tanks equalization and grease traps. Chemical agents such as flocculants or polymers can be added to increase the efficiency of organic load removal;

- Removing most of the organic load, BOD reduction is done by removing organic material, mainly in the form of soluble organic compounds, which still remain after the primary treatment. Pollutant removal efficiency greater than 90% can be achieved through biological treatment. Biological treatment systems for liquid effluents commonly used are: ponds, activated sludge, anaerobic processes or a sequence of anaerobic and aerobic processes;
- Removing of nitrogen, phosphorus, suspended solids, pathogenic microorganisms. This processes aims to recover and minimize disposal of blood, fat, viscera and other by-products that can be reused considerably reduce polluting risks.

- For the removal of suspended solids, a grease trap is recommended, and a tank for depositing the retained material, with the purpose of providing adequate conditions for the use of the fat;
- The system must have a regular effluent quality controller and flow meter, allowing the identification of a possible break in the drainage system and treatment of the effluent produced by the Slaughterhouse and hatchery and a quick intervention to resolve the spill, thus minimizing potential negative impacts generated;
- Taking into account aspects of waterproofing retention basins with adequate capacity to retain the effluent produced for a period sufficient to allow the resolution of any malfunction or deficiency in operation without the need to discharge effluent with inadequate quality. It should be noted that the retention time in retain systems should not be less than 30 days.

Change in Air Quality

The air quality in the slaughterhouse operation process will be impacted by the production of noise and dust in the process of receiving chicken. Along the slaughter chain some noise will be generated with greater intensity in the process of plucking the birds. Noise levels in these two

sections may be above the acceptable level defined by the WHO at around 65 dB. Another aspect that can happen in addition to dust is the odors:

a. Odors by chicken feces;

b. Effluent treatment system , with potential impact mainly on the anaerobic lagoons and treatment of the material retained in the sieve; it can be aggravated by problems in the operation of the system, mainly in the case of overload and excessive accumulation of sludge in the ponds.

Impact: ***Change in Air Quality***

Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Low	Long-term	Low

Mitigation measures

- Slaughterhouse workers in each section must use specific protective equipment;
- All liquid effluents must be collected for the WWTP;
- Keep garbage collection containers segregated, covered and ensure their systematic collection to the landfill;
- Ensure regular maintenance of the WWTP to prevent leaks;
- Ensure cleaning and disinfection of all work areas;
- Ensure that workers know how to use the toilets correctly and carry out systematic cleaning.

7.2.2. Socio economic environment

Occupational health and safety

During the operation phase, biosafety aspects are of high importance. The slaughter room is one of the most risky places for workers.

Occupational health and safety issues during the operation of poultry processing facilities primarily include the following:

Physical Hazards: exposure to same-level fall hazards due to slippery conditions, use of machinery and tools, collisions with indoor transport equipment (eg, forklifts and receptacles).

Biological Hazards: Workers involved in operations that require handling birds may be exposed to dust, biological and microbiological agents. This can result in eye and skin irritation, allergic reactions and Newcastle disease or ornithosis. Pathogens, including salmonella and campylobacter, can cause skin and respiratory tract infections. Specific precautions need to be taken by workers who come into contact with birds suspected or confirmed to have PAH contamination.

Chemical Hazards: Exposure to chemicals (including gases and vapors) typically involves chemical handling activities related to cleaning and disinfecting operations of process areas, as well as maintenance of heating (thermal oils) and cooling (ammonia).

Exposure to Heat and Cold: Potential occupational impacts of exposure to heat and cold include heat from burns and other operations, and cold in refrigeration areas and rooms.

Exposure to noise and vibration: Exposure to noise and vibration can result from proximity to noisy machinery such as compressors, automatic packaging machines, condensers, ventilation units and pressurized air, among other sources

In the process of receiving birds, there is the potential for respiratory and auditory diseases due to dust that the birds can release into space as well as the noise levels. In the following phases until the cold tunnel, workers may be exposed to high levels of noise and vibration, drastic temperature changes (heat and cold), injuries may also occur due to cutting and perforating objects commonly used in slaughterhouses.

Evisceration room workers are exposed through direct contact with meat, blood, viscera, feces and urine. Additionally, the chemical products used in the disinfection and washing of equipment can cause chemical poisoning, asthma and dizziness.

Impact: ***Change in Air Quality***					
Without mitigation	**Statute**	**Extension**	**Magnitude**	**Duration**	**Significance**
	Negative	Local	Medium	Long-term	High
•					

7.3 Cumulative Impacts

The Assessment of Cumulative Impacts is an internationally recognized and recommended practice, particularly in situations where there is a spatial concentration of undertakings causing cumulative impacts. With the purpose of analysing the potential impact of a development project in the context of other activities that affect the same environmental component in order to propose mitigation measures. This assessment makes it possible to consider development actions that occurred in the past, those that occur in the present and those that may occur in the future.

For the proposed sub-projects, the most probable cumulative impacts are as follow:

- Deterioration of air quality, noise and vibrations due to increased emission of gases resulting from the circulation of vehicles and daily activities at the slaughterhouses;
- Contamination of water courses poor effluent management:;
- Compaction and contamination of the soil by the circulation of vehicles and machines;
- Significant increase in inadequate exploitation of wildlife and forest resources, resulting from the significant presence of people working on each project;
- Increase in cases of GBV and socio-economic conflicts due to the significant presence of people from other areas and with social habits and values different from those in the project area;
- Pressure on demand for local public services due to increased demand resulting from increased human presence in the area.

These impacts can be minimized through coordination, and works inspectors to guide responsible conduct in all aspects of project implementation, in compliance with environmental and social safeguards standards. .

The project will be implemented in areas that exist already some projects undergoing or in process in diverse sectors. The Bank has recently funded a number of Project interventions in support of the agriculture and rural development sector in Mozambique, namely: I) The Post Cyclone IDAI Emergency Recovery and Resilience Program; ii) the Drought Recovery and Agriculture Resilient Project; iii) the Value Chain and Youth Empowerment; iv) the Sustainable Land and Water Management Project (SLWRMP); and vii) The Emergency Humanitarian Relief Assistance Related to the 2019 Cyclone.

8. MONITORING, SUPERVISION AND REPORT

The proper monitoring and implementation of the ESIA/ESMP involves periodic verification on site, of the plan when carrying out the construction activities, by the MADER/PIU. Monitoring arrangements and measures, including stakeholder engagement and GRM to ensure E&S compliance of sub-projects will be defined on each site-specific ESMP.

For the purposes of the Monitoring Program, national standards and regulations should be applied. In the absence of national regulations and standards, international standards (ISO) must be adopted or others that are considered adequate or internationally acceptable. The following types of reports should be prepared:

- Routine monitoring reports (RMR),by the contractor and monitoring team on site;
- Monthly monitoring reports (MMR), by the contractor;
- Quarterly monitoring report (QMR), by MADER;
- Semi-Annual monitoring report by MADER;
- Annual monitoring report (AMR), by MADER.
- Annual E&S audit by MADER through an independent consultant.

Regular monitoring activities on-site shall be conducted by the supervising Engineer/HSE Specialist of the Contractor to verify that measures identified in the ESMP are being implemented, as well as to identify in case any changes apply and require new/adapted measures.

The monthly report should include at least information on the ESMP implementation, conflict resolution/GRM and HIV reports. Quarterly site visits will be performed by the M&E and E&S Officer of the PIU and the Representative from the SDPI to hold meetings with the stakeholders in the various project sites to discuss implementation aspects of the project, as well as any other matters that stakeholders consider should be addressed.

The E&S Officer in the PIU will be responsible for the monthly,quarterly, semi-annual and annual progress reports on E&S Performance to be submitted to the AfDB.

9. ENVIRONMENTAL AND SOCIAL PERFORMANCE AUDITS

The Environmental Audit and Environmental Inspection are regulated by Decrees No. 25/2011 (of June 15) and No. 11/2006 (of June 15) respectively. Environmental audits can be public or private. Public when carried out by the Ministry that oversees the environment sector (MTA through AQUA), and private when carried out by entities whose activity is potentially causing environmental degradation (through an independent consultant).

Private audits are carried out at least once a year for activities of categories A +, A and B, aiming to report compliance with the labour and functional processes of the activity, with the legal environmental requirements.

Independent environmental and social performance audits will be commissioned with the objective of assessing the compliance of the project with E&S requirements by the GOM and the AfDB.
The audit will be able to identify any amendments in the ESIA/ESMP approach that are required to improve its effectiveness and enhance E&S performance of the project.
The Audit Reports will be developed annually, as per GOM and AfDB requirements. The template for the ES Audits are included in Annexes.

10. ESIA IMPLEMENTATION COST

The cost of ESIA/ESMP implementation is part of the bill of quantities of the project design. Most of the actions (mitigation and enhancement measures) that are proposed should be assured under each activity (construction and/or/operation) as routine best practices that should be included in the Terms of Reference (ToR) of each works contract. To effectively implement the environmental and social management mitigation measures as part of the ESIA/ESMP, necessary budgetary provisions have to be made for sub-projects in all components. It is important to identify financial requirements even if are indicative. This ensures upfront appreciation of the financial requirements and allows early planning and budgeting accordingly. Tentative budget for the project includes:

- Sensitization and training cost and the cost of environmental monitoring and reporting;
- Institutional capacity building for the coordination team representatives at national and local level on safeguards monitoring;
- Implementation of mitigation measures proposed under the ESIA/ESMP;
- Environmental licence permits and other permits (DUAT etc.);
- Environmental auditing and monitoring process by AQUA/Independent auditor.

Table 10: Implementation Cost

#	Item	Total (US$)
1	Sensitization and training cost of environmental safeguards implementation, monitoring by the extension services officers.	300 000,00
2	Institutional capacity building for the coordination team	65 000,00
3	Environmental license permits and other permits (Lavra, DUAT etc)	8 000,00
4	Independent Environmental auditing (Auditor)	4500,00
5	Annual ES audit performances	23 632,50
6	Project Completion audit of ES performance	7 877,50
Total		**324 530,00**

11. CONCLUSION AND RECOMMENDATIONS

The environmental and social assessment carried out revealed that there are no E&S "fatal issues" that would prevent the implementation of the project. However, there are socio-environmental impacts that must be carefully managed and controlled during the implementation and operation of the project through the application of the respective mitigation, management, and monitoring measures.

The most significant impacts are related to soil and air contamination, especially during the operation phase.

The negative impacts are, however, counterbalanced by positive social and environmental impacts, considered very important at the local level (job creation, promotion of the economy).

The ESMP (Volume II) contains provisions and directions for the implementation of effective mitigation measures to avoid or minimize the negative socio-environmental impacts or enhancement to maximize the positive impacts.

The public consultation meetings helped to inform the interested and affected parties about the project, its potential positive and negative impacts, as well as the need to conduct environmental and social impact studies. These meetings provided an opportunity for affected and interested parties to express their opinions, concerns and needs regarding the studies that will be carried out.

The Project generates predictable negative impacts that can be effectively mitigated through proper implementation of the Environmental and Social Management Plan as well as other associated instruments that aim to minimize the project's negative effects on the natural environment and human health. The effective implementation of the environmental management plan should start from the preparation phase, with a clear indication of the need for the implementation of environmental and social safeguards by contractors, as well as the insertion of specific clauses on the implementation of environmental and social safeguards.

The Project bidding documents should include adequate E&S Specifications and the appropriate environmental and social clauses should be included in Contractors' contracts to ensure compliance with mitigation measures in the ESIA/ESMP, national regulations, and the Bank's ISS requirement standards. The ESIA/ESMP should form an integral part of the project implementation, monitoring and reporting and should be subjected to monitoring by the Bank and the Borrower Executing Agency (under the Environmental and Social Safeguards Specialist and

the M&E project officer) in close cooperation with the National/provincial Environment Authorities.

RERENCES

African Development Bank (2015)	Integrated Safeguard System. Immeuble CCIA
Ambiental, BR,	Maputo de 29 de Setembro de 2004;
Ambiental, BR	Maputo de 31 de Dezembro de 2015;IFC (2017) Sustainability Policy
Decreto 66/98	Regulamento da Lei de Terras. Boletim da Republica, Maputo.
Decreto 94/2014, de 31 de Dezembro	Regulamento sobre a Gestão de Resíduos Sólidos Urbanos;
Decreto 83/2014, de 31 de Dezembro	Regulamento sobre a Gestão de Resíduos Perigosos;
DEKONING, J. (1993):	Checklist of vernacular plant names in Mozambique
DE MOURA, H. J. T. e F. C.DE OLIVEIRA (2012):	O Uso das Metodologias de Avaliação de Impacto Ambiental em Estudos Realizados no Ceará. Ferramentas e Técnicas de Gestão Ambiental, Universidade de Fortaleza – Unifor, Brasil.
Decreto 67/2010, de 31 de Dezembro	Regulamento sobre Padrões de Qualidade Ambiental e de Emissão.
GoM, Resolução 8/97 de 1 de Abril	Política e Estratégia de Desenvolvimento de Florestas e fauna Bravia. Boletim da Republica, Maputo
GoM, Decreto 45/2004	Regulamento sobre o processo de Avaliaçao de Impacto
GoM, Decreto 54/2015:	Regulamento sobre o processo de Avaliaçao de Impacto
INE & MISAU (2013):	Inquérito Demográfico e de Saúde. Maputo, Moçambique
INE (2016)	Mozambique Yearbook. Self-Edition. Maputo Mozambique;

INE (2011) Agriculture and Livestock Census (CAP), Maputo

INE (2017) Contas Nacionas, Regionais e Provinciais 2015. Reprografia Central do INE, Maputo Mocambque

INE (2016) IOF – Household Survey 2014/15-Final Report Reprografia Cental do INE. Maputo Mozambique

ANNEXES

ANNEX 1 - PUBLIC CONSULTATION REPORT

This report describes the process and results of the public consultations carried out within the scope of the preparation phase of Environmental and Social Impact Assessment for PROVACA.
The report is divided into four sections where the methodology adopted for conducting the consultations and the results of the meeting are presented, including the main issues raised by the project's interested and affected parties. At the end of the report, the list and records of the participants are incorporated, confirming the participation of the target stakeholders in this project. The public consultation meeting for ESIA was held in Gurué, (Zambezia), Cuamba, Marrupa and Lichinga, (Niassa) and Rapale (Nampula).

In Nampula, the consultations took place from the 9th to the 11th of July, from the 12th to the 14th in the Province of Zambézia and in September 2021 in Niassa.

A total of 43 people were consulted, of which 36 were men and 7 were women, representing farmers, intermediaries and cooperatives for the production of maze and soy.

Public consultations for each location were convened, disseminated and facilitated by the district services for economic activities. The reduced number of women in these public consultations is a reflection of the number of women involved in these activities, production of maze and soy and poultry, in implementation areas

Objectives of Public Consultation

- Provide information and consultation to all interested and directly or indirectly affected parties (PIAs),
- Ensure that all PIA's are permanently informed and have the opportunity to contribute, in this way so that issues relevant to the project are considered in the report.

The Public Consultation is the base to create a communication channel between the Public, the Consultant, the Proponent and the financier.

Methodology

The methodology adopted for the Public Consultation followed the following steps:

- Identification of interested and affected parties (PIA`s)
- Affected communities, public and private institutions.

The consultancy methodology was done through focus group meeting, individual interview followed by site visits and a public meeting with farmers, were was possible.

Summary

For this report the consultant held focal group meetings with de following Institutions:

- MADER-Safeguards department
- MADER-National Livestock Directore (DNDP)
- AMA
- SPAE-Nampula
- SPAE-Zambezia
- SDAE-Rapale
- SDAE-Gurue
- Government of Niassa Province
- Ministry of Land and Environment
- Ministry of Economy and Finance
- Ministry of Agriculture and Rural Development
- Provincial Services for Economic Activities
- At District Level
- Marrupa
- Marrupa District Administration
- District Services for Economic Activities
- Nungo locality secretariat
- Cuamba
- Cuamba District Administration
- District Services for Economic Activities
- Catholic University_Cuamba
- Municipal Council of the City of Lichinga

Information presented by the Consultant:

- Description of the project;
- Project activities;
- Project Areas;
- Benefit for Local Communities;
- The issue of prices by traders;
- Production Areas: The fact that the areas allocated to each producer do not allow them to reach the targets in terms of money expected;
- Project Implementation: Whether the proposed project will give any monetary value to producers.
- Next steps.

The meeting was conducted in Portuguese and local language when needed.

Main Issues Raised at the Meeting

- The omission of prices by merchants;
- Production Areas: The fact that the areas allocated to each producer do not allow reaching the targets in terms of expected money;
- Project Implementation: Whether the proposed project will provide any monetary value directly to local producers;
- The issue of prices by traders;
- Access to modern agriculture equipment
- Availability to better seeds, especially for soy.

Date	07/12/2023		
Time	09:00		
Location	Feed Factory: Gurue District		
	Name	Position	Institution
	Priscilla V. Fenias	Consultant	-

	Jose Manuel	-	SDAE-Gurue
Agenda	• Project Presentation • Expectations for the operational phase • Data on soy and maize production in the district • Recurring challenges		
	Discussion		
	Baptista Bernardo: As part of local farmers, the prices practiced by intermediaries who buy corn and soybeans and sell them to the processing industry are of great concern. The signed agreements indicate a price that is not the same as the one practiced or paid to the farmer who provides the service. It asked that in the operational phase of the feed factory and the agreements between the associations and the factory, the farmers be directly involved in the negotiations. Artas Evaristo: One of the great challenges for local farmers is the availability of soy seed in the district, which is currently experiencing serious shortages. Baptista bernardo: asks for support from the local authorities in creating a cooperative or association of producers to safeguard the interests of the group, which is often marginalized at the stage of marketing the product. Nelito Pedro: How will the factory work? The population is not aware of much, apart from the fact that it is a feed factory. Baptista Bernardo: The district and the local producers have the capacity to supply the factory with 50% of the necessary material. Right now, the most important thing is to provide local producers with mechanized means to increase production and better quality seed.		

	Comments/Answers SDAE: For the factory's operating phase, the local government, through the District Services for Economic Activities, intends, together with the factory manager, to establish policies that allow the hiring of unskilled labor at 100% local, benefiting and involving the community in the surrounding areas. SDAE: The district has parallel initiatives to improve the conditions and practices of agriculture that include mechanized means through the SUSTENTA program, the great challenge at the district level and the adherence of farmers to this support.
	Final considerations
	To end the session and there being no further questions, Mr. Celso Tivane, thanked the participation and understanding of the guests for coming to the project, and said that the construction of the landfill will be an added value for the Municipality of Lichinga, and the elimination of several existing dumps will be associated with enormous gains in the protection of the environment and in the health of the population of Lichinga district. Since the rate of contraction of diseases related to the poor management of waste in the municipality of Lichinga will tend to reduce.



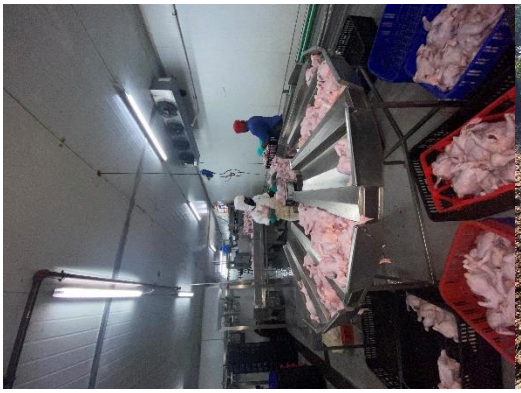
<table>
<tr><td>Date</td><td colspan="3">07/11/2023</td></tr>
<tr><td>Time</td><td colspan="3">09:00</td></tr>
<tr><td>Location</td><td colspan="3">New Horizons: Rapale-Nampula</td></tr>
<tr><td rowspan="5"></td><td>Name</td><td>Position</td><td>Institution</td></tr>
<tr><td>Priscilla V. Fenias</td><td>Consultant</td><td>-</td></tr>
<tr><td>Luisa Serra</td><td>Manager</td><td>NHM</td></tr>
<tr><td>Amiel Brasa</td><td>-</td><td>SPAE-Nampula</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>Agenda</td><td colspan="3">• Project Presentation
• Overview of the activities
• Implementation of Environmental and Social management measures
• Relations with the community
• Sector perspectives</td></tr>
<tr><td></td><td colspan="3">Discussion</td></tr>
<tr><td>Collected Information</td><td colspan="3">New horizons works with small producers in two distinct ways:
1. Within the Novos Horizontes farm, with the farm's infrastructure and supplies, associated in 2 or 3 families,
2. External associations and local Agricultural School, as part of student curriculum development. This school is dedicated to commercial activities as chickens and eggs as a means of supporting monthly income.
The chickens are breeaded in cycles of 7 to 8 weeks, at the end of this cycle NH pays per kilo of chicken. There are 7 cycles per year.
Selected aggregate producers must have the capacity to raise 1500 to 2000 chickens;
For waste management and effluents from the slaughterhouse, there is a WWTP, a pond system that treats the water in 3 stages, but the water from the final stage is not yet being reused because tests have not been carried out;</td></tr>
</table>

	Waste from the slaughterhouse, such as feathers, dead birds and poultry litter, is placed in a composting system to produce fertilizer that is sold to the company Jacaranda, which is dedicated to the production of bananas. For household producers, chicken litter is used on family farms and NH has an awareness program through its environmental and occupational security officer. NH has a functional domestic waste system clearly identified for temporal condition for each type of waste, At the moment, NH has 132 integrated breeders; The final processed product goes straight to the market, the service is not outsourced, NH has a digital system for Grievance Management and has boxes around the premises that are only opened by human resources and the general manager of the company, The hiring process is done through a local liason committee, NH is currently creating a database of local producers and services for future partnerships. NH currently has a feed factory, with a production capacity of 600T per day. 30% of the feed is intended for sale ,and 70% feeds internal production. The corn and soy used in the factory come from Gurue, Lichinga, Namapa and Chiure districts. The fine limestone from Mongicual district and the bulk purchased in Malawi. **Gildo Jorge:** The growing process is done in an average of 30 days, which can fluctuate aiming to reach the ideal weight for sell In each cycle they raise 15 to 16 thousand chickens, and the numbers are greatly influenced by the season, outbreak of diseases such as

	diarrhea, coxidiosis, paralysis and New castle. In the event that they are affected by one of these factors, the mortality rate is 5 to 9%. NH has duly established biosafety procedures, which do not allow entry and exit from the breeding area without complying with the procedures; At the end of each cycle, the "all in-all out" system is used to disinfect the area; ***Mr Luis*** He has been an NH breeder since 2018. He feels that his quality of life has changed significantly, he managed to buy a motorcycle, build a house with conventional material. ***Omar Jabro*** Nutritionist and Quality Manager Manages the grievence mechanism, which is divided into internal and external complaints. The internal ones are linked to stores and suppliers and the external ones to communities and affected parties. The safety and security officer has a program to engage and monitor outgrowers at their breeding sites.








Date	07/12/2023		
Time	09:00		
Location	MADER: National Directorate of Livestock		
	Name	Position	Institution
	Priscilla V. Fenias	Consultant	-
	Suzana Jamal	-	MADER
Agenda	• Project Presentation • Overview of the Sector in Mozambique		

	Discussion
	What is the number of slaughterhouses and their capacity in Mozambique by province? Suzana Jamal: The country's capacity in terms of slaughter infrastructure (slaughterhouses) is quite limited. The country has only 8 operational slaughterhouses; What is the number of creators under contract and the respective companies, as well as the production of small creators? Suzana Jamal: Broiler production models - large scale **(Large >5000)** Large-scale producers are part of large (industrial) poultry companies or producers integrated into the industry in a vertical integration model. These send the chicken to slaughter, freezing and marketing in a formal chain Higest has approximately 30 integrated New Horizons: Mozambique Farms does not have Broiler production models - medium and small scale **(Small <4999)** Medium and small scale producers fill the largest contribution fraction in terms of production volume. They are mostly independent and direct live chicken to informal markets. Its connection with the industry is established only in the acquisition of inputs (chicks and feed); ADAM: has around 600 members Association of poultry farmers of Manica:12 Pemba Poultry Farmers Association:350

	What is the quantity of commercialized chickens that do not enter the slaughterhouses, slaughterhouses/market etc? Suzana Jamal: They are approximately 40% of the production. What is the number of national feed factories and the daily installed capacity: Suzana Jamal: Similar to slaughterhouses, the country's capacity in terms of feed factories is limited, forcing producers to resort to imports; Currently the country has only 9 feed factories; Regarding incubators/1-day-old chicks produced in Mozambique, their distribution across the country Regarding imports, what are the statistics for the last 5 years? Are any vacinnes or hormones produced in Mozambique? Suzana Jamal: Nothing is produced

Date	07/12/2023		
Time	15:00		
Location	Associação Moçambicana de Avicultores		
	Name	Position	Institution
	Priscilla V. Fenias	Consultant	-
	Zeiss Lacerda	AMA Executive Secretary/ Faculty of Veterinary Medicine - Eduardo Mondlane University	AMA
Agenda	Project Presentation		

	Discussion
	For the model that the project proposes, of integrated producers that feed a large producer, in our country the cases that are similar to this model are Higest in the province of Maputo and Novos Horizontes in Nampula. The poultry chain follows these steps process: I. Reproduction (breeding birds, eggs), II. Incubation, III. Small Chicken (Which are distributed by medium, small and large producers, depending on the breeding modality), IV. Slaughter V. Distribution VI. Crosscutting Issues (Feed factories, supplied by the corn and soy production sector). Environmental issues have been addressed with producers, waste treatment and other components, there is awareness of environmental and social not implemented properly.

Date	07/12/2023		
Time	8:00		
Location	SPAE-Nampula		
	Name	Position	Institution
	Priscilla V. Fenias	Consultant	-
	Amiel Brasa	Veterinarian	SPAE-Nampula
	Benefiel Zeca	Eng Agro-Livestock	SPAE-Nampula
Agenda	Project Presentation Overview of the sector at Province level Skills and areas of activity		

	Discussion
	For agricultural activity in the province, the Provincial Services for Economic Activities, work in coordination with the Provincial Directorate of Agriculture and Fisheries, and the National Institute of Economic Activities in inspections of breeders and other livestock derivations. Based on the experience of the province, waste management is a great challenge and some breeders, even well intentioned, do not monitor the treatment system until final disposal. This experience is more severe in small breeders. One of the main roles of the provincial services in these multisectoral inspections is to detect any suspicion of disease, collect samples and carry out tests. The province's ability to respond to outbreaks is limited, but it always has newcastle vaccines The entry of smuggled chickens, importation, are the great challenges of the sector at provincial level, the services have been working with the Ministry of Industry and Commerce to face these practices. MEREC and Higest are the main feed suppliers for the local producers.

Location: Nango Local Office Headquarter

Date:13/09/2021

Questions/Observations	Answers/Observations
The main problems that we as farmers face go from the lack of fertilizers, the invasion of monkeys in our fields, the lack of funds for the extension of production areas, the lack of seeds in the village and the lack of buyers. Enoque Bino– Farmer	There is price tempering in the local market. The price for the products is determined by the trader. Jorge Real – Extensionist For the issue of seeds, there is now an agrarian house in the village, but unfortunately it is still unable to respond to local demand. Augusto Ferrão - Head of the Nungo

	Community What stimulates the invasion of the monkeys in the fields is the modality in which agriculture is practiced. The farms are very dispersed from each other. And they need to be in blocks to reduce this invasion. Servorgel Brandao-SPAE
There are communities where agriculture is practiced in blocks as is the case of the Nancurre community and even so the monkeys are there. In what modalities will be the aid that the project intends to bring to the farmers in the area. Is money expected to be distributed? Lourenco Dimo- Farmer	The practice of farming in block, in addition to scaring away the monkeys, allows the visit of technicians with some ease, which improves assistance to local farmers. The project will not provide money, it can support a producer to support other producers, but there will be no cash financing for each one. Servorgel Brandao-SPAE
What is the solution if there is no one among the local farmers eligible for funding? Lourenco Dimo- Farmer	The district has already started this work and already has a preliminary list of potential candidates. The government's concern is to produce and sell Servorgel Brandao-SPAE As for this question, the person is already being prepared to lead the group and will soon be introduced. Augusto Ferrão - Head of the Nungo Community
What are the criteria for choosing this person? Lourenço Dimo-Campones	Ability to negotiate and take the risk with the production. Servorgel Brandão-SPAE
The local authorities have already done the work of informing about the project and listening to your interest in being beneficiaries. This consultation is a continuation of this	Noted

process, to know your sensitivity to what was explained Augusto Ferrão - Head of the Nungo	
How to apply to be the beneficiary developer? Lourenço Dimo- Farmer	You can make a project proposal and present it to the district for approval. Servorgel Brandão-SPAE
As for the sales, producers look for where to sell. Having someone designated for sales, the person will know where to sell and make contacts with potential buyers, this issue of selling is not very difficult. Artur Antonio-Farmer	When farmers are associated, it facilitates the interest of potential buyers. **Servorgel Brandao-SPAE**
Local youth have many difficulties. The expected 40.000 Meticais for the sale of the production is not realistic for the assigned areas. The production is enough for self-support but not for sale. Bino-Farmer	A study has already been carried out and we already have the experience of SUSTENTA on production costs. It is necessary to choose strategic crops with higher market value, with good seeds, fertilizer, and pest control, there is a greater possibility of achieving the desired production. **Servorgel Brandão-SPAE**
It is necessary to improve cultivation practices to guarantee production, in areas assisted by other projects the production exceeds farmer's expectations. Artur Antonio-Farmer	Noted
How does the district and local communities deal with conflict resolution, is there a system, grievance mechanism or committee created to discuss and solve problems? Consultant	First, through the parties involved and if an agreement is not reached, it goes to local secretary. **Bimo-Farmer**

	Conflicts between neighbors, we turn to local leaders and then to the local secretary Lourenço Dimo-Agriculturist First there is an attempt at resolution by the parties and then there can be arbitration by third parties. The post is training paralegals with IPAJ assistance for conflict resolution Augusto Ferrão - Head of the Nungo Community
In this consultation, unfortunately we have women represented by only one person. Is there any association at local level that works with gender issues, vulnerable groups? Consultant	There is SNV Demaliba, which works with women farmers in Malema/Pemba/Lichinga markets. The type of assistance given is for production and trade. Augusto Ferrão - Head of the Nungo Post
What will be the main products under this project? Augusto Ferrão - Head of the Nungo Pos	Soybeans, sesame e horticulture. **Servorgel Brandão-SPAE**
It would be good for the district to have young farmers trained in entrepreneurship and business management Servorgel Brandão-SPAE	The post already has 9 young people trained in business management and can be extended to farmers benefiting from the project. Augusto Ferrão - Head of the Nungo Community

Identified Area for Horticultural Planting and Construction of irrigation system Malema.

- ● Farmers in Malema area have DUATs for the exploitation of their cultivation areas;
- ● The area chosen for the construction of the irrigation system has a watercourse with water all year long. This area is characterized by native vegetation around it and some banana trees.

Meeting with the Catholic University of Mozambique-Cuamba

Location: Catholic University UCM-Cuamba

Date:14/09/2021

Participants	Intervencions
Albino Cipriano- Director of UCM-Cuamba	The main crops produced are maize and soybeans. In near future will be introduced a sesame; ● The feed factory has already operated on an experimental basis in the past, and stopped due to internal reasons in 2019; ● The only thing the university resents for the operation of the factory is the soy roasting machine; ● The production capacity of the feed factory is 8 tons/day.

	● An environmental impact and economic feasibility study for the factory has already been carried out.
Assucena Auela-UCM Administrator	• UCM is currently looking for partnerships for the operation of the factory. We have already had contacts with some interested parties; ● The factory is in full working condition and with complete machinery.
Rindi Fernando- Dean's Adviser/Vice Dean	UCM is in a restructuring phase to separate the projects with the obligations of each faculty to allow the separation and full effectiveness of each activity
What are the criteria for choosing this person? Lourenço Dimo-Campones	Ability to negotiate and take the risk with the production. Servorgel Brandão-SPAE
The local authorities have already done the work of informing about the project and listening to your interest in being beneficiaries. This consultation is a continuation of this process, to know your sensitivity to what was explained Augusto Ferrão - Head of the Nungo Post	Noted




Meeting in Lichinga City Council

Date:15/09/2021

From this meeting the following points were raised: Location of the abattoir to be rehabilitated under this project is in area that has been encroached and is not any more suitable. The Municipality has identified a new area that has to be fenced. The discussion with the Municipality officers is summarized in the following table:

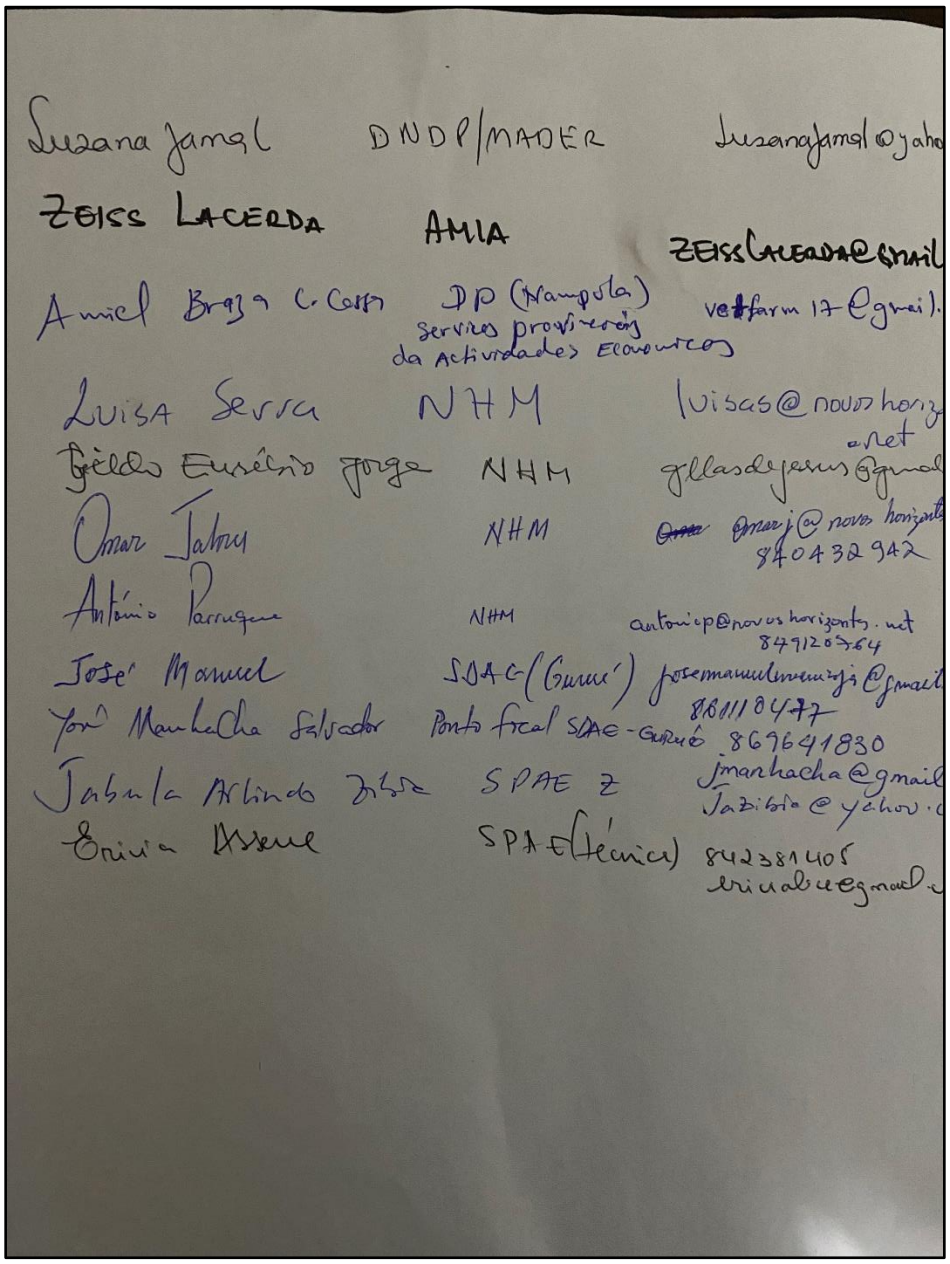
Questions/Observations	Answers/Comments
Lichinga City Council There was already a slaughterhouse, but it was abandoned, the municipality in its plan had foreseen the construction of a slaughterhouse, but with the arrival and proposal of a slaughterhouse made by Mr Aires Ali. The project was later handed over to be assigned to a private manager interested in the project.	The project is a public project, investments no habitation of private sector infrastructure is in the project design. Rehabilitating the existing public infrastructure will be costly and there is not enough area for operation of an abattoir

There is the option of using the already existing slaughterhouse, launching a tender and finding a manager or build a slaughterhouse under the management of the municipal council. There is any possibility to rehabilitate private slaughterhouse?	
Will the African Development Bank help with the construction?	The purpose of the consultation is to inform about the project and gather sensitivities, not to make implementation decisions; The feasible option is to select a new areas to construct a new slaughterhouse
Another concern would be regarding the implementation period. We still not aware of dates, or when it will be executed. When exactly do we intend to implement the project?	The decision of when the project starts, will be clear after the approval of the project by the Bank board. The environmental safeguard instruments are part of the approval process. Therefore, at this time is not yet known.

List of participants

Stakeholders: Institutions consulted

Name	Institution	e-mail address



Participation List:Gurue-Zambezia

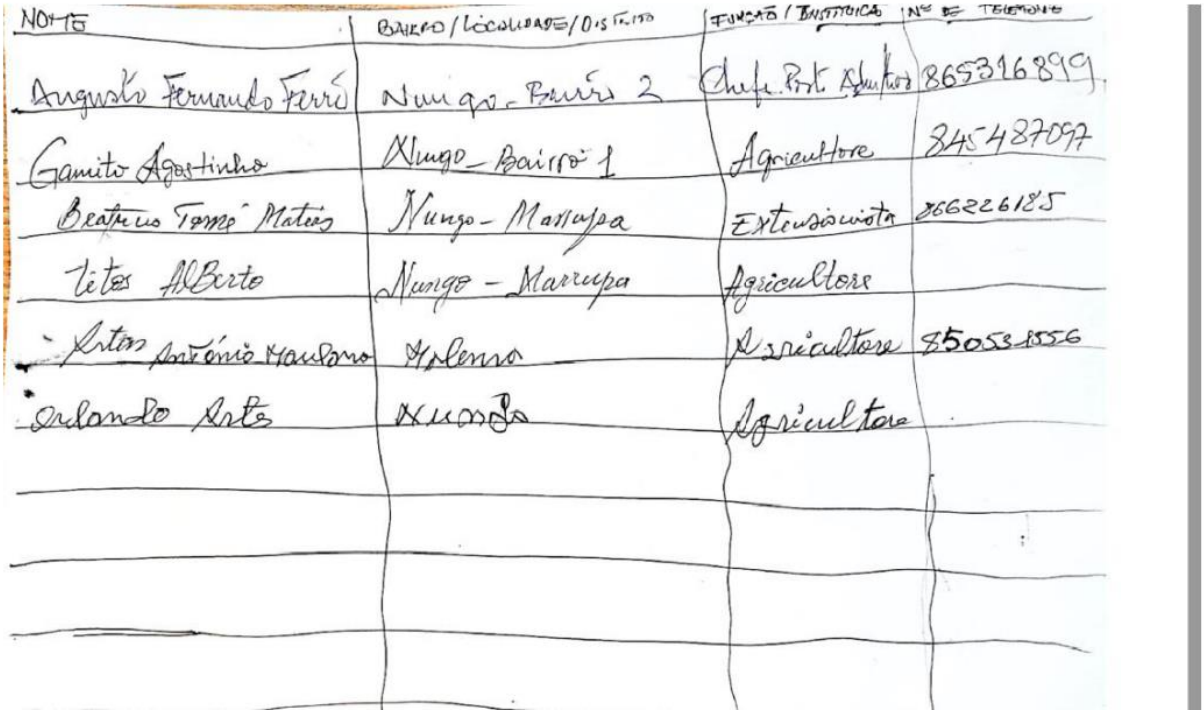
Nome	Comunidade	Contacto
Paulino Bernardo	Horicultor	
Baptista Bernardo	Comunidade Namacala Agricultor	84147786T
Bonifacio Carlitos	Capomes	865139571 847245016
Brasali G. Carvalho	Camponês	863735399
Ronaldo João	Campones	844544115 / 865179915
Artaz Evaristo	Campones	~~872458980~~ 8724809986
Patricio Chico	Capones	873816122
Nelito Pedro	Campones	871808706
Juni Julio	Camponês	865828813
Vasco Chico	Campones	865075526
Atlino Bulaisse	Campones	862513141
Laura Almirando	Campensos	8
Ofelia José	Canpnsós	87640956o

Lista de Presenças - Cuamba

Nome	Bairro / Localidade / Distrito	Função / Instituição	contacto / email
Sueco Alberto Lapusso	Cuamba	UCM	848449980/saapnam@ucm.ac.mz
Agusseni José Haurolo	Cuamba	UCM	843122485/[illegible]@ucm.ac.mz
Dr. Randal Fernando	Reitoria Central Beira	UCM	843306415/rfernando@ucm.ac.mz

Lista de Presenças - Marrupa 13-09-2021

Nome	Bairro / Localidade / Distrito	Função / Instituição	nº de Telefone
Inoque Bisso	Nungo Marrupa	Agricultura	869699638
Nazarena Samuel	Nungo Marrupa	Agricultura	850071199
Bolemário João Kuro	Nungo Marrupa	Agricultura	866844955
Davide Usseme	Nungo Marrupa	Agricultura	868148630
António Luís Celso	Nungo Marrupa	Agricultura	869412288
Lemine Agostinho	Nungo Marrupa	Agricultura	863055239
Aires João	Nungo Marrupa	Agricultura	
Lourenço Bimo Amisse	Nungo Marrupa	pequenos vendedor	
Garito João Nuro	Nungo Marrupa	Agricultura	
Jorge Martins Real	Nungo - Marrupa	Extensionista Ramal SDAE-Marrupa	877204662 / 842046621



NOME	BAIRRO / LOCALIDADE / DISTRITO	FUNÇÃO / INSTITUIÇÃO	Nº DE TELEMOVEL
Augusto Fernando Ferró	Nungo - Bairro 2	Chefe Pst. Adultos	865316899
Gamito Agostinho	Nungo - Bairro 1	Agricultore	845487097
Beatrice Tomé Mateus	Nungo - Marrupa	Extensionista	866226185
Teles Alberto	Nungo - Marrupa	Agricultores	
Artur António Mausone	Nalema	Agricultore	850538556
Orlando Arte	Nungo	Agricultore	