REPUBLIC OF MOZAMBIQUE

MINISTRY OF PUBLIC WORKS, HOUSING AND WATER RESOURCES

NATIONAL ROADS ADMINISTRATION (ANE)

INTEGRATED FEEDER ROAD DEVELOPMENT PROJECT (IFRDP)

(PROJECT -- P158231)

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

Final Report

In Nampula and Zambezia provinces- Mozambique

January, 2018

Acronyms

ANE	Administraçao Nacional de Estradas
ABMS	Area Based Maintenance System
ANRLMP	Agriculture and Natural Resource Landscape Management Project
ARPAC	Arquivo do Patrimonio Cultural
CAE	Child Abuse/Exploitation
DPTADER	Provincial Directorates of Land, Environment and Rural Development
EA	Environmental Assessment
EHSG	Environment, Health and Safety Guidelines
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESSF	Environmental and Social Screening Form
ESMP	Environmental and Social Managment Plan
EU	European Union
GBV	Gender Based Violence
GoM	Government of Mozambique
GRM	Grievance Redress Mechanism
IBRD	International Bank for Reconstruction and Developmen
ICR	Implementation Completion Report
IDA	International Development Association
IFC	International Finance Corporation
IFRDP	Integrated Feeder Roads Development Project
IGAs	Income Generating Activities
IPMP	Integrated Pest Management Plan
STI	Sexual Transmission Deasease
MASA	Ministério da Agricultura e Segurança Alimentar
MIC	Ministerio da Industria e Comercio
MIREME	Ministerio de Recursos Minerais e Energia
MITADER	Ministério da Terra, Ambiente e Desenvolvimento Rural
MozDGM	Mozambique Dedicated Grant Mechanism
MozFIP	Mozambique Forest Investment Project
MOPHRH	Ministerio as Obras Publicas
NGOs	Non-Governmental Organizations
NTFPs	Non Timber Forest Products
OED	Operations Evaluation Department
OPRC	Output- and Performance-based Roads Contracts
PLC	Project Liasion Commmittee
POs	Political Operations
PPP	Public and Private Partnership
PQG	Plano Quinquenal do Governo
PROIRRI	Sustainable Irrigation Development Project
OHS	Occupational Health and Safety
RAP	Resettlement Action Plan
REDD+	REDD plus sustainable management of forest, forest conservation, enhancement of carbon stocks
RF	Road Found
RoW	Right of Way
TTL	Task Team Leader
ToR	Terms of Reference
USAID	United State of America Development Agency
VAC	Violence Against Children
WB	World Bank

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Executive Summary

The Government of Mozambique five-year program, (PQG 2015-2019), presents the country's economic and social development priorities whose main objective is to improve the living conditions of the Mozambican population, by increasing employment, productivity and competitiveness and creating wealth and generating balanced and inclusive development.

The objective of the Integrated Feeder Roads Development Project (IFRDP) is to enhance mobility in selected rural areas with the support of inclusive agriculture and other local communities' livelihoods, whilst ensuring efficient mobility of people and goods along integrated national corridors. In response to this objective, and based on the on-going negotiations with the World Bank for inception terms of the new operation with the Road Sector (Road Fund and ANE), the intention is to support the preparation of the project in the provinces of Zambezia and Nampula. The project will target road in four districts of Zambezia province namely, Lugela, Murrumbala, Maganja da Costa and Pebane.

In Nampula province the project will be implemented in the following districts: Memba, Namapa, Mecuburi, and Monapo, shown in the following map:

IFRDP was categorised as B according to the World Bank's Operational Policies (OP 4.01 – Environmental Assessment)[1]. It is expected that the projects will have positive environmental and social impacts, with relatively minor and localized negative effects. However, for the Mozambican legislation the categorization will be done on the basis of screening process to be undertaken for each of the sub-projects.

The project will have five components, which are interrelated in nature and integrated in road development network in the target provinces. The project components are as follow:

Component 1: Rehabilitation and Maintenance of Feeder Roads (Estimated cost US$80 million, of which US$60 million will be financed by IDA); Component 2: Rehabilitation of Primary Road Network (Estimated cost US$80 million, of which US$70million will be financed by IDA);Component 3: Pilot Rural Transport Services (Estimated cost US$10 million, of which US$5 million will be financed by IDA);Component 4:

1 IFRDP is, by design, a road rehabilitation project is not expected to have significant long-lasting negative environmental or social impacts; therefore, it falls into World Bank Environmental Assessment screening Category B under OP 4.01 – Environmental Assessment and sub-projects that fall under World Bank Category A will not be financed. It should be noted that some of the proposed sub-projects, which remain World Bank Category B, do fall under MITADER Category A, which means that by National policy, a full ESIA will be required.

Capacity Building and Project Administration (Estimated cost US$15 million, financed by IDA);Component 5: Zero-budget Contingency Component.

ESMF will be implemented based on Mozambican legislation and World Bank Safeguard Policies; in any case that Mozambican legislation does not cover an issue or is less stringent, the Bank Policy will prevail.

Based on the Bank screening process, ESMF is the tool used when the exact location of the project is not yet known. As the project is implemented, Mozambican legislation requires that a screening process, as described in the ESMF, will be carried out for each sub-project.

The ESMF has been developed to ensure environmental and social due diligence for sub-projects. Based on this, the World Bank Safeguard Policies that will be triggered by the IFRDP are OP4.01 – Environmental Assesment, OP4.04 – Natural Habitats, OP4.11 – Physical and Cultural Resources, and OP4.12 – Involuntary Resettlement. OP4.11 will be targeted in minor dimension as the IFRDP will not include new or enlargement of existing roads, but rehabilitation and maintenance of the existing road. The World Bank Group Environment, Health and Safety Guidelines (EHSGs) also apply to IFRDP.

The methodology for the ESMF process was based on extensive literature review of relevant GoM environmental and social regulations and guidelines, World Bank environmental and social safeguard policies and ESMF guidelines, a secondary data on biophysical and socio economic information of the targeted provinces were also collected. The desk study was followed by the consultative process at central level, provincial and district level. The two provinces were visited, and two targeted districts per province. In each of the provinces as well as of the districts the consultant holds a meeting with relevant stakeholders. This ESMF will ensure that environmental and social management is integrated into the development cycle of individual sub-projects. The ESMF is also a practical tool to guide identification and mitigation of potential environmental and social impacts of proposed investments and as a platform for consultations with stakeholders and potential project beneficiaries.

Construction activities will impacts socio economic and on natural environment (soil, flora, water and air). The impact of these activities will have distinct intensity and magnitude in different landscape situation. In the upland districts of Zambézia soil erosion in slopes and downstream sedimentation can be expected, while in the lower land of the coast districts the soil erosion may be less. Other expected negative impact will be the potential of encroachment to natural habitats as Zambézia and Nampula provinces are rich in forest and natural habitats. Ancillary work (gravel and stone) will also increase the air and noise pollution and thus contribute to reduction of air quality in the area. From the social perspective is expected that a combination of beneficial and adverse impacts will be felt in both provinces. Table below summaries the likely impacts to occur with the IFRDP.

Environmental Issue	Impact
Vegetation and fauna	• Loss of vegetation at camp sites, borrow pits, access roads and deviations • Forest fragmentation
Protected Areas/Crtitical Forests/Wetlands/ sensitive areas	• Encroachment to natural habitats and/or forest area for hunting and timber exploitation
Water quality	• Water Flow Diversion • Groundwater Flow Modification • Ground water contamination from roads • Modifications in water table as a result of Road Construction (soil compactation)
Soils and underground resources	• Erosion • Landslides • Slopes dezestabilization • Contamination of Soil
Air quality	• Lowering of quality of life of the people in the road alignment route and those located near ancillary sites

Environmental Issue	Impact
Employment provision	• Increase in job opportunities in the region and improvements in rural income • Increase potential for prostitution due to risk behavior of women and young girls • Potential increases of Gender Based Violence (GBV) and Child Abuse/Exploitation (CAE) in the region
Regional and local economy	• Increase demand for construction material for the road work and/or construction of resetled people's new homes • Loss of business assets along the road • Probable loss of income due to dislocation of informal businesses • Improvements in access to alternative markets for agricultural produce • Lowering of transport and business transaction cost
Capacity Building	• Increase knowledge for the local
Impact on property on Impact on access sit	• Properity loss • Limited acccess from and to property • Rsetlement process
Impacts on Productive Land/Agric.	• Loss of cultivated agriculture/grazing land • Loss of productivity of land • Open up market for agriulture products
Impacts on Occupational Health and Safety	• Risk of accidents at worksite Increased dust and noise related problems and diseases Transmission of HIV and other communiable diseases • Increased risk of health problems: waste products and sewerage • Increase in accidents for pedestrians, cyclists and motorists along the road
Impacts on Social Relations and other Social Aspects	• Conflicts between influx workers and locals • Increase in crime • Improved quality of life • Social networks and social cohesion strengthened;
Impacts on Existing Social Facilities	• Disruptions in utility network services Pressure on existing social service facilities like health, water and electricity especially in urban areas.
Impacts on Aesthetic Quality	• Desrupted visual scenic and natural beauty
Impacts on Road Security and Safety (traffic)	• Increase in traffic and risk of accidents • Traffic fatalities

With the road quality improved more efficient road transportation systems will be in place, therefore facilitating or increase mobility from and to the project targeted areas. Road transportation will have a beneficial impact on women, because agriculture activities are mostly done by them, with improved road quality women will have more access to market facilities, also more people will enter into the region to procure agriculture products. Futhermore, local women will have opportunity to be employed by the contractor. Therefore, contribute to increase household income.

However, during the project implementation a Gender Based Violence (GBV) and Child Abuse/Exploitation (CAE) shall be avoided. Guidelines/requirements on GBV and CAE shall be implemented during the implementation of road construction activities. Among the key requirements for employment of local labourers are: (i) No gender disparity in terms of number of unskilled workers and wages for equal type of work; (ii) Preference to disadvantaged and vulnerable local groups strict avoidance of children work; (iii) Children (any person under 18 years of age) should not be extensively contracted, but considering that currently some children became heads of households they need a job to guarantee the survival of their siblings. If and when cases like these occur (only allowable for children above 15, as per Mozambican Law), the Contractor must consider the children's work with justice, the level of effort asked from them must be adequate, they must be allowed time to attend school and be paid the regular salary; (v) Also scheduling the construction works as much as feasible during the agricultural off-season to enable local people to become engaged, and to bridge the lenient/income-low season to secure food sufficiency. ANE guidelines recommends that at least 25% of the contracted workers be women and 100% of unskilled should be local.

Qualified female workforce should be searched for in the project area. If possible, qualified female workforce should be offered refreshing or upgrading vocational training, to thus make it possible for women to qualify for recruitment.

Training and capacity building will be necessary for the contractor workers and communities crossed by the roads in construction to ensure that they have the appropriate knowledge and skills to implement the environmental and social management plans.

A Grievances Redress Mechanism (GRM) will be available for the sub-project affected persons to be able to address their issues and to solve prior to use formal legal grievance system. Through this mechanism, AP's will be able to react on any damages occurred during the ESMF implementation, including aspects related with GBV, CAE and misbehavior of contractor workers.

The contractor, engineer and ANE shall establish a Project Liasion Committee (PLC). The PLC is the primary mechanism for establishing and maintaining communication between the project implementors, local authorities and the community. This committee has a key role in monitoring the overall impact of the project on the community including protection to vulnerable groups. GRM for the ESMF implementation wil also be adequadly addessed by the PLC. When PLC is inable to give satisfactory response, then the grinvance will be submitted to ANE HdQ for a proper resultuion. Communication strategy may prevent or reduce misunderstanding and grievances, therefore awareness-raising about Project activities will be one of strategy that ANE will adopt. Consultations and negotiations will be carried out with PAPs where there are indications of potential conflicts

It was also discussed the roles and responsibilities of each level for the implementation of the ESMF. ANE HdQ and its delegation are responsible for the implementation of the ESMF. A pre-screening process will be carried out by the Bank and ANE to determine the funding eligibility of the project, bearing in mind that for the Bank safeguards the sub-project shall be category B. Then to fulfil with the Mozambican legislation the sub-project will be submitted to screening process for the categorization of each sub-project will be done by the Provincial Directorates of Land, Environment and Rural Development (DPTADER) at the provincial level, after ANE submission.

Once the sub-projects are selected, their final desing will include the preparation of relevant safeguard instruments required. Safeguards instruments may include an Environment and Social Impact Assessment (ESIA), an Environment and Social Management Plan (ESMP), and a Resettlment Action Plan (RAP), depending on the particular circumstances faced.

ANE delegation, DPTADER at local level and the local district authorities has be assisted and trained to be capable of implementing the ESMF and the sub-projects ESIA and ESMP as well as the RAP if needed.

The ESMF gives orientation on the methodology for the elabouration of the ESIA, ESMP and RAP for each sub-project.

Stage in Sub-Project Cycle	Responsible Entity	Role and responsabilities
Sub-project Identification	ANE and RF HdQ DPTADER World Bank	Overal coordination implementation of the project (ESMF and RPF). Conduct sub-project screening; determine eligibility and category; and define required safeguards instruments (ESIA, ESMP, RAP, etc.). Review and confirm sub-project eligibility and category;
Sub-project Preparartion (Feasibility Study and Design)	Contractor Supervision Consultant (Engineer)	Prepare and implement the safeguards instruments. Review the safeguards instruments.
Review and approval	ANE HdQ and Delegate DPTADER World Bank	Review and approve safeguards instruments.
Project Implementation	Contractor Supervision Consultant (Engineer) District administration; ANE and FE Delegation; ANE HdQ; and DPTADER/Resetlment Committee	Implement safeguards instruments. Monitor and report on implementation of safeguards instruments. Manage Grievance Redress Mechanism (GRM) to resolve the any community complaints
Completion/turnover	ANE HdQ,ANE and FE Delegation RAP implementation Consultant DPTADER (Resetlment committee) Contractor	RAP Evaluation ESIA/ESMP
Operation/ maintenance	Contractor ANE delegation	Safeguards instruments implementation

To fulfil the task summarized in the above table, a capacity build is necessary for all levels. The host institution at national and provincial (ANE) have some capacity. However at district level this capacity is weak or no available. Based on needs assessment done during the field visit to the districts (Memba and Erati in Nampula and Maganja da Costa and Murrumbala in Zambezia) one of request was the need of the technical assistance and development of district capacities, in Murrumbala was informed that within the districts there is specialist on the environmental area, but working in a different area. Thus, a specific institutional and human capacity-building program for environmental and social management should be developed as part of the Project. A detailed capacity-building program will be developed during implementation, with a focus on strengthening the District, and Provincial structures responsible for environmental and social management.

The technical assistance will be to ensure that the various external inputs from different providers of goods and services to the project are aligned and harmonized with the Project's ultimate goals. Capacity building and transference of knowledge and skills and the overall environmental and social sector will be at the centre of the activities to be carried out for provincial and district levels will be crucial as it is at this level that capacity is usually low.

Monitoring of the compliance of project implementation with the mitigation measures to be defined in each sub-project ESIA/ESMP will be carried out jointly with PIU at provincial level, engineer, the Environmental and Social Specialist, Contractor and the community.

The PIU at district level should supervise the monitoring activities and report monthly to the site meeting. The site meeting should be include the participation of the PIU at provincial and national level and the participation of the donor.

Adequate budgetary allocations and funding will have to be provided for and the preparation and implementation of the ESIA and ESMP will have to be adequately monitored and evaluated to ensure that all the recommendation are met. According to the table below the ESMF cost estimates are around 4 million US$, representing approximately 5% of the total budget of the project.

Activities to be funded under the ESMF	**Costs (10^3 US$)**	**Nº of sub-projects/districts**	**Total (10^3 US$)**
Elabouration of the ESIA, ESMP and RAP for each sub-project	**50.00**	15	750.00
Implementation of the ESIA, ESMP and RAP	**200.00**	15	3,000.00
Training	**30.00**	2	60.00
Institutional capacity building at provincial and district level	**100.00**	2	200.00
Grand Total			4,010.00

Successful implementation of the Project will depend among other aspects on the effective implementation of the environmental and social management measures outlined in ESMF.

Sumário Executivo

O programa quinquenal do Governo de Moçambique (PQG 2015-2019) apresenta as prioridades de desenvolvimento económico e social do país, cujo objectivo central é melhorar as condições de vida da população moçambicana, aumentando o emprego, a produtividade e a competitividade e criando riqueza e gerando desenvolvimento equilibrado e inclusivo.

O objectivo do Projecto de Desenvolvimento Integrado de Estradas Rurais (IFRDP) é aumentar a mobilidade em áreas rurais seleccionadas com apoio à agricultura inclusiva e outros meios de subsistência de comunidades locais, garantindo simultaneamente uma mobilidade eficiente de pessoas e bens ao longo dos principais corredores nacionais conectados. Em resposta a este objectivo e decorrentes das negociações em curso com o Banco Mundial para a concepção dos termos da nova operação com o Sector de Estradas (Fundo de Estradas e ANE), pretende apoiar a preparação do projecto nas províncias da Zambézia e Nampula.

O Banco Mundial desenvolveu um modelo para priorizar os distritos que serão visados no IFRDP, os critérios de selecção sobre a criticalidade de pobreza e dos dados de agricultura no distrito e sobre a base de risco de inundação sobre a criticalidade e risco. Portanto, o projecto envolverá as estradas em quatro distritos das províncias da Zambézia, nomeadamente Lugela, Murrumbala, Maganja da Costa e Pebane.

Na província de Nampula, será nos seguintes distritos: Memba, Moma, Namapa e Monapo.

O IFRDP foi categorizado como B de acordo com as politicas operacionais do Banco Mundail (OP 4.01- Avaliação Ambiental)[2]. Espera-se que os projectos tenham impactos ambientais e sociais positivos, com impactos negativos relativamente menores e localizados. No entanto, para a legislação moçambicana, a categorização será feita com base no processo de triagem a ser realizado para cada um dos sub-projectos a serem identificados.

O projecto terá cinco componentes, inter-relacionados e integrados na rede rodoviária nas províncias seleccionadas. As componentes do projecto são os seguintes:

Componente 1: Reabilitação e Manutenção de Estradas Rurais (Custo estimado de 80 milhões de Dólares Americanos dos quais 60 milhões serão financiados pela IDA);**Componente 2:** Reabilitação da Rede de Estradas Primária (Custo estimado de 80 milhões de Dólares Americanos, dos quais 70 milhões serão financiados pela IDA);**Componente 3:** Serviços piloto de transporte rural (Custo estimado de US $ 10 milhões, dos quais 5 milhões de Dólares Americanos serão financiados pela IDA);**Componente 4:** Capacitação e Administração de Projetos

[2] IFRDP é um projecto de reabilitação rodoviária que não deverá ter impactos ambientais ou sociais negativos significativos de longa duração; portanto, o projecto cai na categoria B de Avaliação Ambiental do Banco Mundial segundo o OP 4.01 - Avaliação Ambiental; e os sub-projectos que não se enquadram na categoria B do Banco Mundial não serão financiados. Deve-se notar que alguns dos subprojetos propostos, que permanecem na categoria B do Banco Mundial, são abrangidos pela categoria A do MITADER, o que significa que, pela política nacional, será necessária uma ESIA completa.

(custo estimado em 15 milhões de dólares Americanos, financiado pela IDA);**Componente 5:** componente de contingência de orçamento zero.

As Políticas de Salvaguarda do Banco Mundial integram análises ambientais e sociais na preparação de projectos, incluindo a selecção de projectos, a localização e as decisões do desenho.

O ESMF foi desenvolvido para garantir que os impactos ambientais e sociais dos sub-projectos sejam identificados antecipadamente. O ESMF para este projecto será preparado em conformidade com as Políticas de Salvaguarda do Banco Mundial e a legislação Moçambicana relevante sobre avaliação ambiental. As políticas de salvaguarda do Banco que serão usadas pelo IFRDP são OP4.01 - Avaliação Ambiental, OP4.04-Habitats Naturais, OP4.11, Recursos Físicos e Culturais, e OP4.12 - Reassentamento Involuntário. O OP 4.11 poderá ter uma impacto mínimo, pois o IFRDP não inclui o novo ou o alargamento das estradas existentes, mas a reabilitação e a manutenção da estrada existente. As Diretrizes de Meio Ambiente, Saúde e Segurança do Grupo Banco Mundial também se aplicam ao IFRDP.

A metodologia para o processo ESMF baseou-se na extensa revisão bibliográfica das regulamentações e directrizes relevantes ambientais e sociais do GoM, políticas de protecção ambiental e social do Banco Mundial e directrizes ESMF, também foram colectados dados secundários sobre informações bio fisiológicas e socioeconómicas das províncias alvo. A revisão bibliográfica foi seguido de um processo de consulta a nível central, provincial e distrital.. O trabalho foi realizado em estreita cooperação com a equipe do projecto na ANE

Esta ESMF assegurará que a gestão ambiental e social seja integrada no ciclo de desenvolvimento de sub-projectos individuais. ESMF é também uma ferramenta prática para orientar a identificação e mitigação dos potenciais impactos ambientais e sociais dos investimentos propostos e uma plataforma de consultas com as partes interessadas e Beneficiários do projecto. Um processo de consulta para o projecto da ESMF foi realizado nas províncias de Nampula e Zambézia, foram visitados quatro distritos dos 10 propostos.As actividades de construção afectarão o meio socioeconómico e natural (solo, flora, água e ar). O impacto dessas actividades terá intensidade e magnitude distintas em diferentes situações paisagísticas. Nos distritos de terras altas da Zambézia, a erosão do solo em declives e sedimentação a jusante pode ser esperada, enquanto que na região inferior dos distritos da costa a erosão do solo pode ser menor. Outro impacto negativo esperado será o potencial de invasão para habitats naturais, já que as províncias de Zambézia e Nampula são ricas na floresta e habitats naturais. O trabalho de extracção de inertes (Saibro e pedra) também aumentará a poluição do ar e ruído e assim contribuirá para a redução da qualidade do ar na área. Do ponto de vista social, espera-se que uma combinação de impactos benéficos e adversos seja sentida em ambas as províncias.

A tabela abaixo sumariza os impactos provaveis Table below summaries the likely impacts to occur with the IFRDP

Aspecto ambiental	**Impacto**
Vegetação e Fauna	Perda de vegetação durante o estabelecimento dos acampamentos, camâras de emprestímos, estradas de acesso e desvios; Fragmentação das florestas; Aumento da caça ilegal
Protecção de áreas sensíveis	Accesso ilegal a habitats naturais e/ou floresta para exploração ilegal de fauna e madeira
Qualidade de água	Desvio dos fluxos de água; Modificação dos fluxos de água subterrânea; Contaminação da água subterrânea; Modificação dos níveis de lençol freático (compactação)

Aspecto ambiental	Impacto
Solos e subsolo	Erosão Landslides Desestabilização das inclinaçoes **Contamina**ção **de solos**
Qualidade de ar	Poluição sonora, particulas suspensas e poeiras.
Emprego	Aumento de oportunidades de emprego, melhoria nos rendimentos das familias, Aumento de niveis de prostituição devido as atitudes das meninas e jovens s; Potencial aumento de acçoes de Violência baseada em gênero (VBG) e Abuso / exploração infantil (CAE) na região
Impacto na economia local	Aumento da procura de material de construção na região para as obras bem como para o reassentamento, Perda de negocio e propriedades ao longo da via (dentro do corredor de impacto) Possibilidade de movimento de negocios informais; Melhoria de alternativas para a comercialização dos produtos agrários; Redução dos custos de transporte
Perda de prioriedades e acesso limitado	Perda de propriedades, Limitado acesso para as propriedades; Expropriação de terras e reassentamento;
Agricultura	Perda de áreas agricolas e de culturas; Perda de árvores de frutas e sombra; Perda de solos produtivos; Abertura de mercado para produtos agrários; Aumento de vendas locais de horticolas e outros produtos
Saudeocupacional e segurança do trafego	Risco de acidentes no local de trabalho; Aumento de niveis de poeiras e ruidos; Potencial de aumento de doenças de transmissão sexual e HIV/SIDA e outras doenças de transmissão Aumentto de problemas de saude devido ao mau saneamento do meio (mau tratamento de aguas residuais e residuos solidos); Aumento de acidentes para peões, ciclistas e motoristas ao longo da estrada; IAumento de trafico e maior risco de acidentes;
Aspectos sociais e coesao social	Conflitos entre os trabalhadores e as comunidades; Aumento de crime, Aumento na qualidade de visa; Melhoria na rede sociais e coesao;
Impacts on Existing Social Facilities	Disruptions in utility network services Pressure on existing social service potencial de aumento da procura de servicos de saúde, água e elecrticidade (estes últimos para as zonas urbanas);
paisagem	Destruiçao da paisagem pelas actividades de pedreiras e camaras de emprestimos.
Impactos na segurança e segurança rodoviária (tráfego)	• Aumento do tráfego e risco de acidentes, • Fatalidades de trânsito

O transporte rodoviário irá facilitar o acesso ao mercado, beneficiando mais as mulheres que terão integração no mercado. Mais pessoas entrarão na região resultando numa maior demanda de produtos agrícolas. Além disso, as mulheres locais terão a oportunidade ao emprego durante o período de construção, contribuindo assim no aumento dos rendimentos da família. Com a qualidade da estrada melhorada, espera-se que sejam implementados sistemas de transporte rodoviário mais eficientes, facilitando ou aumentando a mobilidade de e para as áreas visadas.

No entanto, durante a implementação do projeto, deve ser evitada a Violência baseada em gênero (GBV) e Abuso / exploração infantil. As diretrizes / requisitos sobre GBV e CAE devem ser implementadas durante a implementação de atividades de construção de estradas. Entre os principais requisitos para o emprego dos trabalhadores locais estão: (i) Não haver disparidade de gênero em termos de número de trabalhadores não qualificados e salários para o mesmo tipo de trabalho, (ii) Estratégias de recrutamento sensíveis ao gênero deverão ser usadas para garantir que não haja disparidade de g6enero na contratação. (iii) Preferência para grupos locais desfavorecidos e vulneráveis, evitando o trabalho infantil. (iv) Crianças (qualquer pessoa com menos de 18 anos de idade) não devem ser contratadas, mas considerando que actualmente algumas crianças se tornaram chefes de família, elas precisam de um emprego para garantir a sobrevivência de seus irmãos. Se e quando casos como estes ocorrerem (apenas permitido para crianças acima de 15 anos, de acordo com a Lei moçambicana). O Empreiteiro deve considerar o trabalho das crianças com justiça – o nível de esforço solicitado por eles deve ser adequado, eles devem ter tempo para frequentar a escola e receber salário regular. (v) e também programar os trabalhos de construção, tanto quanto possível, fora da época agrícola, para permitir que as pessoas locais se envolvam e superar a indulgência/ renda baixa para garantir a subsistência. As directrizes da ANE recomendam que pelo menos 25% de trabalhadores contratados sejam mulheres e que 100% de trabalhadores não qualificados sejam locais.

A força de trabalho feminino qualificada deve ser procurada na área do projecto. Se possível, a força de trabalho feminina deve ser oferecida um treinamento vocacionado, possibilitando assim que as mulheres se qualifiquem para o recrutamento.

O treinamento e a capacitação serão necessários para os trabalhadores contratados e comunidades no entorno do projecto em construção, para garantir que tenham os conhecimentos e habilidades adequadas para implementar os planos de gestão ambiental e social.

Um Mecanismo de Reclamações (GRM) estará disponível para que as pessoas afetadas do subprojeto possam presentar e resolver seus problemas prior uso do sisteam legal de queixa. Através deste mecanismo, os APs poderão reagir a quaisquer danos ocorridos durante a implementação do ESMF, incluindo aspectos relacionados com GBV, CAE e mau comportamento dos contratados.

O empreiteiro, o engenheiro e a ANE devem estabelecer um Comitê-Liasion do Projeto (PLC). O PLC é o principal mecanismo para estabelecer e manter a comunicação entre os implementadores do projeto, as autoridades locais e a comunidade. Este comitê tem um papel fundamental no monitoramento do impacto global do projeto na comunidade, incluindo proteção para grupos vulneráveis. O GRM para a implementação do ESMF também será adequadamente adotado pelo PLC. Quando o PLC é capaz de dar uma resposta satisfatória, o grinvance será submetido ao ANE HQ para um resultado adequado. A estratégia de comunicação pode prevenir ou reduzir o mal-entendido e as queixas, pelo que a conscientização sobre as atividades do Projeto será uma estratégia que ANE adotará. Serão realizadas consultas e negociações com PAPs em que existam indícios de conflitos potenciais

Também foram discutidos os papéis e responsabilidades de cada nível para a implementação do ESMF. ANE HQ e sua delegação são responsáveis pela implementação do ESMF. Um processo de pré-seleção será realizado pelo Banco e pela ANE para determinar a elegibilidade de financiamento do projeto, tendo em conta que para as salvaguardas do Banco, o subprojeto deve ser da categoria B. Para cumprir com a legislação moçambicana, o financiamento ilegível projeto subprojeto será submetido ao processo de triagem para a categorização de cada subprojeto. O projeto será feito pelas Diretrizes Provinciais de Terra, Meio Ambiente e Desenvolvimento Rural (DPTADER) a nível provincial, após a submissão da ANE.

Uma vez que os subprojetos são selecionados, sua concepção final incluirá a preparação de instrumentos de salvaguarda relevantes necessários. Os instrumentos de salvaguarda podem incluir uma Avaliação de Impacto

Ambiental e Social (ESIA), um Plano de Gestão Ambiental e Social (ESMP) e um Plano de Ação de Repostagem (RAP), dependendo das circunstâncias específicas enfrentadas.

A delegação da ANE, o DPTADER a nível local e as autoridades distritais locais, seram assistidos e treinados para serem capazes de implementar o ESMF e os subprojetos dos subprojetos ESIA e ESMP, bem como o RAP, se necessário.

O ESMF orientara a metodologia para a elabouração do ESIA, ESMP e RAP para cada subprojeto de projeto.

Durante a preparação e implementação, as agências tem diferentes funções, como mostra abaixo:

Etapa do ciclo do projecto	**Agencia Responsável**	**Papel e Responsabilidades**
Identificação do sub-projecto	ANE e FE a nível central Banco Mundial DPTADER	Coordenação e implementação do projecto (RPF e ESMF): Realizar o rastreio de subprojetos; determinar elegibilidade e categoria; e definir os instrumentos de salvaguarda necessários (ESIA, ESMP, RAP, etc) Determinação da categoria e instrumentos necessários (PAR ou PARA, EIAS e PGAS)
Preparação do sub-projecto (Estudo de viabilidade e desenho)	Empreiteiro Consultor contratado pela ANE Administração Local e pessoas afectadas	Preparação do PAR ou PARA, EIAS e PGAS Participação no censo e no levantamento socioeconómico Consulta pública; Implementação do mecanismo das reclamações Preparação e implementação de instrumentos de salvaguardas. Revisão das salvaguardas;
Revisão e aprovação	ANE a nível central e as Delegações Banco Mundial Governo Provincial (DPTADER)	Revisão e aprovação dos instrumentos de salvaguardas;
Implementação do Projecto	Empreiteiro; Consultor Administração Distrital n Delegação da ANE e FE; ANE a nível central DPTADER/ Comité de Reasentamento	Responsável pela implementação PAR ou PARA, EIAS e PGAS Monitorar a implementação do PAR ou PARA, EIAS e PGAS (auditoria) Para monitorar o mecanismo de reclamação e a implementação do PAR PARA, EIAS E PGAS dos sub projectos Resolver as reclamações das comunidades
Conclusão/retorno	ANE a nível central, Delegações da ANE e FE Consultor de implementação do PAR DPTADER (comité de Reassentamento) Empreiteiro	Avaliação do PAR EIAS/PGAS
Operação/ manutenção	Empreiteiro Delegação da ANE	Implementação dos instrumentos de salvaguardas

O treinamento e a capacitação serão necessários para os empreiteiros e as comunidades atravessadas pelas estradas em construção, para garantir que tenham os conhecimentos e as habilidades adequadas para implementar os planos de gestão ambiental e social.

A instituição anfitriã a nível nacional e provincial (ANE) tem alguma capacidade existente, melhor no HdQ. No entanto, a nível distrital, esta capacidade é fraca ou não está disponível. Com base na identificação das necessidades realizadas durante a visita de campo aos distritos (Memba e Erati em Nampula e Maganja da Costa

e Murrumbala na Zambézia) sob seu pedido foi a necessidade de assistência técnica e desenvolvimento de capacidades distritais, em Murrumbala foi informado de que, dentro de Os distritos são especializados na área ambiental, mas trabalhando em uma área diferente, portanto, um programa específico de fortalecimento institucional e humano para gerenciamento ambiental e social deve ser desenvolvido como parte do Projecto.

Um programa detalhado de capacitação será desenvolvido durante a implementação, com foco no fortalecimento do Distrito e nas estruturas provinciais responsáveis pela gestão ambiental e social.

A assistência técnica será garantir que os vários insumos externos de diferentes fornecedores de bens e serviços para o projecto estejam alinhados e harmonizados com os objectivos finais do Projecto. A capacitação e a transferência de conhecimento e habilidades e o sector ambiental e social em geral estarão no centro das actividades a serem realizadas para os níveis provincial e distrital será crucial, pois é nesse nível que a capacidade geralmente é baixa.

O acompanhamento da conformidade da implementação do projeto com as medidas de mitigação a serem definidas em cada sub-projecto ESIA / ESMP será realizado em conjunto com a PIU a nível provincial Consultor Especialista em Meio Ambiente e Social, Empreiteiro e a comunidade.

A PIU a nível distrital deve supervisionar as actividades de monitoramento e informar mensalmente a reunião do site. A reunião do site deve incluir a participação da CEP a nível provincial e nacional e a participação do doador.

Devem ser providenciadas alocações e financiamentos orçamentários adequados e a preparação e implementação da ESIA e do ESMP terão de ser adequadamente monitorados e avaliados para garantir que todas as recomendações sejam atendidas. De acordo com a tabela abaixo, os custos da implementação do ESMF estão avaliadas em cerca de 4 milhões de US$.

Actividades a serem financiadas	**Custos (10^3 US$)**	**Nºde sub-projectos/districtos**	**Total (10^3 US$)**
Elabouraçao da AIA, PGA e PRA de cada sub-projecto	**50.00**	15	750.00
Implementação do AIA, PGA e PAR	**200.00**	15	3,000.00
Treinamento	**30.00**	2	60.00
Capacitação Institucional	**100.00**	2	200.00
Total			4,010.00

Para o sucesso do processo, é necessária uma coordenação eficiente entre o Fundo Rodoviário e a ANE a nível central e as delegações provinciais.

1 Introduction

The Government of Mozambique five-year program, (PQG2015-2019), presents the country's economic and social development priorities whose main objective is to improve the living conditions of the Mozambican population, by increasing employment, productivity and competitiveness and creating wealth and generating balanced and inclusive development.

This objective is to be achieved, among others, by the sustainable expansion and quality improvement of strategic roads and bridges links to private and associative sector promotion of productive activity and to increase the capacity of the public sector to provide basic social services to the population.

Integrated Feeder Roads Development Project (IFRDP) objective is to enhance mobility in select rural areas in support of inclusive agriculture and other livelihoods of local communities, whilst ensuring efficient mobility of people and freights along the connected main national corridors. In response to this objective, and arising from the on-going negotiations with the World Bank for the design of the terms of the new operation with the Road Sector (Road Fund and ANE), intend to support with the project preparation of in the provinces of Zambezia and Nampula. The development of the road project will be in line with the other World Bank projects in rural development for instance the landscape project, in Nampula and Zambezia province.

The ESMF ensure that environmental and social management is integrated into the development cycle of individual sub-projects. The ESMF also is intended to serve as a practical tool to guide identification and mitigation of potential environmental and social impacts of proposed investments. Furthermore, can serve as a platform for consultations with stakeholders and potential project beneficiaries. The ESMF will be prepared in compliance with the Bank's OP 4.01 and relevant Mozambican policies on environmental assessment. The ESMF is the appropriate document which sets out guidelines and procedures for assessing potential environmental and social impacts of specific rural road specific projects and can be used in any region in Mozambique. These procedures and guidelines will help the implementing agencies in screening sub-projects' eligibility; determining their environmental and social impacts. Furthermore, identifying appropriate mitigation measures to be incorporated into the sub-project; and specifying institutional responsibilities for implementing preventive, mitigation and compensation measures, and monitoring and evaluation.

1.1 Rationale and Approach for the Environmental and Social Management Framework Road

Construction activities have environmental and social effects on the physical, biological, social, cultural, economic aspects of affected communities.

From the biophysical arena landslides; slope failures; soil erosion; loss of natural habitats, forest, and agricultural lands; and interference with water courses, irrigation facilities; run-off, and sedimentation. Apart from that, socio economic perspective community disruption, land expropriation/ resettlement, loss of physical assets and economic activities are among the potential major negative impacts resulting in road construction. These issues need detailed design, construction and operation incorporating that proved mitigation measures will acceptably mitigate the adverse effects. Awareness and appreciation of the opportunities and risks involved due to road project implementation are often beyond the comprehension of local people. They may recognize the new construction with high expectations, or anxiety, suspicion, concern or resistance. The overall intent of this document is to provide guidance for environmental and social management for the Integrated Feeder Road Development Project (IFRDP). In addition, to disseminate the management options and environmental/social safeguard measures to the broad public to gain full understanding and support of those using the national road network. This ESMF does

not provide site-specific details for the sub projects, as these will be subject to specific field surveys and Environmental Impact Assessment (EIAs) to be carried out under the guidance of this ESMF.

For the World Bank's perspective IFRDP is classified on category B[3] indicating that the expected negative environmental and social impacts will be minor and mitigated. The Safeguard Instruments for IFRDP are the ESMF, a Resettlement Policy Framework (RPF), and, as needed, site specific Environmental and Social Management Plans (ESMPs), and Resettlement Action Plans (RAPs). Under the Mozambican legislation it is expected that the categorization of the sub-project will not differ from the World Bank's classification, though some of the smaller roads might be classified into the C category, not subject to any EIA (in which cases, the World Bank Policies will apply).

1.2 Project structure

Key Objectives of the ESMF

The ESMF intends to (1) provide technical and managerial inputs and guidance into the design of rural road in Nampula and Zambezia provinces, through identification of key environmental and social issues related to the project; (2) mitigate potential impacts and concerns and, (3) devise opportunities to enhance benefits. The framework integrates in a stepwise approach the most important environmental and social considerations into all stages of project, namely, preparation, implementation, monitoring and operation.

Based on both, Consultants' ToR and discussions held with the Client (ANE/WB), the key objectives to be addressed in the ESMF are:

- ✓ Review GoM existing policies, regulations, operational guidelines and institutional arrangements to address and mitigate environmental and social impacts of national roads;
- ✓ Assess the compatibility of the core principles of GoM policies with policies of the donor agencies, identify gaps, and present recommendations for addressing the gaps;
- ✓ Describe the tools and procedural steps to assess the environmental and social issues for project-related activities, and describe stepwise the corresponding management requirements in the entire project cycle;
- ✓ Prepare a screening and consultation framework for environmental and social assessment of the proposed sub-projects;
- ✓ Prepare an exemplary matrix of mitigation measures to manage the identified impacts. Identify practical, feasible, credible and cost effective measures to offset or to reduce adverse environmental and social impacts to acceptable level, and ways to enhance positive impacts.
- ✓ where applicable, also address secondary, induced and cumulative impacts that may be associated with the forthcoming road construction activities.;
- ✓ Make specific reference to the public consultation process and the consultation framework, describing adequate participatory mechanisms particularly with respect to local employment, gender issues, empowerment and local control instruments.

[3] IFRDP is, by design, a road rehabilitation project is not expected to have significant long-lasting negative environmental or social impacts; therefore, it falls into World Bank Environmental Assessment screening Category B under OP 4.01 – Environmental Assessment and sub-projects that fall under World Bank Category A will not be financed. It should be noted that some of the proposed sub-projects, which remain World Bank Category B, do fall under MITADER Category A, which means that by National policy, a full ESIA will be required.

2 Project description

2.1 The Project

Integrated Feeder Road Development Project (IFRDP) will be a national wide rural road project, with initial implementation area in Zambezia and Nampula Provinces. These two provinces represent the most populated and highly productive areas and the development of road infrastructure is weak and most of the roads in the project area, including some of the other classified roads, are frequently in bad conditions and become non transitable during the rainy season due to poor maintenance. When it comes to feeder roads the situation gets even worse with drainage structure and destruction of the road bed as most are gravel road.

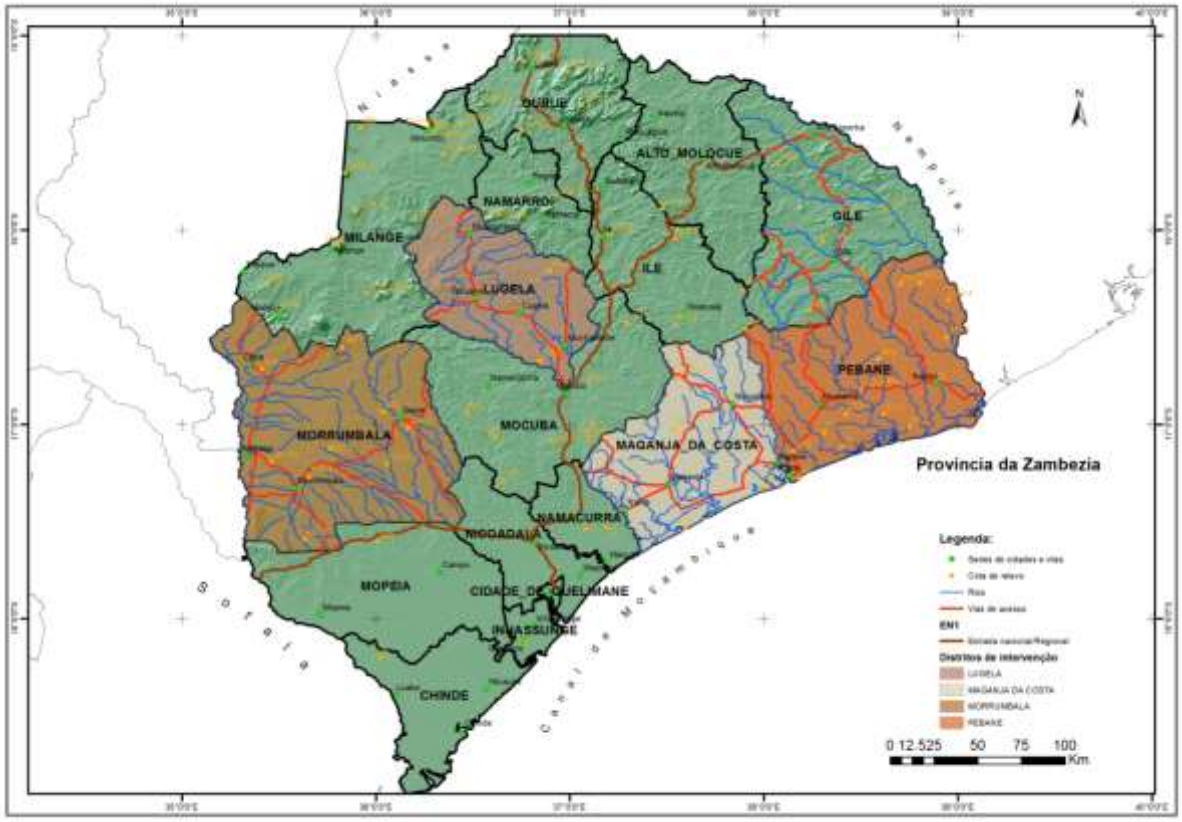
Feeder roads, in general, link production centres (irrigated area and service provider centres (centro de Serviços), small towns and rural villages with each other as well as with the classified roads. In order to offer favourable conditions to facilitate movement of good and people within and between districts these roads will require alignment and realignment, as well as reconditioning of the asphalt or gravel roads. However, these roads may cross dense and rich forest and sensitive areas. Therefore, construction activities may impose negative impacts to these areas.

Around small towns and local villages the roads tend to be surrounded by people's assets in the form of crops, trees, small businesses infrastructures (e.g. kiosks, barracas, etc.). These people and their assets are likely to be affected by the expected interventions, especially in and around densely populated areas. Nampula province, which has more densely populated settlements, can be expected to be more affected. On the other hand, in a number of points, feeder roads in the project area pass through rivers, water courses and other lowland/swampy areas, which will require small bridges/culverts to connect both sides. In these points as well as in some areas embankment could be necessary to rise the quota level. Most of the roads in the project area are in bad condition, like the below picture shows:

Picture 2-1: Roads condition in Murrumbala and Memba Districts

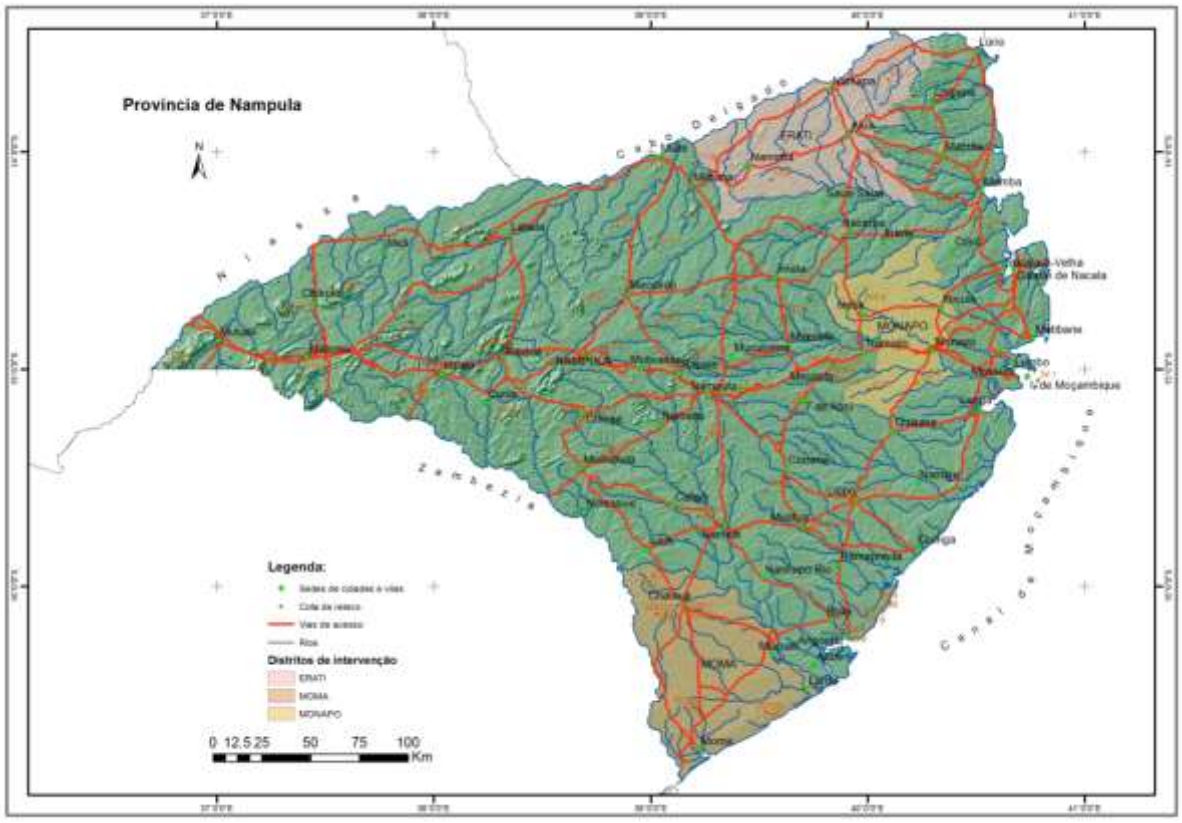
2.1.2 Project Location

Wolrd Bank has developed a model to prioritize districts that will be targetted in the IFRDP the selection criteria on criticality of the poverty and agriculture data in the district and on flood risk. base on the criticality and risk. Therefore, the project will target road in 4 districts of Zambezia provincenamely, Lugela, Murrumbala, Maganja da Costa and Pebane, as shown in the following map:



Map 2-1: Zambezia province project districts

In Nampula province the project will be implemented in the following districts: Memba, Erati/Namapa, Monapo, Mecuburi and Moma, as shown in the map below. The proposed roads are gravel road (unclassified) from 2 to 4 meters wide and an extension of more than 50 km, with several hidrological structures that includes bridges and cullverts.



Map 2-2: Nampula province project districts

During the consultation done in 4 districts of Nampula and Zambezia it was recommend that the roads to be considered should be those linking production centres to markets or to the main road (example N1). Most of the proposed roads are gravel road (unclassified) from 2 to four meters wide and an extension of more than 50 km, with several hydrological structures that include bridges and culverts. Most of the feeder roads in the districts are not transitable all year around, with restriction during the wet season, as most of the drainage infra-structure (bridges, culvert etc.) are destroyed compromising the transitability during wet season. These road conditions have a detrimental implication on the movement of people and goods to and from the districts, from the economic point of view. The selected districts are in highly potential and productive area from the agriculture, tourism, fishery and mining perspective. However, development of these districts is undermined by the lack of, or weak infra-structure developments that includes road. From a social perspective the feeder road facilitates access to high level of health services and schools located at the districts HdQ as well has provincial capitals. The IFRDP aim to facilitate movement of people and goods, and therefore improve the development of the districts as well as attract more investors and tourism to these areas.

The project will have five components, which are interrelated in nature and integrated in road development network in the target provinces. Construction and maintenance components are among the most critical of the project and can be combined to facilitate the tender process. It is important to stress that the component description is undergoing work at ANE. The project components are as follows:

Component 1: Rehabilitation and Maintenance of Feeder Roads (Estimated cost US$80 million, of which US$60 million will be financed by IDA)

This component will finance rehabilitation works on parts of secondary and (classified and unclassified) rural roads in targeted districts in Zambezia and Nampula Provinces, including design studies and supervision activities, and support the extension of the Zambezia ABMS into Nampula Province.

The project design utilizes a multi-criteria analysis to identify around 8 prioritized districts within the two provinces and gives weight to wider economic benefits and financial resource availability. The prioritization criteria could include (a) criticality of the roads in the district for the functioning of the network, (b) proximity to high agriculture potential areas, (c) proximity to high fishery potential areas, (d) current agriculture production, and (e) poverty rate in the district.The analysis assesses both the flood risks, based on flood likelihood maps under various climate change scenarios, and vulnerability functions for bridges, culverts, and road surface. Finally, the prioritized project areas were chosen to ensure close collabouration and coordination with other ongoing and planned development projects in the country to maximize synergy across sectors. Other prioritized districts in the southern Namupla Province were excluded from the project as the European Unionis preparing a road rehabilitation project in those districts. Based on the exercise, the potential prioritized districts selected are mentioned in table 2.1.

Nampula	Zambezia
Memba	Maganja da Costa
Moma	Morrumbala
Namapa	Lugela
Monapo	Pebane

Table 2.1: Districts Prioritized for Intervention

Potential investment options in each district were identified during two workshops with local stakeholders in January 2017 in Quelimane and Nampula. The workshops discussed the potential investment options in each district considering a combination of the following engineering solutions: (a) upgrade to surface treatment, (b) upgrade to gravel road, (c) rehabilitation of earth roads, (d) cleaning and repair of bridges, and (e) replacement ofculverts. The workshops proposed the five potential investment options under a budget constraint. The economic viability of each option was assessed with the DMU approach considering benefits from climate resilience. Final engineering designs will be prepared based on the results of this analysis and engineering site surveys. Anoutput and performance-based ABMS approach will be introduced to ensure sustainability of rural road infrastructure.

The ABMS has been applied in the districts in Nampula and has been shown to help maintain rural roads in a good condition for the longrun. Typically,the ABMS has a contract term of 5 years. The project will review and improve the contract modality and apply it to the rural road network in the target districts together with rehabilitation works identified in the above analysis.

Component 2: Rehabilitation of Primary Road Network (Estimated cost US$80 million, of which US$70million will be financed by the IDA fund)

This component will support rehabilitation of the connected primary road network of approximately 70 km to enhance connectivity to not only roads but also final markets or economic destinations. The intervention will include, among others, road rehabilitation, improvement of road safety facilities, improvement of intersections, and

rehabilitation or reconstruction of culverts. The project will utilize the OPRC approach to implement rehabilitation and maintenance works.

Road sections to be rehabilitated under the component were selected based on the results of the network-based criticality analysis carried out for the district prioritization for the Component 1. The preliminary results of the analysis prioritized the following section on the N1 and N10 highways: Quelimane to Namacurra (70 km). The engineering project designs were prepared by the ANE and will be updated, if necessary, considering further surface deteriorations by the time of the effectiveness of the project.

The project plans to adopt the OPRC approach to implement rehabilitation and maintenance works. OPRC has been widely proven as an effective approach in technical and financial sustainability;OPRC can provide better service quality at a cheaper cost compared to conventional contracting for a project life-cycle period. This approach has been applied on a pilot basis into the ongoing RBMMPII roadworks in the Gaza province, which were contracted in January 2017, and lessons learned from that experience will be incorporated into the rehabilitation and maintenance works of primary roads under Component 2.

Component 3: Pilot Rural Transport Services (Estimated cost US$10 million, of which US$5 million will be financed by IDA)

Component 3 will support a pilot rural transport services program to improve mobility and access to economic and social services to all population groups in the selected areas. It will include the identification of current transport service availability and potential market barriers to private service providers. The pilot would benefit local communities near road improvement investmentsthrough expanded market opportunities to sell agricultural produce and purchase advanced inputs, as well as other benefits. The pilot would also use ICT based solutions to connect services and end-users in a reliable and cost-effective manner.

The pilot will give special attention to improvement of women's accessibility. Given that women and men have different mobility patterns related to mode, affordability, quality of transport, and social norms, diagnostics will be conducted on mobility barriers to women's access to economic opportunities and services. The diagnosticwill inform the pilot on rural transport services, so that both women's and men's needs can be considered. The pilot will be designed to contribute to elimination of identified barriers for women's mobility.

Component 4: Capacity Building and Project Administration (Estimated cost US$15 million, financed by IDA)

This component would finance knowledge development and institutional capacity-building activities through the provision of goods, consulting, and non-consulting services and training, building on the institutional strengthening activities of the previous project, comprising, among others, the following areas:

- **Road asset management:** In support to the RF, the activities would include, among others,(a) improvement of the existing Pavement Management System (PMS) by including feeder roads into the system at the subnational level; (b) updating road condition data; and (c) expanding an internal model to enable PMS to carry out a climate resilience analysis.

- **Road safety:** The project will assist the ANE and INATTER with implementation of the activities identified by the National Road Safety Policy prepared by the GoM, including, among others, (a) development of a Road Accident Data Management System; (b) provision of road safety equipment and materials for enforcement and education; (c) a study on introduction of scoring system for drivers; (d) improvement of engineering standards for road safety and road safety audit capacity;and

(e) road safety risk assessment of the selected primary road sections.

- **PPP:** This would support ANE and the R Fin carrying out, among others, (a) review of the existing highway concession projects; and (b) a feasibility study of potential national highway concession projects.

- **Climate resilience:**This would assist ANE, the RF and INGC with, (a) development of a geo-spatial screening tool to identify most critical and vulnerable transport assets to climate change impacts. This tool would be managed in conjunction with the INGC and MTC; and (b) extension of the DMU approach and climate resilience analysis of road infrastructure projects to the entire country.

- This component will also provide support for improvedproject management in regards to implementation and supervision of the project, social and environmental safeguards, mitigation of gender gaps, and citizen engagement. The impact evaluation on the socioeconomic benefits of the project interventions will be assisted.

Component 5: Zero-budget Contingency Component

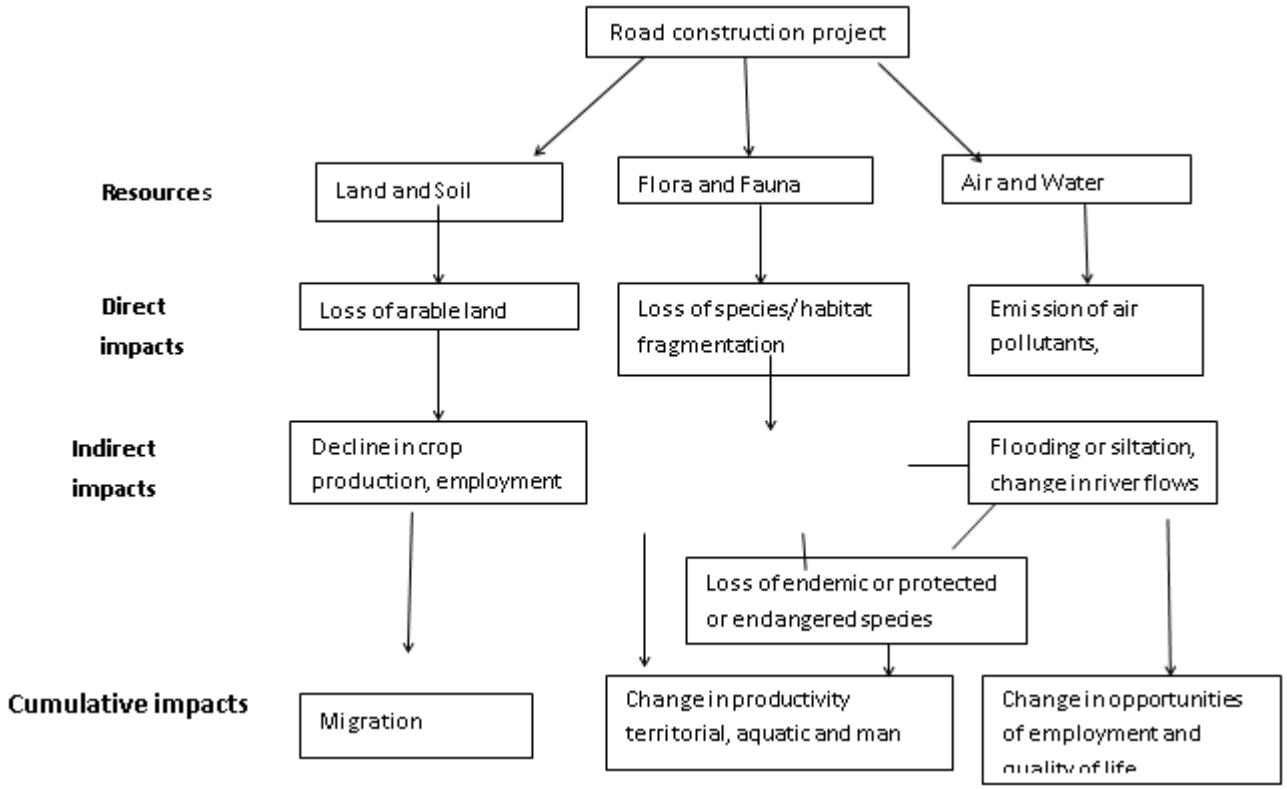
This component will facilitate access to rapid financing by allowing reallocation of uncommitted project funds in the event of a natural disaster either by a formal declaration of a national or regional state of emergency or upon a formal request from the GoM.

The component 5 is a result of the implementation of the component 1, 2 and 3, need to be better integrated into the overal project. These components will have three levels of administration: central, provincial and district/local level.

Component 5 is a result of the implementation of component 1, 2 and 3, and needs to be better integrated into the overall project. These components will have three levels of administration: central, provincial and district/local.

From the environmental point of view Construction, rehabilitation and maintenance of the road always poses environmental impacts. Project component 1 and 2 focus on road construction and therefore impacts are expected. Based on the Bank safeguards the implementation of component 1, object of this ESMF, is not expected to have major environmental and social impacts, due to the nature of the project activities. Mostly it will be upgrading or improvement of existing roads. Minimal adverse impacts, can therefore occur, compared with the loss of land, damage to local infrastructure, loss of vegetation, and slope cutting, that would be associated with the construction of new tracks.

Road construction activities in the project area will have impacts in the natural resources as shown in the next picture:



Picture 2-2: Potential impacts of road construction

Thus, this ESMF aim to provide all contractor and Sub contractor with the basic precedures to avoid or minimize negative impacts and reduce the effects of them to the community of Nampula and Zambezia in general term and particularly to the direct affected people in the target districts.

2.2 Project Implementation Arrangement

According to the discussion held with the Road Sector and project unity at ANE, it is expected that the implementation of some project components be decentralized to the delegations in order to promote road sector decentralization and create capacity at the provincial level. To do so the project will have to create an institutional arrangement that should be in line with the existing delegation's mandate and build capacity at provincial level. Under this project, ANE Delegations will be responsible for procurement and contracting management, with the support of consultants. Additionally, ANE will also be responsible to keep update the GRM data base. Regarding environmental and social safeguards, ANE HdQ and RF will retain the safeguards responsibility at the beginning of the project and will provide a training program to transfer responsibilities in the following years to the Focal Points at the provincial and district level. Financial Management and Audit responsibilities will remain in RF HQ. For the success of the process there is a need for efficient coordination between Road Fund and ANE at central level and ANE provincial Delegate.

Table 2-1: Role and Responsibility of Stakeholders

Stage in Sub-Project Cycle	Responsible Entity	Role and responsabilities
Sub-project Identification	ANE and RF HdQ	Overal coordination implementation of the project (ESMF and RPF).
	DPTADER	Conduct sub-project screening; determine eligibility and category; and define required safeguards instruments (ESIA, ESMP, RAP, etc.).
	World Bank	Review and confirm sub-project eligibility and category;
Sub-project Preparartion (Feasibility Study and Design)	Contractor	Prepare and implement the safeguards instruments.
	Supervision Consultant (Engineer)	Review the safeguards instruments.
Review and approval	ANE HdQ and Delegate DPTADER World Bank	Review and approve safeguards instruments.
Project Implementation	Contractor	Implement safeguards instruments.
	Supervision Consultant (Engineer)	Monitor and report on implementation of safeguards instruments.
	District administration; ANE and FE Delegation; ANE HdQ; and DPTADER/Resetlment Committee	Manage Grievance Redress Mechanism (GRM) to resolve the any community complaints
Completion/turnover	ANE HdQ,ANE and FE Delegation RAP implementation Consultant	RAP Evaluation
	DPTADER (Resetlment committee) Contractor	ESIA/ESMP
Operation/ maintenance	Contractor ANE delegation	Safeguards instruments implementation

2.3 Development context in Mozambique and the project area

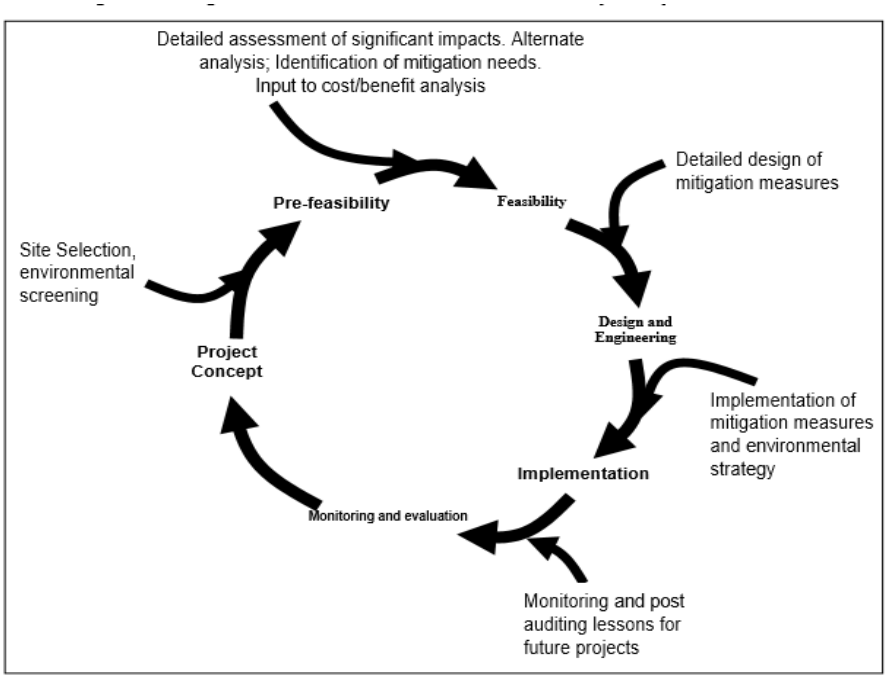
Mozambique economy is mostly based on agriculture with 23% of the contribution to the PIB. Around 80% of people live in Rural areas. MASA (2016), refer that around 5 million of households are in agriculture and contributes with 98% of their production to the national production. Based on this economic set up the level of pervety is high in rural areas compare with urban area (IOF, 2014). Changes in agriculture performance could bring changes in the poverty dimension of rural areas. However, as stated before weak connection between production areas and consumption areas is constraint the production. Nampula and Zambezia are most populated provinces in Mozambique with the high desnutrition rates compare with the national level. However, these provinces have high potential for agriculture based activities development. This potential is under utilized due to low development of infra structures and In that regards, several projects has been implemented and targeted most of the districts of the IFRDP. These projects are funded by donnor community and private sector , some examples the development project are following :

(a) EU is developing a project for the Zambezia province. The project will include agriculture and infra-structure development.
(b) USAID under the Feed the Future Program is promoting the development of certain highly value chain (seasame, Soya, ground nuts etc),
(c) Sustainable Irrigation Development Project (PROIRRI), which is a program aimed at reactivating irrigation in Mozambique. This project is active in Zambézia province and some of the irrigation schemes targeted by PROIRRI are located in Maganja da Costa and Murrumbala districts;
(d) World Bank project in the Agriculture and Natural Resource Landscape Management Project (ANRLMP), which focuses on agricultural development and land tenure rights being implemented in Zambézia and Nampula provinces, currently known as SUSTENTA;
(e) In the forest sector and climate change under REDD+ the Mozambique Forest Investment Project (MozFIP), the Dedicated Grant Mechanism to Local Communities (MozDGM) and (iii) REDD+ Initiatives. c), d) and e) initiatives are led by MITADER in close partnership with MASA and other ministries/sectors (e.g. MOPHRH, MIREME, MIC, etc.). Apart of these projects funded by donnor communities, several private initiatives are also being implemented in these two provinces by the private sector in the agriculture, liverstock and poultry, forest, fisheries and mining sectores. Road improvement will make some of the investiment done viable

At provincial level the ANE delegation in collabouration with relevant sectors will ensure that the sectoral aspects of the project are consistently respected and streamlined in the systems and procedures built for each program/project and contribute to fulfil common interests.

2.4 Methodology

The ESMF is a tool that is used to lead the environmental process of a program, when the project are not yet defined. The environmental tools are part of the project cicle development process from the beginning. From the project cicle environmental screening has to be performed between project concept and pre-feasebility. In a case that the sub projects are not yet known a ESMF based on the secreening process of the national legislation as well as the World Bank Safeguards.



Picture 2-3: Environmental and social evaluation under Project cycle

The methodology for the ESMF process was based on extensive literature reviewof relevant GoM environmental and social regulations and guidelines, World Bank environmental and social safeguard policies and ESMF guidelines, a secondary data on biophisycal and socio economic information of the targetted provinces were also collected. The desk study was followed by the consultative process at central level, provincial and district level. The two provincies were visited, and two targeted districts per province. In each of the provinces as well as of the districts the consultant hold a meeting with relevant stakeholders. The participatory process was based mainly in open ended discussions, formal and informal collabouration with stakeholders, this interaction allowed the team to understand the existing environmental issues and challenges the provinces and districts. The work was performed in close cooperation with the project team at ANE, information was gathered on most critical rural roads for the developments of these provinces from the environmental and social concerns of beneficiaries and primary stakeholders, socially deprived community, and women. The institutional arragement of the project implementation was analysed with ANE delegation and DPTADER and a need assessment for the capacity building of these institutions were performed.

In liason with ANE project coordinator and Environmental officer the institutional arragement for the project implementation was evaluated and analysed on the best way links with the environmental institution at province and district level.

3. Legal Framework

3.1 National Legislation

since ninethy's Mozambique has been undertaking an enormous legal and institutional reform movement to improve the country ability to management the environment and turn it into a more sustainable process. The reform has been under implementation in the form of: (a) adherence to and adoption of a series of 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 Constitution of Mozambique, approved in 2004, the Articles 45, 90 and 117 establish the policies and principles that guide the protection and preservation of the environment. The law points that every community has the right to live in a balanced environment and the duty to protect. While Article 117 of the Constitution states that everyone has the right to an ecologically balanced environment, a healthy quality of life, imposing on the government and the community the duty to protect and preserve the environment for present and future generations. In 1997 the Environmental Act (Act no. 20/97, October 1) was approved, which requires that all public and private activities with the potential to influence the environment must be preceded by an EIA in order to identify and mitigate possible impacts resulting from the project, a process that culminates with the environmental licensing. The Act defines the EIA process as a tool for environmental management and supports the GoM in taking decisions regarding the allocation of environmental permit for project development (Article 15).

Article 4 of the Environment Law establishes a range of basic legal principles, which highlight: the principle of rational use and management of environmental components, with a view to further improve the quality of life of citizens and the maintenance of biodiversity and ecosystems; the precautionary principle, whereby the environmental management should prioritize the establishment of systems to prevent acts that could be harmful to the environment, to prevent the occurrence of significant negative environmental impacts or irreversible damage, regardless of the existence of scientific certainty about the occurrence of such impacts, and the principle of global and integrated vision of the environment as a set of interdependent natural ecosystems, which must be managed so as to maintain their functional balance. Environmental Law (Law No 20/97) also provides for the participation of local communities in the formulation of policies and laws related to natural resource management, management of protected areas, which is of relevance for Program. This law has formed the basis for defining specific environmental laws and regulations.

The Environmental Impacts Assessment (EIA) Regulation, approved by Decree 54/2015 to regulate the same process Mozambique has developed comprehensive regulations to cover the EIA process, which are included in the Regulation of the Process for Environmental Impact Assessment. The regulations are in line with the world's environmental and social management best practices, including World Bank recommendations and procedures. There are three main specific objectives of any EA exercise:

Screening and scoping of the proposed developments in terms of their potential impacts on the natural and social receiving environment, indicating both the beneficial outcomes and adverse effects. The initial screening is meant to determine the scope of the Environmental and Social Impacts Assessment (ESIA) required prior to approval of interventions. If any investment is likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented (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 included in standard Environmental and Social Management Frameworks (ESMFs).

The new Decree 54/2015 of December 31st, which was enacted on the 1st of April 2016 has introduced a new category, which is A^+ followed by a simple Category A. The two MITADER Category A projects (i.e. A^+ and A)

include all the interventions that require a full stringent ESIA process due to their expected severe impacts. One of the differences is that A+ projects should be reviewed by independent (and more professional) assessors, while simple A projects are expected to be reviewed by the normal review process that has been in use, comprising mainly MITADER technicians and those of other sectors (e.g. agriculture, mining, energy, fisheries, water, etc.) seen as relevant in each specific case. Under the new Decree the two A Category projects are required to assess their impact on biodiversity and present and plan to offset any potential biodiversity losses. Screening is done by the Provincial Directorates of Land, Environment and Rural Development (DPTADER), while projects under MITADER Category A and A+ are then supervised by the central MITADER and Category B and C (exemptions) are the domain of the provinces;

The actual Environmental Impacts Assessment (ESIA), which assesses the potential impacts of the investment in detail and evaluates alternatives.

Proposal of measures to be taken 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. This is generally done in the form of an Environmental and Social Management Plan (ESMP), which is normally an integral part of the ESIA.

The Scoping Exercise, ESIA and the Environmental and Social Management Plan (ESMP) are components of importance in any Safegaurds Assessment process. Scoping primarily 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 scoping for Tor for B projects are 15 working days, EPDA and ToR for A projects are 30 working days and EPDA and ToR for A+ projects is between 40 and 50 working days.

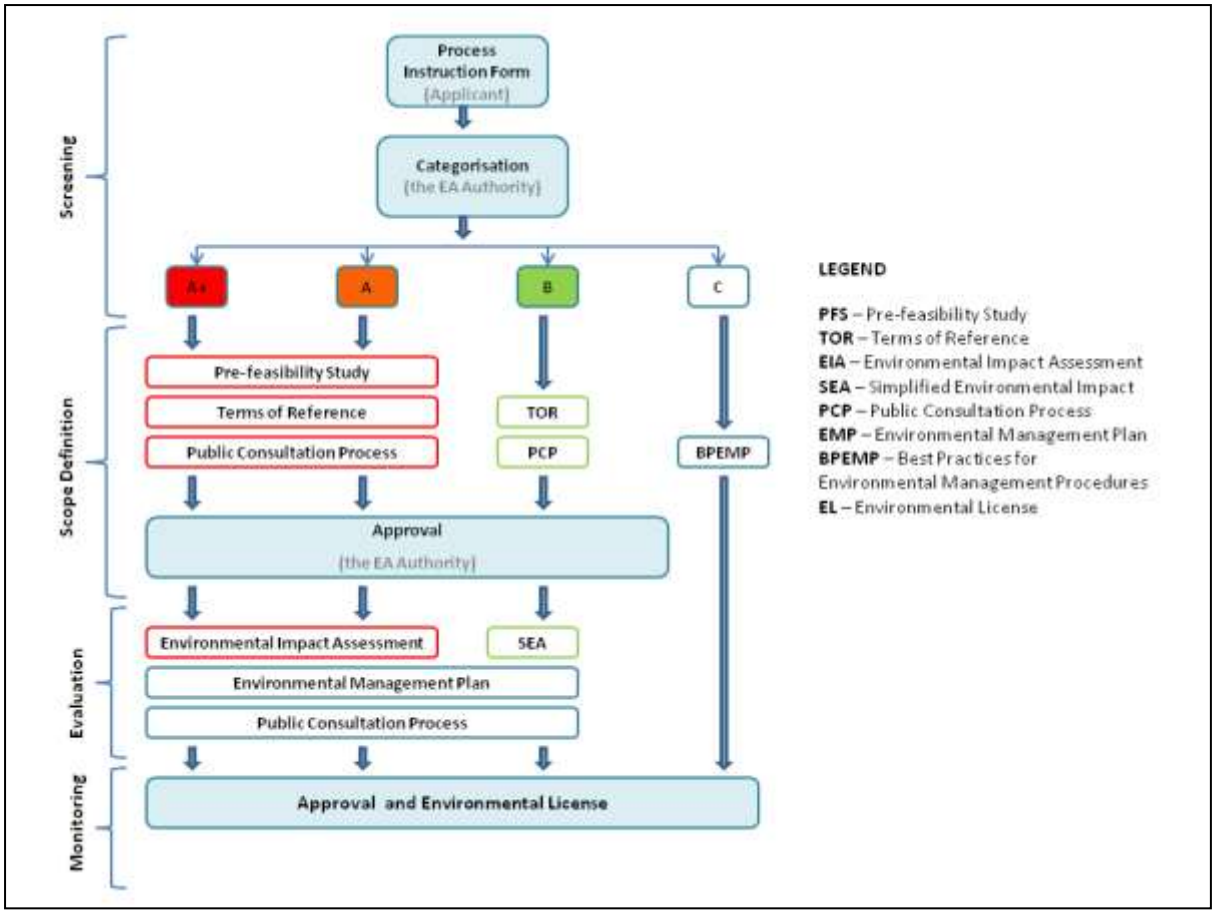
The timeline review for EIA A projects is 45 working days, A+ is 60 working days and for simplified EIA for B projects is 30 working days.

Public Participation, for the category A+, A and B the public participation is mandatory according to the decree nr. 54/2015. Within the Scoping and preparation of EIA the public has to be informed about the project. The comments and suggestion received through such public participation to be included in the EIA report.

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

1) a temporary license after approval of the EPDA/Scoping report (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 review committee provides recommendations to the competent authorty regarding the issuing of the Environmental Licence. The issuance of the Environmental License must be based upon an approved EIA of the proposed activity. Environmental License are valid for a period of five years. They are then renewable for an equal period of time. The license is a prerequisite for the issuance of any other license or permit that may be legally required. The decision on the EIA approval and issuance of the license are both taken by the central EIA autority.



Graphic 3-1: ESIA process in Mozambique

The project is only involved in rehabilitating existing roads. Therefore, it has been considered as a Category B project by the World Bank screening process meaning that project activities will impose environmental and socio economic impacts that are easly mitigated. However, when the screening process be done for each sub project of the IFRDP some roads and bridges may be categoriezed as category A according to the Mozambiquan system (MITADER) due to length, proximaty to wetlands or forests, or associated social impacts. If this happens, the proposed roads will be carefully reviewed by the World Bank to ensure they are category B by in accordance with World Bank policies.

Alongside the legal provisions mentioned above, was created a series of Decrees and Diplomas, most notably:

- Ministerial Diploma no. 130/2006, of 19 July (General Directive for Public Participation Process) Decree no. 32/2003, of 20 August (Regulation on Environmental Audit Process) indicates that any public or private activity may be subject to environmental audits public (held by MITADER) or private (internal).
- Decree no. 11/2006, of 15 July (Regulation on Environmental Inspections).
- Environmental Guidelines and Field Manual for Road Sector, October, 2012.
- Decree no. 18/2004, of 2 June (Regulation on Environmental Quality Standards and Effluent Emission).

In addition to these instruments, the activities proposed are also regulated by the following:

- Land Law (Lei no. 19/1997, de 7 de Julho)
- Regulation of Waste Management ((Decreto n.º 13/2006, de 15 de Junho),

- Water Law (Law no. 16/1991, of 3 of August) states that the hydraulic works will not be approved without the prior analysis of their effects and impact on the environment, economy and society.
- Regulation of the Public Water Supply and Waste Water Drainage Systems (Decree no. 30/2003, of July 1)

3.2 World Bank Safeguards Policies

The operations of World Bank are guided by a comprehensive set of policies and procedures, taking into account the Bank's core development objectives and goals, the instrument for pursuing them, and specific requirements for Bank financed operations. The core of this guidance lies in the Operational Policies (OPs) which are short, focused statements that follow from the Bank's Articles of Agreement, its general conditions and from policies specifically approved by the Board. Within the overall set of Operational Policies, the Bank has identified ten key policies that are critical to ensuring that potentially adverse environmental and social consequences are identified, minimized and mitigated. These ten policies are known as the "Environmental and Social Safeguard Policies". Safeguard policies are mechanisms for integration of environmental and social issues into decision making. It supports participatory approaches and transparency. They provide a set of specialized tools to support development processes as follows. During the course of developing the ESMF the OP safeguards the aplicability of these will be analysised in line with the GoM requirements for the Environmental prescriptions.

The purposes of the Bank's policy and procedures for Environmental Assessment (EA) or Environmental and Social Impact Assessment (ESIA) are to ensure that development options under consideration are environmentally sound and sustainable and that any environmental consequences are recognized early and taken into account in project design. As concern has grown worldwide about environmental degradation and the threat it poses to human wellbeing and economic development, many industrial and developing nations, as well as donor agencies, have incorporated EA/ESIA procedures into their decision-making. ESIAs should emphasize identifying environmental and social issues early in the project cycle, designing environmental improvements into projects, and avoiding, mitigating, or compensating for adverse impacts. By following the recommended EA/ESIA procedures, the Bank as well as implementing agencies, designers, and borrowers are able to address environmental and social issues immediately thereby reducing subsequent requirements for project conditionalities and avoiding costs and delays in implementation due to unanticipated problems.

The Bank Task Team Leader (TTL), in collabouration with assigned Environment and Social Safeguards Specialists, evaluates the project or project components according to the magnitude and sensitivity of the environmental and social issues raised. Screening determines the type of environmental and social analysis to be conducted for the project, ranging from a full ESIA to no further analysis. Safeguards insturments like ESIAs and RAPs or other similar analyses are the responsibility of the borrower, but Bank staff are available to assist wherever requested, such as in determining the scope of work and developing terms of reference (ToRs). Similar screening process is done by MITADER to fulfill the national legislation as described above. "Environmental review" refers to the process just described, from screening at identification through evaluation after the last disbursement, or after implementation is complete. Environmental review may entail preparation of a full ESIA, a more limited environmental analysis, or no further analysis at all, depending on the results of screening.

Environmental review is required for all Bank loans and credits except sectoral adjustment loans and structural adjustment loans. Sector investment projects and the investment component of hybrid loans and credits are subject to the environmental review requirement. "Bank" in this instance refers to the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA); however, the International Finance Corporation of the World Bank (IFC) has developed similar environmental review procedures appropriate to the nature of its investment operations.

The Bank's Safeguard Policies envisage a flexible process, designed to suit the entire range of Bank projects and the different circumstances of its borrowing countries. There is no fixed inventory of issues to be examined in any particular ESIA or other Safeguards instrument, instead, the Bank's procedure relies on screening, environmental reconnaissance, and discussions between Bank and borrower to identify the critical issues and to establish the scope of the instruments required. The safeguards policies also calls for interagency coordination and consultation with affected groups and local (NGOs) at an early stage to ensure that all significant environmental issues are covered.

The Bank Safeguard Policies integrates environmental and social analysis into project preparation, including project selection, siting, and design decisions. In most cases, an this analysis should form part of the overall feasibility study. This facilitates incorporation of the findings into selection of sites and technology, designs and implementation plans. For projects which would have major environmental and social impacts, the Bank recommends that the borrower retain independent experts not affiliated with the project preparation or feasibility study team to conduct the ESIA. However, specialists responsible for the ESIA as a separate task should work closely with the feasibility and design team.

Project Safegaurd Instruments provide numerous opportunities for coordinating environmental and social work in the country, and should be linked to other environmental strategies, action plans, and free-standing projects. They provide a formal mechanism for interagency coordination and for addressing the concerns of affected groups and local NGOs. They can also help strengthen environmental and social management capability in the country and Bank staff should take advantage of opportunities to use them for that purpose.

Safegaurds review begins with screening at the time of project identification. Scoping and preparation of the Safeguards Instruments occur in tandem with or as integral parts of the pre-feasibility and feasibility studies. The final instruments are sent to the Bank by the Borrower prior to appraisal. If the the instruments are satisfactory to both borrower and the Bank, it forms the basis for the Bank's decision on safegaurds clearance and the safeguards condition to be negotiated with the borrower, some or all of which are incorporated into the loan agreement. The Safeguards Instruments may be adequate for the purposes of appraisal, but the Bank review may reveal needs for additional analyses before clearance can be given and negotiations undertaken. Supervision includes monitoring the project's environmental and social performance and compliance with relevant conditions agreed on between the Bank and the borrower. After implementation is complete, the Bank's Implementation Completion Report (ICR) includes evaluation of both the impacts that actually occurred and the effectiveness of mitigation measures of safeguards issues. The Operations Evaluation Department (OED) again audits selected projects possibly some years after the ICR.

Screening

Safeguards screening is the responsibility of the TTL, with advice and assistance from the Regional Safeguards Advisor. An essential part of screening is to identify which aspects of a project are not environmentally or socially significant and which therefore can prudently be dropped from further consideration. Its purposes are to ensure that the appropriate amount of attention is devoted to the environmental aspects of the proposed project from the very outset of the project cycle, to identify as much as possible the key environmental issues, and to determine the type of environmental analysis which is needed so that those issues, and others which may arise, can be addressed effectively in project planning, design, and appraisal.

Screening is carried out at the time of identification. Projects are assigned to one of four categories on the basis of the nature, magnitude and sensitivity of the environmental issues, and so designated in the Initial Executive Project Summary (IEPS). The IFRDP is classified as environmental Category B according to the Bank's OP 4.01. The projects are expected to have positive environmental and social impacts, with relatively minor and localized negative impacts. The ESMF has been developed to ensure environmental and social due diligence for sub-

projects. Based on this, the table below identifies and justifies the Bank safeguard policies that will be trigered by the IFRDP.

	Safeguard policy	Triggered	Justification
1	OP 4.01: Environmental Assessment	Yes	The policy is triggered due to the physical interventions that will be implemented during the rural road rehabilitation activities. The project is not expected to result in significant, negative or irreversible impacts. Due to the nature of interventions, some sub-projects could result in temporary, site-specific adverse environmental impacts. The ESMF includes methodology to apply an environmental and social screening process that will guide in determining the potential environmental and social impacts of sub-projects and in the application of appropriate mitigation measures. Site-specific ESMPs will be prepared for each sub-project prior to construction during project implementation.
2	OP 4.04: Natural Habitats	Yes	The policy is ttriggered as the project will be implemented in a region with conservation areas and high ecological hot spots such as Gile Game Reserve, Mecuburi Forest Reserve, as well as some important wetlands. While none of the sub-projects are expected transit these hot spots, any protected areas or critical natural habitats (forests or wetlands, etc.) within or near to the sub-project are as will be noted in the site-specific ESMPs. A provision to protect these areas will be included in site specific sub projects ESIAs ESMPs.
3	OP 4.09: Pest Management	No	The project is not expected or facilitate purchases of agriculture inputs; therefore, the policy is not triggered. However, the implementation of IFRDP will facilitate movement of goods and people to high produtive areas of Zambezia and Nampula, thus movement of agriculture inputs such as pesticides and fertilizers may increase.
4	OP 4.11: Physical Cultural Resources	Yes	The policy is triggered. Chance find procedures will be included in the site specific ESMPs.
5	Involuntary Resettlement OP 4.12:	Yes	This policy is triggered. A minor and temporary land acquision will be necessary for the ancceliary works and during the implementation all the is expected that the informal markets that are around the site specific sub-project.A Resetlment Framework policy done for IFRDP is dealing with it more deeply.
6	OP 4.10: Indigenous People	No	The policy is not triggered as indigenous people as defined in the policy are not present in project areas.
7	OP 4.36: Forestry	No	The Policy is not triggered. Although Zambezia and Nampula are on the major forest areas in Mozambique, the project will target existing roads. Improved road may facilitate acess to forest area; therefore, illegal logging and hunting may increase – these issues are covered by triggering OP4.01 and OP4.04. A provision to avoid encroachment to these areas will be included in site specific sub project ESIAs and ESMPs.
8	OP 4.37: Safety of Dams	No	The policy is not triggered as SFD IV projects under IDA financing will not include construction of dams as defined in the policy
9	OP 7.50: Projects on International Waterways	No	The policy is not triggered as the project will not undertake any activities in the catchment areas of international waterways and shared aquifers.
10	OP 7.60: Projects in Disputed Areas	No	The policy is not triggered as project activities will not be implemented in any disputed areas.

Table 3-1-: WB Safeguards trigger by the IFRDP

Due to its focus on improving rural road network the IFRDP project will trigger four of the 10 World Bank Operational Safeguards Policies. Next section is describing the safeguard policies and its relation with the Mozambican legislation .

Environmental Assessment (OP/BP 4.01)

The World Bank's environmental assessment operational policy requires that all proposed Bank-funded programs/projects, no matter the source of funding be screened for potential environmental and social impacts. The policy is triggered if a project is likely to have any adverse environmental and social risks and impacts in its area of influence. Similarly, each proposed sub-project activity is required to undergo the same social and environmental screening process to qualify for funding. This is done through the systematic use of the Environmental and Social Screening Form (ESSF). Under OP/BP 4.01, the Bank classifies proposed sub-projects

into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of their potential environmental and social impacts:

Category A: This is the Category for programs/projects likely to have significant adverse environmental and social impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. Environmental and Social Impact Assessment (ESIA) for a Category A project examines the project's potential negative and positive environmental and social impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate or compensate for adverse impacts and improve environmental and social performance. For a Category A project, the borrower is responsible for preparing safeguards documents, normally either an Environmental and Social Management Framework (ESMF) when the physical footprint of a project is unknown by appraisal, or an Environmental and Social Impact Assessment (ESIA with an Environmental and Social Management Plan [ESMP]), or an Environmental Audit/Risk Assessment whenever the physical footprint of a project activity is known prior to appraisal. It should be noted that if a proposed sub-project under IFRDP is subsequently screened as Environement Category A under OP4.01, it will not be eligible for IFRDP financing.

Category B: Is for programs/projects with potential adverse environmental and social impacts on human populations or environmentally and socially important areas, including wetlands; forests, grasslands, and other natural habitats. Impacts under Category B are less adverse and more easily mitigable than those of Category "A" projects. These impacts are sites pecific and easier to deal with; few if any of them are irreversible; and in most cases, appropriate mitigation measures can be readily designed. The scope of ESIA for a category "B" project may vary from project to project, but it is narrower than that of a category "A" ESIA. Like Category A ESIAs, it examines the project's potential negative and positive environmental and social impacts and recommends any measures needed to prevent, minimize, mitigate or compensate for adverse impacts while improving the project environmental and social performance. For simple Category B projects with very limited/low social and environmental impacts the preparation of Environmental and Social Management Plan (ESMP) that builds upon an ESMF might be sufficient. By the same token, the preparation of CDAPs that build on the PF will suffice. All sub-projects considered for IFRDP financing are expected to screen as Category B under OP4.01.

Category C: Is for programs/projects likely to have minimal or no adverse environmental and social impacts. Beyond screening, no further ESMF/ESIA or ESMP or RPF/RAP action is required for a Category "C" project. Nonetheless, being a category C project doesn't necessarily prevent a project from ensuring adequate monitoring of both environmental and social aspects of projects that are beyond safeguards.

Category FI: A proposed project is classified as Category FI if it involves investment of Bank funds through a financial intermediary, in sub-projects that may result in adverse environmental and social impacts.

The Mozambican regulation on the environmental evaluation under the new decree 54/15 in line with the screening process of the World Bank Safeguard for environmental assement. World Bank has identified four categories. The newly approved regulation for ESIA in Mozambique has four categories, category A, has been splited into two (A+ and A) and both requires a full ESIA due to the impacts that the project may cause to the environment, B and C. The diference between the A+ and A is on evaluation process due to the magnitude and sgnificance of the A+ project. .

IFRDP have been categorized under B from the World Bank, considering that they will focus on existing roads, minimal upgrading of the pavement, extensition up to 70 Km, wedining up to 6, and reabiltatition of drainage infrastructures and bridges of less than 100m. From the Mozambican legislation is expected also that the sub project will fall either under Category B or C.A conflict between the two policies might arise if the Mozambican legislation the project in a A category. In this case the two studies has to be performed.

Pest Management (OP 4.09)

Any World Bank financed project that stimulates the use of pesticides will need to prepare and disclose prior to project appraisal an Integrated Pest Management Plan (IPMP). Additionally, the procurement of any pesticide in a Bank-financed project is contingent on an assessment of the nature and degree of associated risks, considering the proposed use and the intended users. With respect to the classification of pesticides and their specific formulations, the Bank refers to the World Health Organization's Recommended Classification of Pesticides by Hazard and Guidelines to Classification (Geneva: WHO 1994-95). The following criteria apply to the selection and use of pesticides in Bank-financed projects:

a) They must have negligible adverse human health effects; b) They must be shown to be effective against the target species; c) They must have minimal effect on non-target species and the natural environment. The methods, timing, and frequency of pesticide application are aimed at minimizing damage to natural enemies; d) Their use must consider the need to prevent the development of resistance in pests.

The proposed project does not trigger OP 4.09 the World Bank Safeguard Policy on Pest Management, because the project activities to be implemented will not need any pesticides. However, improvement on acessibility to high production will facilitates the mobility of goods to the market and vice versa, including pesticides to the used in other agriculture projects in the targeted area.

Involuntary Resettlement (OP/BP 4.12)

Land acquisition under the project may be necessary to enlarge the existing road and accommadate the trafic during the reahabilitation. The need of land will be identified during sub-project screening that under the World Bank Safeguard Policy (OP/BP 4.12 - "Involuntary Resettlement") might require resettlement or compensation. This operational policy will be well dealt in the Resetlement Framework policy.

Natural Habitats (OP/BP 4.04)

This policy applies to activities, which could have a potential impact on important natural habitats outside and inside formally protected areas. Significant conversion of natural habitats is allowed under this policy if there are no viable alternatives, but the affected natural habitat needs to be compensated by an ecologically similar area of the same or larger size and the area needs to be better managed and protected. While protected areas and forests exist in Nampula and Zambezia, neither project activities within protected areas nor forest clearence are allowed under this project; however, the policy is triggered because some project roads do cross some senstive natural habitats such as wetlands and rivers that have to protected during the construction phase. The ESMF has made some provisions to ensure that adequate measures are considered to minimize the negative impacts that may occur

Forests (OP/BP 4.36)

This policy is aimed at reducing deforestation, enhancing the environmental contribution of forested areas, promote afforestation, reduce poverty, and encourage economic development. This policy also goes hand in hand with that of Natural Habitats OP/BP 4.04. As the subproject screening procludes roads transversing significant forests, the policy is not triggered. ESMF has made some provisions to ensure that adequate measures are considered to minimize the negative impacts that may occur.

Physical Cultural Resources (OP/BP 4.11)

This policy applies to sub-projects where important physical cultural resources (i.e. archeological sites, special architecture, important cemeteries, forests or where unique immaterial cultural resources) exist or are affected. In

case none of these physical cultural resources exists in a sub-project area, the bidding documents and the contractor contracts need to include a "Chance Find Procedure", which specifies that in case that during construction/installation an important arte-fact is found, construction should be stopped and the responsible Mozambican authorities be warned and involved in an investigation of the site. Construction/installation can only resume after the green light has been given by the responsible Mozambican authorities. The ESMF has made some provisions to ensure that adequate measures are considered to minimize the negative impacts that may occur. Especially because it is normal in Mozambique and many other African countries and beyond to find forests that have special value for local communities, groups or families. The importance of identifying and recognizing such forests in project development and particularly in forests and other agricultural programs/projects has been part of the standard practice and is streamlined in this ESMF document and related PF.

3.3 Gap assessment and comparison of legislation between Mozambique and WB requirements

The development of the Mozambican legislation on environment management is much in line with the World Bank environmental policies. Minor gaps can be encountred between the Mozambican and World Bank as developed new requirement on the Gender Based Violence (GBV) and Child Abuse/Exploitation (CAE) as well as labour influx specifically for the road sector, while Mozambique legislation is more general for all sectors. The road Sector Authority on their social clause refer to the need that contractor avoid gender based violence and childern abuse in the work site.

For the IFRDP the potential differences can be on the categorization process. The Bank has the ESMF tools to category the project, while the Mozambican legislation the categorization will be given on the bases of the screening process that will be done for each sub-project. In that case the categorization may difer from the process of the World bank. Capacity of Environmental unity at ANE delegation to address environmental and social aspects is limited. In the selected provinces ANE delegation has a focal point for cross cutting issues with no clear mandate, for instance in Zambezia the focal point is responsible for the implementation of the social agenda mostly concentrated in the HIV and AIDS campagain with the contractors therefore have more close relatioship with the Provincial HIV Council and less with DPTADER on environmental matters. In the last years in Zambezia there was an major road development project that the delegation has to overseen the implementation of the EIA or ESMP. The routine road maintenance work done every year are all classifed at C category, ANE inspection are more on engeering and social aspects. With the implementation of the decree 109/2014 the the focal point is now also working with local authorities to sensitaze communities not to build any infra-structure within the road reserve. In that Zambezia province is working with the CPCS to include in their HIV campagain at village level messages on prevention of road reserve occupancy including road safety. With this strategy the province delegation expect that the construction and use of the road reserve decrease, and therefore a need of resetlment in a future rehabilitation and construction of exiting road.

For the implementation of the IFRDP will be necessary to include additional amount to cover costs of the implementation of this ESMF, which will be be turned into ESIA and ESMP for each sub-projects. To meet project requirements on environmental and social aspects at each sub-project additional human resources may have to be hired under the project. Throughout the project, ANE delegation cross cutting focal points at provinces have to be integrated and exposed to process of screening, development and implementation of ESIA and ESMP as well as Resetlement process if any. However, as stated earler internally the ANE delegation does not have a long-term institutional perspective and no permanent institutional arrangement to overseen the aspects of social and environmental aspects.

At present ANE HdQ Monitoring Department includes the is also responsibility of the social and environmental subject matters. Hence, under the proposed project, it has been proposed to establish a dedicated unit within ANE which will be responsible for all social and environmental surveillance, project management, coordination and capacity building support to the ANE delegations. The various agencies at different level (national, provincial and

district) involved in the planning and implementation of environmental and social safeguard functions, will be given orientation and other capacity building, training from time to time to sensitize and familiarize with the ESMF provisions and processes. After awarding contract, the contractor will be given capacity enhancement orientation on ESMF provisions and processes. The contractor will also prepare a Labour Influx Plan based on the requirements of the sub-project and acceptable to ANE and the World Bank. Besides this human resources for environmental and social management will be provided for independent third party audit. Site specific ESMP will propose training and orientation plan, including cost for the sub-project in question, based on the need to enhance capacity of stakeholders.

As per the revised ESMF, provision has been made for monitoring by Central Project Coordination Unit, Provincial Project Implementation Unit, and District Level offices which will assist in enforcing compliance at three different levels.

3.4 Implication of Safeguard Policies of WB in IFRDP

The project has been considered as a Category B project. The policies on environment assessment (OP/BP 4.01), natural habitats (OP/BP 4.04) and physical cultural resources (OP/BP 4.11) have been triggered for the proposed operation. Each sub-project will require environmental screening/assessment before processing. As per Bank requirement, the borrower needs to consult project-affected groups and local nongovernmental organizations (NGOs) about the project's environmental aspects and takes their views into account. The borrower initiates such consultations as early as possible. Since this is Category B project, the borrower will consult groups at least twice: (a) shortly after environmental screening and before the terms of reference for the site specific ESIA/ESMP are finalized; and (b) once a draft ESIA/ESMP report is prepared. In addition, the borrower consults with such groups throughout project implementation as necessary to address EA-related issues that affect them. Under the Mozambican legislation for the category B project at least one consultation meeting with the affected people must be held after the secreening. The meeting should be announced 15 days before.

DPTADER will be responsible for the initial screening process for the IFRDP sub-projects. If in any case a sub-project is classified as A project, subject to the Fully ESIA and ESMP, the project manager should accomplish both Mozambican and Bank requirments. The other way is classified as C by the DPTADER the Bank requirement will prevail.

4 Environmental description of the project area

4.1 Biophysical description

Topograph

The project landscape has fertile soils as well as medium to high altitude, leading to good rainy seasons and high agriculture and forestry potential. The landscape is also home to key biodiversity hotspots, including the Gile National Reserve, the Mecuburi Forest Reserve, and Mounts Namuli and Inago. The coastal topography ranges from 0 to 200 m, rising to 200 to 500 m in the midland plains and 500 to 2000 m of altitude in the highland plateau. The high topographic region of Alto Molocue and Ile districts are covered by about three altimetry areas including: low plateau area (400m - 700m), which occupies the largest portion of the districts; the transition zone (700m - 1000m), and the last small portion, which reaches higher altitudes of more (1000 -2000 m), called mountain zone.

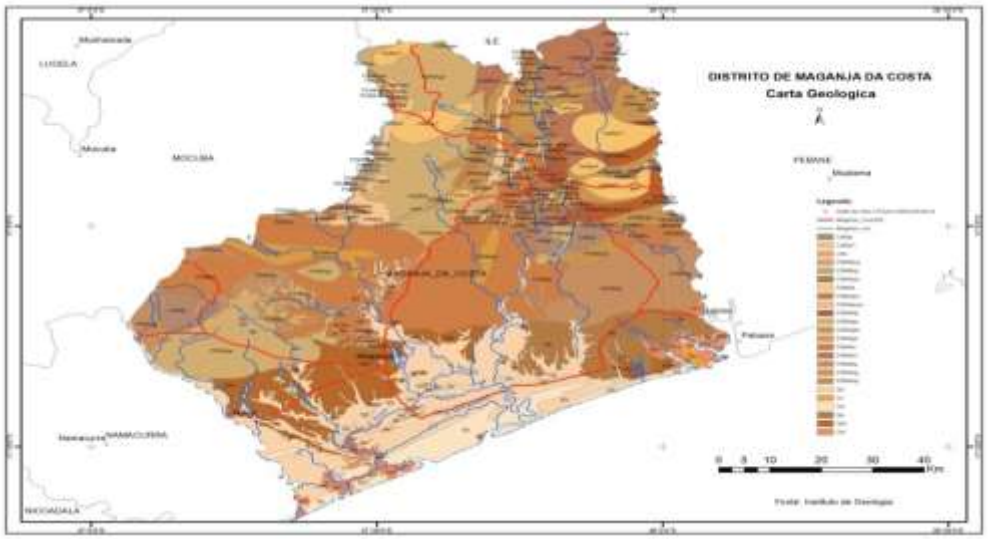
Climate

Nampula and Zambézia are costal provinces with two seasons Warm rainy December-March and Temperate Dry April-November. In Zambézia, mean temperatures vary between 26°C in Quelimane and 18°C in the highlands of Namuli, in Gurué. Annual rainfall oscillates from 1,000 to 1,200 mm in the coastal region and 800 to 1,000 mm in mid Zambézia to 1,200 mm in the province's highlands, more particularly in Gurué. Temperatures and rainfall averages also vary in Nampula. Average temperatures range from 26–28°C in the east to 23–24°C in the west of the province. While the rainfall is normally around 656–901 mm in most parts of the province, it reaches up to 1,160–1,390 mm in the southern tips of Malema and Ribaué (National Meteorology Institute 2007). Evapo-transpiration averages 1000 to 1400 mm (Métier, 2005). In the rainy season, February to March, cyclones affect the coastline.

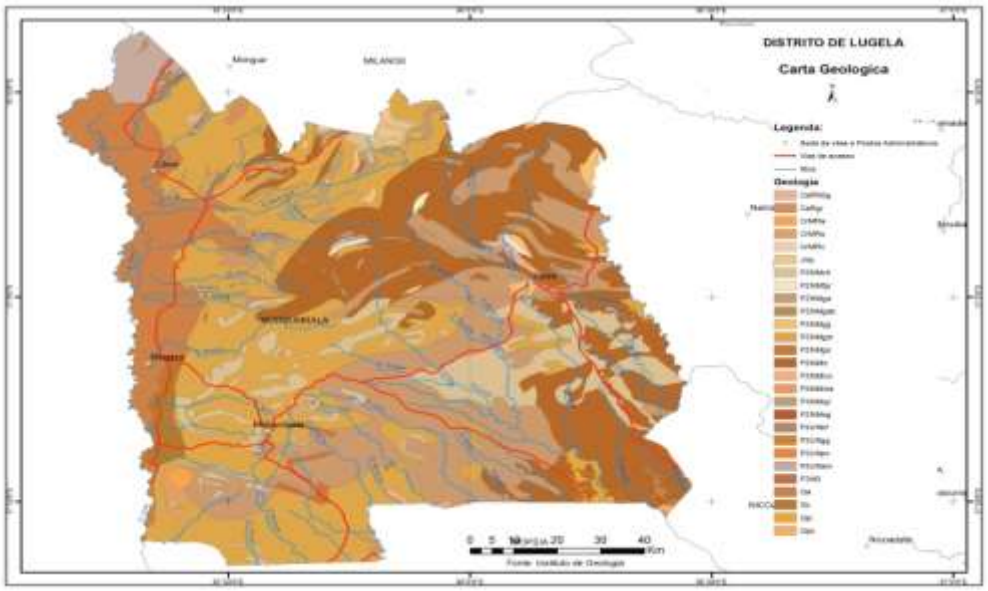
Gelology and Geomorphology

In general terms the geology of Nampula and Zambezia is composed by three category of rocks namely Alluvia, clays & sands, Granites & charnokites granitoids and Gneiss which are non-consolidated sedimentary rocks, which depend on the water lines that originated them and consist of debris or clasts of other pre-existing rocksThe granites have soft black flakes of mica, which are the first to crumble from weathered surfaces. They all have pale crystals of quartz, which rarely disintegrate. The large feldspar crystals give the colour varieties. Gneiss: metamorphic rock that contains a prominent layered structure or foliation but does not tend to break along these foliation planes. Gneisses are often identified by their hambug stripes of dark and light minerals and its crystal fabric. In therm of Geomorphology

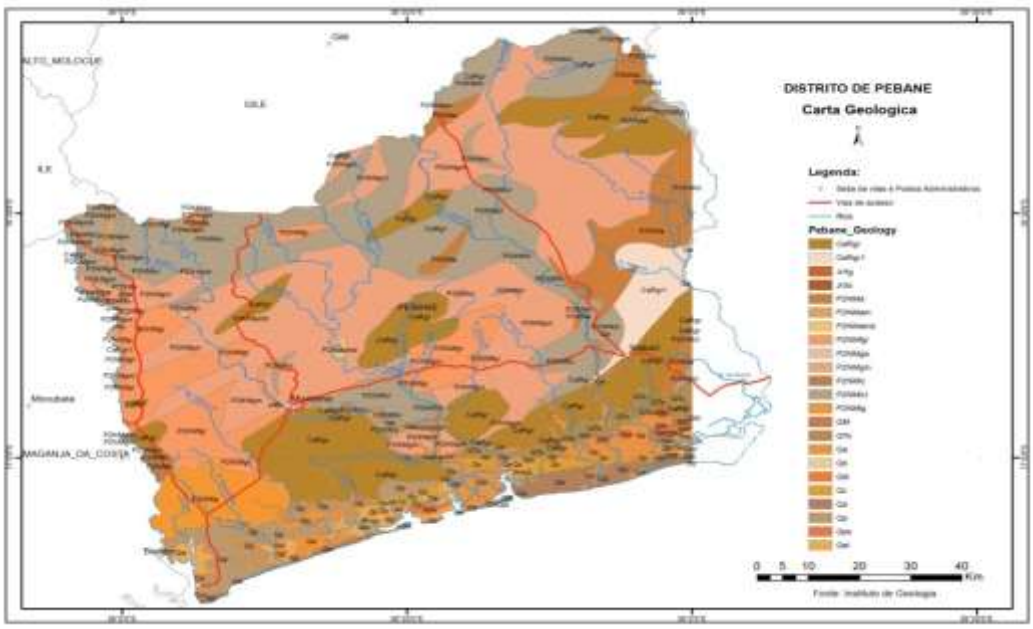
Mozambique's relief is like an amphitheatre, with a a hilly area in the West, sloping downd with teps until the esastern coastal plain. According to altitudes, there are plains, plateaus, mountains and depressions. 44% of national territory consists of plains up to 200m of altitude. 51% of the territory features flatlands ranging 200 to 1,000m of eleavtion, developed in the Northern half of the country, forming the Mozambican Plateau.



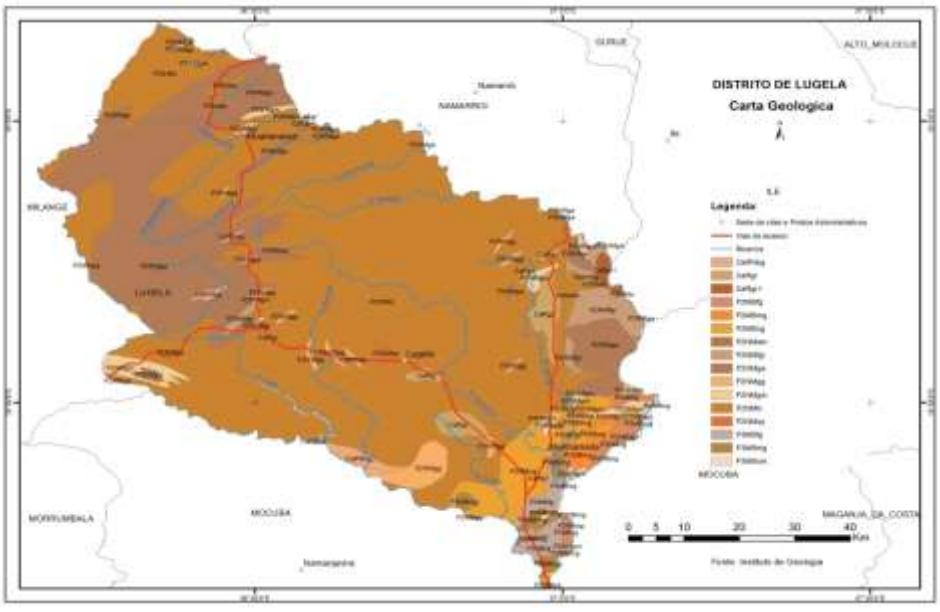
Map 4-4-1: Geology Map of the Maganja da Costa district



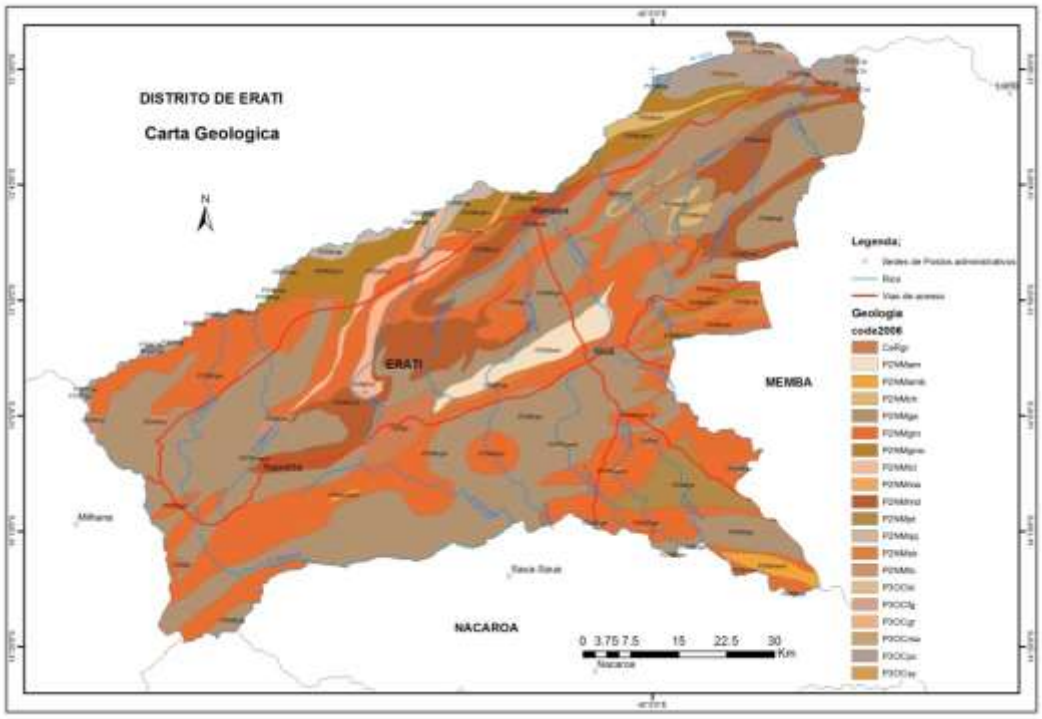
Map 4-2: Geology Map of the Murrumbala district



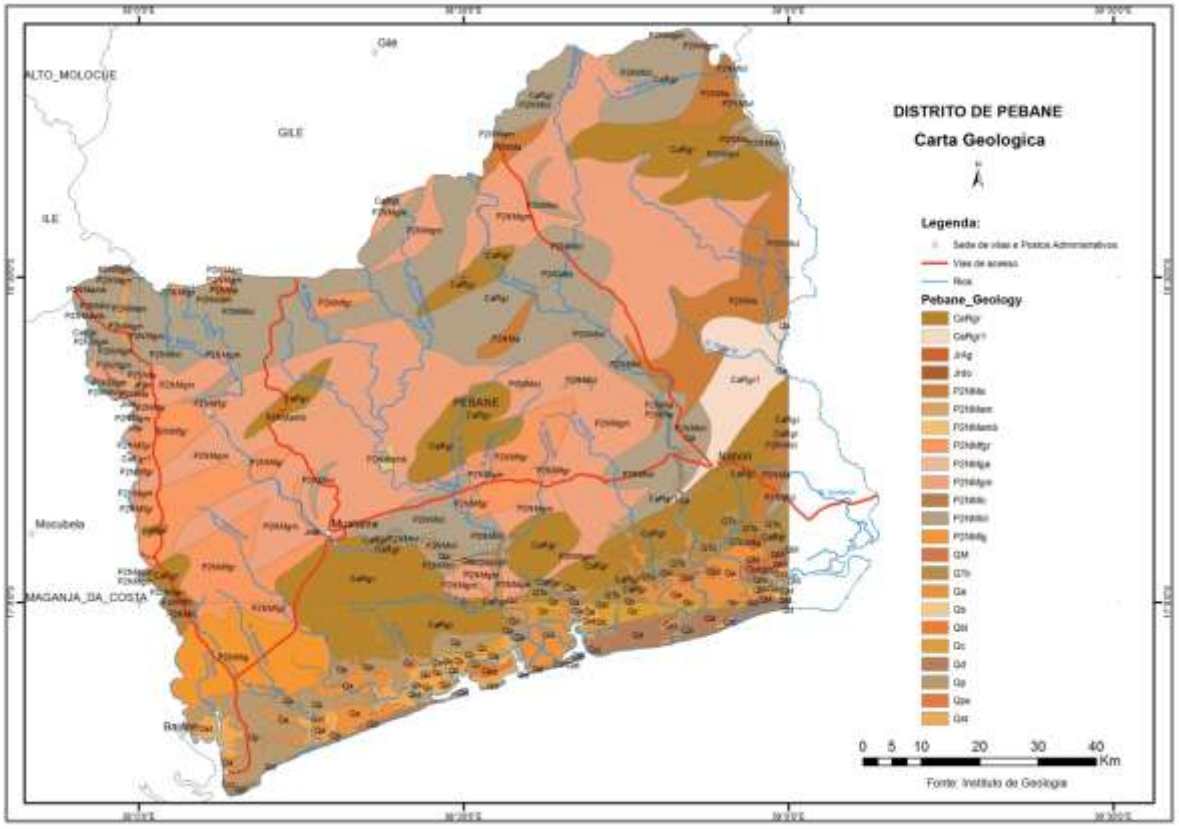
Map 4-3 Geology Map of the Pebane district

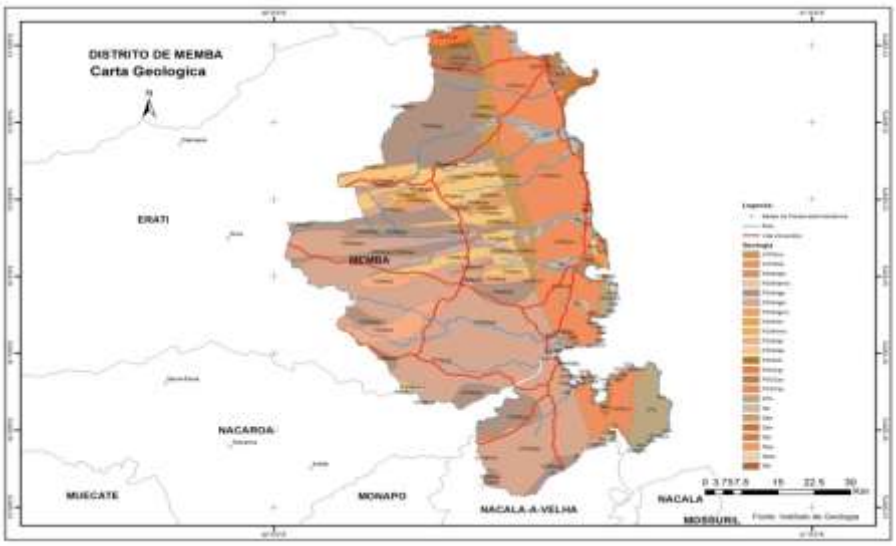


Map 4-4: Geology Map of the Lugela district



Map 44-5 Geology map of Erati District



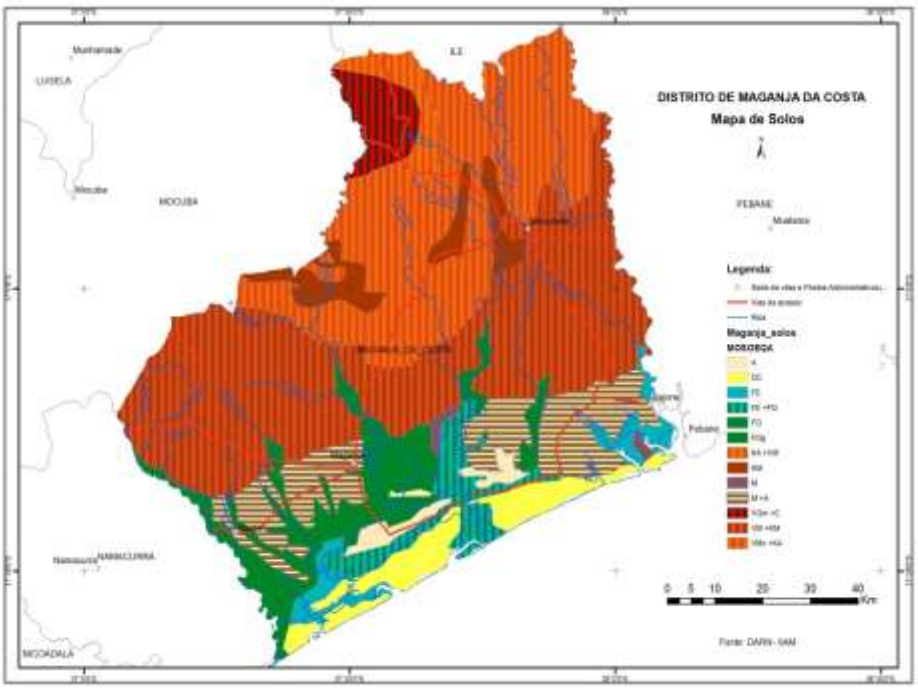


Map 4-6: Geology map of the Memba District

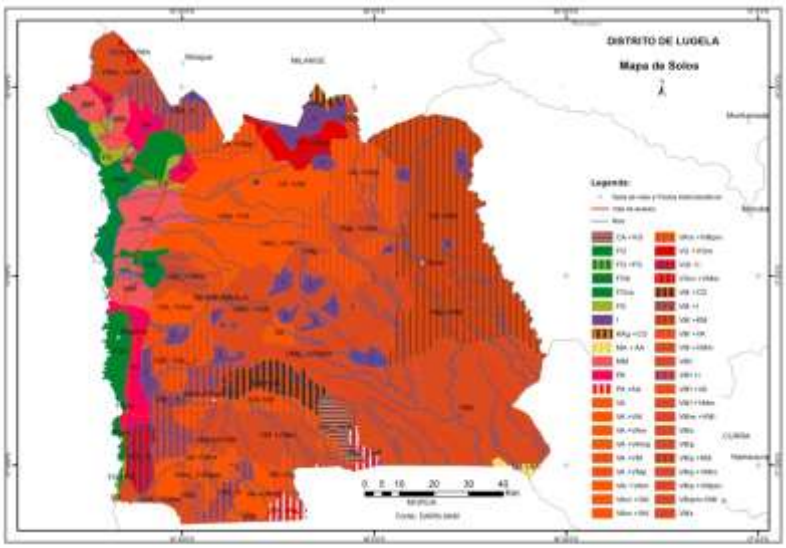
Soil

The project area has several soil types, grouped according to the taxonomic features of FAO's world soil classification (FAO, 1998). The main soils types are eutric fluvisolsand eutric fluvisols these soils are badly drained, due to stagnant ground waters and river flow. They are fertile, but have a low load capacity, which limits farming. Heavy machinery cannot be used. They have no erosion risk.

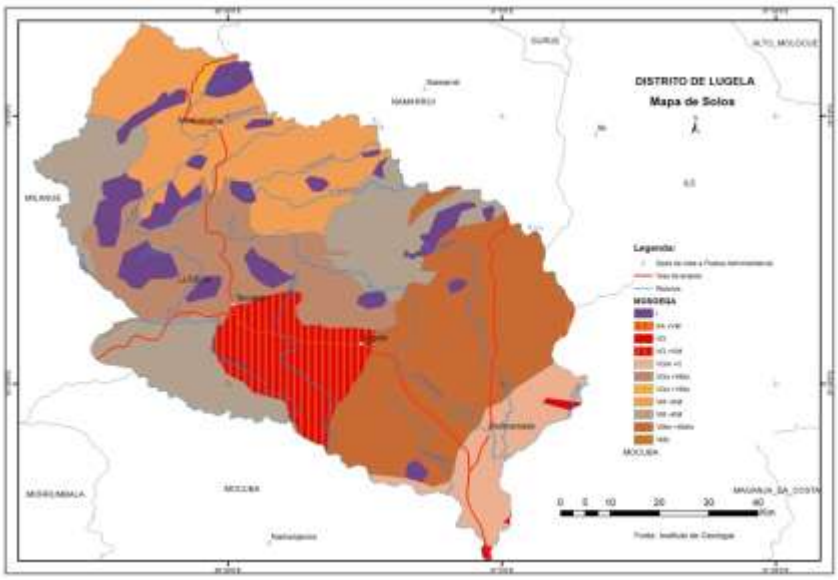
Ferralic lixisolshave high content of Iron (Fe) and Aluminium (Al), a loamy-sandy texture, and are brown-red in colour. These soils have a relatively strong structure; however they are characterised by a strong viscosity on the surface. The soils are well drained and have a low nutrient reserve. They must be improved with fertilisers & manure. They have fair structural development, but undergo erosion (low to medium), due to rain in slopes. FERRALIC ARENOSOLS: they are sandy soils developed over sandy deposits, with coarse and loamy-sandy texture. They have quartzite minerals, feldspar and iron-magnesium minerals. They are erodible soils due to loose grains and high plasticity when dry. CHROMIC CAMBISSOLS: These soils have sandy to loamy-sandy texture, a structural stability, high porosity, good water retention capacity and good internal drainage. In general, cambissols are good soils for farming and are used intensively. These soils have a low erosion risk.In addition, although data is limited, erosion is assumed to be a significant issue, given that the landscape encompasses some of the most vulnerable areas to erosion in the country. Uncontrolled wild fires are also a constant threat to the landscape, contributing to both deforestation and erosion. Associated to that is the degradation of waterways, especially as riparian forests are systematically removed to make way for agriculture lands.



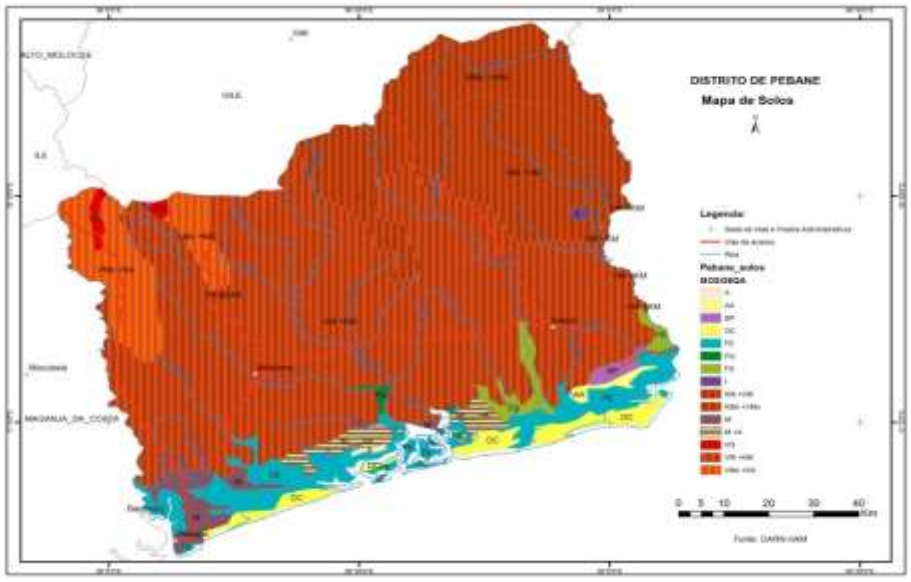
Map 4-7 Soil Map of the Maganja da Costa District



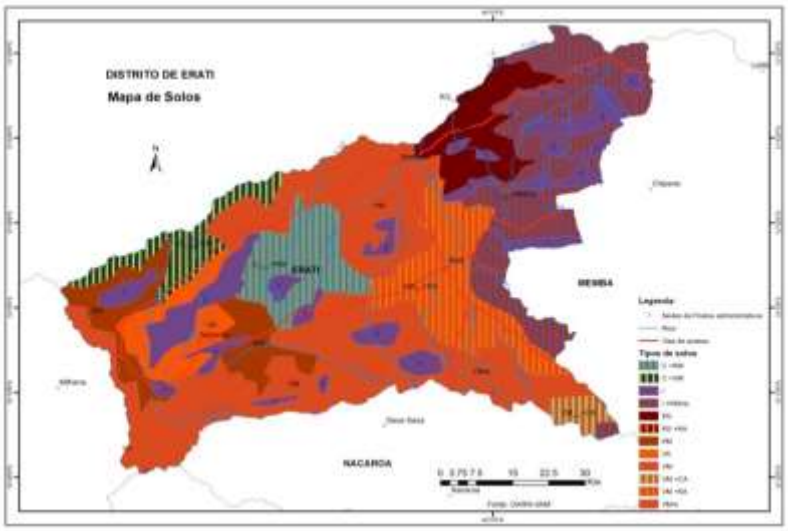
Map 4-8: Soil of Murrumbala District



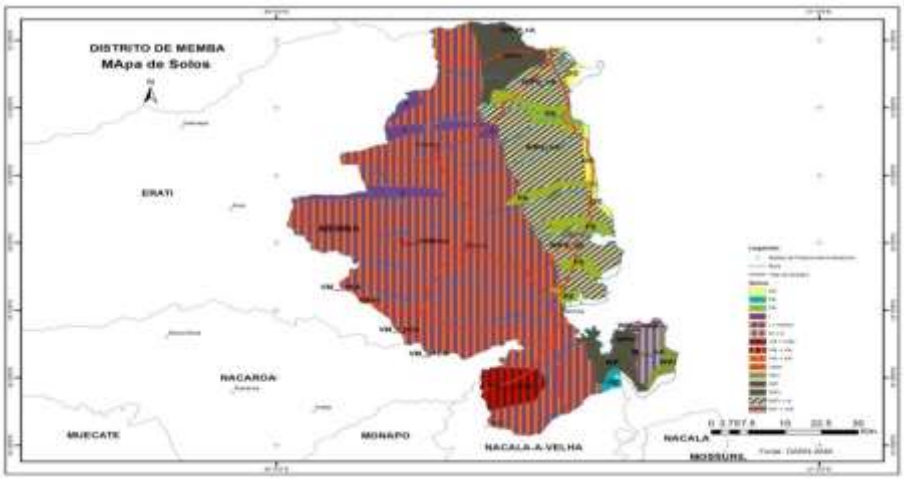
Map 4-9: Soil Map of Lugela District



Map 4-10: Soil Map of Pebane District



Map 4-11: Soil Map of the Erati District



Map 4-12: Soil map of Memba District

Hidrology

Mozambique is crossed by thirteen major water basins from the south to the North. One of the major rivers is the Zambezi basin. The Zambezi River is divided in upper, middle and lower Zambezi. Mozambique occupies 11% of the total basin area. The Lower Zambezi extends from the Lupata Gorge in Mozambique to the coast where the river exits at Chinde. This international river Zambeze crosses Tete, Sofala and Zambezia provinces, the last province is part of the IFRDP. The lower Zambezi in Mozambique is the most productive and biologically diverse tropical floodplains in Africa. It is typified by a broad floodplain, often with many parallel channels and shifting sandbanks, while the coastal portion includes extensive grasslands and freshwater swamps, dunes and mangroves.

Apart of Zambezi River, other three major rivers that crosses the IFRDP are Lúrio, Ligonha, and Licungo. Apart of these, minor water basins are found in the area including Mecubúri, Monapo, Mongincual, Monotomo, Meluli, Molócue, Mulela, Nipiode, Raraga, and Mungueze. The rivers provide the water needs for the irrigation and human consumption as well as for animals.

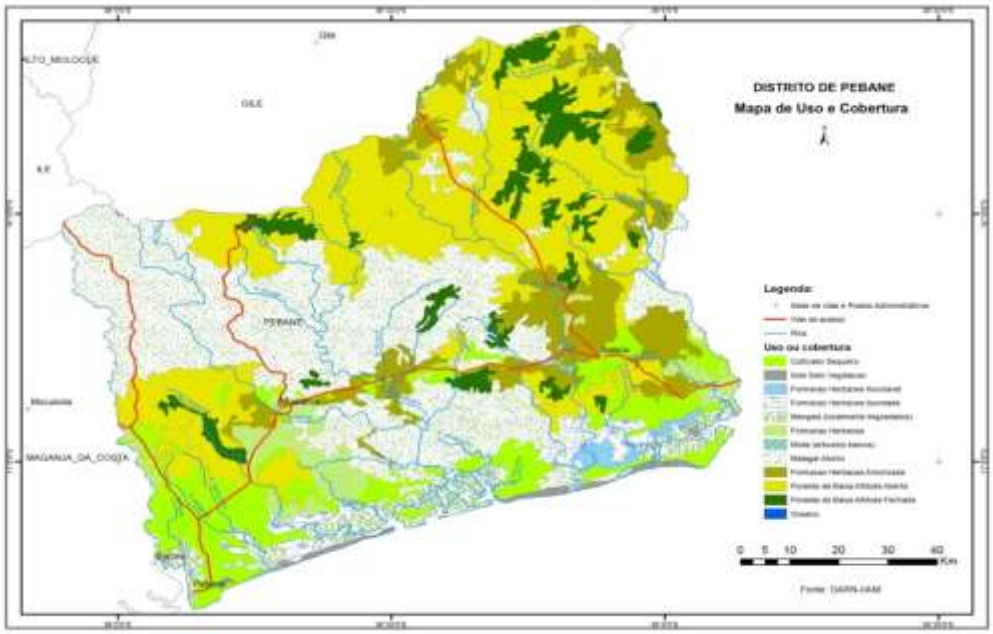
Flora

The project area is located between Swahilian-Maputaland transitional zone and Zambézian Centre of Endemism. The Zambézian Regional Centre of Endemism extends from 3° S to 26° S and almost from the Atlantic Ocean to the Indian Ocean, occupying all Mozambique's hinterland provinces and part of the coastal. The Zambezian center is the second largest phytocorion (Phytogeografical region) in Africa, probably having the richest and more diversified flora. There are at least 8,500 species, 54% of which endemic (e.g. of endemic genera, which are Diplorhincus, Bolusantus and Cleistochlamis), (White, 1983) refered by MICOA, 2009.

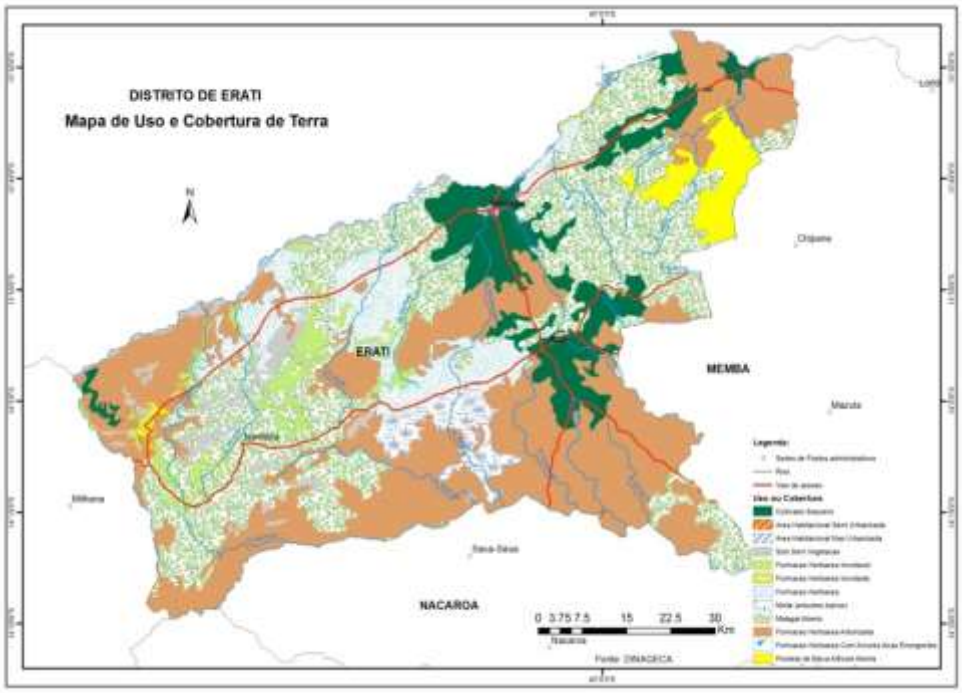
The north-eastern plain and plateau (altitude >400 m) is dominated by coastal mosaic, known as Swahiliean Regional Centre of Endemism, where endemic plant species are Stuhlmania, Hymenaena and Bivinia (MIC0A 2009). Inland, at the altitude between 400 m and 1000 m, is occupied by the Miombo vegetation dominated by Brachystegia and Julbernardia, but incorporates species such as Pleteopsis, Pterocarpus, Vitex payo, Vitex donicela and Cussonia spicata (MICOA 2009).

In MICOA , 2009, Albano, (2008) described the Mozambican flora, from the costaline coastline of about 2,770 km to the with a wide diversity of habitats, which include sandy beaches, coral reefs, estuarine systems, bays, mangroves and sea grass beds.. The swamp coast which extends from Angoche (16˚ 14'S) in the north to Bazaruto Archipelago (21˚ 10'S) in the south, with the length of 978 km characterized by occurrence of several estuaries and extensive mangrove formation. This part of the coast has the largest continental shelf and the very turbid water highly influenced by the sediment discharged by Zambeze river and other. The coastal areas of Zambézia and partial Nampula provinces are found in this habitat. In the project area, the coastal dune vegetation includes Sesuvium portulacastrum, Cyperus maritimus, Ipomea-pes-caprae, Canavalia maritime among others. These species create conditions for the establishment of littoral thickets and forest. The thicket becomes sometimes taller to a dense evergreen forest with climbers forming a patch of coastal forest. Dominant tree species include *Diospyros sp., Euclea natalensis, Mimusops caffra, Brachylaene discolour Bridelia sp., Commiphora schlechteri* as well as *Brexia madagascariensis*

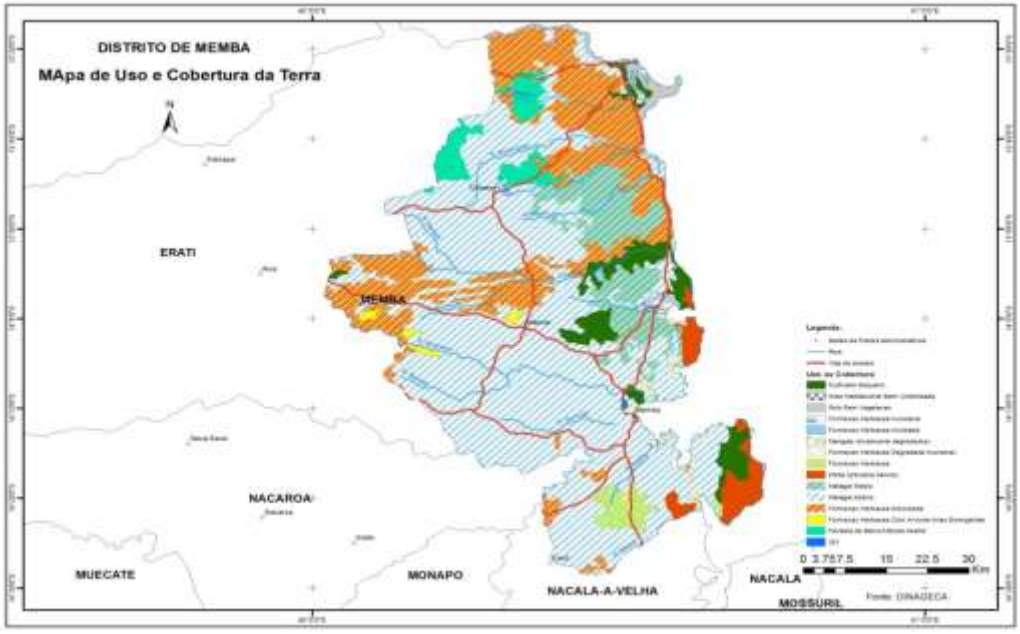
Secondary woodlands contain *Markhamia obtusifolia, Fernandoa magnifica, Trema orientalis, Erythrina sp*.In lower areas this type of vegetation turns into savanna tree with Combretum sp., Commiphora sp., C.africana, Dalbergia melanoxylon, interspersed with a layer of Andropogonaceae and Poaceae or into Acacia savanna with *A. nigrescens, A. polyacantha, Tamarindus indica,* occuring commonly on termite mounds with Oxythenanthera abyssinica in lower areas with clayey grey soils (Albano 2008).



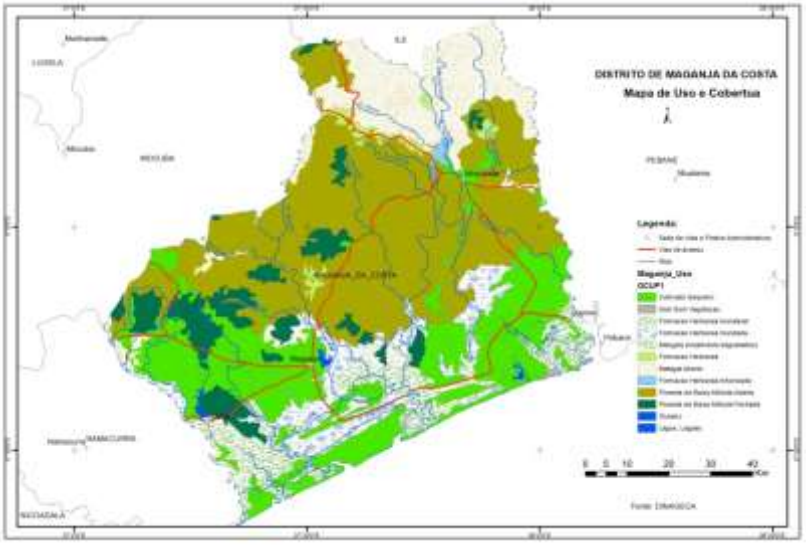
Map 4-13: Land Cover Map of Pebane District



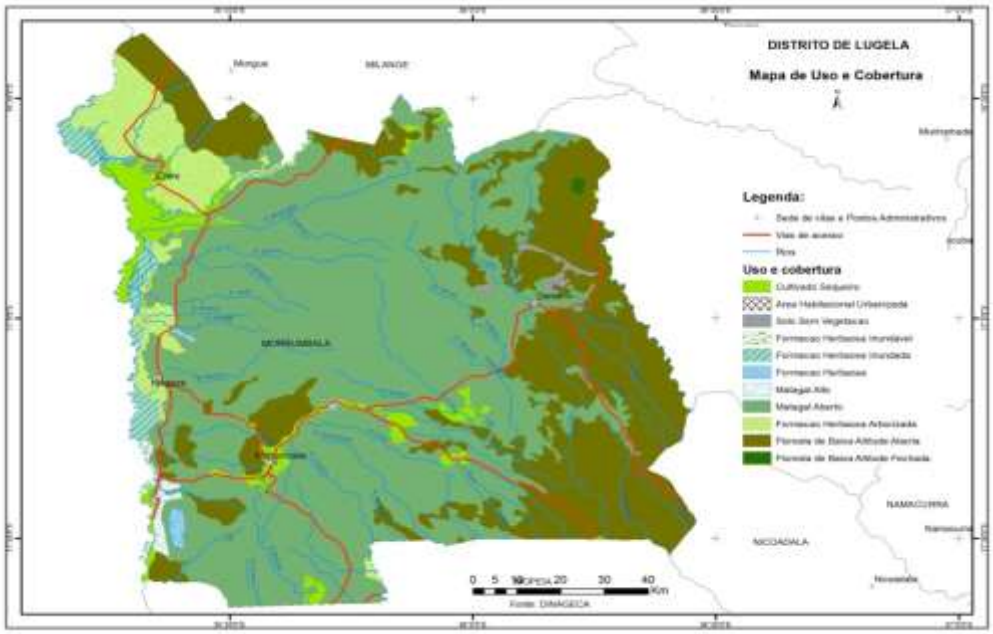
Map 4-14: Land Use map of the Erati District



Map 4-15: Land User Cover of the Memba District



Map 4-16: Land User Cover of the Maganja da Costa District



Map 4-17: Land cover of Murrumbal District

Fauna

The wildlife composition and diversity is highly dependent on the nutritional value of the vegetation types. The soil characteristics and rainfall seasonality contributes to low nutritional value of the miombo vegetation and hence low density of larger herbivores.

The Zambezia and Nampula Provinces have records of a significant richness in faunistic resources. However the long history of human activity associated to the destruction of habitats and poaching resulted in the decrease of the numbers of large mammals. Other reasons responsible for that decrease include the Civil War, lack of inspection, non involvement of local communities in the management of the resources, etc.

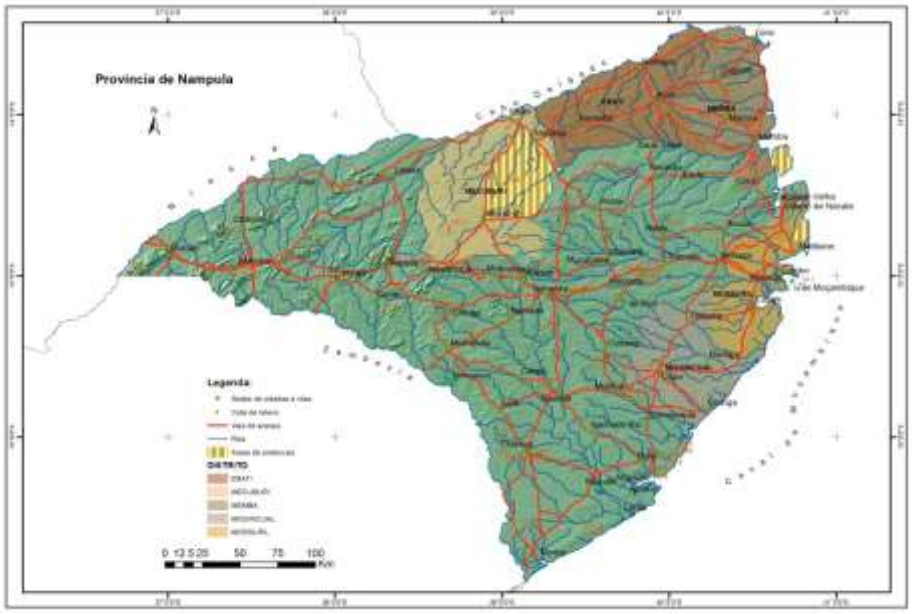
The animals were severely hunted and nowadays, only vervet (*Chlorocebus aethiops*) / samango (*Cercopithecus mitis*) monkeys, savanna baboons (*Papio cynocephalus ursinus*), spotted hyenas (*Crocuta crocuta*), Suni (*Neotragus moschatus*), reedbuck (*Redunca arundinum*), sable antelope (*Hippotragus niger*) are some of the commonly observed species.

The inselbergs have been associated with a diversity of bird species and reptiles. Research from the Malawian side of the Mulanje complex reveals existence of endemic species of birds associated to inselbergs and forest dense ecosystems.

Sensitive Areas

The activities of the sub project may interfere with some ecological sensitive areas including wetland pans, drainage channels, closed vegetation on steep slopes, large forestry areas and proteced areas. The wetland pans are small systems of water reservoirs where some plant species find refuge. The wetland pans are known to be inhabited by a diversity of plants and animals in a small area. Some of the wetland pans are of permanent nature being used by both wildlife and humans as a source of water, the main wetland in the region is at mouth of the Zambeze River.

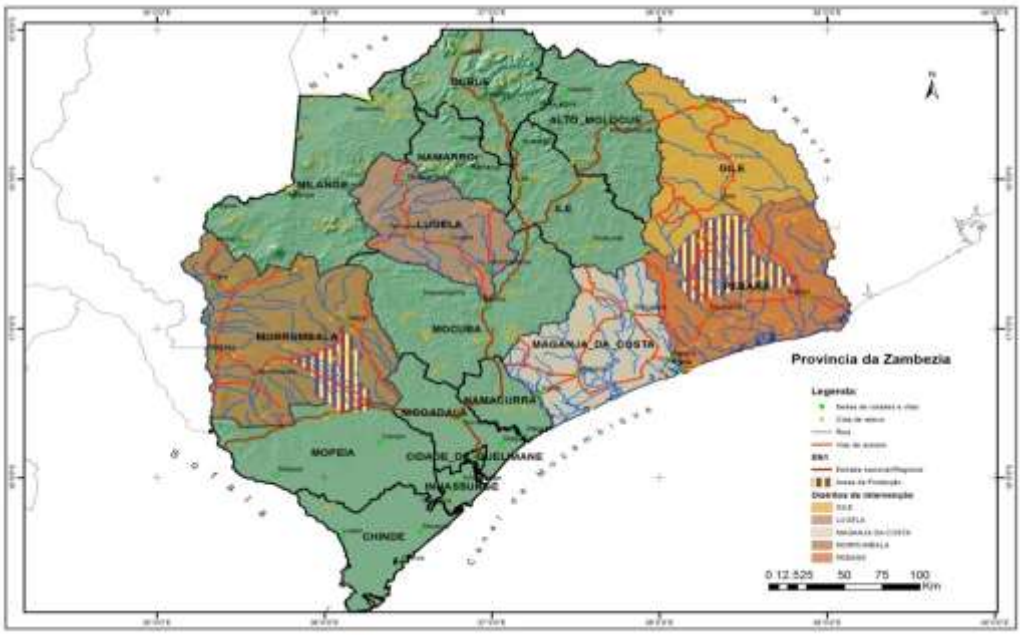
In Nampula there are some forest and marine protected areas, as shown in the following map:



Map 4-18: Location of protected area in Nampula Province

These protected area where proclaimed to protect specific forest species and marine species. However, due to human activities, are in high pressure.

In Zambezia there is gazetted two protected area namely Derre Frorest Reserve and Gile Game Reserve, proclaimed to protect forest resources and wildlife, these are located in Murrumbala and Pebane/Gile as shown in the following map:



Map 4-19: Location of protected area in Zambezia Province

The GNR offers exceptional biodiversity and hosts various critically endangered species, as well as granitic inselberg habitats of significant interest. The GNR area was heavily damaged during the civil war period and now faces high pressures on its natural resources (that is, timber extraction and poaching). MFR is the largest of 13 forest reserves established in the late 1950s with the aim of producing timber in Mozambique. MFR and DFR are facing significant pressures from shifting and subsistence agriculture,and are now heavily degraded. The area also contains other biodiversity hotspots, though currently with no protection status, such as Mounts Namuli and Inago. Threats to Namuli's conservation include human settlements, agriculture, and fires, all leading to significant deforestation in the area.

4.2 Socio economic description

Demographic information and poverty trends.

Nampula and Zambezia area among the most dense populated provinces of Mozambique with more that 37% of the total population of about 27.4 milion people (INE 2008). Graphic below shows the distribution of population for Nampula and Zambezia province for for selected distric including the IFRDP districts.

Population

Selected Dist.	Total (F+M)	Male	Female
Lugela	155,064	72,564	82,500
Maganja	221,850	102,612	119,238
Morrumbala	370,060	180,642	189,418
Pebane	229,757	113,852	115,905
Sum	***976,731***	***469,670***	***507,061***
O ther Districts	4,066,389	1,967,033	2,099,356
Total Province Zambezia	**5,043,120**	**2,436,703**	**2,606,417**

Source: INE- population projection per districts, 2008-2040

Table 4-1: Population trends of Zambezia province

The following grafic, shows the population trends by districts for the Nampula provinces by male and female.

Population			
Selected Dist.	**Total (F+M)**	**Male**	**Famale**
Erati	324,654	156,649	168,005
Memba	270,198	131,137	139,061
Moma	320,508	161,300	159,208
Monapo	392,217	192,042	200,175
Sum	***1,307,577***	***641,128***	***666,449***
OTHERs	3,943,718	1,952,760	1,990,958
Total Province Nampula	**5,251,295**	**2,593,888**	**2,657,407**

Source: INE- Projecções da população por Distrito, 2008-2040

Table 4-2: Population trends for the Nampula provinces

Education

Nampula and Zambezia provinces have primary to university education facilities from private and public sector. However, the enrolement at diferent education level differ from province to province due several factors such as, the nature of population and economic environment. From the gender prespective, boys tend to have more access to schoold and lower level of drop off compare with girls, mostly due to premature marriges and unwanted pregnancy.

Zambezia province has highest number of primary schools, therefore engaging a large number of students compare with Nampula province. However, for the following levels (secundary schools and Universities) Nampula have highest numbers compare with Zambezia. Neverthless, these provinces continues to have high illiteracy levels compare with the country average

Nampula	56.0
Zambezia	53.9
All Country	44.9
Map. CITY	09.5

Source: INE – Final Report/IOF 2014/15

Despite the growth of the number of teachers the teacher/ student ratio is still high, the number of schools is insufficient to cover the whole population and the classroom conditions are bad (constructed of poor material that is deteriorating). Most of the project districts they have education facilities up to secundary schools. Universities are located in large urban areas, mostly, the cities provinces (capitals).

Health

Nampula and Zambezia provinces have some health facilities from the lowest to the central hospitals. In Zambezia the newly opened Central hospital is equipped with high tech and well stuffed to respond to various specialities that do not exist in other provinces. However, the majority of the infra-structure in the targeted districts are in bad condition and understaffed, no doctors, specialists and nurses.The main health problems in these provinces are malaria, respiratory diseases, malnutrition. Regarding HIV/ AIDS, the level of infectionn rate, shows great differences between the two neighbour provinces. Nampula has the one of lower rate of infection among the population, after Tete with 5.2%, accounting with 5.7%, while Zambezia is one of the highest with the infection rate at 15.1% . This rate is above the national avarage rate of infection calculated at 13.2% in 2015. The highest rate of infection is observed in Gaza province with 24,9%.

According with to the Demographic and health survey access to the healty facilities by women and children are constraint by the condition roads, due to the location of the the highiest level of hospital in urban areas.

Acording to the Household Budget Survey that's run in 2015 final report, the general/global framework of health services, people are "not satisfy" with delivered services.

	ACCESS	NEEDS	USE	SATISFATION
Zambezia	64.8	13.1	56.5	44.5
Nampula	66.1	12.1	60.2	49.2
All Country	68.3	12.0	67.4	53.0
Maputo City	96.4	07.3	79.2	52.0

Source: INE- Household Survey 2014/15

Table 4-3: Access to health services

Cultural Features

The project passes through several communities that are characterized by habits and customs that show similarities and differences. When talking about cultural aspects in this document focus is given to issues like language, religion and rites.

The social and family structure of the provinces is basically matrilineal and the residence of the household is set on the mother's side. The matrilineal structure in Nampula allow women to be employed, cultural there is no barrier for a male to do a domestic activities or take care of children as the women is at work. Women in Nampula can have more than one husband and polygamy is a common practice and there are cases where there are formal marriage arrangements.

The languages predominantly spoken is Emakuwa in Nampula province and Chawabo and Elomwé in Zambezia province. Religion has an important role in the shaping of communities and apart from playing the role of moral support and solidarity, churches are also seen as a place for socialization in a broader sense, covering economic and social spheres. They are also found to be places for the propagation of traditional cultural topics and other associated to modern culture. The Catholic and Muslim communities are mostly concentrated in urban areas, while the Protestants, Zionists and Animist communities are much more concentrated in the rural areas of the project area. Another important aspect regarding rituals is related to holy places where ancestors have been buried, since these are very respected by families and the community in general. In the specific case of the area covered by this study only one grave was identified alongside the road.

Poverty and Performance

The poverty index has shown a sigltly reduction in all the country, but remain high in the northen and central regions. These two seem to be the poorst provinces, alltougth have a large number of population, and active population. The following tables show the changes in the the total GDP in pecentage for the multi dimentional poverty index. And the GDP PER CAPITA in Meticais for the targeted provinces compared with reagion, country and the Maputo city. Nevertheless, Nampula and Zambezia are among the most productive provinces the level of poverty are above the country avarage in its region.

Table 4-4: Total GDP Per capita and total GDP of Nampula and Zambezia provinces

Evolution and Comparative GDP PER CAPITA

	2012	2013	2014	2015
Zambezia	7679	8056	8353	8654
Center	**10,552**	**11,049**	**11,476**	**11,894**
Nampula	11,665	12,025	12,657	13,103
North	**10,369**	**10,802**	**11,257**	**11,686**
Maputo City (The Highest)	58,096	61,056	64,886	67,941
All Country	**15,521**	**16,175**	**16,867**	**17,500**

Table 4-5: Total GDP Per capita and total GDP of Nampula and Zambezia provinces

Source: INE- Dir. Contas Nacionais e Indicadores Globais

Evolution and Comparative GDP, Zambezia Nampula (10^6 Mts)

	2012	2013	2014	2015
Zambezia	34125	36758	39112	41553
Center	**101,882**	**117,519**	**125,809**	**134,428**
Nampula	57,237	54,168	61,789	65,632
North	**82,097**	**87,818**	**94,633**	**100,779**
Maputo City (The Highest)	69,374	73,878	79,542	84,362
All Country	**367,853**	**394,124**	**423,463**	**451,386**

Source: INE- Dir. Contas Nacionais e Indicadores Globais

The basic source of livelihood for Zambezia and Nampula people are agriculture and animal breeding. These activities provide products for consumption and trade. These activities are mainly done by households where natural conditions are favourable, such as fertile soils, reasonable rain and a good river network. Apart from the activities already mentioned, the districts are also involved in the trade, fishery products and revenues coming from informal trade. The provinces are potential in natural resources and tourism but still underdeveloped.

Agriculture and animal breeding

Agriculture is the largest economic sector in the country accounting for over 25 percent of Mozambique's GDP and employing 72 percent of the workforce. Approximately 3.9 million households (80% women) cultivate an area of about 5.1 million ha (out of 36 million ha) of arable land, mostly practicing subsistence agriculture on holdings not larger, on average, than 1.3 ha (DE/DNSA 2014).
Agriculture is mostly rainy feed. Fewer is irrigated the main irrgeted crops are rice, sugar cane and horticulture.

Nampula and Zambezia pursue very productive areas, with very good soils and good rainfall pattern that exceeds 1200 mm annually. In Nampula and Zambezia provinces, the diference between cash crop and food crop is narrow, because most of the known food crops are also cash in nature (beans, ground nut, maize and cassava) Production of the food crops (maize, cassava) is done mostly by small household and done by women, due to some level of excedent agriculture comercialization is dinamic. Male tend to be more involved with cash crops in particularly the high valuable crops (sesame, soya etc), which are also produced by smalholders family and vibrant private sector is growing in these provinces. In term of sells the decision on what, when to sell and price negotiation is made by male. The main cash crop products are cashew nut, cotton, pegeon peas, sesame, soya, macadamia nut, tea. World Bank and other donors are funding the reabiltation projects of irrigation schemes in targeted districts namely Larde, Mazuca, Caluane cava in Moma, Italo and Munda Munda in Maganja da Costa and in Murrumbala Chire, Morrire, Pinda and Megaza. Access to these important infrastructure are constraint by the quality of roads

Animal breeding also represents an important activity for the economy creation and production of animal protein. Animal breeding is practiced by the family and enterprise sectors, especially in the breeding of goats, pigs, chicken and cattle. For theIn Nampula and Zambezia high investments are made in the poultry and catlle sector.

Roads and transport

Nampula and Zambezia provinces are served by a national and regional road network which is comprised by paved National road from the South to the North, other regional classified roads and non classified roads connecting head of districts to the households setllments within the districts. The regional road mostly are gravel roads, some paved connecting the districts to the main road and the non classified roads are normally gravel with one RoW. The later roads are important for agriculture sector, as their link production areas to the market place, as refered before in the rain season are not transitable. Ministry of Agriculture and Food Security, identifies the main rural roads that need intervention in all provinces.

Roads Network in Zambezia and Nampula Provinces, in km

	Total Moz	Nampula		Zambezia	
		Total Km	%	Total Km	%
	30,984.0	4,036.0	13.0	4,532.0	14.6
Main road	6,395.0	994.0	15.5	1,068.0	16.7
Secondary roads	5,168.0	166.0	3.2	720.0	13.9
terceary roads	12,633.0	1,941.0	15.4	1,733.0	13.7
Feeder roads	6,787.0	935.0	13.8	1,011.0	14.9

Source: INE, Mozambique Yearbook 2015

Table 4-6: Total km of Road by type per province

Water supply and sanitation

The water supply situation in Nampula and Zambezia is similar to the all country and it is a result to the weak water network system.The Sanitation doe not difer from the water supply situation. Most of the population live in huts without latrines and consume water they fetch directly from wells or boreholes or they resort to water from rivers and lakes, women and girls are encharge from procure water. This situation contributes to the bad management of the environment.

Household survey shows that 46.0% and 65.2% of household leave without any sanitary condition in Nampula and Zambezia povinces respectively. Potable water access in last five years improved from 20 to 30.1% on in Zambezia and from 35 to 38.1% in Nampula, the changes in both provinces are lower than the country average, that have moved from 40.5 to 50.3%. water access from the 2008/9 survey to 2014/5.

Electricity

Nampula and Zambezia provinces are connected to the national grid. Major town in the districts are also connected to the national grid. The average coverage of the two Provinces is less than twenty per cent (17.4%). This is lower than the national rate of access. The figures below are from the report of Household Survey 2014/2015

Table 4-7**:** ***Access to electricity by type per province***

	Nampula	Zambezia
National Grid	20.0	11,5
Diesel Termical	0,1	0,1
Solar Power	1.7	1,4
Total Access	21.8	13.0

5. Potential Environmental and Social Impacts

5.1 Methodology

This Chapter identifies the potential environmental and social impacts that may arise with the implementation of the Integrated Feeder Road Development Project (IFRDP) at various stages of the project cycle. The Chapter is applicable generally to the full range of conditions that occur typically with rural and feeder road development in Nampula and Zambezia. This ESMF does not provide site-specific details for the sub projects, as these will be screened to ensure that they are eligible for IFRDP financing and then subject to specific field surveys and EIAs to carried out under the guidance of this ESMF. The overall intent of this document is to provide guidance for environmental and social management for the Integrated Feeder Road Development Project (IFRDP).

Sub projects eligible for IFRDP financing must be classified as category B under OP 4.01. Once screened and selected for IFRDP financing, sub projects are subject to site specific Environmental and Social Impact Assesments (ESIA) and/or Environmental and SocialManagment Plans (ESMP), which implies that the project will not have such impacts that are detrimental to the environment or are not possible to mitigate. This category is also referred into the world Bank Safeguards. The impact identification and classification will be done combined ennvironmental matrix and expert judments. The matrix is constructed based on the activities that the project will implement for the rehabilitation the road and the environmental features that will be impacted. The matrix below gives the environmental components that are impacted by any road project in all project phases.

Temporal Distribution of Impacts					
No.	**Valued Environmental Components**	**Project Phases/ Type of Impacts**			
		No impact	**Positive Impact**	**Negative Impacts**	
				Significant	**Insignificant**
Pre-Construction Phase					
1	Health and safety				
2	Employment and income generating activities				
3	Real property, heritage, building and equipment				
3	Agriculture, livestock/ breeding				
4	Vegetation and Fauna				
5	Water contamination/ supply				
6	Soil and underground resources				
7	Air pollution				
Construction Phase					
1	Health and safety				
2	Employment and income generating activities				
2	Real property, heritage, building and equipment				
3	Agriculture, livestock/ breeding				
4	Vegetation and Fauna				
5	Water contamination/ supply				
6	Soil and underground resources				
8	Air pollution				
Operation Phase					
1	Heath and safety				
2	Water resources and water quality				
3	Soil erosion and land resources				
4	Local air quality				

*Table 5-1:*Simple Matrix for Impact Identification and Evaluation

Theses aspects will be then valuated against the following criteria.Criteria for Evaluation of Potential Impacts

Criteria	Description
Type of Impact	• **Direct** - An impact that appears immediately as a result of an activity of the project. For example, the loss of vegetation is a direct impact of site clearing. The direct impacts would be experienced mainly during the construction process, and include effects on the physical environment, health and safety of the construction workers. • **Indirect** - An impact that is related to the project but thatarises from an activity of the project at a secondary level. For example, the demand for supplies and services may cause indirect impacts on the local economy by increasing indirect employment opportunities.
Status	• **Positive** • **Negative**
Duration	The life-time of the impact; this is measured in the context of the life-time of the proposed development. Whether the Impact will be: • **Intermittent** – not occurring at all times. • **Temporary**-only for a short period. • **Short term** - the impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase. • **Medium term** - the impact will last for the period of the construction phase, thereafter it will be entirely negated. • **Long term** - the impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter • **Permanent**
Intensity / Severity	Whether or not the intensity (magnitude) of the impact would be high, medium, low or negligible (no impact). An attempt to quantify the impacts on components of the affected environment to be described whether destructive to the alter its functioning or harmless: • **Negligible** • **Low** - where impact alters the affected environment in such a way that natural proc • esses of functions are not affected in any significant way. • **Moderate** - where the affected environment is altered, however, function and process continue, albeit in a modified manner. • **High** - where function or process of the environment is seriously altered and disturbed to the extent where it temporarily or permanently ceases
Spatial Extent	The physical and spatial size of the impact; a description of whether the impact would occur on a scale described as follows: • **Site** - whether the impact will be within limited locale of the project site / study area affecting the whole or measurable portion of the area. • **Local** - whether the impact will affect the environment or communities along the border of the study area or in the extended area adjacent to the site or perhaps outside the immediate environment. • **Regiona**l - whether the impact extends beyond the study area affecting areas on a regional scale
Likelihood	The probability or likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The probability that a certain impact will in 3fact realize: • **Uncertain** - insufficient information to determine its probability. Because the precautionary principle is followed, this increases the significance of the impact. • **Improbable** - the unlikeliness of the impact to occur. • **Probable** - the impact could possibly happen, and mitigation planning should be undertaken. • **Highly probable** - it is most likely that the impact will occur at some or other stage of the development. • **Certain** - the impact will take place regardless of anyprevention plans, and only mitigatory actions can be relied on to contain the effect.
Sensitivity	Degree of change effected on natural processes or peoples livelihoods; the sensitivity of the receptor of the impact to change • **Low** • **Moderate** • **High**

Criteria	Description
Overall Significance	An indication of the importance of the impact to the design and planning of the project in terms of physical extent, intensity and time scale, and therefore indicates the level of mitigation required rated as follows: • **Insignificant** - if impact is not substantial and does not require any mitigating action. • **Low** - if impact is of little importance, will not need to be significantly accommodated in the project design, but may require limited mitigation • **Moderate** - if the impact could have an influence on the environment and livelihoods of households within the study or local area and mitigation is required to reduce the negative impacts to acceptable levels or to enhance positive impacts. • **High** - where the impact is of great importance and could have a significant impact even with mitigation. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable

Table 5-2: Criteria for impact evaluation

Then the impacts will be evaluated based on the following matrix against each of crtieria.

Impact Assessment Table

Impact Assessment Table									
Environmental Issue	**Phase**	**Type of impact**	**Status**	**Duration**	**Intensity / severity**	**Spatial extent**	**Likelihood**	**Sensitivity**	**Overall significance**
Biophysical Environment									
Vegetation and fauna	Construction	Direct							
Water quality		Direct							
Soils and underground resources		Direct							
Air quality									
Socio-economic Environment									
Impacts on Local and Regional Economy									
Employment provision									
Boost to local economy									
Capacity Building									
Impacts on Property, Buildings and Heritage, Access									
Impact on property on site									
Impact on access									
Impact on properties outside site									
Impacts on Productive Land/Agric.									
Impacts on Occupational Health and Safety									
Risk of accidents at worksite									
Increased dust and noise related problems and diseases									
Impacts on Social Relations									

Impact Assessment Table										
Environmental Issue		**Phase**	**Type of impact**	**Status**	**Duration**	**Intensity / severity**	**Spatial extent**	**Likelihood**	**Sensitivity**	**Overall significance**
Impacts on Cultural heretage										
Impacts on Existing Social Facilities										
Impacts on Aesthetic Quality										
Impacts of Waste										
Impacts on Road Security and Safety										
Impacts on Security										

Table 5-3: Impact Assessment Table

5.2 Potential Environmental and Social Impact of Project Components

Construction activities will impacts socio economic and on natural environment (soil, flora, water and air) as described in next picture. The impact of these activities will have distinct intensity and magnitude in diferent landscape situation. In the upland districts of Zambezia soil erosion in slopes and downstream sedimentation can be expected, while in the lower land of the coast districts the soil erosion may be less. Other expected negative impact will be the potential of encroachment to forest and natural habitats as Zambezia and Nampula provinces are rich forest and natural habitats. Ancillary work (gravel and stone) will also increase the air and noise pollution and thus contribute to reduction of air quality in the area. From the social perpective is expected that a combination of beneficial and adverse impacts will be felt in both provinces. As described in the chapter 2 the project will be comprised by five components interrelated in nature.

The project is only involved in rehabilitating existing roads; therefore, it has been considered as a Category B project by the World Bank screening process meaning that project activities will impose environmental and socio economic impacts that are easly mitigated. Sub-projects that would be Category A by World Bank screning process will not be financed. However, some sub-projects may be categoriezed as category A according to the Mozambiquan system (MITADER) due to length, proximaty to wetlands or forests, or associated social impacts and still fall into World Bank Category B - if this happens, the proposed roads will be carefully reviewed by the World Bank to ensure they are Category B by in accordance with World Bank policies.

Examples of sub-projects that would not be financed under IFRDP include those that would pass through or are adjacent to or would cause increased degredation to protected areas, critical natural habitats, critical natural forests, etc.

Initially, sub projects proposed for financing will be screened by DPTADER using the Screening Form attached as Annex 1. Sub projects are not expected to have major environmental and social impacts, due to the nature of the project activities mostly will be upgrading or improvement of existing roads. Minimal adverse impacts, can therefore be expected, compared with the loss of land, damage to local infrastructure, loss of vegetation, and slope cutting, that would be associated with the construction of new tracks. With well environmental management options incorporated in the planning of the construction, most of the impacts can adequately be mitigated.

The ESMF makes provision that all roads considered as sub-projects under this program will have an Environmental and Social Management Plan, including, as required, a Resettlement Action Plan, following the GoM legislation and World Bank provision under the safeguard policies. It is intended to involve to the extent possible the local communities, especially the underprivileged strata, in road construction as well as monitoring activities.

The IFRDP will be implemented in both low land (coastal districts) and up land (interior districts) of Nampula and Zambezia, as stated in the chapter 2, the expected environmental impacts are similarlry in nature but the intensity and magnitude of them will be different. Roads in up land often suffer from problems related to slope failure, drainage and erosion. IFRDP project will improve existing areas with unstable slopes, using protection structures and bio-engineering to minimize damage to fragile slopes the contractor can use labour-based technology . While, in coastal line the main problems are excessive drainage soil.

The proposed road development project bring both opportunities and risks for both the bio-physical and the social environments.

Beneficial Impacts

Acessibility

Road Projects are generally intended to improve the economic and social welfare of people. The development efforts of the IFRDP, particularly the development of a strategic transportation network will have multifold beneficial impacts , such as improve accessibility resulting in improvement of their standard of living, give access to nearby markets and resources, education and health facilities. The immediate beneficial impacts form road development become apparent in the construction phase. Depending on the demographic and socio-economic setting in a given location there will be various employment opportunities for both women and men . During operation stage, an improved road access will bring in most if not all localities an improvement of food security situation, and will result in an overall economic and social stability. Increased road capacity and improved pavements are expected to reduce travel times and lower the costs of vehicle use. At the same time, good and reliable road links will increase access to markets, jobs, education, and health services and reducing transport costs for both freight and passengers (women and men).

In the long term, the road will provide safe and fast transport of people (both women and men), goods and services from rural areas to urban centres and vice versa. This will bring about increase in productivity in rural areas and eventually improve the overall socio-economic condition of people living in or nearby road corridors.

Employment

One of the major direct beneficial impacts is the creation of employment. The sub-projects would require a large number of skilled and unskilled wokers . The socio-economic information indicates that about 70 percent of the local people are economically active, however the level of employment in Nampula and Zambezia is low, with women and young girls being the most affected. With the implementation of the IFRDP is expected that the majority (60 to 70%) of skilled work force will come from the outside of the region and the rest will be contracted at site region (30%), The contractor should procure locally 100% of the unskilled work force and give equal opportunities to both women and men for all project phases (rehabilitation and maintainance). ANE's procedure referred that at least 25% the total workerforce employed should be women. Incentives to attract women for employment, at local level, should be considered for example specific training and part time work..

Influx of labour will have positive and detrimental impacts for the local communities.The positive impacts will be the availability of employment for local people, which will have salary that can be used for the household needs. The expected detrimental impacts will be on the social side, where influx workers interfer with the social relation at community level as well as rise of the level of prostitution and premature marriges in the area, which will then contribute to the school dropouts by young girls. In these provinces premature marriges is cultural acceptable and common. Young girls when they are around 11 years old go to the initiation, this cultural pratice contributes to their sexual risk behavior. With paid male work force (local or outside) parents may see this as an opportunity to force young girls into premature marriges and/or prostituion with all consequences. During the implementation of IFRDP contractor and engineer should institute a Code of Conduct for workers (see annex 8) as well as establish awareness against HIV/AIDS and other STI as well as premature marriges. As the road upgrading works require workers, it is likely that they will contract most of the unskilled workers from the local area, to decrease the influx of workers to the area.

Among the key requirements for employment of local labourers are: No gender disparity in terms of number of unskilled workers and wages for equal type of work, that gender sensitive recruitment strategies will be used to guarentee there is no gender disparity in hireing. Preference to disadvantaged and vulnerable local groups strict avoidance of children work. Children (any person under 18 years of age) should not be extensively contracted but considering that currently some children became heads of households they need a job to guarantee the survival of their siblings. If and when cases like these occur (only allowable for children above 15, as per Mozambican Law), the Contractor must consider the children's work with justice – the level of effort asked from them must be adequate, they must be allowed time to attend school and be paid the regular salary. Also scheduling the construction works as much as feasible during the

agricultural off-season to enable local people to become engaged, and to bridge the lenient/income-low season to secure food sufficiency

Opportunities of New Income Generating Activities (IGAs)

The construction activities will not only increase the income sources the local workers, but will stimulate trade in the region, as the will be a relative number of influx labour that will procure good for them, agriculture products will be high demand. Contractor camp's will need fresh vegetable and fruits to feed the workers. Women will have ease access for their products. Therefore the contractor is encouraged to procure good locally. Additional bussiness will be also created by the establishment informal food and beverage business. As a result, a significant amount of cash from the project workers will be channelled into the local economy and will generally foster the development off other micro-enterprises. Once an all-year road access is available, local farmers may be encouraged to crop more and be linked to the market in other region.

When completed, improved road connectivity will bring about opportunities for the promotion of trade and business. All weather road facilities will enhance the trade and business because of round the year access and reduced transportation cost. The flow of goods from and to the project influence area will be continuous. Local products could be transported outside markets at low cost, thereby benefiting the producers. The local agricultural and horticulture products that use to go rotten and waste previously can be transported to other market and the improved agriculture inputs market be established in the region with all the benefits for productivity. Thus an improved road linkage with other markets opens potential opportunities for the agriculture production. In this context, however, care must be taken to channel IGAs to ensure that benefits are equally distributed among the local communities. Therefore it is recommended to install effective social mobilization from NGOs to encourage local people to tap the new opportunities, which includes also the creation of credit facilities, support from government agencies, extension services as well as support from the road program itself.

Enhancement in Technical Skills and Know-How

ANE policy on maximize use of local people for construction works lies in the unique chances for the transfer of skills and technical know-how in construction and related technical sectors as well as to reduz the detrimental efefct of the influx workers. Considerable number employed work forces will convert themselves into fully skilled labourers (Women and man) in works such as masonry, gabion wires weaving, construction of dry and foundation walls, slope cutting and stabilization, rock cutting, bio-engineering works etc. These skills will not only benefit the locals by providing long-term employment opportunity but also contribute to local human resource development in regions that otherwise have restricted opportunities. The project will make sure that both women and men can benefit from this transfer of skills and technical know-how

Enhacement of Former Environmental Problems

One of the major problems of the gravel and earthen road is dust which directly affects the health of the people living in the vicinity. As applicable and incorporated in the project design, sealed gravel standard or bituminous surface road will substantially reduce the dust nuisance. It will also make easy for vehicle movement thereby reducing amounts gas emission of unborn carbon, oxides of sulphur and nitrogen. This impact has beneficial implications on human health. School children, health posts, market areas along the road pedestrians etc. will relieved from dust nuisance. One of the major activities of the road works in the envisaged program is to stabilize slopes through proper drainage management, retaining structures and bio-engineering. The project will treat erosion. Similarly, slope failures and landslides will be stabilized. This is a direct and identified beneficial impact as potential landslide and erosion areas will be stabilized and protected by construction and maintenance of road.

Improved Access to Services and Decrease in Transportation Cost Roads

It is expected that, after road reabilitation, will facilitate access to services such as health and education. In addition, the overall vehicle operating cost will be reduced and thereby transportation cost will be decreased. In Mozambique the cost of the transport is not gender biased, all the citezen will have the same oportunities

The journey will be comfortable and travel time will be saved. Similarly, the wear and tear of the vehicles will be less; and fuel consumption of the vehicles will also be less resulting into saving in the hard currency for the import of these commodities.

Access to inputs and services is severely constrained without suitable road transportation facilities. In most of district in Mozambique only in dry season the roads are transitable. As a result of difficult and expensive access, the use of inputs and services is far below the potential in agriculture. Once the road comes into operation, people will have improved access to many inputs such as seeds, chemical fertilizer, irrigation and technology leading to increased agricultural production and diversification. Crop investment and operation costs are expected to become considerably reduced. Same would be the case for marketing the local products, which have experienced difficult access to get into the bigger markets. This will enhance economic activities within the area through the increase of employment opportunities and income level. On other hand the production area will be opned to market. Most women are involved in the agriculture trade between the production areas (Zambezia and Nampula provinces) and the maket areas (south of the country), improvement in road quality will have positive impacts in these women life, as it will decrease timeout and increase their profit.

The operation of road will also contribute to raise quality services in social sector as more competent agencies and people will enter into the area to provide the services. Road transportation will also encourage students to attend classes even in distant areas after efficient transportation service.

Gender-Specific Benefits

Agriculture activities are mostly done by women and road transportation will benefit local women by providing improved access to market facilities, more people will enter into the region resulting in increase demand of the agriculture products. Also the local women will have opportunity to be employed by the contractor, in this regard contribute to increase household incomes. With the road quality improved is expected that more efficient road transportation systems will be in place, therefore facilitating or increase mobility from and to the targeted areas.

Women, in specific, may therefore get into a better position to attend various service agencies such as hospitals, health clinics, training institutes, women development programs etc. More frequent visit to such organizations will increase women's knowledge and awareness level. Girl students will be encouraged to go to schools that will become easier accessible.

Poverty Alleviation

Road access significantly alleviated poverty by improving economic opportunities and access to services. However, benefits varied depending on the geographical context, such as the regional economy, agricultural potential, proximity to transport networks, market prices, availability of services, as well as social structure and concentration of assets.

Adverse Impacts

Based on the inittial survey done by the World Bank team and the proposed road reahabilitation process it appears a broad consensus that there will be some mitigable adverse environmental and social impacts and many expect the project to improve environmental conditions caused by existing roads. These mainly include poor drainage conditions in the some roads on upland districts and unstable slopes in some areas, and subsequently some adverse effects on local forest, fauna and agricultural lands is also expected. Depending on the environmental setting, some construction practices are more sensitive in terms of environmental hazards than others. For example, in mountain terrain gradual

widening, of a narrow track of typically 2 m width bears much more risks than doing the same in flat terrain. In the first case intensive slope stabilisation measures or blasting might be required, all of which may include significant residual risks of failure and cumulative impacts.

In contrast, the second setting may require much more consideration of preventing losses of farmlands and suitable sites for habitation. Similarly, the use of labour and hand tools instead of heavy machinery will result in completely different environmental impacts in certain conditions.

Conservation/protection of soils, water resources, fauna and flora need equally be seen in the local context, including other external impacts like rainfall, over-use of certain natural resources, law / order situation etc. The following sub-section gives an overview of potential adverse environmental and social impacts that are likely to occur during the different stages of the road sub projects proposed under IFRDP.

Impacts on the Physical Environment and Land

The narrow and linear character of roads makes the impact of lost land seem minimal, but when width of RoW is multiplied with its length, total area of land removed from production becomes much significant. According to the Land Law in Mozambique the extention of the road reserve in rural area is 30 meter on either side from the centre line and that for urban areas is 15m. It needs to be noted, however, that the immediate zone of impacts, i.e. the actual formation width of the road, varies from 2 to 4 m. Any enforcement and land acquisition beyond this corridor, e.g. in adhering to the 15 m RoW, will invariably incur in a substantial increase in land that has to be acquired and protected from further encroachment. All resettlement, land acquisition and compensation issues will be dealt in accordance with the RPF developed for the road section of N1/N10 Quelimane-Nicoadala-Namacurra.

a. **Soil Instability**

Instable soils, landslides and severe erosion are the major environmental drawbacks associated with most road construction in Mozambique in uplands of Zambezia and Nampula. Consequences of landslides and soil erosion not only affect the safety and serviceability condition of roads but also have chain effects on the farmers (loss of crops or farmland), land (degradation due to silt/debris deposition), water (degradation of quality), river and streams (change in regime), vegetation (loss and impact) and on other infrastructures like reservoirs (silting). Slope stability can be upset by creation of road cuts or embankments. Excessive steepness of cut slopes, deficiency of drainage, altered and concentrated water flows, and excessive slope loading from spoil disposal can result in landslides. The degree of slope instability increases during the road construction and offer regular sliding during later operational phase as well. Further, it creates a number of partly significant risks for the down hill and/or downstream settlements.

Disturbance during construction (vibration, spoil disposal, borrow and quarry areas operation, slope cutting and exposed surface, construction carried out in rainy season without proper water control and drainage facilities etc.) can upset the often delicate balance between stabilizing factors, such as vegetation and others which seek to destabilize, such as running water. Sometimes, cumulative result of all these may have impacts far beyond the road itself, affecting slopes,streams, rivers, and dams at some distance from the initial impact. Fresh cuts are often vulnerable to wind and rain, instigating erosion. Similarly, haphazard disposal of construction spoils, unsuitable locations of quarry sites and borrow pits, fresh quarrying and borrowing activities, construction carried out in rainy season without proper water control and drainage facilities; and improper construction methods which leave soils exposed unnecessarily, etc. are also reason for erosion and possible consecutive landslides.

During the construction period, instability, landslides and soil erosion problems may result because of: (i) steeper cut and fill (embankment) slopes and their construction qualities,(ii)environmentally hazardous disposal of construction

spoils (e.g. near water bodies or drinking water sources, wetlands, karstic landscapes, sensitive habitats); (iii unsuitable locations of quarry sites and borrow pits (eventually leading to uncontrolled, unaesthetic and hazardous dump sites and mosquito breeding grounds),(iv) rash quarrying and borrowing activities, (v) construction carried out in rainy season without proper water control and drainage facilities; and (vi) improper construction methods which leave soils exposed unnecessarily, etc.

During the operational Common problems associated with soil failures are: blockage or deficiency drainage structuresmodification of water paths leading to concentrated flows (may also be caused by blocked ditches), - high gradient in cut or fill slopes, and - cleared areas which have been left without re-plantation or other appropriate rehabilitation measures.

b. **Contamination of Soil**

Soil contamination can arise from inappropriate construction practice, as well as from accidents during both construction and operation stage. Pollution risks originate from transportation of hazardous materials during road construction and subsequent traffic operations. Metals such as chromium, lead, and zinc remain and continue to be an environmental hazard in the soil for hundreds of years. Pollutants settling in roadside soil can impair the growth of vegetation and the growth of soil organisms, thus increasing the likelihood of soil depletion and erosion. These impacts tend to be localized, affecting only a narrow zone on either side of the road. In colder climatic zones in mountainous area, salting of roads can lead to soil contamination, and subsequent decrease in soil fertility and losses of organisms vital for good soil quality.

c. **Impact on water**

Roads that intersect drainage basins generally modify the natural flow of surface water by concentrating flows at certain points and, in many cases, increase the speed of flow. Diversion or disruption of natural surface water flow and drainage is often inevitable in road projects. Blockage of natural drainage path during construction or maintenance may generate water depletion, water logging, a concentration of water flow as well as increase the speed of flow, which will be erosive in nature. Diversion as well as overloading existing drains results in water flowing where it normally would not, e.g. on vulnerable soils where frequent effects are scouring, gullying, bank cutting and soil erosion.

Subsequent impacts of water flow diversion or blocking by embankment structures are often dramatic changes in local groundwater level that will result in changing vegetation pattern or even destroy vegetation and crops, and may lead either to water logging, increase in waterborne diseases, or to severe water depletion and to local desertification. In many cases such activities will also cause subsequent impacts with far-reaching and long-term implications for aquatic life, habitat changes for fish and reduction in the local and regional fisheries production. Similarly, excavation activities can lower the water table in surrounding areas.

Pollution of Water Resources Construction activities such as cutting and filling, disposal of construction waste and spoil, erosion and soil movement due to quarrying and borrowing, etc. cause increase in turbidity of streams, rivers and lakes. Improper sanitation of workers or local inhabitants, (e.g. lack of appropriate sanitary facilities, defecation in open field) disposal of wastewater from labour camps, unauthorized washing of vehicles and unauthorized/unsuitable garbage dump sites, may also pollute water, particularly the drinking water sources.

Accidents of tankers carrying oil and other environmentally hazardous chemicals can also cause pollution due to their spillage in large quantity. The typical primary and secondary effects of water pollution include health hazards to the downstream water users and impact on local fisheries. Increased silt content could cause unnecessary sediment deposition in downstream areas which causes the rising of river beds resulting flood in downstream areas. Polluted water may become unfit for bathing, drinking, animal consumption, irrigation, etc. and affect fish and other aquatic life.

d. **Air Pollution**

Air pollution due to vehicle emission (particulate matter, nitrogen oxides, hydrocarbons, carbon monoxide, sulfur dioxide, lead, aldehydes) and dust raised by plying of construction vehicles and operation of machineries, crushing plant etc. may cause nuisance to roadside walkers and nearby residents. Dust layer accumulates on the leaves of roadside vegetation limiting their growth and assimilation capacities, and affects the roadside settlements. Many of the air polluting agents are known to cause respiratory and eye disease to people exposed for long duration. Informal food sellers usually keep food (bread and cake) in open, over which dust layer naturally settles. This is directly consumed by people. Although the evidence of concrete health hazards is often not known, it is definitely not hygienic, and may cause stomach ailments. Dust may considerably affect school going children, school and health posts besides the road. Age and poor quality of vehicles, lead from petrol engines are the other causes of pollution.

It is anticipated, however, that most traffic-generated air pollution effects identified in humans are likely to occur in animals. Flying animals (bird, insects) may particularly suffer from air pollution as this will impair many physiological functions. Acidification of aquatic ecosystems has definite implications on aquatic organisms.

Dust and emissions from asphalt mixing plants is a significant pollution problem, although more of localized and temporary nature (over a period of months).

e. **Noise Pollution**

Road construction and maintenance generally require the use of heavy machinery and crusher plants. Noise associated with road development has four main sources: (i) vehicles (engines, transmission, exhaust and suspension); (ii) friction between tire of vehicles and road surface; (iii) driver behaviour (excessive honking, loud music, shouting at each other, causing tire to squeal by sudden breaking or acceleration); and (v) construction and maintenance activity. Although the construction activities are intermittent and localized, they nevertheless contribute to significant amounts of sustained noise during equipment operation. Chronic noise exposure can be a source of nuisance, creating communication problems and leading to elevated stress levels as well as associated behavioural and health effects. It can cause auditory fatigue, temporary and permanent lessening of hearing ability, sleep disorders, and can contribute to learning problems in children. Noise may prevent many animal species from approaching or crossing road corridors because they are afraid. As a result, road corridor becomes a barrier to regular wildlife migration routes, and effectively rendering roadside habitat areas inaccessible to some species. Such disturbance reduces the success of these species and contributes to ecological alteration. Livestock and wildlife may experience breeding problems and other forms of behavioural disturbances. The vibration induced by the resonance of traffic noise can have a detrimental effect on structures standing near the road. This is of particular concern in the case of cultural heritage sites.

i. Quarrying of Construction Materials

The construction of road, particularly the structures such as retaining walls, culverts, bridges, road surface works etc. require large quantity of boulders, gravels, sand, and other types of construction materials. Good road building materials are hard to find. Poor quality of material will often lead to premature failures of the road pavement. As a result, it is normally necessary to extract materials from wherever a good enough source is available, mostly locally. Such materials are normally mined in nearby locations on local streams and places near the road alignment with a view to save the transportation cost. Uncontrolled quarrying by contractors from non-approved sources is a damaging activity which must be controlled. However, sometimes such activities are beyond the control of the road constructing engineers.

The extraction of materials from inappropriate places or in excessive amount can seriously damage the local environment. For example, quarrying from a high slope and fragile terrain can result slope instability; extraction of sand and gravel in excessive amount from river can cause river bank cutting and erosion and changes in river regime. This will eventually affect the local environment in terms of erosion, flooding of cultivated land, damage to community infrastructures, affect road itself, and eventually affect the entire livelihood of local people.

Disruption of natural land contours and vegetation resulting in accelerated erosion, landslides, disturbance in natural drainage patterns, siltation of surface waters, ponding and water logging, and water pollution are the potential adverse

impacts of quarry and borrow pits operation. General scouring of river beds resulting in endangerment of bridges and continuous degradation of the river regime are also potential impacts of quarry operation.

f. **Stone Crushing Plants**

Stone crushing plants are temporary work sites, occurring during construction and rehabilitation of roads. They are normally established in quarries and river beds from where the stones are derived. In addition, stones are often broken for rural roads by hands in these locations by labour force. The operation of crushing plants and stone breaking by labour causes inconvenience to nearby settlements in terms of air and noise pollution. Siltation and pollution of surface water resulting from uncontrolled runoff from storage piles, and damage to the local crops and surface water are also potential impacts. Excessive noise and dust from the plant will create disturbance to nearby settlements, school, health posts etc. Crushing plant site is also a high risk area for accidents and injuries. Also, there will be continuous flow of heavy vehicles for carrying the materials to construction sites. If their path is along school and busy market area, there will always be potential risk of serious accidents.

g. **Stockpiling of Materials and Disposal of Spoil Material**

Construction materials are usually stockpiled for relatively short period without covering. It is often done on river beds or river banks, forest area, open spaces, and cultivated land. This situation may lead to environmental degradation in terms of air pollution, land pollution, pollution of surface water and permanent changes of land use if not rehabilitated after the completion of construction works. Standing crop or future cultivation on land is disrupted. If not appropriately stockpiled with drainage facility, rain water can carry the sediment into water bodies affecting their quality as well as aquatic life. Surplus construction material, cut material, drainage cleaning debris, and landslide mass (spoil) can cause significant environmental hazards, mainly on the adjacent hydrology and habitats if they are side-tipped downhill without appropriate spoil management. This impact occurs both during construction and maintenance operations. Among the common negative consequences are overloads instable areas causing slope instability and slides, smothering and removal of trees, vegetation and topsoil, causes or promote erosion, kill vegetation, destruction of private property, crops and irrigation systems at foothills, disrupt natural drainages and surface water sources, and pollute water.

h. **Hazards caused by Explosive, oil and Toxic Materials**

During road construction activities, explosive materials are needed to blast hard rocks to open stone quarries. The use of explosives, if not done carefully, can lead to extensive environmental damages in terms of causing slope instability, excessive rock fracturing, damage to nearby property due to vibration as well as rock splinters, injury, disturbance to wildlife, air pollution etc. The safeguarding of explosive from theft is also a major concern. Contractors may store fuel, oil and lubricants, diesel and petrol, bitumen, solvents and other toxic chemicals for use in construction work. Inappropriate storage of such materials or accidents of tankers may cause spillage or leakage, polluting surface and groundwater, contaminate soil, cause fire and explosion hazards and nuisance to human health.

Combustible materials mostly comprise fuels and lubricants and bitumen. The most common risk involved is bitumen distributors catching fire. Cement, a widely used material but can cause minor chemical burns and skin problems to the users. Protective clothing is rarely provided or used. In hot weather, it may be uncomfortable and therefore its use difficult to enforce.

Explosives need particular handling and precautionary measures, both in terms of safety and in affecting the environment. Rock blasting may, for instance, trigger slope instability.

Impacts on Biological Resources

a. **Clearing of Forest and Habitat Disturbance or Loss**

The IFRDP will contribute to the improvement of road connection. This connection facilitation forests become easily accessible for, collecting firewood and NTFPs, and hunting. Roads may also considerably contribute and/or accelerate logging activities. A road transgressing forest areas is likely to disturb irreversibly wildlife activities. A road may contribute to increased hunting and poaching of wildlife. The underlying cause is the improved accessibility by road to former difficult or remote lands such as forests, national parks, wildlife reserve areas, community forests,. Additional (illicit) activities of the work-force may also create pressure on the forest and forest resources include firewood collection and hunting birds/animals. This can lead to increased timber cutting (legal or illegal) in pristine or vulnerable forests and illegal collection of medicinal plants. Development stimulated by the road may promote activities such as use of firewood to meet the demand of locals (urban areas) who consume forest resources and increase pressure on it. All these factors may cause significant deforestation and degradation of local forests or other valuable/vulnerable biotopes.

b. **Disturbance of Biodiversity and Wildlife and Habitat Fragmentation and Barrier to Wildlife Movement Corridor**

When a road cuts through an ecosystem, the sum of the two parts created by the cut is less than the value of the initial whole, even when the habitat loss is ignored. Ecosystems are characterized by complex, interdependent relations between component species and their physical environment, and the integrity of the ecosystem relies on the maintenance of those interactions. By slicing through habitat, roads affect an ecosystem's stability and health. Without careful planning, roads tend to fragment an area into weaker ecological sub-units, thus making the whole more vulnerable to invasions and degradation. A road with wider width and higher vertical alignment may cause a physical and psychological barrier for wildlife, and act as a barrier across their movement corridor.

Roads frequently pose a number of threats to local wildlife that can, in worst cases, lead to reduction of biodiversity. Due to clearance of forest and loss of habitat, but also due to increased vehicular movement and disturbance by people, rare floral and faunal species may become adversely affected or might even disappear at all from those areas. It may happen that entire ecosystems may get disturbed and destroyed due to excessive intrusion of human activities (hunting, forest fires), due to filling (e.g. swamplands) or intensive extraction of resources. Development of road-side settlement, often in the form of undesirable ribbon development of squatters, commonly results in increased pressure on forest resources. Roads are effective vectors for the spread of diseases, which can have marked impacts on populations of plant and animal species and thereby pose considerable direct and cumulative impacts on the native biodiversity. Flow of nutrient and materials is a major determinant in ecosystem structure and function. Road construction can easily disrupt this vital flow through alteration of surface water and groundwater, removal of vegetation cover, and relocation of topsoil.

c. **Damage of Aquatic Habitats**

Road development has perhaps its most serious effects on aquatic ecosystems though it is not seen directly. Erosion from poorly constructed and rehabilitated sites can lead to downstream siltation, ruining spawning beds for fish. restrictions of flows at water crossing can make the current too fast for some species. Alteration of flood cycles, tidal flows, and water levels can upset trophic dynamics by affecting the life cycle of plankton, and have corresponding effects on the rest of the food chain. Re-channelling of waterways is often undertaken as part of road construction to avoid flooding and make crossing structures simpler. In the process, natural streambeds are dug up and useful obstructions, including large boulders, are removed. Roads may serve as barrier to movement of migratory aquatic species, especially where culverts are used. Often migratory fish species are intensively fished/overfished at sites where culverts and bridges tend to block the natural migratory pathways.

Impacts on Socio-Economic Environs

a. **Land and Property Acquisition, Compensation, Resettlement**

Rehabilitation Road development often requires land.

All resettlement, land acquisition and compensation issues will be dealt in accordance with the RPF developed for the road section of N1/N10 Quelimane-Nicoadala-Namacurra.

d. **Potential Impacts and Conflicts associated with Road Construction Work Forces**

Occupational Health and Safety (OHS) of workers is an important issue during construction. The occupational health and safety concern arise from the operation of stone crushing, bitumen use, operation of earth moving equipment, use of blasting materials, and all other construction activities. Accidents may occur during the construction and operation of roads causing injuries or loss of property and life.

Some common reasons for accidents in rural road works include unsafe excavation, collapse of trenches, injuries from unsafe tools/equipment, lack of protective clothing, debris falling from hill slopes, inappropriate disposal of construction and campsite wastes, electric failures, etc. OHS can only be maintained by stringent awareness training through the contractor, and by providing adequate medical arrangements ready in case of emergency, including provisions for fatal accidents and invalidity. Similarly, OHS issue also covers the quality of living space, facility of clean drinking water, sanitary practices with toilets and solid waste management system etc. within the labour camps. Dust raised by construction activities and blown by air may pose health risks to the workers and inhabitants near the road alignment. Construction practice should employ dust control practices/measures and construction activities should be scheduled taking this into account. Vector Diseases is another common problem associated with the sudden influx of work personnel. Gathering and contacting local people may lead to transmission of infectious/communicable diseases.

Disease transmission is facilitated by the migration of people, particularly among migrant labourers. If proper sanitary conditions are not maintained in the camps, it may create pool of waters and pile of waste which will attract vermins and vector diseases. Such vectors and new diseases may spread to local population, who are not immune to such diseases. Stagnant water bodies created due to road construction such as borrow-pits and quarries may become breeding sites for disease vectors. This may contribute to increase in number and type of disease vectors and incidence of water-related infectious diseases.

Increased movements of people (from or to outside) may introduce new diseases to the area (particularly, communicable diseases like Tuberculosis, cholera HIV/AIDS and other STD) are of particular concern. Spread of these communicable diseases is one of the prime concerns associated with construction camps. Effective counter measures and highest level of attention are mandatory in road development projects planned in areas with highly affected HIV prevalence, such as Nampula and Zambezia provinces. Effective measures are frequent awareness campaigns, involving both the labour forces and the local communities, and regular health check-ups among both to detect and control transmission of such diseases. Such activities are to be carried out by both specifically engaged NGOs in junction with the contractors who must be obliged for such actions in specific contract clauses. Competition for local water supply and water contamination are other potential sources of conflicts between the work forces and local communities. Extraction of large amount of domestic use waters and surface or groundwater contamination often occurs when an influx of people associated with the road project overloads the local sanitation infrastructure, and encourages the spread of water-borne diseases. Accidents involving spillage of fuel and chemicals may pollute water source and contaminate water supply.

Cultural and social conflicts may arise when outside workers get in contact with locals of different cultural background. Often conflicts may be associated with increased consume and availability and consumption of alcohol and drugs as well as a Gender Based Violence (GBV) and Child Abuse/Exploitation (CAE). Adequate efforts should be made to maintain social harmony and cooperation among the workers and local residents.

i. Road Safety Impacts

Road safety issues naturally increase when the upgraded/new roads go into operation. Inherently, roads bear accident risks that may cause adverse effects to the individuals afflicted, and may lead to a variety of direct and indirect environmental damages. Traffic accidents because of negligent crossing or walking, undefined crossing sites, narrow road, low quality shoulder surface, poor visibility, careless driving in high speed, rushing in the roadway, lack of nonmotorized lanes, inadequate traffic signs, inappropriate road standards and designs, and by natural disasters. There are many features of a road and its associated structures which influence the risk or the severity of a road. Pertaining parameters include: (i) pavement and shoulder condition, roughness and surface grip; (ii) presence of roadside poles, trees, ditches, steep slopes, and barriers; (iii) signage, markings, intersection layout; (iv)roadside access, parking, and bus stop arrangements; (v) provision of pedestrian, cyclist and other non-motorized road users. (vi) traffic control and enforcement of traffic rules, (vii)drivers behaviour and license system (viii) public safety awareness and educational standards (ix) vehicle maintenance *ƒ* road maintenance;

ii. **Impact on Cultural and Historical Assets**

Cultural heritage can be sites, structures, and remains of archaeological, historical, religious, cultural, and aesthetic value. Cultural heritage is a particular form of expression of human values which serves to record past achievements and discoveries. It is important to assess site to understand the significance of a site, according to its aesthetic, historic, scientific, and social value, in addition to its amenity value. Cultural and historic sites may be threatened by road construction and associated works such as excavation, filling, quarrying and spoil disposal, and unregulated/increased access to cultural heritage sites. It can destroy the sites or alter their character.

Aesthetic impacts on cultural monuments and archaeological sites can occur. Road many result in illegal occupation or encroachment of the culturally and historically important areas (religious sites, graveyards, traditional site,) or the land belonging to these sectors. On the other hand, the increased accessibility may attract visitors to these areas which encourage better use, care and conservation of the same. Additionally, construction activities result in chance finds of previously unknown cultural artefacts for which contractors and supervising engineers should be prepared and know how to contact the proper authorities. It should be noted that such chance finds are unlikely in a project like IFRDP as it is a rehabilitation of existing roads rather than new constructions.

j. **Impact on Landscape Aesthetics**

Negative aesthetic impact can commonly result from poor design, faulty identification of likely impacts during the process of environmental assessment. . Landscape sores relates particularly to ill-designed or monitored activities resulting from borrow pit and quarrying operations, from landslides that could have been avoided, and from indiscriminate dumping of spoil material.

Deteriorating aquatic systems are equally sources of reduced landscape values, especially when signs and secondary effects of pollutants become evident. A road can be visually attractive or unsightly depending on its physical layout within the surrounding landscape and how far the attention is given to detailed designs, road-side planting and maintenance.

In contrast, road design may lack aesthetical considerations when a landscape is distorted by repellent cuts, repulsive borrow pits, unused quarries, and landslides, all leading to depreciation and loss of scenic values of the site. Road induced activities may lead to the generation and mismanagement of wastes (solid and liquid) in the roadsides and create scars on the landscape. Construction of road may cause loss of or encroachment to unique geological and geographical sites (e.g. wetlands, sensitive ecological terrains), natural beauty spots and scenic sites that attract both domestic and international tourists, and sites of scientific interests. Last but not least the right choice of alignment, taking into account the aesthetic qualities of both natural architectural and cultural sites will help to increase the attractiveness of new road development projects.

The following table is summarizing potential impacts that can occur with road construction projects

Environmental Issue	Impact	Source
Vegetation and fauna	Loss of vegetation at camp sites, borrow pits, access roads and deviations Forest fragmentation	Open up work areas , and facilitation of access to the rich forest area leading to Ilegal logging and hunting Increase in demand for wood fuel and house construction
Protected Areas/Crtitical Forests/Wetlands/ sensitive areas	Encroachment to forest area for hunting and timber exploitation	Illegal activities due to ease accessibility to protected areas
Water quality	Water Flow Diversion Groundwater Flow Modification Ground water contamination from roads Modifications in water table as a result of Road Construction (soil compactation)	Soil compactation, Brigde constructions; Operation of borrow pits, bad management of betumen and fuel
Soils and underground resources	Erosion Landslides Slopes dezestabilization Contamination of Soil	Soil compaction , operation of borrow pits Embarkments Oil and betumen spillage,
Air quality	Lowering of quality of life of the people in the road alignment route and those located near ancillary sites	Gas Emission from moviment of working equipment and veicules Dust from the site work, transport of material, moviment veicules Noise fom working equipment and veicules, quarry blasting if any
Employment provision	Increase in job opportunities in the region and improvements in rural income; Increase potential for prostitution due to risk behavior of women and young girls	Construction activities has be performed, contractor must under the contract clause offer employment to the locals Equal opportunities to employment should be given to both man and women. The contractor shall avoid to employ children; Influx of male wokers with money and far from their homes, is a potential for risk attitude and prostitution
Regional and local economy	Increase demand for construction material for the road work and/or construction of resetled people Loss of business assets along the road Probable loss of income due to dislocation of informal businesses Improvements in access to alternative markets for agricultural produce Lowering of transport and business transaction cost	The influx of people and locals with money from the contractor payments may increase sellers of the business in the region for varies products including agriculture, However, need of addtional land near to the road may result in reduction of incomes for the informal business. After the conclusion of the construction reduction in the transport cost is expected with the beneficiaire economic and road safety impacts associated
Capacity Building	Increase knowledge for the local	Employment of local, on job training process.
Cultural and Historical Assets	Destruction of cultural area; Conflicts between Contractor and communities;	Excavation, filling, quarrying and spoil disposal, unregulated/increased access to cultural heritage sites.

Environmental Issue	Impact	Source
Impact on property and on on access site	Property loss, Limited acccess from and to property; Resetlement process;	Construction of road, camp site, borrow pits and other related construction activities
Impacts on Productive Land/Agric.	Loss of cultivated agriculture/grazing land Loss of productivity of land Open up market for agriulture products	Expropriation of land for road construction, borrow pit, camp site
Impacts on Occupational Health and Safety	Risk of accidents at worksite Increased dust and noise related problems and diseases Transmission of HIV and other communiable diseases Increased risk of health problems: waste products and sewerage; Increase in accidents for pedestrians, cyclists and motorists along the road	Influx of people into the project area Increase in infection and spread of STIs and HIV/AIDS High speed, Increase of circulation of heave trucks, construction vehicles
Impacts on Social Relations and other Social Aspects	Conflicts between influx workers and locals Increase crime Improved quality of life Social networks and social cohesion strengthened;	Outsiders that do not respects the cultural set up of the area Money
Impacts on Existing Social Facilities	Disruptions in utility network services Pressure on existing social service facilities like health, water and electricity especially in urban areas.	Construction activities; Work accidents, high demand fro services;
Impacts on Aesthetic Quality	Desrupted visual scenic and natura lbeauty	Borrow pits, quarries, anceliary work and RoW sub base contruction and work site construction. Waste
Impacts on Road Security and Safety	Accidents, Fatalities;	High Speed, no signals,

Table 5-3: Impacts identification and sources

5.3 Potential Mitigation Measures

The above chapter described the potential impacts that may arise from the implementation of the IFRDP. This chapter is organized to provide the framework for the IFRDP team, while considering typical mitigation measures as they occur in the chronological sequence of road development projects. It is also attempted to give guidance in elabourating credible, feasible and costeffective actions to implement the proposed mitigation measures, and how to ensure that these actions will later be implemented in the desired manner. While doing so, this framework presents practical and proven methods to maximize the beneficial impacts, and at the same time to avoid or minimize adverse impacts. The mitigation measures basically follow common-sense approach that aims to viable, practical, and cost effective solutions, which in turn would supplement its environmental and social sustainability. The mitigation measures described here are divided into beneficial and negatives. These impacts will mostly occur during the construction stage. The mitigation here described are aplicable for the existing landscape in the targeted districts (up land and low land/coastal area). These mitigation intend too be an indicative of mitigation measures that should be adjusted accordingly with the specific description of the specific sub-project.

Beneficial Measures (positive impacts)

Increased Income and Employment Opportunities

The road construction work will use reasonable of unskilled local labourers. As stated before, around 30% of labours will be procured from the local area. To enhance the benefits given by employment the contractor shall offer similar opportunities to both (male and female) and non descriminator level of salaries. The employed pleople will increase the individual live standard of the selected beneficiaries and enhance the local economy. The Contractor must avoid to employ children as The coordination for local employment arrangements should be facilitated by local authorities. Contractor must inform the need of workers and should give similar opportunities to man and women.As decribed before the active population in Nampula and Zambezia is high and in rural areas a formal employment is low, therefore the project will improve the labour oportunities for the locals. The Contractor should adopt a contract system that allow a high number of vilages, along the route/road to benefit.

Enhancement of Technical Skills

During the road upgrading works, the local labourers will be given training in road, soft engineering structures construction and bio-engineering works. This can help them to find job as skilled workers in future projects as an alternative occupation in addition to agriculture.

Enhancement of the Local Economy

During construction, there will be large number of people working in the area. Consequently, there will be large demand for consumable goods and local products such as vegetables, poultry, cereals, and fish. Small food shops and *barracas* will be in demand. The proposed enhancement measure is to facilitate the process where local people may be willing to obtain micro-credits to start some enterprises.

(ii) Mitigation Measures (Adverse Impacts)

Coping with Slope Failure and Erosion

Good practices and prevention measures to cope with erosion and associated problems are :

- ✓ Minimizing the area of ground clearance as to avoid the production of excess spoil material and reduce the need for borrow pits;

- ✓ Choose the best work period to limit risks of erosion- avoid rainy season;
- ✓ Avoiding previously contaminated sites;
- ✓ Avoiding the creation of cut spots and embankments which are of an angle greater than the natural angle of repose for the local soil type;
- ✓ Protecting trees and vegetation in the road alignment vicinity and revegetation of cut slopes as soon as possible;
- ✓ Maximum destructionto the vegetation in the right of way;
- ✓ Replanting disturbed areas immediately after disturbance has stopped, not after construction has been completed, and their maintenance, and
- ✓ Drainage improvement to control location, volume and speed of water flows in water courses in the vicinity of exposed soils and slopes.

Other precautionary measures include undertaking cut and fill activities during dry season, construction of drains and ditches to avoid the damages by water flow and the regular maintenance of the slope protection measures. Compensatory measures to cope with erosion and associated problems are: Topsoil (15 to 25 cm top layer) is an important natural resource that needs to be preserved to the extent possible. It takes a long time to form a layer of topsoil, and is therefore high priority is accorded to the conservation of the soil during road construction. Topsoil must be carefully stripped separately from subsoil and collected from area of excavation and stored at a designated safe place for later use. It should be stored with protective measures, including covering, making bund and drainage around the stockpile etc. It should be reused to reclaim land, form a cover layer on spoil disposal and landscaped areas, reclaimed land, slope of embankments prior to turfing or replanting or developing as farmland. This way, the productive area lost can be compensated to some extent. Other measures may include remediation of soils whose productive capacity has been reduced during the construction phase, for example by using a subsoiler to break up hardpan produced by compaction with heavy equipment.

Addressing Destabilisation of Slopes

- ✓ do not undertake road construction during peak rainy season;
- ✓ Wherever possible, use surplus spoil to fill eroded gullies and depressed areas;
- ✓ If feasible, spoil material may be disposed in abandoned quarries and borrow pits as means to help restore original contours;
- ✓ It is advised to use the excavated materials for reclaiming the degraded land in near vicinity in consultation with local communities on their preferences;
- ✓ Never dispose spoil on fragile slopes, flood ways, wetland, farmland, forest areas, natural drainage path, religious and culturally sensitive sites, wetlands, canals and other infrastructures;
- ✓ Spoil material may be discharged to a landfill that is constructed using a series of small spoil benches to prevent slope overloading;
- ✓ Avoiding Hazards due to Water Flow Diversion.
- ✓ Avoid alignments in the close vicinity of wetlands and sensitive water bodies;
- ✓ Wherever possible, drainage structures should be designed and constructed to have minimum interference with and impact on the natural drainage patterns in the area;
- ✓ Avoid surface water discharge onto farmlands or risky locations. Always consult local communities regarding location of drainage outfalls. Provide adequate protection measures like apron and walls at the disposal points to prevent scour and undercutting.
- ✓ Do not divert water away from a natural watercourse unless it is absolutely necessary or otherwise environmentally desirable;
- ✓ Avoid blockage or diversion of natural channels due to construction of road embankment and disposal of spoils**.**

Avoiding Hazards originating from Quarry and Borrow Activities

- ✓ Collection of construction material may have long-term and sometimes irreversible effects, for example road-side borrow pits may pose increased accident risks, or if left unmanaged, may become filled with garbage and stagnant water being both an eyesore and source of breeding ground for mosquitoes and other disease vectors;
- ✓ Borrow sites should be located away from cultivable lands and settlements, drinking water intakes;
- ✓ Quarry and borrow pit should be located in structurally stable area, even if some distance from construction site. In long run, unsound quarries and borrow pits can promote slides and further aggravate maintenance and traffic flow resulting in higher overall costs;
- ✓ Quarry and borrow pit location shown in design documents are provided only as a guide. It is the Contractor's responsibility to verify the suitability of all material sources, and to obtain the approval of the engineer;
- ✓ If possible, seek borrow pit locations not immediately adjacent to the road shoulder;
- ✓ Extraction of sand and stone from seasonal rivers should be avoided due to the impact on complex flood hydrology, which can result in much more serious storm floods;
- ✓ Extraction of stone and sand should be spread over the longest length possible so that no section of river bed is excessively disturbed;
- ✓ Clearing of trees and other desirable vegetation should be discouraged. Only those trees which are absolutely necessary to operate the sites should be cleared;
- ✓ The site should be restored after completion of construction activities, and left in stable condition without steep slopes;
- ✓ The restored site should be drained, and no standing water shall remain. Stagnant waters become disease vectors breeding site and pose threat to public health;
- ✓ The sites must always be closed and restored in a planned and appropriate manner to suit local conditions and in consultation with the concerned owners and/or community. It should be done before spreading equipment is allowed to leave the site;
- ✓ Land utilized for river bed extraction and quarry site access roads should also be restored, as applicable.

Addressing Issues associated with Stockpiling of Materials

Sites for stockpiling of material should be located away from cultivable lands and settlements, drinking water intakes, public places, near school and health centres;

- ✓ Sites for stockpiling of material should be located away from forest area, sensitive ecosystem, fragile and landslide prone slope or terraces etc.;
- ✓ Stockpiling of earth fill shall in most cases not be permitted during the rainy season unless covered by a suitable material;
- ✓ Stripped material should not be stored where natural drainage will be disrupted;
- ✓ Stockpiled material should be protected from erosion prior to rainy season, including construction of drainage, trenches and ponds.

Avoiding Water Pollution

There are a number of activities during construction and operation phases of the project which will generate wastewater. During construction wastewater will be generated by the sanitation facilities provided for workers the contractor is responsible for the collection and treatment of the generated wastewater from sanitation facilities. The Contractor is responsible for ensuring the treatment and disposal of wastewater and approved by Supervision Engineer.

Wastewater from wash down areas is to be collected either in a settlement pond or tank to allow sediment and particulate matter to drop out (or processed through a filtration system) before the water can be reused as wash water, dust suppression or in other processes.

A separate wash down area is required for machinery or material with oil or fuel residue as this wash water is required to be treated through a mobile oil water separator. Wash water from concrete production, cutting, washing of equipment used and areas where concrete is produced must be collected and treated to lower the pH (closer to neutral) and to allow settlement of suspended solids. All wash down areas and wastewater treatment areas should be located within the construction lay down areas.

- ✓ Treated wash water where possible should be reused for dust suppression or within other processes. Direct discharge to the river, marine or coastal environment or to the water reserve protection area is prohibited. Discharges of treated wash water are to occur to land only at least 500m from any bore used for potable water at a rate not exceeding 20mm/day or the infiltration rate of the ground (i.e. no ponding or runoff).
- ✓ Quarries must have sufficient measures to avoid direct discharges when working adjacent to the marine and coastal environment, particularly for the runway resurfacing component, which may include bunding (e.g. sand bags), demarcation of exclusion zones, and limited use of large machinery.
- ✓ Precautions should be in place to prevent wastewater and hazardous substances or materials entering the environment (e.g. fuel spillage, wastewater containing fire retardant during firefighting), however in any case an incident occur, a spill response plan should be in place. The response plan should include details on the use of spill kits and absorbent items to prevent spills entering the receiving sensitive environment (ground, surface water).
- ✓ Avoid alignments which are susceptible to erosion, such as those crossing steep slopes;
- ✓ Minimize the number of water crossings by the road, wherever possible;
- ✓ Use only “clean” fill materials around watercourses, such as quarried rock containing no fine soil;
- ✓ Leave buffer zones of undisturbed vegetation (width increased in proportion to slope) between road sites and water bodies ;
- ✓ Do not dispose spoils, other hazardous substances near water sources or water bodies; and
- ✓ Do not wash vehicle, or dispose cement slurry etc. in water bodies;
- ✓ Enforce law and penalties to violators.

Avoid Air Pollution

All heavy equipment and machinery shall be fitted with air pollution control devices that are operating correctly;

- ✓ Stockpiled sand and soil shall be slightly wetted before loading, particularly in windy condition;
- ✓ Vehicles transporting sand and soil shall be covered with a tarpaulin;
- ✓ Sprinkle water on sites with ongoing construction activities.
- ✓ Take account of prevailing wind direction when siting roads and road features, including re-fuelling stations, near population centres;

Control of Noise Pollution

- ✓ All heavy equipment and machinery shall be fitted with noise pollution control devices that are operating correctly;
- ✓ Application of bituminous layer produce less noise than over worn concrete surface or open-graded asphalt or avoiding surface dressings in sensitive areas;
- ✓ Provide ear mufflers to construction workers in high noise exposure areas;
- ✓ Consider erection of noise barriers by planting bushes/hedges in the vicinity of sensitive road sections (e.g. in front of schools and health facilities);

- ✓ Include education of local drivers in the awareness training provided through the projects.

Handling Hazardous Materials

- ✓ Hazardous materials shall not be stored near surface waters;
- ✓ All used lubricants and oil should be collected and recycled or disposed off site in appropriate manner by not causing environmental degradation;
- ✓ Hazardous materials should be stored only on impervious (concrete or plastic sheeting as approved by engineer) floor with drainage and collection sump so as to retain leaks and spills;
- ✓ Apply sealing or binding material in case of major spills of (liquid) hazardous materials;
- ✓ The Contractor must install all safety and warning devices before commencing blasting operation.

Clearing of Forest Land and Habitat Damage or Loss

- ✓ Clear trees only when absolutely necessary. Trees falling in right-of-way but not on formation width need not be cleared, rather consider new plantation of selected (non-exotic) species;
- ✓ Planting in road right of way, adjacent areas and other public areas in consultation with local people can help to support local flora and fauna;
- ✓ To protect aquatic resources, provide precautionary mechanisms to avoid accidental spills, controlling of open-field defecation by work staff and restrict access and amount to drinking water sources other than agreed with local communities and entitled users.
- ✓ Careful attention should be paid to erosion control techniques near watercourses;
- ✓ Culvert crossings should be designed with the needs of migratory aquatic species in mind;
- ✓ Baffles might be installed to slow the flow enough to allow fish and others to swim against the current and culvert bottoms should be set below the level of stream bed.

Control of Illegal Harvest of Forest Products and Poaching of Wildlife

- ✓ The large size of labours will basically depend on forest products for their energy requirement, if not provided alternate fuel for cooking and heating. Without strict control and management, labourers are likely to collect the fuel wood from the nearby forest;
- ✓ The contract documents must include provisions to instruct or arrange alternate energy; such as kerosene, LPG and micro hydropower for labour by making provision in contract document
- ✓ Vegetation clear should be minimized, and buffer zones of undisturbed vegetation should be left between roads and watercourses;
- ✓ The Contractor must prevent illegal cutting of forest wood by labour force. He is also liable for penalties to violators;
- ✓ The project management should instruct the project officials, labour force, contractors, engineer and other stakeholder not to indulge in such activities and abide by the forest act and its regulation;
- ✓ The project should closely coordinate with Forest Office and its outlets to control illegal poaching and trapping by the project stakeholders or other outside wildlife poachers, wildlife traders and timber smugglers.
- ✓ The project should colabourate with community representatives to control forest eanchroachment by the workers.

Cultural and Historical Assets

To avoid desturbance of an cultural and historical areas to be affected by the construction activities the employer and contractor shall:

- ✓ Prior to the beginning of the work all cultural, cemetery and relegious sites must be identified;

- ✓ In a case that the construction activities can not avoid these areas, a fair compensation shall be implemented after agreement between ANE, community and families. And all traditional and official rules/procedures to realocate these areas be followed before construction starts;
- ✓ In chance that the contractor; during the construction find a cultural area shall stop all the work and inform the engineer and the local leader;
- ✓ With the supervision of the the engineer shall inform District or Provincial Directorate of Culture and tourism or a provincial delegation of ARPAC.

ENVIRONEMTAL MANAGEMENT PLAN MATRIX						
Construction Phases	**Environmental impacts**	**Issues**	**Objective**	**Mitigation (management strategies)**	**Responsabilty**	**Output/Performance indicator**
Pre-phase construction	legal clearance for site installations		To acquire all permits and licenses from relevant government and local authorities	• Contact with the local leaders for permission in its jurisdiction area • Clear all paper work with DIPREME for permits and licensing for quarries. • Giving project Information to the affected parties prior to the commencement of the activity (consultation process).	Local autorities (provincial and districts) and Contractor	Permits issued Environmental issues are included in the design and BOQ
Construction phase	Health and safety	Road safety	To ensure maximum safety to construction personnel, locals as well as other road users	• Adequate deviation road shall be provided not to interfere with normal traffic flow. • Traffic rules and discipline should be observed by all workers. The employer should ensure that all operators and drivers are fully aware of and are able to handle the responsibility they are assigned to. • Install light and cautionary signs in hazardous areas. • Establish footpaths and vehicle pull-off bays along the road, through villages and near markets, schools and other community facilities. • Speed control and traffic management measures put in place including speed bumps to be constructed at critical locations. • Awareness creation on traffic safety and rules	Contractor, Engineer,	Light and caution signals installed in all hazardous areas (deviation, half with close, bridges works, etc) Training material for drivers and operators on traffic rules
		Health	To guarantee minimal health condition and prevent infection and spread of STI and HIV/AIDS at workplace and to the local community	• Ensure all occupational health and safety requirements are in place on construction sites and in work camps (first aids set and clinic) • Awareness creation on basic health care, environmental sanitation. • Implement awareness activities on HIV/AIDs pandemic at least once a month at project level (workforce) community level. • Ensure enough condoms and awareness material is available to workforce and adjoining communities. • Rehabilitate excavated grounds at quarry sites and borrow pits to avoid mosquito breeding.	Contractor, health staff , HIV/AIDS specialist/local NGO Peer educators	Clinic and first aid boxes at camp site and other working areas Condom distribution Counseling and test records Peer educators trained IEC material specific to socio-cultural context of region

ENVIRONEMTAL MANAGEMENT PLAN MATRIX						
Construction Phases	**Environmental impacts**	**Issues**	**Objective**	**Mitigation (management strategies)**	**Responsabilty**	**Output/Performance indicator**
		Managing construction sites	To avoid contamination from solid waste and sewage	• Provide water for workers from protected sources or public water supply. • Ensure sanitary conditions, proper waste disposal (sanitary landfill) and waste management in camps and at work places that includes: o Burning non recyclable waste including paper used in bitumen spraying and clinic waste. o Crushing all unburned residues. o Burying the crushed residues in a pit dug • Dispose of sewage into hygienic pit latrine or into septic tank system. • During site clean-up, burn all spilled fuel oil	contractor	established water distribution system in the camps and work places Waste is properly collected and disposed off safely. Garbage containers at camp site Sanitary landfill established
	Cultural and Historical Assets	Cultural and heratege Chance Finds	To avoid desturbance of an cultural and historical areas to be affected by the construction activities	• Prior to the beginning of the work all cultural, cemetery and relegious sites must be identified; • In a case that the construction activities can not avoid these areas, a fair compensation shall be implemented after agreement between ANE, community and families. And all traditional and official rules/procedures to realocate these areas be followed before construction starts • In chance that the contractor; during the construction find a cultural area shall stop all the work and inform the engineer and the local leader • With the supervision of the the engineer shall inform District or Provincial Directorate of Culture and tourism or a provincial delegation of ARPAC	ANE (at the RAP/ARAP preparartion stage), Contractor during the construction phase	Nr of culural site identified and protected from road construction activities

ENVIRONEMTAL MANAGEMENT PLAN MATRIX						
Construction Phases	**Environmental impacts**	**Issues**	**Objective**	**Mitigation (management strategies)**	**Responsabilty**	**Output/Performance indicator**
Construction Phase	Employment and income generating activities	Accounting for social or community concerns (including gender issues)	To minimize social disturbance and maximize community benefits from the project	• Arrange contractual commitments to respect social factors for temporary employees. • Arrange for local people to be employed and trained as part of the activity. • Include women and other community groups in the activity whenever possible. • Create suitable working atmosphere at work place to encourage women involvement in the project activities. • Encourage workers to use locally available products to assist local economy. • Arrange and ensure supply of basic consumable items by encouraging entrepreneurs in the area.	Contractor, Local authorities and local administration	Nr of local people getting employed and fairly paid within project Nr of women working and involved with road activities Nr of (informal markets)people selling agriculture and other products close to camps and working areas
	Real property, heritage, building and equipment		To minimize social disturbance due to road work	• All resettlement, land acquisition and compensation issues will be dealt in accordance with the RPF developed for the road section of N1/N10 Quelimane-Nicoadala-Namacurra.		
	Agriculture livestock	Farmland acquisition	To minimize farmland loss and animal accidents due to road works	• All resettlement, land acquisition and compensation issues will be dealt in accordance with the RPF developed for the road section of N1/N10 Quelimane-Nicoadala-Namacurra.		List of affected landholders
	Quality of life		To avoid reduction of quality of life for the communities within the project boundaries	• Locate camps away from sensitive sites like villages. • Quarries in the proximities of settlement must not be used (less than 500 m) • Watering gravel section during dry season.	Contractor, engineer	

ENVIRONEMTAL MANAGEMENT PLAN MATRIX						
Construction Phases	**Environmental impacts**	**Issues**	**Objective**	**Mitigation (management strategies)**	**Responsabilty**	**Output/Performance indicator**
	Vegetation and Fauna	Controlling vegetation and fauna depletion due to work roads	To minimize impacts on vegetation and fauna degradation in the region	• Prohibit project workers from encroachment and poaching forest and wildlife areas (for poles, firewood and meat). • Sources of energy for cooking must be provided by contractor. • Limit vegetation removal and site clearance to only areas required for project works. • Prohibit forest fire setting and supervise fire risks by construction workers. • Route selection for access to material sites, and detour road route should try to avoid dense vegetation covered areas and protected area. • The road route should not cross any gazetted protected area. • Tree cutting for deviation and access road construction should be strictly prohibited unless conditions forced to do so otherwise.	Contractor, Engineer Forest Department at provincial level	Area of forest cleared to accommodate road works, About 50 to 100 new trees planted and handed over to the municipality
	Water contamination/supply	Controlling sources of water contamination and guarantee water supply for construction works	To minimize impacts of water contamination and avoid water competition with other users	• Competition over water use due to influx of workers in the area, and due to the construction activity should be regulated by giving priorities to the resident community. • The contractor shall arrange water supply point that doesn't interfere with that of the local community. • Provide adequate flow dispersal structure to maintain the natural flow direction and to avoid flow concentration to specific locations. • Program excavation activities at river crossing areas during dry period, • Protect sensitive surface (river margin adjacent to drainage structure) with mulch or fabrics, stone ripraps, gabions, etc. • Avoid dumping and accumulation of spoil soil at river banks and downhill sides. • Store oil and bituminous products at a contained location away from drainage line and in appropriate manner.	Contractor	Potable water provided from sustainable sources Drainage facilities are provided Spoil soil cart away timely
	Soil and underground resources	Reducing erosion	To minimize the amount of sediment lost from the site	• Vegetation clearing to a minimum level. • Avoid disturbance on steep slopes. • Keep vehicle on defined tracks. • Surplus excavated top soil shall be stored and used to rehabilitate degraded grounds	Contractor, Engineer	Erosion and slope protection measures and constructions done timely Excavated ground areas (quarries and borrow pits)

ENVIRONEMTAL MANAGEMENT PLAN MATRIX						
Construction Phases	**Environmental impacts**	**Issues**	**Objective**	**Mitigation (management strategies)**	**Responsabilty**	**Output/Performance indicator**
				• Rehabilitate excavated ground up on completion of works • Prohibit animal grazing at road shoulders • Re-vegetate erodible soil surfaces as soon as possible		reclaimed and return to crop
			To minimize the impacts of storm water containing sediments	• Schedule construction so that large areas of soil are not exposed during the wet season	Contractor Engineer	Camp and work sites established before/after wet season (December to February) Use of heavy equipment and borrow pit material collection be avoided during December and January
			To minimize long effects of soil contamination due to mismanagement of hazardous products	• Maintain leaking equipment and vehicle parts, Avoid fuel & oil spillages while refilling, collect and properly treat used oil and	Contractor Engineer	Clearly identified areas for hazardous material storages
	Air pollution		To ensure nuisance form noise is minimized and no health risk or inconvenience due to dust production.	• Carry out noisy construction activities during normal working hours. • Advice local people when there will be blasting or unusual, unavoidable noise. • Protective equipment for construction workers in areas of high noise levels. • Spray water on exposed surfaces during dry season (deviation, carriageway bed, etc) • Install dust and smoke suppression accessories on asphalt plant and crasher equipment. • Avoid locating quarries and borrow pits close to settlements. • Regular maintenance of machinery and vehicle to reduce excessive gaseous emissions.	Contractor Engineer	Protective equipment distributed to workers at quarries, operators etc.
Operational phase	Soil erosion and soil contamination			• Grass cover slopes and graded grounds, and protect livestock grazing at road shoulders and embankments • Control traffic accidents and transportation of hazardous chemicals • Rake or loosen all compacted ground surfaces	Contractor, Engineer,ANE Delegation,	Erosion and slope protection measures and constructions done timely

ENVIRONEMTAL MANAGEMENT PLAN MATRIX						
Construction Phases	**Environmental impacts**	**Issues**	**Objective**	**Mitigation (management strategies)**	**Responsabilty**	**Output/Performance indicator**
				• Establishment of local team for culvert and other drainage infrastructure clean up in regular basin (from siltation, trees etc) to maintain the normal flow of water		
	Water contamination			• Oil spills and vehicle leakages shall be minimized through regular monitoring and supervision, annual checking of vehicle conditions • Waste management practices should improve, road side littering especially in towns and villages should be regulated.	Transport department, Municipalities and local authorities	
	Vegetation and flora			• Minimize forest fire risks by creating awareness among the road users and the surrounding community. • Reduce illegal forest harvesting and cropping up hills to minimize siltation and destruction of drainage infrastructures along the road	Contractor	Speed limit signs posted, Light signs, reflectors, landslide walls built, Pavement and Vertical road signs
	Road safety			• Minimized vehicular accidents through implementation of traffic and transport regulations. • Warning signals and bumps shall be Posted at critical locations	DPTADER	Forest Law enforced with mobile patrolling; Community atrolling

Table 5-4: Example of mitigation measures

6. Training and Capacity Building Requirements

Successful implementation of the Project will depend among other aspects on the effective implementation of the environmental and social management measures outlined in ESMF. Training and capacity building will be necessary for the contractor workers and communities crossed by the roads to ensure that they have the appropriate knowledge and skills to implement the environmental and social management plans. On the other hand, training and capacity will be necessary for the PIU at all level.

Institutional Capacity Assessment and Analysis

Descriptions made before show that there has been considerable progress in institutional, legal and regulatory processes related with environmental and social management in Mozambique. However, coordination and law enforcement remain a serious challenge.

The host institution at national and provincial (ANE) have some existing capacity, better in the HdQ. however at district level this capacity is weak or no available. Based on needs identification done during the field visit to the districts (Memba and Erati in Nampula and Maganja da Costa and Murrumbala in Zambezia) on of their request was the need of the technical assistance and development of district capacities, in Murrumbala was informed that within the districts there is specialist on the environmental area, but working in a different area, therefore a specific institutional and human capacity-building program for environmental and social management should be developed as part of the Project.

.A detailed capacity-building program will be developed during implementation, with a focus on strengthening the District, and Provincial structures responsible for environmental and social management.

The District Services of Planning and Infrastructure (SDPI), which have a unit that deals with environmental matters at the district level, should be given special attention to build their capacity to manage the ESIA/ESMP. So far, these processes are managed mainly at the provincial and central level. Only limited number of districts have made significant progresses in getting actively and competently involved in ESIA/ESMP. To deal with the various and complex issues related with communication, coordination, capacity building and institutional strengthening there will be one qualified Safeguard Specialist at central level and two Provincial Community Management Officials (one in each province) and a Communication Officers in the two provinces stationed at ANE delegate.

Proposed Training and Awareness Programs

The general objectives of the training and awareness programs for implementation of the ESIAs/ESMPs are to:

- ✓ Sensitize the various stakeholders on the linkages between environment and social impacts of the road construction projects;
- ✓ Demonstrate the role of the various key players in the implementation and monitoring of the safeguards instruments (ESMF-ESIA/ESMP);
- ✓ Sensitize representatives and leaders of community groups and associations, including women's and people with diasbilities representants, (who will in turn convey the message to their respective communities) on the implementation and management of the mitigation measures; and on their roles in achieving environmental and social sustainability;
- ✓ Ensure that both provincial and district level personnel can provide leadership and guidance as well as supervise the implementation of their components in the ESIA/ESMP;
- ✓ Ensure that participants can analyze the potential environmental and social impacts, and competently prescribe mitigation options as well as supervise the implementation of management plans.

Technical Assistance (TA)

TA will be to ensure that the various external inputs from different providers of goods and services to the project are aligned and harmonized with the Project's ultimate goals. Capacity building and transference of knowledge and skills and the overall environmental and social sector will be at the center of the activities to be carried out for provincial and district levels will be crucial as it is at this level that capacity is usually low.

6.1 ESMF monitoring requirements

Monitoring Reports and review

Monitoring of the compliance of project implementation with the mitigation measures to be defined in each sub-project ESIA/ESMP will be carried out jointly with PIU at provincial level, Environmental and Social officer of the engineer, the Conntractor and the community. PIU at national level has to submit to the approval of the World Bank a quarterly and annual report on safeguards issues, implemented by the contractor under supervison of the Engeneer. PIU at district level should supervise and monitoring activities and report monthly to the site meeting. Monthly site meeting should be attended by the representative of the PIU at provincial and national level as well as the representative of the funding agency . During this meeting implementation aspects of the project will be discussed and all matters of community concern not resolved should be given a solution On a monthly base the project will hold a site meeting. During this meeting the Contractor Envronmental officer shall present, prior to the approvall of the engnieer. The montly report should include at least information on the CESMP implementation, conflict resolution/GRM, OHS, HIV, GBV and CAE ICE reports.

Compliance monitoring comprises on-site inspection of activities to verify that measures identified in the ESMP are being implemented. This type of monitoring is like the normal tasks of a supervising engineer whose task will be by contractual arrangement to ensure that the Contractor is adhering to the contractual obligations regarding environmental, social, health and safety practices during construction, as prescribed in the Environmental and Social Clauses (ESC) included in the bidding documents and Contracts or as described in the Contractor ESMP.

DPTADER will have the responsibility of conducting the environmental, social, health and safety inspection. An annual inspection report must be submitted (together with the monitoring report) to MITADER and the World Bank for review and approval.

Environmental and Social Audit

An external independent environmental, social, health and safety audit will be carried out at mid-term of project implementation and at the end of the project. It is proposed that AQUA/MITADER will conduct its audit to verify compliance with the GOM requirements, mainly based on the ESMP, while DPTADER will focus on compliance of the project requirements as such. The two audit teams will report to ANE and the World Bank, who will deal with the implementation of any corrective measures as required. The audits are necessary to ensure that (i) the ESMF and the ESMP processes is being implemented appropriately, and (ii) mitigation measures are being identified and implemented accordingly. The audit will be able to identify any amendments in the ESMF approach that are required to improve its effectiveness.

The Audit Reports will include:

- ✓ A summary of the environmental, social, health and safety performance of the sub-projects, based on the ESIAs, ESMPs RAPs,and the implementation of the Environmental and Social Clauses in the Contractor Contracts and Contractor ESMPs;

- ✓ A presentation of compliance and progress in the implementation of the sub-projects ESMPs;
- ✓ A summary of the environmental and social monitoring results from individual sub-projects monitoring measures (as set out in the sub-project ESMPs);
- ✓ Examine monitoring programs, parameters and procedures in place for control and corrective actions in case of emergencies;
- ✓ Examine records of incidents and accidents and the likelihood of future occurrence of the incidents and accidents;
- ✓ Inspect all working areas and camping sites including borrow and quarry areas, where donguerous products are stored and disposed of and give a record of all significant environmental, social, health and safety risks associated with such activities;
- ✓ Examine and seek views on health and safety issues from the project employees, the local and other potentially affected communities; and
- ✓ Prepare a list of health and safety and environmental and social concerns of past and on-going activities.

7. Public/stakeholder consultation and Participation

Public Consultation throughout Project Cycle to Secure Support

Public conultation in an Environmental process is regulated under the pubic consultation directives approved by MITADER. Accordingly with the rule a public consultation should be hold for a a categories A+. A and B. A call for public consultation should be made fithen days (15) priori to the meeting, using the most common communicable means that reach all people like news papper, TV, national radio and community radios (local).
At least two public meetings are expected to be taken for the category A+ and A. One in the beginning (EPDA and TOR's) and another in the end (EIA and ESMP), while for B one is acceptable at the begining. The project will make sure that different groups are included in the consultations. Before the meeting is hold the environmental consultant/ANE should submit a non technical report for revision by Interested Parties (IP).

The main role of a consultation is to inform the AP about the project and the impacts that may cause and also helps identify impacts, sources of vulnerabilities, the households and groups likely to be affected and appropriate measures to address appropriately. Similarly, because the APs know their economic, social, and biophysical surroundings best, consultation is useful in formulating environmental mitigation measures or resettlement options that balance the APs needs and capabilities with the technical requirements of the options. In carrying out public consultation, a number of advantages for smooth project implementation will be secured which are briefly discussed hereunder: The project-affected communities should be continually consulted by the Project Management (including supervision and monitoring personnel) to identify upcoming needs, constraints and priorities and discuss success/mobility needs as well as the levels and kinds of services needed, or what kind of environmental corrective measures need to be pursued during the different phases of the road project implementation.

In a situation that the project has to resetle people are more continuous consultation process should be established. All resettlement, land acquisition and compensation issues will be dealt in accordance with the RPF developed for the road section of N1/N10 Quelimane-Nicoadala-Namacurra.

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Public consultation is also a viable instrument to addressing AP's anxieties/expectancy and to secure their support. Communities of the proposed project may be anxious that they will lose their property or livelihoods due to the land acquisition or activities that may hamper their production (e.g. farmers my lose production due to reduction of their fields). Participation in planning and managing the project activities might help to reduce such fears and will give the consulted persons equally the opportunity to participate in key decisions. Thus they will both understand and support better the proposed measures, particularly when viable income alternatives can be offered.

In other word, a frequent Public Consultation that will give due account to the concerns and perceptions of the Affected People (AP) will be the best way in creating a feeling of ownership among the people, particularly when they gain the confidence that their concerns and suggestions forwarded are taken into consideration in the design and the construction. Only then the local communities will collabourate and support the beneficial aspects and measures of the sub project(s). In addition, local people must receive adequate feedback for imposed corrective measures: One of the effective mechanisms of continued consultation with the project communities also could be public audit to conduct at a regular interval during implementation and operation so that project beneficiaries are informed timely on the project activities, and are invited to provide feedback for further improvement. In contrast, project activities implemented without (adequate) public consultation may lead to undesired counter-actions (e.g. opposition or blockage of works, theft, delays, cost increases, penalties), social disturbance and eventual crime. With proper and timely consultation, initial opposition to a project may be transferred into constructive participation.

In addition, providing continual information on the project and, at the same time, asking the public for constructive suggestions will eventually make the local communities ready to feel the ownership and support the beneficial aspects of the project. It also , help the ANE to inform and implement the decree 109/2014 regarding the need to avoid activities within the road reserve area.

To maintain social balance and confidence with the local people, all information needs to be disclosed to the public on the project's likely positive and negative impacts, the established compensation and payment schedules, Environmental Social Management Plan (ESMP), RAP, implementing institutions and timetable and grievances procedures.

Identification of Project Stakeholders and Integration of their Perspectives in the Planning and Management Process

Public participation, consultation and information dissemination in a project must be an integral part in all environmental and social impact assessment activities during the initial phases of project preparation. Concerned stakeholders will be regularly provided with information on the project prior to and during the process of ESIA, while the Consultants prepare the ESMP, RAP documents as applicable. Established mechanisms of public participation include: Contact representatives of line agencies responsible for social, economic, environmental, agriculture, forestry, land-use planning) in the project area; Consult experienced and well-established NGOs working locally in the above sectors.

Formation of committees and/or groups comprising of stakeholders at various stages of the project Information campaign through media and other means. Interviews with APs to identify issues for resettlement, compensation and grievance redress mechanisms. Focus group discussions, seminaries and workshops,Socioeconomic baseline survey as well provides an opportunity for consultation with the concerned public.

ESMF should identify the targeted institutions and governmental agencies who have a vested interests and also different responsibilities with regard to the proposed road development program. On the non-governmental level, Individuals, families, social groups, environmental conservationists and research institutions with interest in the road development program are the principal stakeholders of the project. The primary stakeholders of the project are those directly affected by the road construction sub-project either as beneficiaries or as those affected by loss of property or loss of livelihood. Secondary stakeholders are intermediaries in relation to the project and not directly affected but show their concern in one way or the other in the project as a whole such as donor, implementing agency, government, NGOs, environmental protection agencies, and private sector organizations involved in monitoring and advocacy.

A public consultation process has to be established in a way that women, poor and vulnerable people be integrated into the discussion. The inputs, perspectives and recommendations of the stakeholders received during public consultation will be incorporated in the planning and management documents. The establishment of link structure between contractor, community and engineer is a convenient way of expressing their individual and community concerns and bringing to the notice of the project management. Local labour especially from the vulnerable and APs will receive priority to work during road construction and maintenance. At least 25 % of employment will be reserved for women. It will also ensure that women are adequately participating and fairly paid for similar type of work like men, and that child labour is being avoided. During the employment contract process an equpibrium among villages should be established.

Screening Framework involving Participatory Approach

To assess the precise nature and magnitude of social impacts, environmental and social screening involving local stakeholders to the degree possible will be carried out as part of the feasibility studies for each sub-project. To ensure consistency in the application of screening criteria, standard formats will be used for both aspects (see Annex 1). The standard environmental and social screening is based on current World Bank or MITADER screening guidelines for environmental and social impacts. Social screening will identify the potential for loss of land, assets/structures, livelihoods, and other significant social impacts. Social screening will also enable the categorization of sub-projects based on their level of social impacts. Where the extent of adverse social impacts is minor and no displacement or loss of assets or livelihoods is expected, no further action is required. However, where the social screening indicates that land acquisition and/or loss of assets is unavoidable, and there is adverse impact on AP's including vulnerable communities, then appropriate resettlement action plans as well as vulnerable communities development plan will be prepared in accordance with the provisions of the framework for resettlement and for vulnerable groups development. During the social screening process, information will be shared on preliminary project design and resettlement related impacts. Furthermore, alternatives will be explored through consultations to minimize resettlement and adverse social impacts on AP's and vulnerable groups.

8. ESMF Cost Estimation

Cost estimation for the ESMF is any indicative of the buget lines that has to be included when the individual project ESIA, ESMP are designed.

The IFRDP is in the initial stage of the project conception and design, therefore number, location and extension of the sub-projects are not known, which implies that the total cost of the project is not also known. which makes the budget calculation of the ESMF dificult. Nevertheless, ESMF may account for 5% of the the total budget of IFRDP, this value include the cost to hiring additional people to over see the social and environmental issues implementation for the PIU/ at central, provincial and district level. Financial resources allocate to the ESMF, should finance the following activities:

Activities to be funded under the ESMF	Costs (10^3 USD)	Nº of sub-projects/districts	Total (10^3 USD)
Elabouration of the ESIA and ESMP for each sub-project	**50.00**	15	750.00
Implementation of the ESIA and ESMP	**200.00**	15	3,000.00
Training	**30.00**	2	60.00
Institutional capacity building at provincial and district level	**100.00**	2	200.00
Grand Total			4,010.00

Table 8-1: Cost estimates

The implementation of the ESMF which includes the elabouration of the ESIA and ESMP for each sub-project in both provinces as well as the mitigation measures implementation by the Contractor and monitoring and evaluation process done by ANE and DPTADER is quantified at around 4 million dolares.

To estimate the cost several assumption were considered. It was assumed that the amount to be allocated to the districts will be around 10 million usd. The cost estimates for the desining of the ESIA, ESMP and RAP for category B is around 50 thousand per each sub-project and it was assumed that a total of 15 sub-project may be selected. For the implementation of these ESIA and ESMP by the the contractor, including the RAP process was considered that should be allocated 500 thounsad USD per targeted district. For the training and institutional development capacity for both provinces was estimated 160 thousand USD.

The Contractor's costs shall be financed from this on proof of record (e.g. time sheets, material invoices etc.) for the following:

- Provision of Safety Officer when acting in the role of Safety Officer.
- Recruitment of provider for delivery of HIV/AIDS education training.
- Recruitment of provider for delivery of GBV and CAE training.
- Expenses related to delivering HIV/AIDS, GBV and CAE training.
- Personal Protective Equipment (PPE) for all workers on the site, and visitors as appropriate
- Safety signage, safety literature, HIV/AIDS literature, condoms, voluntary counselling and testing, GBV and CAE literature, etc.
- Drug and alcohol testing of staff to enforce a zero alcohol tolerance policy.
- Sexually Transmitted Infections (STI) including HIV/AIDS screening.

Labour costs for attending: (i) dedicated safety training such as working at heights, confined space training, first aid training etc.; (ii) HIV/AIDS, GBV and CAE education training. The contractor shall make their employees available for initial training of 1.5 days, and a total of at least 0.5 days per month for other such formal trainings

9. Environmental and Social Clauses

The environmental and social clauses will be integrated into Contracts for the Design, Construction, Operation and Maintenance of the FRDP sub-projects in the selected districts. The Site Specific ESMPs should be appended to both Contractor and Supervising Engineer Contracts and regular reporting on safeguards issues should also be part of the contract as refered above.

Environmental and social clauses are defined based on the construction process:

9.1 Construction Planning Phase

Compliance with laws and regulations:

- Prior to mobilization, or for new staff, the Contractor shall supply the Engineer a list of all staff proposed for the project who have resided outside the country for more than 12 months over the last 5 years with an accompanied background check acceptable to the Engineer. This background check shall cover: (i) all countries for which the staff have citizenship; and, (ii) include verbal referee checks with employers over the last 2 years. This background check should identify any criminal, arrest, incarceration and/or sex offenses. The Engineer reserves the right to reject any proposed staff on the basis of this background check. All costs associated with the Engineer rejecting staff due to the background check shall remain with the Contractor.
- The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's Personnel including Laws relating to their employment, health, safety, welfare and shall allow them all their legal rights. , For oversease personnel should also immigration and emigration laws ,.

The Contractor and its subcontractors must:

- ✓ know, respect and enforce laws and regulations in force in regard to the environment, disposal of solid and liquid waste, air emission and effluent standards and allowed noise levels, hours of work, etc.;
- ✓ take all appropriate measures to minimize harm to the environment and people; take responsibility for any claims related to environmental non-compliance.

Permits and approvals before work

Before starting work, any environmental study and ressetlement plan has to be prepared and submitted for approval from the enviornmental Authority for each of the proposed road and a emnvironmental permit issued.

The Contractor shall obtain all permits and premission to access resoruces and material necessary to the carry out the work under the contract:

Premission will be issued mining services (in case of quarries and borrow sites), water and hydraulic services (in case of water abstraction and use of public water points) etc. To access land for temporay and permanent use (if is the case) a premission will be done by the affected people if is a privatly owned land (DUAT) and by the administration if under public domain following the Resetlment Action Plan .

Meeting before starting works

Before starting work, the Contractor, Client (PIU) and the engineer shall hold meetings with government officials, representatives of the communities in the project area to inform about the project and duration of works, routes involved and locations likely to be affected. This meeting will enable the Client to collect people's suggestions, raise awareness on environmental and social issues and their relationships with the workers.

Identification of concessionaire networks

Before starting works, the Contractor shall investigate, in any case, a procedure for identifying concessionaire networks (water, electricity, telephone, sewer, etc.) on a plan that will be formalized by Minutes of Meetings signed by all parties (Contractor, works supervisor, concessionaires).

Works signage

Prior to the opening of construction sites and whenever necessary the Contractor shall place, pre-signage and signage within an appropriate distance in line with the laws and regulations in force.

Release of public and private domain

The Contractor should be aware of the fact that the perimeter of a public utility related to the operation is the perimeter that may be affected by the works. Work can only begin in the affected areas after the implementation of the RAP, if any. All resettlement, land acquisition and compensation issues will be dealt in accordance with the RPF developed for the road section of N1/N10 Quelimane-Nicoadala-Namacurra.

Participation of Women and Children

Qualified female workforce should be searched for in the project area. If possible, qualified female workforce should be offered refreshing or upgrading vocational training, to thus make it possible for women to qualify for recruitment.

Children (any person under 18 years of age) should not be extensively contracted but considering that currently some children became heads of households they need a job to guarantee the survival of their siblings. If and when cases like these occur (only allowable for children above 15, as per Mozambican Law), the Contractor must consider the children's work with justice – the level of effort asked from them must be adequate, they must be allowed time to attend school and be paid the regular salary.

The Contractor shall develop: (i) Gender Based Violence (GBV) and Child Abuse/Exploitation (CAE) Codes of Conduct; and, (ii) an Action Plan to mitigate and respond to GBV and CAE within the project and the community.

The Codes of Conduct will outline the responsibilities of: (i) the company to create a positive culture for its workplace and employees; (ii) managers to ensure that culture is implemented; and, (iii) individuals to adhere to the principles of that culture and not to engage in GBV and/or CAE.

All employees (including managers) will be required to attend training prior to commencing work to reinforce the understanding of HIV/AIDS, GBV and CAE. Subsequently, employees must attend a mandatory training course at least once a month for the duration of mobilization.

Environmental and social management program

The Contractor shall prepare and submit for approval by the Project Manager a detailed project environmental and social management program including: (i) a site plan showing the location of the site and the various areas of the site for project components and locations, (ii) a site plan for waste management indicating the types of waste, the type of collection considered, the storage, the method and location of disposal; (iii) the information and awareness program specifying targets, themes and selected consultation modality; (iv) a plan for accident management and health protection stating the risks of major accidents which endanger the health or safety of staff and/or public security measures and/or health protection to be applied in the context of an emergency plan. The Contractor shall also prepare and submit, for approval by the prime contractor, a plan to protect the environment of the site, which includes all security measures to protect the site and forward a site decommissioning plan at the end of works.

The environmental and social management program will also include: the organization of staff in charge of environmental, health and safety management with an indication of the officer in charge of the Project Environmental Health and Safety Department, description of the methods to reduce negative environmental, social, health and safety impacts, water resources management, water supply and sanitation management plan, the list of agreements made with the owners and current users of private sites, etc. The Contractor shall comply with all national environmental laws and regulations.

The Contractor shall Prepare and submit to the Engineer for acceptance the "Contractor's Environmental and Social Management Plan" (CESMP) which provides a detailed explanation of how the Contractor shall comply with the project's safeguard documents such as the Project Environmental and Social Management Plan (ESMP) that were provided as part of the bid documents and/or have been publicly disclosed. **No civil works shall commence until the CESMP has been cleared by the Engineer.**

The contractor shall ensure that CESMP includes as a minimum the following management plans, with a level of detail appropriate for the project based on the ESMP requirements:

- Work Activity
- Traffic
- Occupational Health and Safety
- Environment
- Waste
- Social
- Labour Influx
- CSMP Implementation

- Participate in public consultations on the CESMP by attending public meetings at their own expense as requested by the Engineer.
- Approve public disclosure of the CESMP once approved by the Engineer through the project web site and other means that the Employer may deem appropriate.
- Shall allocate sufficient resources in terms of budget and staff to carry out the provisions of the approved CESMP.
- Carry out the project in accordance with the approved CESMP.
- Attend public meetings at their own expense as requested by the Engineer to discuss the CESMP or any other aspects of the project's environmental and social compliance of interest to the public.
- Submit monthly reports on the CESMP implementation progress to the Engineer in an agreed format.
- Update the CESMP as necessary—in particular when there are design changes, (e.g. changes in the alignment, lay down areas, working hours or practices, etc.) that impact on the project area of influence or the public—or upon instruction by the Engineer for re-approval and re-disclosure.

For CESMP or ESMP infringements, the Contractor shall be given a Notice by the Engineer to initiate actions to remedy the issue within 48 hours. If remediation and restoration has been satisfactorily initiated but could not be completed during this period, the Engineer shall determine a reasonable extended period to complete the remediation in consultation with the Contractor and the Employer.

If in the judgment of the Engineer the Contractor has not:

- Initiated any satisfactory remedial action within the 48 hour period, or
- The restoration is not being done properly, or
- The restoration is not being done in a timely manner during any extended period, then:

The Engineer may instruct the Contractor to cease all remediation activities. The Employer shall be entitled to employ and pay others to carry out the restoration work. The Contractor shall reimburse the Employer through deductions to payments all costs reasonably incurred by the Employer for others to carry out the restoration work.

For plant and materials to be imported from overseas, the Contractor shall determine and comply with all importation related inspection and quarantine requirements, including fumigation and other such treatments, and allow for these in their procurement planning and works pricing. Appropriate quarantine certificates are to be provided to the Engineer prior to importing of material and/or equipment.

9.2 Construction Phase

Biophiscal feature

Soil and water resources protection

The contract shall protect in all means the degradation of soil and water due to his activities. Soil erosion has to be avoided using best praticies and mitigation proposed under this ESMF, similarly for water resoruces protection. Contractor shall implement all mitigation measures to avoid water polution

Solid waste management

At all times, the Contractor is responsible for the safe and sound disposal of all solid waste generated by the Works. Solid waste includes:

- General waste (i.e. office type waste, household waste (from any workers camps), lightweight packaging materials).
- Recyclable waste (i.e. certain plastics, metals, rubber etc. that can be recycled).
- Organic biodegradable waste (i.e. waste that will decay / break down in a reasonable amount of time, such as green waste, food waste).
- Inorganic non-recyclable waste (i.e. waste that cannot decompose / break down and which cannot be recycled).
- Hazardous waste (i.e. asbestos, waste oil etc.)

The Contractor shall provide bins container in the camp to deposit the garbage in to be emptied and sealed periodically. In case of evacuation of the site by trucks, bins should be sealed to prevent the waste spillage. For hygiene reasons, and in order to not attract vectors daily collection is recommended, especially during hot periods.

The Contractor shall dispose of or recycle the waste in an environmentally sound manner. For this purpose the Contractor should store waste in labeled containers. The Contractor shall deliver the waste, if possible, to existing disposal sites. The despose location should be approved by the Engineer based on :

- General waste (including only small quantities of lightweight packaging waste) can be disposed of at approved and permitted landfills.
- Organic biodegradable waste may be deposited in designated dumping areas in reasonable quantities.
- Recyclable waste may be supplied to a local receiver

All other waste is to be disposed of offshore in permitted or licensed facilities. It is the Contractor's responsibility to obtain all necessary permissions for transport and safe disposal of hazardous waste from the project site in a legally designated hazardous waste management site.

Surplus Material Disposal: Surplus material (millings, excavation materials, concrete rubble, and other clean fill materials) will be generated. Disposal of surplus materials is at the Contractor's expense.

The CESMP Waste Management Plan shall describe solid waste streams generated by the works and detail the approved disposal methods along with permissions.

Burning of any materials is not permitted.

With the approval of the Engineer clean fill material (e.g. millings and crushed asphalt, basecourse material, concrete rubble) may be used to backfill areas where old equipment or infrastructure has been removed or as a resource for general use by the client and/or the community.

All spoil materials removed by clearing and grubbing, surplus material from excavations, non-clean fill material etc. shall be removed from the work site and transported to the Employer's nominated disposal site(s) in compliance with any local requirements before the start of the defects liability period.

Unless otherwise instructed by the Engineer, other surplus materials not needed during the defects liability period shall be removed from the site and if appropriate the country and in compliance with the ESMP.

Liquid Waste Management

There are a number of activities during construction and operation phases of the project which will generate wastewater. During construction wastewater will be generated by the sanitation facilities provided for workers contractor is responsible for the collection and treatment of the generated wastewater from sanitation facilities.

Wastewater from wash down areas is to be collected either in a settlement pond or tank to allow sediment and particulate matter to drop out (or processed through a filtration system) before the water can be reused as wash water, dust suppression or in other processes.

A separate wash down area is required for machinery or material with oil or fuel residue. Wash water from concrete production, cutting, washing of equipment used and areas where concrete is produced must be collected and treated to lower the pH (closer to neutral) and to allow settlement of suspended solids. All wash down areas and wastewater treatment areas should be located within the construction areas and away from the water courses (at least 500 m).

The Contractor shall take precaution measures prevent wastewater and hazardous substances or materials entering the environment prevent (fuel and oil spills, wastewater discharge, and all kinds of pollutants).However should an incident occur, the Contractor must have a spill response plan in place. The response plan should include details on the use of spill kits and absorbent items to prevent spills entering the receiving sensitive environment (ground, surface water).

The contractor shall hire a specialized service provider or company, at approval of the engineer, to collect hazardous wate. Or the contractor shall agree with the supliers of oil, filter and batery to collect the waste.

Protection against noise pollution

The Contractor shall limit construction noise in order not to disturb residents, either by excessively long duration, or by their extension outside of normal working hours. Thresholds are not to exceed 55 decibels (dB) during the day and 45 decibels at night.

Protection of wetlands, fauna and flora

It is forbidden for the Contractor to establish temporary installations (storage areas and parking, or paths to circumvent works, etc.) in wetlands, including the filling of existing temporary pools. In the case of vegetated areas, the Contractor must adapt to the local vegetation and be careful not to introduce new species without consulting the forestry services. For all deforested areas lying outside the ROW and required by the Contractor for the purposes of its works, the top soil must be kept separate and restored afterwards.

In addition to complying with all the measures set forth in this ESMF in the case of deforestation, felled trees must be cut and stored in locations approved by the Project Manager. Local residents should be aware of the possibility that they can make use of this timber at their convenience. Felled trees should not be left on site or burned or fled under the earth materials. Felled trees should be compensated in kind or in monetary value. No road crossing protected area will be funded under this project.

Socio economic features

Health, Safety and trafic control

The contractor shall comply with the Occupational Health and Safety (OHS) requirements embodied in the ESMP and the World Bank's EHS Guidelines.

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.

For the purposes of the this project , in addition to the national OHS standards the employer is adopting a code of practice for occupational health and safety based on good international industry practice.

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 across the project. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

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 collabouration with local health authorities, the Contractor shall ensure that first aid facilities and locations of appropriate sick bays are available at all times at the Site, including appropriate vehicles that are available to be used immediately to transport Contractor's and Employer'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 contract details of the site designated Safety Officer.

The Contractor shall inform and educate employees on safety and health at He must maintain the 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 footware 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 of the end of the calendar month the Contractor will be required to report to the Engineer on their performance.

Regardiing road safety , the Contractor, during the construction shall limit vehicle speeds 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 nuisances (noise, dust, risk of accidents and traffic congestion) and carry approval of the project manager.

Only strictly necessary materials will be tolerated on the site. Outside access, designated crossing places and work areas, it is prohibited to operate construction equipment.

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 installation of speed humps or water spraying in settlements will be recommended in order to reduce the risk of accidents and reduce the nuisance of dust.

Vehicles of the Contractor shall, at all times, comply with the requirements of the Highway Code in force, particularly with regard to the weight of the laden vehicle.

The Contractor shall, during the dry season and depending on water availability, regularly spray water on dusty roads/tracks used by its transport equipment to avoid dust, especially in populated areas.

Protection of crossing areas and agricultural and forest activities

The work schedule should be established in such a way as to minimize disruption of agricultural including forest activities. The main periods of activity (ploughing, sowing, harvesting, drying, etc.) must be known in particular to adapt the construction schedule to these agricultural and forest activities. The Contractor shall identify where crossings for animals, livestock and people are needed. Again, the involvement of the population is paramount.

Protection of sacred sites and archaeological sites

The Contractor shall take all necessary measures to respect the cultural and cultural sites (cemeteries, sacred sites and tree species/forests, etc.) existing in the vicinity of the works and not interfere them with. For this purpose he must first identify their type and location before starting the works.

If, during construction, remains of places of interest for worship, historic or archaeological value are discovered, the Contractor shall follow the following procedure: (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 on, and (iii) to refrain from removing and moving objects and relics. The work must be suspended within the scope of protection until ARPAC for historic and archaeological sites has given permission to continue.

Prevention against STI/HIV/AIDS and related diseases

During the work mobilization stage , the Contractor shall conduct an HIV-AIDS IEC campaign through a service provider approved by the Engineer, and shall undertake such other measures as are specified in this Contract to reduce the risk of the transfer of the HIV virus between and 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 found to have HIV-AIDS as part of the campaign.

The Engineer shall provide to the Contractor a list of approved service providers which shall include recognized NGOs and/or recognized local health departments. From the provided list, the Contractor shall enter into agreement with one service provider to undertake the HIV-AIDS IEC campaign. The cost of the campaign shall be funded by the Contractor from the provisional sum provided in the bill-of quantity.

The approved service provider shall prepare an action plan for the IEC campaign based on the 'Road to Good Health Toolkit' which shall be submitted to the Engineer for approval.

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 engineer employees, and all truck drivers and crew making deliveries to Site for construction activities as well as immediate local communities);
(iii) whether condoms shall be provided; and (iv) whether STI including HIV/AIDS screening, diagnosis, counseling and referral to a dedicated national STI and HIV/AIDS program, (unless otherwise agreed) of all Site staff and labour shall be provided.

The IEC 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 behavior with respect to, of STI 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 STI/HIV/AIDS. He must make sufficient and good quality condoms available to staff free of charge to be used against STIs and HIV/AIDS infections. Local communities should also be informed about the risks of STIs and HIV/Aids. The contractor shall make staff available for a total of at least 0.5 days per month for formal trainings including HIV/AIDS.

.**Gender Biased Violence and Child Abuse**

The purpose of the clauses is to and/or mitigate *risks of Gender Based Violence (GBV) and Violence Against Children (VAC)* on the sub project site.

Mutual respect and fair treatment between those working on the project and local communities is critical to a safe, respectful, and productive workplace and operating environment. GBV and VAC can be one of the most serious violations of respect and fair treatment which can harm the local community, and significantly damage trust and cooperation between parties.

The Engineer shall provide to the Contractor a list of approved service providers which shall include recognized NGOs and others for conducting training on GBV and CAE.

From the provided list, the Contractor shall enter into agreement with one service provider to undertake the GBV and CAE IEC campaign. Ensuring that all project staff understand the values of the project, understand expectations for all employees, and acknowledge the consequences for violations of these values, will help to create a smoother, more respectful and productive project implementation thereby helping ensure that the project's objectives will be achieved. Promote/ adopt a Code of Conduct for the workers that protects children; and put in place GBV and CAE protection mechanisms to prevent and deal with situations of abuse and of labour and sexual exploitation and to follow any disclaims on breaches of the Code of Conduct.

The contractor shall make staff available for a total of at least 3 hours per month for formal trainings including GBV and CAE.

Site journal

The Contractor shall maintain a log yard, which will record complaints, violations, accidents or incidents that have a significant impact on the environment or impacts on the local communities. The site log is unique to the site and notes must be written in ink. The Contractor shall inform the general public and local residents in particular, about the existence of this journal, with an indication of where it can be accessed.

Liaison with Communities and Local Authorities

The relationship between the project staff and the local communities, government officials and traditional leaders is an important aspect that will either contribute to or detract from the overall success of the project.

In all dealings with the community and workforce employed from within the community, the Contractor shall take due cognisance of the character, culture and circumstances of the community and shall at all times endeavour to avoid the development of disputes and to foster a spirit of co-operation and harmony towards the project.

The contractor, engineer and ANE shall establish a Project Liasion Committee (PLC). The PLC)is the primary mechanism for establishing and maintaining communication with the local authorities and the community. This committee has a key role in monitoring the overall impact of the project on the community including protection to vulnerable groups. GRM for the ESMF implementation wil also be adequadly addessed by the PLC. When PLC is inable to give satisfactory response, then the grinvance will be submitted to ANE HdQ for a proper resultuion.

The Contractor shall attend all meetings of the Project Liaison Committee as may be reasonably re-quired by the Engineer and shall provide adequate information to the committee related with the implementation of the ESMF in order for it to fulfil its responsibilities. The meetings will be held in Portuguese, with translation into local language as apropriate .

The PLC will integrate at least the following members, although it has to be adjusted to the local situation:

- ANE representatives (ANE Delegate and/or HdQ))
- Engineer representative
- Contractor representative
- A representatives from the Workers' Union (sindicate)
- A representative of the Child Protection/ HIV&AIDS Service provider (at least during the discussion of the social component)
- Representatives of local district authorities at site area for Heath, education, agriculture and police
- A representative local authorities
- Other relevant participants

Equipment projects maintenance

The Contractor shall comply with the maintenance standards for construction equipment and vehicles and conduct refueling and lubricant in a place designated for this purpose. Refueling should take place on a concrete slab. Fuel tanks should be placed within a concrete bund of 110% volume the volume of the fuel tank or tanks. Oil/water separators should be installed where there is a risk of pollution with hydrocarbons, e.g., at vehicle maintenance sites. On the site, provision of absorbent materials and insulators (pillows, sheets, tubes and peat fiber, etc.) as well as sealed containers clearly identified for receiving petroleum residues and waste, must be present. The Contractor shall perform, under constant surveillance, handling of fuel, oil or other contaminants, including the transfer to avoid

spillage. The Contractor shall collect, process and recycle all waste oil, and waste in operations and maintenance or repair of machinery. It is forbidden to discharge any hydrocarbons or other dangerous chemicals into the environment or on the construction site.

The Contractor shall drain the waste oils in sealed drums and retain oils to return it to the supplier (recycling). Used spare parts must be sent to the landfill or disposed off in another environmentally acceptable manner.

Washing areas and areas for maintenance of equipment and vehicles must be from concrete and equipped with a collection system for oils and fats, with a slope oriented to prevent the flow of pollutants to areas with bare soil. Concrete mixers and equipment for the transportation and installation of the concrete should be washed in the areas provided for this purpose.

Dust control

The Contractor shall select the location of crushers and similar equipment based on noise and dust they produce. Glasses and dust masks are mandatory for all workers that are working in dust and noise areas;For the dust control, in major setlements, hospitals and schools or other people concentration (markets), contractor shall apply water on the working places with high level of dust;

Equipments and vehicules transporting material should be covered and work with material during winding days must be limited.

Construction Plant and Work Camp Rules

Location standards

The Contractor shall construct temporary construction facilities in order to cause the least disturbance possible to the environment, preferably in areas already cleared or disturbed when such sites exist, or on sites that will be reused at a later stage for other purposes. The Contractor shall strictly prohibit the establishment of a base camp within a protected area.

Display rules and staff awareness

The Contractor shall display a clearly visible internal regulation in the various camp facilities specifically prescribing: respect for local customs, protection against STI/HIV/AIDS, hygiene rules and safety and environmental measures. The Contractor shall educate its staff in regard to respect for customs and traditions of the people of the area where the works are being performed and the risks of STIs and HIV/AIDS.

Use of local labour and working hours

The Contractor shall engage (besides his technical staff) as much labour as possible from the area where the works are being performed and 100% of unskilled labour as to be local. The contractor shall give the same opportunities to both women and man. Based on ANE regulation at least 25% of the work force must be women. Use of child work force is proibited under the Mozambican regulation.

Employment of children that is economically exploitative, or is likely to be hazardous to or interfere with, the child's education, or to be harmful to the child's health, or his/her physical, mental, spiritual, moral or social development should not be alowed. The Contractor shall ensure that work schedules comply with the laws and regulations in force. The Contractor shall avoid performing work during the rest hours, Sundays and holidays.

Protection of site personnel

The Contractor shall make available to site personnel prescribed working clothes and in good condition and all accessories and safety protection to their activities (helmets, boots, belts, masks, gloves, etc.). The Contractor shall

ensure scrupulous use of protection equipment on site. Permanent monitoring should be carried out for this purpose and, in case of violation, enforcement actions (warning, layoff, dismissal) must be applied to personnel.

Person(s) Responsible for Health, Safety and Environment

The Contractor shall appoint Health/Safety/Environment Officer(s), who will ensure that the hygiene, safety and environmental protection rules are strictly followed by all and at all levels of performance, both for workers and the population as well as others in contact with the site. He will locate health centers closest to the site to allow its staff to have access to first aid in case of accident. The Contractor shall prohibit access to the site by the public, protect it with tags and signs, indicate different access and take all order and security measures to avoid accidents.

Appointment of staff on duty

The Contractor shall provide care, supervision and safety maintenance of the site including out of hours on-site presence. Throughout the construction period, the Contractor shall have personnel on call outside working hours, every day without exception (Saturday, Sunday and holidays), day and night, to take action with regard to any incident and/or accident that may occur in connection with the works.

Measures against traffic barriers

The Contractor shall avoid blocking public access. He must constantly maintain and guarantee the movement and access of residents during construction. The Contractor shall ensure that no excavation or trench is left open at night without proper signage. The Contractor shall ensure that temporary deviations allow for passage without danger.

Decommissioning of construction sites

General Rules

Upon releasing a site, the Contractor leaves the premises to their own immediate use. He cannot be released from his obligations and responsibilities without ensuring that the site is in good condition. The Contractor shall carry out all the necessary works for rehabilitation of the site and restore it to its initial or almost initial state. All equipment, materials, polluted soil, etc. will be removed and cannot be abandoned on site or surrounding area.

Once the work is completed, the Contractor shall: (i) remove temporary buildings, equipment, solid and liquid waste, leftover materials, fences, etc. (ii) rectify faults in drainage and treat all excavated areas; (iii) reforest areas initially deforested with appropriate species in relation to local forest services; (iv) protect the remaining dangerous works (well, open ditches, slopes, projections, rehabilitate borrow pits and quarries, etc.); (vi) install functional pavements, sidewalks, gutters, ramps and other structures essential for public service. After the removal of all equipment, a report on the rehabilitation of the site must be prepared and attached to the minutes of the reception of the works.

Protection of unstable areas

During the execution of works in unstable environments, the Contractor shall take the following precautions not to accentuate the instability of the soil: (i) avoid heavy traffic and overload in the zone of instability; (ii) retain as much as possible the vegetation or restore it using native species where there are erosion risks.

Control the execution of environmental and social clauses

The engineer, whose team should include an environmental expert who is part of the mission control team, shall verify compliance and the effectiveness of the implementation of the environmental and social clauses by the Contractor.

Notification and Sanction

The engineer shall notify the Contractor of any event of default or non-performance of environmental and social measures. The Contractor shall rectify any breach of the regulations duly notified to him by the engineer. Costs of restarts or additional works arising from non-compliance shall be borne by the Contractor.

Pursuant to contractual non-compliance with environmental and social clauses, duly noted by the Project Manager, may be grounds for termination of the contract. The Contractor whose contract has been terminated due to nonimplementation of environmental and social clauses may be subject to sanctions up to suspension of the right to bid for a period determined by the Client, with a reduction on the price and blocking the pay back of the guarantee.

Reception of the works

Failure to follow these terms exposes the Contractor to provisional or final refusal of acceptance of the works, by the reception Commission. The implementation of each environmental and social measure may be subject to partial acceptance involving relevant departments.

Obligations under the guarantee

The obligations of the Contractor run until the final reception of the works that will happen only after the complete execution of the works to improve the environment as stated in the contract.

10. Implementation agency

Current institutional analysis

MITADER (Ministry of Land, Environment, and Rural Development) is the institution responsible to issue the environmental licence. To initiate the environmental process a form must be filled and submtteed to the Land, Environment and Rural Development Provincial Directorate (DPTADER) for the screening process. For the category A+ and A projects under MITADER regulations, the screening and review process is done in Maputo.

The National Road Authority (ANE) is responsible for classified road construction, rehabilitation and maintanance in the country. Before the project starts ANE submits to MITADER the intial form for the screening process.

The responsible within ANE is for the Department of Monitoring which now includs Crosscutting issues, previously called GAT – stands for Gabinete de Assuntos Transversais (Cross Cutting Issues Office), GAJUTRA- Gabinete de Assuntos Jurídicos e Transversais (Legal and Cross Cutting Issues Office) and UASMA – Unidade de Assuntos Sociais e Ambientais (Social Issues and Environmental Unity). It is a support department to ensure the environmental and social issues are taken into account whene implmenting the road project. The department is within the Project Directorate. The department is composed by 6 personal with expertises in social, environmental, geology and civil engineers expertise, with the main responsibility is to monitor the projects in all stages, manage the environmental, gender, poverty reduction, HIV & AIDS awareness and mitigation and other issues such as resettlement, climate resilience and Occupational Health and Safety related to public road projects or all roads construction, rehabilitation and maintenance works. The department follow a coordinated approach and cohearsive work program in order to more effectively and efficiently integrates environmental and social issues and monitor techcnicaly aspects into the road project cycle.

ANE is structure based on the following picture.

Environmental and social issues is one of the responsibility of the Project Directorate. Within the directorate Environmental and social responsabilities are carried out by the monitoring Department. However, the roles of the monitoring department does not include clearly environment and social issues, internal arragement was made . The following picture shows the links and Coordination role that monitoring Department plays.

There is a coordiation with MITADER and DPTADER, during the project cycle in other to consider environmental issues. In all ANE delegations there is a focal point who deal with crosscutting issues in the provincial leval. The role of the position is to guarantee the integration of the crosscuting issues in the projects at provincial level, coordinate with DPTADER for getting environmental licence and monitor regularly the implementation of ESMP in all projects.

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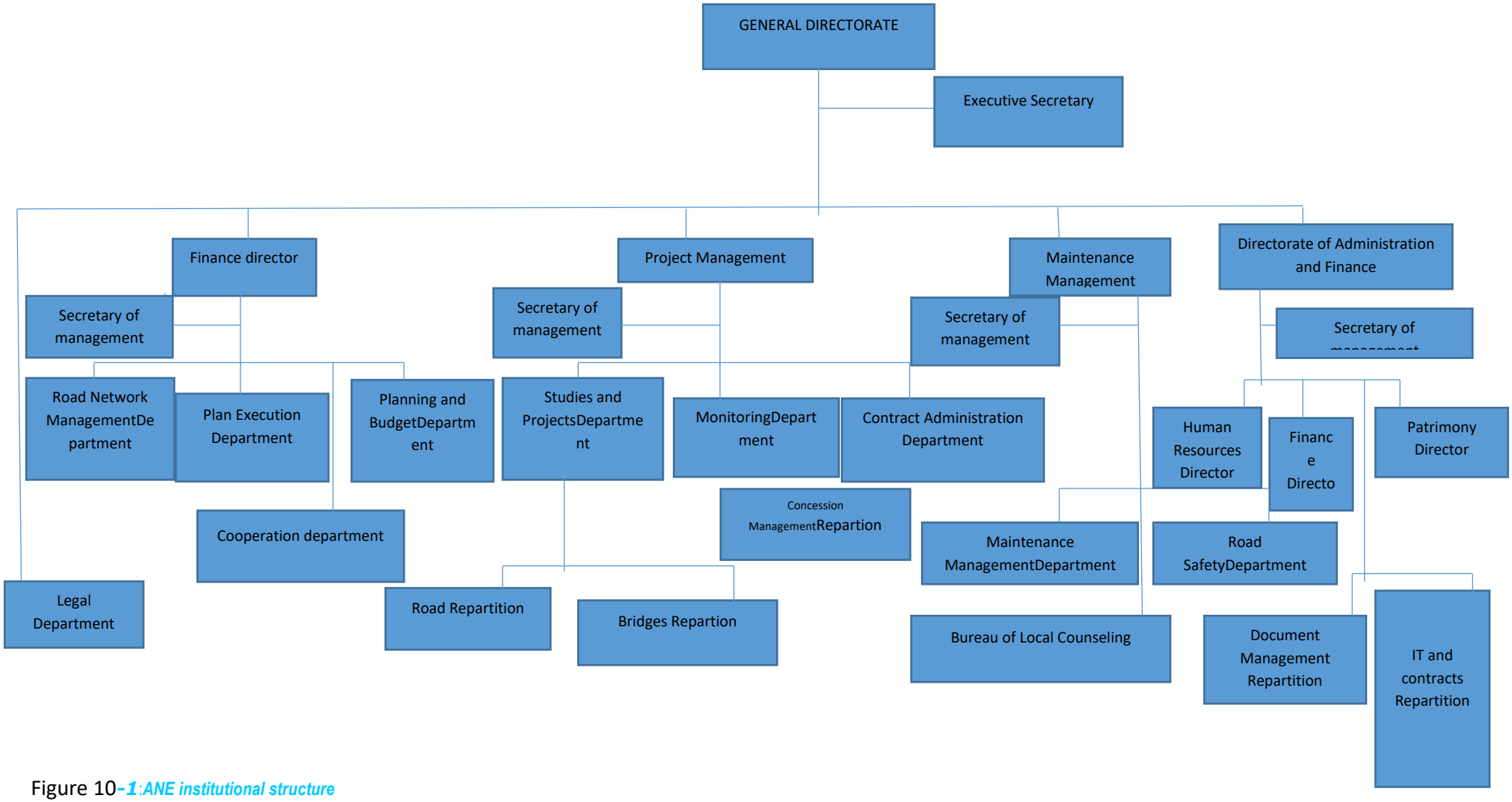

Figure 10-*1:ANE institutional structure*

Monitoring's Department de organizational relatioship with othe entities with respect to ongoing road development projects

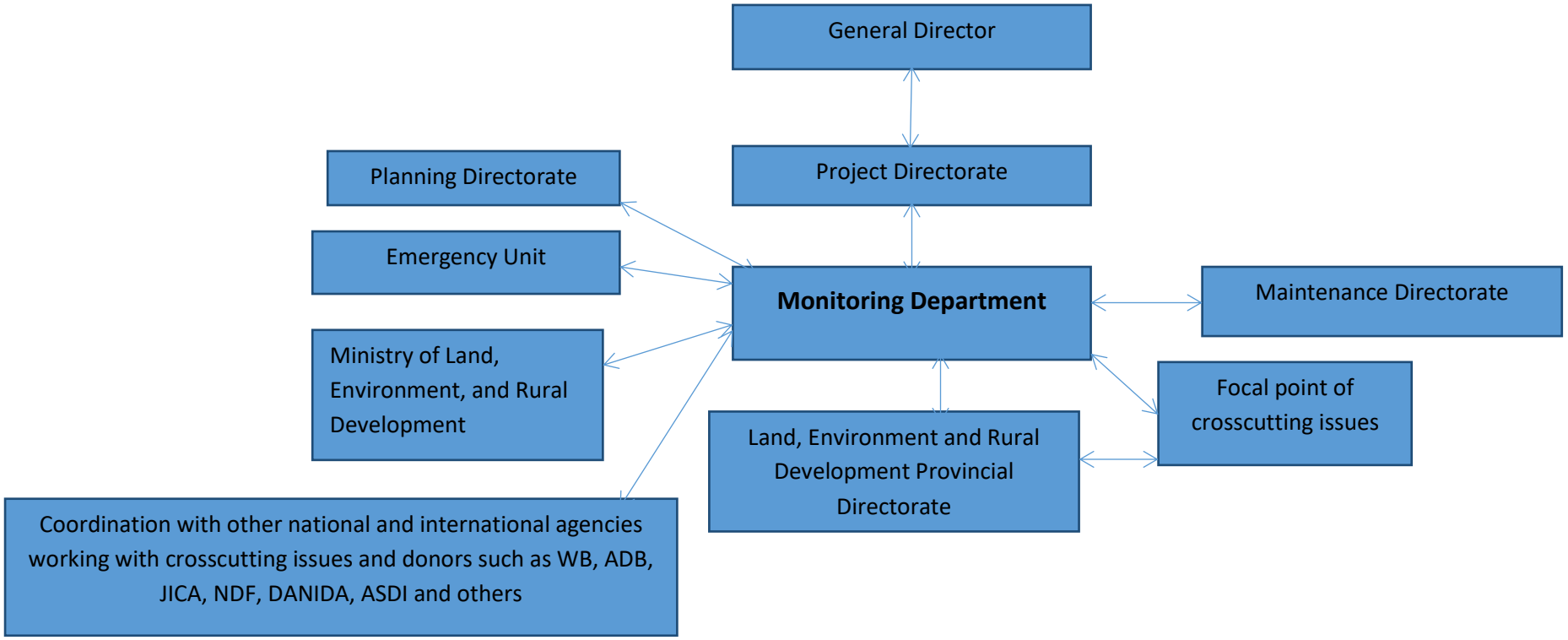

Figure 10-2: Environmental structure at ANE

At provincial level ANE's has the called Road Authority Delegation. Delegation responsabilities and roles are: planning, implementing provincial maintenance programs, rehabilitation, construction of roads at the local level taking into account the recommendations of the provincial road commission and the availability of financial and material resources. The delegation is organized as follow:

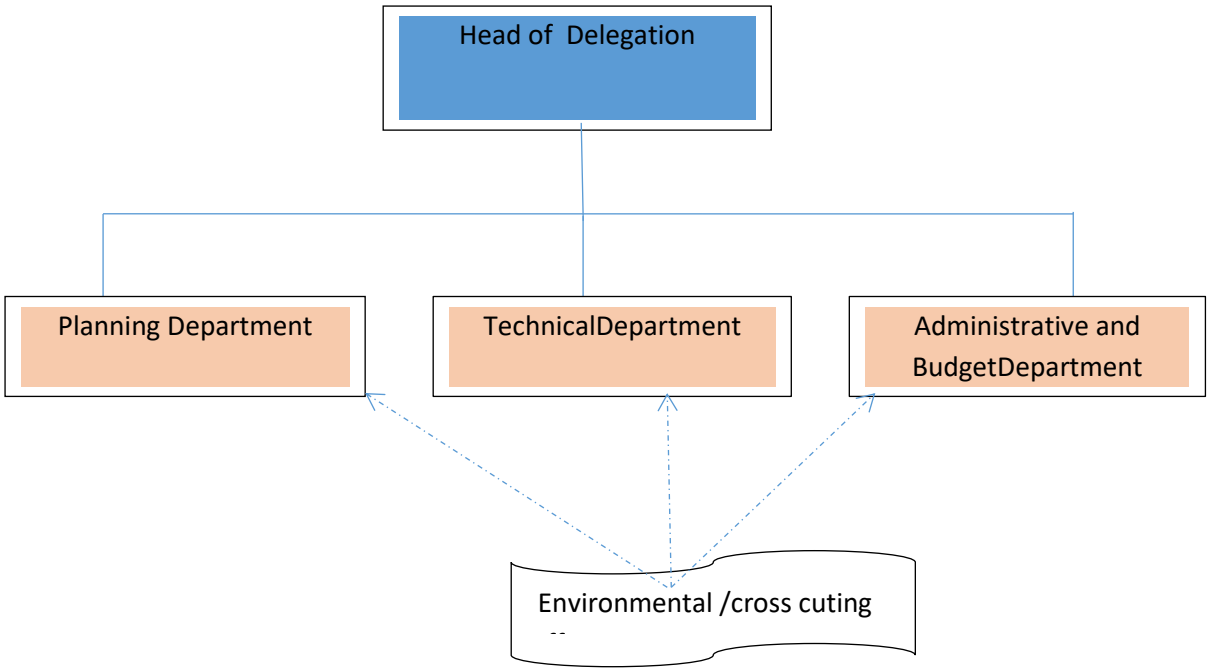

Figure 10-3: ANE Delegation Structure

At ANE delegation responsibility of environmmental an social monitoring is well defined as one of their mandate. However, all delegation has indicate a focal point for environment, who can be one of the existing officers in any of the departments of the delegation. It means that the environmental focal point does not only oversee environmental and social issues in the provincial road projects, but does also other work. During the consultation done, the delegation officers state that the mandate of the environmental and social matters is a responsibility of the ANE HdQ. Most of the environmental focal points at provincial level are not environmental expert, but went through a short term courses In Nampula and Zambezia the environmental focal point is under the technical department, there is no clear responsibility of the focal point and there is no any effective coordination mechanisms with the environmental authority in the provincial level, unless the road construction has a severe impacts on people's assets.

Both at National and provincial level there is not a specific budget for the environmental activities, unless in the specific donor funded projects that include budget for the environmental component.

Institutional arrangement for the project implementation

To implement this ESMF the existing institutional arrangement at national and provincial level need to be strenghened. A team/unity for the environmental should be established in Nampula and Zambezia, with a specific responsabilities and roles in the implementation of the ESMF and specifics EA and ESMP for specific sub-projects as well as the interaction with DPTADER and the districts authorities and communities, annex to this document the unity/team TOR's.

ESMF implementation institutions

The implementation of the ESMF is the responsibility of ANE. ANE HdQ and Delegation are the client of the project and the have a responsibility to guarrantee the implementation of this ESMF, facilitate the process of project screening with DPTADER

ANE may contract engineer to monitor the construction project in all aspects and contractor to construct and implement the ESMP at sub-project level.

Engineer has to be familiar with the content of the ESMP prepared for each sub-project based on the guidelines given in this ESMF, monitor the Contractor's compliance with the environmental specifications on a daily basis through the site diary, review and approve method statements by the Contractor in connection with ESMP, Oversee the general compliance of the Contractor with the ESMP and other pertinent site specifications, liaise between and with the contractor and the ANE Environmental and Social Team on environmental and social matters, as well as any pertinent engineering matters where these may have environmental consequences. And the **Contractor** have the roles to implement, manage and maintain the ESMP for the duration of the contract, designated, appoint and/or assign tasks to personnel who will be responsible for managing all or parts of the ESMP, assign appropriate authority, accountability and responsibility for these personnel to carry out their duties, provide appropriate resources, budgets, equipment, personnel and training – for for the effective control and management of the environmental risks associated with the construction.

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World Bank (2017) Safeguard Policies. Safeguards Website www.worldbank.org/safeguards. Consulted on the 15 of January

ANNEX 1: Environmental Screening Form for Checklist of Likely Environmental and Social Impacts of Sub-projects

Project title……..

Project number…….

Project type……..

Name of district for infrastructure rehabilitation/construction……

Name of Executing Agent……

Date: ……

Name of the Approving Authority ……

PART A: BRIEF DESCRIPTION OF THE PROPOSED ACTIVITIES

Please provide brief information on troad rehabilitation project road (extension, wide).

_____
_____
_____
_____
_____

Please provide information regarding actions needed during the construction of facilities including support/ancillary structures and activities required to build them, e.g. need for borrow pits, , access roads, campsites etc.

_____
_____
_____
_____

Please describe how the construction/rehabilitation activities will be carried out, including complementary activities and infrastructures and resources required e.g., roads, and traffic routes, disposal sites (waste and removed materials), water supply, energy requirement, storage areas, human resources, worker camps, security arrangements, etc.

_____
_____
_____
_____

PART B: BRIEF DESCRIPTION OF THE ENVIRONMENTAL SITUATION AND IDENTIFICATION OF ENVIRONMENTAL AND SOCIAL IMPACTS

Name, job title, and contact details of the person responsible for filling the Form:

Name: ----------

Job title: ----------

Telephone numbers: ----------

Fax Number: ----------

E-mail address: ----------

Date: ----------

Signature: ----------

Please describe the proposed infrastructures location, sitting, coordinates; surroundings (include a map of the sub-region as well as a detailed area map of the project and its ancillary facilities, and their immediate surroundings)

_____
_____
_____
_____

Describe the land formation, topography, vegetation in/adjacent to the activity areas (project and ancillary facilities/activities)

_____
_____
_____

Estimate and indicate where vegetation might need to be cleared, erosion and drainage issues might occur.

_____
_____
_____
_____

	Environmental and social aspect	Yes	No	Don't Know
	Is the site zoned for the proposed land-use?			
	Are there any environmentally sensitive areas or threatened species (specify below) that could be adversely affected by the project?			
	Are there any intact natural forests near or adjacent to the project?			
	Is there any surface water courses, natural springs?			
	Is the water table close to the surface? i.e. 0,5 m or less?			
	Are there any wetlands (lakes, rivers, swamp, seasonally inundated areas) in the proximity of the site?			
	Is the project located near the coast? If so near any marine reserve area?			
	Is there any area of high biodiversity or high conservation value?			
	Are there habitats of endangered/threatened or rare species for which protection is required under the Mozambican national law/local law and/or international agreements (such as IUCN listed or identified as HVCA or IBA?)			
	Is there a possibility that, due to construction/rehabilitation works and subsequent operation of the infrastructure, coastal, the river and lake ecology will be negatively affected with regards to its water quality and quantity?			
	Is the site (or its complementary facilities) located within/adjacent to any protected areas designated by the government or international agreement (national park, national reserve, world heritage site etc.)?			
	Is the project likely to alter any historical, archaeological, cultural heritage traditional (sacred, ritual area) site or require excavation or other significant disruption near same?			
	Will the project involve any land acquisition?			
	Will any such land acquisition be effected through voluntary donations?			
	Will the activities be located in any vacant public land?			
	Under any of the types of land acquisition above are there any current uses or activities on the land proposed to be acquired? Any formal or informal occupation?			
	Is the project located in any or near polluted area (near a waste dump or any industrial facility)?			
	Is the project located in an area of steep slope and or susceptible to landslides or erosion of soils?			
	Is the project located in or near to agricultural land? Including seasonal, recession, or sporadic agriculture?			
	Is the project located in the proximities of tourism activities?			
	Is the project site susceptible to natural disasters (flooding, fire, cyclones and earth quake)?			
	Is the project located in area of population concentration points (schools, markets, health facilities, churches, office buildings, water sources and commercial areas, transportation hubs)?			
	Will the construction/rehabilitation activities including support facilities result in the permanent or temporary loss of crops, fruit trees and household or livelihood related infra-structure (such as granaries, outside toilets and kitchens, livestock grazing and watering areas, irrigation canals, wells and water sources?			
	Will the construction/rehabilitation activities including support facilities interfere with employment, livelihood activities, markets or formal or informal commercial activities including street vendors and similar?			
	Will the construction/rehabilitation works interfere with or block access, routes etc. (for people, livestock and wildlife) or traffic routing and flows?			
	Will the construction or operating noise or vibration level exceed the allowable/safe noise/vibration limits?			

	Will the construction/rehabilitation works require large number of staff and labourers as compared to the size of the communities?large construction camp? Overnight worker accommodations for extended periods?			
	Will the activities result in emission of significant amounts of dust, hazardous fumes?			
	Will the activities decrease traffic or personal safety in their immediacy or beyond? during construction and/or operation			
	Will the construction/rehabilitation works generate solid or liquid wastes? (including human excreta/sewage, asbestos,)			
	If "Yes", does the architectural plan include provisions for their adequate collection and disposal, particularly asbestos?			
	Are the construction/rehabilitation activities prone to hazards, risks and could they result in accidents and injuries to workers or nearby communities during construction or operation?			
	Will the operation involve use of considerable amounts of natural resources (construction materials, water, land, energy from biomass etc.) or may lead to their depletion or degradation at points of source or discharge?			
	Has public consultation and participation been sought?			
	Will the project interfere with community (households) access to water, firewood, medicinal and food plants, hunting or fishing resources, and other natural resources in general that support food security or livelihood activities?			
	Will the community participate in work opportunities or receive any benefits form the project?			
	Is the community highly vulnerable?			
	Is the community conflictive?			
	Is the community known to be opposed to the project or similar activities.			

PART D: MITIGATION MEASURES

For all "Yes" responses, please briefly describe the nature and scope of the impacts and the measures proposed to be taken to address them. Subsequent to completion of the present Environmental and Social Screening Form, the analysis by the DPTADER will follow in order to classify the activity into one of the categories A+, A, B or C according to local law.

The PIU (along with DPTADER as applicable) will validate the category under the ESMP and ensure that the appropriate ESHS studies are carried out and an ESMP, and where applicable a RAP are prepared.

PART E: SCREENING RESULTS

The project is only involved in rehabilitating existing roads; therefore, it has been considered as a Category B project by the World Bank screening process meaning that project activities will impose environmental and socio economic impacts that are easly mitigated. Sub-projects that would be Category A by World Bank screning process will not be financed. However, some sub-projects may be categoriezed as category A according to the Mozambiquan system (MITADER) due to length, proximaty to wetlands or forests, or associated social impacts and still fall into World Bank Category B - if this happens, the proposed roads will be carefully reviewed by the World Bank to ensure they are Category B by in accordance with World Bank policies.

Examples of sub-projects that would not be financed under IFRDP include those that would pass through or are adjacent to or would cause increased degredation to protected areas, critical natural habitats, critical natural forests, etc.

Elegibly for funding _____ Yes _____No

If No, state reason and recommend needed for revision of design_____

Requirements (check)

_____ESMP ____ESIA/ESMP ____RAP _____Abbreviated RAP

Annex 2: Template for the Scope report and TOR

1. Non-technical summary
2. Identification and address of the proponent as well as the interdisciplinary team responsible for the EIA
3. Limits and patterns of land use in the areas of direct and indirect influence of the activity
4. a description of the activity and the different actions envisaged therein, as well as the alternatives in the stages of planning, construction, exploration and when it is the case of temporary activity its deactivation;
5. Biophysical and socioeconomic description of the site, including preliminary identification of ecosystem services and vulnerability to climate change;
6. Identification and evaluation of the fatal issues of the activity if they exist,
7. Identification of potential impacts of relevant nature on the activity, including those related to climate change, if applicable,
8. Identification and description of the aspects to be investigated in detail during the ESIA,
9. Public participation report in accordance with article 15, paragraph 9.

Template for the ToRs:

1. Description of the specialized studies identified as necessary during the Scope and to be carried out during the EIA for MITADER Category A and A + activities.
2. Methodology for assessing the ecosystem services;
3. Description of viable alternatives identified and to be investigated in the ESIA;
4. Methodology for identifying and assessing environmental impacts, in particular impacts on climate change and vulnerability to climate change and biodiversity, including residual and social impacts in the construction, operation and decommissioning phases;
5. Additional information necessary.

Annex 3: Template for the ESIA in accordance with the Decree 45/2015 of 31 (minimal content)

Non-technical summary

1) Identification and address of the proponent
2) Identification of the interdisciplinary team that prepared the EIA
3) Legal framework of the activity, including resettlement, counterbalance, territorial planning plans for direct and indirect influence areas,
4) Description of the activity,
5) Description and detailed comparison of the different alternatives,
6) Delimitation and geographical representation of the area,
7) Characterization of the environmental and social situation of reference,
8) Forecasting the future environmental situation, with or without mitigation measures,
9) Summary of the environmental and socio-economic impacts and viability of the proposed alternatives,
10) Identification and analysis of the impact of the project on the health, gender and vulnerable groups of affected communities and mitigation measures
11) Identification and evaluation of direct, indirect, residual, cumulative impacts and mitigation or compensation measures,
12) Presentation of the provisional or definitive DUAT of the project area,
13) The EMP of the activity,
14) Management Plan for biodiversity balance as an annex, if necessary,
15) Report of the Physical and Socioeconomic survey, as separate annex when necessary,
16) Public participation report in accordance with the stipulations of article 15, paragraph 9,
17) Proof for payment of income taxes of engineer not domiciled in Mozambique

Annex 4: Public Disclosure of Information

Most often a development project, including its socio-economic and environmental setting, fails due to lack of information or misinformation. For the success of a given program the management must share all information obtained about the proposed activities and their expected results with the affected and/or interested public. Disclosure for the World Bank's shareholders and constituents to ensure transparency of its operations. All the targetted safeguard policies have set a requirment for Disclosure and consultation. The Mozambican legislation also require that a plubic consultation be done and informed two weeks at least before hold the meeting and the documents be made available for the APs at national, provincial and local institutionwhere the project wil be implemented. The disclosure should be done on at national level on ANE an MITADER web sites and offices. At local level ANE delegation, DPTADER website and in the local communities/local councils where the project will be located 2 weeks before public consultation.

The EA documents for each sub-project should be translated into a language, understandable for potentially affected population. The recommendations given should reflected in the final version of the EA document. Minutes of the public briefing should be attached to the EA document. Information dissemination in a project begins with environment and social impact assessment activities during the initial phases of project preparation. Through respective local authorities and NGOs, APs should be regularly provided with information on the project and the resettlement process prior to and during the RAP preparation and implementation stage. Agencies working for nature conservation or other ecological aspects should also be informed at both local and national level about the ongoing and planed activities, to identify jointly appropriate protective or corrective measuresThe documents to be disclose are following: ESMF, Environmental Assessment/ Environmental Management Plan • Resettlement Action Plan, Policy Framework or Process Framework Pest Management Plan for the sub-project under the IFRDP.

Disclosure in support of meaningful public consultations

To reach the local communities and to ensure maximum employment among local population, as well as ensuring the inclusion of vulnerable groups and women in the income-generating process associated with the road construction works, each sub-project will establish mechanisms and structures to involve all project-affected people and stakeholders. At first stage before contractors will move into the area, need to conduct a local labour availability survey, producing a list of wo/men from the each village/road section willing to work in road construction. The survey shall also assess the level of skill available among the local communities. Skilled labour will be given priority in employment. If the labour required for the work will be insufficient in the local area, outside labourers will be allowed to meet the shortfall only. It is proposed from the past practices that at least 70 % of the labour should be reserved for the APs in particular and local population in general. Public meetings will be held that explain this strategy and demonstrate the job opportunities to the local population. This arrangement will promote local economy and help APs and local community to gain skill related to road construction and maintenance. This will also increase feeling of ownership over the road and will ensure maintenance assistance in the future. The Project Proponent will then engage qualified NGOs or CBOs who will be responsible, throughout the construction period, for community mobilization and facilitation of employment. The mobilization and facilitation activities will include a number of awareness and skill training programs that will put the potential work candidates in a better understanding of the works requires, and the risks and opportunities associated with such work. Specific awareness aspects will relate to environment protection, agriculture, health, STDs and social conflict avoidance. Specific attention will be paid to the following principles while generating income opportunities for local people:

a. **Empowerment**

Empowerment is the process of transforming existing power relations and of gaining greater control over the sources of power. Empowerment builds people's capacity to gain understanding and control over personal, social, economic and political forces to act individually as well as collectively to make informed choices about the way they want to be and do things in their best interest to improve their life situations. Empowerment can occur in economic, socio-cultural, political, legal, inter-personal and psychological dimensions. Empowerment of AP's and the vulnerable families will lead to increased self-confidence and broaden their social capabilities, including quality of life as education, skills, health, access to safe water and sanitation, information and communication.

b. **Avoidance of Gender Discrimination**

There are ample opportunities and practical means to address gender issues during the public consultation process for the planned sub-projects. Women will be fully informed of the process and procedures of resettlement, as well of the chances and rights they may want to enjoy from forthcoming job opportunities. Contractors need to be made liable to observe gender quota in awarding jobs to unskilled labour. Earning income will raise women's status in the home and in the community, and encouraging savings will enable women to retain control over a small proportion of their income and resources. Stereotyped roles, limited access to education and skills/vocational training, discriminatory wage rates, legal discrimination, and deprivation of the rights to property are some factors that negatively affect women's participation in the development activities.

The IFRDP shall therefore make efforts to gradually mainstream the gender equity issue at all stages of project cycle (need assessment, project planning/design, implementation, monitoring and evaluation). Women-headed households would be given special priority in resettlement packages. Appropriate capacity building programs would be introduced to increase participation and receive valued inputs from women themselves.

c. **Education on Worker's Rights and Grievance Resolving Processes**

The work candidates will also receive appropriate information on their rights with respect to health care, remuneration and payment conditions. A specific grievance and complain mechanism will be established to ensure the addressing of claims brought forward by the engaged workers. A locally contracted NGO will be responsible for monitoring local labour employment to ensure that female participation in construction work are maintained and that child labour is avoided. The consultation process shall provide full information and explanation that not only equal access to employment opportunities are maintained, but that equal wages will be paid for similar work for both men and women. Contractors shall also be obliged to make payment in frequent and agreed intervals, equally to both men and women employed. Payments schedules and amounts need to be continually monitored by NGOs to ensure that both men and women receive the payments they are entitled to, and at schedules specified in their contract.

Annex 5: Grievances Redress Mechanism details

Conflicts or grievances may arise when the construction process occur without a pre negotiation process or contractor does not respect the concerns of the PAP's.

Conflicts generally arise from poor communication, inadequate or lack of consultation, inadequate flow of accurate information, or restrictions that may be imposed on people through the implementation of Project activities. Grievances Redress Mechanism will be available for the sub-project affected persons to be able to address their issues and to solve prior to use formal legal grievance system. Through this mechanism, AP's will be able to react on any damages occurred during the construction works or ESMF implementation, including aspects related with GBV, CAe and misbehavior of contractor workers.

Communication strategy may prevent or reduce misunderstanding and grievances, therefore awareness-raising about Project activities will be one of strategy that ANE will adopt. Consultations and negotiations will be carried out with PAPs where there are indications of potential conflicts. Contractors and engineer have to be aware of managing conflicts and communities to 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 Project Authority in terms of grievances is PIU at provincial level. Project Communication Plans should prioritise awareness-raising about the structures that are available to redress more serious grievances that cannot be addressed satisfactorily locally.

At local level community leaders will be trained in communication and initial grievances reception. Grievances response at community level will also be linked to the community court system where these have been duly constituted, so that they can be used for resolving as many grievances as possible at local community level.

A Project Liasion Committte (PLC) will be established per district and members of localities or villages along the road will be representing the commmunities at PLC . The composition of the PLC is described at chapter 9 . It expected that the community members at local or village community level submit their grivances to be given a solution initiall for the local authorities.. They may also exact penalties such as compensation for damages caused by the offense and / or, public criticism, community service, small fines, refraining from carrying out the activity that caused the case. Unresolved cases may be turned over to the District Courts.

For all grievances related with non-fulfilment of community related contracts, levels of compensation, unauthorised taking of assets without compensation Project affected people must first try to resolve these conflicts through presentation to the local influence leaders or authorities, or to the EO of the contractor for attention and either immediate redress action of channelling to the appropriate higher authority. General principles and procedures must be established by the Projects and publicised including:

- ✓ Verbal communication should be in locally relevant languages but all records of communications must be in Portuguese.
- ✓ Grievance forms should be prepared by ANE HdQ and be available for the delegate at provincial level, PAPs may also lodge their own documented grievances as they wish;
- ✓ An initial response must be provided to the communities in a recommended period of 10 days. Detailed procedures to redress grievances and the appeal process should be disseminated among PAPs who should be empowered to use them. The participatory processes in this Process Framework should, among other aspects, focus on these procedures.
- ✓ 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 IFRDP especially for grievance presentation and to accompany the redress process. These men and women will provide a first level of listening and informal resolution.

The ANE delegate, through the PIU with the assistance of service provider, should create awareness that they may also be used for the communication of grievances for informal resolution. Efforts will be made to ensure that be include representatives of women and youth with whom leaders will consult to offer tangible solutions. Formal grievances redress and conflict resolution processes should follow the general steps outlined below:

Step One

If issues of concern with relationships with the contractors or sub contractors, neighbouring communities or external stakeholders they should be presented to PIU at local level to try and resolve immediately or as appropriate, to transmit directly to the site meeting for resolution.

The PIU should screen grievances presented to the contractor to initially decide if a grievance is to be accepted or not. If so, the PIU should pass them on to the appropriate level (ANE HdQ) for resolution.

Grievances may be resolved directly by the EO of the contractor, but where they require redress via other agencies they should be passed to the PIU at provincial level for recommending solutions accordingly.

Grievance redress may require shorter (max 3 days) or longer (10 days) periods depending on the subject of the complaint.

Step Two

If the aggrieved person is not satisfied with the Step One decision he/she shall forward the case to the PLC attention with a preliminary report prepared by the engineer. The report should contain the details of the grievance and hearing date

PLC may engage with relevant Government and local authorities to help resolve these problems in such a way that the interests of communities.

It may be necessary for operational reasons at sub-district level to have a multi-sector channel to fairly hear grievances, and respond to issues that may involve more than one sector. The period for informing the aggrieved person of the redress steps must be followed, and the periods expected for redress communicated to them.

Step Three

If the PAP is still dissatisfied with the decision taken after Step Two, he/she shall forward the case to ANE Delegate/ANE HdQ for attention of the PIU. The grievance shall be forwarded with all the documented details of the case to date. Communication with the PIU may also be carried out via community representation on

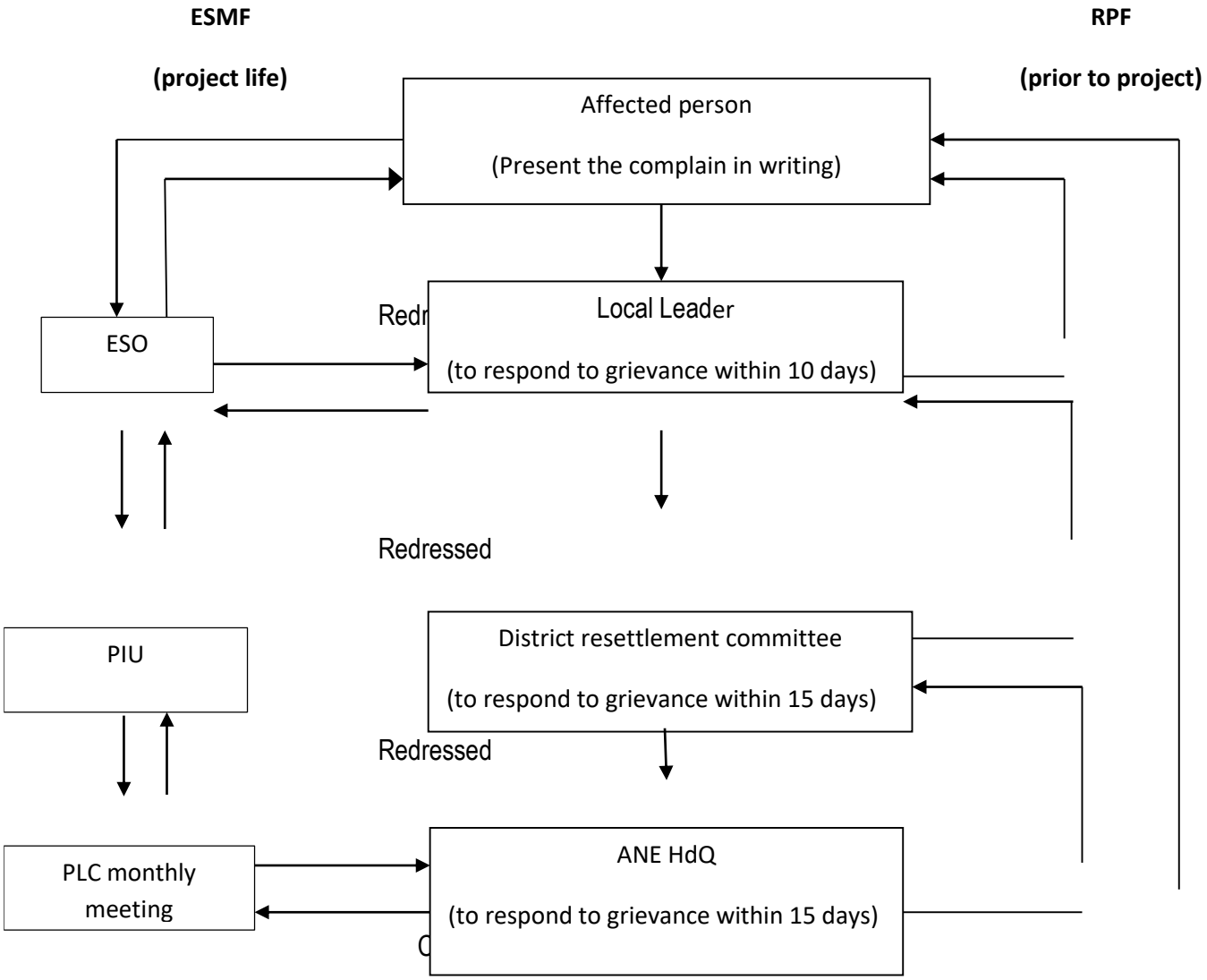
Step Four

If no amicable solution is reached up to Step Three, as an ultimate recourse the aggrieved person may submit the case to the Provincial / District court system to seek reparation. This final step is an option that must always be available, but it should be discouraged by all positive means possible. Timely communication and open negotiation are the main deterrents.

The institutional arrangement and the principles of community consultation and participation that are intrinsic to the Process Framework are designed to allow the process to detect and deal with problems in a timely and satisfactory manner for all parties concerned.

If affected communities' interests are superseded or rendered ineffective by any other government actions in agreements entered into by them provisions exist in most legislation to appeal with sectoral grievances to higher levels of government such as ANE HdQ and MOPHRH. Ultimately, though not usually practiced systematically by many people, all citizens have the right to address complaints to the Public Prosecutor, the institution responsible for ensuring the law is correctly applied, particularly in the elabouration of territorial management instruments and their implementation.

Grievance Register Forms to be provided by ANE delegation to the District Service for Infra Structure and Service Providers for making available at local level at publicised sites and via publicly recognised community representatives. Community representatives should be encouraged to explain this entitlement whenever needed and at no time should filing a grievance be discouraged by community representatives, local authorities or Project officers. Each grievance will be captured in the Grievance/Issues Register that must be maintained at ANE PIU and ANE delegate. Reports on grievances will be regularly presented at monthly PLC meeting. Grievance reports should track complaints, responses, redress action and close-out of all community grievances with dates and responsible parties clearly indicated. ANE HdQ and Delegation will periodically verify response management and redress through to close-out of each grievance. Each of the following steps should be limited to a maximum of 15 days from receiving a grievance to communicating a decision. Resolution should be sought at the lowest level possible in all cases. The GRM can be decribed by the folowing chart:


ESMF
(project life)
RPF
(prior to project)
Affected person
(Present the complain in writing)
Redr
Local Leader
(to respond to grievance within 10 days)
ESO
Redressed
PIU
District resettlement committee
(to respond to grievance within 15 days)
Redressed
PLC monthly meeting
ANE HdQ
(to respond to grievance within 15 days)

ANNEX 6: Sample Grievance Form

Name (Complaint): _____

PAPs ID Number: _____

Contact Information: _____ (Community; mobile phone)

Nature of Grievance or Complaint:
_____
_____
_____

Date Individuals Contacted Summary of Discussion

_____ _____ _____

Signature

PAPs:_____ Date: _____

RAP Consultant representative: _____ Date: _____

Local Authorities:_____ Date: _____

ANNEX 7: Sample Resolution Form

Name of Person :_____

Position: _____

Review/Resolution

Date of Meeting on Grievance: _____

People Present at Meeting (see attachment):

Was field verification of complaint conducted? Yes____No____

Findings of field investigation:

_____
_____
_____

Summary of Conclusions from the Meeting:

_____
_____
_____

Key Issues:

_____
_____

Was agreement reached on the issues? Yes_____ No_____

If agreement was reached, detail the agreement below:

If agreement was not reached, specify the points of disagreement below and Next Action Step Agreed:

_____
_____
_____

Signed (Conciliator): _____ Signed (person): _____

Signed (Independent Observer): _____

Date: _____

Annex 8: Employer's Child Protection Code of Conduct

To Be Signed by All Employees, Sub-contractors, engineer, and Any Personnel thereof

I, _____ agree that in the course of my association with the Employer, I must:

- treat children with respect regardless of race, colour, gender, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status;
- not use language or behaviour towards children that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate;
- not engage children under the age of 18 in any form of sexual intercourse or sexual activity (other than in the context of legal unions that took place between parties under the laws of the country), including paying for sexual services or acts;
- wherever possible, ensure that another adult is present when working in the proximity of children;
- not invite unaccompanied children into my place of residence, unless they are at immediate risk of injury or in physical danger;
- not sleep close to unsupervised children unless absolutely necessary, in which case I must obtain my supervisor's permission, and ensure that another adult is present if possible;
- use any computers, mobile phones, video cameras, cameras or social media appropriately, and never to exploit or harass children or access child exploitation material through any medium;
- not use physical punishment on children;
- not hire children for domestic or other labour which is inappropriate given their age or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury;
- comply with all relevant local legislation, including labour laws in relation to child labour;
- immediately report concerns or allegations of child exploitation and abuse and policy non-compliance in accordance with appropriate procedures;
- immediately disclose all charges, convictions and other outcomes of an offence, which occurred before or occurs during my association with the Employer that relate to child exploitation and abuse.

When photographing or filming a child or using children's images for work-related purposes, I must:

- assess and endeavour to comply with local traditions or restrictions for reproducing personal images before photographing or filming a child;
- Obtain informed consent from the child and parent or guardian of the child before photographing or filming a child. As part of this I must explain how the photograph or film will be used;
- ensure photographs, films, videos and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner. Children should be adequately clothed and not in poses that could be seen as sexually suggestive;
- ensure images are honest representations of the context and the facts;
- ensure file labels, meta data or text descriptions do not reveal identifying information about a child when sending images electronically or publishing images in any form;

I understand that the onus is on me, as a person associated with the Employer, to use common sense and avoid actions or behaviours that could be construed as child exploitation and abuse.

Signed:

Date:

Annex 9: Guidelines For Quarry Areas Management

Selection of Quarry sites

1. Quarry site should be located away from the villages/settlement area, drinking water supply sources, community infrastructure such as school, health post, bridge, etc., religious sites, cultivated land, protected forests, natural drainage systems;
2. Quarry will not be located in protected areas (forest or wildlife);
3. River gravel will not be extracted from flowing water due the disturbance of raising sediment and danger of resulting oil/fuel leaks;
4. Quarry sites should be selected in stable area, in agriculturally unsuitable land 5. Local communities will be consulted and take approval from respective owner before selecting the place for quarry operation:
   - ✓ Potential Environmental Impacts;
   - ✓ Disruption of natural landscape and vegetation;
   - ✓ Accelerated erosion and landslides;
   - ✓ Disturbance in natural drainage patterns / Siltation due to surface water;
   - ✓ Water pollution and dust pollution;
   - ✓ Scouring of riverbeds resulting endangerment of bridges and continuous degradation of river regime and detrimental effects on aquatic lives and their habitats.

Quarry Operation

5. Working should be prohibited during the night time;
6. Barricade to site to control free movement of local people.

Contract Obligation:

Contractor will secure government permit and other relevant environmental requirements for operation of quarry site with recommendation from project engineer.

Quarry management & Restoration Plan

7. The plan must contain site restoration measures such as spoil management, slope stabilization/erosion control measures, drainage pattern management, etc.;
8. Suitability of proposed mitigation measures is needed to be verified and conformed;
9. Provision of drainage system during operation to ensure no risk of depositions of debris from quarry to lower catchments area and to prevent the flooding of excavated area;
10. The plan should mention use of safety gears during working hours in the quarry site, and appropriate means of safeguarding for passer-by and nearby households;
11. The plan should include suitable bioengineering techniques where appropriate with reapplication of stored top soil.

Acceptance of Restoration Work:

12. The Supervision engineer should verify and recommend for approval the restoration plan submitted by contractor;
13. The Supervision engineer will make sure that quarries are operated and closed according to the submitted plan;

14. The payment of each works structure should only be made after filling of the data by the Contractor for quarry management and restoration plan and acceptance by the Supervision engineer;
15. Final payment will be dependent on verification and approval by SC at the end construction of each respective structure.

Parameters and indicators for supervision/Monitoring:

16. Implementation of mitigation measures as per design plan;
17. No evidence of water ponding or presence of fresh gullies;
18. Proper site closure;
19. Natural contours and vegetation restoration;
20. Engineer's report testifying to completion of restoration.

Annex 10 : Datasheet for Quarry Management and Restoration Plan

Name of Sub-project: ..... Contract No:.....

Locations of Civil Works:.....

Required Type of Material from Local Sources: Stone / Gravel / Sand / Soil.

Required quantity of material from local quarry (in cum): .....

Selection of Quarry Sites: Parameter for quarry site selection: (e.g. unsuitable land for cultivation, stable slope, minimum environmental hazard etc.).....

Sources of Material: Within RoW / Private land / Public land / Forest (community/ private/government)/Surplus material extracted / River / Borrow pit / Roadway.....

1. Available quantity in Selected Source (in cum): .....
2. Approval for Quarry site: DIPREME / Community / Land Owner (Attach agreement herewith).....
3. Method of extraction and transportation: Depth of cut / Height of cut / and Tractor / Tipper / manually or any means.....
4. Precaution measures during excavation:.....
5. Likely negative environmental impacts:.....
6. Restoration Plan - Trimming of slope / - Filling of quarry / - Need of check wall / Toe wall / Plantation / Benching etc.
7. Any special safety arrangement required:
8. Mitigation measures for negative environmental impacts:
9. Verification of Restoration Work as Planned by the Supervision Engineer.

Submitted by: Checked by: Approved by:

Note: The payment of each structure will be made only after filling of the data by the contractor for Quarry Management and Restoration Plan. Final payment will be dependent on verification and approval by SC at the end construction of each respective structure.

Annex 11: Selection Criteria of Borrow Pit Sites

1. Pits shall not be located in natural and design drainage areas /water bodies;
2. Pit should be avoided in land close to embankment (i.e. should be more than 1.5 m) and irrigated agricultural land;
3. In case of agricultural land depth of pit shall not exceed 45 cm;
4. In case of riverside, pit should be located at more than 15 m from toe of bank ;
5. Avoid borrow pit in land within settlement areas, protected areas, forests, unstable site-hills, wetlands, stream and seepage areas, areas supporting rare plant/animal species
6. The clearing of trees and other vegetation shall be discourage;

Potential Environmental Impact

7. Disruption of natural landscape and vegetation
8. Disturbance to natural drainage resulting ponding, water logging and water pollution.

Borrow Pit Operation / Restoration

9. Borrow pit areas shall be restored with adequate slope and cross drain at regular interval to facilitate drainage. 8. Stripped material shall be stored so as to not disrupt natural drainage
10. The ponding of surface water shall be prevented through adequate drainage.
11. Site shall be left in a stable condition without steep slopes.
12. Exposed area shall be planted with suitable vegetation

Design & Estimate of Borrow Pit

13. Using site selection and restoration criteria and the engineer shall specify borrow pit location in drawing (plan) and specification;
14. In case of additional pits required during construction the contractor shall use the site selection and restoration criteria to select new pits with approval of the Engineer;
15. The cost of compliance with above requirement shall be included in Contractor's rate for supplying of materials;
16. The cost of mitigation measures and restoration plan will be prepared separately under EMP item.

Parameters and indicators for supervision/Monitoring:

17. The Engineer shall ensure that the bowwow pits are operated and closed according to design;
18. Implementation of erosion control work;
19. No evidence of water ponding, no increased visual turbidity in surface water;
20. Natural contoured and vegetation are restored;
21. Engineer's report on compliance of restoration work.

Annex 12: Guidelines for Spoil Mass Management

Selection of tipping sites:

1. Possible tipping site should be identified right from feasibility study / walkover survey phase and should be selected with details during detailed engineering / preparation of EMP
2. Following consideration will be made while selecting tipping sites:

    a. Nearby barren land within RoW with flat/rolling terrain slope.

    b. Can be used in making passing nays, extra widened sections etc

    c. For reclamation of public private/land d. In building other community infrastructures like play ground of school etc

    e. If appropriate site is not found nearby spoil mass can be use for overlay over the existing road surface

3. Site should not be weak, fragile and unstable area susceptible to erosion and landslides and that will collapse by surcharge mass. Avoid wetland or other prohibited areas.

Potential Environmental Impact

4. Damage of vegetative cover with scouring of valley slope resulting in landslide and removal of vegetation and top soil causing slope instability.
5. Damage of private property, land, public infrastructures
6. Disruption of natural drainage system and water pollution.

Design & Estimate of tipping site

7. Tipping site should be located and shown in road plan inclusive of retaining and other protection structures;
8. There should be a column for calculation of surplus mass from excavation in Earthwork Calculation Sheet (see table below);
9. The quantities & haulage distance of spoil mass will be incorporated in detail quantity/cost estimate and BoQ of works with detailing of means of transportation;
10. If any changes/revision needed contractor will identify and submit the detail of tipping site for approval by Project Manager.
11. Mitigation measures should be design & estimated for possible impact against disturbance to natural drainage system and other likely instability

Construction & Operation of tipping site:

12. Stones extracted during excavation should not be thrown away, but need to be stacked along not disturbing the road for future use;

13. Landfill is constructed using a series of small spoil benches to prevent slope overloading. Earth mass should be dumped and stacked in design slope of filling mass;
14. The dumped spoil mass will be protected using toe/check walls and exposed areas will be strengthened with application of bioengineering over it;
15. Disposal area should be leveled & compacted after disposal.

Parameters and indicators for supervision/Monitoring:

16. Stability of spoil area
17. No presence of slides, scouring, erosion, or destruction of public utilities and infrastructures
18. Vegetative cover is maintained – survival rate of plant.

Annex 13: Labour camp guidelines

Establishing labour camp

The main purpose for the preparation of camp standard is to assist in the effective implementation of Environmental and Social Management Framework (ESMF) and to achieve sustainable development ensuring no any adverse impacts upon environment and society.

The establishment and operation of a camp is likely to produce adverse impacts upon the bio-physical as well as the social and economic environments. It is imperative to safeguard the environment and society and to reduce and mitigate the negative impacts that are likely to be produced for the operation of camps. It is envisaged that a contractor will follow the following guidelines during the operation of camps in the project areas and hope that the project will be accomplished and benefited including local community and labour workers. Similarly, central level monitoring will be executed for the proposed camp sites under the consideration of following guidelines.

After the selection of the camp site by the project, the contractor shall submit to the project a detailed layout plan for development of the construction camp, indicating the various structures to be constructed including the temporary structures to be put up, drainage and other facilities. The plan will include the redevelopment of sites to pre-construction stage.

The contractor shall provide temporary accommodation to all the workers employed by him for such a period as the construction work is in progress. The contractor shall not charge any cost to the residents labour.

Lodging facilities

For non-local workers, a contractor shall provide adequate lodging/accommodation. Separate compartment shall be provided for male and female workers for their accommodation. If couples live in the camp then they shall be provided with separate compartments.
The accommodation areas for workers shall be designed, constructed and furnished. Changing rooms shall be provided for workers who are required to wear working clothes. Provision shall be made for separate changing rooms for men and women.

Food and Energy

The availability and proper storage of quality food and potable water is also the responsibility of a contractor. The quality of food grains and other consumable items and water must be provided. In case labours wish to prepare their own meals, the contractor shall provide adequate cooking facilities. In camps where cooking facilities are used in common, legal source of energy shall be provided. Such kitchen shall be established at least 10m distance from any sort of water sources.

Water and Sanitation

Adequate water storage facility shall be provided in a proposed camp site. Workers working on a construction site shall be provided with drinking water which meets the standards established for drinking water. Lavatories facilities should be adequate for the capacity of a camp. The lavatories shall be adequately lighted and shall be maintained in a clean sanitary condition at all times. Water shall be provided in or near the lavatories by storage in suitable containers (tank, buckets etc)

If proper sewerage system is not available at the proposed camp site, contractor shall established toilets with septic tank for the proper disposal of waste. Bamboos and plastic sheets shall be used as encircle material for the establishment of temporary toilets. However, contractor shall ensure that the site is free from open defecation.

Provision shall be made for separate lavatories for men and women on the camp site and these rooms shall be distinctly marked "for men" and "for women" by signs printed in native language of the persons occupying the camp, or marked with easily understood pictures or symbols. If the facilities for each sex are in the same building, they shall be separated by solid walls or partitions extending from the floor to the roof or ceiling. The camp site should be served by energy.

Contractor shall provide adequate waste disposal facilities for the storage Garbage containers shall be kept clean and shall be emptied when full, but not less than twice a week. In case garbage is disposed, only biodegradable waste and organic kitchen waste shall be dumped in pit. Pit shall be at least 150 ft. away from the camp site, whereas contractor shall ensure that diseases will not spread into nearby community and any sort of contamination into water bodies and ambient environment..

Contractor shall also ensure that the pit is covered properly after disposal of degradable waste everyday to reduce spread of fly and rodents. Liquid waste generated from the camp site shall not be disposed directly into any surface water bodies. The contractor shall ensure proper management of grounddrainage from camps as a preventive measure against breeding places of mosquitoes and other pests. Non-biodegradable wastes shall be kept in containers and shall be disposed into proper place.

Contractor shall provide adequate health services to workers on the site. A permanent health worker is required Construction sites shall be equipped with First Aid Kit at every construction campsite with essential first aid equipment and stretchers. The contractor shall ensure that first aid can be provided to workers who have had an accident or have suddenly been taken ill on the site.

The construction camps shall be equipped with fire-fighting equipment and facilities. Fire extinguishing equipment shall be provided at readily accessible and adequately marked locations at Camp. Every worker should be trained in use of fire extinguishing equipment At least one fire extinguisher shall be provided, where flammable liquids or combustible materials are stored, handled or used.

Fire extinguishing equipment shall be of a suitable type and size to permit the evacuation of workers during a fire. After a fire extinguisher is used, it shall be refilled or replaced immediately Every fire extinguisher shall be inspected for defects or deterioration at least once a month by a competent worker who shall record the date of the inspection on a tag attached to it.

A camp site shall be adequately drained. All temporary camps shall be constructed using tents, and shall be closed from all side to protect from wind and water, while at the same time ensuring ventilation. A contractor shall provide separate store room or compartment for the storage of handy construction equipments. 48 Play grounds and other recreational and refreshing activities shall be provided in a proposed camp site where a worker could spend his/her leisure time.

Annex 14: Occupational health and safety guidelines

A safe and healthy work environment for people at work is required to prevent loss of life or personal injury. The safety and health of the workers is important in successful completion of any project. A safety guideline developed with due considerations and identifications of hazards in the workplace and implemented will be adequate and effective in controlling the mishaps and accidents. Safety hazards generally arise from the following aspects of work during rural road construction:

- ✓ Different construction activities (excavation, quarrying, filling)
- ✓ Construction equipment and materials used
- ✓ Management in the work place

The health and safety of both the general public and the workers must be of prime concern for all parties involved in with road and bridge construction activities. During the progress of work, following are the safety requirements that the contractor at the construction site shall ensure to the public and workers;

(a) **Health concern:**

1. Creation of stagnant water ponds / waterlogged areas near construction sites and labour camps have the potential to increase public health risks, as such locations will serve as breeding ground for water-borne disease vectors (e.g. malaria, dengue, intestinal worms);
2. Unauthorized use of local natural resources by work forces on items like medicinal plants, non-timber forest products, fire wood, hunting species, fish etc. may lead to resource depletion, inducing secondary side-effects like malnutrition that may harm public health;
3. Migrant workers, especially when under drug and alcohol influence, may cause social conflicts which can result in physical clashes with the general public and the workers, putting local health facilities under constraints. Similarly, migrant workers may act as vectors for sexually transmitted diseases such as HIV/AIDS. Migrant workers may become vectors for other endemic diseases;
4. Low quality drinking water as well as inappropriate storage of drinking water likely to cause water borne diseases among workers.

(b) **Safety Concerns:**

5. Personal protective equipment (such as footwear, gloves, boots and goggles, helmets, mask etc.) shall be made available to the workers and appropriate training in its use shall be provided.
6. A protective helmet is mandatory on a construction site in an area where, due to the work technology, the risk of head injury exists.
7. Non-slippery and non-penetrable safety footwear shall generally be used on construction sites. Kneepads shall be used while working on the floor or during other work involving kneeling.
8. Restricting the working hours to day time as far as possible
9. Adequate lighting arrangement if working hours are at night time due to unavoidable circumstances
10. If work is performed in the dark, a reflex reflector or a reflector-band shall be worn on clothing. If work is performed in places in the vicinity of traffic, the worker shall wear a bright waistcoat or clothing and, in the dark, also a reflector-band. A reflector-band shall be attached in a visible place and, if necessary, also to a protective helmet.

11. Improper handling of materials like bitumen, oil and other flammable/hazardous material at construction sites, likely to cause safety concerns to the workers.
12. 8. Lack of safety measures such as fences, adequate lockers, alarm, awareness and safety equipment may result in accidents,
13. Lack of specific precautionary measures, especially at work sites with or around heavy machinery / equipments near rivers, steep slopes, equally bears many accident risks, partly with fatal consequences.
14. Proper and regular maintenance of vehicles and equipment used in the field
15. Facilities for administering first aid

(c) For general Public

The contractor should ensure and avoid the following safety concern to the public:

a. Parking of equipment and vehicles at the end of the day likely to cause accidents to the general public especially during night hours;
b. Transportation of uncovered loose material or spillage of material increases the chances of accidents to road users and surrounding settlements;
c. Children hanging on trucks and vehicles being at particular risks for fatal accidents.

Annex 15: Template for safeguards Tables in Quarterly Progress Report

Sub-project:			
Contractor:		**Supervising Engineer:**	
Monthly Report from Supervising Engineer (dd/mmm)		Major Issues Raised	
Project Safeguards Site Visits (dd/mmm – QQ/YYYY)		Overall Implementation	

RBMMP II Safeguard Policy Triggers	**Issues Raised**	**Description**	**Actions Taken**
World Bank Safeguard Policies Triggered by Project			
OP4.01 – Environmental Assessment			
OP4.11 – Physical and Cultural Resources			
OP4.12 – Involuntary Resettlement			
Other Environment or Social Issues Noted in Supervision			
Gender and Vulnerable Groups			
Other Issues…			

Annex 16: Environmental Monitoring Report Outline

1. Background

1.1 Project location

Scope and Methodology

Objectives

Methodology

2.Environmental Management Plan Implementation

2.1 Permits and permission

2.2 Site location and contractors camp

2.3 Solid waste management

2.4 Liquid waste

2.5 Environmental training and awareness

2.6 Local labour

2.7 Maintenance and storage

2.8 Storm water management and erosion

2.9 Air and Noise emissionand odour control and safety

2.10 Heath and safety

2.11 Conservation of veetation and wildlife

2.12 Protection of sensitive environments and natural feactures

2.13 Fire prevention and control

2.14 Community relation and control of community disruption

2.15 Traffic control

2.16 Private land and community properties

3. Planning borrow pits and quarries

3.1 Decomissioning of the site

ANNEX 17: Indicators for the OHS

For the OHS the report should include Within 5 working days of the end of the calendar month the Contractor will be required to report to the Engineer on their performance with the following OHS indicators:

- Number of serious near miss incidents, where serious harm to employees or others may have resulted.
- Number of fatal injuries (resulting is loss of life of someone associated with the project or the public)
- Number of notifiable injuries (an incident which requires notification of a statutory authority under health and safety legislation or the contractor's health and safety management system)
- Number of lost time injuries (an injury or illness certified by a medical practitioner that results in absence of work for at least one scheduled day or shift, following the day or shift when the accident occurred)
- Number of medical treatment injuries (the management and care of a patient to effect medical treatment or combat disease and disorder excluding: (i) visits solely for the purposes of observation or counseling; (ii) diagnostic procedures (e.g. x-rays, blood tests); or, (iii) first aid treatments as described below)
- Number of first aid injuries (minor treatments administered by a nurse or a trained first aid attendant)
- Number of restricted work cases. (those people who have returned to work, but are undertaking "light duties")
- Number of recordable strikes of services (contact with an above ground or below ground service resulting in damage or potential damage to the service)
- Rate of recordable strikes of services per services crossed.
- Lost Time Injury Frequency Rate (the number of allowed lost time injury and illness claims per million man-hours worked)
- Total Recorded Frequency Rate (the number of recordable injuries [recordable/lost time/fatal] per million man-hours worked)

The monthly reports shall also include:

- Number of drug and alcohol tests
- Proportion of positive drug and alcohol tests
- Number of site health and safety audits conducted by contractor
- Number of safety briefings
- Number of near misses
- Number of traffic management inspections
- Number of sub-contractor reviews
- Number of stop work actions
- Number of hazard cards reported
- Number of positive reinforcements

Annex 18: Public Consultation Site Visit

The site visit was done on 31st May up to 2sd June 2017. The team visited two districts in Nampula (Memba and Erati) and two districts in Zambezia (Maganja da Costa and Murrumbala). The main objective of the filed visit was to identify the main environmental and social impacts that the feed road project can bring or even make them more worse. As well as to assess the capacity in place at provincial and district level to implement and monitor the ESMF of the IFRDP. The methodology adopted was meetings with representatives of ANE and Road Funds, as well as with the line departments that have a say on the environmental and social issues associeted with projects implementation (DPTADER, DPASA, DPOPHRH). Then the team visited the targetted districts and also hold a meeting with the local authorities as well as visited the priority roads for the districts.

The first meeting was held at DPTADER with head of Environmental Assessment Department Mr. Victor Lopes in Nampula, while in Zambezia the meeting at DPTADER was with the provincial director, team of the Territorial Planning (Resetlement unity) and Evnronmental Assessment Department. During the meeting the team, accompanied by ANE delegation, did the project presentation and informed the expected role of the Directorate in line with the ESMF. DPTADER in both provinces has human capacity to fulfil their role.

The Directorate informed that for the IFRDP the system will be the same they are using for other projects. ANE as to submit the screening form for categorization under the decree 54/2015. In a case that the project is categorized as asB or C DPTADER will follow up the entire process until the license be given. The cost of the screening process is at the cost of the project owner. The cost include the field visit for the DPTADER team. According with type of project a technical committee is formed, which is composed by different institutions to evaluate the project.

During the Implementation of the project DPTADER will do the audit if there is enough budget.. However, DPTADER never did audit to road projects because of lack of funds, but the audit is mandatory. The Proponent can hire a Consultant to do the external audit and send to DPTADER the report.

Regarding the resettlement process the only issues DPTADER have is related to the infrastructures models which are not defined at the beginning of the process the other issues is related to the compensation modality, most of the time the affected person what to receive money as compensation, but the law is recommend not to compensate in money but in infrastructure.

DPASA

The meeting at DPASA was held with Mr. Pedro Dzucula Provincial director. During the meeting the Director inform that they work in coordination with ANE Delegation when it is necessary. Also inform that the following districts are priority because of the high production. Memba, Erati, Mecuburi, Murrupula, Monapo, Meconta, Angoche, Moma, Malema, Ribawe, Mogincual and Liopo

The Director advise to visit the road which is going to Nameroa and the other one was the road going to Chipene.Regarding to the compensation there is a table with price of plants which is updated in each 5 year.

In Zambezia was not possible to have a meeting with the DPASA as they were not avalilable.

DPOPHRH

The meeting at DPOPHRH was with Mr. Fernando Manuel Manhique head of planning department in substitution of Provincial Director.

Mr Fernando inform that the DPOPHRH is happy with the project and will give the necessary assistance for the successes of the project.

The head of the department inform that the challenges are enormous, considering that most of the network at provincial level is feeder roads and the expectation is to have all the roads transitable during the year. The DPOPHRH inform also that technical capacity to monitor the process exist what are not there are the resources such as computers, fuel, transport, cameras and so on.

Regarding the resettlement process the team was informed that DPOPHRH in coordination with ANE will assess the affected infrastructures to get the compensation value. The challenges on this assessing process as been related with the cut of date and the compensation payments . In most cases the communities continues to construct within the area of direct impacts after the the census, therefore, resulting high number of the affected parties. The decree 109/2014 is any instrument that will help ANE to take action sunction to those violating the cutting of date. . DPOPHRH recommends that the implementation of the be done immediatly after the census.

ANE DELEGATION

In Nampula the meeting was held with Mr. Isac Ibrahimo, Olinda Ernesto, Carvalho Jose and Armindo Gabriel. The delegate was in the field. While in Zambezia ythe Meeting was lead by the ANE Delegate, with participation of the Road Fund Delegate.

The Nampula team was informed that the human resources for implementation project exist, what is needed is training and other resources such as transport, fuel, computer, camera and so on. There is no specific unity created but 3 technicians were indicated to work on crosscutting issues when is necessary.

The relationship with other institutions is good, when there is a need to work with other institutions ANE delegation inform them and they indicate someone to work with.

The experience ANE delegation has in resettlement is that when the period of assessment and implementation is long the cost of compensation increase because people come closer to the road.

In Zambezia the situation of ANE delegation does not difer much from the Nampula, but the environmental team of Zambezia, comprised by two people, are more involved in the social aspects related with the provincail road maintenance and no much environmental issues, they have stated that the environmental team at ANE HdQ is responsible for the monitoring process of the ESIA and ESMP for the projects that are funded by the central government. In most case, they are only envolved during the resetlement designing and implementation. To paly any role for the IFRDP the enviornmental team at ANE delegation in Zambezia will need capacitation and strenthining the institutional relationshp with DPTADER and other institutions for the implementation of the ESMF of the IFRDP.

The Delagate referred to the work done by ANE and CPCS for the ITS and HIV/SIDA sensitization as well as the opportunity that this partnership may represent for the implementation of the decree 109/2014. The Road Fund delagation in Zambezia and Nampula agreed that the provinces and districts can can manage the Project,

however will need a training and assistance at the beginning. For Road Fund to play its role in the project will need more staff.

Then the team with the ANE delegation staff visited the districts. In Nampula the team visited the following districts: **Memba** is a district located along the cost with population of 270.000 habitants. The main economic activity is agriculture, fllowed by fisheries and trade. The district is characterized by high terrains. Erosion is one of their major environmental problem.

The district is rich on cultivation land produzing cashew nut, peogeon peas, cassava,ground nut other important area of development of the district is fisheries and forest resources with high commercial value species such as jambirre, chanfuta, umbila, pau preto, in small quantity pau ferro. Also, has potential for mining being rich on tourmaline, gold, quartz, iron. At the district the team had the following contacts:

The district administrator welcome the project as it

will bring development to the district and emphasize that ANE need to look more than maintainance

there is a need to decentralize the funds to the district, to give more technical assistanceand train the district staff.

SDPI and SDAE

We were informed that the district is facing difficulties to transport people and goods within the district due to the high level of road degradation. And because of the road degradation, SADE states that it affects the price of products and tourism.

SDPI informed that for them to be part of the implementation of the sub-projects in their district and follow with the monitoring of the ESMF, ESIA, ESMP and RPFa capacity building is necessary. SDPI listed a number of roads which need intervention to impulsion the development.

1. Road to Simuco Beach (has potential tourism, fishiring)
2. Ingeba Beach also has potential tourism, has an aerodrome;
3. Road Mazua - Chipene

To reduce the need of resetllement along the sub-projects there is a need to sensitize the communities not to build or do farm in road reserve.

The relationship with road fund is not efficient the SDPI is not informed about the payments and the process of payment takes long. The certifications of the works sometimes are not done in the field because of lack of fund to go to the field.

In district some NGO's operates in several field namely Save the Children, Inter Aid, Water Aid. USAID have also a project in the district.

To fulfill the role that the district is expected to undertake on the implementation of the ESMF there is a need of:

1. Technical assistance
2. Training
3. Improve communication between district and Road Fund/ANE

Road visited: Mazua – Simuco 40 km

The road visited is located at a north part of Memba, with 40 km. The road is located in a mountainous area. The road gives access to the Simuco beach, the fishing center and the potential area for turism.

Along the road there are small farms and some forest were communities take material for the construction of their houses.

The conditions of the road are precarious, presents problems of erosion and is full of sand, making it difficult to transport fishing products and the exist agricultural production.

1. Then the team drove from Memba to Erat Districtlocalized in interior area with hills . The network is composed mainly by non classified roads.The district has 3 adminstrative posts: Namapa, Namiroa and Alua. The district is potencial in: Agriculture production (Maize, bens, gergelim, cotton, cassava)
2. Forest resources (Umbila, pau-ferro, pau preto)
3. Mineral resources (Quartz pink, Calcite, granada, gold, pedras preciosas)
4. cultural heritage for the communities (Mount Erati-speritual place) and historical places in Riane Landscape around Lurio River (for tourism)

At Erati the team met with the district administrator and the representative of SDPI and SDAE. The Administrator wellcome the team and inform that Erati road network is mainly unclassified, that is the reason during the rainy season the transitability is difficult. He is happy with project and they will do what is needed for the success of the project.

The Administrator inform that in the district there is capacity but needs training, technical assistance and resources to implement the project.. The Administrator recommends need for good communication system during the implementation to bring success in the project, also to be involved in all project phases.

The representative of the SDAE and SDPI

referred the importance of the road to the agriculture commercalization as well as the moviment of people and goods. However, the district is understaffed, only one person is deal with all roads projects in the district. The district has 3 officials that are trained/training environmental engineering and working in other areas.

To avoid the delay in the project we recommend the involvement of the district from the beginning of the process, the decentralization of funds to the district, provide training to the staff, provide technical assistance also provide resources.

Regarding the resettlement the district have experience gained during the rehabilitation of Namialo-Rio Lurio road, which was good but they were not involved in the preparation of resettlement action plan. A resettlement committee was formed to monitor the implementation process.

For this project SDPI recommend to involve the staff of the district from the beginning of the process, to do the evaluation very well to avoid as much as possible mistakes. SDAE referred that the investors face challange in transporting products and these companies are are doing some road maintainance in some road to access their projects (Jacaranda, PASP) which . Therefore, the IFRDP will will impulsion the development of the triangle of district: Namapa – Namiroa – Alua.

Road visited: Namapa sede - Namirroa - 70 Km

The road is located at Southern part of Erati, with 70 Km. The road takes to the agricultural production area. The road presents problems of erosion, with much sand and several deviations due to mud in the rainy season, these difficulates the access. Along the road there are small machambas.

In Zambezia was only possible to meet with officials in Murrumbala. The messages get there is similar to that got by the Nampula team. The districts expects to play important role from the begnning of the project and not be only a recipient , but any active body in the implementation of the ESMF as the district will be then responsible for the maintainance. In Murrumbala and Maganja da Costa the government with the donnor funds is reahabilitating irrigation schemes, but the road to access these important investments are in bad condition.

Visited roads in Zambezia

The team drove from Zero to Murrumbala sede, and then to the Chire River . While, in Maganja the team drove from the Bive to Maganja da Costa-Sede and then to the Post Administrative of the Nante. From the districts view these are the most priority roads that need intervention. The adminisrator of Murrumbala, referred that daily 4 to 5 car of 30 tons enter into Murrumbal to buy maize.

The main environmental problems that was possible to identify was the erosion, drainage. Regarding road reserve occupancy they have mostly agricullture plots, and the house are far from the area of the direct impacts.