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Community Markets for Conservation
For

The COMACO Landscape Management Project

P144254

DRAFT ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

August 2014

ACRONYMS AND ABBREVIATIONS

ADSP	Agricultural Development Support Program
ARPF	Abbreviated Resettlement Policy Framework
CBO	Community Based Organisations
CCP	Community Conservation Plan
CDM	Clean Development Mechanism
CSA	Climate Smart Agriculture
COMACO	Community Markets for Conservation
COMAC	Community Advisory Committee
DMMU	Disaster Management and Mitigation Unit
EA	Environmental Assessment
EIA	Environmental Impact Assessment
ESMF	Environment and Social Management Framework
FA	*Faidherbia albida*
FD	Forest Department of the MLNREP
FTCs	Farmer Training Centres
GMAs	Game Management Areas
GRZ	Government of the Republic of Zambia
GS	*Gliricidia sepium*
MAL	Ministry Of Agriculture and Livestock
MEWD	Ministry of Energy and Water Development
MLNREP	Ministry of Lands, Natural Resources and Environmental Protections
NAPA	National Adaptation Programme of Action on Climate Change
NGO	Non-Governmental Organisation
OP	World Bank Operational Policy
PMP	Pest Management Plan
PPCR	Pilot Programmes for Climate Resilience
PPPs	Public Private Partnerships
REDD+	Reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
SALM	Sustainable Agricultural Land Management (Integrated Crop Management) / Afforestation, Reforestation and Re-vegetation
SPCR	Strategic Programme for Climate Resilience
TA	Technical Assistance
TOR	Terms of Reference
UNZA	University of Zambia
VCS	Verified Carbon Standard
ZAWA	Zambia Wildlife Authority
ZEMA	Zambia Environmental Management Agency

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1. INTRODUCTION

1.1 Situational analysis of the Luangwa Valley

Farming for most small-scale farmers in Luangwa Valley in the Eastern, Central and Northern Provinces (see Figure 4. The Luangwa Valley with COMACO presence around National Parks, April 2013 is a life of hard labour, often borne by women, using farming practices that typically limit productivity, crop diversity and incomes, and as a result, increase risks of soil degradation, deforestation, and biodiversity loss as households seek ways to cope. The general factors contributing to this outcome is a lack of effective extension services that promote improved production technologies, poor access to affordable farm inputs, and markets that fail to support the adoption of these technologies or build effective synergies between forests, wildlife and agriculture. Sixty-five percent of all people living within the valley watershed in the Eastern Province, for example, are considered to be extremely poor, well above the national average of 51%, despite a national economic growth rate of about 7.6%. Correlated with these socioeconomics is a landscape that faces high rates of deforestation, land degradation, and biodiversity loss.

In addition, climate models predict increasing rates of transpiration, rising temperatures of a mean of 2 degrees Celsius over the next 60 years (GRZ, 2007), and greater variability in the pattern of rainfall in Zambia over the next 40 years. Such trends will increase demands for crop diversification with varying tolerances for climate extremes and for more adaptive, labour-saving farming practices for water and nutrient retention in soils.

If effective mitigating solutions are not put into place, small-scale farmers will experience growing risks of crop loss and uncertain livelihood security. Under such scenarios, Zambia could witness massive losses of biodiversity in the future as small farmers seek coping strategies to satisfy household food and income security needs from such off-farm sources as charcoal-making, wildlife poaching, fish-netting, and timber-cutting.

Such outcomes will not only limit future economic opportunities and endanger ecosystem services, but will perpetuate rural poverty and hunger, leading toward a new equilibrium of human impoverishment and depleted biodiversity. Competing market interests to satisfy immediate social and economic needs may help to fill this void, but are either illegal or environmentally destructive or risky. For example, local farmers turned poachers can earn up to $100/kg on the black market for elephant ivory, or farmers can sell off their trees as charcoal along roadside markets where ready buyers reward local residents for destroying their forest resources. Other markets also entice farmers to grow non-food crops (e.g. cotton) dependent on chemicals and potentially harmful to soil nutrients to sustain international value chains.

Such problems facing Zambia, and the Luangwa Valley in particular, are complex. There is need for greater commitment, understanding and working together of government and non-government in addressing these problems. . The principal challenge is moving beyond sector-driven agendas to accommodate a broader set of cross-cutting objectives reinforced with the right markets and technologies that can help drive and serve the interests of both conservation and the farmer.

Farming is a principal source of income for communities living in the Luangwa Valley, a mixed woodland landscape dotted with smallholder farms. Main crops grown are food crops, such as maize and sorghum, and cash crops: cotton and soybeans. Households are vulnerable to food insecurity for about three months in a year, partly because of time spent on commercial crops and because the environment itself is edaphically dry, thus lowering productivity for food crops. In view of this, survival strategies for families rely on natural resources, namely, poaching of animals whose meat

they exchange with food and/or burning of trees for charcoal to generate income to purchase food. These measures lead to depletion of wildlife and degradation of forests, respectively.

1.1 COMACO organization and achievements

Community Markets for Conservation (COMACO) is a model for rural development that uses inputs, improved technologies, and markets to help small scale farming communities achieve increased food security and incomes and more effective conservation of the natural resources they live with. The COMACO model works on the premise that households will reduce destructive use of their natural resources if their basic food and income needs are met in ways that remove the need to rely on destructive resource-use practices. It also recognizes that people accustomed to bad practices often require incentives to change behaviors and this process can take time and may require disincentives if change does not follow.

These conservation agriculture and improved forest management practices are driven by COMACO's unique conservation compliance-based incentive scheme funded through the sale of COMACO's value-added food products. COMACO manufactures and sells a Zambian-wide brand of healthy food products, called It's Wild!, to sustain these incentives. COMACO offers above-market prices for surplus commodities to communities who meet conservation targets based on a scoring system that integrates compliance measures for soils and farming practices with wildlife conservation and forest management. Use of incentives and disincentives is an important feature of the COMACO model. If scores are relatively low, COMACO lowers commodity prices. Thus, if the scores are unacceptably low producers risk losing substantial income.

COMACO operates as a hybrid organization that performs two separate but interrelated functions: a commercial enterprise and the farmer support services. The former relies largely on revenues derived from the production and sale of value-added food products, while the latter is entirely supported through donor grants. Both sections have their own distinct lines of accounting and reporting to ensure their respective accountability. Opportunities for sustaining the farmer support costs will over time become increasingly possible through the company's own business revenues and through community payments derived from carbon credit sales. Figure 1 below provides a simple overview of how the COMACO model works and as to how these two company sections link. The model follows an iterative process that begins with farmer-based steps that lead to food crop surpluses which are sold to COMACO, the business, which in turn converts the surplus into value-added products and are sold to sustain both, the cycle for the next fiscal year and selected incentives to encourage farmers to comply with climate-smart, sustainable agriculture skills and conservation guidelines.

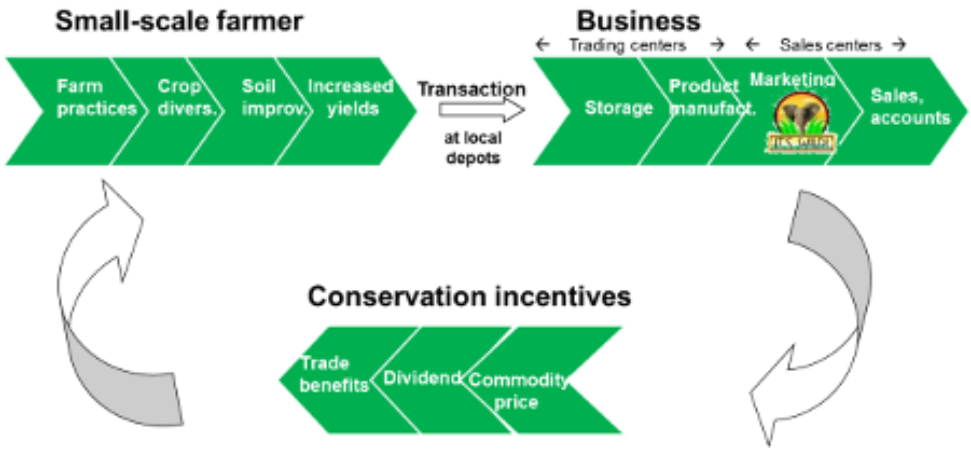


Figure 1. COMACO model

COMACO has supported conservation farming in the Luangwa Valley for the past decade and has a total of 86,995 registered farmers. COMACO is organized into 36 chiefdom-level cooperatives, which overlap with 9 districts and are organized into about 15 producer groups. Leaders of these cooperatives form COMACO regional management committees to engage on issues of compliance scoring, market incentives and opportunities for added market benefits accrued from their compliance to conservation. These entities promote farmer awareness and pricing incentives linked to conservation compliance requirements. Leaders of these cooperatives form COMACO district-level management committees to engage on issues of compliance scoring, market incentives, and opportunities for added market benefits accrued from their compliance to conservation. Increasingly, COMACO will build responsibility for these cooperatives to oversee the work of 1650 lead farmers who support year-round training needs of their designated farmer producer groups and the transformation training of people with destructive livelihoods, such as charcoal-making. Through these efforts and with demonstrated impact on conservation, community members derive increased market incentives.

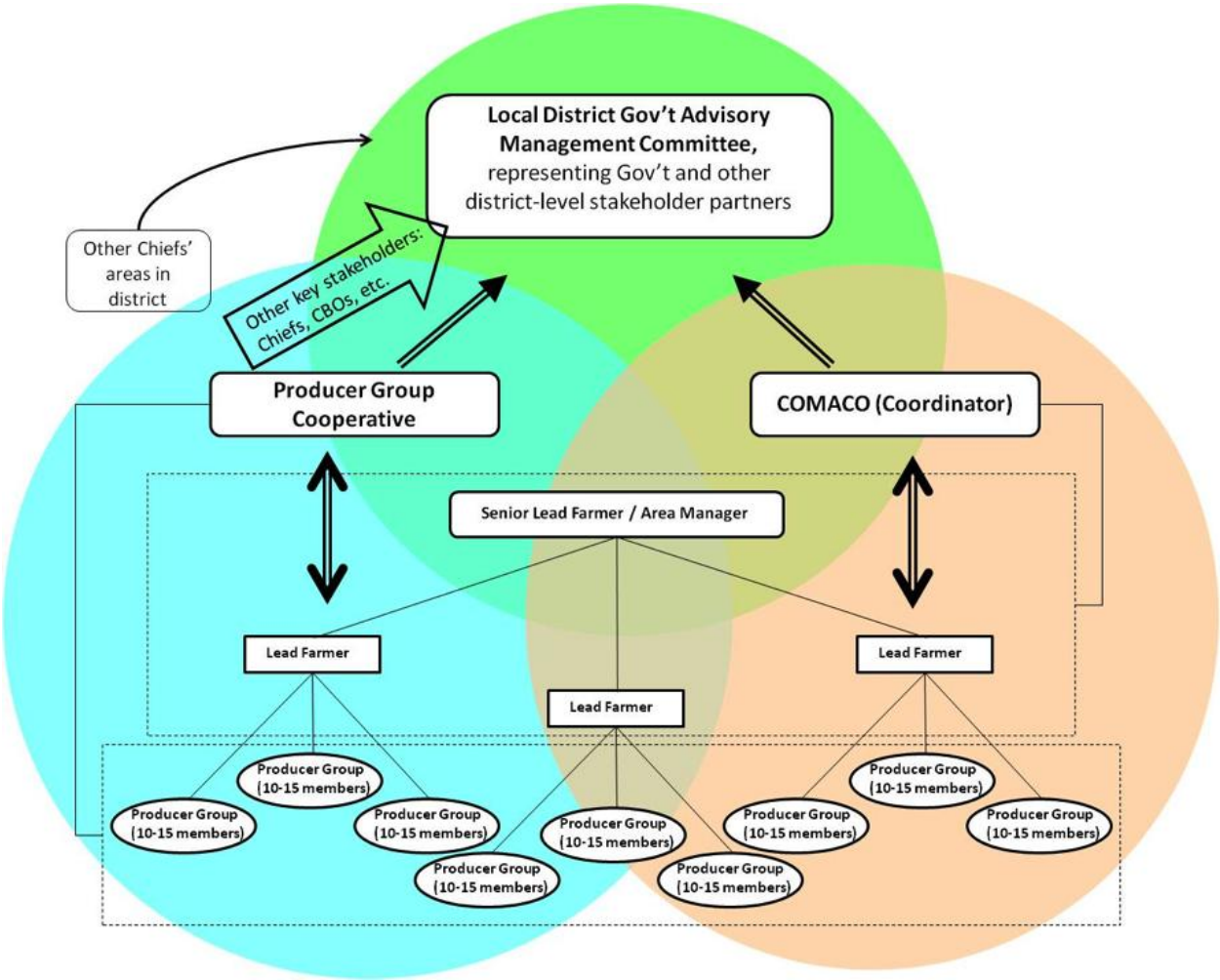


Figure 2. District-level organization of COMACO and its partners

Key results achieved during COMACO's past history include:

1) Farmer members and extension support
   - COMACO's farmer membership as of January 2014, is 86,995, of which 52% are women, have undergone formal training in sustainable agriculture and have formed 3,939 registered producer groups that have associated into 20 registered producer group cooperatives;
   - As of January 2014, the extension workforce consisted of 56 salaried staff and 1650 community trainers referred to as lead farmers, each of whom oversee 2 to 3 producer groups with on-going training and market support; and
   - Established District-level advisory management committees to improve accountability of COMACO and community results and their respective commitment to markets and conservation for setting premium prices.

2) Conservation
   - Transformed of 1329 poachers and 290 charcoal makers with the surrendering of 2,069 firearms and 80,220 snares used to kill wild animals;
   - Based on repetitive aerial survey counts, a positive trend in wildlife numbers with the exception of increased elephant poaching since 2009 correlated with areas where COMACO does not exist;
   - Creation of 1500 km^2 Community Conservation Area and green zoning in multiple chief areas, giving rise to increased wildlife movement and availability of wildlife habitat; and
   - Reduced deforestation and incidence of bush fires in COMACO areas relative to non-COMACO areas.

3) Sustainable agriculture and alternative livelihood support
   - Innovations and adoption of climate smart, sustainable agriculture practices:
     → Over 10 million cassava cuttings planted as drought-resistant food reserve
     → Over 20 million annual planting of agroforestry species *Gliricidia sepium*
     → High percentage of farm members adopting low tillage, mulching, crop-rotation with legume, and composting (65-85%)
     → Seed recovery and seed improvement of open-pollinated variety;
   - As of January 2014, COMACO averages about 65% compliance across the range of recommended sustainable, climate-smart farming practices COMACO teaches and has increased maize yields, as well as groundnuts and soybeans, for farmers adopting these practices by 30-40% (see Table 5)[1];
   - Widespread adoption of beekeeping (9469 bar hives in use), dry season gardening, and improved poultry husbandry;
   - Substantiated third-party studies demonstrating increased women empowerment in COMACO areas with improved access to cash and skills with increased decision-making roles in the community; and

[1] These results also show a significant (1.6:1) increase in food security based on only one food crop (maize) and only1 of 3 variables (cereal, income, other food sources) used by World Food Program to calculate food security. Calculate of actual food security will increase this ratio substantially.

- 100% use of COMACO's Better Life Training Manual providing simple procedures and methods for a range of livelihood skills.

4) Community trade and market benefits
   - Established 251 bulking stations and community trading centres (see Figure 3);
   - About 25% of COMACO's total membership sells surplus to COMACO, and farmers in this category currently experience approximately $130 income lift, not including sales to other vendors. Combining the monetized gain in food produced for consumption, a successful COMACO farmer today earns on average $300-$400, a lift of over $200 compared to pre-COMACO baseline incomes;
   - Annual crop purchase of over $1.5 million from COMACO communities;
   - Extension of the COMACO model into the plateau region of Eastern Province with support from USAID in 2011;
   - 12 value-added *It's Wild!* products sold in retail stores across Zambia with expected sales turnover for 2012-13FY to reach $3.1 million;
   - 5 major manufacturing hubs established for producing It's Wild! products (soon to be consolidated to 3) and 7 Farmer Support Centers; and
   - An Eastern Province-wide radio program called COMACO Farm Talk broadcast weekly, reaching approximately 100,000 smallholder farming families.

1.2 Purpose and Objectives of the ESMF

The objective of the Environmental and Social Management Framework (ESMF) is to provide a framework for management of environmental and social impacts associated with the COMACO Landscape Management Project. The project site locations include existing COMACO areas of operation, i.e., Lundazi, Mambwe, Petauke, Nyimba, and Chipata districts in Eastern Province. COMACO is considering expanding these activities in existing and neighboring areas where it operates, such as Muchinga Province. Since the actual program site locations are not yet well-defined, the ESMF will provide a uniform approach for the management of potential negative environmental and social impacts. Specifically, the objectives of the ESMF are to:

- Establish clear procedures and methodologies for the environmental and social assessment, review, approval and implementation of investments to be financed under the COMACO Landscape Management Project;
- Specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to project investments;
- Determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF;
- To establish funding requirements to implement the ESMF;
- Provide practical tools for implementing the ESMF.

1.3 The ESMF Report Structure

This report is made up of the following main sections:

- Section 1, Introduction;
- Section 2, Description of the Program and its Activities;
- Section 3, Description of the Bio Physical Environment of the Project Area;
- Section 4, Legal and Institutional Framework in agriculture and climate change adaptation;

- Section 5, Identification of programme impacts and mitigation measures for identified potential impacts;
- Section 6, Monitoring;
- Section 7, Training and capacity building; and
- Section 8, Implementation budget for ESMF training and capacity building needs

A list of references consulted and Appendices are also included.

2. DESCRIPTION OF THE PROGRAM AND ITS ACTIVITIES

The COMACO Landscape Management Project will increase smallholder farmer crop yield from sustainable Climate Smart Agriculture (CSA), increase farmer income and welfare, reduce uncontrolled forest loss and degradation and increase net forest cover in the project areas within the Luangwa Valley supported by revenues from a significant increase in bio-carbon sequestration. COMACO implements an array of interventions, e.g., fallowing, minimum tillage, no burning and planting of *Gliricidia sepium*; use of increased market incentives and livelihood alternatives; and increased community land use planning and leadership roles in the reduction of forest loss and degradation to sustain a net increase in forest cover in the Luangwa Valley. These activities are part of integrated landscape management strategy to conserve biodiversity, improve food production per unit area of cropland and to minimize climate change. This is achieved with carefully designed, ecologically sensitive mosaic of production and conservation functions. The project will expand the activities being currently implemented by COMACO with a view to achieve overall climate mitigation and adaptability.

As a bio-carbon project, COMACO and its partners intend to pioneer a unique approach to landscape-wide carbon asset management that combines several approved Verified Carbon Standard (VCS) methodologies under an umbrella of grouped projects, equivalent to Clean Development Mechanisms (CDM) programme of activities to monitor, verify, and monetize carbon increments in the most biologically and economically important carbon pools across the managed landscape. Conceptually, the project represents a bridge to a comprehensive landscape management methodology, yet to be developed, that would eventually achieve the same economic purpose of capturing for trade incremental carbon in a more economically efficient manner.

COMACO will be the lead implementing organization for this project with increased collaboration with the Government of the Republic of Zambia (GRZ) through the Department of Forestry in the Ministry of Lands, Natural Resources and Environmental Protection (MLNREP) and the Ministry of Agriculture and Livestock (MAL).

Being a predominantly farmer-based program, it is a requirement under the GRZ's Environmental Management Act of 2011, as illustrated in the Environmental Impact Assessment Regulations of 1997, that an Environmental and Social Management Framework (ESMF) and an Abbreviated Resettlement Policy Framework (ARPF), are prepared. Similarly, for the project under the World Bank financing, it complies with the Safeguards Operational Policy (O.P) 4.01 on Environmental Assessment and OP4.12 on Involuntary Resettlement respectively. This document will be submitted to the Zambia Environmental Management Agency (ZEMA) for clearance through issuance of a "No Objection" and also for World Bank review and issue of no objection and disclosure both in country and at the World Bank's InfoShop, in accordance with Bank Disclosure policy.

2.1. Project Components

The COMACO Landscape Management Project (CLMP) will be implemented in areas where COMACO operates and is expected to cover an area of approximately 1.7 million hectares (see Figure 3). Project success over the next ten years will lay the foundation for expansion of these sustainable land-use practice and innovations to surrounding areas, to be applicable to over eight million hectares.

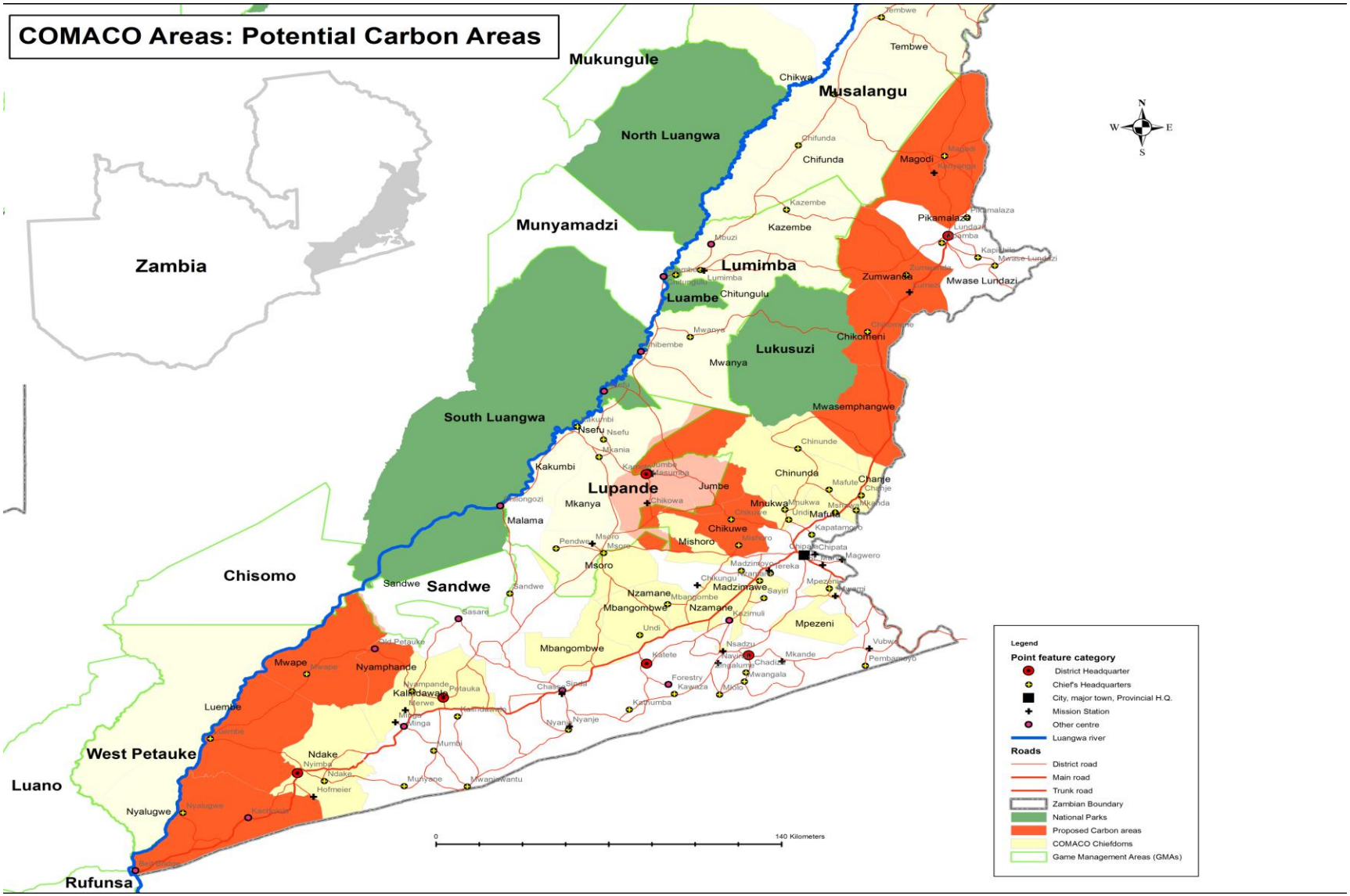


Figure 3. Potential Project Area, COMACO Landscape Management Project

The project comprises an array of specific interventions as part of an integrated landscape management strategy that will conserve biodiversity, improve food production per unit area of cropland, and increase farmer resilience to climate change. Operational objectives and interventions for each project component are as follows:

The COMACO Landscape Management project includes two main components under each operational objective and intervention: (1) Sustainable Agricultural Land Management (Integrated Crop Management) / Afforestation, Reforestation and Re-vegetation (SALM) and (2) Reduced Emissions from Deforestation and Degradation (Avoided Unplanned Deforestation) (REDD+):

Component 1: SALM

Component 1 will ensure a) an increase in food production and farm-gate income per unit area by expanding legume-based agroforestry systems with demonstrated improvements in sustainable crop yields, and b) the shift from expansive to intensive farming practices, coupled with the new availability of fuel sources, will help to alleviate the pressure on forests by decreasing the need for agricultural and charcoal-production encroachment as compared to the baseline of traditional small-holder agriculture methods called 'slash and burn' ("*chitemene*"). More specifically, the activities will include:

- Bio sequestration of fast-growing agroforestry systems of nitrogen-fixing species (*gliricidia sepium*) with demonstrated higher sustainable crop yields
- Residue retention and cessation of post-harvest crop-residue burning
- No-till agricultural practices
- Composting
- Non-burning of designated woodland sites used as apiaries
- Establishment of firebreaks to protect forest products harvests

Supply side support for the COMACO market-based incentive system will come in the form of inputs, training, and extension delivered through COMACO's hundreds of lead farmers to small-holders from COMACO's technical specialists, and drawing on technical capacity and experience of COMACO partners and advisors.

Component 2: REDD+

Component 2 will protect and expand areas under natural forest cover on traditional land by prioritizing conservation agriculture practices, alternative livelihoods, and traditional governance frameworks through the following activities:

In cooperation with traditional leaders and local government authorities (including District Forestry and Agriculture officials, and ZAWA), COMACO is piloting approaches to land-use zoning and community-based participatory forest management planning for COMACO farmers. These activities layout a potential model for traditional authorities to zone customary land and use market-based incentives to implement a conservation vision for sustainable agricultural and land use practices in consultation with community members, COMACO cooperative leaders, and local government.

The Project will build on existing pilot initiatives that have resulted in a burgeoning honey market and potentially large wild mushroom market with added premium pricing when producers demonstrate commitment to forest protection.

- Fast-growing coppicing leguminous trees (*Gliricidia sepium* (GS) and potentially *Faidherbia albida* (FA)) in agroforestry systems represent a significant increases in firewood alternatives

from renewable sources as well as increases in materials suitable for tradable carbon production can also make household energy supply sustainable through:

(i) the establishment of firewood woodlots and border plantings;
(ii) reducing destructive charcoal production in natural forests; and
(iii) introducing (in a parallel COMACO CDM project) the use of clean and efficient wood-stoves for COMACO farmers and associated communities to replace open fire cooking and switch charcoal users to superior wood stoves. This could eventually lead to a regional market for surplus sustainably produced firewood.

Small holder farmers will gain increased premium prices for their farm commodities when their community effectively implements a community-regulated and enforced land use zoning plan or establishes community conservation areas that exclude land use practices destructive to forests, as part of broader Community Conservation Plans (CCPs).

3. DESCRIPTION OF BIO-PHYSICAL ENVIRONMENT

The Luangwa Valley primarily covers Eastern Province and parts of Muchinga, Lusaka and Central provinces. It also extends to a small segment of Mozambique in the south. Phiri and Moore (1998), estimated that the valley floor covers an area of approximately 40,000 square kilometres (4 million hectares) with a length of 700 kilometers and at its widest point 90 kilometres. The valley, which is predominantly flat-bottomed, is bounded by steep escarpments,

of which the Muchinga Escarpment is more pronounced on the Western side.

While the valley extends to the other aforementioned regions, the focus of the Project is on the area that lies within the Eastern Province with a bias on districts and chiefdoms that have threatened forests and COMACO operational areas. COMACO's original operational areas are in Mabwe, Lundazi and Chama districts. The program subsequently expanded to Chipata, Katete and Petauke. Recent additions are also Nyimba and Serenje districts in the south and Chinsali district in the north of the valley.

Envisaged areas of expansion are the districts of the Muchinga escarpment between Chinsali and Serenje bridging Lavushi Mada and the Luangwa Valley National Parks. Subsequently COMACO's Community Trading Centres will cover the whole of Eastern Province.

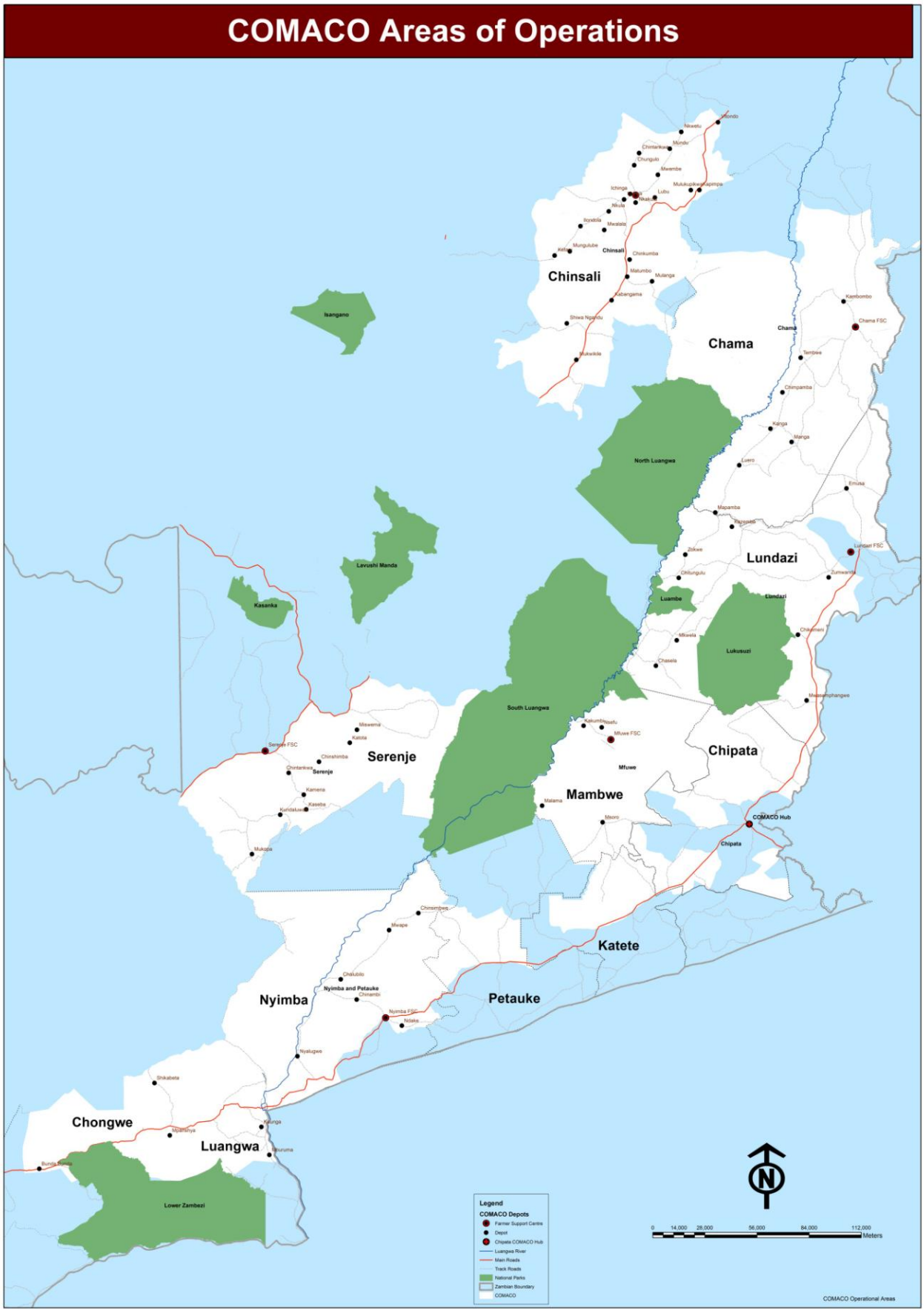


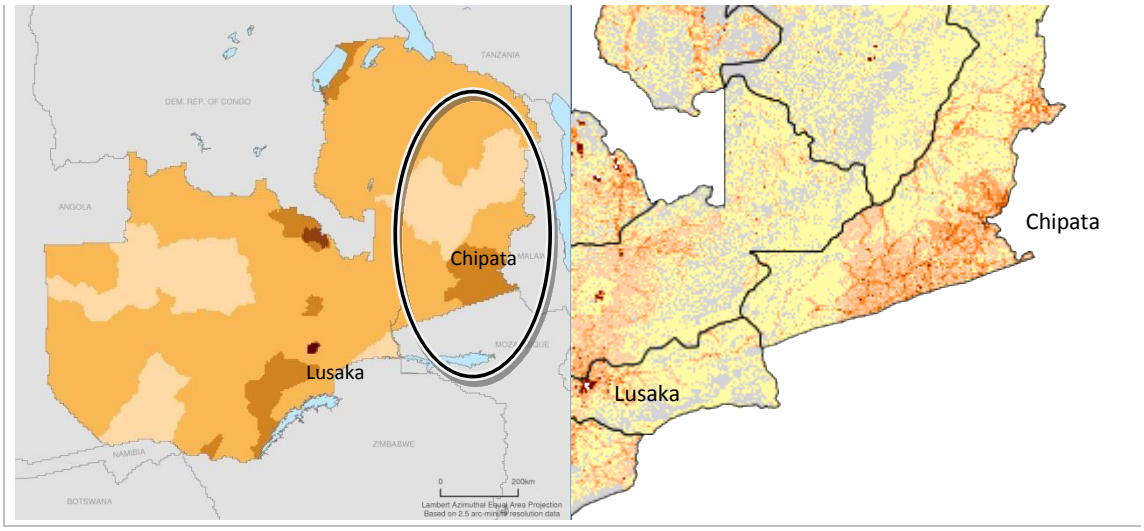
Figure 4. The Luangwa Valley with COMACO presence around National Parks, April 2013

3.2 Spatial distribution and influence of drivers of deforestation

Deforestation rates vary between different provinces. A study from Chidumayo (2012) found the highest rates of deforestation to be in Luapula- (2.47%), Eastern- (0.85%) and Copperbelt provinces (0.84%), while the lowest rates were found in Southern and Western provinces. Eastern Province according to the same study has an increasing deforestation rate.

The proxy for deforestation over time is the population density map below as no land use change maps are available until the FAO/UNREDD program publishes the maps currently produced by the Regional Mapping Centre for Development Resources (RMCDR) in Nairobi, Kenya. The population density maps below show that in Eastern Province the density is up to 100 people per square kilometre (light brown) around Chipata in the base map on the left and 5 to 25 in the rest of the province (beige to orange). The road and lighting intensity map on the right shows the higher resolution pattern for the lower Luangwa valley.

The main drivers of deforestation have been identified as charcoal and wood fuel production, logging for timber, expansion of small-scale agriculture, and unsustainable agricultural practices (GRZ & UN-REDD, 2010). Specific drivers of deforestation vary across the landscape. Clearance for small scale agriculture is a major driver in some areas, while charcoal and wood fuel production (for domestic, commercial and industrial uses) is a more important driver of deforestation in other areas. However, there is some uncertainty as to how much of deforestation in these areas is a direct cause of charcoal production and how much is due to agriculture expansion, as clearing for one is often interlinked with the other; much of the woodland converted to small-scale agriculture actually shows up as biomass in charcoal statistics, making it difficult to disaggregate the two. The impact of charcoal production on deforestation is closely interlinked with access to and the nature of the energy supply. Nearly 75% of the population lives without access to electricity, and charcoal and wood-fuel constitute the main source of energy for the majority of the population (GRZ & UN-REDD, 2010).



Source: Oak Ridge National Laboratory 2000

Figure 5. Population density map

4. LEGAL AND INSTITUTIONAL FRAMEWORK

This chapter reviews the legal and institutional framework that will guide implementation of the COMACO Landscape Project.

4.1 Review of Relevant Policy Framework

The ESMF proposes procedures that are practical and implementable and not unduly complicated or time-consuming. This relates to the larger purpose of the Project, which is to maintain a clear and committed focus on building district, community and stakeholder commitment to the needs of improved environmental management and social welfare within the COMACO Landscape Management project. This ESMF is therefore a methodology designed to streamline appropriate steps that enhance environmental and social planning impacts in the COMACO Landscape Management project. Most specifically, the ESMF seeks to incorporate underlying principles of land and natural resource management, as well as lessons and experiences from work currently in practice in the Project area that will enhance the level of cooperation among community stakeholders to support improved protected area management.

4.1.1 Vision 2030

Vision 2030 is Zambia's first written long-term plan, expressing Zambians' aspirations to become **"***A Prosperous Middle Income Nation by 2030"* by achieving certain socio-economic development objectives:

- To attain and sustain annual real economic growth rates of between 6 and 10 percent;
- To attain and maintain a moderate inflation rate of 5 percent;
- To decelerate the annual population growth rate from its 2005 rate of 2.9 percent to a rate of less than 1.0 percent over the next 25 years;
- To reduce national poverty head count to less than 20 percent of the population;
- To reduce income inequalities measured by a Gini coefficient of less than 40; and
- To provide secure access to safe potable water sources and improved sanitation facilities to 100 percent of the population in both urban and rural areas.

The Vision 2030 envisages the gradual transformation of the structure of the economy from an agricultural based (primary) to an industrial based (secondary) economy. Analysis of development trends in advanced and middle-income countries shows that economic development entails a progressive migration of labour from agriculture (primary) into industrial (secondary) and finally into services (tertiary) sectors. A key to this process is the increasing labour productivity, first in agriculture, and subsequently in industry, which releases labour to the tertiary sector.

The Vision will be operationalised through the five year development plans, currently the Sixth National Development Plan (2011-2015).

4.1.2 National Agricultural Policy, 2004-2015

The overall objective of the National Agricultural Policy is 'to facilitate and support the development of a sustainable and competitive agricultural sector in order to ensure food security and income generation at household and national levels and maximize the sector's contribution to gross domestic product (GDP).

Specific Policy Objectives are to:

- Ensure national and household food security through all-year round production and post-harvest management of adequate supplies of basic foodstuffs at competitive costs;
- Contribute to sustainable industrial development by providing locally produced agro-based raw materials;
- Increase agricultural exports thereby enhancing the sector's contribution to the national balance of payments;
- Generate income and employment through increased agricultural production and productivity; and
- Ensure that the existing agricultural resource base is maintained and improved upon.

In order to realize the above objectives the following Goals and Strategies have been set:

Policy Goals:

- Attain food security for majority households – 90% food secure by 2015;
- Increase agriculture's FOREX earnings – contribution 5%; target 20%;
- Productivity growth to expand output – Present annual rate 1-2%; target 7-10%; and
- Increase contribution to GDP – Current 18-20% target 30%.

Policy strategies:

- Private sector led market development and
- Government focus on infrastructure and support services.

4.1.3 Sixth National Development Plan, 2011-2015

The specific policy objectives in the Sixth National Development Plan relevant to the COMACO Landscape Project include the following for the agricultural sector:

Objective: "To diversify and attain national and household food security." The following strategies for meeting this objective should guide the focus of the proposed project interventions:

- Promote high yielding seed materials;
- Promote soil improvement practices;
- Improve farm management practices;
- Enhance control of crop pests and diseases;
- Promote agricultural mechanization (through appropriate technology);
- Promote crop diversification;
- Promote Public Private Partnerships (PPPs) in research, infrastructure development and programmes;
- Promote participation of farming communities in the uptake of proven agricultural practices such as conservation farming through enhanced extension services; and
- Encourage community participation in decision making through the localized Advisory committees and ensure responsibility towards planned activities.

Objective: "To promote soil management for sustainable agricultural production and growth"
The following strategies for meeting this objective should guide the focus of the proposed project interventions:

- Mainstream climate change adaptation and develop mitigation action plan and measures including vulnerability assessment and risk management;
- Promote appropriate conservation farming methods;
- Promote and strengthen participatory land use planning and management; and
- Upgrade skills of technical and professional staff in research and extension services training.

Objective: "To promote the development of competitive, efficient and transparent public and private sector driven marketing system for agricultural commodities and inputs".

The following strategies for meeting this objective should guide the focus of the proposed project interventions:

- To promote the development of competitive, efficient and transparent public and private sector driven marketing system for agricultural commodities and inputs;
- Strengthen the collection, analysis, dissemination and use of agricultural marketing information systems;
- Promote private sector participation in agriculture marketing;
- Promote structured markets and transparency in the pricing system;
- Facilitate the development of market infrastructure such as feeder roads, storage and market facilities;
- Promote improved agricultural commodity processing, marketing, distribution and storage;
- Promote PPPs in agricultural marketing infrastructure development; and
- Facilitate access to credit particularly for small and medium-scale farmers.

4.1.4 National Policy on Environment (NPE), 2009

The NPE was designed to "create a comprehensive framework for effective natural resource utilization and environmental conservation and which will be sensitive to the demands of sustainable development."

Specific Policy objectives are:

- To promote the sound protection and management of Zambia's environment and natural resources in their entirety, balancing the needs for social and economic development and environmental integrity to the maximum extent possible, while keeping adverse activities to the minimum;
- To manage the environment by linking together the activities, interests and perspectives of all groups, including the people, non-governmental organisations and government at both the central and decentralized local levels;
- To accelerate environmentally and economically sustainable growth in order to improve the health, sustainable livelihoods, income and living conditions of the poor majority with greater equity and self-reliance;
- To ensure broadly-based environmental awareness and commitment to enforce environmental laws and to the promotion of environmental accountability;
- To build individual and institutional capacity to sustain the environment;
- To regulate and enforce environmental laws; and
- To promote the development of sustainable industrial and commercial processes having full regard for environmental integrity.

With specific reference to the Agricultural Sector, the NPE's overall objective is: "To promote environmentally sound agricultural development by ensuring sustainable crop and livestock production through ecologically appropriate production and management techniques, and appropriate legal and institutional framework for sustainable environmental management."

In order to realise the above objective, the following strategies have been adopted and will require incorporation in the overall COMACO Landscape Management Project implementation:

- Intensify production on suitable lands to avoid expansion into marginal or fragile areas;
- Integrate environmental awareness and education in community participatory agricultural extension and research programs;
- Train research and extension staff on the community based participatory approach for environmental concerns;
- Prevent or minimize the environmental impact of cultivation and other development on marginal lands (steep slopes, 'dambos', swamps and areas susceptible to flooding) through improved cultivation of agricultural production;
- Review, evaluate, and develop agricultural policies and the legislative and institutional framework on a regular basis for the purpose of incorporating environmental concerns and inter-sectoral links;
- Review and enact legislation to protect environmentally fragile areas from agricultural encroachment;
- Embark on intensive education, extension and mass awareness programmes and promote community participation in soil conservation measures and integrated land use systems in all parts of the country;
- Promote research into appropriate and sustainable soil and water conservation techniques;
- Promote proper animal husbandry practices to avoid overgrazing, spread of disease, soil erosion, loss of soil fertility, air, land and water pollution, loss of biodiversity and overall environmental degradation;
- Promote community participation in environmental conservation programmes, including communal catchment protection and conservation;
- Ensure that trade policies on agricultural commodities and inputs encourage environmentally sound production systems;
- Review and implement the Pesticide and Disease Control Act;
- Promote conservation-oriented farming practices especially in areas prone to laterisation and nutrient leaching and
- Introduce area-specific technologies including organic fertilizers, seed varieties and soil conservation.

4.1.5 National Adaptation Programme of Action on Climate Change (NAPA), 2007

Zambia developed its NAPA as a Least Developed Country party to the United Nations Framework Convention on Climate Change by identifying the 10 most urgent priorities for immediate adaptation interventions within the sectors of agriculture and food security (livestock, fisheries and crops), energy and water, human health, natural resources and wildlife, and forestry

For agriculture and food security, the main climactic threats that have an impact on livelihoods and adaptive capacity of vulnerable communities are:

- Excessive precipitation leading to water logging;
- Erosion and hindrance to field operation;

- Increased frequency of droughts;
- Shortening of the growing season; and
- Flash floods

The regeneration of forest resources are negatively impacted by drought and climatic changes that affect the resilience of forest vegetation types could grossly affect income and welfare of the communities.

Some of the relevant adaptation measures, mostly relating to alleviating the impact of droughts, include:

- Adaptation of crops (cereals, legumes, root and tuber crops, and horticultural crops) to climate change/ variability including promotion of early maturing/drought resistance crops;
- Promotion of irrigation and efficient use of water resources;
- Use of technologies for fertility improvement and moisture storage (including soil conservation measures); and
- Improve post-harvest storage and marketing of produce.

4.1.6 World Bank Operational Policies

The World Bank has set safeguard policies covering various aspects of the environment. Below is a summary of each safeguard policy in relation to the COMACO Landscape Management Project.

Environmental Assessment (OP/BP 4.01)

The policy is triggered as a result of: proposed activities under component 1 and 2, which will include increased food production and farm-gate income per unit area by expanding legume-based agroforestry systems, climate-smart agriculture, and promotion of the use of fast growing coppicing leguminous trees in agroforestry systems, i.e. *Gliricidia sepium* (GS). Through the program activities, COMACO farmers will experience increased production of crops as well as intensification of on-farm crop production through the introduction of legume-based agroforestry and this is expected to have significant positive environmental impacts as well as productivity improvement. However, some potential adverse impacts have been identified during preparation of this ESMF and are described in Table 1. If they materialize during implementation mitigation measures will be adopted, including but not limited to those identified in this document, and reviewed and monitored by appropriate oversight bodies (district-level COMACO/Community Advisory Management Committees (COMACs)).

As a consequence, an Environmental and Social Management Framework (ESMF) will detect and mitigate environment and social impacts when the project is implemented as well as to enhance sustainability of the project results. Mitigation measures provided in this ESMF will address potential impacts of the COMACO Landscape Management Project.

Natural Habitats (OP/BP 4.04)

This policy is relevant because most of the COMACO landscape project area is natural habitat, such as miombo woodlands, mopane woodlands and grasslands. The Project aims to enhance their conservation status but there is a possibility that the project will expand its farming activities at the cost of natural habitat in order to achieve climate mitigation and adaptability. This expansion in project activities could locally increase the ecosystem disturbance, especially that it is envisaged that there will be new settlements as a result of relocation of some households from potential forest reserve areas to new farming areas, where they will clear land for crop production. This will result in

increased responsibility by the COMACO Landscape project to actively engage in the production and implementation of a Community Conservation Plan as summarized in Annex 2. The ESMF will support the successful development of these plans.

Forests (OP/BP 4.36)

The policy is triggered since the project intends to replace the need for unsustainable dependence on forests by decreasing the need for agricultural and charcoal production encroachment. The project instead proposes promotion of incentives for sustainably harvested forest products such as honey and wild mushrooms as alternatives (or increased diversification of agricultural, non-intrusive-based commodities, such as poultry) reduce destructive charcoal production and establishment of fire breaks to protect forests as well as their products. The ESMF will be applied to that OP as well.

Pest Management (OP 4.09)

This policy is triggered because there is a possibility that increased crop production among farmers could trigger the use of pesticides among some farmers who would feel that the use of the pesticides would in one way or the other increase their crop yields and reduce threats from unwanted pests. However, the COMACO Landscape project has no intention of introducing pesticides to the program as the proposed intervention of coppicing GS and maize or other crops will not contribute to an increase in crop pests that would induce the use of pesticides. The project would also not: (i) procure any pesticides or pesticides-application equipment, (ii) lead to substantially increased pesticide use, and (iii) maintain or expand pest management practices that are risky from an environmental or human health standpoint.

If the need arose in any instance, COMACO would engage use of organic pesticides which would not have any adverse effects on the environment or relative crops around the production area. COMACO is currently working with one of the local cotton companies (Cargill) on the possibility of using GS leaves as a non-chemical insect repellent sprayed on crops.

Physical Cultural Property (OP/BP 4.11)

The policy is triggered as the Project area may harbor structures of cultural or archeological importance. If during implementation, civil works would unearth archaeological relics, fossils, or human remains, mitigation measures would include chance finds procedures as part of the generic environmental rules for contractors and construction workers.

Indigenous Peoples (OP/BP 4.10)

The policy is not triggered as there are no known indigenous peoples present in the proposed project areas where the project will be implemented.

Involuntary Resettlement (OP/BP 4.12)

The policy is triggered because some local communities have encroached on potential forest areas and are utilizing them for their livelihoods. The COMACO Landscape project will work with the local authorities and chiefs, as well as District Forestry, Agricultural and Lands officers to relocate these households, to more arable land where they can generate better income from sustainable farming practices rather than destructive use of their forests and land through illegal charcoal production. This decision to relocate these households triggers this policy. The project will comply with the provisions of the policy whenever such situations arise in line with the Resettlement Policy Framework and the national resettlement regulations.

However, the project will in no way ask or require any land ownership to be eligible for carbon benefits. The COMACO Landscape project will not take land away from local communities in order

to sell carbon, but instead wants the community to care for their own land and keep it safe while benefiting from carbon market incentives.

Safety of Dams (OP/BP 4.37)

The policy is not triggered as the project would not invest in dam construction.

Projects on International Waterways (OP/BP7.50)

The policy is not triggered because the project area does not include international water ways.

Projects in Disputed Areas (OP/BP 7.60)

The policy is not triggered as the area where the Project will be implemented is not known to include any disputed areas.

In conclusion, it has been determined that this project will trigger six World Bank Safeguards Operational Policies (OPs): Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP 4.04), Pest Management (OP/BP 4.09), Forests (OP/BP 4.36) Involuntary Resettlement (OP 4.12) and Physical Cultural Property (OPN 11.03). In order to fulfill requirements for these policies (1) an Environmental and Social Management Framework (ESMF) which satisfies the requirements of World Bank Safeguard Policies OP/BP 4.01, OP/BP 4.04 and OP/BP 4.36, as well as (2) a Resettlement Policy Framework (RPF) to satisfy OP/BP 4.12 on Involuntary Resettlement have been prepared.

4.2 Review of Relevant National Regulatory Framework

The proposed Project activities may be subject to a range of regulatory instruments, and regulations are considered below.

4.2.1 Environmental Management Act, 2011

The Act is the principal Act on environment in Zambia, it provides for the establishment of the Zambia Environmental Management Agency (formerly Environmental Council of Zambia) and mandates it to do all such things as are necessary to protect the environment and control pollution so as to provide for the health and welfare of persons, animals, plants and the environment in general. Noting that project activities involving crop production and agroforestry systems closely interact with the environment, the provisions of this Act and its subsidiary pieces of legislation will require compliance with this Act. This will be done through implementation of the ESMF as appropriate.

A total of 5 Regulations have been passed as Statutory Instruments under this Act and these relate to Water Pollution Control, Waste Management, Air Pollution Control, Water Pollution Control and Environmental Impact Assessment Regulations.

The EIA studies include an assessment of:

- The social economic impact of the project, such as resettlement of affected people;
- Socio-economic and cultural considerations such as effects on generation or reduction of employment in the area, social cohesion or resettlement, local economic impacts; and
- Effect on land uses and land potential in the project area and surrounding areas.

The Agency is granted a relatively narrow remit specific to climate change; it can conduct research on the effects of climate change on human beings and the environment, as well as prepare guidelines for

the management of environmental emergencies that includes climate-change related disasters.

4.2.1.1 Environmental Impact Assessment Regulations

The Regulations state that a developer shall not implement a project for which a project brief or an environmental impact statement is required under the Regulations, unless a Project Brief or an Environmental Impact Assessment (EIA) has been concluded in accordance with the regulations and the Agency has issued a decision letter.

As part of the process of developing an EIA, an EMP will be prepared. An EMP describes the specific actions needed to manage and monitor the various impacts identified in a particular EIA. The EMP is a key working document to guide how a particular implementing party or stakeholder identified in an EIA will provide assurances for mitigation against potential environmental or social risks. Elements in the EMP are detailed steps or procedures the identified parties or stakeholders must follow to receive support from the COMACO Landscape Management project.

4.2.1.2 Pesticides and Toxic Substances Regulations, 1994

A subsidiary legislation under the Environmental Management Act (EMA) the Regulations provide for the safe use and management of pesticides and toxic substances so as to safeguard the general health, safety and welfare of persons, animal life, plant life and property across all user categories.

4.2.1.3 Hazardous Waste Management Regulations, 2001

Also falling under the EMA, the Regulations (Statutory Instrument No. 125 of 2001), provides for safe management of hazardous wastes by controlling the generation, collection, storage, transportation, pre-treatment, treatment, disposal, export, import and trans-boundary movement of hazardous wastes.

4.2.1.4 Water Pollution Control Regulations, 1993

Falling under the EMA, these Regulations (Statutory instrument No.72 of 1993) provide for measures aimed at controlling the discharge of effluents and water pollutants into the aquatic environment in order to ensure public health and protection of aquatic ecosystems by prescribing standards to be complied with for all discharged effluents and waste water streams.

4.2.1.5 The Waste Management (Licensing of Transporters of Wastes and Waste Disposal Sites) Regulations, 1993

Falling under the EMA, the Regulations require that anyone transporting waste or operating a waste disposal facility should obtain a license from the ZEMA and comply with the conditions of the license.

4.2.1.6 The Ozone Depleting Substances Regulations

A subsidiary piece of legislation under the EMA, the Regulations (Statutory Instrument no.27 of 2001 provide for the control of ozone depleting substance such as refrigerants.

4.2.1.7 The Air Pollution Control (Licensing and Emissions Standards) Regulations, 1996:

Also falling under the EMA, the Regulations prohibit unauthorized discharge of pollutants into the air.

4.2.2 The Agricultural Lands Act of 1994

Section 40 of The Agricultural Lands Act of 1994 identifies improvements qualifying for compensation to include:

- Planting of orchards or fruit bushes;
- Improvement to watercourses for water supply – domestic and agricultural;
- Boreholes/wells, ponds; and
- Erection, alteration and enlargement of building.

4.2.3 The Agriculture, (Fertilisers and Feeds) Act

The Act became effective in 1990 and provides for the regulation and control of the manufacture, processing, importation and sale of fertilisers and feeds. It also provides for ensuring minimum standards of effectiveness of fertilisers and feeds.

4.2.4 The Factories Act

The Act regulates the conditions of employment in factories and other places of work as regards the safety, health and welfare of persons employed there in. The Act also provides for the examination and inspection of certain plant and machinery in order to ensure safety.

4.2.5 The Fisheries Act

Enacted in 1974, the Act provides for the development of commercial fishing, control of fishing and the registration of fishermen and boats.

4.2.6 The Forests Act, 1999

The Forests Act of 1999 provides that the ownership of all trees standing on, and all forest produce derived from, customary areas, National Forests, Local Forests, State Lands and open areas is vested in the President on behalf of the Republic, until lawfully transferred or assigned under this Act or any other written law. In addition to the management of National Forests and Local Forests, the Forestry Commission (and not operationalized as of February 2014) established in the Act would also oversee the establishment of Joint Forest Management (JFM) areas. The JFM framework enables the greater participation of local communities through a Forest Management Committee that would adopt a management plan and share revenues with government. The make-up of the Forest Management Committees is stipulate in the Act and representatives from villages, the local authority, various government ministries, and license holders in the JFM Area.

The Local Forests (Control and Management) Regulations, 2006

The Local Forests (Control and Management) Regulations specifically provide for the structures and procedures of Joint Forest Management Areas. Under this structure, a Forest Management Committee (made up of primarily of local government) is responsible for implementing a Joint Forest Management Plan and sharing revenues. A Village Resource Management Committee (made up of village headmen and user group representatives, and community members) elects members of the

Forest Management Committee, advises on granting licenses, and submits work plans. Together these two committees can register the group as a Forest Trust.

4.2.7 The Lands Act, 1995

The Lands Act vests all land (which is defined to mean any interest in land whether the land is virgin, bare or has improvements but excludes mining right) in Zambia in the President to be held by him in perpetuity for and on behalf of the people of Zambia. There are two types of land tenure, leasehold rights to state land and customary tenure.

Customary tenure applies to "individual plots, forest land, common land within a village, and communal grazing land." The Lands Act recognises customary tenure by providing that every piece of land in a customary area which immediately before the commencement of the Act was vested in or held by any person under customary tenure will continue to be so held and recognised and any provision of this Act or any other law shall not be so construed as to infringe any customary right enjoyed by that person before the commencement of this Act.

Though it is a *de facto* right, only traditional authorities (typically chiefs through headmen) have the right to allocate land under customary tenure. Chiefs may also approve the conversion of customary land to leaseholds of state land, but once alienated all customary rights attached to the land are extinguished and it cannot be converted back to customary tenure.

4.2.8 Local Government Act

The Act came into force in 1991 and provides for the establishment of Councils in districts, the functions of local authorities and the local government system. Some of these functions relate to pollution control and the protection of the environment in general.

4.2.9 National Heritage Conservation Commission Act

Enacted in 1989, the Act provides for the conservation of ancient, cultural and natural heritage, relics and other objects of aesthetic, historical, pre-historical, archaeological or scientific interest.

4.2.10 The Natural Resources Conservation Act

Enacted in 1970, the Act provides for the establishment of the Natural Resources Advisory Board whose main functions are to ensure the proper use, conservation and improvement of natural resources. Some of the provisions of the Act have since been repealed with the coming into force of the EPPCA. This includes the abolition of the Natural Resources Advisory Board.

4.2.11 The Noxious Weeds Act, 1953

The Act provides for the removal and destruction of noxious weeds wherever they are identified and places the responsibility on the occupier of the land upon which the weed is identified.

4.2.12 The Plant Pests And Diseases Act, 1959

The Act provides for the eradication and prevention of the spread of plant pests and diseases in Zambia and for the prevention of the introduction into Zambia of plant pests and diseases.

4.2.13 The Plant Variety and Seeds Act, 1968

An Act to provide for the regulation and control of the production, sale and import of seed for sowing and of the export of seed, and to provide for the testing and for minimum standards of germination and purity thereof, and further to provide for the certification of seed and formatters incidental to or connected with the foregoing. Should the project begin to produce seed for sale, the COMACO Landscape project will comply with the provisions of the Act.

4.2.14 Public Health Act

The Act provides for the prevention and suppression of diseases and general regulation of all matters connected with public health in the country. The Act also stipulates conditions for production, distribution and vending of food products.

4.2.15 State Lands, Reserves and Trust Lands Act

The Act provides for the protection of rights to land ownership and exploitation by specifying exclusive conditions for acquisition and exploitation of different categories of land.

4.2.16 The Tourism Act

Enacted in 1979, and amended in 1985, the Act provides for the control of tourism enterprises. The Act though making no direct reference to environmental protection does provide for appeals against authorisation of tourism projects which are deemed to negatively affect Zambian tourism, which is basically natural resource-based.

4.2.17 The Town and Country Planning Act

The Act became effective in 1962 and provides for the appointment of planning authorities whose main responsibilities are the preparation, approval and revocation of development plans. It also provides for the control of development and subdivision of land. The Act does not however apply to Trust Land and land in Reserve and Mining Areas.

4.2.18 The Water Resources Management Act (Act no. 21 of 2011)

The Act provides for the control, ownership and use of water, excluding that of the Zambezi, Luapula and parts of the Luangwa Rivers that form borders with other countries. The Act establishes the Water Board and regulates the use of public water including protection against pollution.

4.2. The Zambia Wildlife Act, 1998

The Act provides a legal framework for the establishment, control and management of National Parks and Game Management Areas (GMAs); conservation and protection of wildlife and objects of interest in National Parks; licensing of hunting; and the involvement of communities in the management Game Management Areas to enhance benefits to both local communities and wildlife. Ownership of all wild animals in Zambia is vested in the President, but can be transferred or vested in others in accordance with the Act. The capturing or killing of wild animals that are protected animals or game animals must be done under a license or permit. The Act authorizes the Zambia Wildlife Authority (ZAWA) to control and manage National Parks, bird sanctuaries, wildlife sanctuaries and GMAs. In these areas, ZAWA must also adopt methods to ensure sustainability, conservation, and preservation of ecosystems and biodiversity, as well as enhance economic and social wellbeing of communities

living in Game Management Areas. The Act provides for Community Resource Boards made up of community members living in Game Management Areas, which will have powers including the right to negotiate co-management agreements with hunting and tour outfitters, manage quotas for wildlife under their jurisdiction, and appoint village scouts.

4.2. International and Regional Conventions

Zambia is a party to a number of international and regional conventions aimed at addressing environmental concerns. Those relevant to the proposed program and its environmental setting will require compliance with and include but not limited to:

- United Nations Framework Convention on Climate Change;
- United Nations Convention on Biological Diversity;
- International Plant Protection Convention for the prevention and control of the introduction and spread of pests of plants and plant products;
- Stockholm Convention on Persistent Organic pollutants;
- Convention on Wetlands of International Important especially as Waterfowl Habitat (RAMSAR Conventions);
- Statutes for the International Union for the Conservation of Nature and Natural Resources;
- International Plant Protection Convention;
- African Convention on the Conservation of Nature and Natural Resources;
- Vienna Convention of the Law for Treaties;
- Convention concerning the Protection of the World Cultural and Natural Heritage;
- Convention on International Trade in Endangered Species of Wild Fauna and Flora;
- Agreement on the Action Plan for the Environmentally Sound Management of the Common Zambezi River System; and
- Convention on Biological Diversity.

4.3 Institutional and Organisational Framework

4.3.1 National Government

The President of the Republic of Zambia, elected for a maximum of two five-year terms, is head of state and heads the national government. The President exercises executive authority under provisions of the Constitution, extending to the execution and maintenance of the Constitution and all laws made under or continued in force by the Constitution:

"As Head of State the President shall perform with dignity and leadership all acts necessary or expedient for, or reasonably incidental to, the discharge of the executive function of Government subject to the overriding terms of this Constitution, obliged to protect, administer and execute".

The Cabinet, made up of the President, Vice-President, and Ministers assists the President in the determination of the government's general policy.

A unicameral parliament, popularly elected every five years, exercises legislative power. The parliament enacts laws to ensure the governance of the country. Parliament controls and regulates the finances of the state through the passage of annual revenue and expenditure budgets.

4.3.2 Government ministries and bodies

COMACO works in partnership with government ministries at the district, provincial and national level. The Project could also coordinate with various governmental bodies to advance mutually beneficial goals including information and knowledge sharing, promoting climate resilience, advancing conservation agriculture and sustainable land use practices, and improving local livelihoods.

The Disaster Management and Mitigation Unit (DMMU)

Established in 19994, the vision of the Disaster Management and Mitigation Unit (DMMU) vested in the Office of the Vice President is to create a disaster management system in the country that promotes a social 'safety net' for protection of the citizenry, their assets and the environment against disaster through a proactive, community-based, developmental and multi-sectoral approach that combines disaster preparedness, prevention and mitigation and integrates disaster management into national development. The DMMU performs the following functions:

- To put in place appropriate preparedness measures in order to manage effectively and efficiently;
- To activate response mechanism for effective and timely search and rescue operations in order to save life and reduce damage to property;
- To put in place measures to restore livelihoods and other life support systems to affected communities;
- To mitigate the disruptive and destructive effects of hazards and all disasters in order to reduce their impact on vulnerable communities, assets and the environment;
- To put in place preventive measures in order to reduce the negative effect of hazards and strengthen the national capacity for disaster management in order to avoid the adverse impact of hazards; and
- To effectively co-ordinate disaster management activities through a body of procedures and practices in order to avoid duplication of efforts and resources at all levels.

Inter-ministerial Interim Climate Change Secretariat (IICCS)

In 2012, the Government of the Republic of Zambia established the Interim Inter-Ministerial Climate Change Secretariat. The IICCS is intended to provide sustained coordination support for climate change actions in Zambia and is comprised of officials from key impacted Ministries, including: Ministry of Finance, Ministry of Lands, Natural Resources and Environmental Protection, Office of the Vice President, Ministry of Agriculture and Livestock, Ministry of Transport, Works Supply and Communication, and Ministry of Mines, Energy and Water Development. In addition, the GRZ also appointed a Steering Committee of Permanent Secretaries and a Technical Committee of Government officials, Civil Society and Private Sector.

The functions of the Secretariat include, (i) establishing the Long Term Institutional Arrangements for overseeing Climate Change programs in Zambia, (ii) Coordinating the implementation of climate change activities, and (iii) Carrying over the functions of the Climate Change Facilitation Unit (which was previously serving as the Secretariat for Climate Change). While the Steering Committee of Permanent Secretaries will oversee the work of the Secretariat, while the Technical Committee will provide technical and policy guidance to the Secretariat.

Luangwa Valley Ecosystem Partnership Management Initiative

The Luangwa Valley Ecosystem Partnership Management Initiative was launched in 2007 to promote a Luangwa Valley ecosystem that is able to sustain diverse, healthy wildlife populations, year-round water flow of the Luangwa River, and improved rural livelihoods. The Initiative has two main goals: 1) Unify rural communities living across the valley and plateau landscapes of the Luangwa Valley ecosystem with livelihood skills and improved leadership that promote better land management and natural resource conservation, and 2) Develop effective oversight structures by government and partners to maintain community commitment to conservation in ways that reward the right livelihood choices and leadership decisions.

The framework of the Initiative enhances coordination through governance and developmental support structures, especially at the provincial level of government, to promote conservation and good land stewardship at the farmer and community level. Accountability of results and activities will be reinforced through Community Conservation Plans at the chiefdom level, which will be incorporated as benchmarks into annual district conservation plans and monitored at biannual roundtable meetings, involving district senior government officers and key provincial officers together with non-government and private sector partners. These roundtable meetings will also increase central government awareness of environmental challenges that exist across the Luangwa Valley and progress in addressing them through the partners engaged and supporting the Initiative.

COMACO is an active member in this Initiative, which includes the Forestry Department, Ministry of Agriculture and Lands, Fisheries, Planning, Land alliance, and ZAWA.

Ministry of Agriculture and Livestock

The Department of Agriculture in the Ministry of Agriculture and Livestock is responsible for providing of agriculture extension services in order to promote adoption of improved farming technology for farmers to achieve high production, productivity, maintain and improve the agriculture resource base. The Department has three operational branches: The Technical Service Branch (TSB), Agriculture Advisory Service Branch (AASB), and the Crops Production Branch (CPB). The Department is mandated to:

- Disseminate technical and other information to the farming community;
- Provide technical services in irrigation, farm power, mechanization and land husbandry; and
- Provide technical information and extension services in crop production, horticultural production, nutrition, crop protection and soil fertility

Ministry of Lands, Natural Resources and Environmental Protection (MLNREP)

The Forestry Department, which falls under the Ministry of Lands, Natural Resources and Environmental Protection, has the mandate to manage forests both on customary land and protected forests. The Forestry Department operates under a legal and institutional framework built on the following:

- National Forestry Policy of 1998;
- Forests Act Cap 119 of the Laws of Zambia;
- Zambia Forestry Action Plan;
- Sixth National Development Plan;
- Vision 2030; and

- Millennium Development Goals.

Some of the functions of the Forestry Department to promote sustainable forest management include:

- Ensuring sustainable management and utilization of forest resources through enforcement of forest act to maintain the ecosystem integrity;
- Identifies areas to be declared protected forest areas to avoid loss of biodiversity and land degradation; and
- Collecting general statistics periodically on forests to help in forest management and planning. The current forest statistics are based on the countrywide assessment carried out between 2005 and 2008 under the Integrated Land-Use Assessment. A second phase of the Integrated land-use Assessment (ILUA II) was launched in 2010 and is expected to be completed in 2014. ILUA II will include two types of assessments: (i) Biophysical assessment which incorporates forest and soil parameter measurements, and (ii) Forest livelihood and economic survey (FLES), be the first of its kind to be undertaken by the Ministry in collaboration with Central Statistics Office, which considers socio-economic, forest governance and informal forest economy measurements in order to provide more details of the economic contribution of forests to the livelihood of the people of Zambia.

Each of the ten provinces of Zambia has a Provincial Forestry Office and the department is also represented in 75 districts while new District Forest Offices are being set up in the newly created districts.

Pilot Program for Climate Resilience (PPCR)

The Pilot Program for Climate Resilience (PPCR) is implementing a programmatic approach to enhance Zambia's resiliency to the impacts of climate change in the form of a Strategic Program for Climate Resilience (SPCR).

The SPCR approach represents a shift away from a sector-specific, project-by-project model and towards the development of selected transformational themes and priorities of Zambia's National Development Plan. National stakeholders have endorsed three strategic components for the SPCR:

- **Participatory Adaptation** – supporting community-based as well as complementary private sector support;
  Climate Resilient Infrastructure – supporting the climate proofing of highly visible infrastructure; and
- **Strategic Program Support** – providing direct support to Zambia's emerging Climate Change Program.

There is a national focus on program strengthening while field interventions target two priority sub-basins of the Zambezi River (Barotse and Kafue).

Zambia Wildlife Authority (ZAWA)

ZAWA is authorized and mandated by the Wildlife Act (1998) to control, manage and conserve, promote and administer National Parks, bird sanctuaries, wildlife sanctuaries and Game Management Areas and coordinate activities in such areas and to do such things as are necessary for the furtherance of the objectives of the Act. COMACO is planning to enter into a long-term partnership with ZAWA to address rural poverty and hunger as a basis to enhance conservation results in both Game

Management Areas and National Parks in Zambia, focusing on the Luangwa Valley where the potential for community conflicts with wildlife and habitat are high.

4.3.3 District Government

Office of the District Commissioner

The administration of the district is vested in the Office of the District Commissioner, established by the Government in 1999 as part of the decentralization process. The office coordinates the functions of all developmental agencies at the District level as well as harmonizing the functions of Central Government and those of Local Government (Authority). All development agencies working in the district are members of the District Development Coordinating Committee (DDCC) that is chaired by the District Commissioner. The District Council provides the secretariat.

The Local Authority

The District Council, usually referred to as the Local Authority, is a semi-autonomous institution operating as an agent of Central Government. It is authorized to perform specific functions on behalf of Government. The Council is the highest decision making body at the district level. It formulates policies in the form of by-laws. The Local Authority provides a forum for local representation of the public by electing their local representatives, the Councillors.

The Local Authority is responsible to the Ministry of Local Government and Housing. The Local Authority possesses the statutory powers to make by-laws and regulations. According to the provisions under the Local Government Act No 22 of 1991, the Ministry of Local Government and Housing can amend or revoke by-laws issued by council and make regulations that Council has to conform to, through circulars and statutory instruments.

A Management Team, which is employed by the Council for specific responsibilities, administers the Council. However, the general establishment of the Council is bigger. It comprises the Council Secretary who is the Chief Executive Officer supported by Chief Officers and other auxiliary staff.

4.3.3 Traditional Authorities

The traditional system of governance is an important part of the way of life in the rural areas. The Chief administers his area using group tribal leaders, village headmen and a system of deputies. They address typical issues of local importance, for example, issues relating to land or witchcraft. All these chiefs are within the jurisdiction of Senior Chief.

A legal structure is also present in the traditional communities. There are Local Courts with Court Assessors who are appointed on the recommendation of the Chief and district government.

4.3.4 Household Organization

In the affected areas, people reside in family homesteads, usually comprising more than one dwelling unit. As most households have an extended family. As in other parts of rural Africa, most of the households are male-headed; though in recent years the number of female-headed households is on the increase due to the impact of HIV/Aids. A given household may cook and eat from a common pot or may combine food supply, preparation, and consumption with co resident households within the homestead.

4.3.5 COMACO Producer Group Cooperatives

Producer Group Cooperatives are COMACO's farmer-based partner organizations. They fulfill the following objectives:

- Farmers need representation at planning and review meetings held by COMACO.
- Enable COMACO to work more efficiently through a smaller group of peer-elected leaders to resolve jointly issues and plan strategies.
- Facilitate key functions that enhance COMACO's efficiencies for building sustainability and profitability for both farmers and COMACO.
- Provide influence to leverage traditional leaders and the farming community to support climate-smart agricultural practices and good conservation practices.
- Provide an important link with other stakeholders to small-scale farmer interests and needs.

Membership and structure

All COMACO registered farm (producer) members are automatically members, provided they are members of producer group and sign the COMACO Conservation Pledge. All members must accept their responsibility of membership without gender, social, racial, political or religious discrimination. Its' leadership structure consists of 10 people, referred to as the Cooperative Board. This board is composed of the Chairperson, V/Chairperson, Secretary, V/Secretary, Treasure and other board members.

Capacity building

COMACO Cooperatives are expected to run multi-activities, including logistics of crop consolidation and purchases, businesses, infrastructure development, marketing etc. This implies that the cooperative will need to undergo training in such skills as leadership, business planning, project planning, basic bookkeeping, conservation planning and land management, and new, climate-smart agricultural techniques to enhance the sustainability of the organization and contribute effectively to COMACO's mission.

Key tasks of the COMACO Cooperatives

Producer group cooperatives are the custodians of COMACO activities at grassroots level with activities centered at the trading depot in each of the participating chiefdom. Among the various responsibilities expected of cooperatives and included in their By-laws are as follows:

- Manage all depot activities in relation to depot's day to day programs,
- Provide leadership to all member producer groups to promote food security, household income and conservation,
- Maintain group register of producer groups members,
- Help COMACO mobilize surplus crop for sell to COMACO through forward contracts
- Promote compliance in conservation farming among all producer cooperatives as a condition for premium commodity prices,
- Refrain cooperative members from indulging in any unlawful use of wildlife and other natural resource,

- Work as partners with the COMACO program and district advisory committees,
- Promote the development and support of local trainers (lead farmers) for continued development of improved livelihood skills,
- Conduct full cooperative meetings as producer group field days to promote skills, cultural values, market understanding, and conservation goals,
- Develop the COMACO trading depots as centers for serving cooperative members,
- Account and report to all members on revenues accrued and use to enhance the benefits of cooperative members,
- Encourage lead farmers and group members to learn better technologies,
- Uphold By-Laws as condition for membership in the cooperatives, and
- Contribute to the development and implementation of the Community Conservation Plans.

5. IDENTIFICATION OF PROGRAMME IMPACTS

The COMACO Landscape Project is still at a planning stage and it can only speculate what some of the potential impacts might be that would require an ESMF to help address and resolve. However, there are various broad activities the project will support in which potential adverse impacts could arise and a functioning ESMF would help mitigate. Otherwise, the project will actively enhance the overall positive impact on conservation and the welfare of local residents associated with the project.

Noteworthy, an ESMF does not identify all possible impacts from project activities, but instead provides a framework and set of methods and procedures for mitigating those with possible negative impacts while enhancing those with potentially positive impacts. This is done within the framework of existing laws and World Bank Safeguards as well as within a formal process of collaboration among all relevant stakeholders, particularly the local community.

The ESMF proposes procedures that are not unduly complicated or time-consuming. This concern relates to the larger purpose of the Project, which is to maintain a clear and committed focus on building district, community and stakeholder commitment to the needs of improved environmental management and social welfare within the COMACO Landscape project areas. This ESMF is therefore a methodology designed to streamline appropriate steps that enhance environmental and social planning and impacts in the COMACO Landscape project area. Most especially, the ESMF seeks to incorporate underlying principles of land and natural resource management, as well as lessons and experiences from work currently in practice in the Project area that will enhance the level of cooperation among community stakeholders to support improved protected area management. This can be achieved through conducting regular meetings with the community members and local traditional leaders so as to get their input on various ways that can help further improve sustainable environmental resource management.

5.1 Project oversight and governance

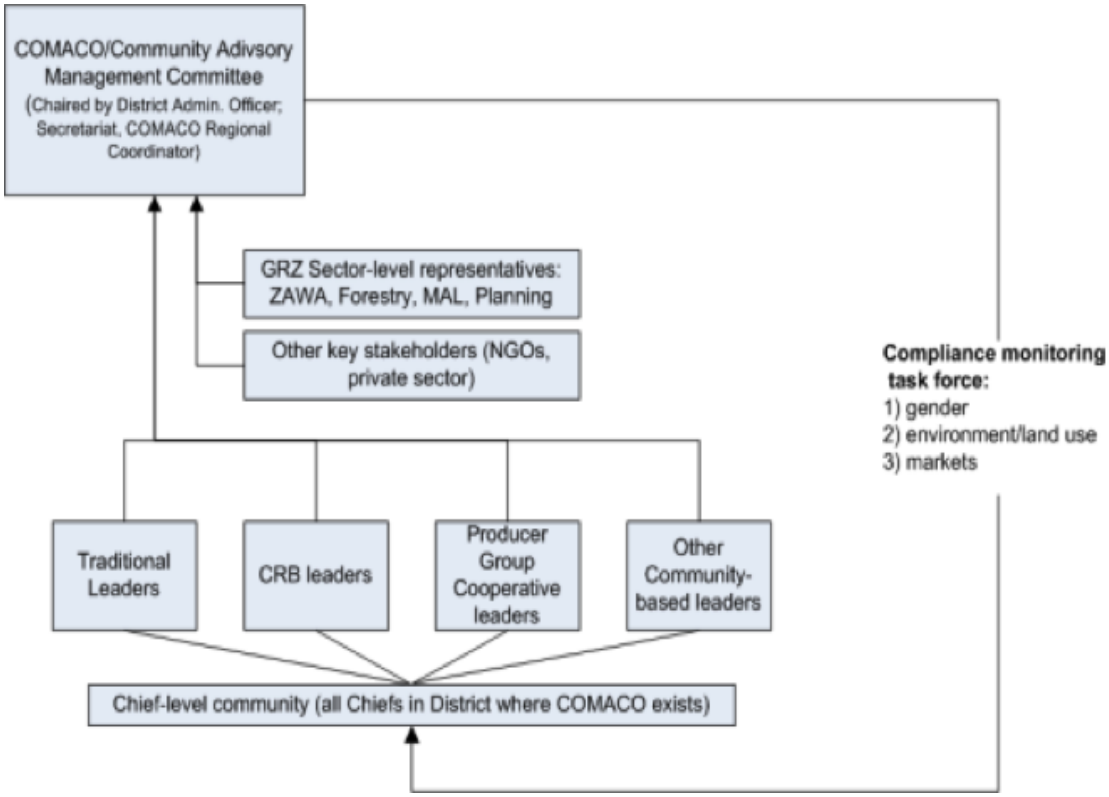


Figure 6. COMAC members and their functional relationships

The Project will implement the guidelines contained in this ESMF to promote a participatory process of community involvement, as well as other relevant stakeholders, to support an accurate assessment of such impact before the Project activities commence.

This oversight will be organized primarily through district-level COMACO/Community Advisory Management Committees (COMACs).

These committees provide transparent oversight to levels of compliance by both participating communities and COMACO to their respective pledges of market support and conservation compliances. Over time, the process as supported under this project will lead to improved capacity to monitor and report on compliance and will increase the level of dialogue and collaboration for more long-term conservation results.

Chaired by District Commissioners in districts within the Project area, COMACs will convene twice annually to increase transparency by both the community and COMACO in meeting their respective commitments as overseen by third-party District Government Officers, including ZAWA, Ministry of Agriculture and Livestock, and the Forestry Department. These government officials will play an active role in COMACs together with chiefs' representatives, Community Resource Board representatives, and other participating non-government partners who will provide guidance, particularly on local land, traditional and political issues. Figure 6. COMAC members and their functional relationships shows the organizational structure of these committees. The oversight role of government officers provides a means to validate eligibility for conservation dividend payments and to recognize the achievements by local leadership.

The review process at these meetings will qualify communities for potential conservation dividend payments. Alternatively, if these committees find communities have violated their compliance agreements, disincentives in the form of reduced commodity prices will be considered. In support of this process, COMACO will support improved technologies and partnership roles for monitoring and objective scoring of community compliance to required conservation guidelines.

These COMAC's hold a range of functions including the following:

- Strategies on how to ensure natural resources are well managed such as gun and snare surrendering, controlled selling of charcoal;
- Enhance food security at household level by encouraging more crop diversification and conservation farming; and
- Increased monitoring by all stakeholders to ensure farmers are complying to conservation practices, thereby meriting premium prices.

All the stakeholders have a role to play so as to ensure that these efforts to overcome the challenges being faced in natural resource management are successful. COMACO will rely heavily on the role of the Advisory committees to ensure that the environment is well managed and the communities living within the COMCO Landscape project areas are all satisfied with the outcome of the programme.

COMACO will ensure that communities, through their respective representatives, can voice their concerns through an appropriate grievance mechanism if they feel that agreed upon guidelines and policies are not being adhered to by either party, in this case, COMACO (being the company) and the Community (being the beneficiaries). An important safeguard is to ensure that the communities, through COMACs, are assisted in developing and executing their own Community Conservation Plans, as outlined in the steps listed below.

5.1.1 Community Conservation Plan (CCP) Process:

STAGE ONE: Household level

Producer group cooperatives and all its members commit to household-level conservation practices in a formal document signed by every producer group chairperson and a copy of the document is given to the local chief and district government authorities. Essential requirements include:

- Good soil management practices (low tillage, rotation with legume, legume cover crop, non-burning of crop residue, use of mulch, etc;
- Adoption of agroforestry and local woodlots;
- Compost-making as fertilizer substitute;
- Diverse food crops;
- No ownership of illegal firearms;
- No poaching or snaring with wires; and
- No charcoal-making for commercial sale

STAGE TWO: Chief/Headmen level

Local chiefs with his/her headmen/women agree on a land use governance code to be appended to the STAGE ONE document that will help prevent depletion of natural resources with clearly stated intentions to enforce the code with penalties for people who violate them. Examples of the code include:

- Restrictions of fishing net mesh size, where to fish;
- No making of charcoal for commercial sale;
- No bush burning after a given date; and
- Firearms

STAGE THREE: Community level

The CCP is further amended through consultation among community leaders and residents, with the help and support of the local chief and district government authorities, to establish a long-term land zoning of agreed settlements, land use practices and conservation targets, including:

- Settlement policy to provide guidelines/criteria that conform with CCP for use by chiefs/village headmen when granting consent to issue land parcels to families;
- Goals and targets for wildlife protection (collection of snares and firearms) as well as wildlife monitoring plans to be developed at the chiefdom level in cooperation with ZAWA; and
- Resettlement plans to be carried out through the Resettlement Policy frameworks.

5.2 Impacts Identification

The proposed program has identified three (3) key positive impacts for the program: Environmental, Socio- economic and Business impacts.

5.2.1 Environmental Benefits

The holistic management enterprise supported by COMACO and undertaken by small holder farmers as described for this project will reduce farmers' need or economic justification to deforest areas adjacent to their farmland. Interventions supported by this project will also contribute to a reduction of fires and soil carbon loss, while facilitating increased regeneration of woodland cover. As

communities progress in their willingness and rewards for complying with these interventions, local leaders will progressively adopt bolder and more significant measures to reduce deforestation with the development of land use zone and community-protected conservation areas as part of their Community Conservation Plan.

In addition to removing CO^2 from the atmosphere, both GS and FA are highly efficient nitrogen soil fixers, cycle nutrients from deeper soil layers, have high biomass productivity, and improve soil structure that enhances infiltrability, reduces evaporation and erosion. FA shed their leaves at the start of the wet season (reverse phenology) and become dormant, so compete minimally with crops for light and nutrients, and shade the soils in the dry season reducing soil surface temperature and improving soil health. GS increases carbon build up in the soils at a high rate contributed by the annual coppicing for fuel wood and leaves for green manure.

All these factors serve to increase crop yields and improve food security, decreasing the need for environmentally degrading coping strategies such as the poaching of wildlife or clearing forest for new cropland, and therefore minimizing the role of shifting agriculture as a driver of deforestation.

Based on repetitive aerial survey counts, COMACO has also achieved a positive trend in wildlife numbers with the exception of increased elephant poaching since 2009 correlated with areas where COMACO does not exist.

5.2.2 Socio-economic benefits

The project will provide long-term benefits to 80,000-100,000 small holder farmers through higher crop yields and increased value for crop surpluses under the COMACO incentive system or premium commodity pricing system for adopting conservation measures. Such adoption will also provide longer-term resilience to climatic variation. The project will contribute to sustainable development by providing permanent and temporary employment in local communities linked to good land management and farming practices and impact on the lives of 300,000 to 500,000 people with increased food, economic and environmental security. Through this impact, the project will help strengthen the regional economies in four different provinces in Zambia, namely Eastern, Central, Northern and Muchinga Provinces. These goals are in harmony with national policies and priorities, along with Millennium Development Goals.

The following activities will achieve corresponding socio-economic benefits:

1. Capacity building and organization to strengthen producer groups with demonstrated improvements in community leadership for developing and enforcing land use plans, promoting sustainable agriculture practices, and achieving food security needs for the community.
    a. Train producer groups in sustainable harvesting of honey, wild mushrooms, and caterpillars for products marketed and sold by COMACO to increase market incentives for protecting forests. Agricultural market prices will be linked to level of commitment to CCPs. Trainings are conducted by lead farmers, who are in first trained by extension specialists (e.g., bee keeping, agroforestry) or by diploma-holding extension staff called area managers)
2. Promote livelihood skills and link production of conservation branded commodities to markets. COMACO will promote market links for such income sources provided communities remain committed to CCPs.
    a. Specialized training and support for COMACO women farmers to encourage leadership and innovations in climate-smart agriculture, family health and family planning, and conservation/nutrition-linked income sources. One example is providing training and

support for pre-processing of wild mushrooms by women groups to increase commercial value and incentivize value of protected forests;

b. One of COMACO's key priorities will be to increase female lead farmers to not less than 40% and20% female producer group cooperative leaders;
c. COMACO will build on its strong network of partners to promote and scale up food processing of legume crops for proposed project;
d. Training manual(s) for forest management to communities and local authorities through COMACO's Better Life Book. The Better Life Book is a collection of loose sheet learning pages made available to each producer group in a sturdy plastic folder. This simple book, based on explanatory pictures and simple text, offers a practical and low-cost way to help educate a largely illiterate rural population on a range of life skills, starting with the basics of sustainable farming and progressing to more advanced skills in family budgeting, health and nutrition;
e. Transformation of poachers and charcoal-makers, coordinated by Producer Group Cooperatives and overseen by Area Managers and Regional Coordinators with lead farmer trainers, COMACO extension specialists and selected government trainers; and
f. COMACO Farm Talk radio program. One of COMACO's partners is Radio Breeze, which has helped COMACO to launch its own weekly Farm Talk radio program to be broadcast across the entire proposed project area. Radio offers a much lower cost approach to disseminating a wide range of topics to a far greater number of farmers of both sexes and all age groups than conventional extension services. The rural radio listening audience in Eastern Province is estimated to be over 200,000 adults. COMACO has hired a seasoned, highly qualified radio-producer to direct the programming around technical features, peer-to-peer experiences, call-ins, and plays. All programming is done in local language. COMACO Farm Talk uses community "voices" to share their results and lessons learned, in order to expand listenership to rural residents and potential COMACO members about the benefit of CSA and participatory forest management planning. Some of the key subjects COMACO Farm Talk will air include:
    - Female empowerment with relevant life skills and leadership roles;
    - Seed recovery, grading and storage;
    - Crop bulking and marketing;
    - Specialized farming skills of selected crops (e.g. rice, groundnuts, soybeans, cassava, sweet potato, maize, beans);
    - Agroforestry skills (nursery management, stem planting, spacing, etc.);
    - Fuel wood production using *Gliricidia sepium* and fuel-efficient cookstoves
    - Poultry/goat husbandry;
    - Bee-keeping and apiary management;
    - Family health, nutrition, family planning;
    - Family budget planning;
    - Wild mushroom and caterpillar harvesting and pre-processing; and
    - Gardening, fruit tree horticulture

5.2.3 Business/Other benefits

The proposed project provides significant training on the multiple benefits of agroforestry, near-zero tillage practices, forest product management and harvesting skills, and broader understanding of land use and farming practices that promote market incentives for small holders. COMACO's continued

development of value-added processing with ongoing efforts to improve efficiencies and market competitiveness, revenue flow into communities will improve and offer small business opportunities for targeted communities. And ultimately, the COMACO business will have built sustainability for its farmer support services to maintain the environmental and social benefits indefinitely. These benefits are contingent on compliance conditions set down by COMACO. If a target community fails to adhere to the producer group pledge (pledging to compliance), the community's farmers will not benefit from premium pricing or receive dividends. These efforts combined have the potential to be an indigenous African solution for addressing climate change and increasing food security. The project has enormous potential to be replicated across Africa on degraded lands using the lead farmer system and agro-processing market linkages that can aggregate a sufficient number of farmers to make accessing carbon finance financially viable.

5.3 Potential adverse impacts and proposed mitigation measures

Each activity, as the project planning and implementation phase gets underway, could contribute to a scenario where adverse environmental, habitat or social impacts might arise and where such impacts could be avoided through a functioning ESMF. The table below provides a summary of the activities the project might support and the range of issues this ESMF addresses to reduce undesirable impacts while increasing the potential environmental and social benefits of the project itself. At the time of mid-term review, there will be assessment.

Table 1. Project Activities with Potential Adverse Environmental or Social Impacts and Proposed Mitigation Measures

Project Target Areas, Potential Activities	**Adverse Environmental Impacts**	**Adverse Social Impacts**	**Mitigation measures**
Farm performance through conservation farming and CSA results in increased yields to achieve food security and increases farmer income and welfare by linking market incentives to the adoption of these practices that reduce forest loss, habitat loss and poaching.	Increased human immigration into area leads to increase in human disturbances, loss of trees and habitat in project area.	Increased human immigration into area leads to non-compliant farming practices and other harmful practices, such as poaching and charcoal-making. Households with surplus income may choose to invest in harmful practices-e.g. charcoal making, bushmeat	Through a participatory process, COMACO will work with traditional authorities and communities (including COMACO farmers) to develop a Community Conservation Plan (CCP) for each chiefdom participating in the Project. The CCP is a vision for land use will become the basis for the Chief and his/her Headmen/Headwomen to communicate to all subjects the importance of conservation to sustain a better future from their natural resources. The CCP will also provide the basis for reducing risks of unplanned settlements and destructive uses of the land and resources that could deplete this chiefdom of its natural resources. Chiefs and village headmen will consult a settlement policy to provide guidelines/criteria that conform with CCP when granting consent to issue land parcels to families. The CCP will be endorsed by the chief, his subjects through a participatory process, as well as district-level officials in the Forestry Department. The CCP forms the basis of payment-for-performance for REDD+ generated emission reductions on a community-wide basis-therefore communities are incentivized to work with each other to achieve compliance with the CCP. Each CCP consists of three key sections: 1.Community Conservation Areas (Zoning); 2. General land and natural resource management needs and responsibilities; 3. Conservation plan governance. COMACO will work with traditional authorities to designate Community

Project Target Areas, Potential Activities	Adverse Environmental Impacts	Adverse Social Impacts	Mitigation measures
			Conservation Areas (CCAs) in their respective chiefdoms. These Community Conservation Areas are subject to rules for land and natural resource management laid out in the Community Conservation Plan to be established for each chiefdom. The boundaries of each CCA will be mapped by longitudinal and latitudinal coordinates, and these maps will be included in the CCP that is approved and signed by the chief with the designated authority over the chiefdom. As part of its overall programmatic approach, COMACO is committed to providing support to communities and chiefs in order to improve farmer welfare, increase incomes and achieve food security, and increase food diversification and yields. Together these positive trends combat the spread of harmful practices such as charcoal-making and lead to habitat loss and deforestation, and include: • Introduce new high-yielding, vitamin A-enriched sweet potato varieties. • Support farmer members with cassava cuttings to mitigate drought-related food crop losses. • Introduce cowpeas (Vigna unguiculata), pigeon peas (Cajanus cajan) or velvet beans (Mucunus pruriens) as cover crops to enhance soils and reduce weeds • Introduce skills (and inputs) for dry season gardening with possible development of dry processing technologies to increase market value of vegetables • Increase food crop varieties, particularly maize, to vary crop maturing times. • Introduce permaculture skills (and inputs) to maintain diverse fruit trees

Project Target Areas, Potential Activities	Adverse Environmental Impacts	Adverse Social Impacts	Mitigation measures
			(and other selected plants, e.g. chili, moringa, lufa, pigeon peas, spices) around homes. • Continue promoting rice intensification system and water management for higher yielding rice production. • Promote livelihood skills traditionally used by women and for which markets exist that can reduce dependency on charcoal-making as a source of income, such as poultry raising and vegetable growing, and training in collecting and semi-processing wild mushrooms and caterpillars. • Train and transform charcoal makers with alternative livelihood skills and market support. • Train and certify transformed poachers in chili-blasting for elephant crop damage control and formalize as community-paid seasonal workforce. • Assess alternative technologies to reduce elephant conflicts in settled areas with high risk of conflict (e.g. trip line with strobe lights and alarm) and adopt if practical and feasible. • Assist communities with maps and relevant GIS information to explain land management threats and appropriate solutions • Distribution of 60,000 mud brick energy-efficient 'rocket stoves' provided to COMACO and distributed to its farmers as a conservation dividend • Assist local chiefs with pilot initiative to help register farmer land holdings for monitoring land settlements in a given Chief's area
Farmer compliance in exchange for price premiums on surplus commodities: COMACO's farmer	Increase in human disturbances, loss of trees and habitat in project area	Increased exposure to illegal markets and people who may exploit local residents. Side-	Mitigating this risk will involve a combination of strategies: • Participation and engagement of all sectors in developing CCPs and monitoring compliance through COMACs. COMACs will perform increased monitoring role by all stakeholders to ensure farmers are

Project Target Areas, Potential Activities	Adverse Environmental Impacts	Adverse Social Impacts	Mitigation measures
support services rely on farmer loyalty to sell crop surpluses to COMACO so the sales revenues can maintain incentive prices to drive compliance to improved farming practices.		selling of surplus to buyers other than COMACO and competing with other companies that might influence farmer members to grow other crops by matching COMACO prices.	complying to conservation practices, thereby meriting premium prices. • Farmers are offered premium prices based on community compliance with conservation farming practices that are also defined in each CCP. Furthermore, Potential for carbon revenues to help pay for farmer-support services and increase incentive payments. • COMACO's core approach is to intensify farmer adoption of practices that COMACO promotes through training and extension support: o minimum tillage, composting, alley-cropping, cover crops, crop rotation, fire breaks, tree rows (e.g. G. sepium fence rows to reduce insect pests); o Promote and expand improved apiary management; Increase training on beehive maintenance, honey harvesting, and hive replication o Improve food storage (granary) technology to reduce post-harvest food crop losses (e.g. use of Gliricidia sepium leaves). • Other support services to be provided by COMACO to encourage community compliance with improved farming practices and minimize negative impacts include: o Convene periodic meetings of NGO and private sector partners to enhance collaboration for diversifying farmer skills o Promote selected chiefs as role models and conservation champions to inspire other chiefs through exchange visits or by interview on COMACO Farm Talk. o Improve and support systems for monitoring conservation compliances o Problems of side-selling and competition with other crops and buyers has become progressively reduced as COMACO continues

Project Target Areas, Potential Activities	Adverse Environmental Impacts	Adverse Social Impacts	Mitigation measures
			to build price incentives for producers and is able to guarantee reliable logistics for on-site payment, bulking and collection. o Produce community scorecards communicated to chiefs and PGCs for CCP compliance and eligibility for premium prices and conservation dividends o Enhance information sharing by government stakeholders to promote monitoring efforts • Promoting the establishment of an institutional framework for low-carbon development: o The Project will engage other stakeholders for whom farmer support services are a form of ecosystem services that key stakeholders like ZAWA and the tourism industry may want to support through the COMACO system of household-level payments. Once example is the establishment of formal partnership with tourism lodges or safari operators to promote wildlife conservation through joint incentive-based approaches for conservation as a basis for complementing and adding to COMACO's own farm-based incentives. o Effective oversight of coordinated landscape-wide land use management through the Luangwa Valley Ecosystem Partnership Management Initiative. Launched in 2007, the Luangwa Valley Ecosystem Partnership Management Initiative was conceived to promote a Luangwa Valley ecosystem that is able to sustain diverse, healthy wildlife populations, year-round water flow of the Luangwa River, and improved rural livelihoods. The Initiative has two main goals: 1) Unify rural communities living across the valley and plateau landscapes of the Luangwa Valley ecosystem with

Project Target Areas, Potential Activities	Adverse Environmental Impacts	Adverse Social Impacts	Mitigation measures
			livelihood skills and improved leadership that promote better land management and natural resource conservation, and 2) Develop effective oversight structures by government and partners to maintain community commitment to conservation in ways that reward the right livelihood choices and leadership decisions. COMACO is an active member in this Initiative, which includes the Forestry Department, Ministry of Agriculture and Lands, Fisheries, Planning, Land alliance, ZAWA, and a growing number of private sector partners.The framework of the Initiative enhances coordination through governance and developmental support structures, especially at the provincial level of government, to promote conservation and good land stewardship at the farmer and community level. Accountability of results and activities will be reinforced through Community Conservation Plans at the chiefdom level, which will be incorporated as benchmarks into annual district conservation plans and monitored at biannual roundtable meetings, involving district senior government officers and key provincial officers together with non-government and private sector partners. This could also be a forum for working with private sector to ensure legitimate investments are compliant with CCPs.
Development of participatory land use plans for chiefdoms in project area, including community conservation zones	Improved chiefdom-wide management of natural resources leads to leakage as harmful practices (such as charcoal making) and	Shifts in land use in demarcated conservation zones could limit access to wild resources and harmful income-generation activities	• Any required resettlement will conform with the Resettlement Process Framework and Resettlement Action Plan • COMACO operates not only in project areas, but across these chiefdoms implementing the same market incentive structure based on compliance with conservation agriculture practices. Compliance is evaluated across communities.

Project Target Areas, Potential Activities	Adverse Environmental Impacts	Adverse Social Impacts	Mitigation measures
	poaching shift to non-project areas. Some levels of ecosystem disturbance is possible if new settlements are developed as a result of relocation of some households from potential forest reserve areas to new farming areas.	(charcoal-making). May also require resettlement of villagers living in conservation zones to new farming areas.	• The boundaries of each CCA will be mapped by longitudinal and latitudinal coordinates, and these maps will be included in the CCP that is approved and signed by the chief with the designated authority over the chiefdom. • The Luangwa Valley Ecosystem Partnership Management Initiative is a cross-sectoral partnership that encourages community commitment to conservation across the entire Luangwa Valley, and establishes the effective oversight structures by government and partners to maintain this commitment.

6. MONITORING

Scheduled environmental monitoring will ensure that the provisions of the ESMF are being implemented and that the subprojects are fully compliant with national environmental legislation and World Bank operational policies.

COMACO's internal Monitoring and Evaluation Department provides independent monitoring and verification of results and activities conducted by the COMACO farmers to ensure compliance to programme activities.

COMACO maintains a database on registered farmers that is used to design additional survey work, etc. Furthermore, COMACO works to continuously improve the mechanisms and accuracy of these systems, and is about to begin an audit of these systems to estimate the percentage accuracy and fraud (if any). Registered farmers agree to comply with various practices that are monitored at the individual level. "Farmer cards" document data that provide the basis for monitoring and evaluation, and are supplemented by ground-truthing (e.g., photographic records).

COMACO has developed a farmer payment system for monitoring farmer payments by crops and more detailed information on farmer activities related to yields, farming practice adopted, total income earned and food produced and family expenditures by broad categories through the use of a farmer card system. Annual statistics of these data are generated to assess a number of social and indicators. This extension system may be applicable for implementing and monitoring carbon MRV systems in the landscape by incorporating a framework for community-based carbon stock monitoring. In turn, incorporating MRV activities into COMACO's existing system of conservation dividends, and thereby linking market incentives for conservation outcomes to emission reductions on an additional basis, would mitigate risks associated with high expectations for carbon-related payments.

7. TRAINING AND CAPACITY BUILDING

Effective implementation of the prepared ESMF and PMP as well as EMPs to be prepared for the sub-projects require some level of knowledge and understanding yet to be developed in certain eligible beneficiary institutions and for some participating farmers. Therefore, for training and capacity building for effective program implementation in line with the environmental and social safeguards will be delivered through COMACs. As the governance bodies in regular contact with the project communities, they are the most efficient vehicle for knowledge transfer to participating farmers.

This section outlines the types of training and capacity building that is required to support implementation of this ESMF. These recommendations result from observation and discussions made during the study for preparation of this ESMF.

7.1. Institutional Capacity Assessment

Institutional capacity to address environmental and social management issues, and consequently to implement most of the measures outlined in this ESMF, is considered acceptable, as COMACO has been liaising frequently with most agencies involved in the programme implementation who have had prior experience in direct environmental management. However, there could still be a need to boost capacity both at institutional level as well as community level, particularly the farmers. As mentioned above, trainings will be carried out during Management Advisory Committee meetings as well as

during farmer cooperative trainings. Extension officers and support staff may equally not be adequately sensitized and knowledgeable to the expected level of ESMF implementation and hence the requirement for some form of capacity building.

7.2. Proposed Training and Awareness Programs

In order to successfully implement the guidelines and recommendations in the ESMF, it is important to ensure that target groups and stakeholders who play a role in implementing the ESMF are provided with the appropriate training and awareness provisions. These include:

- Project Coordination Team and Support staff;
- Extension workers;
- Lead farmers; and
- Producer group cooperatives and COMACs.

These stakeholders have different training needs in terms of raised awareness, sensitization to the issues, and detailed technical training:

- Awareness-raising in which the participants acknowledge the significance or relevance of the issues, but are not required to have technical or in-depth knowledge of the issues;
- Sensitization in which the trainees become familiar with the issues to a sufficient extent that allows them to demand their precise requirements for further technical assistance; and
- In-depth technical training to a level that allows trainees to go on to train others, including technical procedures and take action.

The objectives of the training under this ESMF include:

- Support stakeholders (through COMACs) to prioritize their needs, and to identify, prepare, implement and manage the environmental and social aspects of their CCPs; and
- Strengthen local stakeholders and extension teams to provide technical to communities in implementing their CCPs.

8. IMPLEMENTATION BUDGET FOR THE ESMF TRAINING AND CAPACITY BUILDING NEEDS

Oversight budget: Combined extension, Remuneration and Training budgets

Activity	Duration	Responsibility	Cost (US$)	Comments
Salary support for 1 Extension staff	1 yr	COMACO	5,000	10 key staff will be trained for the project
Logistics contribution for Lead Farmers	1 yr	COMACO	5,000	COMACO to assist with lead farmers in monitoring compliance procedures
2 sessions Training in GS management, intercropping and pest management techniques; field days,	1 yr	COMACO/MAL/Forestry	2,800	
Development of participatory land use plans for chiefdoms in project area, including community conservation zones	1 yr	COMACO/MAL/Forestry	1100	
2 CTC Advisory committee meetings (Discussions on dividend sharing mechanisms)	1 yr	COMACO	2,200	
Cooperative training/meeting	1 yr	COMACO	916	
Total Budget			17,016	

Extension and Remuneration Budget

Activity	Duration	Responsibility	Cost (US$)	Comments
Salary support for 1 Extension staff	1 yrs	COMACO	5,000	10 key staff will be trained for the project
Lead Farmers	1 yr	COMACO	5,000	COMACO to

allowances				assist with lead farmers in monitoring compliance procedures

Training budget

Activity	**Duration**	**Responsibility**	**Cost (US$)**
2 sessions Training in GS management, intercropping and pest management techniques; field days,	1 yr	COMACO/MAL/Forestry	2,800
2 CTC Advisory committee meetings (Discussions on dividend sharing mechanisms)	1 yr	COMACO	2,200
Development of participatory land use plans	1 yr	COMACO/MAL/Forestry	1100
Cooperative trainings/meetings	3 yrs	COMACO	916

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Appendix 1: Checklist for Environmental and Social Screening

Name of the Project:

Sub-projects Name:

Sub-projects Location:

Community Representative and Address:

Extension Team Representative and Address:

Site Selection:

When considering the location of a sub-project, rate the sensitivity of the proposed site in the following table according to the given criteria. Higher ratings do not necessarily mean that a site is unsuitable. They do indicate a real risk of causing undesirable adverse environmental and social effects, and that more substantial environmental and/or social planning may be required to adequately avoid, mitigate or manage potential effects.

Issues	Site Sensitivity			Rating
	Low	Medium	High	
Natural habitats	No natural habitats present of any kind	No critical natural habitats; other natural habitats occur	Critical natural habitats present	
Water quality and water resource availability and use	Water flows exceed any existing demand; low intensity of water use; potential water use conflicts expected to be low; no potential water quality issues	Medium intensity of water use; multiple water users; water quality issues are important	Intensive water use; multiple water users; potential for conflicts is high; water quality issues are important	
Natural hazards vulnerability, floods, soil stability/ erosion	Flat terrain; no potential stability/erosion problems; no known volcanic/seismic/ flood risks	Medium slopes; some erosion potential; medium risks from volcanic/seismic/ flood/ hurricanes	Mountainous terrain; steep slopes; unstable soils; high erosion potential; volcanic, seismic or flood risks	
Cultural property	No known or suspected cultural heritage sites	Suspected cultural heritage sites; known heritage sites in broader area of influence	Known heritage sites in project area	
Involuntary resettlement	Low population density; dispersed population; legal tenure is well-defined; well-defined water rights	Medium population density; mixed ownership and land tenure; well-defined water rights	High population density; major towns and villages; low-income families and/or illegal ownership of land; communal properties; unclear water rights	

Completeness of Sub-projects Application:

Does the sub-project application document contain, as appropriate, the following information?

	Yes	No	N/A
Description of the proposed project and where it is located			
Reasons for proposing the project			
The estimated cost of construction and operation			
Information about how the site was chosen, and what alternatives were considered			
A map or drawing showing the location and boundary of the project including any land required temporarily during construction			
The plan for any physical works (e.g. layout, buildings, other structures, construction materials)			
Any new access arrangements or changes to existing road layouts			
Any land that needs to be acquired, as well as who owns it, lives on it or has rights to use it			
A work program for construction, operation and decommissioning the physical works, as well as any site restoration needed afterwards			
Construction methods			
Resources used in construction and operation (e.g. materials, water, energy)			
Information about measures included in the sub-projects plan to avoid or minimize adverse environmental and social impacts			
Details of any permits required for the project			

Environmental and Social Checklist

		Yes	No	ESMF Guidance/ Comment
A	Type of activity – Will the sub-projects :			
1	Involve the construction or rehabilitation of any small dams, weirs or reservoirs?			
2	Support irrigation schemes?			
3	Build or rehabilitate any rural roads?			
4	Build or rehabilitate any electric energy system?			
4	Involve food processing?			
5	Build or rehabilitate any structures or buildings?			
6	Support agricultural activities?			
7	Be located in or near an area where there is an important historical, archaeological or cultural heritage site?			
8	Be located within or adjacent to any areas that are or may be protected by government (e.g. national park, national reserve, world heritage site) or local tradition, or that might be a natural habitat?			
9	Depend on water supply from an existing dam, weir, or other water diversion structure?			
	If the answer to any of questions 1-9 is "Yes", please use the indicated Resource Sheets or sections(s) of the ESMF for guidance on how to avoid or minimize typical impacts and risks			
B	Environment – Will the sub-projects :			
10	Risk causing the contamination of drinking water?			
11	Cause poor water drainage and increase the risk of water-related diseases such as malaria or bilharzia?			
12	Harvest or exploit a significant amount of natural resources such as trees, soil or water?			
13	Be located within or nearby environmentally sensitive areas (e.g. intact natural forests, mangroves, wetlands) or threatened species?			
14	Create a risk of increased soil degradation or erosion?			
15	Create a risk of increasing soil salinity?			
16	Produce, or increase the production of, solid or liquid wastes (e.g. water, medical, domestic or construction wastes)?			
17	Affect the quantity or quality of surface waters (e.g. rivers, streams, wetlands), or groundwater (e.g. wells)?			
18	Result in the production of solid or liquid waste, or result in an increase in waste production, during construction or operation?			
	If the answer to any of questions 10-18 is "Yes", please include an Environmental and social Management Plan (ESMP) with the sub-projects application.			

		Yes	No	ESMF Guidance/ Comment
C	Land acquisition and access to resources – Will the sub-projects :			
19	Require that land (public or private) be acquired (temporarily or permanently) for its development?			
20	Use land that is currently occupied or regularly used for productive purposes (e.g. gardening, farming, pasture, fishing locations, forests)			
21	Displace individuals, families or businesses?			
22	Result in the temporary or permanent loss of crops, fruit trees or household infrastructure such as granaries, outside toilets and kitchens?			
23	Result in the involuntary restriction of access by people to legally designated parks and protected areas?			
	It the answer to any of the questions 19-23 is "Yes", please consult the ESMF and, if needed, prepare an Resettlement Action Plan (RAP)			
D	Pesticides and agricultural chemicals – Will the sub-projects :			
24	Involve the use of pesticides or other agricultural chemicals, or increase existing use?			
	If the answer to question 24 is "Yes", please consult the ESMF and, if needed, prepare a Pest Management Plan (PMP).			
F	Dam safety – Will the sub-projects :			
25	Involve the construction of a dam or weir?			
26	Depend on water supplied from an existing dam or weir?			
	If the answer to question 25-26 is "Yes", please consult the ESMF			

CERTIFICATION

We certify that we have thoroughly examined all the potential adverse effects of this sub-projects. To the best of our knowledge, the sub-projects plan as described in the application and associated planning reports (e.g. ESMP, RAP, PMP), if any, will be adequate to avoid or minimize all adverse environmental and social impacts.

Community representative (signature): ……..……

Extension team representative (signature): ……

Date: ……

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Desk Appraisal by Review Authority:

The sub-project can be considered for approval. The application is complete, all significant environmental and social issues are resolved, and no further sub-project planning is required.

☐ A field appraisal is required.

Note: A field appraisal must be carried out if the sub-project:

Needs to acquire land, or an individual or community's access to land or available resources is restricted or lost, or any individual or family is displaced

May restrict the use of resources in a park or protected area by people living inside or outside of it

May affect a protected area or a critical natural habitat

May encroach onto an important natural habitat, or have an impact on ecologically sensitive ecosystems (e.g., rivers, streams, wetlands)

May adversely affect or benefit an indigenous people

Involves or introduces the use of pesticides

Involves, or results in: a) diversion or use of surface waters; b) construction or rehabilitation of latrines, septic or sewage systems; c) production of waste (e.g., slaughterhouse waste, medical waste); d) new or rebuilt irrigation or drainage systems; or e) small dams, weirs, reservoirs or water points.

The following issues need to be clarified at the sub-project site:

……
……
……

A Field Appraisal report will be completed and added to the sub-project file.

Name of desk appraisal officer (print): ……...
Signature: ……
Date: ……

Appendix 2: Environmental and Social Field Appraisal Form

PART 1: IDENTIFICATION

1. Project Name: Application Number:
2. Project Location:
3. Reason for Field Appraisal: (Summarize the issues from the ESMF Checklist that determine the need for a Field Appraisal.)
4. Date(s) of Field Appraisal:
5. Field Appraisal Officer and Address:
6. Extension Team Representative and Address:
7. Community Representative and Address:

PART 2: DESCRIPTION OF THE PROJECT

8. Project Details: Provide details that are not adequately presented in the sub-project application. If needed to clarify sub-project details, attach sketches of the sub-project component(s) in relation to the community and to existing facilities.

PART 3: ENVIRONMENTAL AND SOCIAL ISSUES

9. Will the project: Yes No *
Need to acquire land?
Affect an individual or the community's access to land or available resources?
Displace or result in the involuntary resettlement of an individual or family?

If "Yes", tick one of the following boxes:
The Resettlement Action Plan (RAP/ARAP) included in the sub-project application is adequate. No further action required.
The RAP/ARAP included in the sub-project application must be improved before the application can be considered further.
An RAP/ARAP must be prepared and approved before the application can be considered further.

10. Will the project: Yes No *
Encroach onto an important natural habitat?
Negatively affect ecologically sensitive ecosystems?

If "Yes", tick one of the following boxes:
The Environmental and Social Management Plan (ESMP) included in the sub-project application isadequate. No further action required.
The EMP included in the sub-project application must be improved before the application can be considered further.
An EMP must be prepared and approved before the application can be considered further.

11. Will this project involve or introduce pesticides? Yes No
If "Yes", tick one of the following boxes:
The Pest Management Plan (PMP) included in the sub-project application is adequate. No further action is required.
The PMP included in the sub-project application must be improved before the application can be considered further.
A PMP must be prepared and approved before the application can be considered further.

12. Will this project involve or result in: Yes No
Diversion or use of surface waters?
Production of waste (e.g. slaughterhouse waste)?
New or rebuilt irrigation or drainage systems?

If "Yes", tick one of the following boxes:
The application describes suitable measures for managing the potential adverse environmental effects of these activities. No further action required.

The application does not describe suitable measures for managing the potential adverse environmental effects of these activities. An ESMP must be prepared and approved before the application is considered further.

13. Will this project require the construction of a small dam or weir? Yes No If "Yes", tick one of the following boxes:

The application demonstrates that the structure(s) will be designed by qualified engineers, and will be built by qualified and adequately supervised contractors. No further action is required.

The application does not demonstrate that the structure(s) will be designed by qualified engineers, and will be built by qualified and adequately supervised contractors. The application needs to be amended before it can be considered further.

14. Will this project rely on water supplied from an existing dam or weir? Yes No

If "Yes", tick one of the following boxes:

The application demonstrates that a dam safety report has been prepared, the dam is safe, and no remedial work is required. No further action is required.

The application does not demonstrate that a dam safety report has been prepared, the dam is safe, and no remedial work is required. A dam safety report must be prepared and approved before the application is considered further.

15. Are there any other environmental or social issues that have not been adequately addressed? Yes No

If "Yes", summarize them and tick one of the following boxes:

Before it is considered further, the application needs to be amended to include suitable measures for addressing these environmental or social issues.

An ESMP needs to be prepared and approved before the application is considered further.

PART 4: FIELD APPRAISAL DECISION

The sub-project can be considered for approval based on a site visit and consultations with both interested and affected parties, the field appraisal determined that the community and its proposed project adequately address environmental and/or social issues as required by the ESMF.

Further sub-project preparation work is required before the application can be considered further. The field appraisal has identified environmental and/or social issues that have not been adequately addressed. The following work needs to be undertaken before further consideration of the application: All required documentation such as an amended application, ESMP, RAP/ARAP, or PMP will be added to the sub-projects file before the sub-projects is considered further.

Name of field appraisal officer (print): .....

Signature: .....Date: ……

Appendix 3: Checklist for Project Screening

Step 1: Does project require authorisation or licensing by any agency of government
If No, go to Step 3
IF Yes go to Step 2
Step 2: Is project located in, near or likely to affect any of the following environmental characteristics:
indigenous forests;
wetlands;
zones of high biological diversity;
areas supporting populations of rare and endangered species;
zones prone to erosion or desertification;
areas of historical and archaeological interest;
areas of cultural or religious significance;
areas used extensively for recreation and aesthetic reasons;
areas prone to flooding and natural hazards;
water catchments containing major sources for public, industrial or agricultural uses and areas of human settlements (particularly those with schools and hospitals).
Or will it involve any of the following undertakings:
Resettlement of people
Construction of dams, weirs and barrages
Water supply reservoirs
Introduction and use of agrochemicals new to Zambia
Introduction of new crops and animals especially exotic ones new to Zambia
Irrigation schemes covering an area of 50 Ha or more
Aerial and ground spraying - industrial scale
Food processing plants - 400 tonnes or more output a year

IF No, go to Step 3
If Yes, proceed to undertake an EIA study and prepare an Environmental Project Brief (EPB) or an Environmental Impact Statement (EIS) if the project meets any of the following benchmarks
Dams and barrages covering a total of 25 Ha or more
Water supply reservoir with a surface area of 50 m2 or more
Clearance of forestry in sensitive areas such as watershed areas or for industrial use 50Ha or more
Land clearance for large scale agriculture
Introduction and use of agrochemicals new to Zambia
Introduction of new crops and animals especially exotic ones new to Zambia
Introduction of alien species of flora and fauna to local ecosystems
Irrigation schemes covering an area of 50 Ha or more
Aerial and ground spraying - industrial scale
Food processing plants - 400 tonnes or more output a year
Step 3: Implement project in compliance with the provisions of the ESMF and PMP

Appendix 4: Study Terms of Reference
COMACO Landscape Project (P144254)

COMACO Landscape Project (P144254)

TERMS OF REFERENCE (TORs) for the PREPARATION OF AN ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF), ABBREVIATED RESETLLEMENT POLICY FRAMEWORK (ARPF), AND ENVIRONMENTAL PROJECT BRIEF (EPB)

1. Introduction

The Government of the Republic of Zambia (GRZ), through the Ministry of Agriculture and Livestock (MAL)will coordinate the Community Market for Conservation (COMACO) Landscape Management Project [P144254]. The project is anchored within the MAL Environmental program after the end of Agriculture Development Support project (ADSP). The Project will be implemented by COMACO with technical back up from the MAL and the Ministry of Lands, Natural Resources and Environmental Protections' (MLNREP) Forest Department (FD).

COMACO team and/or their assignee will prepare the Environmental and Social Management Framework (ESMF), Abbreviated Resettlement Framework (RF), as may be required, and the Environmental Project Brief (EPB). The preparation of Environmental Project Briefs (EPBs) is a requirement under the Environmental Management Act of 2011, as illustrated in the Environmental Impact Assessment Regulations of 1997. The preparation of the Environmental and Social Management Framework (ESMF) and Abbreviated Resettlement Policy Framework (ARPF), are also a requirement under the World Bank Safeguards Operational Policy (O.P) 4.01 on Environmental Assessment and OP4.12 on Involuntary Resettlement respectively. The prepared ESMF, ARPF, and EPB Documents are supposed to be submitted to the Zambia Environmental Management Agency (ZEMA) for clearance through issuance of a "No Objection" and also for World Bank review and issue of no objection and disclosure both in country and at the World Bank's InfoShop in accordance with Bank policy.

2.0.Background

It is a requirement that all World Bank Projects are subjected to a safeguards assessment and meet World Bank Safeguard Policies and all relevant Zambian Environmental Laws. In line with World Bank requirements an Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) need to be prepared for the COMACO Project using guidance provided by the Bank safeguards policies. As the project command area is better identified and its interventions are clearly described additional adjustments to the safeguards documents are envisaged. All the activities under the COMACO Project are expected to comply with the local environmental and World Bank Safeguards Policy requirements and site specific activities would require environmental project brief(s). The environmental assessments are made in order to prevent and/or mitigate any foreseen adverse impact of a development activity before, during and after project completion.

Farming is the principal source of income for communities in the Luangwa Valley, a mixed woodland landscape dotted with smallholder farmers. The farmers grow food crops such as maize and sorghum, and cash crops; cotton, soybeans and tobacco. The families of the Luangwa valley are mostly unable to meet their food security needs for about three months in a year partly because of time spent on commercial crops but also the environment is edaphically dry reducing the optimum productivity of the crop. In view of this, survival measures for the families are mainly natural resources based, namely, poaching of animals whose meat they exchange with food and/or burning of trees for charcoal which they sell and the money used for food. These measures lead to depletion of wildlife and degradation of forests, respectively. Studies conducted several years ago showed that 20-60% of Luangwa Valley residents were not food secured up to 3-months with food security being defined as sufficient food to last from one harvest to the next for a given family.

The COMACO landscape project will increase smallholder farmer crop yield from sustainable Climate Smart Agriculture (CSA), increase farmer income and welfare, reduce uncontrolled forest loss and degradation and increase net forest cover in the project areas within the Luangwa Valley supported by revenues from a significant increase in bio-carbon sequestration. COMACO implements an array of interventions, e.g., fallowing, minimum tillage, no burning and planting of *Gliricidia*; as part of integrated landscape management strategy to conserve biodiversity, improve food production per unit area of cropland and to minimize climate change. This is achieved with carefully designed, ecologically sensitive mosaic of production and conservation functions. The project will expand the activities being currently implemented by COMACO with a view to achieve overall climate mitigation and adaptability.

The following safeguards policies have been triggered on the basis of recently concluded safeguards assessment of the Project by the World Bank mission (see Table 1).

Table 1: Safeguard Triggered by the COMACO Project

No.	Policy	Subject	Applicability to COMMACO Project
1.	OP/BP 4.01	Environmental Assessment	Applicable
2.	OP/BP 4.04	Natural Habitats	Applicable
3.	OP/BP 4.09	Pest Management	Applicable
4.	OP/BP 4.12	Involuntary Resettlement	Applicable
5.	OD 4.20	Indigenous Peoples	Not Applicable
6.	OP/BP 4.36	Forests	Applicable
7.	OP/BP 4.37	Safety of Dams	Not Applicable
8.	OPN 11.03	Physical Cultural Property	Applicable
9.	OP/BP 7.50	Projects in International Waters	Not Applicable
10.	OP/BP 7.60	Projects in Disputed Areas	Not Applicable

In this regard, once triggered under Bank policy O.P.4.01, COMACO is required to prepare an Environmental and Social Management Framework (ESMF) and under O.P.4.12, the Resettlement Policy Framework (RPF).It is within the ESMF, that the Environmental Project Brief (EPB) will need to be prepared and within RPF that the Abbreviated and/or Resettlement Policy Framework [ARAP or RAP] will have to be prepared.

3. Principles and Objectives of Environmental Project Briefs (EPBs)

3.1. Objective of the Assignment

The objective of the assignment is to prepare an Environmental and Social Management Framework (ESMF), Resettlement Policy Framework (RPF), and Environmental Project Brief (EPBs). The ESMF and ARPF are documents, which would be reviewed and cleared by the Bank.

As the COMACO Project is a category "B" project under the World Bank Safeguards Classification it has necessitated the preparation of an EPB for the project command area.

Under the Environmental Management Act (EMA) of 2011, Environmental Impact Assessment Regulations SI No. 28 of 1997 provides the following key definitions:

Decision Letter: refers to a letter issued by the council (Agency) stating a proposed project is not likely to cause unacceptable environmental impacts or that the expected environmental impacts are unacceptable and an authorization license, permit or permission should not be issued.

Developer: means any person who, or entity which, proposes to undertake a new project or to repair or extend an existing project which falls within the list of projects provided for in the First schedule and who, or which, is responsible for obtaining the appropriate authorization.

Environmental Impact Assessment (EIA): means a systemic examination conducted to determine whether or not a proposed project, or alteration to an existing project, or alternatives, may have significant adverse or beneficial impacts on the environment.

Mitigation Measures: including engineering works, technological improvements, management measures and other ways and means of preventing ameliorating or compensation for adverse environmental impacts and losses suffered by individuals and communities and for enhancing benefits

Project: means any plan, operation, undertaking, development, change in the use of land , or extensions and other alterations to any of the above and which cannot be implemented without an authorization license, permit or permission from an authorizing agency or without approval from a line ministry before entry into a project implementation program.

Project Brief: means a report made by the developer including preliminary predictions of possible impacts of a proposed project on the environment and constituting the first stage in the environmental impact process.

4.0Scope of Work and Tasks

The scope of work will involve carrying out a sector wide assessment through interaction with the various key stakeholders in the management of the environment.

The consultant is expected to undertake the following tasks:

- Collect background information to the development proposed by the COMACO landscape project.
- Study and evaluate the various economic, environmental and social impacts of the development.
- Recommend/propose mitigation measures
- Prepare an Environmental and Social Management Plan (ESMP)as part of the ESMF as mentioned above

The Scope of the Assignment will include:

- Thorough consultation with various stakeholders, collect information concerning the sector and the specific locality of the project.

- Conduct a literature review and assess previous and current practices concerning the sector, efficiency and shortcomings among others.
- Outline the economic benefits that are motivating the development.
- Assess ways of overcoming any adverse impacts of the development.
- Prepare a plan that will ensure sustainability of the project before, during and after the project.
- Submit the prepared document to ZEMA for review and approval.
- Submit the prepared documents to the World Bank for review and clearance.

5.0. Structure of the ESMF and RPF

The COMACO team (and the consultant) is referred to the Bank financed existing operations in Zambia in the agriculture sector and the environment sector to guide the ESMF and RPF document structures.

6.0. Structure of the Environmental Project Brief (EPB)/Environmental and Social Management Plan (ESMP)

Structure of the EPB would at minimum contain the following areas with detailed descriptions.

- An executive summary
- An introduction describing the purpose, objectives, principles and methodology
- A description of the COMACO Project implementation, with an emphasis on Agriculture and REDD
- An Overview of the Bio-Physical Environment – of the Project Area
- Institutional and Legal arrangements in agriculture and climate change adaptation and mitigation measures
- Alternatives to the proposed development
- Implementation schedule for COMACO agriculture-REDD project
- Potential Adverse Impacts from the proposed Development and Proposed mitigation Measures
- A detailed cost estimate for implementing the mitigation measures
- A detailed cost estimate for implementing the COMACO agriculture-REDD project

7.0. Consultants Qualifications and Experience

COMACO team and Consultants and/or Company Qualifications

BSc. in Agriculture, Bachelor of Engineering, Bachelor of Business Administration, Bachelor of Agricultural Economics, Bachelor of Science or similar academic qualification.

Familiarity with drafting Bank safeguards documentation and the laws of Zambia concerning Environmental Management is a requirement.

Experience

If a Consultant is engaged to draft the above mentioned documents, she/he should possess a minimum of a Masters in their disciplines with minimum of Five (5) years relevant experience. A doctorate degree with relevant experience will be an added advantage.

The consultant and/or company should be knowledgeable of World Bank Safeguard Policies and the laws of Zambia concerning Environmental Management and would have prior experience either in drafting such safeguards documentation and/or in managing same. Project management experience in environmental, conservation agriculture, climate change, climate resilience, or carbon finance projects is a plus.

Good writing skills and attention to detail is a must in drafting and finalizing the reports.

8.0. Duration

The assignment will be carried out within a two (2) months period.

Proposed period is between July and end of August, 2013.

9.0. Services, Facilities and Materials to be provided by the Client

The COMACO team, firm and/or consultant will have access to the following documents:

- The Project Information Document (PIN)
- Other COMACO project documents
- Relevant maps and area descriptions (climate and soils data)

10.0. Schedule and Deliverables

The following will be the schedule and deliverables.

Week	Deliverable
1	Inception Report (includes a detailed work plan, methodology, etc.)
4	Interim ESMF and Interim Comprehensive EPB report
6	Draft ESMF and Draft Final EPB report
8	Final ESMF and Final EPB report

Additional requirements are to work with the COMACO team through the documentation submission, review and finalization period with both the ZEMA and the World Bank.