

PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC2444

Project Name	Zambia COMACO Landscape Management (P144254)
Region	AFRICA
Country	Zambia
Sector(s)	Forestry (28%), General agriculture, fishing and forestry sector (35%), Agro-industry, marketing, and trade (24%), Animal production (13%)
Theme(s)	Other environment and natural resources management (13%), Biodiversity (15%), Land administration and management (25%), Rural non-farm income generation (35%), Rural markets (12%)
Project ID	P144254
Borrower(s)	COMACO, COMACO
Implementing Agency	COMACO, COMACO, COMACO
Environmental Category	B-Partial Assessment
Date PID Prepared/ Updated	15-Nov-2013
Date PID Approved/ Disclosed	04-Feb-2014
Estimated Date of Board Approval	10-Sep-2014

I. Introduction and Context

Country Context

Climate vulnerability mitigation in Zambia is critical and the proposed project fits with the Sixth National Development Plan stated Objectives.

Sectoral and Institutional Context

Agricultural development is a high priority area and proposed project activities related to carbon offset and conservation agriculture related climate smart agriculture is a priority.

Relationship to CAS

The proposed project is contained in the Country partnership Strategy (CPS) of Zambia for the period 2013 to 2016.

II. Proposed Development Objective(s)

Proposed Development Objective(s)

The project has the following objectives:

- (i) Agriculture Land Management/ Afforestation, Reforestation and Revegetation; To increase food production and farm-gate export income per unit area by expanding legume-based agroforestry

systems with demonstrated higher sustainable crop yields, and important firewood, materials and tradable carbon production compared to the baseline of traditional smallholder agriculture;

- (ii) **Energy Demand:** To move household energy supply to a sustainable basis by promoting use of fast-growing coppicing leguminous trees in agroforestry systems, establishment of firewood woodlots and other plantings, control of destructive charcoal production in natural forests, and introduction of clean and efficient wood stoves to replace open fire cooking and use of charcoal;
- (iii) **Reduced Emissions from Deforestation and Degradation (REDD):** To protect and expand areas under natural forest and conserve biodiversity through the intensification of food production on existing farm plots by adoption of legume-based agroforestry with in-built firewood fire wood production and avoidance of fallows, which will replace the need for further forest clearing as part of slash and burn agriculture, firewood and charcoal production.

Key Results

Project activities would result in increased agricultural productivity, improved incomes and household well being as well as environmental conservation in the targeted project areas.

III. Preliminary Description

Concept Description

The COMACO Landscape Management project will increase smallholder farmer crop yield from sustainable climate-smart agriculture, increase farmer income and welfare, reduce uncontrolled forest loss and degradation and increase net forest cover of the Luangwa Valley while being supported by carbon revenues from a significant increase bio-carbon sequestration across the project area. The project comprises an array of specific interventions as part of an integrated landscape management strategy to conserve biodiversity, improve food production per unit area of cropland, and increase resilience to climate change in a landscape with a carefully designed, ecologically sensitive mosaic of production and conservation functions.

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

COMACO is dedicated to using economic incentives that promote small-holder adoption of improved farming and land use practices on landscapes sensitive to biodiversity loss and wildlife habitat/watershed degradation. The project area is approximately 1,219,888 hectares; 30,000 ha is for agroforestry and improved cropland management, and 1,192,464 ha is for REDD.

The shift from expansive to intensive farming practices, coupled with the new availability of fuel resources, will help to alleviate the pressure on forest, reducing forest loss and supporting natural forest regeneration in conservation areas. Moreover, new management practices to be rewarded by COMACO will include cessation of post-harvest crop residue burning and collateral forest fire damage, the full suite of no-till and residue retention agriculture practices, dedicated woodlots and border plantings, and the switch to improved cook stoves using firewood from chopping

agroforestry and conservation from traditional charcoal braziers to efficient wood stoves in the surrounding area. Supporting these efforts will be the promotion of incentives for sustainable harvested non-traditional forest products (apiaries for honey and wild mushrooms) as alternatives to destructive charcoal production, and the establishment of fire-breaks to protect forest products harvest.

The project will expand on the following technologies which have been piloted by COMACO in the project area:

(i) Conservation Farming: The project will expand on COMACO's current initiatives in conservation farming. COMACO has been exploring and promoting techniques to increase yield and decrease the rate of deforestation and forest degradation from expansive low-yield agriculture in the face of the burgeoning population growth for the past ten years in the Luangwa Valley. These innovations cover the full range of conservation farming techniques from no-till to agro-forestry, which entails alley-cropping of maize between rows of actively coppiced agro-forestry species such as *Gliricidia sepium* (GS) and *Faidherbia albida* (FA). These are both nitrogen fixing and micronutrient cycling species which are also good for accumulating a humus layer in the alleys. Coppicing provides ideal firewood for modern efficient cook stoves and has resulted in the parallel 60,000 efficient cook stove project for COMACO farmers.

(ii) Reduced Till Agriculture: Compliance to low tillage practices is a major determinant of COMACO's incentive payment to farmers when purchasing their surplus crops. These practices include pot-holing of individual planting stations, provision of compost fertilizer in these pot-holes, and mulching of the area around the pot-holes with crop residues from the previous harvest. Through these practices farmers are able to produce maize yields above 2000kgs per hectare without fertilizer which in turn reduces associated carbon costs from increasing farmer dependency on fertilizer.

(iii) Other Sustainable Agriculture: Other measures to increase yield and recover degraded agricultural land include crop rotation with legumes and use of deep-rooted crops such as sunflower to help pull up soil nutrients, and fallow field recovery with velvet beans.

(iv) Reduced Emissions from Deforestation and Degradation (REDD): The project will scale up on existing initiatives that have resulted in a burgeoning honey market and potentially large wild mushrooms market with added premium pricing when producers demonstrate commitment to forest protection through the cessation of expansive slash-and-burn and rotational fallow agricultural practices. 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 that are destructive to forests. The project will utilize one of the existing REDD methodologies approved under the Verified Carbon Standard.

(v) Improved Fire Management: Non-burning of post-harvest farm plots to promote mulching of next season's crop is an important part of a farmer's compliance score. No-burning of designated woodland sites used as apiaries is another basis for allocating points for compliance by participating farmers. Their respective points contribute to a community's overall scoring for market pricing of the commodities COMACO buys from small holder farmers. A comparison between a COMACO and a non-COMACO area using MODIS imagery data has shown a reduced fire history in the COMACO area and the importance of the measures applied by COMACO.

(vi) Alternatives to fuel wood for forest protection: Adoption of GS coppice agroforestry has the potential of becoming a large scale alternative for firewood, both to farmer household use and for sale to urban/peri-urban non-farm households. Coppicing results in annual stem regrowth of long narrow stems of 1-3inch diameter which grows during the dry season. This regrowth makes the stem easy to bundle, store and finally use for cooking. The firewood bundles are suitable for sale to current charcoal users and reduce forest degradation.

IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	x		
Natural Habitats OP/BP 4.04	x		
Forests OP/BP 4.36	x		
Pest Management OP 4.09	x		
Physical Cultural Resources OP/BP 4.11	x		
Indigenous Peoples OP/BP 4.10		x	
Involuntary Resettlement OP/BP 4.12	x		
Safety of Dams OP/BP 4.37		x	
Projects on International Waterways OP/BP 7.50		x	
Projects in Disputed Areas OP/BP 7.60		x	

V. Financing (in USD Million)

Total Project Cost:	0.00	Total Bank Financing:	0.00
Financing Gap:	0.00		
Financing Source			Amount
Borrower			0.00
Carbon Fund			0.00
Total			0.00

VI. Contact point

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