



Community-Based Natural Resource Management Planning in Central Africa: A U.S. Forest Service Guide

Version 2.0



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Definitions:

CARPE implementing partners - Institutions that have been awarded USAID funding to implement the CARPE program.

Desired Conditions – The broad vision for an area over an extended period of time. Set idealized goals for what the area should be, what it should protect, and who it should benefit.

Evaluation – Analysis of information (including monitoring results) to determine whether or not management (including plans) of the landscape/macro-zone needs to change.

Guidelines – Set of general rules that indicate what uses and activities are permitted or prohibited in a given area. Guidelines also indicate certain conditions that should be met for a certain use or activity to proceed.

Land Use Plan - A plan that determines the stratification of land uses within a landscape, and provides basic guidance for the each land use zone and the integration of these zones.

Management Action – A general type of activity expected to be performed during plan implementation to work toward achieving desired conditions and objectives, while following the guidelines.

Management Plan: A plan usually developed and administered by a single entity for the management of a single area in a land use zone.

Monitoring – Systematic process of collecting information to evaluate progress toward meeting desired conditions or plan objectives and other key trends in the planning area.

Multi-Year Implementation Schedule –List of management actions to implement the plan, typically over 5 to 10 years.

Objectives – Specific accomplishments that indicate measurable progress toward achieving or maintaining the desired conditions. Identify objectives for accomplishment in an area for a specific timeframe.

Planning – Process in which stakeholders (community members, scientists, government representatives, private businesses, traditional authorities, etc.) come together to discuss and determine how to manage resources in a particular geographic area for the benefit of current and future generations.

Stakeholder – Individual or group that may be affected by the management of an area or that may have an interest in its management, even if they are not directly impacted by activities in the area.

Unique Values – Brief description of the niche and unique features of the area including social, biological, and economic factors that provide a focus for the planning process.

Workplan – Annual plan of projects or activities, including the identification of necessary human and financial resources.

Zoning – Process of identifying (or delineating) geographic areas separated by differing land uses (and associated guidelines) as a part of a broader land use planning process.

1.0 INTRODUCTION

This document provides practical guidance on developing land use plans for Community-Based Natural Resource Management (CBNRM) macro-zones within the 12 Congo Basin Forest Partnership (CBFP) Landscapes. CBNRM planning should be undertaken in the context of an integrated landscape land use plan.

The U.S. Agency for International Development (USAID) Central African Regional Program for the Environment (CARPE) program works closely with its partners in the sovereign nations in the region to improve Central African natural resource management capacities, contributing to national and regional objectives. Field efforts are concentrated on 12 landscapes, chosen and delineated across the Congo Basin as CARPE areas of focus due to their particular importance and unique value to forest and biodiversity conservation. The aim is to outline and implement planning processes for these landscapes so that: 1) the long term ecosystem function of the forest and biodiversity present within these landscapes is ensured; 2) the supply of products and income sources for local communities that have traditionally depended upon these landscapes continues; 3) extraction areas within these landscapes are not negatively influencing local populations or the health of the ecosystem but contributing to the country's economy and economic structure; and 4) in-country natural resource management capacity is strengthened.

USAID/CARPE and its relation to the CBFP

CBFP defined - The Congo Basin Forest Partnership (CBFP) was launched at the 2002 World Summit on Sustainable Development in Johannesburg. As a "Type II" partnership, it represents a voluntary multi-stakeholder initiative contributing to the implementation of an intergovernmental commitment, i.e., the Yaoundé Declaration, and brings together the 10-member states of the Central African Forests Commission (COMIFAC), donor agencies, international organizations, non-governmental organizations (NGO), scientific institutions, and representatives from the private sector. CBFP works closely with the COMIFAC.

CARPE defined - The Central African Regional Program for the Environment (CARPE) is a long-term initiative by the United States Agency for International Development (USAID) to promote sustainable natural resource management in the Congo Basin by supporting increased local, national, and regional natural resource management capacity. CARPE is the core mechanism through which the United States contributes to the CBFP.

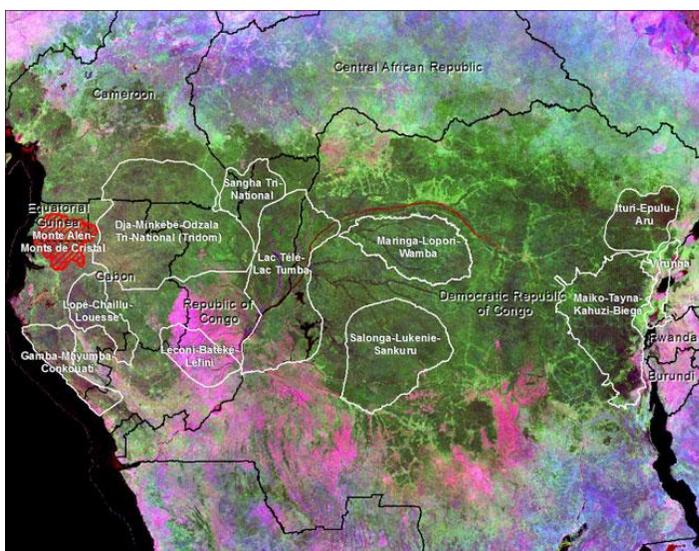
This guide to land use planning in CBNRM macro-zones of CBFP Landscapes is one in a series of planning guides produced by the U.S. Forest Service (USFS) for CARPE and its partners. Other planning guides include an overarching Integrated Landscape Land Use Planning Guide and two macro-zone guides (Protected Areas (PA) and Extractive Resource Zones (ERZ)). PA, CBNRM, and ERZ management plans are more detailed than the overall landscape plan, as they outline a set of desired conditions for a discrete geographic region, the specific set of permissible and non-permissible activities within a macro-zone, and identify in the annual workplans the specific interventions needed on the ground. These macro-zones are identified in the higher level landscape plan. These macro-zone plans are components of the overall landscape plan and

must articulate how they reflect, support and will contribute to the landscape desired conditions and objectives, as well as how they will address site-specific issues and needs. The objectives of the three macro-zones of a CBFP Landscape therefore, should be harmonized, and should not conflict, with the objectives of the overall landscape.

CBFP Landscapes¹

CARPE currently works within 12 key biodiversity landscapes in seven countries. Several of the CBFP landscapes are transboundary and are recognized by international agreements promoting cooperation on environmental monitoring and law enforcement. These 12 landscapes form the pillar of CARPE's regional conservation strategy and cover an area of 680,300 km².

The CBFP landscapes were identified as appropriate conservation targets at a 2000 Conservation Priority-Setting Workshop for Central Africa. The workshop was organized by the World Wildlife Fund and brought together over 160 biologists and socio-economic experts to carry out a region-wide evaluation and resulted in the drafting of A Vision for Biodiversity Conservation in Central Africa (WWF 2003). The 12 landscapes were recognized as priority areas for conservation based on their relative taxonomic importance, their overall integrity, and the resilience of ecological processes represented.



“In 2000 the Vision for Biodiversity Conservation in Central Africa was adopted by the country signatories of the Yaoundé Declaration as the blueprint for conservation in the region. The Yaoundé Declaration significantly evolved six years later into the signing of Africa’s first ever region-wide conservation treaty, a historic milestone for the future of the world’s second largest rainforest. Additionally, the Brazzaville Priority Action Plan, which outlines targets for the period 2002-2005, and the subsequent Convergence Plan for the period 2005-2007 focused implementation on transborder forest areas identified within the biodiversity vision. (WWF 2003)”

In accordance with principles of integrated conservation initiatives and broad-scale land management, each landscape is divided into different categories of management areas, including: protected areas, community-based natural resource management zones, and extractive zones. Within these zones, CARPE and its partners are working to implement sustainable natural resource management practices at the local scale.

¹ <http://carpe.umd.edu/Plone/where-carpe-works/landscapes>

WWF. 2003. Biological Priorities for Conservation in the Guinean-Congolian Forest and Freshwater Region. WWF-US/CARPO, Washington, DC.

In this series of planning guides, the USFS shares its expertise gained in managing large forested multiple-use landscapes in the United States (e.g., wilderness areas, complete protected zones, extractive use areas, recreation areas, and lands within National Forest boundaries zoned for small-scale or subsistence use). USFS guidance is tailored to the specific context of Central Africa and the needs of implementing partners and government agencies in the region. This adaptation of lessons learned and processes used in the United States to a Central African context is a result of partnerships and direct technical assistance provided by the USFS International Programs (IP) office. It is expected that both CARPE implementing partners and host country government agencies charged with managing these resources will benefit from these guides.

Community-based forest management is still in its early stages of evolution in Africa and around the world. Several models have been attempted, with varying degrees of success. However, few truly successful models exist to date in Central Africa. What emerges is that the community should have, to some extent, property rights over natural resources for successful CBNRM planning and implementation. Although not sufficient alone, without said rights, experience has shown that the motivation and capacity for sustainable use and responsible stewardship diminishes.

Approaches to CBNRM land use planning are still developing and the learning process is ongoing. It is hoped that the planning process outlined in this guide will contribute to that learning process. Moreover, these planning guides are fundamentally guides for adaptive management and, as such, should also be considered dynamic and “living” documents that will benefit from further technical assistance missions and other feedback from CARPE implementing partners and host government agencies.

In addition to guiding the overall process of creating a CBNRM plan, this document outlines certain minimum standards expected of CARPE implementing partners. The personnel of USAID/CARPE will use these standards to assess partners’ progress toward developing CBNRM plans. This document standardizes certain plan elements as required by USAID/CARPE. These minimum standards are highlighted under each section as “Tasks” that need to be completed throughout the process.

Chapter 2 explains the purpose of a management plan and outlines key concepts central to CBNRM planning. Chapter 3 describes the process for developing a CBNRM plan in the CARPE context. Finally, Chapter 4 provides a framework of CBNRM land use plan components; suggesting section headings and explanations of elements to consider and include when developing each section.

2.0 COMMUNITY LAND USE PLANNING CONCEPTS

2.1 Purpose

The purpose of planning is to develop management and governance strategies that respond to scientific understanding of natural and social systems, as well as changing societal conditions and values. Effective planning is a process that promotes decisions that are informed, understood, accepted, and able to be implemented.

The purpose of a CBNRM plan is to establish the community's aspirations for a given area over a stated period of time by describing what they want the land and resources to look like, how they want those resources to function and serve them, how plentiful they want the resources to be, and how to maintain the resource for future generations.

Communities inhabiting Central African rainforests may identify their aspirations in terms of increased harvests of bushmeat, fish, and agricultural crops; increased revenue from the sale of resources or ecotourism; or improved roads and communication infrastructure. However, experience has demonstrated that increasing resource extraction and other pressures on an ecosystem without consideration and appropriate adjustment for resource sustainability has led to suboptimal conditions. Facilitating multi-stakeholder involvement in the planning process will help integrate long-term ecological, economic, and social concerns, and if properly incorporated, will improve the success of the plan and well-being of the community.

A sustainable CBNRM zone will include the following attributes: 1) Possessing an acceptable/functioning organization or structure for governance and operations; 2) Having some form of official recognition of rights/ownership of the zone; 3) Willingness/interest of communities to organize; and 4) Community recognition of resource values.

2.2 Adaptive Management Planning

Planning can be complex, depending upon the number of issues internal and external to the planning area. Planning requires risk assessment and forecasts about anticipated and uncertain future events and conditions. Consequently, even the best plan will need to be altered to adjust to improving data and information; changing social, economic, or other conditions; evolving threats; or feedback from monitoring efforts. Significant changes in the resource or in the social and political situation may trigger the need for changes to a plan. Therefore, land use plans are adaptive in nature; they are flexible and can be amended to changing realities on the ground.

Adaptive Management:

Management plans should be considered “living” documents, able to evolve in response to changing information, environmental conditions, and monitoring results. Systematic plan revisions should happen on a periodic basis, usually after the current plan has been in effect for 5–10 years. During a plan revision, the entire plan is revisited, allowing for major revisions and changes to the plan's content and objectives. Adaptive management, on the other hand, allows individual plan components to be amended or altered at any time due to changing resource conditions or social values, improved data, or in response to results of monitoring activities.

When undergoing a planning effort, it is essential to recognize that not all data pertaining to the landscape and its resources will be available in the desired detail. This is universally true, regardless of the financial and human resources available to the management authority. Nevertheless, landscape planning must proceed with the view that the plan can call for specific data collection and be revised with that newly acquired data to make better informed decisions at a later time. Therefore, it is important not to delay plan development due to a lack of data. Planning will be adapted to the realities of available data and, therefore, improved over time.

Land-use plans around the world—whether for landscapes, protected areas, communities or other areas—vary substantially in their content and level of detail and complexity. When working through the planning process, keep in mind that simpler plans are often more effective plans. The likelihood that the plan will be widely read and understood by local stakeholders, as well as the likelihood of their engagement in the process, will increase if the plan is concise, focuses on what is important for resource conditions, and is light on jargon, both scientific and legal. Such an approach will also ease plan implementation and enforcement.

2.3 Desired Conditions in CBNRM Plans

CBNRM plans should state the community’s vision and aspirations for the identified CBNRM zone, expressed as their “desired conditions.” The CBNRM plan should acknowledge the community’s relationship to the larger CBNRM Landscape and link to, and be compatible with, the desired conditions and plan for the larger landscape including nearby CBNRM zones, extractive resource zones (ERZ) and protected areas (PA). Moreover, the plan should complement the broader regional-, national-, and local-level legislation and/or other sanctioned initiatives affecting the proposed CBNRM zone.

A CBNRM plan should incorporate and balance the tradeoffs of diverse interests required for sustainable management of a given area, and thereby, demonstrate that sustainable management can still be achieved—or perhaps better achieved—with the proposed social and economic developments.

Desired conditions set the broad direction for a given area (i.e., landscape, macro-zone) over an extended period of time; they describe the compositional and structural characteristics of the biological and physical features desired across the given area. Desired conditions should also reflect the social and economic needs of stakeholders who depend on the area’s resources. Barriers or threats that may limit the ability of resource management to achieve or move toward the desired condition are specifically addressed in subsequent sections regarding objectives, guidelines, regulations, and zoning concepts.

The desired condition and zoning model used by the USFS for their multiple-use planning on National Forest lands, outlines overall objectives for the zone. Desired conditions describe the

Desired Conditions

Desired Conditions set the broad direction for the CBNRM zone over an extended period of time. Desired Conditions set idealized goals of what the zone should be, what it should provide, and who it should benefit.

Desired Conditions describe the compositional and structural characteristics of the biological and physical features desired across the zone; it also accounts for the social and economic needs of stakeholders who depend on landscape resources.

vision of the community members and other stakeholders for the zone and what resources the zone should continue to offer. In addition, this model allows for more specific objectives within each micro-zone to guide future management decisions. This guide promotes the desired-condition approach to planning as it is flexible and adaptable, allowing the plan to address not only existing threats, but unforeseen future ones, as well as non-threat management targets.

2.4 CBNRM Micro-Zoning

Zoning decisions are often considered the heart of a plan and can be contentious. It is presumed here that the CBNRM zones were identified at the landscape level of planning. Where different land use objectives are needed within a macro-zone, “micro-zones” are developed. “Micro-zoning” is the delineation of a subset of smaller areas managed by the community with different objectives, and therefore, different guidelines than the macro-zone. For example, the community can identify micro-zones, such as agricultural development zones, timber harvesting zones, or wildlife protection zones. The community may allow relatively intensive use in some micro-zones to provide for economic or subsistence benefits, whereas in other areas, there may only be low-intensity use or no use at all. The CBNRM plan should define objectives for each micro-zone and propose which activities should or should not occur in each micro-zone to be consistent with those objectives.

Zoning:

Two levels of planning are involved in the CBFP landscape land use planning process: the broad landscape-level scale which assigns macro-zones across the landscape, and the finer, more site-specific scale, which designates micro-zones within a macro-zone.

CBFP Landscape land use planning prioritizes three types of macro-zones to be delineated within the landscapes: Protected Areas (PA), Community-Based Natural Resource Management (CBNRM) and Extractive Resource Zones (ERZ). Each of these zones requires a management plan to dictate resource use and conservation objectives within these areas.

Micro-zoning occurs as a part of the process of creating these macro-zone management plans. This site-specific zonal planning will determine the mix of activities and projects specific to that site that are needed to move the planning area toward desired conditions. These zoning exercises fall within the context of ongoing national and regional initiatives, promoted by partners seeking to foster sustainable natural resource use and conservation.

CBNRM plans address potential threats to resource base sustainability, establishing those micro-zones where activities may be encouraged, allowed, or prohibited. Guidelines associated with the zones will provide direction or restrictions on how activities should be conducted. A micro-zone is created only when different guidelines and management separate from the rest of the macro-zone are needed.

2.5 Defining a Community

There has been a great deal of debate on what constitutes a “community,” National legislation can sometimes provide guidance; in other instances, communities have been based on ethnic/familial relationships. In some areas, it may be easy to identify the communities in which existing structures such as traditional links are well-established. Whereas in other areas, the community may be hard to identify, as an area may have been impacted by years of migration and refugee influx, and the traditional village or community structure has broken down, requiring

a redefinition of the term “community” for planning purposes. If an area does not have traditional structures, or easily identifiable groups, other social mechanisms to promote decision making will be required. Some community forestry projects have developed “administrative committees” that represent communities in forest planning efforts.

Identifying a community will require assessing each particular situation; working and talking with community members to understand how they are structurally grouped and what management mechanisms and structures are present. To identify a community, one needs a group of people with some degree of cohesion and decision-making capability, or willingness to develop that capability, and who are tied through spatial proximity or a mutual interest in the same geographic area or resource(s). A community can be a single village, a grouping of villages in close proximity to one another, or settlements separated by greater distances but who utilize common resources for their livelihoods. A community can refer to groupings such as local communities, indigenous peoples, local populations, and others. The definition of a community does not have to be the same throughout a single landscape. There is no easy “one size fits all” guidance for this process. The spatial definition of a community is inextricably linked to its membership.

Definition of Community

Article 1.17 of the 2002 Forestry Code for the Democratic Republic of Congo defines local community as:

“A people traditionally organized based on custom and united by ties of clan solidarity or family which are the basis of its internal cohesion. It is characterized otherwise by its attachment to a specific territory.”

Forestry Code Article 25 further allows that management of portions of the forest may be delegated to public associations.

Different definitions of community exist in different contexts. Know the context.

2.6 Plan Components and Conceptual/Logical Framework

The elements or components of the landscape plan interact in a logical manner as shown in figure 1. The Desired Conditions inform the Objectives and Guidelines, which both inform the Management Actions, which are then implemented. Zoning, or the selection of specific areas in the landscape for differing management regimes, is core to and influenced by each of these elements. Likewise, these elements provide feedback to ultimately the desired condition articulated by the stakeholders.

Implementation requires multiple aspects including:

- clear identification and definition of roles and responsibilities of stakeholders and the overarching governance structure;
- monitoring and evaluation activities to track the progress of the plan itself, as well as the impact of plan implementation;
- a public participation strategy to ensure ongoing broad stakeholder engagement and transparency during plan implementation; and
- a multi-year implementation schedule that generally describes what should be done and when to ultimately achieve the desired conditions.

Monitoring and evaluation results in an adaptive management approach, providing feedback to determine whether there should be revisions or adjustments to elements of the plan, taking into

account the evolving reality on the ground. Lastly, a separate but linked key element of implementation is the development and execution of annual workplans, which are developed to describe what will be done in a given year, by whom, and for how much.

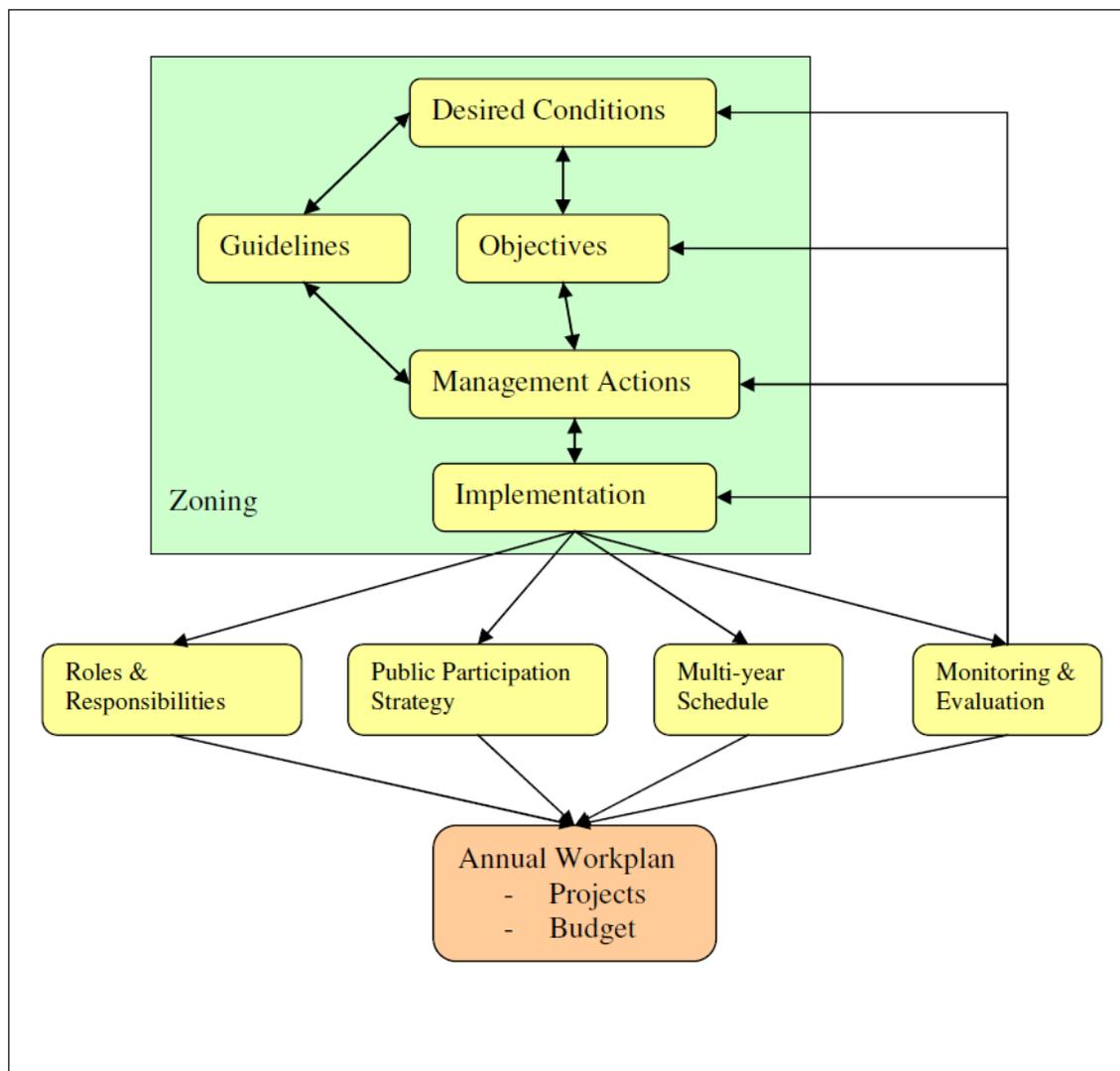


Figure 1. Plan components and logical framework.

2.7 Management Authority, Legal Recognition of the CBNRM Plan, and Decision Making

A central tenet of CBNRM planning is that the community has, to some extent, property rights over natural resources. Although not sufficient alone, without these rights, experience has shown that the motivation and capacity for sustainable use and responsible stewardship diminish. In Central Africa, the degree to which a community may hold tenure over natural resources varies among countries due to differences in national laws. However, most countries in the region have some legal framework in which to grant communities the rights over natural resources for various uses. For example, although the Forestry Code of the Democratic Republic of Congo states that all forest lands are property of the State, there exists a process by which communities may apply for community-use status of forested lands.

In reality, many people inhabit these forest lands and use the natural resources, regardless of the community's status or legal recognition. A CBNRM plan may nevertheless be a requirement of the official recognition process in that country of a community's property rights, or may help to receive that recognition. Therefore, it is possible that some CBNRM zones currently being developed in CBFPL Landscapes may lead to the central government officially recognizing a community's property rights.

The CBNRM plan should describe what type of recognition of the plan the community hopes to attain, if any, and a strategy to attain it. In addition, during development and before completion of a CBNRM plan, the planning team should verify that the plan is consistent with current law and codes by consulting legal experts and government representatives. This consultation will also help community leaders develop the strategy for obtaining legal recognition of the completed land use management plan by the appropriate provincial and national government authorities. Planning can also be very useful for establishing rules on resource use for internal community management purposes in the interim, or even in the absence of official recognition of community structure and/or resource use rights.

Local or provincial government representatives may or may not be part of all technical discussions or planning operations, but their early involvement in the community planning process will be crucial. The planning team needs to ensure that the appropriate government representatives have some familiarity with the entire landscape planning process to aid in developing their support for the specific CBNRM plan adoption and implementation.

Naturally, CARPE implementing partners do not, and will not, have any mandate to exercise governance authority. This authority lies with national, local, and community entities, depending on the national legal framework and structures in place. As government capacity and presence on the landscapes vary widely throughout the region, engagement and policy influence is challenging at best. To influence the development of good governance practices and structures on the ground, CARPE implementing partners can strategically use the management plan development process to engage local communities, government agency representatives, concession holders, and other stakeholders. This critical stakeholder engagement process requires significant investment of time and resources to support a given community in developing a CBNRM plan and subsequent institutional capacity to meet concomitant needs for resource use and conservation. Community adoption of CBNRM plans will be largely, if not entirely, voluntary, and will rely on general community engagement, agreement, and frequently, self-regulation and policing to assure effective implementation. Therefore, CARPE implementing partners will need to help the community negotiate with dissenting stakeholders about any aspects of the plan with which they strongly disagree during the planning process.

3.0 COMMUNITY PLANNING PROCESS

The following sections outline components of the CBNRM planning process including key elements in the development of the CBNRM plan, how these elements can be fleshed out, and other considerations of the planning process and plan development. Additionally, many of these sections contain “Tasks” which are actions required of CARPE implementing partners and used by USAID/CARPE as monitoring tools to measure progress.

3.1 Community Planning in the CARPE Context

The community planning process should demonstrate how the community, CARPE implementing partners, and other pertinent stakeholders have: 1) assessed and analyzed activities, resources, uses, and trends in the CBNRM zone; 2) developed and formulated desired conditions and objectives for the CBNRM zone; 3) consulted, collaborated, and integrated stakeholders in plan development; and 4) focused management activities to achieve desired conditions and priority objectives with the appropriate stakeholders.

Although it may vary somewhat nationally, generally in Central Africa a typical lifecycle of a plan would be 5 to 10 years with annual monitoring and evaluation. That monitoring and evaluation would determine if conditions or needs had changed enough to warrant updates to the plan or if assumptions made in the planning process were accurate.

These plans are required as part of the CARPE program activities and are meant to promote collaboration across the CBNRM zones, focus efforts on priorities, and stimulate planning processes throughout the region. These plans have only as much authority as agreed upon by the communities they concern, government representatives, and other stakeholders. The guidance and activities outlined in the CBNRM plan aim to contribute to the long-term management and sustainable use of forest resources, and thereby contribute to developing strategies and practices for improved livelihoods and economic development activities that will endure for those depending on these resources.

3.2 Community-Based Planning Process Steps

The following steps form the basis of the CBNRM planning process; while this list is numbered, it will not always be necessary to follow these steps sequentially, as some of these actions may occur concurrently, iteratively, or realities on the ground may cause a change in order.

1. Identify areas of importance for natural resource management.
2. Identify community and/or communities (stakeholders) that impact or are impacted by the area.
3. Identify planning team members and define individuals' specific roles.
4. Identify the general location and boundaries of the CBNRM zone based on the priorities at the landscape-level plan and priorities initially identified by the community.
5. Create and implement a public participation strategy to effectively identify and involve all stakeholders.

6. Identify existing and needed ecological, social, and economic information pertinent to the CBNRM zone,
7. Review and advise the community, as appropriate, of the steps necessary to become an officially recognized community with property rights over local natural resources, based on the pertinent laws in place.
8. Develop the CBNRM plan, including results of the following actions:
 - a. Describe unique natural resource value(s) of the CBNRM zone and current uses of resources by the community.
 - b. Describe characteristics (physical, ecological, socio-economic, etc.) of the CBNRM zone.
 - c. Develop desired conditions for the CBNRM zone and objectives which reflect and address the community's vision for the CBNRM zone. These conditions and objectives should benefit from analyzing existing information, current conditions, and future trends in the CBNRM zone.
 - d. Develop and map micro-zones and define guidelines for each, taking into consideration already legally designated areas, concessions, and contracts.
 - e. Outline a plan implementation schedule (e.g., annual workplan).
 - f. Create a monitoring and evaluation schedule.
 - g. Update and revise the CBNRM plan as information improves, conditions change, community needs or desires change, or monitoring results indicate changes are called for.

3.3 Identifying the CBNRM Boundary

Although the CBNRM macro-zone is usually broadly defined in the higher level landscape planning, before proceeding with the planning process it is important to more precisely define the geographic region that will be the focus of planning. Initially, it may be difficult to ascertain the exact location of the boundary of the CBNRM zone, given that communities may utilize resources to lessening degrees as distances from the village center increase, yet the areas of use can stretch over significant distances and even vary by season. Some boundaries to the CBNRM may already be pre-defined by default due to the presence of other macro-zones such as protected areas or extraction concessions. Additionally, if the CBNRM zone boundaries follow government administrative unit boundaries as closely as possible, and not just biological criteria, the CBNRM land use plan may likely be accepted by government authorities at all levels.

Existence of one of these other macro-zones, however, does not necessarily mean that community use of resources ends at that line. For this reason, the integrated nature of the landscape plan as a whole, and the manner in which the CBNRM plan fits into it, is highly important. Before engaging the full slate of stakeholders, the planning team needs to have a general idea of the region where they will be working to create a CBNRM plan. At this stage, the boundaries can be tentatively defined, and later modified through stakeholder involvement in the planning process (see section 3.7).

3.3.1 Prioritization

Early in the planning process it's not feasible for CARPE implementing partners to develop a CBNRM plan with every group residing within a CBFP Landscape. Resources are limited and their use must be effectively prioritized to work in areas where threats to resources are greatest

and where opportunities for success are highest. The planning team should carefully analyze key threats across the landscape, as well as in communities where existing structures, governance, personal connections, and other factors lend themselves to effective planning.

3.3.2 Definition of Community for CBNRM Zones

This process must be based on an understanding of the area in question, its residents, and influential stakeholders. The definition of any one particular community should be accomplished with the help of social scientists (in particular anthropologists) and locally knowledgeable people who understand the dynamics of the area's populations. (See section 2.5 for further discussion.)

3.4 The Stakeholders

Stakeholders are individuals or groups who may be affected by the management of an area or who may have an interest in its management even if they are not directly impacted by activities in the area. Stakeholders are able to influence activities in an area by their own actions or by influencing others to act in support of or opposition to plans or activities.

Community-based natural resource management planning is the process in which community members *and* other stakeholders (e.g., scientists, government representatives, private businesses, traditional authorities, interest groups, development experts, etc.) come together to consider how to manage lands for the benefit of current and future generations.

Through this kind of information sharing, a common vision should emerge that acknowledges the link between social stability and long-term economic stability. When economies are able to thrive over long periods of time, there is less impetus for civil unrest. To achieve long-term economic stability, the natural resource base must be used sustainably—if the natural resource collapses, the economy, and possibly existing social systems, likely will undergo a similar crisis. In order to be optimally effective in the long run, the entire planning process—starting with desired conditions—should strive to include representation from all stakeholder groups, including marginalized segments. If some stakeholders still are unable to participate, their views and needs can be understood and represented in the planning process. Otherwise, these groups may constitute road blocks to the success of the plan and the goals of sustaining a sound economic and natural resource base. The intent of this process is to ensure that social and economic needs of the

Who are Potential CBNRM Stakeholders?

Community planning will benefit from having stakeholder perspectives that represent the range of interests for the specific CBNRM zone under study.

Stakeholders of a CBNRM zone could include:

- Government representatives at the local and regional levels
- Government Ministry representatives that have authority over lands within the landscape
- Traditional leaders
- Individuals claiming ancestral rights to lands
- Community members who are able to represent resource users
- Women
- Local hunters and fishers
- Extractive industry representatives operating in or near the CBNRM zone
- Local and international non-governmental organization (NGO) representatives operating in the CBNRM
- Marginalized groups that may not have a voice as part of the above groups
- Military leaders

communities are met simultaneously with the goals of ecological sustainability of lands and resources. The planning team should be prepared for the possibility where the local community may not be interested in ecological sustainability, but rather will be focused on shorter term social or economic goals.

The planning team should develop a strategy to facilitate the stakeholders in taking a lead and central role in developing and implementing the CBNRM plan. Moreover, the team should seek to ensure that the most vocal individuals in the planning process are truly representing the desires of the community as a whole. Some stakeholders may have specific interests or agendas that conflict with community interests. CARPE implementing partners can facilitate the dialogue between communities and other stakeholders to ensure the community's long-term needs are being met while ensuring the ecological health of the resource.

Support can be fostered by developing the plan using an open and transparent process involving interested groups and individuals throughout the CBNRM zone. The planning process should recognize groups and individuals who may not have been traditionally represented in community governance but are potentially affected by the CBNRM plan, or who could potentially adversely affect the plan's success by failing to support or adhere to it. The planning team should strive to understand social, political, and religious dynamics in the CBNRM zone and attempt to integrate any pertinent national and regional perspectives in local zoning decisions.

Conflicting values and desires can be a normal part of any community planning process. There are many sources of information and approaches to conflict resolution and mitigation. It is important to address these conflicts early to avoid future derailment of the process.

3.4.1 Stakeholder Identification

The stakeholder participation strategy must begin by listing the stakeholders that will be affected by the CBNRM planning process. Such a strategy may also be developed to target community members that are underrepresented or difficult to engage. It is important to note that the term "stakeholder" can include members of the community residing within the CBNRM zone, as well as other interested parties concerned with the management of landscape and the resources within it. Not all stakeholder viewpoints are necessarily equal. Community members residing within the CBNRM will be faced with much more direct costs, and hopefully, the eventual benefits, from the management decisions made in the CBNRM plan. Keep this in mind when weighing the involvement of stakeholders as a whole in the development of the management plan.

Use the following recommendations to effectively identify the stakeholders that should be involved:

- Assess the different groups living, operating, or overseeing the CBNRM zone.
- Identify groups that are central to land-use decisions, impact the CBNRM zone, or rely on or benefit from resources within the area.
- Include stakeholder representatives from the local and provincial governments and traditional leadership.
- Consider how women's roles differ from men's, how to ensure women's participation, and how men in the community may perceive their participation.

- Consider including ethnic and religious groups, timber companies, tourist companies, mining companies, NGOs (local, regional, and national), government agencies, civil societies, hunters, fishers, loggers, farmers, water users, researchers, or other groups with potential interest in the landscape.
- Consider activities outside of the CBNRM zone that may impact community resources, identifying the groups or individuals overseeing these activities. For example, determine if there are pending developments or infrastructure projects proposed in or near the community, such as road re/construction. Who oversees these activities and makes decisions on road placement?
- Do these communities in turn impact resources outside the proposed CBNRM zone? For instance, do community members hunt in a particular PA? If so, the PA manager should be a stakeholder in discussions.
- Given landscape priorities and trends, decide which stakeholders are essential to addressing community priorities and participating in planning decisions. Do certain stakeholder groups impact key resources on the landscape? Are there potential conflicts among certain stakeholder interests in proposed macro- or micro-zones? Are authority figures with strong influence operating or living on the landscape? What stakeholder interests may conflict with micro-zoning decisions? These questions may help identify and prioritize the engagement of certain stakeholders.

Identification of Stakeholders

To ensure the participation of key individuals and groups in the CBNRM zone has not been overlooked during the stakeholder identification process, expand your outreach to those in non-natural resource-related fields (e.g., health-care workers or teachers) who work in, or are very familiar with, the specific CBNRM zone.

They may be able to contribute useful information or know of other individuals, affected stakeholders, or organizations that could greatly contribute to the community planning process. They may also be better positioned to engage certain groups in the process than a conservation NGO.

3.4.2 Stakeholder Participation Strategy

The community planning process will involve a variety of stakeholders, each with a different level of interest, and impacted to different degrees by decisions made in the planning process. Different participation strategies for different stakeholders may be necessary. The overall public participation strategy identifies:

- those stakeholders that must be included in the community planning process;
- the link these stakeholders have with the community;
- how and when these stakeholders will be involved;
- incentive structures and compensation mechanisms for increasing participation in and support for alternative livelihood projects;
- methods of working with these stakeholders; and
- communication tools used to successfully promote stakeholder participation.

Accommodate Stakeholder Availability

Some stakeholders may not be able to spend time participating in all aspects of the community planning process.

If they are unable to participate in organized sessions, and their involvement is critical to the success of the planning process, consider keeping them informed and involved through personal communication and adjust meeting schedules to meet their needs.

Sound strategies for community planning will facilitate local communities, government, relevant industry, and other stakeholders taking a central role in developing the management plan. Creating a sense of ownership among local community members and a wider audience of stakeholders by facilitating this central role in planning discussions and decision making will improve the likelihood that the plan will be supported and its implementation will be successful.

The stakeholder participation strategy should identify methods of information exchange. The following steps should be included or considered in engaging the different stakeholders:

- Determine how the planning team will interact with the stakeholders (e.g., individual and/or group meetings in the community and/or a central location) recognizing the real or perceived power, expectations, and responsibility of the convener in the planning process; and specify which, if any, stakeholder groups will be treated differently and why.
- Explain the manner in which information will be exchanged and how concepts will be delivered to the different stakeholders. This is particularly important for local inhabitants, many of whom will have limited or no access to maps, data, and reports, and may have low levels of literacy.
- Consider how different ethnic groups and women may be marginalized in these types of decision-making processes and find a way to overcome this problem.
- Define the overall purpose of each stakeholder contact; e.g., information sharing, data gathering, decision making, etc.
- Consider how stakeholder representatives will coordinate between the planning team and their respective groups to ensure information and viewpoints are conveyed and received accurately.
- Develop specific talking points for each stakeholder group and for delivering concepts to the group as a whole.
- Include well-defined terminology to reduce confusion in the planning process.
- Describe what languages will be used for written and oral communication and how the planning team will provide for adequate translation.
- Ensure that all participants have an accurate understanding of the planning process and their role in the process.

The Role of Women in Natural Resource Management

Women often play a key role in using natural resources. Women collect the bulk of firewood, and water and plants for food or medicinal purposes. The knowledge they possess related to these resources is invaluable and they often are the ones to bear much of the cost of a deteriorating environment due to the increased labor necessary as resources in close proximity to villages are degraded or consumed.

Also, women are frequently marginalized in the decision-making processes in many cultures. It will be necessary for the planning team to access their knowledge and ensure the community's women participate in the planning process.

Once again, when facilitating stakeholder participation, it is important to consider how costs and benefits of any planning decisions may be distributed among stakeholder groups. Community members living in the CBNRM zone will be more directly and heavily impacted by these decisions than interested parties living outside the zone, landscape, province, or the country in question. Keep this in mind throughout the planning process.

Tasks:

- 1) *Identify and list the interests in the CBNRM zone and potential groups or individuals representing those interests.*
- 2) *Prioritize participation of key stakeholders that must be involved or aware of the planning process if it is to be approved and successfully implemented.*
- 3) *Document the considerations that went into developing the final stakeholder list.*
- 4) *Identify stakeholders who have agreed to participate in developing the community plan, how they will participate, and their level of participation.*
- 5) *Describe the approaches used to involve the various stakeholders.*

3.5 The Planning Team

Early in the planning process, define roles and responsibilities of the planning team to reduce confusion, focus staff time, avoid duplication of effort, and ensure that all aspects of the process are addressed. The CBNRM planning team may either be the same or a different group of individuals as those working on the larger landscape plan. However, CBNRM plan development may require different skill sets than at the landscape level of planning. If this is the case, clearly articulate to those involved any changes in the team's composition and members' roles when working on the various plans.

While the planning team leads the actual development of the plan, community planning is a collaborative, integrated process involving community leaders, traditional authorities, community members, and other appropriate stakeholders. As part of the collaborative effort, partners with specific expertise (NGOs, university, consultants, government officials, or development experts) can help a community build capacity in natural resource management by providing training in skills related to forestry, fisheries, wildlife management, agriculture and the manufacture or transformation of raw materials into subsistence and commercial products. Moreover, as natural resource management is fundamentally about people and their social and economic relationships to the natural resource base, community planning also requires social science expertise (e.g., socio-economic assessment and planning).

3.5.1 Planning Team Skills

Identify the skills needed for successful CBNRM plan development. Necessary skills may vary depending on the types of stakeholders, data needs, and primary issues associated with the CBNRM zone and the landscape as a whole. The size of the team will vary depending on available resources, however, some of the commonly required skills for a planning team include:

- Team leader / program manager
- Biologist(s)
- Botanist(s)
- Soil scientist(s)
- Holder(s) of local knowledge
- Hydrologist(s)
- Anthropologist(s)
- Social Scientist(s)
- Statistician/Population modeler(s)
- Economist(s)
- Forester(s)
- Mineral/mining specialist(s)
- Engineer(s)
- Agriculture specialist(s)
- Educator(s)
- Development expert(s)

Develop the plan in consultation with the technical specialists, and with professionals and community members who have local knowledge and experience to ensure that proposed zoning and guidelines (norms) are appropriate for fulfilling management objectives, including sustaining and conserving the resources on which the community depends.

The primary issues in a given CBNRM zone (and its landscape) should drive which natural resources to emphasize. However, it is very likely that a social scientist, an agricultural specialist, a biologist, and a soil scientist will be necessary. Although important for planning in the other landscape macro-zones, it is particularly crucial to engage with social scientists from the region throughout the CBNRM planning process, because success requires understanding the dynamics among locals residing in the zone. Using as much local information as possible, a population modeler could reasonably predict population growth for the area and an agricultural economist could combine local population trends with the expected productivity of local farms to predict future community needs for agricultural lands. Additionally, soil scientists and agriculture extension agents can bring to the team knowledge on approaches and constraints toward improving farming methods and yields.

With the right skill set, a single person may be able to provide sufficient expertise in more than one of the above-listed areas. As the CBNRM plan and associated micro-enterprises are developed, at least one type of biologist (e.g., wildlife, botanist, or ecologist) will be needed to investigate how human activities may potentially impact flora, fauna, and the ecology of the local area. A biologist with strong wildlife expertise is recommended because bushmeat hunting is essential to human livelihoods in most CBFP Landscapes and usually impacts one or more flagship species. Having a broadly skilled biologist actively involved throughout the planning process will increase the possibility of identifying creative solutions to minimize those impacts and to achieve the goal of sustainable use.

At this stage in the process, assign responsibilities and tasks to each planning team member, and hire new staff or consultants to fill voids. It is important to recognize both the abilities and limitations of the existing planning staff, and adjust accordingly.

It may not be necessary to have all of these specialists on the planning team throughout the entire process; rather some could be brought in as needed to advise on certain issues. Different organizations throughout the CARPE countries have a wealth of experience in community engagement in natural resource management with a great deal to contribute in terms of lessons learned from failures and successes. Begin early and seek advice from these entities. Additionally, throughout the process, the CARPE implementing partners working on these plans should strive to build capacity within the communities to allow them to eventually conduct the planning process on their own.

3.5.2 Planning Teams and Community Capacity Building

CARPE implementing partners and planning teams should facilitate a process where local communities and other local stakeholders take the lead in defining overall objectives and content of the management plan. At the same time, the planning team should strive to increase community members' capacity and facility for decision making.

For example, CARPE implementing partners developing CBNRM plans can involve community members in data gathering and mapping to help identify opportunities for conservation and sustainable development. Through their participation in this preliminary planning work, community members better understand the community's relationship to natural resources and increase their appreciation and capacity to sustainably use resources. Community associations are emerging, and should be encouraged, as an effective mechanism to increase community capacity to plan, monitor, and implement these plans.

In addition, community members develop working relationships with one another that can encourage broader participation in decision making about community development and use of natural resources. The CARPE implementing partners can also facilitate communication among neighboring communities to share information about resource management, transportation, and marketing. This information helps develop practical approaches for sustainable development.

Often projects help communities gain the rights to manage natural resource lands, but without the necessary long-term support and capacity building, sustainable management of resources may not necessarily result. Capacity building is required in numerous forms and at multiple levels to address technical, administrative, collaboration, and internal decision-making processes. Support to communities should not end when resource rights have been granted, but rather, should be augmented to reflect communities' increased rights over natural resources. CARPE implementing partners can serve as a conduit to and from the community, in particular concerning information about national laws and emerging legal issues to assist in building local knowledge and capacity for governance.

The more community members take a lead role in the planning process—defining plan objectives; determining micro-zones and their corresponding resource regulations; marking boundaries, gathering data, including participatory mapping; and stakeholder communication—the more communities will take ownership of the process and support implementation of its outcomes.

The ultimate long-term goal of these planning efforts is to build local capacity to develop, implement, and monitor these plans.

Tasks:

- 1) Define the skills needed by the planning team, based on the needs or situations in the individual CBNRM zone.*
- 2) Identify team members and their roles, responsibilities, and tasks throughout the planning process.*
- 3) If any necessary skills are missing, determine how those skills will be obtained and when.*
- 4) Identify any short-term expertise that will be brought in to assist with the planning process.*

3.6 Compiling the Data

Planning teams should identify existing pertinent information for use in developing the CBNRM plan, and indicate what additional data are critical to developing a sound plan, such as that required by national laws. At a minimum, the planning team should identify core data needed to make zoning and guideline decisions in a CBNRM plan, and if those data exist or need to be collected. This step involves synthesizing existing knowledge of the zone and its surroundings and collecting new information (inventories). In the absence of hard data on current, and especially historic, conditions, do not underestimate the value of anecdotal information from community members. Types of inventories likely to be needed in developing CBNRM plans include: physical features; flora/fauna; socio-economic; threats and trends in resource use; and other information regarding local religious, traditional, cultural, and/or government institutions.

The two primary scales of complimentary and equally important inventories are local-scale and broad-scale. Local-scale inventories establish where resources and activities occur in the context of community-use areas. An advantage to using a local, participatory approach in this type of inventory is to capitalize on local knowledge and contribute to developing local support for the plan. In a participatory approach to local community inventories, prioritizing resources can be useful: identify the resources most important to local users and ones important to others.

Broad-scale inventories typically provide information and mapping over larger areas such as a landscape. Frequently, the goal of inventories over large areas is to enhance long-term conservation and biodiversity goals through developing a more complete understanding of flora and fauna, or gaining an understanding of resource use patterns and practices. Inventories across large expanses contribute useful information to CBNRM plans by validating participatory mapping results and filling information gaps.

Include in the characterization of the CBNRM zone a discussion of major trends in resource availability, human use of resources, and other relevant issues, such as changes in human population size, immigration, and emigration. Other examples of data sets to collect, depending on the region-specific needs, may include changes in the species of fish caught and average size of fish caught; rate of migration of people into an area; annual crop production per hectare over several years; or changes in the community's total area in agricultural plots in the last decade.

Tasks:

- 1) Identify existing pertinent data and determine if it can be used for developing the CBNRM zone under study.*
- 2) Prioritize and identify critical missing information that will be needed to make expected zoning and guideline decisions in the CBNRM plan.*
- 3) Make recommendations for information that should be collected in the future to contribute to improving the plan.*

3.7 Refining the CBNRM Zone

With the regions of interest identified, stakeholders engaged, communities defined, data compiled, and planning team mobilized, the team can move forward with further refinements necessary to develop the CBNRM plan. Again, these steps will not always be followed sequentially, as some of these actions may occur concurrently, iteratively, and/or on the ground realities may otherwise lead to changes in the order.

It is assumed that the higher level landscape plan generally delineates/designates CBNRM macro-zones within the landscape. Establish priorities for planning among several CBNRM zones within a CBNRM Landscape. Though planning efforts will focus on those communities identified as high priority at the landscape level, more detailed information about stakeholder needs and general feasibility of creating a sustainable local economy may require the general landscape definitions of the community to be further refined or altered at the CBNRM-zone level. Expect to adjust both the members and spatial definition of the community repeatedly throughout the process, as new information becomes available.

Each community needs to define the geographic boundary to which its CBNRM plan applies. The size of the area included in the plan should be large enough to provide for long-term (multi-generational) sustainable use by the community, bearing in mind the projected population growth of the resident community. There are several schools of thought on defining spatial boundaries for a CBNRM zone. One is much like the urban-growth boundary concept in the United States, where defining the zone serves to limit the sprawl of communities into undeveloped areas, preserving nearby forests in a more natural state. Another view is that defining a generously large CBNRM zone protects the forest by reserving it from other uses. One factor supporting the generous boundary approach is that communities in some landscapes are projected to have substantial growth in the next few decades. CBNRM boundaries need to account for population growth. Analyze each community's context and select the best approach.

Identifying Boundaries

The community should focus on conceptually agree upon the general area to include in the CBNRM zone and then find existing administrative boundaries or geographic features that match closely enough to serve the purpose of the CBNRM boundary. This method should improve recognition and compliance, because residents would already know the boundary lines.

In many areas, local residents have developed a tradition of resource partition at some level. In identifying specific boundaries, the team will first want to accurately assess through participatory mapping any existing boundaries recognized by some or all community members, noting which groups do and which do not recognize those boundaries. Some boundaries may apply to the harvest of one resource, such as caterpillars, but not another, such as water use. Record and assess these details when evaluating the importance of existing use patterns, as well as the potential utility of such boundaries in the CBNRM micro-zoning process.

Some existing boundaries may delineate the CBNRM macro-zone boundary, or micro-zone boundaries within it. For instance, the boundary of a group of villages, or

groupement, may work well to delimit a given macro-zone. Existing creeks, rivers, or other geographical features may delineate logical and recognizable boundaries between micro-zones.

In the event that people reside inside contested areas such as PAs or ERZs, conflicting opinions may exist as to the appropriate use and designation of the area. Some human dwellings are still likely to be present in these contested zones; address these on a case-by-case basis.

Very rarely, if ever, is it advisable to recommend moving people from their ancestral lands—and then, only if they do so willingly. Generally, there has been low success when existing residents are forced to leave their home-sites. Even if conservation of the natural resource is achieved, there is a high risk of impairing the morale, unity, function, economy, or culture of the people who are moved, and such an outcome conflicts with the goals of CARPE.

Therefore, it is preferable to work cooperatively with local area residents to establish acceptable guidelines that, where necessary, redirect their resource use away from an imperiled resource. Perhaps new micro-enterprises can be subsidized that draw the impacts of residential populations away from sensitive areas or wildlife, or that add value to the imperiled resource. In some circumstances, ecotourism may be a viable option. In areas containing a rare resource of scientific import, researchers may be willing to pay for conserving that resource (e.g., bonobos) in exchange for the opportunity to study it.

Ultimately, human dwellings within PAs and ERZs may be unavoidable. And yet, these populations may be in areas with the highest need for well-designed sustainable use plans. For that reason, it may be an acceptable compromise to retain some CBNRM boundaries within PAs or ERZs and proceed with CBNRM planning.

Tasks:

The planning team, in conjunction with all stakeholders will:

- 1. Identify community members and general geographic area for the CBNRM plan.*
- 2. Identify boundaries for the specific CBNRM plan, recognizing areas currently used by the community, as well as future needs based on expected population trends.*
- 3. For a given area where threats to natural resources are high, identify which villages or residential groups are interested in and prepared to participate in developing a CBNRM plan.*
- 4. Where needed cooperation between stakeholders is lacking, work toward gaining that cooperation before proceeding.*

4.0 CBNRM PLAN COMPONENTS

The following section outlines the main components to include in a CBNRM plan. We offer guidance on what elements to include in each section, how to develop those elements, and other considerations of the planning process. All of these elements are subject to being defined according to opportunities and constraints. Again, each subsection contains a list of “Tasks,” or actions required of CARPE implementing partners and used as monitoring tools by CARPE management.

4.1 Executive Summary

Develop and include an executive summary of the plan.

4.2. Introduction

4.2.1 Unique Value of the CBNRM Zone

A CBNRM plan serves as a tool for the organized management of the CBNRM zone and as a guide for whether the status of the CBNRM zone (at given points along a timeline) is still on course with its purpose on the local, national, regional (including within the CARPE program), and global levels.

This section introduces the CBNRM zone and its resources, explaining its unique value to stakeholders. Keep the description brief and focus on the reasons the community as a whole created it. The management plan is not the place for in-depth discussions of the resources. Rather, this section should provide the name, location, size, and other brief, important features (e.g., primary land uses, heritage sites, endemic or rare species, and the economies influencing any of these) of the CBNRM zone.

Explain the unique resource conditions that have led communities to want to manage this area in a CBNRM zone in the CARPE context. Consider an interdisciplinary approach in assessing a CBNRM zone’s particular values, as different stakeholders value different aspects of the macro-zone. In some cases, the values or needs of stakeholders will be addressed on lands outside of the CBNRM zone. Describe that relationship briefly to minimize potential for negative perceptions of the CBNRM zone (e.g., although bushmeat hunting may occur inside a CBNRM zone, such activities will be restricted in a neighboring PA that will provide a replenishing source of wildlife for local communities). Subsequent sections of the plan will allow for more thorough explanation of the above items, so focus the introduction on the highlights—the key points you want known about the CBNRM zone.

The primary purpose of most CBNRM plans is to serve as a tool for communities to organize themselves and ensure the future protection of their resources. Focus this section of the plan on describing the value of the zone to local populations, rather than to broader outside groups of stakeholders who may have an interest in the management of the area, but are not directly impacted by management decisions. The unique value of a CBNRM zone will thus include social contexts reflecting the community’s vision for its future.

Tasks:

- 1) *Identify and describe the unique value of this CBNRM zone to local communities. This serves as an introduction to the management plan and should remain brief and concise. This section should clearly and quickly answer the question “Why is this piece of land a CBNRM zone?”*

4.2.2 Characteristics of the CBNRM Zone

In this section, describe in more detail various attributes of the CBNRM zone. Include an inventory of the CBNRM zone’s natural resources and information about the condition of those resources. Use objective statements as much as possible. A management plan is not the appropriate document for extensive discussions or narratives of all research accomplished on the CBNRM zone. Rather, this section should be a stocktaking of what is known about the zone.

This section should be direct and concise, listing and describing features and resources and their importance. Do not delay the planning process while research is performed on the topic. This section inventories what is currently known about the zone, and will assist the planning team in identifying key knowledge gaps. This section should include data on the following (to the extent that it is known and available):

- **Physical**
 - Delineate and describe boundaries, using natural features, if possible.
 - Identify topography, water courses, and unique physical features.
 - Compile maps and satellite imagery.
 - Identify existing facilities such as infrastructure, roads, administrative buildings, landing strips, etc.
- **Socio-economic**
 - Identify villages, cultural and spiritual resources, foot paths, transport routes, key economic centers within and around the macro-zone, agricultural activities, hunting and fishing areas, areas of subsistence-level timber extraction, drinking water sources, and include areas outside the CBNRM zone that are used by community members residing inside the zone.
 - Identify all stakeholders of the CBNRM zone (including populations outside the CBNRM zone).
 - Identify how areas are used differently by separate groups (ethnic, gender, neighboring communities, etc.).
 - Identify agricultural uses of land, indicating for example, what is being grown where.
 - Identify resources and regions of the CBNRM zone used for subsistence purposes vs. larger commercial trade (species hunted or collected and intensity).
 - Broadly map the location of economically desirable natural resources (e.g., timber stands, mineral deposits, oil and gas, etc.) that may be targeted for future exploitation.
 - Describe any other existing economic activities dependent upon the CBNRM zone, such as tourism.

- Ecological
 - Identify CBNRM zone features in regards to:
 - key wildlife and fish resources
 - wildlife migration and movement corridors
 - rare and under-represented plant communities
 - other floral and faunal resources that are of key importance to the CBNRM zone
 - Describe key ecosystem services (provisioning, regulating, supporting, and cultural) within the CBNRM zone and interactions with areas outside the CBNRM zone.
- Threats and trends:
 - Describe impacts of surrounding land uses to the CBNRM zone.
 - Describe any known threats to the resources named above and current trends.
 - Anticipate challenges and new or changing influences on the CBNRM zone.
- Local religious, traditional, cultural, and/or government institutions, including an assessment of government management authority presence in the CBNRM zone and that authority's capacity to implement the plan and enforce laws.

In this section, it may be tempting to attempt to identify which ongoing uses of the CBNRM zone resources are legal and which are illegal when describing how resources are used. Avoid this categorization as communities may get the impression that the planning process is a way of cataloguing their illegal activities and may fear being reported. This approach could be detrimental to creating a fully participative process and would lead to collection of inaccurate information if the planning team is not trusted.

Early in the process, develop a map—or several maps—to be used as a tool for exploring different options for managing CBNRM zones. The map is a visual or graphic aid to facilitate communication among the planners, community members, and other stakeholders. During the course of developing the plan, the map may be repeatedly adjusted to reflect new information. When the plan is completed, the map can be used to document the CBNRM boundaries, micro-zones, and features of special interest or value.

Features commonly shown on maps include villages; vegetation cover; forest types; agricultural areas; rivers, streams, wells and other water features; structures; roads, bridges, and foot paths; special areas such as cemeteries, sacred places, communication sites; and, ultimately, micro-zones. Moreover, cartographic standards require displaying the scale of the map, its orientation to north, the date the map was created, who made it, and what type of data were used to create it—such as satellite imagery, national surveys, or participatory mapping. An inset of the CBNRM zone's location within the context of the CBFP Landscape and country is useful for illustrating the context of the macro-zone in the larger landscape plan.

If the CBNRM planners have access to a geographic information system (GIS) the task of mapping is greatly facilitated. Even without GIS resources, it is useful to collect local information through participatory mapping to enrich the process.

When using participatory mapping where community members develop maps of existing activities and species based on local knowledge, indicate the source of the data used and

the people who contributed to the map. Ensure that the maps are understandable to all users so they are an effective tool for implementing the final CBNRM plan.

Tasks:

1) Characterize the CBNRM zone and its known features and attributes. Keep descriptions objective and brief. Use tables and maps as much as possible to list natural resources of the CBNRM zone and describe physical, ecological, and socio-economic conditions.

4.2.3 Description of the Planning Process for the CBNRM Zone

Plans should describe:

- the historical background/context of the macro-zone
- the legal and institutional framework for the plan (explain the legal status of the CBNRM zone, addressing questions such as: Has it been proposed for official recognition by the central government? Has it already been designated? Who recognizes this plan? In some cases, as previously indicated, the plan will also provide a strategy for acquiring legal recognition of the community's natural resource property rights and for serving as a record of the original intent of the CBNRM zone.),
- the process used to develop the plan,
- decision-making authorities for the plan, and
- the authorities to implement the plan.

See the Introduction and sections 2.6, 3.1, and 3.2 for additional sources of information for this component.

4.3 CBNRM Desired Conditions

This section describes the zone's unique qualities and how the zone can contribute to meeting the needs of the community, including future generations, and to CARPE's goals for the landscape. The desired conditions for the CBNRM zone will provide context and direction for the rest of the planning process.

Developing desired conditions is a process by which community representatives articulate what they hope their immediate and surrounding land will provide for them including ecosystem services (e.g., better water filtration, more forest cover (carbon sequestration), healthy and adequate supplies of necessary natural resources, potential Reduced Emissions from Avoided Deforestation and Degradation projects) and other economic opportunities. Desired conditions can express an aspiration to maintain a certain level of resource use or condition in the zone, or a desire to improve the state of certain resources or at least decrease the rate of their degradation. This section may also aim for attaining certain development-related goals linked to the resources present in the zone. The planning team and the community should seek to identify desired conditions that reflect social and economic considerations, as well as the zone's distinctive roles and contributions to ecological systems and to the landscape as a whole.

Most projects and activities in the CBNRM will be developed specifically to achieve or maintain one or more of the desired conditions and objectives of the plan. It should not be expected that each project or activity will contribute to all desired conditions or objectives in every instance, but only to a selected subset. CBNRM zone plans should articulate what desired conditions are being addressed by what proposed activities and follow-on monitoring exercises should track whether these conditions and objectives are being advanced.

Desired conditions may only be achievable in the long term. If it becomes apparent that desired conditions cannot be achieved or are no longer relevant to the long-term multiple-use management of the plan, update or revise the plan.

Desired Conditions

Desired conditions set the broad direction for the landscape over an extended period of time. Desired conditions describe the CBNRM zone in the eyes of the stakeholders, what it should protect, and who it should benefit.

Some examples include:

- 1) Maintain the existing diversity and populations of plant species in the CBNRM zone to ensure continual supplies of wood and non-timber forest products.
- 2) Support and maintain a stable source of animal protein for nourishment over the long term, ensuring viable populations of those species.

Tasks:

- 1) *Convene planning team and stakeholders to identify desired conditions for the CBNRM zone.*
- 2) *Identify widely shared desired conditions that aim to maintain or improve the zone's resource conditions; the ability of the zone to meet the needs of its inhabitants, including future generations; and promote livelihood opportunities for the community.*
- 3) *State who was involved in developing the desired conditions, so as to clarify whose desired conditions they represent.*

4.4 CBNRM Plan Objectives

Management objectives present the key components necessary for effectively managing the CBNRM zone. Objectives are particularly important because they support the desired conditions and more specifically describe the intended outcome for a given element, attribute, or condition in the macro-zone. A CBNRM plan should identify the community's objectives and expected outcomes resulting from the plan. The CBNRM objectives should be consistent with the landscape plan. Objectives should not state specifically how they will be accomplished, but they do need to be feasible. *Objectives should be unambiguous, measurable, and have a timeline.*

Ensure that diverse stakeholders are involved in selecting objectives, as different stakeholders may disagree about which activities are or are not compatible with the desired conditions. For example, one of the desired conditions may be to ensure that everyone has sufficient food to eat and non-timber forest products to provide for shelter. The related objective may be that each family has access to at least 1.5 hectares for farming (up to some limit of total area farmed allowable within the macro-zone) and that at least half of the area within 3 km of the village be forested and have the non-timber resources needed for community use.

Additional objectives may apply to the same resource or areas. For instance, an overlapping objective may be that, at any given time, one-third of all agricultural lands within the macro-zone be in active production, one-third in fallow condition, and one-third supporting second-growth forest. This overlapping objective would then support a desired condition for maintaining productive soils over the long term. Clearly, local knowledge, other subject matter expertise, and analytical capacity of the planning team will be critical in gauging the relative effectiveness of the proposed objectives in contributing to the desired conditions.

Objectives of the CBNRM plan could be based on the following topics, but will be specific to the site in question:

- food source maintenance or production,
- income generation,
- micro-enterprise development,
- habitat and species conservation,
- ecosystem services maintenance,
- education and training development, and
- social and cultural preservation.

In addition to identifying objectives, the CBNRM plan should identify potential challenges to and opportunities for meeting the objectives. In the example of farm plots, the CBNRM plan may identify the need for better seed sources for high-yield maize or mosaic-resistant manioc that would increase productivity and reduce the pressure for clearing more land; or identify the challenge of monitoring immigration and population growth to ensure that sufficient forested area is maintained for sustainable use. The objectives will, in turn, be supported by decisions about the amount of area zoned for particular uses and the guidelines or norms adopted to ensure objectives are met. Be sure to differentiate between objectives that apply to the entire CBNRM zone versus those that apply to a specific micro-zone. For the latter, place those objectives under the appropriate micro-zone section in the plan.

Management Objectives

Management objectives present the key components necessary for effective management of the CBNRM zone. The objectives support the desired conditions and, more specifically, describe the intended outcome for a given element, attribute, or condition in the macro-zone.

Example Objectives:

- 1) At least half the area within 3 km of the community will remain forested.
- 2) Each family has access to at least 1.5 hectares for farming”.

Tasks:

- 1) *Convene community members and stakeholders to identify and agree on CBNRM objectives.*
- 2) *Describe the opportunities and challenges to achieving each objective.*

4.5 Micro-zones

Within a CBNRM zone, micro-zoning delineates a subset of smaller areas with differing objectives. Successful development of a widely supported CBNRM plan will be largely based on the level to which the plan reflects a community-based vision. Again, community members, stakeholders, and the planning team should work together to identify opportunities for conservation and sustainable development in the CBNRM zone.

4.5.1 Information Used for Micro-zoning

Proposals regarding the potential location of micro-zones should be based on information gathered, including inventory information, stakeholder interests, legally designated concessions, other administrative boundaries, areas and contracts already established within or adjacent to the CBNRM zone, as well as professional judgment.

A key step in gathering information for the micro-zoning process is identifying the location of current resources and activities the communities want to incorporate in the CBNRM plan. For example, micro-zoning could delineate where activities such as hunting, fishing, farming, timber harvesting, and gathering non-timber forest products currently occur and the location of areas used for religious or cultural ceremonies or similar activities.

In addition to inventorying current activities and resources, the micro-zoning step should identify additional locations where such activities could take place in the future, to accommodate growing populations or the need to relocate existing activities to avoid conflicts. And, identify potential economic opportunities within the macro-zone before finalizing the micro-zone locations.

After data gathering is complete and micro-zoning begun, include in the planning process a validation step to confirm the proposed location for each micro-zone reflects on-the-ground reality, i.e., that an agricultural zone actually provides appropriate land for farming

4.5.2 Micro-zoning Process

After gaining an understanding of current and future activities and resources throughout the CBNRM zone, the next step is to determine how those resources and activities can best fit together to achieve the local vision of sustainability.

The number and type of micro-zones included in the plan should ultimately be up to the communities and stakeholders and should reflect the specific situations in each CBNRM zone. *Micro-zones should not be used to identify or mark features within the CBNRM, but are only necessary to indicate areas where management or guidelines will differ from the rest of the CBNRM or from other micro-zones.*

Some of the activities and resources likely to be addressed in micro-zones in a CBNRM plan are:

- agriculture,
- livestock production,
- agro-forestry,
- fishing,
- hunting,
- non-timber forest products extraction,
- timber extraction, and
- potential economic opportunities

One Micro-Zoning Approach

A recent consensus-based approach to CBNRM planning included seven micro-zones, reflecting areas of progressively less development moving away from human settlement.

This approach identified a contiguous zone of 3 to 5 km around settlements and included farming, most hunting and fishing, agriculture, agro-forestry, village expansion, non-timber forest product (NTFP) extraction, and timber extraction as appropriate activities within that zone.

Other micro-zones in this approach included: hunting, fishing, conservation and protection, NTFP and medicinal resources, timber, and religious and cultural sites.

In addition, protecting areas of religious and cultural importance, designating areas for the conservation or protection of natural resources or ecosystem services, and reserving areas for village expansion all could be included in micro-zoning. In any of the above situations, the plan must specify the details (e.g., species names) of what is being conserved or protected.

Illustrative Examples Influencing the Micro-Zoning Process

Existing intact forest that is relatively far from the transportation infrastructure (e.g., roads and rivers) may likely be the best area to protect as wildlife habitat and ecosystem processes; whereas areas of partially cut forest or forest that is relatively near the transportation infrastructure may be best suited to serve as extractive use micro-zones.

Additional information to help guide the location of micro-zones would likely include any information on the location of threatened species, as well as timber concessions. For instance, an area known to support a population of gorillas with no existing timber concessions would become a high priority for protection and restricted hunting.

The CBNRM plan should define the objectives for each micro-zone and identify which activities should or should not occur in the micro-zone (guidelines) to be consistent with those objectives.

An iterative approach to micro-zoning the CBNRM zone is likely the most applicable to the CARPE land use planning situation. As additional data is gathered and stakeholder interests identified, micro-zone boundaries can be refined or changed to better respond to the community-based desired conditions, objectives, and priorities.

To start, the planning team should use existing spatial (GIS) information when available in combination with local inhabitants' identification of their current land use practices to draft reasonable areas for micro-zones. These data can be used as starting points for potential designation as micro-zones and can be adapted as such if the communities decide they are a priority.

When attempting to predict future growth of the human population to set aside an adequate area for community use, the planning team will benefit from the expertise of a population modeler. Gather information, using census or election data when available, on local population growth in the vicinity during the past 10 to 20 years, and then use that rate of growth, along with other data, to model potential future growth.

Keep in mind that, as with the other sections of the plan, micro-zoning is an adaptive process. Even after the plan is finalized and adopted, the boundaries of each micro-zone may be altered to adjust to local needs, unforeseen threats, improved data, changing conditions on the ground, or other factors. It's imperative to facilitate a process whereby communities define needed changes in an inclusive manner that assures a high level of compliance with the plan.

Minimize the number of micro-zones in a plan to keep it as simple and easy to understand as possible. Combine two or more micro-zones where it makes sense, and where the uses are compatible with each other and the CBNRM objectives. The simpler a plan, the more likely it will be understood, followed, and supported by the community.

Tasks:

- 1) Involve stakeholders to develop, respond to, and refine zoning options.*
- 2) Delineate boundaries for micro-zones reflecting current uses, the landscape desired conditions, objectives, and information gathered.*
- 3) Provide a justification for each micro-zone created.*
- 4) Develop a map showing the delineated boundaries of each micro-zone.*
- 5) Develop management guidelines for each type of micro-zone, defining how use within that zone will differ from the larger CBNRM zone and the other micro-zones.*

4.6 Guidelines

Guidelines or norms regulate resource use in each macro-zone and micro-zone. They are intended to ensure the sustainability of activities and resources. Guidelines reflect traditional and/or science-based knowledge about sustainability, such as which activities can and cannot occur in the zones, how activities should (or should not) occur, when activities should (or should not) occur, where activities should (or should not) occur, or

how much should (or should not) be collected. CBNRM guidelines or norms thus provide direction for conducting activities in the CBNRM zone and in each micro-zone, and should be consistent with the overall landscape plan and the relevant laws and regulations. These guidelines must also recognize both customary use and access rights, and ensure the use of resources as recognized in other legal decisions (e.g., concessions, parks, etc.).

<p style="text-align: center;">CBNRM Guidelines</p> <p>CBNRM guidelines govern actions the community will take, or not take, to obtain the expected outcomes. For example, a guideline identifying when a plant-gathering activity should occur would address plant ecology and physiology issues related to sustainability:</p> <p>Collect plant ‘X’ only after seeds have dispersed, so that new plants can grow next year.</p>
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To the extent possible, state guidelines in measurable terms to simplify compliance and monitoring. It is unnecessary to develop guidelines for every activity that may occur, if they are long-standing traditional practices not identified as potentially damaging to the CBNRM zone resources.

As always, keep in mind that simplicity is preferable and only create those macro- and micro-zone guidelines necessary to achieve sustainable and improved livelihoods within the CBNRM zone, while also achieving the established objectives and desired conditions. Guidelines should link back to specific objectives in the plan. Bearing that in mind, guidelines for either the entire CBNRM zone or specific micro-zones may address the following:

- **Hunting and fishing:** Specify whether it is allowed, and if so, specify what species, when, where, by what means, how much (limits per person, per season, or per day), and by whom (local communities, sport hunting, or fishing tourists). Keep simplicity in mind. If it is clearer to state which species cannot be hunted, do so.
- **Timber harvest:** Specify whether it is allowed, and if so, several guidelines should direct ecologically sustainable operations. The guidelines should again specify who can harvest, how much, when, where, and what species (guidelines can specify which species can be harvested, or which cannot, whichever is simpler).
- **Agriculture, aquaculture, and livestock:** Specify whether it is allowed, and if so, several guidelines should direct traditional, locally appropriate, and ecologically sustainable operations.
- **Non-timber products collection:** Specify whether it is allowed, and if so, specify which species or items may be collected, where, when, how much, and by what method.
- **Motorized vehicles:** Specify where they are allowed, when, and what rules apply (e.g., stay on designated motor routes, speed limits near housing).
- **Roads:** Where possible, include a map of existing, planned, and closed roads in the guidelines. Other illustrative aspects include: decisions regarding which existing roads will be maintained and which will be closed off permanently; where travel will be discouraged to protect an aspect of the CBNRM zone, such

as family safety, and areas where road infrastructure should be enhanced for improved access to markets or for ecotourism; determining for each existing or planned road, what size of vehicle will be permitted, and if volume be limited; and deciding if a road is to be closed, whether active rehabilitation should take place.

- **Other infrastructure development:** Where possible, include a map of existing or planned heavy or permanent infrastructure (e.g., roads, irrigation) in the guidelines. To contribute to the over-arching CARPE goals of sustainable development, the infrastructure-related guideline could look for opportunities to focus development within “built corridors” rather than in a haphazard manner that may increase negative environmental impacts within the CBNRM zone.
- **Fire:** If lighting of fires is permitted, identify by whom and under what circumstances. This is especially pertinent in areas that practice slash-and-burn agriculture.
- **Culture heritage resources:** If the CBNRM zone contains any, identify who will be allowed access to them, when, and what type of rituals may be performed there, if applicable. Moreover, any such guidelines should take into account and seek to reconcile any religious groups in the area that may have different needs.
- **Minerals and geology:** Identify the legal framework for such activities and whether it is permitted or banned, and if the former, then whether or not the community explicitly reserves the rights to prospecting and extraction.
- **Tourism activities:** Illustrative issues to consider include determining: who can bring tourists into the CBNRM zone, how much tourism can be accommodated, what permits are necessary, whether guides are required, what fees will be levied, whether camping is permitted, and if night tours are permitted.
- **Scientific research:** Identify what permits are necessary, what limits on manipulation of the environment will be allowed, and whether the community will charge fees for use of the area for research.
- **Revenue sharing:** Example issues to be addressed could include: how revenue from community-based enterprises will be shared with local communities, and what steps will be taken to ensure equitable distribution of revenue to all parties involved.

Guidelines on all of these topics need not be articulated for all CBNRM zones. Consider the context, needs, and desires of the communities and develop guidelines accordingly.

Tasks:

- 1) Convene community members, stakeholders, and relevant technical experts on the planning team to identify and agree on guidelines or norms associated with activities in each CBNRM micro-zone to achieve stated objectives.
- 2) Specify which norms apply to activities throughout the CBNRM zone, and those that apply only to a specific micro-zone.

4.7 Management Actions

The plan should identify likely management actions to be implemented to achieve the desired conditions and objectives. Identify these management actions as general types of activities that follow the guidelines. Management actions can also identify some general sense of timing and location for where said actions would occur.

Management Actions

Some examples could include:

- 1) A community forest management and monitoring committee is established by the end of 20XX to oversee timber use per the guidelines.
- 2) An agricultural cooperative is established to facilitate transfer of skills/technique and access to markets in community XX by 20XX.

Tasks:

- 1) *Identify the core possible actions that fall within guidelines to achieve specific objectives (therefore contribute to meeting the desired conditions).*
- 2) *Assess the technical and financial feasibility to implement the management action.*

4.8 Implementation

The plan should describe how it will be implemented. This includes a discussion of roles and responsibilities of the different parties participating in the plan implementation; the public participation strategy; the approach to monitoring and evaluating the plan; and a multi-year implementation schedule that presents a schedule of management actions to facilitate more detailed work planning.

4.8.1 Roles and Responsibilities

This section identifies the different roles and responsibilities of community leaders and institutions, government agencies, and other organizations for administering the plan. Differing actions associated with implementation will be the responsibility of various institutions. Describe who will be responsible for each action in plan implementation.

With limited land-management capacity and resources within the communities, as well as the government ministries that are mandated with providing technical assistance and guidance, actual management of the CBNRM and its resources will often fall to a mosaic of actors with a presence in the zone. Government ministries and departments, conservation and other NGOs, private industry, and local communities will bring an array of capabilities and resources to help implement the plan. It will be important, therefore, to create (or reinforce) the appropriate advisory and management teams and assign responsibilities for implementing various aspects of the plan to individuals or organizations with the ability and resources to carry them out.

Tasks:

1. *Agree on the structure of the management leadership, advisory teams, and any extended team, if needed.*
2. *Nominate and agree on management leadership and advisory team members.*
3. *Define a meeting schedule for the management and advisory team, and how the meetings will be conducted.*

4.8.2 Public Participation Strategy

This section describes public participation processes involving other parties. The process of creating the CBNRM land use plan is participatory in nature, drawing input from diverse users and interested parties. As the plan moves into the implementation phase, it is critical to maintain this participatory nature. The management team will need to come up with a public participation strategy to describe how stakeholders will be involved in management decisions and actions, and how those decisions will be communicated to the public. Typically, this participation strategy includes establishing formalized periodic stakeholder meetings. These platforms provide a mechanism for regular communication and dialogue between the management team and pertinent stakeholders.

Task:

1. *The management team should create a public participation strategy that describes how stakeholders will be involved in management decisions and plan implementation.*

4.8.3 Multi-Year Schedule

In this section of the plan, the planning team, in conjunction with any other pertinent individuals charged with implementing activities, fleshes out the actions, timeline for completion, as well as the roles and responsibilities of the various implementers of the plan. The action items can be prioritized into a multi-year schedule with reference to annual workplans. Annual workplans are documents separate from the overall plan and follow from the plan's multi-year schedule. Annual workplans should have a timeline and could include a brief description of the funds, labor, materials or training needed to accomplish the work. All implementation activities should link back to one or more of the CBNRM plan objectives. The annual workplan may be as simple as a table that lists objectives and their associated tasks, along with names of the responsible persons and the corresponding date each task must be completed. Where current uses or activities are to be modified or restricted to comply with the new plan, initial implementation may include steps to inform or educate people of the changes. Then, specific individuals need to accept tasks and lead the related efforts for their completion. Later, implementation may focus more on monitoring for compliance with the new guidelines or rules concerning land use. In short, the multi-year schedule indicates in broad terms what actions will be done, by whom, and when; while the annual workplan translates this information into the reality of a current year's budgeted activities.

The implementing partners in a given landscape may find that the biggest hurdle is transitioning from writing about various tasks in a plan to actually accomplishing them. This makes the implementation schedule crucial. CARPE implementing partners should try to build momentum within the community and assist with initiating change by sponsoring small projects that build incentives for individuals in the community to become entrepreneurs or to step into roles of responsibility.

Lessons learned from other countries, including the United States, demonstrate that it can take many years to develop, complete, and implement a plan. Most communities living in remote areas in which a CBNRM plan would be useful are not familiar with the concepts of land use planning, and as such, partners should expect there to be a learning curve. As the community gains more experience with the new plan and gains capacity for its implementation, community leaders may begin to identify specific steps to encourage certain kinds of sustainable use or development.

Incentives and CBNRM Plan Implementation

As an incentive for renewed efforts to generate income through farming, the landscape partners could initiate projects that facilitate transport of agricultural products to market, having identified the lack of transportation infrastructure as the biggest obstacle to the area's farming economy. Farmers complying with agricultural micro-zoning and associated guidelines would be specifically targeted for assistance with commercialization.

In this manner, the landscape partners simultaneously provide positive incentives for compliance with micro-zoning, build relationships with the communities living in the landscape, increase the communities' trust in them, and empower locals to improve their livelihoods sustainably. Moreover, small grant programs can also be used as incentives for micro-enterprises like livestock production to reduce pressures on populations of bushmeat species.

Tasks:

- 1) *Outline a multi-year schedule, expressing who will be responsible for which actions and when.*
- 2) *Link tasks to the objectives of the plan.*

4.8.4 Monitoring and Evaluation

Monitoring of CBNRM plans helps determine if the plan is working as intended or if changes need to be made to the plan. Monitoring results are periodically reviewed to determine if assumptions in the plan were correct, if the plan continues to be effective, or if the plan needs to be changed. Local communities and other stakeholders should continue to participate in this process to ensure the plan and plan implementation are still relevant and address the important natural resource issues.

Monitoring can help determine if the guidelines (norms) are effective in ensuring the sustainability of activities and resources. For example, ecological surveys in areas where plants are gathered are a potential monitoring tool to determine if plants are regenerating adequately, and may show whether the guidelines and associated enforcement mechanisms are effective.

Monitoring also includes verifying assumptions made in the plan. If a CBNRM plan assumes community populations will increase by 10 percent by the year 2020, and therefore, the community expansion area will need to accommodate 100 families, a monitoring item related to actual population growth would be useful to determine if more land needs to be designated for community expansion. An influx of immigrants could create an unforeseen need to designate a larger community expansion area or to create incentives that encourage the immigrants to move to an area that can better accommodate them with less stress on the resource.

CBNRM Monitoring

An example of the steps to employ for a monitoring activity related to a CBNRM plan follows:

- **Monitoring question.** Is the community zone designation for agricultural fields sufficient in size to accommodate population growth in the village?
- **Monitoring method.** Determine if the land occupied by agricultural fields in the community zone has increased more than 10 percent since the plan was developed. To determine land occupied by fields, update the map of the community zone to current conditions. Then compare the updated map to the original map developed during plan creation.
- **Monitor when.** Every 2 years.
- **Who monitors.** Village monitoring team assisted by an NGO with survey and mapping capability.

Monitoring helps identify if resource conditions or demands of the public have changed since the land use plan was developed. The monitoring section of a land use plan typically lists: what question the monitoring will answer, who will conduct monitoring, what they will monitor, and the general methodology and frequency of monitoring.

Tasks:

- 1) *Involve stakeholders in identifying the most important characteristics or outputs of the CBNRM to monitor.*
- 2) *Develop monitoring questions relevant to important CBNRM characteristics and objectives.*
- 3) *Develop a monitoring plan to identify what, when, how, and by whom each monitoring item will be measured.*

4.9 References

For each reference cited in the plan, include author name(s), date, title of article (if applicable), title of publication, publisher (if available), and page(s).