



USAID
FROM THE AMERICAN PEOPLE

A GLOBAL ASSESSMENT OF COMMUNITY BASED NATURAL RESOURCE MANAGEMENT: ADDRESSING THE CRITICAL CHALLENGES OF THE RURAL SECTOR

May 2013

This report was produced for review by the United States Agency for International Development (USAID). It was prepared by International Resources Group (IRG).

A GLOBAL ASSESSMENT OF COMMUNITY BASED NATURAL RESOURCE MANAGEMENT: ADDRESSING THE CRITICAL CHALLENGES OF THE RURAL SECTOR

Prepared by

Jon Anderson and Shreya Mehta

May 2013

DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government

TABLE OF CONTENTS

ACRONYMS	V
ACKNOWLEDGEMENTS	VII
EXECUTIVE SUMMARY	IX
INTRODUCTION	I
CBNRM definition	1
Has CBNRM been successful?	2
Defining success	3
METHODOLOGY	5
Literature review	8
Site visits	9
Sustainable Livelihood approach (SLA).....	15
Proposed CBNRM Typology	16
RESULTS AND DISCUSSION	18
CBNRM impact and the typology.....	18
Remaining issues and constraints.....	19
Nature – Technical constraints.....	20
Wealth – Economic constraints.....	22
Power – Governance constraints.....	24
Overcoming and eliminating constraints.....	26
Overcoming technical constraints – Nature solutions.....	26
Overcoming economic constraints – Wealth solutions	27
Overcoming governance constraints – Power solutions.....	29
Dealing with special issues.....	30
National level processes	30
Governance	30
Food security and Climate Smart Agriculture	31
Climate change, resilience, and community based adaptation	35
Gender and vulnerable groups.....	39
Population growth or density.....	40
Impacts on perceived value of the natural asset.....	40
Context and culture.....	41
Summary of constraints and solutions facing CBNRM.....	42
THE FUTURE OF CBNRM	44
Predictable sequences?.....	44
Identification and usefulness of key principles	45
Improving CBNRM effectiveness	45
Is CBNRM designed or discovered?.....	46
Transformational possibilities?.....	46
The revealing examples of collateral success.....	47
Key findings of the assessment:.....	48
Conclusions.....	51
BIBLIOGRAPHY	52
ANNEX I. SUMMARY OF CONSTRAINTS	59

ACRONYMS

CBA	Community-based adaptation
CBEs	Community-based enterprises
CBET	Community-Based Ecotourism
CBNRM	Community Based Natural Resource Management
CBOs	Community-based organizations
CF	Community Forest
CFA	Community forestry associations
CSA	Climate smart agriculture
FA	Forestry Administration
FAO	(United Nations) Food and Agriculture Organization
FS	Food security
FUNDAECO	Foundation for Eco-Development and Conservation
IAD	Institutional analysis and development
ICIMOD	International Centre for Integrated Mountain Development
ICTs	Information and communications technologies
IDRC	International Development Research Centre
KFS	Kenya Forest Service
KM	Knowledge management
KOK	The Kbal O KraNhak Community Forestry Project
M&E	Monitoring and evaluation
NGOs	Non-governmental organizations
NRM	Natural resource management
NRT	Northern Rangeland Trust
NWP	Nature, Wealth and Power
PES	Payments for ecosystem services
PKWS	Peam Krasop Wildlife Sanctuary
PMMR	Participatory Management of Mangrove Resource Project
RECOFTC	Regional Community Forestry Training Center
S&T	Science and technology
SLA	Sustainable Livelihood approach
TSC	Todos Santos Cuchumatan (Guatemala Park Management)
WRUAs	Water resource user associations

ACKNOWLEDGEMENTS

The authors would like to acknowledge the participation of George Taylor, Tom Catterson, Juan Carlos Mendes, Fabian Musila, and Ou Ratanak in the field work and write up for the report.

The authors would like also to acknowledge significant comments on a draft of this paper by Megan Hill and the team at USAID, Fred Nelson, George Taylor, Wendy Stickel, Philip DeCosse, and Doug Clark.

EXECUTIVE SUMMARY

Rural development issues are critical not only for the rural areas themselves but also for addressing pressing global concerns of food security (FS), climate change, biodiversity conservation, poverty reduction, provision of environmental goods and services, and good governance. Community-based natural resource management (CBNRM) has been a rural development strategy for over 30 years. This paper has a two-fold objective: to assess the CBNRM experience in order to improve the performance of CBNRM itself, and to evaluate the lessons learned from CBNRM for critical issues – especially food security and climate change.

CBNRM involves defined groups of local people collaborating on utilization and regulating use of natural resources. CBNRM is an approach to empowering rural communities with the knowledge, skills, and authority to sustainably manage natural resources (e.g., wildlife, rangelands, forests, fish, water, etc.). Successful CBNRM initiatives require sustainable natural resource management; benefit streams (financial, social, and economic) that exceed costs; and good governance.

Although it is difficult to identify predictable sequences and blueprints for success, many principles of “good” CBNRM have been identified. Each program has its own historical and cultural context and that influence success. Adaptive management and a systems approach, to accommodate the interplay between the realities of the field and the application of principles, are needed. The principles, when applied in a rigorous, integrated, and systematic fashion, greatly improve the chances of successful CBNRM. The paper enumerates a range of these principles and cases where they have been applied with good results. A typology, from transformational to extractive, is presented as an informal tool to assist in the analysis of cases.

There are many constraints – technical, economic, cultural, and governance-related – that impede success. A number are presented here with suggestions for overcoming them. Not all constraints are equal, however. A major common constraint is the lack of an appropriate rights framework, often combined with institutional arrangements that are complex, time consuming and costly for rural people. Communities are often put at a disadvantage because they are assigned management “rights” over low value resources that have no other claimants. The ability of CBNRM programs to have significant impacts on the economic growth of rural communities depends to a large extent on the value of the resource base, the distribution of rights over those resources, and the functioning of markets. These are not always aligned in the favor of local communities. CBNRM programs need to systematically analyze these elements along with transaction costs and opportunity costs, in order to understand the incentives and viability of CBNRM programs. Unfortunately, because they involve vested interests and politics, governance and rights constraints may be easier to identify than to change.

The assessment revealed interesting examples of “collateral success,” the sometimes hidden improvements in livelihoods and the environment that occur in parallel or tangentially to the main objective of the CBNRM initiative. Collateral success, sometimes as important to local people as success at achieving the initial objective, stems from communities and groups applying the tools, institutions, and methods of CBNRM (such as mechanisms for coordination, planning, rulemaking and sanctions, economies of scale, partnerships, capacity building, advocacy and marketing, etc.) to other resource activities – particularly ones where communities have secure rights, such as livestock and agriculture. The West Gate Conservancy in Kenya, for example, has used the tools and capacity built for wildlife and ecotourism to better manage livestock through group herding, rotational grazing, range improvement, and better marketing. Local communities can be ingenious in their use of the CBNRM tools made

available to them. Innovative and adaptive, monitoring and evaluation systems are needed to capture this creativity. Collateral success shows the importance of the CBNRM principles and best practices for the pressing challenges of food security and climate change.

The critical threats of food shortages, insecurity, and climate change underline the urgency of improving agriculture and natural resources management. The principles, and the mechanisms, institutions, and tools of CBNRM can improve the performance of other rural sub-sectors and will be key to climate-smart agriculture, community-based adaptation, and rural resilience.

INTRODUCTION

“Food needs are projected to increase by 70 percent by 2050 when the global population reaches 9 billion while climate change is projected to reduce global average yields.” (World Bank, undated). At the same time as there is an urgent need to increase food production, there is also a need to deal with climate change: “Today agriculture contributes about 14 percent of annual greenhouse gas emissions, and forestry another 17 percent.” (World Bank, undated). Further, the management of natural capital is key to growth and development of many poor countries and communities. The World Bank (2006) states that natural capital amounts to 26 percent of total wealth in low income countries.

Rural areas need to help meet global challenges of food security, climate change, poverty alleviation, provision of environmental goods and services, and improved governance. Community-based natural resource management (CBNRM), as a rural development strategy for the past 30 years, can contribute to these challenges both through improving its own performance but also as a source of principles and best practice that can increase the effectiveness and sustainability of other rural subsectors, such as agriculture and livestock.

CBNRM has been subject to numerous studies at national, regional, and international levels. Although it has had varying degrees of success (de Jong, 2010; IIED, 2009; IIED 2009; DAI, 2010), it is in some cases an attractive rural development investment. With data from three site visits and a literature review, this paper presents a global assessment and identifies the major impacts, barriers, and remedial actions of CBNRM. It also explores how the principles of development practice that emerge out of CBNRM can be of use to critical issues of food security and climate change and other facets of rural development.

The purpose of this report is to assess the state of community-based natural resource management. It focuses on the CBNRM principles that apply across a broad range of sub-sectors and landscapes, which could be used to guide program design and implementation, particularly in climate change and food security initiatives. CBNRM principles are in essence the principles found in the Nature, Wealth, and Power (NWP) document (USAID, 2002).

In addition, several other topics were included in the analysis, including the following:

- CBNRM and food security and climate-smart agriculture
- CBNRM and climate change, resilience, and community-based adaptation
- Conditions or barriers that contributed to CBNRM impacts
- Actions and tactics used to overcome constraints
- Presence of a predictable sequence of events or benchmarks that led to adoption of CBNRM
- CBNRM’s contribution to increased participation and economic empowerment of women and vulnerable groups

CBNRM DEFINITION

Numerous definitions and interpretations of community-based natural resource management exist. It involves defined groups of local people collaborating on utilization and regulation of natural resources. CBNRM is an approach to empowering rural communities with the *knowledge, skills, and authority* to

sustainably manage commonly held natural resources (e.g., wildlife, rangelands, forests, fish, water, etc.). Successful CBNRM initiatives require the following: sustainable natural resource management; benefit streams (financial, social, economic) that exceed costs; and good governance. (Chris Weaver, 2013)¹.

Other more detailed definitions exist, for example:

“CBNRM is the management of natural resources under a detailed plan developed and agreed to by all concerned stakeholders. The approach is community-based in that the communities managing the resources have the legal rights, the local institutions, and the economic incentives to take substantial responsibility for sustained use of these resources. Under the natural resource management plan, communities become the primary implementers, assisted and monitored by technical services.” CBNRM Net (2013).

The aims of CBNRM are to:

- 1) Obtain the voluntary participation of communities in a flexible program that incorporates long-term solutions with problems arising from the use of natural resources.
- 2) Introduce natural resources to a new system of group ownership and territorial rights for the communities in the target areas. The management of these resources should be placed under the custody and control of resident peoples.
- 3) Provide appropriate institutions under which resources can be legitimately managed and exploited by local people for direct benefit. These benefits can take the form of income, employment, production of bush meat, etc.
- 4) Provide technical and financial assistance to communities that join the program, to enable them to realize their objectives.

In the early 2000s, an effort was made to distil lessons learned and best practices of the CBNRM experience. This resulted in a concise framework and set of principles called Nature, Wealth, and Power (USAID, 2002). In turn, this framework informs CBNRM practice and is used in this analysis as a reference point for CBNRM. Weaver (2013) states that “In essence, [CBNRM] is the application of the principles of Nature, Wealth, and Power.”

The focus of CBNRM is not merely the wise management of natural resources. As important, if not more so, is the need for community development, local self-government, and the creation of local institutions for the management of common property resources (Fabricius, 2001).

HAS CBNRM BEEN SUCCESSFUL?

There are cases of CBNRM activities meeting environmental, economic, and capacity/empowerment goals on a sustainable basis. However, there are also a number that have been less successful and a few that have failed (IIED, 2009). Results vary on a regional, country, and even community level. Nelson and Agrawal’s (2008) review of CBNRM in selected countries in East and Southern Africa shows that there are two country programs that are successful (Namibia, Botswana) and some that are considered failures (Kenya) with the rest somewhere in the middle. Even within the same country and with the same approach, results can vary significantly. In Guatemala, two of the 14 community forest concessions in the Petén are considered successful and a couple are seen as failures (Radachowsky, 2012). In Namibia, there are some conservancies that are clearly doing better than others (Boudreaux, 2007).

¹ This definition is from a presentation at the CBNRM Conference sponsored by USAID in January 2013.

Within a single activity or community itself there are some individuals and households that benefit more than others. The literature on local elite capture is extensive (see Shackleton et al, 2002).

Some observers are generally critical of CBNRM as an approach and as a successful development activity in the field. Blaikie (2006) notes that “for all the theoretical benefits it promises, by and large, CBNRM has failed to deliver...” and that “...most devolved natural resource management reflects rhetoric more than substance.” Shackleton, et al (2002) state that “the ways in which local people realize the benefits of devolution differ widely, and negative trade-offs, mostly felt by the poor, are common.”

The conditions under which CBNRM is attempted and succeeds vary significantly even at a very local level (IIED, 2009). In addition, the extent to which the principles and best practices are applied rigorously is diverse (Child, 2004). However the core principles have been shown to be relevant and useful under a range of conditions and applications.

DEFINING SUCCESS

Successful CBNRM has simultaneous positive results in three areas – nature (environmental management), wealth (economics and revenue generation), and power (local empowerment and good governance). Initiatives that are very successful along one or two dimensions but are unsuccessful on one dimension are usually unsustainable over the long run. These metrics set CBNRM apart from purely growth, or purely conservation efforts, which give particular, if not sole, emphasis, on a single goal. Seeking win-win-win outcomes is sometimes difficult and a challenge for most CBNRM programs.

After laying out the methodology for the assessment and an informal typology, this document discusses environmental, economic, and governance constraints to successful CBNRM and ways to overcome them. It then deals with a range of additional issues and the relevance of the principles emerging from CBNRM to them. Of special interest are the challenges of food security and climate change. The discussion focuses on climate-smart agriculture and community-based adaptation. Collateral success is described as an example of the principles of CBNRM being usefully applied to other productive rural sectors. In the concluding section of the paper, the usefulness of the rigorous application of principles rather than a blueprint approach is discussed. The principles of good CBNRM apply not only to traditional CBNRM but are important in making food security and climate initiatives more resilient and productive.



The dramatic impact of community forestry on hillsides in Nepal. Photos: Nepal Swiss Community Forestry Project, 2011.

METHODOLOGY

The assessment included site visits in three countries – Cambodia, Guatemala, and Kenya – as well as an extensive literature review and participation in conferences and discussions. In order to have a consistent and overarching framework and tool with which to analyze the site visits and literature, five sets of principles for successful CBNRM were compared, with NWP as a basis. The objective was to come up with a consensus set of principles with which to analyze CBNRM initiatives. The five sets of principles are:

- a) **Marshall W. Murphree** – Distilled from many years of experience in Southern Africa
Mukamuri, B.B.; Manjengwa, J.M.; Anstey, A. (editors). 2009. *Beyond Proprietorship. Murphree's Laws on Community-Based Natural Resource Management in Southern Africa*. Weaver Press.
- b) **Elinor Ostrom** – Design principles developed for farmer-managed irrigation systems
Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. New York: Cambridge University Press.
Ostrom, Elinor; Benjamin, Paul. 1993. *Design Principles and the Performance of Farmer-Managed Irrigation Systems in Nepal*. In Performance Measurement in Farmer-Managed Irrigation Systems ed. Manor, Shaul; Chambouleyron, Jorge. Colombo, Sri Lanka: IIMI.
- c) **Waylen et al (2010)** – Review of about 70 initiatives from a culture angle
Waylen, Kerry; Fisher A; McGowan PJK; Thirgood SJ; Gulland, and EJ Milner. 2010. *Effect of Local Cultural Context on the Success of Community-Based Conservation Interventions*. Conservation Biology. Blackwell Publishing Inc.
- d) **Stock-taking (DAI, 2012)** – Developed through assessment of five African and two Asian countries
Development Alternatives, Inc. & World Wildlife Fund. 2012. Stock-taking Assessments. Various country profiles. USAID
- e) **Nature, Wealth and Power (2002)** – Developed by a community of practice reviewing natural resource management (NRM) experience in Africa
USAID. 2002. *Nature, Wealth and Power: Emerging Best Practice for Revitalizing Rural Africa*. International Resources Group.

These sets have a number of similarities. All sets take an integrative view – that is, they all deal with environment (nature), economics (wealth), and governance (power); and indicate that dealing with those dimensions is necessary for success. In some sets nature seems to be less of a concern (Stocktaking 2012, Waylen, 2010). Murphree (as described in Mukamuri et al, 2009) and NWP (2002) seem to be the most developed or comprehensive, and have the most material concerning adaptive management, politics, and systems thinking. The importance of governance comes out very strongly across the sets. However, there are differences of emphasis on the social aspects of power and the structural and rights issues. Mukamuri et al (2009) and Waylen (2010) put greater emphasis on cultural aspects and social cohesion than the other sets.

An attempt was made to analyze and combine the principles to come up with a master test list for the assessment. Table 1 reflects the combination of the five sets of principles into test principles. The most important evolutions from the NWP framework, for the testing phase, are:

- An additional category: culture (alongside nature, wealth and power);
- The addition of some principles or concerns (such as population density); and
- Further specification of some of the action recommendations (for example, graduated sanctions and business skills).

Using the NWP as a framework, sub-principles from the other sets have been included. In addition, two NWP principles (minimum environmental standards, provision of technical advisory and intermediary services) were not mentioned by any of the other sets, but were included to test their validity.

Table 1 Combined CBNRM Test Principles

NATURE:
<p>Improve information and knowledge management systems</p> <ul style="list-style-type: none"> Monitoring Link science and local people Good science recognizes contingency and uncertainty Establish and maintain a comprehensive national level database and monitoring system Ensure that thorough community monitoring and patrolling systems are established
<p>Promote local land use planning and appropriate resource tenure systems</p> <ul style="list-style-type: none"> Clearly defined boundaries Collective choice arrangements Regulation of use Close boundaries Develop natural resource management, land use, or zoning plans Promote gender equality
<p>Foster innovation, social learning and adaptive management</p> <ul style="list-style-type: none"> Law of conservation and sustainability (biological and social science, dealing with change, resilience rather than stability, resilience is negotiation over time) Community conservation is continually evolving, competition and manipulation over meaning and practice Process of adaptive management Policy is dynamic
<p>Build capacity and invest in human resources</p> <ul style="list-style-type: none"> Objective is capacity for local adaptive and dynamic governance of natural resource use Education High quality capacity building and skills transfer component Develop community business skills
<p>Promote cost effective technical advisory and intermediary services (only NWP mentions this)</p>
<p>Consider population density (new)</p> <ul style="list-style-type: none"> Large groups with weak resource base are unlikely to succeed Human population size
WEALTH:
<p>Be strategic about the economics of natural resource management</p>

<p>Resource use and resource management Management needs focused value for local people National economic health and CBNRM success are closely linked Multi-level incentives Intervention benefits Encourage an array of revenue-generating CBNRM activities that reinforce livelihoods Proportional equivalence between Benefits and Costs Differential inputs require differential benefits</p>
<p>Strengthen markets and NRM market incentives Market integration Promote value added and processing Encourage partnerships – especially with the private sector – as a way to expand and scale up</p>
<p>Invest in rural organizations Legitimacy comes from within but needs state sanction Benefit inequity Institution building Transparent, clear, and equitable benefit or revenue sharing distribution and use mechanism Group production of community-based enterprises (CBEs) for better negotiation and marketing. Build strong community-based organizations (CBOs)</p>
<p>Create a framework for better NRM choices Principle of costs and benefits The perceived benefits of CBNRM must exceed the costs A large portion of the CBNRM benefits must be equivalent to direct, monetary benefits or revenue</p>
<p>Assure that resource managers have secure access to NRM means and benefits.</p>
<p>POWER:</p>
<p>Strengthen procedural rights for rural people Minimal recognition of the right to organize Farmers first Effectiveness cannot be imported Self-determination and robust tenure Decision control Ensure widespread participation</p>
<p>Improve rural input into public decisions and policy Importance of macro and structural components Approach to government institutions Develop communications strategies and campaigns</p>
<p>Redistribute natural resource authority and functions Nested enterprises Graduated sanctions The match between responsibilities and rights Strengthen capacity among communities, agencies and program managers Devolution of authority Jurisdictional parsimony Supportive institutions NRM rights and responsibilities must be fully devolved to the community level and communities must be fully empowered</p>

<p>CBNRM stakeholders and proponents must establish a national, integrated or holistic vision</p> <p>Establish a holistic and integrated NRM policy and legislative framework</p>
<p>Transfer powers, rights and responsibilities to representative and accountable authorities.</p> <p>Tenure subsidiarity</p> <p>Authority is a prerequisite for responsible management</p> <p>Imperative of immediate empowerment</p> <p>Constituent accountability</p>
<p>Develop a minimum environmental standards approach</p>
<p>Promote platforms that allow for continuous and inclusive consultations</p> <p>Conflict resolution mechanisms</p> <p>Conservation no panacea</p> <p>Establish active networks and platforms for advocacy and learning</p>
<p>CULTURE:</p>
<p>Develop approach to nongovernmental institutions and shared values</p>
<p>Assess and promote cohesive communities and social capital</p>
<p>Develop and promote local leadership and charisma</p>

From this comparison a shorter list of principles were put together to facilitate data and information collection. The comparison of principles or best practice reaffirms the general soundness of the NWP framework.

LITERATURE REVIEW

The assessment draws from the significant body of literature on CBNRM programs and activities around the world. It pulls out key lessons learned, common approaches, and impacts and barriers to successful programs. Using a standard annotation template based on NWP (with some additional fields), an in-depth literature review was undertaken including, but not limited to, peer-reviewed articles, program documents, and reports/analyses by development partners and donors. Coverage of the following was sought:

- 1) Recent publications (as means of updating the meta-analyses such as IIED (2009))
- 2) A range of resources including wildlife, fisheries, forests, etc.
- 3) Every region of the developing world including Asia, Latin America, and Africa
- 4) Economic, environmental, and governance dimensions
- 5) Key authors and thinkers such as Marshall Murphree, Arun Agrawal, Jesse Ribot, Brian Child, Christo Fabricus, Piers Blaikie, James Murombedzi, Fred Nelson, Dilys Roe, Kerry Waylen, Fikret Berkes, Jeremy Radachowsky, and others

Annotations (done on USAID's RMPortal) of key documents were done electronically by a team of specialists. The annotated bibliography was organized to both quantify and describe impacts under the three components of the Nature, Wealth, and Power Framework: biophysical/environmental impacts (Nature); economic/livelihood impacts (Wealth); and governance and rights impacts (Power). This was extended to also deal with culture and other aspects that did not fit the three categories. A literature review, which produced a complementary publication "CBNRM: An annotated bibliography" was produced and is available online at the RMPortal: http://rmportal.net/cbnrm_annotations/annotation_render.

SITE VISITS

A range of criteria was applied in identifying sites as well as the methodology for the CBNRM field work. Countries were selected to provide a regional distribution and for their active USAID programs in natural resource management. Three countries were ultimately selected for field missions – Guatemala, Kenya, and Cambodia. Between two and six projects or activities were visited in each country. A standardized information collection form was used. The form included questions based on the NWP principles (as modified through the comparison with additional sets) and questions relating to barriers and constraints, techniques for overcoming barriers, food security, climate change, gender, and other topics. The trips were undertaken in teams of two – an international and a local expert.

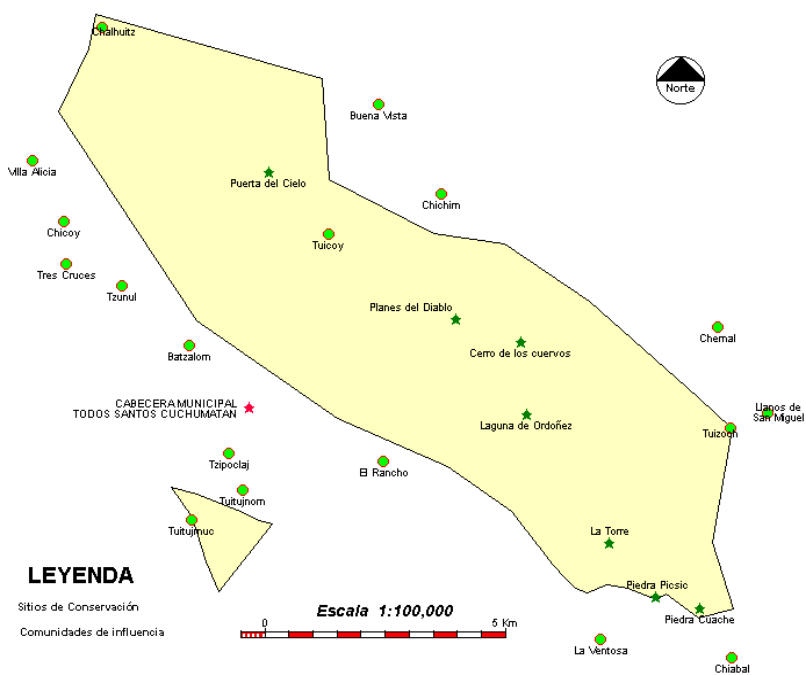
The following is a short description of the activities visited with observations on performance and lessons learned.

Guatemala. The mission to Guatemala was undertaken in November 2012, and included two sites where there are slightly different types of CBNRM based on the co-management of forests: *The Municipal Regional Park: Todos Santos Cuchumatán (TSC)* as well as *The 48 Cantones de Totonicapán*, a local community forest.

The Municipal Regional Park: Todos Santos Cuchumatán: The TSC activity includes the co-management of the Montane forests and sub-alpine moors (principally of conifers, junipers, and in one of the sites, there are remnants of endangered Guatemala Fir), as well as the biodiversity typical of the highest plateaus of the Central America. There are 17 communities within or near the TSC Park, with a total population of about 9,600 people of which about 5,000 are women. The objective of the activity is to sustainably co-manage (between the local communities and the municipality) the forest resources to preserve biodiversity and forest cover and to provide some economic benefit to local communities.

Nature: The Municipality of TSC has approximately 9,400 hectares of forest cover and the Regional Park has a total area of 7,300 hectares, of which 2,800 hectares are forested. The map provides an overview of the Park showing affected communities, both within and adjacent to the Park. Community forest management is supported by the Foundation for Eco-Development and Conservation (FUNDAECO), a local NGO founded in 1990 with the objective to protect areas of endangered and threatened biodiversity.

Wealth: Communities are allowed some access to forest products within the Park, including the collection of deadwood for fuelwood. The principal livelihood activity of the communities in and around the Park is the production of potatoes, followed closely by the raising of sheep. Economic globalization in recent years has had impacts on the market for wool where its value has collapsed because of imported synthetic fibers and today, raising sheep is focused on meat production rather than wool. Some local projects, including the



support provided by FUNDAECO, have promoted improved practices of animal husbandry, including stables rearing and rotational grazing.

Power: Community organizations participating in the co-management of the Regional Park have found space for operating within the decentralization context. At the local government level, there are two auxiliary mayors in each community, who act as an extension of the municipal mayor. At the level of the Municipal Office of Environment and Natural Resources, each community names two forest guards. Thus, local authorities include community members and are accountable to communities for the responsible management of natural resources. The creation of the Municipal Regional Park took place through a municipal agreement on July 24, 2002 with the consent of the communities. Allowing community organizations to participate in co-managing local resources strengthens the procedural rights and representation of the local communities, as well as promotes local land use planning by having clearly defined boundaries.

Culture: The local Mayan ethnic group does not see the forest as a resource that can be commercialized. An economic aspect of interest in the forests is foreign to local culture. Unsustainable commercial exploitation of forest resources directly affects the quality of life in the rural communities. The local government, in spite of the participation of local people, has been unable to develop shared values on commercial exploitation with the indigenous groups that inhabit the Municipal Regional Park area. Indigenous people suffer some level of discrimination and isolation, which greatly affects their empowerment and economic development.

The 48 Cantones de Totonicapan: The 48 Cantones of Totonicapan is an indigenous, community-based, historical organization for forest management of the Totonicapan area. It has been in existence since colonial times and was formally recognized under an agreement with the King of Spain. It is the institutional manifestation of communal unity and stands out as such even in the highlands of Guatemala where traditional indigenous communities have maintained their cultures and ways of life. The organization and its community-based management of the forest area have recently received support from USAID/Guatemala through the Rainforest Alliance.

Nature: The 48 Cantones focuses on the management of a local forested area. Although there is some potential there was limited community interest in ecotourism. The forest is the main source of the potable water supply of many of the surrounding districts, and one of the primary reasons which local people give to justify its continuing conservation. It is noteworthy that although Totonicapan is the most densely populated rural area of the country, the forest is in better environmental condition than many other highland forest areas.

Wealth: The most important and most tangible benefit/impact of the forests of Totonicapan is the provision of potable water from the many spring boxes that have been tapped and piped to the adjacent and nearby villages. The community has effectively protected the forest because it recognizes the link to potable water. Active community participation has allowed for the protection of water systems that bring clean water to the villages, and has yielded a profound impact on food security, mainly through its impact on sanitation and health. On another note, arrangements with municipal authorities in some areas on the periphery of the forest have been allocated to prominent local families (of the same community). Management of these lands, called “*parcialidadesn*” has been delegated to beneficiary families, who often clear the forest for timber revenue and for crops and pasture. These elites, within Totonicapan, appear to be benefiting from their positions with both positive and negative impacts. Though the government is promoting local land use planning and allocating certain areas of the land to families, it appears that it is being done unfairly and it is leading to degradation of that land area.

Power: Any effort to regulate conservation and perhaps remove control of the forests from the hands of the 48 Cantones of Totonicapan by the national forestry authorities would be anathema to the

indigenous community. They would see such efforts as an example of overall discrimination and continuing inequities that they have suffered for generations. In 2012, during a protest of Government plans for hydropower and water supply development, several people were killed by Government soldiers. The community believes that although they have protected the watersheds which make such development possible, these types of developments and their outcome (electricity and potable water) rarely reach the indigenous communities. This highlights the fact that CBNRM is affected by the human rights situation and there is a need for a clear understanding and respect of human rights for discussions about the equitable distribution of benefits, rights to resources, fair representation, and decision making authority.

The Rainforest Alliance and the 48 Cantones signed a Memorandum Of Understanding to formalize their working relationship, and to deliver and manage funds provided by USAID/Guatemala. USAID/Guatemala also aims to promote the implementation of forest conservation-oriented agroforestry models. These will also address food security goals in the local area and related appropriate technology projects (such as solar energy, improved stoves, rainwater collection, etc.), which also take the pressure off the forests.

Kenya. A mission to Kenya was conducted in December 2012, during which community forestry associations (CFA), water resource user associations (WRUAs), and wildlife conservancies were visited. Community forestry has been established under law in order to involve communities in the management of their nearby state forests. Similarly, legislation permits the creation of conservancies, local entities for the management of non-consumptive wildlife use and for conservation. WRUAs are local watershed or catchment management organizations that increase watershed planning (coordination within the watershed) and management (watershed protection and conservation) and in some cases promote economic (irrigation) and domestic use of water within the catchment. These different types of CBNRM have had different levels of success.

Nature: The impacts of these activities on the environment and natural resource base vary considerably. Community forestry appears to have had little impact on the forests mainly because the procedures to get registered and develop a management plan are very lengthy and little in the way of management has actually taken place. Conservancies have a generally positive impact on wildlife and the environment, slowing negative trends if not increasing wildlife numbers. However, in certain places, like Laikipia in central Kenya, some species of wildlife have declined. There are important positive environment impacts on land use in general – particularly in grazing and herding. For the water resource sector, WRUAs have done some work in terms of promoting conservation farming, better species selection, riverbank protection, tree planting, etc., which has resulted in positive environment results.

Wealth: Community forestry appears to have provided little incremental benefit to communities, while they take on considerable costs of monitoring, patrolling, and planning. A realistic cost benefit analysis needs to be done which accounts for transaction and opportunity costs. Community forest associations do not seem to have secure access to NRM means and benefits. Livestock dominates the household economic benefits of the wildlife conservancies. The additional revenue from non-consumptive use of wildlife (lodges, visitors, etc.) is used mainly to support the community-wide social benefits of health and education. WRUAs' economic standing depends to some extent on the ability to undertake projects such as irrigation and domestic water supply. The irrigation projects have allowed for a cheaper water supply and larger profit margins for farmers. However, WRUAs do not necessarily benefit economically from the projects it promotes or coordinates and often survive on membership fees. The transfer of resources from the Water department to WRUAs as WRUAs undertake a greater role in watershed management is under discussion.

Power. In the forestry sector, some benefits accrue if communities can use the organizational tool of CFAs to better organize use rights or other non-forestry activities. However, in general, there has been no devolution of new or improved access, rights or authority over forest resources. In fact, the bureaucratic requirements, lack of support from the government, and imposition of new requirements (management planning, for example) may be contributing to a further lack of empowerment of local communities. For the case of wildlife conservancies, the state still owns and controls the consumptive and non-consumptive uses of wildlife. For water resource user associations, significant control and responsibility over the water resource seems to have been delegated to the WRUAs. However, it is unclear if the WRUAs will get support from the national level for fulfilling functions previously undertaken by central authorities.

In the activities visited, the role of women and their level of empowerment varied. The CFAs do not appear to be making much of a contribution to gender equity and equality, food security or resilience. The wildlife conservancies however have integrated gender into their activities. The West Gate Conservancy with support from the Northern Rangeland Trust (NRT) has developed a revolving fund specifically for women's activities. Women are active on committees and state that better access to domestic water has allowed them to spend more time on handicrafts and thus increase their cash incomes. Conservancy members have also stated that the approach has contributed to increased food security, as well as improved land use planning; and that diversification of income streams has contributed to greater resilience.

The role of women was also somewhat positive in the WRUAs. Women were present at the group meeting for the WRUAs and were said to be an important beneficiary of service provision; however, the extent of their participation and access to management of resources remained unclear. The WRUA members also reported positive impacts on food security, as a result of proper irrigation management. In turn it has contributed to resilience, as the WRUA has provided a forum to discuss water scarcity and brainstorm plans for equitable distribution.

Cambodia. The Cambodia trip was undertaken in January of 2013, and visits included: The Kbal O KraNhak (KOK) Community Forest, the Community-Based Ecotourism (CBET) project in Chi Phat and the Peam Krasop Wildlife Sanctuary (PKWS). In all three of these sites, the impacts on nature are evident, and while it's difficult to quantify specifically the economic gains for women and vulnerable groups, each of these community-based groups are active and have working relationships with the community/local government leadership.

The Kbal O KraNhak Community Forest was established through local initiative in January 2002, in direct response to the rapacious exploitation of timber in the area by the Moeung Ly Heng Forest Concession Company. The Kuy minority group of 250 families was deeply concerned about the direct negative impacts on their livelihoods and succeeded in getting their concerns to both the King and Prime Minister of Cambodia and in 2003, the concession was canceled. The Community Forest was formally approved by the Ministry of Agriculture, Fisheries and Forests in November 2008 and endorsed by the Provincial Governor in April, 2009. Work on a Community Forestry Management Plan was started in late 2010 with technical support from Regional Community Forestry Training Center (RECOFIC). The CBET project in Chi Phat was established by the Wildlife Alliance in 2008. The Chi Phat CBET program was developed to promote local buy-in to this work, including forest protection and regeneration. Work in the Peam Krasop Wildlife Sanctuary was initiated in 1997 with International Development Research Centre (IDRC) support under a program for Participatory Management of Coastal Resources. The Participatory Management of Mangrove Resource Project (PMMR) aimed to restore and conserve mangrove resources with active local participation.

Nature: The KOK Community Forest has had positive effects on the environment through stopping the extensive uncontrolled forest exploitation and by putting 1,500+ hectares under the direct management and stewardship of 250 families as a Community Forest (CF). The KOK CF Users Group have used the principles around knowledge management, land use planning, innovation and adaptive management, capacity building, and advisory services. In the Chi Phat CBET program, 1.7 million hectares of forest land has been preserved and 500,000 trees have been planted. Tree seeds from 90+ indigenous species were collected to be sown at a “Million Tree Nursery.” In the Pream Krasop Wildlife Sanctuary, where they were nearly completely lost, mangroves are now thriving. One region of the protected area that had been heavily cut for charcoal production has been replanted. PKWS is the first protected area in Cambodia with an approved and functioning zonation plan. The zonation plan, the first for a protected area in Cambodia, was developed through an iterative, participatory process and approved through a Sub-Decree by the Prime Minister on August 3, 2011.

Wealth: RECOFTC has not yet tracked wealth/livelihood data or facilitated access to markets for the KOK region. However, in the Chi Phat CBET site, it was reported that there has been a 300 percent average income growth for families in the village since 2004. There has been explosive growth in the number of tourists (see Table 1 below), including a 30 percent increase in 2012 over 2011. In 2008, 60 percent of the visitors were Cambodians. By 2012 this had dropped to 10 percent.

Table 1: Growth in Tourism in Chi Phat CBET

Year	Number of Tourists			Income	Amount into CBET Fund
	Domestic	International	Total		
2008	256	170	426	\$9,621.00	\$1,256.45
2009	314	517	831	\$22,375.46	\$5,724.78
2010	398	830	1228	\$39,225.15	\$10,735.77
2011	345	1447	1792	\$69,681.24	\$19,472.30
2012	231	2084	2315	\$99,541.76	\$26,023.03

Source: WA/CBET
 Note: US\$1=4000 Riel

The growth in tourism was also the case for PKWS. The table below shows that direct income collected by the PKWS from 2009 through 2012 was through tourism. Domestic tourists are the overwhelming majority of visitors. In addition to entrance fees, domestic and international tourists spend money on activities inside the PKWS (e.g. boat tours to view mangroves and visit fishing villages). The more significant wealth impact involves the livelihoods of the 9,000 people who live in the Sanctuary where livelihood activities take place such as open sea fishing, mangrove and sea-grass ecosystem fishing, aquaculture, serving as middle people for fisheries product collection, animal raising, snapper and grouper culture, crab culture, green mussel culture, upland farming, thatch weaving, home gardening, mangrove forest extraction for firewood, mangrove forest collection for construction, and the sale of labor in local markets.

Table 2: Growth in Tourism in PKWS

Year	Number of Tourists			Income		
	Domestic	International	Total	Domestic	International	Total
2009	51,578	2564	54142	\$38,698.50	\$3205.00	\$41,903.50
2010	42,224	3206	45430	\$31,668.00	\$4007.50	\$35,675.50
2011	44,393	3928	48321	\$33,294.75	\$4910.00	\$38,204.75
2012	51,759	4746	56505	\$38,819.25	\$5932.50	\$44,751.75

Source PKWS Commune, Yearly Tourist statistics log book from 2009-2012

Note: US\$1=4000 Riel

Entrance Fee: National Tourist=3000 riel=0.75

International Tourist=5000 riel=1.25

Power: The community forestry groups have been successful in attaining representation in the KOK region. Over the past few years, the community forestry group has been working effectively with the local government, the Forest Administration and RECOFTC to meet the requirements to prepare and get a Management Plan approved. Despite having significant support and guidance, their progress in gaining representation has stalled. RECOFTC staff indicated that 93 community forests have been proposed since 2007. Fifty-seven of these have been approved by the FA. Ten management plans have been prepared, but only one has been formally approved (in October 2011). There are currently seven management plans pending approval, including the one for KOK. At Chi Phat CBET, at the provincial and national levels, the Wildlife Alliance has used its resources and political connections to help define and promote the community's interests. At the PKWS site, the commune (i.e. local government), the communities within the Sanctuary, and the Ministry of the Environment administrators of the Sanctuary are working well together. After government and ministry officials visited PKWS, and heard directly from villagers that cooperation and co-management could lead to the sustainable development of these resource systems; they supported the inclusion of the Community Protected Area category in the law.

Other observations: In the KOK region, simplified procedures need to replace the current burdensome and overly bureaucratic system. Obtaining approval from the Government has been time consuming, complex, and costly. Community forestry agreements last for 15 years and include a moratorium on commercial harvesting for the first five years. In

terms of gender and vulnerable groups, the KOK is ethnically homogenous and concerned about equity. The Deputy Chair of the CF Management Committee, a woman, reported that women are actively involved in decision-making. This group of leading women includes widows and 76 woman-headed



CAMBODIA: Chi Phat Community-Based Ecotourism (CBET) Committee Chairman Prom Hoeng pointing to the extensive data on “CBET Achievements” (including visitor numbers and financial information) available for all to see at the Visitor’s Center. Photo: George Taylor

households. RECOFTC is aware of the importance of gender but has not collected data on participation and income. The PKWS site had all male leaders, yet all the operating vendors were female. There were no indications of gender groups being addressed in the CBET site. The community forestry groups in KOK provide a modest contribution to food security and resilience. A recent expansion in cassava production outside the forest is making a more direct contribution to food security. However, community members did express concern about climate change, in reference to the powerful Ketsana typhoon that hit the region in 2009. Food security and resilience are addressed indirectly through increased incomes from ecotourism in the Chi Phat CBET villages. There is support for some agricultural extension to improve food crop production along with reforestation and related programs. There is also support focused on the potential negative impacts of climate change on food security, as well as community and ecosystem resilience, for the PKWS villages.

SUSTAINABLE LIVELIHOOD APPROACH (SLA)

The Sustainable Livelihood Approach, developed in the 1980s, is useful to understanding the broader context of CBNRM and how CBNRM can help address the critical issues of resilience, vulnerability, and the place of natural capital within rural people's portfolio. Jones (2004) states that "CBNRM needs to be placed in the specific context of rural livelihoods ... and evaluated in the context." The overwhelming majority of rural people, no matter how poor, manage a set of assets. SLA places natural capital in a context of five "capitals" that rural people manage including social, human, financial, and physical capital. The approach usefully underlines the importance of shocks and stressors which is more important than ever given the growing impacts of climate change. (See Figure 1.)

Natural capital itself can also be differentiated and rural people also manage a range of resources within this general category. As the case studies and literature review show, rural people can integrate the management of forests, wildlife, range, and crops within their livelihood. This helps provide resilience as well as increased incomes. The natural assets such as forests, wildlife, and fisheries, which are traditionally of interest to CBNRM, are often a minority share of the rural poor's natural portfolios. This true for all of the projects visited. Even when rural households are dependent on forests they, for example, are only part-time "foresters" and have other occupations, such as agriculture or commerce. If CBNRM is applied to a section of the natural capital portfolio which is a minority share, improved management is less likely to be transformational. In the Guatemala of Kenya cases, the co-management of forests, although important, does not significantly contribute to economic well-being since the most important part of the portfolio by far is agriculture.

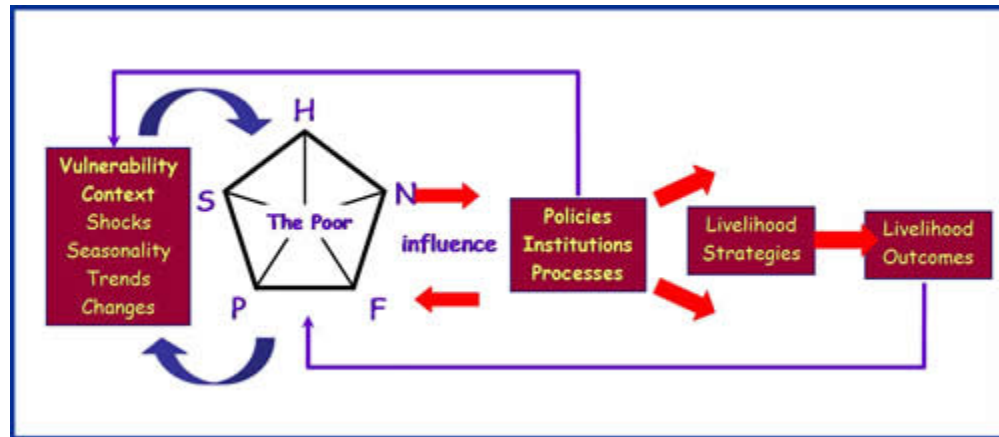
The literature shows a virtual consensus that the extra livelihood options offered through CBNRM are an *additional* source of income that usually does not replace agriculture (Rutten 2002; Bond 2001; Arntsen 2003; Jones 2004; Roe and others 2006). In other words, CBNRM is rarely an alternative for agriculture or formal employment. (Arntzen, 2007)

While CBNRM does perhaps not replace agriculture, it can, as will be shown below, be of value and have significant returns, if the principles of CBNRM are applied to agriculture.

SLA is also a dynamic framework. Since the value of a resource changes over time, the relative importance in the portfolio can also change. CBNRM is often implemented around low value or degraded resources. Fortunately, many of these resources can recover and gain value fairly quickly through management and the application of CBNRM principles. Therefore, in cases like Nepal or Namibia, forests and wildlife respectively have become a more important part of the rural portfolio as they have recovered and become more productive.

The SLA is also relevant since it directly addresses key elements of resilience, such as vulnerability, shocks, and changes. As climate change adaptation and resilience become more important the SLA also

takes on a renewed role. Figure 1 shows the basics of the SLA with the emphasis on vulnerability, the portfolio of assets or capital and the key role of institutions and policies which mediate outcomes of resource management.



Source: <http://www.ifad.org/sla/>

Figure 1. Diagram of the sustainable livelihood approach (H = human capital, S = social capital, P = physical capital, F = financial capital and N = natural capital)

PROPOSED CBNRM TYPOLOGY

As already noted, CBNRM programs have variable success rates (IIED, 2009; Radakowsky, 2012, Nelson and Agrawal, 2008). A slightly more precise typology might assist in the analysis activities and the extent to which they are successful and be of use to practitioners and others in the analysis of programs. Shackelton et al. (2010) assert that “a typology is required of the different sorts of ‘community-based’ interventions to lend clarity to the debates regarding criteria for success or failure... The development of such predictive typologies is however compromised by the fact that CBNRM is a dynamic process...” The typology proposed here is partially a response to this demand. In order to add some granularity to the analysis of CBNRM programs, it has been developed to analyze programs along a success gradient, based on the definition of CBNRM, and success noted above.

Transformational – The resource in question is a large share of rural livelihood portfolios, and the technological, economic, and governance systems facilitate optimum natural resource management. Economic growth, local empowerment, and sustainable management are all taking place with national level impacts. The CBNRM activity is the best land use option – or close to it.

Significant – The resource in question is an important part of rural livelihood portfolios, and the technological, economic, and governance systems facilitate sufficient levels of natural resource management to allow for significant growth and empowerment. The CBNRM activity is a competitive land use option.

Threshold/tipping – Management of the resource in question allows for a level of local benefit that, although small, may help push people over the poverty threshold. Economic, governance, and technological systems may not be ideal but function sufficiently to allow for some benefit.

Survival/subsistence – The management of the resource in question is marginal due to economic, governance, technological or land use systems. Costs and benefits are essentially equal and local people are at equilibrium vis-à-vis the management of the resource.

Extractive – The resource in question may be significant but the economic and governance system does not allow for local people to benefit. With the system in place, local people are subsidizing other actors/stakeholders. Local people are actually worse off through the CBNRM process. These cases are often due to a combination of lack of rights devolution, coupled with onerous bureaucratic and technical requirements.

This typology was used as a flexible tool in order to help analyze projects and programs. Practitioners or support organizations such as donors and NGOs, can use the typology to help them reason through how successful activities are and areas of improvement.

RESULTS AND DISCUSSION

This section of the report presents and discusses the results of the literature review, site visits, and discussions including those at the USAID-sponsored CBNRM conference held in Washington on January 16 and 17, 2013. The section enumerates the use of the typology and a range of barriers and constraints facing CBNRM. Ways of overcoming barriers and improving CBNRM success are also listed. Finally, the section addresses the relationship between CBNRM and several critical issues of rural development and global importance, including food security; climate smart agriculture; governance; resilience, community-based adaptation, and climate change; gender and vulnerable groups; perceived value of the resource base; and culture and context. This section also introduces the concept of collateral success.

CBNRM IMPACT AND THE TYPOLOGY

The typology developed was employed to look at the cases from the field work and several other well-known cases (Bangladesh and Senegal). Below is a table that shows a preliminary distribution of several projects and programs.

CBNRM type	Field examples
Transformational	Namibia conservancies, ² Nepal community forestry ³
Significant	Kenya conservancies, Cambodia protected area management, Bangladesh wetlands management ⁴
Threshold	Kenya Water Resource User groups, Cambodia ecotourism, Senegal “Wula Nafaa,” ⁵ Bangladesh forestry co-management ⁶
Subsistence	Guatemala municipal park management, Guatemala multifunctional management of forest reserves, Cambodia community forestry
Extractive	Kenya Community Forestry

2 For more information on Namibia conservancies, see NACSO. 2011. Namibia’s communal conservancies: a review of progress 2010. NACSO, Windhoek, Namibia.

3 For more information on Nepal community forestry, see MFSC. 2009. Nepal Forestry Outlook Study. In Asia-Pacific Forestry Sector Outlook Study II. Working Paper No. APFSOS II/WP/2009/05. Bangkok: Food and Agriculture Organization of the United Nations

4 For more information on Bangladesh wetlands management, see Sultana, P., and Thompson, P.M. Methods of Consensus Building for Community Based Fisheries Management in Bangladesh and the Mekong Delta. CAPRI Working Paper 30, CGIAR Systemwide Program on Collective Action and Property Rights, International Food Policy Research Institute, Washington. 2003

5 For more information on the Wula Nafaa program in Senegal, see USAID. Wula Nafaa Program Annual Report October 2011 - September 2012. 2013. USAID

6 For more information on Bangladesh forest management, see Quazi, Shimona A.; Bushley, Bryan R.; Miles, Wendy B. Introduction: Participation and the collaborative management of protected areas in Bangladesh. Honolulu: East-West Center; Dhaka: Nishorgo Support Project, Bangladesh Forest Department. 2008.

The Namibia and Nepal programs appear to be transformational. The resources in question (wildlife in Namibia and forests in Nepal) are important parts of rural livelihood portfolios. The technologies of management are well known and are mastered at the local level. The economic and governance systems are “good enough” to permit local natural resource management. Income is being generated; national, regional, and local empowerment is taking place; and the resource base is increasing in productivity, and being sustainably managed. CBNRM activity is the best land use option – or close to it.

Several programs have significant positive impact. In three cases (Kenya conservancies, Cambodia protected area management, and Bangladesh wetlands management), the resource is an important part of rural livelihood portfolios at more than just the local level. Technologies are well known. The economic and governance systems facilitate sufficient levels of natural resource management to allow for significant growth and empowerment. The rights framework – while perhaps not totally clear or decentralized – nevertheless allows for benefit capture, and encourages investment at the local level. The activity is an important part of people’s income generation activities. The CBNRM activity is a competitive land use option.

Threshold activities. In Kenya, Cambodia, Senegal, and Bangladesh, CBNRM programs allow for a level of local benefit which, although small, may push people over the poverty threshold. Economic, governance, and technological systems may not be ideal, but they function sufficiently to allow some benefit. However, the rights situation may be unclear, as the resource may be a relatively small portion of a community’s portfolio.

The sites visited in Guatemala and Cambodia fall in the survival/subsistence category. In these cases, the CBNRM activities are marginal to local livelihoods. Local people may be involved for minor products and/or for non-economic reasons (cultural identity, organizational benefits, etc.). Economic, governance, technological or land use systems prohibit activity from having more than a subsistence impact. Costs and benefits are essentially equal and local people are at equilibrium vis-à-vis the management of the resource.

Community forestry in Kenya appears to be extractive. The forest resource is locally important but perhaps not a large portion of the portfolio of a large number of Kenyans. In addition, the economic and governance system does not allow for local people to benefit. Rights have not been transferred and communities cannot capture the larger economic benefit from timber. The system in place means that local people are subsidizing other actors/stakeholders. Because of the lack of rights devolution, coupled with onerous bureaucratic and technical requirements, local people are actually worse off through the CBNRM process. While forestry associations have no new or additional rights they are expected to monitor, patrol, and carry out management plans for the forests.

The aim of the typology is to stimulate thinking among analysts and practitioners about the depth of success of CBNRM activities. It is meant to highlight the dimensions of CBNRM, critical issues, what the opportunity costs may be, and how to improve activities. The typology shows that unsuccessful programs may have negative effects on local people, and contribute to further impoverishment, rather than to growth. It might be useful to systematically review CBNRM activities based on this typology.

REMAINING ISSUES AND CONSTRAINTS

Even with the often repeated caveat that good data is lacking and monitoring is poor, there have been numerous reviews of CBNRM projects and programs throughout the world (see, for example: Nelson and Agrawal, 2008; DAI, 2010; ICIMOD, 2006; Shackleton et al, 2002; IIED, 2009). These reviews tend to be restrained in their assessment of CBNRM success, sometimes in contrast to project and donor documents. The issues raised here are not comprehensive but reflect some of the more important issues

that come up during site visits and in the literature review. A more comprehensive list of constraints can be found in a summary table in Annex 1.

This section uses the NWP framework to organize constraints and “solutions.” There is some overlap between the three categories of nature, wealth, and power.

NATURE – TECHNICAL CONSTRAINTS

Technical constraints are fairly common in CBNRM programs. They range from low value of the resource base, to lack of good techniques and knowledge of sustainable management, to lack of technical capacity and know-how.

Lack of knowledge of the resource base and/or effective management techniques. Lack of knowledge of the resource base, such as lack of knowledge of the population dynamics and levels of fish resources, is a hindrance to good CBNRM. Without such knowledge, sustainable yield and other management techniques may be difficult to determine. In addition, there may be a lack of knowledge of techniques that would improve, safeguard or restore natural productivity. While this is not often cited in the literature as a major constraint it is of great relevance to successful management.

Low value resources. A common CBNRM phenomenon is that degraded or low value resources are much more likely to be ‘transferred’ (some mixture of rights over the resource granted to the local level) than high value ones. Namibia and Nepal - two of the most successful CBNRM cases – are examples of this constraint. In Namibia, wildlife numbers in communal areas had declined noticeably. “...the value of wildlife in communal areas was perceived as relatively marginal prior to conservancy formation”. (Nelson and Agrawal, 2008). In Nepal, the government was prepared to transfer some management rights over degraded hillside forests to communities, but not high value forests in the plains (*terai*). This is a constraint for two reasons. First, it increases poor people’s initial costs (that they are ill-equipped to support) as they must invest significantly to restore productivity prior to the resource’s return to “profitability”. Second, as resource condition and profitability increase so does pressure from other stakeholders to revoke rights, increase fees and other extractive activities, or change ownership regimes. This trend is apparent in Nepal but may be resisted by well organized forest user groups.

Role of science and technology (S&T). S&T are clearly critical aspects of CBNRM. S&T can promote evidence-based decision-making, innovation, and problem solving. However if S&T is dominated by outside influences, it may hinder local empowerment and decision-making. Hockley and Andriamarovololona (2007), for example, question management planning for “minor forest products” which they say is based on “dubious science.” In addition, “often scientific and technical plans and institutions are used as instruments of control, bureaucracy and a means of transferring costs to the poor under the name of ‘sustainability’” (Anderson et al, 2006). S&T in some cases seem to facilitate the neglect of local knowledge, which is often extensive. In Kenya, Community Forestry forest management plans are required by national authorities. They demand costly outside input and lengthy approval processes while seemingly adding little to the quality of management.

Complicated planning process. In many cases, governments force a complicated planning process that imposes costs on communities (Ribot, 2003; Hockley and Andriamarovololona, 2007). The costs are sometimes monetary as in the need to pay outside consultants but may also increase transaction and opportunity costs. Costs may not be equitably distributed among partners. These procedures may add little value, scientifically or technically, but impose burdens on communities. In Kenya, the community forestry process dictates that forestry management plans are required of communities (but do not confer additional rights). The communities do not have the capacity to develop these plans and they do not appear to be designed with community ownership in mind. The plans must meet forest service requirements, essentially guaranteeing that government foresters, who are often retired, are hired to complete them. Plans are valid for five years. Even when done by the Government’s own forester,

government approval can take extensive periods of time. In at least one case (Sharmonnek), the plan has taken almost five years to be approved – it will essentially lose its validity before it is approved. Hockley and Andriamarivololona, (2007) claim that the “*Gelose*” (community forestry – secure local management) in Madagascar had to go through 22 separate steps before a community was actually allowed to manage some of the local forest resources. These steps did not seem to add value to sustainable forest management. A subsequent program (GFC – contractual forest management) reduced some steps and made the process somewhat simpler and easier but still has significant requirements.

Administrative processes that are capricious, arbitrary, and lack checks and balances. The relationship between the community and the state often appears to be one-sided, with the community having little in the way of checks and balances on the performance of the state. There may be no independent bodies to arbitrate the relation between the community and the technical administration and little accountability of the technical administration. This can lead to an unbalanced situation where the communities have no say in outcomes or the performance of the technical ministry. In the cases of successful programs, such as community-based commercial sports hunting in the Peten, Guatemala, “government bureaucracies have consistently challenged project operations” and permitting processes often have multiple stages, or are subject to change, idiosyncrasies, or arbitrary modification without notice” (Baur et al, 2012). The relationship lacks equity. In community forestry in Kenya, the Kenya Forest Service (KFS) dominates the relationship with the villagers, imposes its requirements with little negotiation, and can cancel any agreement with communities at its sole discretion. This system does not provide the type of security, confidence or checks and balances for the community forestry association to invest in the forest, leading to a self-fulfilling prophecy. Without a sense of secure rights, communities do not invest as they might. This lack of investment is seen by the authorities as a sign that communities are ill equipped to manage.

Technical and detailed documentation. Many CBNRM programs require detailed technical documentation such as detailed management plans, benefit distribution plans, community based organizational constitutions (community forestry association, conservancy, water user group, etc.) and bylaws, committees descriptions, operating manuals and the like. Since local communities are not familiar with these types of requirements, it can be costly for them to comply, making this a constraint.

Double standards. Governments sometimes impose documentation and procedures on low capacity and poor communities. In some cases, these requirements seem to apply only to communities and not to other stakeholders, including the government itself. For example, in Kenya and Mali, while forests were under the jurisdiction of the state, they often lacked management plans. However, once co-management with communities was started, the plans became a requirement for even basic use rights (Ribot 2003). The existence of double standards reinforces the unequal relationship between state and community.

Lack of capacity. In developing countries, capacity is often weak at all levels (Freudenberger, 2010) for all stakeholders and can be a constraint to sustainable natural resource management. Government ministries sometimes have technical, communication, policy, and financial weaknesses as well as lack of a joint vision throughout the organization on existing policy and rule enforcement. At the local level, local groups may have low capacity to organize, make and respect rules, manage financial and natural resources, monitor and hold meetings, etc. Capacity may also be uneven and this can lead to disparities in approaches. Government foresters may be better trained in the technical aspects of forestry than in community approaches and participation. These can skew services in the direction of technical solutions. There may also be “trained incapacities” where the capacity that has been built is inappropriate to the local situation. It can be very difficult to judge the level and types of capacity needed and the relationship between capacity and the rights and incentives framework. For example, the lack of implementation of technical advice may relate to costs and benefits rather than lack of understanding.

Governments can use perceived lack of local capacity either when refusing to devolve rights, or devolving them with unreasonable conditions, caveats, and requirements (Ribot, 2003). While communities lack certain capacities, it is often not in the area of knowledge of the resource base, understanding of sustainability, and commitment to manage. A keener lens needs to be applied to capacity building efforts to ascertain real needs from compensatory activities.

Inadequate monitoring and evaluation. There appears to be a dearth of (good) information on the impacts of CBNRM, and monitoring and evaluation (M&E) is weak (Jones, 2004). Lack of good information and rigorous analysis makes it difficult to judge the levels of success. It also makes day-to-day management of CBNRM programs less rigorous and decision-making more difficult. There have been recent efforts to overcome these obstacles to better performance of CBNRM but there is still some way to go before better methods, data, and analysis improves performance. In some cases, there appears to be insufficient investment in M&E programs. In some cases, methods may need to be improved. Local participation in M&E is also sometimes problematic. Communities, in spite of the fact that they have a tremendous knowledge of and impact on the resources, have sometimes not been involved in M&E activities to the extent that they should. M&E is occasionally irrelevant to field actors and managers.

Knowledge management (KM). Good information and knowledge is essential for sustainable resource management. With the existence of new technologies there are ways to store, manage and use knowledge in real time. The efforts at developing lessons learned and best practice have the potential to greatly improve CBNRM performance. More investment is needed in this area, especially to the extent that it can empower local managers. Knowledge management needs at least partially to be done to satisfy the needs of local actors and to facilitate local management. Since “information ‘gathering’, planning, and the design of institutions are simultaneously instances of, and vehicles for, the exercise of power” (Li in Agrawal and Gibson, eds., 2001), an analysis of the impact of KM on power structures would be useful and could lead to approaches that empower local people.

WEALTH – ECONOMIC CONSTRAINTS

Low value resources. As noted in the nature section, communities are often stuck with management responsibilities over degraded or low value resources – resources that have few if any other claimants. Nelson and Agrawal (2008) state that “valuable natural resources create incentives for central actors to retain control over them.” Communities usually get lower value resources and this creates a constraint to economic growth and income generation. “... [T]he search for ‘new’ sources of income for ‘poor forest dwellers’ is often, in reality, a search for opportunities that have no other claimants – a search for unsuccessful development alternatives” (Dove cited by Li in Agrawal and Gibson eds. 2001). Since communities are usually allocated resources, often degraded resources, that have no other claimant, CBNRM becomes an exercise in helping the poor restore degraded resources to enhance their productivity instead of immediately tapping into economic opportunities.

Low level of economic benefit. The literature and the site visits indicate that, in general, CBNRM provides relatively small economic benefits (this is not to say these are the only benefits), and often overlooks structural economic issues and the role of the private sector. “Overall, the cash benefits accrued by communities (through community forestry) have so far been limited... the overall mix of benefits [need to be] greater than the costs or trade-offs incurred by communities, and that cost and benefits are shared equitably between the government and the communities, and among community members.” (FCMC, 2013) Even for the programs that are considered transformational, such as Namibia, the impact on poverty appears, in some analyses, to be minimal (Jones, in press).

When discussing activities similar to CBNRM, Li states that these “... efforts that are consistent with the market related economic strategies of resource users are more likely to be effective than those that

overlook them, or bury them in a rhetoric of subsistence” (in Agrawal and Gibson eds, 2001). CBNRM sometimes neglects the (international) private sector or sees it as a negative influence when it is an increasingly important player in the rural world. There is a need to explore the approaches of the private sector, and encourage more equitable approaches. Low levels of economic benefit and lack of partnership with the private sector is a constraint to CBNRM.

A lack of emphasis on local livelihoods and trade-offs. In many cases, CBNRM involves trade-offs for local people. One of the most obvious trade-offs is that between conserving wildlife and dealing with problem animals, especially predation on livestock and crop destruction by herbivores. This is the case in Namibia, where local communities are constrained by the government in their ability to quickly deal with problem-animals (Boudreaux, 2007). Boudreaux (2007) also believes that the process for commercial leasehold in conservancies (such as the ability to contract with an ecotourism operator) is overly complicated and burdensome. In terms of already difficult livelihoods, such trade-offs can be important. In the tension between environmental and economic outcomes, many CBNRM activities are not always able to identify and implement ‘win-win’ scenarios often having to accept ‘win-settle’ situations (Barrett, et al.; 2011).

The broader economic context is often ignored. There remains a lack of a strategic approach to the economics of CBNRM – even in the most successful of CBNRM cases, such as Namibia, the economic framework appears to be lacking. Boudreaux (2007), with regard to the Namibia conservancy programs, states that more needs to be done to assure contract freedom and enforcement, improve property rights, free the market, cut down on red tape for business creation and export/import. Arntzen et al. (2007) also believes that the socio-economic impacts of CBNRM are rarely analyzed in a broad context, and there is often a focus on gross revenues - with less attention on operating, opportunity and transaction costs.

Role of “intangible” cultural/spiritual benefits – The management of local resources often confers non-economic benefits to local communities which are difficult to quantify. The Guatemala cases are examples of close cultural ties with nature and forests, in particular, which are reinforced through good management. In other cases, association with CBNRM programs allows communities to become more formal entities that may confer advantages in terms of capturing benefits from a range of partners. In Mali when previously isolated villagers, who are now organized and involved in lucrative rice farming, were asked what the benefits of the project are, they would often start with the functional literacy program. Additional non-material benefits include empowerment of local population, encouraging self-esteem and pride, exposure to commercial partners, and development of working relations with the government, NGOs, and the private sector (Arntzen, 2007). There appear to be a range of important non-economic benefits to CBNRM which could theoretically increase the attractiveness of these investments. However, caution should be exercised to make sure that non-economic benefits are given the correct weight in the calculation of returns.

Lack of markets and market analysis. As Dove (in Agrawal and Gibson, 2001) points out, the “products” that are left for communities are often ones that have no other claimant and therefore they often they have no initial market. In some cases, great efforts are made to develop local alternative livelihoods based upon superficial market analysis in the hopes that low value products can find a market. In spite of some evidence on the importance of these products in local livelihoods, much of the effort seems supply-driven and not market-driven. For example, Boudreaux (2007) advocates for a more sophisticated market approach in Namibia. The lack of markets, the lack of market analysis, and superficial supply-driven approaches can inhibit success.

Benefit distribution and elite capture. Much has been written about the distribution of benefits of CBNRM programs, and the possibility of elite capture (Schackleton et al., 2002). These issues are both

intra-community and extra-community. In terms of distribution within communities, elite capture – i.e. the poor benefiting less (and sometimes assuming more of the cost) – appears to be fairly common; although there are some exceptions, such as Namibia (Barnes, 2007; Jones, in press). Also of concern is the benefit-sharing between the community and the private sector, and between the community and the government. Local elite capture and unfair benefit distribution schemes damage social capital and endanger sustainability partly because many people may opt out or become free riders. It also is a constraint to achieving the economic growth and poverty reduction objectives of CBNRM.

Extractive institutions and arrangements. In some cases, attempts to do CBNRM can end up being extractive. Community forestry in Kenya is an example. As Mogoi et al. (2012) point out, local associations “are responsible for diverse management activities in forest protection, monitoring and management, yet access to decision-making, revenue streams and overall resource control rights are vested in the Kenya Forest Service.” They insist that “in order to balance community incentives with the burdens and responsibilities they bear, rights to revenue streams generated from forest resources must be shared with communities to assure continued commitment to the ... process.” Koech et al. (2009) point not only to KFS retaining forest ownership, but also the “right to withdraw the agreement in total or in part.” Even Mbuvi et al (undated), who speak about the benefits of capacity building, networking, etc., acknowledge that implementation is limited and needs improvement. While ostensibly about forest management, the system is essentially extractive. Since the system is generally disadvantageous for communities, it is very difficult for them to achieve even the lowest level of economic benefit.

Imperfect markets. Rural markets sometimes do not work well for the poor. There are issues such as information asymmetries and monopsonies (where one buyer faces many sellers in imperfect competition). Rural producers may not know about prices and the processes along the value chain, which puts them at a disadvantage. Buyers sometimes geographically divide rural markets in order to create monopsonies, where they can “fix” prices to their advantage (Scherr et al. 2002).

POWER – GOVERNANCE CONSTRAINTS

The majority of CBNRM programs seem to take an instrumental view of governance, i.e. the approach interprets governance as a means to achieve economic and environmental outcomes. The fundamental role of CBNRM in empowering local people and promoting local governance is often neglected.

Some of the constraints listed under nature and wealth have strong governance dimensions. For example, the complicated processes and delays in approvals have technical sides to them, but they also have economic costs and affect power relationships.

Conditional “rights” compromise security. Arntzen et al. (2007) points out that “resource rights are often conditional and can be revoked if communities do not adhere to the conditions. Requirements typically include acceptance of a constitution, establishment of a community organization, approval of a resource management plan, and audits of annual financial accounts.” In many cases, transfer of rights and authority is conditioned on a test period, and in general allocated for short periods. In Madagascar, the forest management contracts are initially for three years (renewable for another 10 years) (Hockley and Andriamarivololona, 2007). Cambodia forestry activity presents another example, because the technical administrations do not trust local people and fear that they will over-exploit or otherwise mismanage the resource. However, such short conditional periods – relative to the growth and recovery rates of the resource base (in forestry often measured in decades if not longer) – may not give local people the sense of security that they may need to make investments in the productivity and sustainability of the resource. The idea behind short periods may be a self-fulfilling prophecy – short periods do not provide the communities with incentives for investment, thus justifying the technicians’ view that communities do not care about sustainability.

Little effective rights transfer. Unfortunately, it appears that there is little effective rights transfer to local communities. Community forestry in Kenya, for example, conveys no new rights (but does transfer costs) to communities, and some traditional informal use rights have been formalized, making them less accessible. There is a similar situation in Madagascar (Hockley and Andriamarivololona, 2007; Ribot, 2003; Nelson, 2008). Nelson and Agrawal, (2008) state “the lack of down-wardly accountable decentralization or devolution is increasingly recognized as the principal barrier to CBNRM in Sub-Saharan African” (2008). With regard to land forest tenure for local communities in Madagascar, Hockley and Andriamarivololona (2007) believe it is very limited and suggest a “less measly” approach, including full tenure for communities.

Disconnect between policy and practice. There is often a disconnect between environmental policy and practice. Governments, when they do achieve policy and legislative change, often neglect or delay the enactment of the administrative orders and instruments, which would make the policy shifts effective (Ribot, 2003). In addition, even when all the implementation documentation is finalized and made effective, it is not communicated to operational staff in a comprehensive way. Little training or capacity is built – disempowering the staff to understand, commit, and have the skills to carry it out (Lawry, 2013).

Bureaucracy creation.

Governments often require the establishment of new, complicated, “foreign” bureaucracies that seem more accountable to central technical ministries than to the members of the community.

Communities may be disempowered by these organizations. Dressler et al (2010) state that “CBNRM’s governance design and delivery has often disempowered the very people it was meant to support. In the South African, Malagasy and Philippine cases we see how state and NGO-led CBNRM followed foreign ideas and concepts... With an outside push, local people have



SENEGAL: Community meetings in Dionewar. Photo: USAID/Wula Nafaa

begun to take part in CBNRM governance bureaucracies, which set out overly organized, and neither necessarily legitimate nor long term sustainable, solutions to fluid, politically contested problems. ... adding layers of governance that simply complicate ‘being poor.’” In addition, the transaction costs can be high. Even well intentioned attempts by outsiders to create local organizations can backfire. “The effects of the decentralization measures proposed by community advocates as a mechanism to roll back state power and strengthen communities need to be carefully considered. These measures have the capacity to ... provide various ... opportunities (e.g. through bureaucratic expansion, donor funding, international legitimation) for the intensification of rule.” (Li in Agrawal and Gibson eds., 2001). Or further, in the case of Kenya, “... wildlife policy has long been supportive of private and community rights.... In contrast, administrative actions have worked to progressively centralize and limit landholders’ rights... The common outcome for CBNRM reform efforts in contexts of high resource value and low institutional accountability is that such reforms often occur only on paper, and power to allocate resources continues to be monopolized by central actors ...” (Nelson and Agrawal, 2008).

For Lawry and McLain (2012), two factors “may explain lack of progress in devolving rights despite legislative mandates to do so: (1) conflicts of forest reform laws with existing laws that assign strong residual rights to states, and (2) the failure of agencies responsible for implementation of forest law reform, to realign their missions in support of rights devolution” (Lawry and McLain, 2012).

Attempts to develop local institutions from the outside can lead to the following: 1) a proliferation of organizations – each one required/sponsored by a different line ministry; 2) organizations that are not tools of empowerment, representation, and self-determination – but an extension of command and control; 3) processes which are prescriptive and onerous, and entail high transaction costs; and 4) documentation that reflects a double standard and top-down thinking (Anderson, 2013, presentation at the CBNRM workshop)

Subsidizing the Government. In spite of the progress of conservancies in Namibia, Boudreaux (2007) thinks that additional rights need to be transferred, including the rights of exclusion, to set quotas, manage problem animals, and manage leaseholds. This case is an improvement from the situation in Kenya where forest communities take on a range of costs like monitoring and management-planning, while having no incremental benefit, and higher transaction costs. These groups are in essence subsidizing the government.

OVERCOMING AND ELIMINATING CONSTRAINTS

This section of the report deals with overcoming and eliminating constraints to successful CBNRM. There is a hierarchy in constraints – some are more important than others. After the site visits and the literature review, it appears that the most pressing and important constraints are those that influence structure, or power. Much of the success of CBNRM depends on the rights framework. If it is unfavorable, working on lower order constraints can be futile. If communities have tenure-security they have incentives to build capacity, which can become a good investment. As a rural counselor in Tambacounda, Senegal said, while reflecting on the priorities in the hierarchy of constraints: “We need the power to manage the resources to generate wealth.”

OVERCOMING TECHNICAL CONSTRAINTS – NATURE SOLUTIONS

Low value resources. The low value of resources or their degraded nature can sometimes be overcome through the application of good natural resource management techniques. This has been done in numerous instances from Namibia to Nepal. As resources recover through management, their value increases, and the economic benefit to communities increases as well (all other things being equal). Resources also become more attractive to other powerful claimants.

Role of science and technology. The application of the latest and best S&T is critical for sustainable CBNRM. In many cases, if the incentive framework is appropriate, communities will seek out the best technical solutions to help them increase production and productivity in a sustainable way. This is perhaps the best solution: an active, demand-driven search for technology and techniques. However, with the lack of information in isolated rural areas, sometimes a more proactive supply-driven approach is needed. Often, this can be led by farmers and local CBNRM managers themselves. Sometimes strong intermediary advisory services are needed, as in the case of Namibia.

Administrative processes that are capricious, arbitrary and lack checks and balances. In order to counteract these types of administrative processes, local communities may need to network and mobilize other stakeholders for support. NGOs can be useful in this area. In some cases, the engagement of a public interest law firm can aid in creating a fairer more equal relationship, with less administrative abuse. In Kenya, two community forestry associations have taken the government to court to protest the government’s request for proposals for logging in community forests without letting the community association bid. This type of approach merits support.

Technical and detailed documentation. The development of simplified management plans has been promoted with some success in places like Senegal and Madagascar. If alternatives to plans cannot be developed, plans need at least to be useful to those who manage on a day-to-day basis. A major constraint is getting the technical ministries to accept this approach. Resistance seems based mostly on well-intentioned beliefs about the linkages between sustainability and planning, and/or the possibilities of capturing resources to carry out the various studies and drafting of plans. In order to overcome this obstacle, both these issues need to be addressed.

Double standards. Governments sometimes impose technical requirements on poor communities that they have failed to produce in “managing” the same resources. It would be useful to carry out negotiations with the government on this situation, and obtain a more productive approach to sharing the costs of needed requirements.

Lack of capacity. Lack of capacity is an across-the-board constraint. Communities, technical administrations, and local and national governments all lack technical capacity. The development of capacity obviously cannot replace economic incentives, or empowerment and rights, but it can be a strong boost for sustainable CBNRM, particularly if it is broad-based and helps build confidence and advocacy competencies. There are many best practices and lessons learned in the domain of training and capacity building. Adult education may have something to offer in terms of methodologies.

Inadequate monitoring and evaluation. There have been a number of cases, such as Namibia, where local monitoring has empowered the local communities. For communities, the first attempt to obtain similar rights as private landholders involved the training and use of game-guards. Now, locally mastered techniques, such as the “event book,” give local communities the knowledge of the resource base, where they can negotiate quotas with the government, and have better information than the government. These approaches merit more extensive use.

OVERCOMING ECONOMIC CONSTRAINTS – WEALTH SOLUTIONS

Poverty is defined in many ways. A useful definition derived from the World Bank’s work in interviewing the poor and getting their perspective is that “poverty is the lack of control over factors that influences livelihoods.” This places a governance-spin on poverty. In the section below, the lines between governance and economics are often blurred.

Low value resources. The low value of resources often results from the structure of claims over resources. In Nepal, claims on hillside forests were low and management was transferred. Where competing claims are high, transfer is more difficult. Dealing with rights over resources helps communities get control over higher value resources. However, if communities are assigned control

Service to the Community: Serving as a member/delegate of an Assembly or a Board of Directors of the 48 Cantones of Totonicapán is an obligatory year-long service, to be completed no more than three times in the lifetime of a citizen. This year of service is known as the k'axk'ol in k'iche', meaning “suffering,” implying that it is not an option *nor is it an election*; those given the honor of being selected to serve for a year do not campaign for positions, and do not receive any economic or other benefits by completing their year of service. To the contrary, it usually implies an economic burden (and often other forms of hardship), and for that reason is not taken lightly by those serving nor by the communities served.



These two men are the current Directors of the Junta Directiva de RRNN. Note their ceremonial sticks, the symbol of office. Photo: Tom Catterson

over low-value resource there may be little possibility of transformational economic benefit in the short term.

The broader economic context often ignored. CBNRM programs are sometimes criticized for taking a very narrow and local perspective on resource management. To remedy this, larger sector and portfolio analyses, undertaken with the communities' participation, are needed. There is a need to focus on what structural changes are needed in order to make more than a marginal difference at the local level.

Role of “intangible” cultural/spiritual benefits. It is important from the start to take a broad view of benefits. However, there is also the corresponding danger of “overvaluing” intangible benefits and having them be an “excuse” for not taking the economic and livelihood needs of communities into account. The role of cultural/spiritual benefits needs to be recognized but not overplayed.

Lack of markets and market analysis. If the CBNRM program aims to generate income for communities, then a market analysis is a necessary prerequisite. There are tools, including those developed by the community forestry unit at United Nations Food and Agriculture Organization (FAO) (Undated), which can greatly help with the needed market analysis and market development. Improving market linkages is important, but “better market linkages alone will not address either poverty or inequality” (Anderson et al 2006). In their review, the International Centre for Integrated Mountain Development (ICIMOD) recommends the identification and removal of marketing barriers (2006).

Benefit distribution and elite capture. Elite capture is often difficult to deal with and depends largely on transparency and downwardly accountable community organizations (governance issues). There are techniques to promote this, as in the case of Namibia, where a requirement of conservancy formation is the development of a local benefit distribution plan that can demonstrate it was developed through open consultations between community members – including women and vulnerable groups. With regard to relations between the communities and the private sector, there is often a need for an intermediary – sometimes governmental (Indonesia) and sometimes non-governmental (Namibia). This should clearly be done with a defined exit strategy and safeguards to avoid dependency.

Imperfect markets. The agricultural sector has achieved great progress in making markets work for the poor. The natural resource sector has begun attacking these issues as well. Improving market information-flows is important, and information and communications technologies (ICTs) can play an important role. Promoting competition in rural natural resource markets is also necessary, and can be achieved by helping communities' market products themselves. This is harder than it sounds, since buyers are often organized, and in some cases “middle men” perform critical functions that are hard to replace (Scherr, 2002).

Extractive institutions and arrangements. Proposed institutional arrangements for CBNRM need to be analyzed from the perspective of potential extraction and should not be pursued if the activity is leading to costs exceeding benefits for local communities. Communities may persist over many years in pursuing the community forestry approach in spite of extractive relationships. They do this partly because they hope that things will eventually structurally improve. However, they may also persist because the CBNRM tools that they have developed convey another set of benefits – sometimes relating to a cultural identity in nature (see Mbuvi, undated). They may also convey other tangible benefits when they are applied to a secondary and unplanned set of resources.

Lack of integration of the private sector. While the role of the private sector can be key, IIED (2009) warns that the private sector is a “significant but potentially risky ally” of communities and CBNRM. “The commoditization of resources must be accompanied by strategies to ensure local interests have the skills and tools to ensure sustained harvests and market rates of compensation.” (IIED, 2009). IIED

also stress multi-stakeholder approaches and codes of conduct, for the private sector, that facilitate local rights and sanction inappropriate behavior.

OVERCOMING GOVERNANCE CONSTRAINTS – POWER SOLUTIONS

Minimum standards and cutting red tape. There are more recommendations about “keeping it simple” than actual progress towards this goal. Hockley and Andriamarivololona (2009), reacting to the complexity of procedures in Madagascar, promote a “keep it simple” approach, and say that “for minor forest products, it may be more sensible to dispense with management plans altogether than create complicated rules, which cannot and will not be enforced, and in any case are based on questionable science.” Efforts at simplification and adaptation to local conditions have been made in Senegal, Madagascar, Namibia, and other places.

Connecting policy and practice. In the cases where policy and national level discourse have evolved (including the development of the administrative tools to enact policy changes – a key step) but not made a difference on the ground, the training and capacity-building of the staff of ministries and technical departments can be helpful. Jones (pers. comm) sees this as “not forgetting the bureaucrats” who implement policy, and Lawry (presentation at CBNRM workshop, 2013) might call this making sure that everyone “gets the memo” (and reads it). In general, staff need solid training on policy shifts, so as to be able to implement them uniformly. Connecting policy and practice also means that policy should be developed and inspired, based on research and lessons learned from field programs (ICIMOD, 2006).

Secure “rights” over time. As with land rights, it is commonly believed that time impacts the security of rights. Yearly contracts or short-term leases do not provide sufficient security and negatively affect incentives for investment. In Madagascar, forest rights were initially allocated for five years. It now appears that they may have all expired. This makes it difficult for villages to fight over-exploitation from outsiders. Namibia has addressed this problem by having rights encoded in legislative – and not administrative – decree, which is less secure. Lawry and McLain (2010) state that the potential for administrative cancellation is real. In addition to the type of right, the form and length of that right are important.

Transfer rights. For local control of forests, the situation varies between regions, but there has been no devolution of forest tenure rights in Africa where the government still owns 98 percent of forest land. In Asia, the situation is a bit better – the government controls about 68 percent, while individuals and firms own about 24 percent. The rest is owned by communities, or designated for indigenous peoples. Only in Latin America has a shift occurred in tenure – governments control about 36 percent while communities and indigenous peoples control about 39 percent (Rights and Resources Initiative, 2012). However, pressure needs to be exerted by communities, civil society, donors, and others on governments for effective resource right transfers.

Capacity building. While some question the emphasis on capacity building of local communities and technical services as a distraction from the fundamental need to transfer power (Ribot, 2003), others claim it is needed to overcome Lawry’s “didn’t get the memo” phenomenon, and to strengthen communities to manage resources. Retraining of government and service providers is often essential (Nurse and Malla, 2005). While capacity building is critical it is not a substitute for rights transfer. Often resources are expended over long periods in order to build capacity; and the effort is largely ineffective in the long run, because the policy framework is inadequate. Capacity building, for example, may not have much of an impact on Kenya community forestry since it appears to be structurally flawed. The approach, which implies that capacity-building is always a useful activity, needs to be refined to take the broader context into consideration, and the use of scarce resources. In addition, the kinds and timing of training, and other efforts to strengthen institutions need a critical eye.

Institutional arrangements. To overcome the constraints caused by the creation of disempowering rural bureaucracies instead of effective and efficient administration, a couple of steps can be taken. The links between CBNRM-organizations and local government can be strengthened, and redundancies eliminated or kept to a minimum. Extensive discussions and negotiations may be needed. Institutional analysis of the local situation should be undertaken to avoid a “cookie cutter” approach to institutional development when local organizations may already exist. Without this, resource-specific organizational types may duplicate existing organizational legislation, adding little value. Multi-purpose and flexible organizational types may be preferable to those that are sector-specific and rigid. CBOs should be encouraged to form apex organizations, to have a fuller voice in policy-making, at the higher levels. Local organizations may also require legal advice and obtain counsel for some discussions with the government.

DEALING WITH SPECIAL ISSUES

The assessment validates the view expressed by IIED (2009) that “CBNRM experience offers lessons for future processes of agrarian reforms, as well as providing decentralized models of natural resource use that are of relevance in the context of adaptation to climate change, the fight against desertification and the conservation of biodiversity.”

NATIONAL LEVEL PROCESSES

CBNRM takes place in both a local and a national context. The national context can have dramatic effects on the ability to have success at the field level. In Madagascar, in spite of having the world’s highest level of biodiversity and consequently much donor interest – both economic and governance policies and processes make progress on conservation and CBNRM virtually impossible. Economic policies did not provide incentives for more intensive agriculture, and thus extensive swidden cultivation and rural poverty continue to cause encroachment and exploitation of natural areas. Governance of the environment sector – and in general – is characterized by corruption, lack of transparency, and rent-seeking. Biodiversity conservation and local livelihoods are held hostage to economic policies, which in turn are held hostage to “not good enough” governance (Freudenberger, 2010). Nelson and Agrawal (2009) point out that “Where reforms have taken place there have been stronger public institutions, less corruption and relatively low value to be captured... donors are fairly marginal in process. Focus needs to shift from technical issues of how policies should be designed to the political means of achieving them.” If the policy environment is “not good enough,” CBNRM investments, at the ground level, are not likely to bear fruit. In such a situation, attention needs to be turned, as Nelson and Agrawal (2009) point out, to engaging in the political process to engage a reform process. National level processes are critical to success, and need to be addressed if inadequate. Where there have been successful reforms, they have come most consistently from within, and have been based on favorable conditions. Reform agendas are easier to develop than implement. Nevertheless, there are occasions where reviews of legislation and policy ambiguities, inconsistencies, gaps, and limitations can be useful (ICIMOD, 2006). In some cases, helpful reform is not in the natural resource sector. As Boudreaux (2007) points out, helpful reform can be in other sectors such as contract law, or “doing business” policies – which makes a strong case for more economic sophistication in the Namibia CBNRM program. While outsiders may have little influence over sectoral policy reform, they might be able to assist the sector in “shopping” for other legal frameworks. In some cases, land law, or freedom of association laws, for example, might help compensate for inappropriate sector rules and legislation.

GOVERNANCE

CBNRM can be an important stimulus to more democratic forms of governance (IIED, 2009). Natural capital is critical to the development of most poor rural populations (WB). Therefore, control and access of local resources are key to communities’ ability to improve their well-being. CBNRM can play a

fundamental role as a primary governance “project” at the local level. As Anderson et al. (2006) state, there is a need to “improve the recognition of the fundamental role of natural resources in economic growth of poor countries and poor populations and in the development of democracies and good governance.”

Building good governance from the ground up means dealing with the local level issues of control and access over resources. If building good governance requires both top-down and bottom-up approaches to the central issue on which governance must deliver for rural people – namely, control and access over natural resources – then CBNRM surely has lessons for both. However, the centrality of also working at the ground level means that CBNRM may represent a critical entry point into this arena. Many CBNRM programs have the potential to supplement, complement or sabotage local government.

The great majority of CBNRM programs take an instrumental view of governance – that is, the approach interprets governance as a means to achieve economic and environmental outcomes. In Kenya a technical officer stated clearly that they (the project) “use the communities to manage the forest.” The fundamental role of CBNRM in empowering local people and promoting local governance, as a goal and outcome of CBNRM, is often neglected. Governance needs to be considered not only a means of CBNRM but an objective.

There are a number of cases where CNRM organizations are acting as local government, in whole or in part. In Namibia and Kenya, there is a local level void which the conservancies are filling, even to the extent that they are funding or supplementing the funding of the government. This includes key social services such as water provision, education and health.

CBNRM organizations that act as local government has its risks. Ribot (2003) recommends that it is important to establish democratic local government, before empowering local technical committees. Without first supporting local democratic government, technical or resource-focused committees can take on additional roles, without being appropriately accountable, participatory, and representative. Local government can then find it difficult to establish itself and gain legitimacy.

Democracy and governance programs, which attempt to work at the local level, have a lot to offer the CBNRM sector – and vice versa. It is unlikely that these democracy and governance programs can meet the aspirations of local people without considering the institutional frameworks which determine and organize access and control over resources.

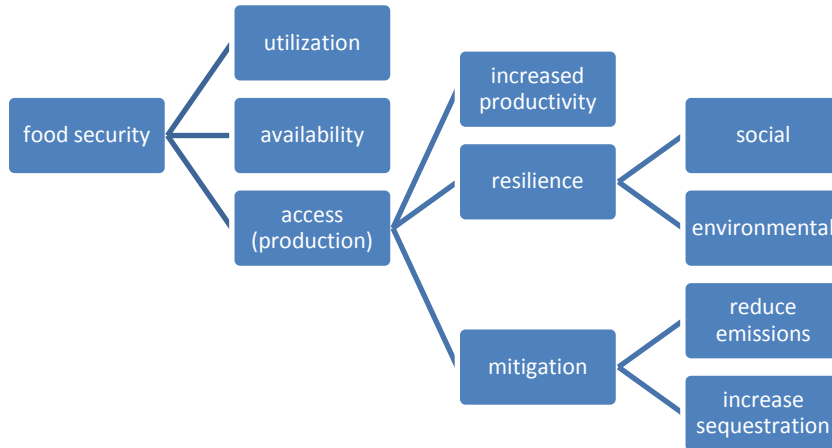
FOOD SECURITY AND CLIMATE SMART AGRICULTURE

“Food needs are projected to increase by 70 percent by 2050 when the global population reaches 9 billion while climate change is projected to reduce global average yields” (WB, undated). At the same time as there is an urgent need to increase food production, there is also a need to deal with climate change: “[T]oday agriculture contributes about 14% of annual greenhouse gas emissions, and forestry another 17%. ... The management of soils and trees to capitalize on their carbon storage potential (and thus reduce carbon in the atmosphere) is the main bonus that agriculture has to offer to the world’s mitigation efforts....” Developing countries are particularly vulnerable, because their economies are closely linked to agriculture. A large proportion of their populations depend directly on agriculture and natural ecosystems, for their livelihoods. (CCAFS, 2009)

Food security is commonly seen to have several dimensions, including utilization (including health care, nutritional status, and water and sanitation), access (including levels of production, prices and markets, purchasing power), and availability (amount of food, location, and timing). The production components of food security are also closely linked to agricultural production. There is increasingly a need to increase production in climate appropriate ways. Climate smart agriculture (CSA) is an emerging approach to this issue, and “seeks to increase sustainable productivity, strengthen farmer’s resilience, and reduce

agriculture’s greenhouse gas emissions and increase carbon sequestration. It strengthens food security and delivers environmental benefits.” (WB, undated)

The graphic below attempts to show, in simplistic form, the relationships between FS and climate CSA.



Food security and CSA have the following key elements: utilization, availability, increased productivity, social resilience, environmental resilience, reduction of emissions, and increased sequestration. CBNRM can – and often does – have positive impacts on each of these elements. There may be many areas and opportunities for win-win synergies between and among the aspects of food security and CSA, but there may also be areas where trade-offs are inevitable (FAO, ND). FAO states that we need to remember that “climate change mitigation will never be the main goal for agriculture” (2013). However, finding the win-win, and win-do-no-harm scenarios will be important. Working on an integrated landscape and ecosystem approach – combining forestry, fisheries, crops, and stock systems – is crucial for responding to the impacts of climate change, contributing to its mitigation and feeding the world’s population. The landscape and ecosystem approach provides a framework for the better management of ecosystem services, such as carbon storage, freshwater cycling, biodiversity protection, etc. (FAO, ND)

Health care, nutritional status, and water and sanitation are important elements of the utilization of food. In some instances, CBNRM programs and groups, such as the conservancies in Namibia and Kenya, have been re-investing revenues from ecotourism into health care and education (NACSO reports). These same programs and others, including water user groups, are investing in water and sanitation programs. Some programs, such as Wula Nafaa in Senegal, are helping to optimize the production of “minor forest products” (Wula Nafaa reports). CBNRM may also promote the diversification of food sources, and thus contribute to resilience. Wild foods can contribute to nutritional status, even in good staple production years. Some wild foods, such as baobab fruits and leaves, have been important parts of the diets of local people for centuries. They are also important sources of key nutrients such as vitamin C. Recent analysis of the nutritional value of some of these resources shows that they can be very high in certain needed nutrients. Many community forestry programs contribute to the availability of fuelwood for cooking, and help sterilize water and food – thus preventing debilitating diseases. All these initiatives can aid in the better utilization of existing food resources for greater food security.

CBNRM programs can contribute to various aspects of food availability, including the amount of food, timing, and location. In Namibia, the consumptive rights over wildlife provided significant animal protein from wildlife-harvesting (Jones, in press). These resources can be available at certain times of the

year when other food sources are not available or are in short supply. In Bangladesh, CBNRM tools and approaches have allowed for increased productivity and production of fisheries, leading to more available protein (Sultana and Thompson, 2003). CBNRM also appears to improve the safety net function. In times of food shortages, communities sometimes fall back upon “wild foods,” which are often collected from forest or shrub lands. CBNRM programs that improve the management of these resources may directly improve situations in times of crop failure or other shocks. Some programs also provide alternative income and food sources, when crops fail or production is lowered. This allows for increased purchasing power and food sources.

In Kenya, some WRUAs and conservancies are increasing the availability of both irrigation and domestic water. Also, in Kenya, the use of the conservancy model has allowed for increased livestock productivity and production – providing both protein and revenue. Indirectly, the increase in domestic water availability impacts food security because it saves time and increases people’s availability for productive activities (especially women, who are often responsible for domestic water supply). In rural areas, time saved is often invested in small-scale gardening. Additionally, increases in income from CBNRM increases a household’s food security. For example it appears that increases in disposable incomes are often invested in food.

CBNRM has emerged as largely complementary to other established land and resource uses in communal areas. CBNRM contributes to rural economic diversification and greater livelihood security through provision of additional livelihood sources, which are less susceptible to droughts than agriculture. The option to increase household dividends during drought years (as done in Zimbabwe) can dramatically increase livelihood and food security. It must be appreciated that CBNRM projects often operate in a harsh arid to semiarid environment and in remote areas with high market costs and few livelihood alternatives. The diversification has, however, been limited, as few communities have developed enterprises (Arntzen et al., 2007).

Some products that were once seen as safety net products have emerged into more extensive economic roles. Quinoa in South America, and fonio and shea in West Africa are examples of this. These crops are moving from the more traditional local market and complementary foods to the international value chain. This can help increase revenues and purchasing power, but needs to be carefully monitored so that local people are not losers in the penetration of the international value-chain to rural areas.

CBNRM has generally improved food security, directly and indirectly. Income may be used to purchase food, and CBNRM projects have provided game meat, vegetables, fruits, and fish. CBNRM activities have the potential of providing food when one’s own agricultural produce is low, thereby ensuring a more stable food supply. (Arntzen et al, 2007)

In order to contribute to food security and resilience, a number of key elements emerge from the literature and field experience. These include the need to promote innovation and learning, knowledge management, the use of science and technology, rural organizations and strategic thinking, markets and how to make them work better, rights and access to resources, nested institutions, and partnerships. These concerns have been at the heart of CBNRM and are among the NWP principles for rural development.

CBNRM often bolsters an array of social resilience activities and programs: mutual self-help groups, platforms for planning and management, the pooling of resources, the creation of partnerships and their diversification, building of capacity, and training and education of youth. CBNRM helps create institutions and organizations that come to agreement on boundaries, sanctions, land use planning, distribution of benefits, and other NRM matters, which can also be useful in building the social resilience. Legally recognized local organizations are also active in a variety of partnerships, which increase social resilience. The West Gate Conservancy in Kenya, for example has a range of partners –

public, private, and civil – which are sources of information, support, and capacity. Participation and adaptive management are needed to respond to climate change and build food security. CBNRM institutions are already built around such principles. For example, conservancies in both Kenya and Namibia invest in the education of children and youth, often by providing scholarships and building facilities. In the mid and longer term, this provides the next generation with more options, including employment, with which to deal with local shocks and stresses.

There are a number of useful techniques for the reduction of emissions and increased sequestration for agriculture and NRM. Many of these are just good agriculture and NRM practice. These include, but are not limited to: managing soils for carbon sequestration, improved rice farming, reducing deforestation, conservation agriculture, eco-farming, no-till farming, mulching, and cover cropping agroforestry mangrove conservation – reducing deforestation and emissions from soils. For example, as a complement to agriculture, community forestry in Nepal has increased the quality and quantity of forests on hillsides. This has improved environmental services such as soil and water conservation at the same time as increasing the availability of forest products. “The very good news is that many mitigation opportunities also enhance adaptive capacity and sustainability of systems, and contribute to development generally” (CCAFS, 2009).

The “Sahelian eco-farm” approach combines market orientation with soil rehabilitation, and can multiply farmers’ net income by a factor of six. The technique includes planting nitrogen-fixing *Acacia* species to rebuild the soil, as well as using other economic perennials in the system. Soil is improved with the addition of organic matter, and erosion is decreased. The uses of external inputs are optimized (CCAFS, 2009). This approach has grown out of many years of NRM and CBNRM work, and varieties of this approach cover thousands of hectares in the Sahel at present.

Environmental resilience and adaptation is supported by many of the interventions listed above. However, there is a need to link livelihoods systems to eco-systems, and analyze the synergies and trade-offs: “a landscape approach deals with large-scale processes in an integrated and multi-disciplinary manner, combining natural resources management with environmental and livelihood considerations” (FAO, 2012). Some CBNRM programs were developed with a broad view of the resources to be managed. CBNRM policies in both Namibia and Zimbabwe include language on “other renewable living resources.” However, in practice, and partly through the impact of donor funding, the target areas were “lands marginally suitable for agriculture” (Jones 2004).

As part of the rural portfolio, CBNRM in most cases is an additional income-source and not a replacement for agriculture, the main source of food (Arntzen et al., 2007). CBNRM is not a panacea. In some isolated, marginal areas certain improvements can be made by applying the principles of solid rural development, but caution is in order – “it is hard to escape the bleak conclusion that there is little chance of significantly improving the livelihoods of most rural people” (Mendelsohn and el Obeid 2003) and “our overall conclusion [is] that there are very few options for significantly reducing poverty in semi-arid regions” Campbell et al. (2002).

In some cases, CBNRM can offer some comparative advantages over traditional agriculture (such as wildlife over livestock in very arid areas). In addition, communities are already using resources such as forests, grazing lands, and fisheries and large gains from these resources may not be likely. Larger gains may be seen from resources where communities have been traditionally alienated – such as wildlife and ecotourism – once they obtain secure access (Arntzen et al, 2007). In addition, most CBNRM activities are not designed with food security as a primary objective.

There are numerous innovations suggested for the climate smart improvement of livestock systems, including participatory breeding, fodder banks, replanting of rangelands, and diversification of dairy products (CCAFS, 2009). The West Gate conservancy practices many improved livestock techniques,

including the reseeded of rangelands and better land use planning, which simultaneously improve climate and economic outputs without endangering wildlife and non-consumptive benefits.

The application of principles from CBNRM to the more traditional areas of agriculture including livestock (Kenya conservancies), fisheries (Bangladesh MACH program) and irrigation (Ostrom, 1997) demonstrate that CBNRM's impact on food security could be increased if applied more systematically to the agriculture sector. The structural similarities between CBNRM and agriculture are significant. The artificial divide between the two, especially when CBNRM is clearly targeting the increased well-being of local people, is unnecessary and unproductive. There is much to be gained from a greater cross-fertilization between CBNRM and agriculture programs. The assumption that CBNRM involves a unique form of common property management has been used to distinguish CBNRM from the rest of the rural sector, especially agriculture. However, many of the “principles” of common property management are useful for agriculture, and have been developed in the agriculture sector (Ostrom's principles).

The traditional agriculture sector is moving towards a greater integration of resilience, climate smart approaches, and food security, which takes a more comprehensive approach. This includes attention to institutions (including rural institutions) and governance, and capacity building (such as literacy and numeracy), policy (such as land and resources rights) is needed. A growing number of CBNRM programs have been expanding to the agriculture sector and having direct impacts on crop, livestock and fish production (the Wula Nafaa project in Senegal, the Conservancies in Namibia and Kenya, the MACH program in Bangladesh) as well as having a host of indirect impacts, through greater disposal incomes, and greater availability of water and time. While the motivations behind this may vary, there is growing evidence that CBNRM has useful lessons for the agricultural sector (and vice versa). Cases of collateral success sometimes involve the more traditional agriculture sectors (Kenya Conservancies). There is a significant potential for cross-fertilization between CBNRM and agriculture programs, such as USAID's flagship agriculture program, Feed the Future. As the issues of climate smart agriculture, resilience, and community-based adaptation come to the forefront of development, the importance of lessons learned and principles from CBNRM grows.

CLIMATE CHANGE, RESILIENCE, AND COMMUNITY BASED ADAPTATION

Climate change is sometimes termed “the development challenge of our time.” Rural areas are not outside of this challenge. Rural areas need to adapt to changes and also contribute to mitigation. Most rural areas have been coping with shocks and stressors for many years. These coping mechanisms will be useful for climate change but may not be sufficient. Local level adaptation and resilience initiatives are already applying some of the lessons learned from CBNRM, which has much to offer broader rural development approaches.

Agrawal (2008) points out that adaptation is essentially local, and that the role of local institutions is especially critical in structuring climate change impacts, mediating responses, and providing a means of delivery and governance. The most striking area of synergy is between CBNRM (and its principles) and local level adaptation and resilience. Although much is being done at higher levels, this section of the report will emphasize the “community-based” and sustainable livelihoods aspects of the links between CBNRM and climate change, in both mitigation and adaptation.

“Carbon can be sequestered (i.e. stored) in plants and soil. Forests, wetlands, grasslands, and agricultural systems store a significant portion of global carbon stocks. Depending on how landscapes are managed, they can either be “sinks” or “sources” of carbon. Thus, sustainable management of landscapes is essential to reducing global atmospheric levels of greenhouse gases. Forests are of particular importance because they provide valuable natural resources for local people, are home to much of the world's biological diversity, and play a key role in carbon

sequestration. Deforestation is both a local problem and a global problem because deforestation releases stored carbon dioxide back into the atmosphere (estimated at 14-20% of annual global greenhouse gas emissions).” (USAID)

CBNRM has an important role to play in building resilience and promoting adaptation, and building sustainable landscapes critical to addressing climate change. To adapt, communities must anticipate and incorporate plans for responding to potential climate change impacts into their economic and political systems. They must also utilize science, technology, innovation, and the best available information to understand – and respond to – unavoidable impacts. In many cases, CBNRM and other rural development initiatives help communities diversify their activities, improve land use planning, build capacity, manage knowledge, and develop extensive networks and partnerships with local, national, and international entities.

Mitigation seeks to reduce the amount of greenhouse gases released through improved land use practices. Reducing the “carbon footprint” of human activity will require smarter land use planning. It will also require conservation of forests and other ecosystems that store large amounts of carbon, such as wetlands and peat lands. If these ecosystems are destroyed, gains from clean energy and greater efficiency will be offset by the loss of these carbon reservoirs and by the release of the carbon they contain. CBNRM clearly aims at building sustainable landscapes, and where successful, protects forests (where this is the focus resource) and increases carbon storage on degraded lands. In fact, the experience of internalizing and capturing the benefits from environmental services within the framework of CBNRM is growing very rapidly.

The role of CBNRM in contributing to climate change adaptation could be significant in a number of areas. It is particularly relevant at the field level, where much adaptation plays out. This domain can be described as the relatively new field of community-based adaptation (CBA). CBA can be defined as “a community-led process, based on communities’ priorities, needs, knowledge and capacities which should empower people to plan for and cope with the impacts of climate change.” (IIED, 2009, Agrawal, 2008) stresses “a focus on different forms of mobility, storage, diversification, communal pooling, and exchange in rural settings as the basic mechanisms through which households address riskiness of livelihoods.” Community responses that incorporate sustainable livelihood and environmental management strategies can build community resilience and adaptive capacity that lessens the vulnerability of the community to future climate change.

Recent work has attempted to draw out the similarities and lessons learned between CBA and CBNRM (Chiskawe et al. 2012). This emerging literature and analysis shows that there is much to be gained from a closer look at CBNRM approaches and principles.

“The lessons learned from CBNRM are a vital and rich resource for emerging payments for ecosystem services (PES) to draw on. For example, initiatives like REDD and voluntary carbon market have much to learn from CBNRM with respect of institutional design that creates effective local incentives for collective action under communal tenure arrangements. PES arrangements are not fundamentally different from CBNRM.” (IIED, 2009)

Some of the key elements of CBA include (Chiskawe et al. 2012):

- Support greater role for institutional partnerships in facilitating adaptation
- Enhance local institutional capacities
- Understand local institutional articulation and access patterns before providing resource support in any development project

- Improve institutional coordination across scales
- Focus on territorial development strategies taking both vulnerabilities and capacities into account
- Adopt an adaptive perspective on institutional development

CBNRM, with its emphasis on rural institutions and organizations, directly addresses these areas.

“Perhaps CBNRM’s most remarkable attribute are the processes and institutions it establishes in order to achieve its results, including the creation of space for the direct and practical involvement of communities; the devolution of power from central government to communities recognized by policy and law; the establishment of mechanisms to ensure the provision of tangible benefits for communities from conservation initiatives; and its capability of replication and diversification to other sectors. Similarly, even in its early stages, the successes of CBA are likely to be hinged on those attributes that enable local communities to be in control of their adaptation, covering various sectors such as agriculture, water, natural resources and others as well as the local institutions that provide the bedding for a variety of adaptation actions.” Chishakwe (2012)

Recent work on the community forestry dimension of CBNRM has started to produce lessons learned for climate resilient local adaption, and for REDD+. In many ways, the integrated approaches stressing community organization and rights as well as economic and technical soundness are influencing local adaptation programs, projects, and policies.

The principles of CBNRM, CBA, Sustainable Livelihoods Approach, and the lessons learned from community forestry – as applied to climate change – converge within the NWP framework fairly well. They continue to inform local level adaptation as the field grows. A summary of the convergence follows:

Nature and resource management. The specific resource management activities undertaken as part of CBNRM are often the same as those recommended and carried out under CBA. Activities such as soil and water conservation, no fish zones, agroforestry, and re-greening activities serve to safeguard and restore the natural resource capital. Generally this makes the combined human and social system more resilient to change. There are a lot of examples of these from the Sahel, as well as Guatemala, Cambodia, and Kenya. All of these programs have clear elements of safeguarding, restoring, and increasing the productivity of the resource base.

The use of information and knowledge management is also a CBNRM lesson that is key to CBA and climate change adaptation in general. “Communities have a wealth of knowledge about the environment and have been adapting and coping with change for years” (IIED, 2009). While this local knowledge is under increasing stress, “it remains an invaluable resource” (IIED, 2009). However, external scientific and technical knowledge is also invaluable, and there needs to be a synthesis of both spheres of knowledge. This kind of knowledge management is also a hallmark of CBNRM and there are many good examples of how to go about this.

“It is now increasingly recognized that, for poor communities, adaptation approaches that are rooted in local knowledge and coping strategies, and in which communities are empowered to take their own decisions, are likely to be far more successful than top-down initiatives.” (IIED, 2009)

Local capacity is a key element of CBNRM, NWP, CBA, and the SLA. It applies across the board and is an important factor in enhancing community response to external shocks. Local capacity can help increase information flow and knowledge management which can be fundamental in helping people adapt.

Wealth and Economics. Local level adaptation strategies stress many of the wealth principles of NWP, critical to CBA, SLA, and CBNRM. A key element is rural organizations, which, among other things, allow for economies of scale in marketing and input acquisition, and can help with mutual self-help and savings programs. Rural organizations are essential for self-reliance, local credit schemes, and the promotion of robust groups and federations. Both also stress a strategic approach to the economic issues surrounding rural development, and support the creation of diversified and alternative income strategies.

CBA and SLA, much like NWP, recognize the importance of incentives. In order for communities to be motivated to embrace CBA initiatives, CBA-associated incentives should be direct and visible. Sustainable household income is an important factor in enhancing community capacity to adapt to vulnerabilities caused by climate change-related factors. Therefore, it is important to enhance and diversify benefit flows to communities. The benefits that communities derive from the sustainable use of resources need to significantly outweigh the transaction, management and opportunity costs of CBNRM (FCMC, 2012).

Power and Governance. As described above, institutions (and institutional arrangements), rights, capacity, an enabling environment, and social capital are elements of approaches that build resilience and help communities adapt.

SLA and CBA efforts confirm the NWP insistence on assuring institutional arrangements are inclusive, and create space for all relevant stakeholders to participate. Stakeholders include elected representatives, community members, NGOs, and the private sector. The institutional architecture in local adaptation projects should not only consist of new project-established structures but should also recognize and include existing traditional institutional structures, for the projects to be effectively implemented. A review of community forestry activities, contribution to adaptation, and REDD+ stresses provide communities a high level of autonomy in adapting or defining their own management institutions, and using their local and traditional knowledge especially local ecological and traditional knowledge regarding natural resource management.

Many analyses, including NWP, stress the importance of rights including land, resource and procedural rights (Lawry and McLain, Ribot, Veit, FCMC). Tradable rights are an important element of resilience to shocks, and coping strategies. Locally there is a need for effective rules and compliance-mechanisms, including graduated sanctions for rule breakers. Scaling up, a necessity to meet climate change challenges needs not only favorable legal frameworks, but also operational, proven CBNRM systems (FCMC, 2013).

Given the scale of climate change impacts, there is a need to build capacity for collective action to solve common problems. The scale of coordination can be quite large, including whole landscapes. The capacity of community members, government, and other partners must be built to support community-level management institutions across the NWP dimensions:

- a) Technical skills (forest management, utilization and planning)
- b) Enterprise development skills (financial management and book-keeping)
- c) Governance capacities (accountability, communications and enforcement of rules governing access and use, conflict management) to increase NRM success

Policy reforms need to be undertaken, especially to provide procedural and tenure rights, and regulate forest access and use for all types of legitimate stakeholders (FCMC, 2013). There is also a need to deal with vested interests that seek to block the implementation of government policies in support of

community empowerment. Reforms also have to facilitate and be the result of rural consultations, and improved rural representation.

Elements of **social capital** such as “relationships of trust” between members of the community, resource user groups, and traditional leadership, and the convergence of social values among project implementers and traditional leadership, can be important factors in promoting communal proprietorship over CBA initiatives and diminishing transaction costs. While not everything that is “traditional” is “good,” under the right circumstances, traditional leadership can play an important role in signifying and symbolizing community ownership over CBA projects.

The West Gate Conservancy in Kenya demonstrates many of the elements of this convergence of analysis on best practice in rural development and local adaptation to climate change. The managers of the conservancy are aware of climate change threats, and raise these issues without stressing the importance of planning and capacity. The recent drought has brought climate change to the forefront of their thinking. Through improved land use planning and greater capacity they have improved range management and areas for ecotourism, and have diversified their incomes and activities. Most striking, however, is their extensive network of partners throughout the world, which provide knowledge, advice, and support. The conservancy has incorporated local traditional knowledge into technical and scientific approaches to land management, in promising ways. Through the conservancy, the communities carry out planning, decision-making, and other governance processes that are inclusive, transparent, and empirically based.

In many ways, CBNRM is already an approach that captures and reinforces what communities need to do to adapt and build resilience. Clearly, climate change is an important but not the only shock that communities and countries have to deal with. CBNRM has a critical body of knowledge and experience from which other rural sectors can draw to increase “the ability of people, households, communities, countries, and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth” (USAID Resilience Strategy). Existing and emerging paradigms and programs dealing with climate change and resilience at the local level must seek out and learn the lessons of CBNRM, and apply the principles which emerged from this experience.

GENDER AND VULNERABLE GROUPS

Women’s empowerment and gender mainstreaming is vital to development for both fundamental and instrumental reasons. Not only is it a question of rights and a good in itself, the empowerment of women and the participation of vulnerable groups makes development more effective, efficient, equitable, and sustainable. Women and men may often use different strategies to improve their economic and physical welfare. Therefore, project activities must be designed and implemented to understand how gender-based differences affect the project impact and effectiveness. Without recognizing and addressing these differences or concerns, development initiatives can be sub-optimal or even have negative outcomes. A gender focus must be incorporated in all phases of the development project cycle, from inception and design to implementation to monitoring and evaluation. By doing so, development can advance efforts and improve gender equity and equality around the world, to deliver positive and sustainable outcomes.

The site visits in Cambodia revealed that women, including widows and the 76 woman-headed households, are actively involved in decision-making. The Deputy Chair of the Community Forestry Management Committee is a woman. The local population at KBal O KraNhak is ethnically homogenous and concerned about equity. RECOFIC is aware of the importance of gender, but has not yet collected data on participation and income. Women are also active members of the Community-Based Ecotourism Project in Chi Phat, which was the second site visit in Cambodia. The CBET committee is run by 11 people, six of whom are women. At the third Cambodia site visit in Peam

Krasop Wildlife Sanctuary, the community leaders were all male but all of the vendors operating near and inside the PKWS were female. For the 14 livelihood activities listed in the PKWS, two involved men only (open sea fishing and mangrove collection for construction), two involved women only (thatch weaving and mangrove extraction for firewood), and the remaining 10 involved both men and women.

Women have also made progress in their economic well-being. Namibian conservancies showed that 33 percent of conservancy management committees' membership, in 2011, were women; there were four female chairpersons, and 33 out of 66 conservancies had women running the day-to-day management of conservancy finances. Of the 665 permanent jobs generated by conservancies, 22 percent were held by women. There are similar impacts in Senegal, where from 2009 to 2011, the number of persons who increased their revenues due to project assistance in fisheries products was 2,790; of these, 2,246 (80.5 percent) are women. The total volumes of product marketed in 2011 was 1,118 tons, for a value of 789.7 million FCFA. That is up from 70.9 million FCFA in 2009.

CBNRM often forces a focus on low value resources or resources where there is no other claimant. This may mean that it often works with the less powerful – especially women and the vulnerable populations. It has had some experience, therefore, with organizing and empowering these groups. There are many other cases of CBNRM leading to women's empowerment and the participation of vulnerable groups from both an economic and political point of view. CBNRM has helped promote gender and ethnic equality, and better the lives of women.

POPULATION GROWTH OR DENSITY

CBNRM has been successful in very divergent demographics. In Namibia – a large country with a small population as well as in Nepal – a small country with a relatively large population. Bangladesh is another example of very high population densities and successful CBNRM. Botswana has low population density but does not have stellar CBNRM experience. Some reviewers see high population pressure as a constraint to management (Banana, 1999). In contrast, there is a growing literature (Mortimore, 1998; Fairhead and Leach 1996) showing that environmental recovery can happen in situations of population growth. That growth might even contribute to recovery, as in Mortimer's "more people, less erosion." Low population densities do not provide much advantage in terms of success, perhaps partly because markets may be smaller in scale, more dispersed, and provide less incentive for investment and management. In contrast, high population densities do not seem to confer great disadvantages, though they are sometimes associated with success.

It appears that population density and growth rates have little impact on success. In general, however, the effects of population are mediated by institutions and organizations whose impact is much greater. Where these are strong and apply good principles of management, such as in Bangladesh or Nepal, the outcomes can be favorable.

IMPACTS ON PERCEIVED VALUE OF THE NATURAL ASSET

Successful CBNRM has, in some cases, increased the production and productivity of resources such as fisheries (i.e. Bangladesh), forests (i.e. Nepal), and wildlife (i.e. Namibia and Kenya). There is also growing evidence that CBNRM approaches applied to activities such as dryland farming also increase production and productivity. Such biological increases are also reflected in increases in total economic value, and may allow communities to increase their revenues over time. In such cases, the perceived value of the resources also improves. What was previously seen as a constraint – predators taking livestock, forests occupying potential agricultural land – has become an asset. However, "to be an asset there must be some form of property rights that connect that resource to a person or a group" (Ratner et al. 2010). Where communities have rights over a resource, the perceived value of that resource improves, and investments take place. Perceived value is somewhat rights dependent.

The perceived increase in value of the resource is not limited to communities. The transfer of rights over a resource is significantly easier, politically; if the value is low and central actors are not losing revenue (Nelson and Agrawal, 2008). As value increases, the interest of other stakeholders increases in kind. This may lead to attempts to diminish rights through mechanisms, such as amending benefit sharing agreements to allow greater elite capture (Botswana, Zimbabwe) or cancelation of leases. Therefore, it is important to solidify rights gains, and make them as robust as possible – avoiding overly discretionary power of technical ministries, and levels of government.

CONTEXT AND CULTURE

Context and culture condition CBNRM success. Context refers to aspects of the broader development environment that is pertinent to successful CBNRM. Context shapes the effectiveness or relevance of different interventions, the feasibility of change, and the positions and perspectives of stakeholders at all levels. Context has four major dimensions: technical (such as the characteristics of the resources base, availability of technologies and innovations), economic (such as the existence and functioning of markets and pricing and distribution policies), governance (such as legal frameworks, distribution of power, institutional strengths and weaknesses, formal and informal rules), and cultural and historical (such as gender, perceptions of resources and equity, historical relationships and trends). The discussion above has dealt in some length with the first three dimensions. The last one seems equally important, as the case studies, particularly Guatemala, and literature show.

Understanding and accommodating culture can be a key component of CBNRM success. However, it is sometimes overlooked, poorly understood, and not systematically taken into account. Recent work by Waylen et al (2010) demonstrates the links between culture and success in conservation, and makes recommendations for moving forward. What follows underlines the cultural aspects of the cases studies.

The example of TSC Municipal Park, in Guatemala shows the importance of cultural dimensions of CBNRM. In the case of the community management of TSC Park, the local communities closely associate the forest with their Mayan cultural identity, the “Mam,” which shows great respect for nature, including the rare Guatemalan Fir which is considered “emblematic of the local culture” (Guatemalan case study). While cultural beliefs reinforce conservation values, they also inhibit the commercialization of nature and natural products. For instance, “the tourism component has a cultural ingredient which does not fit with ancestral traditions ... charging an entrance fee is not culturally acceptable” (Guatemala case study, 2012).

At the Cambodia **Kbal O KraNhak**, community forestry activity exhibits “a good value match between the two support organizations and the local community. Local leadership has been developed and is in the driver’s seat. *Kny* cultural values are central to their interest in protecting and managing the Community Forest” (Cambodia case study, 2013).

Over-Mature, Damaged Pine Trees – common in the forests of Tonicapan. These living trees have had their lateral branches loped for fuelwood many times and the “Ocote” face (extraction of naval stores) is now being hacked with axes to produce firebrands, another sort of fuelwood. Many of these older trees are considered “sacred” and are the sites for repeated Mayan rituals.
Photo: Tom Catterson



Progress has been made, especially in Latin America, and to a lesser extent in Asia, in assuring indigenous rights over traditionally held lands and resources. Much less progress is being made in Africa, where central control is still the overwhelming norm – even if the definitions and use of “indigenous” have a different connotation. There is progress yet to be made, and rights are proving difficult to assert or retain, in the face of powerful interests in places like Madagascar, Guatemala, and Indonesia.

Other elements of the CBNRM context are also important to integrate and understand – including history, leadership, cultural dynamics. For example, in 1990, when Namibia gained independence from an apartheid regime, the government took power based upon the principle of empowering the previously disadvantaged population. The necessary transfers of powers were easier to affect under these conditions. Some literature also deals with the potential fundamental role of local charismatic and dynamic leadership, in success. Finally, it is important to note that culture is dynamic. For example, while cultures that exhibit gender inequality cannot be changed overnight, they can be pushed in the right direction.

SUMMARY OF CONSTRAINTS AND SOLUTIONS FACING CBNRM

Through academic analyses, project evaluations, program monitoring, and other means, the constraints to CBNRM are fairly well known. In some cases, practical solutions are available and can be applied immediately, especially in technical areas. However, as with the difference between policy and practice, many solutions are theoretically known but their application is untested. For these, it appears that more is known about “what to do” than “how to do it.” For more intractable constraints, theoretical indications of solutions are often found. The key is how to apply them. Even though “what” is much easier to define than “how,” many solutions are about processes.

Many of the most important and intractable constraints center on governance, and relate to the transfer of power, tenure rights, control and access, excludability, etc. In general, the key constraints identified by a number of authors and reviewers (Nelson and Agrawal 2008, Ribot 2003, IIED 2009, DAI 2010, FCMC flyer, 2013) concentrate on rights and governance issues. Rights impact the ability to capture benefits. Benefits from discretionary control of wildlife are a critical variable in whether resources will be devolved. “The extent of rent seeking opportunities for central policy makers ... is in general inversely related to the political will to devolve authority ...” (Nelson & Agrawal, 2008). Some constraints and their solutions go well beyond the narrow confines of a community. They deal with government transparency and accountability, level of staff competency, remuneration, value of resources, and frameworks of disincentives to empower local people (Nelson and Agrawal, 2008).

The “what” of solutions corresponds with the sets of principles that have been developed over the years. An extensive list of these principles is found in the introductory section of this report.

The “how” of implementing solutions and reforms is a more difficult question. Building support for changes and reforms is key. Agrawal and Gibson (eds. 2001) “suggest a stronger focus on the divergent interests of multiple actors within communities, the processes through which these interests emerge and through which various actors interact with each other, and the institutions that influence the outcomes of political processes.” Here we will highlight just a few, highlighting those that address how solutions can be applied.

CBNRM needs, in many cases, to develop a broader understanding of the larger political ecology. That is, it often overlooks how resource-management is linked to wider socio-economic and ecological concerns (ICIMOD, 2006). Political ecology looks at the relationships between political, economic, and social factors, with environmental issues and changes. Political ecology differs from apolitical ecological studies by politicizing environmental issues and phenomena. Elements of understanding the larger political context might include a review of legislative ambiguities, inconsistencies, gaps, and limitations.

These elements also require identifying and removing benefit-sharing barriers, developing policy based on research and lessons learned, and developing a flexible policy for local innovation (ICIMOD, 2006). It may also be useful to recognize the range of barriers of management regimes – from traditional to modern, informal to formal (IIED, 2009) – and the different levels types of government and government/donor relationships, and policy dialogues. Nelson and Agrawal (2008) also argue for better understanding of key terms and actors’ incentives in their review of policy reform in Africa.

Parallel to this increased understanding and engagement, is mobilizing stakeholders to work towards reform and better frameworks for CBNRM. Stakeholder networks may need to be created to advocate, lobby, and promote checks and balances, which are critical to gaining a foothold on political ecology. This may include a focus on demand-driven collective management arrangements (IIED, 2009). The legislative review mentioned above should be broad enough to enable the use of existing legal frameworks, if the existing framework for NRM is suboptimal. This might be called “legal framework shopping” and has been tried in a few places, such as Thailand and Tanzania. It might be applicable in Kenya, where pre-existing laws on associations might have advantages over the forest sector legislation (Anderson, 2006).

Capacity building is also necessary to support local communities and civic organizations, by building their capacity for collective action, which builds stronger political constituencies for resource governance reforms. Improved indicators and better monitoring is also needed (IIED, 2009).

For CBNRM’s many bureaucratic obstacles it might be useful to draw from the significant efforts to improve the business and private sector environment in many countries. These efforts have often streamlined bureaucratic procedures, including radically reducing the time and costs for establishing a business. In some cases “one-stop shops” have been created. Given the sometimes daunting red tape for implementing CBNRM, such an approach could have significant benefits.

THE FUTURE OF CBNRM

PREDICTABLE SEQUENCES?

A predictable series or sequence of events which would reliably produce successful CBNRM would certainly aid in improving performance. However, CBNRM has “demonstrated a wide range of development pathways and opportunities tailored to local needs and conditions” (IIED, 2009). The cases analyzed here show a great variety of sequencing and processes. Unique history, site specifics, and the complexity of CBNRM hinder the identification of a generalizable sequence of events. Ribot (2003), in discussing recommendations on democratic decentralization of natural resources, states that “they are not design guidelines... The meaning of power transfers in one place will be completely different than in another, depending on the nature of local authority and the central state.” Starting points and history matter, and each CBNRM program is different, with a different trajectory even if the same principles are applied. Dressler et al. (2010) report that “most cases have shown that reconfigured and standardized program policies and practices leads to interventions that are misaligned with local realities.” The review of successful CBNRM activities reveals that a predictable “repeatable solution” for successful CBNRM is unlikely. Dressler et al. (2010) state “CBNRM is fluid in design, relative in practice, and upheld with degrees of success rather than predesigned, absolute outcomes.”

It’s difficult to predict how actors, particularly local ones, will solve problems and capture unexpected opportunities, especially of such complex systems. The unexpected application and use of tools and institutions in different settings may be fairly common. Kenya’s West Gate Conservancy (livestock) is an example. As a conservation activity, it is having a positive impact, but the fact that tools and organizational forms are being successfully used on livestock greatly increases this activity’s overall success. Local innovation and creativity are hard to predict.

While predicable sequences may be difficult to identify the likelihood of success can be greatly increased by the rigorous application of principles and lessons learned. Many principles have been identified (see Table 1) and structured into frameworks such as NWP. The application of these principles in a consistent and comprehensive manner will improve performance.

The principles identified interact with each other, and strengths in some areas can compensate for weaknesses in others. For example, strong local organizations can sometimes compensate for less than clear tenure regimes. This appears to be the case in Mali, where in the absence of land rights, strong natural resource management organizations are sometimes able to control the access of outside “free riders” – and the ability to exclude users is a key element of a property right. Principles work together and overlap in ways that are hard to predict or codify in universally applicable sequences. No one “condition of success” is sufficient in itself. As IIED (2009) points out, land tenure may even be necessary but in and of itself, not sufficient to assure sustainable development of local resources and people.

It is valuable to identify principles of good CBNRM, and may be equally productive to identify elements that compromise success. The reasons for success are often more difficult to identify than the reasons for failure. Lack of secure tenure greatly increases the likelihood of failure but secure tenure does not guarantee success. IIED (2009) states that some are necessary but not sufficient – only an application of broad range of them can approximate “sufficiency.”

IDENTIFICATION AND USEFULNESS OF KEY PRINCIPLES

The principles of successful CBNRM come from a variety of sources such as common property theory and practice, sustainable rural livelihoods, NWP, and other rural development approaches. All of the sets were identified by analyzing field experience, and distilling key elements. Certain approaches are broader than others, and therefore may be more useful at certain stages and situations than others. There is some consensus that allows for the production of sets of key principles to form a flexible framework. However, attempts to produce a unified set may lead to a loss of richness and limitations given the tremendous variety of experience and situations. NWP reflects general overall lessons learned and best practice, and therefore is a good set to use when analyzing and improving performance. They have been tested and validated in the field.

There is little contradiction among the principles in the literature, indicating a strong consensus on best practice. Apparent differences are more the result of differences in scope, level of specificity, etc. Any attempt to use the principles should be accompanied by an analysis of the specific situation. Selectively choosing and using principles and not looking across the board and systematically at the full range of principles for a given situation will compromise success.

The use of principles can be helpful throughout the project cycle, including design, implementation, monitoring and evaluation, and modification. They can and have been used for program design, for instance the use of NWP in cases like Senegal and Bangladesh (USAID/IRG). Ostrom's design principles for irrigation are obviously useful for design of specific systems. The NWP framework has also been used in evaluation and consultations such as in Madagascar (Raik, 2007).

IMPROVING CBNRM EFFECTIVENESS

The application of good CBNRM principles may be difficult. Understanding the gaps and weaknesses in a system does not mean that they can be easily resolved or overcome. The most difficult, and perhaps most important to apply, are principles related to governance. The literature and field sites show that rights and good governance are often the primary obstacles to better CBNRM (Nelson and Agrawal, 2008; Lawry and McLain, 2010; Veit, 2012; Ribot, 2003). Effective transfer of rights is rare (IIED, 2009). In a review of CBNRM in southern Africa, the "cradle" of CBNRM, Arntzen et. Al. ask "... are these community resource rights sufficiently significant to stimulate community-based resource management and conservation? The preliminary answer appears to be no ...". CBNRM practitioners need to be cognizant of the political, power, and patronage dynamics that exist at all levels (Nelson and Agrawal, 2008).

CBNRM, with its community focus, has sometimes neglected national level processes and the role of the private sector. The participation and involvement of both these actors is often critical to success. They have been successfully addressed in a number of cases (i.e. Namibia, Nepal). The central government is the most important actor in a nation's political economy and sets the ground rules for CBNRM. They must be brought into the picture for even the most local CBNRM initiatives. The private sector (both national and international) is an increasingly important player in development, even in the rural world. There is a need to have approaches that more clearly capture the benefits of private sector involvement while being vigilant about equity and social and environmental standards. Many CBNRM programs, especially those approached from an environmental angle, have measurable positive environmental impacts. However, these impacts will be short term, unless significant progress is made on economic and governance dimensions. As Shaikh puts it: "A forest can be sustained through successful protection. But it is not sustainable unless the underlying forces that tend to degrade it are reversed. And the system as-a-whole is not self-sustaining unless it tends to self-correct the imbalances

that undercut its ability to regenerate itself and to grow in the future.”⁷ This is especially true with CBNRM programs that are initiated and or supported from the outside.

The great majority of CBNRM programs take an instrumental view of governance. That is, they approach governance as a means to achieve economic and environmental outcomes. The fundamental role of CBNRM in empowering local people and promoting local governance is often neglected. Governance needs to be considered not only a means of CBNRM but a goal. The fundamental role of NRM as a primary governance “project” at the local level is often missed.

The most successful CBNRM programs demonstrate integrated “systems thinking” such as considering the triple bottom line of the environment, economic growth, and empowerment in Namibia. This could be of relevance to other rural subsectors, such as agriculture, which has sometimes been characterized by linear commodity chain thinking.

IS CBNRM DESIGNED OR DISCOVERED?

Many CBNRM programs are initiated locally or nationally and have developed organically as opposed to being initiated from the outside. The Guatemala examples noted here show traditional management of forest areas well before colonization. However, in comparison with donor-initiated activities, local historical initiatives can be poorly documented and understood. Lessons from homegrown initiatives are less visible because they are rarely written up and exchanged to a much lesser extent at an international level. The visibility of CBNRM is skewed towards donors. The relative scarcity of documentation on local efforts may make it seem like most cases of CBNRM are designed. The lessons learned from local initiatives may be very important. Many of these systems are under great pressure from globalization and other factors and lessons may be lost. CBNRM may be both designed and discovered. In most cases, externally driven CBNRM is implemented in the context of informal ongoing local management. The interplay between ongoing informal systems and CBNRM programs coming from the outside may be important for success.

TRANSFORMATIONAL POSSIBILITIES?

Relatively few CBNRM programs, on their own, appear transformational at a national level. This is partly because of the nature of the resources traditionally included in CBNRM. A key consideration for broader impact is whether CBNRM can be applied to a broader range of resources and sectors. The review of the relationship between CBNRM and food security, climate smart agriculture, and community-based adaptation demonstrates that the principles of CBNRM may be important to the rural sector in general. This would increase the transformational possibilities of the principles.

A growing number of CBNRM programs have been expanding to the agriculture sector. The case of Senegal where a NRM program was specifically asked to move into more traditional agricultural activities, and Kenya where conservancies are having a significant impact on livestock-dominated livelihoods are two clear examples. CBNRM principles have added value to these activities in part by promoting techniques that are climate smart, promoting resilience and developing local institutions. CBNRM has learned valuable lessons and developed techniques and methods that can be key for certain of the challenges the agricultural sector including climate change, food security and resilience. CBNRM has taken an integrated and systems approach to natural resource management which can be helpful to agriculture and livestock sectors.

CBNRM principles may also contribute to the development and reinforcement of rural governance. “Natural resources are among the prime sites where struggles for defining the contents and meanings of

⁷ Speech at Airlie House in 1998

democracy and citizenship are waged in the developing countries of Asia, Africa, and Latin America” (Kashwan, 2011). In some cases, CBNRM organizations appear to be filling a local government gap and are acting in essence as local governments. They generate revenues that are subject to broad-based decision-making and re-invested not only in resource-related public goods, but also other public goods, such as health, education, security, water, etc. While this may present some risks (Ribot, 2003), it is clearly of benefit to local communities, and there should be careful consideration of these models by those interested in promoting good governance and democracy – not only at the local level, but more broadly.

THE REVEALING EXAMPLES OF COLLATERAL SUCCESS

There are revealing cases of “collateral success” or improvements in livelihoods and the environment that occur in parallel to the main objective of the CBNRM initiative. The success stems generally from communities and groups applying the tools, institutions and/or methods of CBNRM to other resource activities. Since the delegation or transfer of “new” rights over traditional CBNRM resources remains problematic, groups apply CBNRM tools to resources that they do have rights over.

Community forestry in Kenya might appear to be costing local communities more than they gain but they appear to appreciate the institutional tools and methods and may be applying these instruments to grazing, beekeeping and other activities. They may also convey some other benefits in terms of local visibility and decision-making.



At the West Gate Conservancy in Kenya, a member of the technical staff explains the range management and land use planning activities.

Also in Kenya, the West Gate Conservancy, and perhaps conservancies in general, provide a good example of higher levels of collateral success. The conservancy approach is touted as being about wildlife management and sustainable local benefits from wildlife. Glew et al (2010) describe the conservancies as community-based conservation projects linking biodiversity with local livelihoods. However, partly due to limited rights transfer (non-consumptive use only), the benefits from wildlife are important but limited. In the case of West Gate, they represent perhaps 20 percent of total revenue, and are systematically invested into the social sectors. Glew (2010) lists benefits that are typically not financial in nature, including: physical security, access to transport, provision of educational and medical scholarships, and paid employment. Social sectors are an excellent long-term investment but do not have the same short-term returns as other more direct economic investments. However, 80 percent of the household income of the conservancy comes from livestock (West Gate Chairman and staff interviews). Livestock is a resource over which communities and households have direct and secure rights. The conservancy, with the help of some of its partners, especially NRT, are applying CBNRM tools to these resources. They are improving land use planning, carrying out consultations, resolving conflicts, doing range improvements, and increasing productivity and marketing – all principles of CBNRM. Glew et al (2010) say that “the positive socio-economic changes have occurred in the context of ... improvements to habitat condition driven by sustainable grazing management.” These actions have improved their main source of livelihoods in sustainable ways, while protecting and improving wildlife conditions. Simultaneously, through the use of CBNRM principles, livestock production has increased in climate smart ways and has increased resilience. These actions have improved their main

source of livelihoods, in sustainable ways, while protecting and improving wildlife conditions and responding to critical climate and food security issues.

There may also be examples of collateral success in terms of governance. Cases of CBNRM in Namibia (conservancies) and Nepal (forestry) show that CBNRM has potential for impacts on governance and power at many levels. CBNRM helps communities organize themselves locally and regionally, and sometimes have become political movements. These organizations advocate for small rural communities, not only for resource rights, but other domains as well. They provide voice for local people and provide important checks and balances on other actors.

These cases show that the principles of CBNRM can successfully apply to other resources and sectors, in including governance and agriculture, in ways that meet pressing challenges of the day including climate adaptation and mitigation and resilience. Collateral success also shows that rights remain of primordial importance and that local communities can be ingenuous in their use of the tools made available to them. Tracking unintended or unexpected outcomes is an important facet of learning from experience.

KEY FINDINGS OF THE ASSESSMENT:

The following summarizes some of the key findings of the assessment:

- While a predictable sequence of actions for successful CBNRM is difficult to define, there are a number of principles, best practices, and lessons learned that, when applied, greatly increase the chances for success. NWP is a useful framework of principles and needs to be rigorously applied for success.
- CBNRM is often perceived as externally driven. However there are many CBNRM programs that are initiated locally and/or nationally. In comparison with donor-initiated CBNRM, these are poorly documented and capitalized. The visibility of CBNRM is and has been skewed towards donors. Additional research and assessment of local initiatives is needed.
- The rural poor manage a portfolio of natural assets. Donors and governments need to be aware of potentially artificial separation of resources into CBNRM resources and agricultural resources. CBNRM techniques have been successfully applied to “agriculture resources” and this has helped increase food security, climate mitigation, and adaptation.
- The examples of collateral success in CBNRM demonstrate that CBNRM can have significant impact on resources that are not traditionally considered part of CBNRM. This impact seems due to the application of CBNRM organizations and tools to rural resources, where community members have more secure tenure, such as livestock and agriculture. CBNRM organizations and tools include the following mechanisms for coordination: planning, rulemaking and sanctions, economies of scale, partnerships, capacity building, advocacy and marketing. Cross-fertilization and mutual learning between traditional agriculture and traditional CBNRM is needed.
- In some CBNRM initiatives there appears to be a separation between the concepts of community, private sector and the state. This implies that these are separate entities; with different objectives and that they are in competition or conflict. In most cases where CBNRM has had an impact, these three entities have worked together and have played important roles. A better understanding of the interdependence of the three, and the need for mutual interaction could help CBNRM become more effective.
- It is important to consider the broader CBNRM context. History, culture, and national policy – resource, economic and governance – influence CBNRM effectiveness. The cultural context is sometimes overlooked but has been shown to be a key element of success. Gender is critical. History and starting points matter, therefore making each CBNRM program different, with a unique trajectory – even if the same principles are applied. Recognition of varied pathways to success helps in creating flexible frameworks responsive to the context.

- The monitoring and evaluation of CBNRM needs to be strengthened. There is a lack of good data on environmental, economic and governance outcomes. There is also very little comparative data on CBNRM versus other rural development interventions. Monitoring for adaptive management of the CBNRM system also needs improvement. An approach that promotes learning and innovation opportunities, particularly at the local level and front lines is critical in adaptive management of complex socio-ecological systems.
- The future impact of CBNRM may lay in the broader application of the lessons learned to rural development challenges in addition to strengthening traditional CBNRM. In doing so CBNRM may lose its “brand” as it influences agriculture and rural governance. Perhaps a new term can be developed to reflect the application of principles across the rural landscape.

Nature:

- Donors and governments should explore a minimum standards approach to CBNRM. Rural communities need institutional development and support but are often plagued with overly complex and prescriptive planning, and organizational and procedural requirements. Sometimes dysfunctional rural bureaucracies are created by governments and donors disempowering local communities, and cutting economic margins and adding little value to resource management.
- Many CBNRM programs, especially those approached from an environmental angle, have measurable positive environmental impacts. However, these impacts can be short term, unless significant progress is made in the economic and governance dimensions. This may be especially true with CBNRM programs that are initiated and or supported from the outside.
- In most cases, local groups have a significant history of managing a portfolio of resources. CBNRM programs need to analyze and adapt to this situation through an interactive process involving communities and their local knowledge and institutions.
- A growing number of CBNRM programs have been expanding to the agriculture sector, both crops and livestock, and there is growing evidence that CBNRM has some important lessons learned that are of use to the agricultural sector. This may especially be true as agriculture tries to promote resilience and climate adaptation and mitigation. The most successful CBNRM programs seem to demonstrate “integrative systems thinking,” which links and takes into account nature, wealth, and power.
- CBNRM in and of itself can have both direct and indirect impacts on food security. Traditional CBNRM efforts often save rural people time, especially women, or increase their income. This has indirect positive impacts on food security, as time and money are often re-invested in food production. In some cases – those dealing with food sources, like fish and wildlife protein, experience more direct impacts.
- CBNRM’s main impact on food security, however, may be the principles and lessons learned that need to be integrated into agriculture, in particular to respond to climate change and resilience concerns. The emerging field of climate smart agriculture already integrates some of the techniques that have long been part of CBNRM, such as soil and water conservation, management, agroforestry, and conservation farming. CSA could benefit from other CBNRM lessons learned, and principles in the wealth and power domains – including portfolio management and empowering institutions.
- Given the challenges of climate change, there is also a need to develop adaptive capacity at the local level, since the natural resource-dependent poor are likely to be the most affected. Community-based adaptation has many potential lessons to be learned from CBNRM.
- CBNRM’s emphasis on rights, consensus building, organization, capacity building, planning, partnerships, and diversification makes it extremely relevant to resilience concerns. CBNRM shown that it can potentially increase resilience and allow communities to adapt to – and recover

from – shocks and stress, and to build a platform for inclusive growth. These characteristics can be usefully deployed in other areas to increase adaptation to climate change, and other shocks.

Wealth:

- The ability of CBNRM programs to have significant impacts on the economic growth of rural communities depends to a large extent on the value of the resource base, the distribution of rights over those resources, and the functioning of markets. In many cases these are not aligned in the favor of local communities.
- A lot has been made of benefit distribution schemes, and elite capture at the local level. Elite capture occurs at all levels, and at the local level the stakes are rarely as great as at the regional or national level. Successful efforts in dealing with elite capture depend on promoting transparency and accountability, rather than being prescriptive about benefit sharing schemes.
- Donors and governments need to be vigilant about possibly extractive CBNRM programs. In some cases, increased local transaction costs and opportunity costs outweigh any incremental benefit. In these cases, local communities are subsidizing the government, and resources and wealth are being extracted from communities. These programs need to be redesigned and/or renegotiated to promote the development of communities and the sustainable management of natural resources.
- CBNRM programs need to systematically analyze both transaction costs and opportunity costs (and avoid assuming that these do not exist or are not important), in order to understand the incentives and viability of CBNRM programs. The costs are overlooked in some cases.
- CBNRM has sometimes neglected the role of the private sector (local, national, and international) as an increasingly important player in the rural world. There is a need to explore equitable partnerships with the private sector.

Power:

- Governance and rights over resources are key to success. Without real rights (ownership, security, comprehensiveness) over real resources (resources of value) CBNRM's impacts will be questionable. Monitoring of this principle should guide the development and implementation of CBNRM programs. The lack of progress on devolving real rights over real resources may be the greatest obstacle to CBNRM success. Resources of value often have other claimants. The decision to prioritize local claims and facilitate development of local communities is a question of choice, equity and politics – not of economics or sustainability.
- A large number of CBNRM programs take an instrumental view of governance, viewing governance as a means to achieve economic and/or environmental outcomes. The fundamental role of CBNRM in empowering local people and promoting local governance needs to be highlighted. Governance needs to be considered not only a means of CBNRM, but also a goal. CBNRM's focus on access to resources coincides with local people's central governance concerns.
- CBNRM often appears to be filling an institutional or governance gap at the local level. In addition to providing a forum in which to discuss substantive governance issues like the management of natural resources, these programs are sometimes investing in sectors such as health and education that are normally provided by government. This investment needs to be in addition to the government's investments and not a substitute. In addition, local, resource-specific organizations are not a substitute for democratic local government. The coordination of CBNRM activities with local government in a mutually reinforcing way promotes accountability, transparency, and sustainability.

- Donors and governments need to analyze the rights (property and procedural) impacts of every CBNRM program. If the rights framework does not empower local communities, and allows increased benefit and incentives, the program will likely be unsuccessful, and may be a waste of scarce resources.
- Devolution of partial rights over unclaimed resources, or resources of low value, immediately puts local communities at a potentially enduring disadvantage. In cases where over time, local stewardship has increased the value over a resource, the question of rights and claims can resurface, along with the issue of benefit-sharing between the government and the community.
- CBNRM has shown that it can be locally important for the promotion of gender equality and empowerment of women. CBNRM needs to be developed and implemented in this light. CBNRM's emphasis on institutional building provides opportunities for greater gender integration. Additionally, the resources that CBNRM traditionally cover are often of considerable importance to women (partly because they have few other claimants). Increasing the effectiveness of their management can help to empower women economically.

CONCLUSIONS

CBNRM has had some success and, as traditionally practiced, can be made to be more effective and efficient by attention to best practices and principles learned through hard-won experience. The majority of these principles are fairly well known – even if one cannot identify a fixed comprehensive set, and a standard way of applying them. Application of good principles can make more projects transformational, and more programs significant. They are outlined, to a large extent, in NWP.

Application of the principles is often difficult. There are vested interests which often oppose key ideas such as local empowerment and the transfer of rights, or feel that their economic interests are threatened, or that they would like a greater share of benefits.

The examples of collateral success and emerging issues show that CBNRM has much to offer outside of narrow confines of its own definition. The principles derived from it can contribute to an array of rural issues. The critical threats of food shortages, insecurity, and climate change underline the urgency of improving agriculture and natural resources management. The principles, and the mechanisms, institutions and tools, of CBNRM, can improve the performance of other rural sectors and will be key to climate smart agriculture, community-based adaptation, and rural resilience. The potential for increased transformational impact from CBNRM will come if and when CBNRM principles are applied to other sectors and rural interventions. CBNRM can, for example, be key to the crop and livestock sectors as they try to integrate more fully resilience, climate change, climate smart approaches, and food security concerns.

The application of these principles to other activities may mean that CBNRM loses its identity or brand in the process. However, perhaps the greatest legacy for CBNRM would be to have the principles that have emerged be applied more broadly to rural development to help meet the urgent and complex challenges facing the world today.

BIBLIOGRAPHY

Agarwal, Arun, and Clark C. Gibson, eds. *Communities and the Environment: Ethnicity, Gender, and the State in Community-Based Conservation*. Rutgers University Press, Piscataway, New Jersey. 2001

Agrawal, Arun, *The Role of Local Institutions in Adaptation to Climate Change, Social Dimensions of Climate Change*, The Social Development Department, The World Bank Group

Alix-Garcia, Jennifer M.; Shapiro, Elizabeth N.; Sims, Katharine R.E. *Impacts of Payments for Ecosystem Services on Deforestation in Mexico: Preliminary Lessons for REDD*. University of Wisconsin-Madison. 2010.

Allison, Edward H.; Ratner, Blake D.; Asgard, Bjorn; Willmann, Rolf; Pomeroy, Robert; Kurien, John, *Rights-based fisheries governance: from fishing rights to human rights*. Blackwell Publishing Ltd. 2012.

Anderson, J.; Bryceson, D.; Campbell, B.; Chitundu, D.; Clarke, J.; Drinkwater, M.; Fakir, S.; Frost, P.G.H.; Gambiza, J.; Grundy, I.; Hagmann, J.; Jones, B.; Jones, G. W.; Kowero, G.; Luckert, M.; Mortimore, M.; Phiri, Aaron D. K.; Potgieter, P.; Shackleton, S.; Williams, T. *Chance, Change and Choice In Africa's Drylands*. USAID. 2004.

Anderson, J.; Benjamin, C.; Campbell, B. and Tiveau D. *Forests, poverty and equity in Africa: new perspectives on policy and practice*. International Forestry Review. 2006

Arntzen, Jaap; Setlhogile, Tshepo; Barnes, Jon. *Rural Livelihoods, poverty reduction and food security in southern Africa: is CBNRM the answer?* USAID. Washington, D.C. 2007.

Bampton, James F.R.; Ebregt, Arthur; Banjade, Mani Ram. Collaborative Forest Management in Nepal's Terai: Policy, Practice and Contestation. *Journal of Forest and Livelihood*. Livelihoods and Forestry Programme/DFID, Nepal Biodiversity Sector Programme for the Siwaliks & Terai (SNV) Forest Action Nepal ForestAction. Nepal. 2007.

Banana, A.Y. & Gombya-Ssembajjwe, W.S. Successful forest management: the importance of security of tenure and rule enforcement in Uganda. In: Gibson et al. (Eds.), *People and forest communities, institutions and the governance of forests*. MIT Press, Cambridge. 1999.

Barrett, Christopher B.; Gibson, Clark C.; Hoffman, Barak; Mccubbins, Mathew D. The Complex Links between Governance and Biodiversity. *Conservation Biology*. 2006.

Barrett, Christopher; Brandon, Katrina; Gibson, Clark; Guertsen, Heidi. Conserving Tropical Biodiversity amid Weak Institutions. *BioScience*. 2001.

Barrett, Christopher; Travis, Alexander; Dasgupta, Partha. On biodiversity and poverty traps. *National Academy of Science*, 2011.

Baur, Erick H.; McNab, Roan B.; Ramos, Victor Hugo; Strindberg, Samantha; Williams, Lovett E. *Community-Based Ocellated Turkey (Meleagris ocellata) Sport Hunting in the Petén, Guatemala*. USAID TransLinks. 2008.

Baur, Erick H.; McNab, Roan B.; Williams, Lovett E. Jr.; Ramos, Victor H.; Radachowsky, Jeremy; Guariguata, Manuel R. Multiple forest use through commercial sport hunting: Lessons from a community-based model from the Petén, Guatemala. *Forest Ecology and Management* 268 (2102) 112-120. 2012.

- Berkes, Fikret. Rethinking Community-based Conservation. *Conservation Biology*. Natural Resources Institute. 2004.
- Blaikie, Piers. Is Small Really Beautiful? *World Development*, Elsevier. 2000.
- Blomley, Tom; Tola, Prom; Kosal, Mam; Dyna, Eam; Dubois, Mark. *Review of Community Forestry and Community Fisheries in Cambodia: Report prepared for the Natural Resource Management and Livelihoods Programme*. Multi-Donor Livelihoods Facility (MDLF) 2010.
- Boudreaux, Karol. *Community-Based Natural Resource Management in Namibia: A Case Study*. Mercatus Center at George Mason University. 2007.
- Brechin, S.R; Wilshusen, P.R.; Fortwangler, C.L.; and West, P.C. (eds). *Contested Nature: Promoting International biodiversity Conservation with Social Justice in the Twenty-First Century*. SUNY Press. Albany, NY. 2003
- Brooks, Jeremy; Waylen, Kerry; Mulder, Monique. *How national context, project design, and local community characteristics influence success in community-based conservation projects*. Proceedings of the National Academy of Sciences. 2012.
- Burgess, Sarah; Heng, Sokh; Sloth, Arvid. *A Decade in Forest Management and Planning in Cambodia: A Synthesis of Forestry Reviews and Supportive Studies*. Forest & Landscape Denmark. 2007.
- CARE and IISD, *Community-Based Adaptation Toolkit, Digital Toolkit – Version 1.0 – July 2010*
- CARE, *Framework of Milestones and Indicators for Community-Based Adaptation*, undated
- Carlssona, Lars; Berkes, Fikret. Co-management: concepts and methodological implications. *Journal of Environmental Management*, Elsevier. 2000.
- Carter, Jane; Pokharel, Bharat Bharat; Parajuli, Rudriksha Rai. *Two decades of community forestry in Nepal: What have learned?* Nepal Swiss Community Forestry Project. 2011.
- CCAFS/CGIAR, *Climate, agriculture and food security: a strategy for change*, 2009
- Child, B. *Parks in Transition. Biodiversity, Development and the Bottom Line*. Earthscan. 2004.
- Chishakwe, N., L. Murray and M. Chambwera; *Building Climate Change Adaptation of Community Experiences: Lessons from community-based natural resource management in southern Africa*, IIED, 2012
- Clements, Tom; John, Ashish; Nielsen, Karen; An, Dara; Tan, Seta; Milner-Gulland, E.J. Payments for Biodiversity Conservation in the Context of Weak Institutions: Comparison of Three Programs from Cambodia. *Ecological Economics*, Wildlife Conservation Society. 2009.
- Cocks, Michelle; Dold, Anthony; Grundy, Isla. Challenges Facing a Community Structure to Implement CBNRM in the Eastern Cape, South Africa. *African Studies Quarterly*, University of Florida. 2001.
- Colfer, Carol J. and Capistrano, Doris. *The Politics of Decentralization: Forests, People and Power*. Earthscan Forestry Library. Earthscan. 2005
- Cox, Michael; Arnold, Gwen; Villamayor Tomás, Sergio. A Review of Design Principles for Community-based Natural Resource Management. *Ecology and Society*. 2010.
- DSI. *Review and synthesis of lessons learned concerning optimum forms of community management structures for multiple resource management in Zambia and southern and eastern Africa*. Ministry of Tourism, Environment and Natural Resources Zambia/UNDP. 2008.

- De Gryze, Steven; Durschinger, Leslie; Koontz, Ann; Pandey, Shiva; Subedi, Bhishma. *Payment for Ecosystem Services: Developing Forest Carbon Projects in Nepal*. USAID TransLinks. 2009
- Dressler, W., B. Busher, M. Schoon, D. Brockington, T Hayes, C. Kull, J. McCarthy and K. Stresha, 2010, From Hope to Crisis and Back Again? A Critical History of the Global CBNRM Narrative, Environmental Conservation. 2010
- FAO, *Climate Smart Agriculture Managing Ecosystems for Sustainable Livelihoods*, undated
- FAO, *Climate-smart Agriculture*, PowerPoint, 2013
- Fabricius, Christo; Folke, Carl; Cundill, Georgina; Schultz, Lisen. Powerless Spectators, Coping Actors, and Adaptive Co-managers: a synthesis of the role of communities in Ecosystem Management. *Ecology and Society* 12 (1):29. 2007.
- Fairhead, James and Leach, Melissa. *Misreading the African Landscape: Society and Ecology in a Forest-Savanna Mosaic (African Studies)*. Cambridge University Press. 1996.
- Ferraro, Paul; Hanauer, Merlin; Sims, Katherine. *Conditions associated with protected area success in conservation and poverty reduction*. National Academy of Science. 2011.
- Fisher, Robert; Prabhu, Ravi; McDougal, Cynthia. *Adaptive Collaborative Management of Community Forests in Asia Experiences from Nepal, Indonesia and the Philippines*. Center for International Forestry Research. 2007.
- Forest Trends; The Katoomba Group. *Payments for Ecosystem Services: Getting Started in Marine and Coastal Ecosystems - A Primer*. 2010.
- Franks, Phil. *Promoting Equity in the Management of Protected Areas: New evidence of the need for action*. CARE. 2008.
- Freudenberger, Karen. *Paradise Lost?: Lessons from 25 years of USAID Environment Programs in Madagascar (Final Report)*. USAID. 2010.
- Giri, Kalpana; Ojha, Hemant R. How does techno-bureaucracy impede livelihood innovations in Community Forestry? ForestAction. 2011.
- Glew, Louise; Hudson, Malcolm D.; Osborne, Patrick E. *Evaluating the effectiveness of community-based conservation in northern Kenya: A report to The Nature Conservancy*. University of Southampton, School of Civil Engineering and the Environment/the Nature Conservancy. 2010.
- Glew, Louise; Hudson, Malcolm; Osborne, Patrick. *Evaluating the effectiveness of community-based conservation in northern Kenya*. University of Southampton. 2010.
- Hockley, Neal; Andriamarivololona, Mijaso M. *The economics of community forest management in Madagascar: Is there a free lunch?* USAID. 2007.
- Holmes, Christopher; Ingram, Jane Carter; Meyers, David; Crowley, Helen; Victorine, Ray. *Forest Carbon Financing for Biodiversity Conservation, Climate Change Mitigation and Improved Livelihoods: the Makira Forest Protected Area, Madagascar*. WCS Madagascar WCS Living Landscapes Madagascar Bamboo WCS Conservation Finance. 2008.
- ICIMOD, *Capitalisation and Sharing of Experiences on the Interaction between Forest Policies and Land Use Patterns in Asia, Linking People to resources*, ICIMOD, 2006
- IIED, Community-based adaptation to climate change, Participatory Learning and Action 60, December 2009

IFAD, *IFAD's response to climate change through support to adaptation and related actions. Comprehensive report: Final version*; undated

Ingram, J. Carter; Stevens, Todd; Clements, Tom; Hatchwell, Matthew; Krueger, Linda; Victurine, Ray; Holmes, Christopher; Wilkie, David. *WCS REDD Project Development Guide*. 2009.

IRG; USAID. *Peru Climate Change Vulnerability and Adaptation Desktop Study*. USAID. 2011.

Islam, Gazi M Nurul ; Dickson, Malcolm. *Turning Social Capital into Natural Capital: Changing livelihoods of fishers through CBFM*. Conference Paper. 2000.

Iversen, Vegard; Chhetry, Birka; Francis, Paul; Gurung, Madhu; Kafle, Ghanendra; Pain, Adam; Seeley, Janet. *High value forests, hidden economies and elite capture: Evidence from forest user groups in Nepal's Terai*. Natural and Organizational Resources Management Services (NORMS). 2005.

Jammeh, L. *Participatory Forestry in the Gambia*. Paper presented at the 12th Biennial Conference of the International Association for the Study of Commons, University of Gloucester, England, July 14-18. 2008.

Jones, Brian TB; CBNRM, *poverty reduction and sustainable livelihoods: Developing criteria for evaluating the contribution of CBNRM to poverty reduction and alleviation in southern Africa*, Center for applied Social Sciences and Programme for Land and Agrarian Studies, Cape Town, 2004

Kashwan, P. (2011). Kashwan, P. (2011). *Democracy in the Woods: The Politics of Institutional Change in India's Forest Areas*. Extended abstract of the doctoral dissertation. Indiana University, Bloomington.

Koech, C.K.; P.O. Ongugo; M.T.E. Mbuvi; and J. O. Maua. *Community Forest Association in Kenya: challenges and opportunities*. Kenya Forestry Research Institute. 2009

Koontz, Ann; Dupuis, Steven; Treves, Adrian; Jones, Stephanie Michelle; Crowley, Helen. *Conservation Certification and Product Branding - The Case of Wildlife Friendly Certification*. Relief International-EnterpriseWorks/Vita The DuPuis Group University of Wisconsin-Madison/Land Tenure Center Wildlife Conservation Society. 2010.

Lawry, Steven and McLain, Rebecca. *Devolution of Forest Rights and Sustainable Forest Management: Learning from Two Decades of Implementation*. Development Alternatives, Inc. Presentation for Annual World Bank Conference on Land and Poverty. 2012

Malla, Y.; Nurse, M. *Advances in Community Forestry in Asia*. Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC). Bangkok, Thailand. February 2005.

Mazambani, D.; Dembetembe, P. *Community Based Natural Resource Management Stocktaking Assessment: Zimbabwe Profile*. USAID. 2010.

Mbuvi, M.T.E; Kagombe, J.K.; and Ongugo, P.O. *Emerging Social and Democratic Institutions: Experience from Community Forestry Associations in Kenya*. Kenya Forestry Research Institute. (undated).

Mitchell, Dominic; Coelho, Luci; Baumgart, Johannes; Snel, Herman; Grimm, Josef. *Lessons learnt from Implementing CBNRM projects in South Africa*. GTZ and the Department of Environmental Affairs and Tourism, Republic of South Africa. 2008.

Mock, Greg; Corcoran, Joseph; Hughes, Oliver. *The Power of Local Action: Lessons from 10 years of the Equator Prize*. UNDP. 2012.

- Mogoi, Jephine; Emily Obonyo; Paul Ongugo; Vincent Oeba; and Ester Mwangi, *Communities, Property Rights and Forest Decentralisation in Kenya: Early Lessons from Participatory Forest Management*. Conservation and Society 10(2): 182-194. 2012.
- Mortimor, Michael. *Roots in the African Dust: Sustaining the Sub-Saharan Drylands*. Cambridge University Press. 1998.
- Mosse, David. *Cultivating Development: An Ethnography of Aid Policy and Practice*. London and Ann Arbor, MI: Pluto Press, 2005.
- Mukamuri, B.B.; Manjengwa, J.M.; Anstey, A. (editors). *Beyond Proprietorship. Murphree's Laws on Community-Based Natural Resource Management in Southern Africa*. Weaver Press. 2009
- NACSO. 2011. *Namibia's communal conservancies: a review of progress*. NACSO, Windhoek, Namibia. 2010
- Nations, James D.; Burwell, Bruce B.; Burniske, Gary R. *We did this ourselves – a case study of INAFOR/CARE/Peace Corps soil conservation and forest management program*, Republic of Guatemala. 1987.
- Naughton-Treves, Lisa; Day, Cathy. *Lessons on Land Tenure, Forest Governance and REDD+*. USAID TransLinks. 2012.
- Nkhata, BA ; Breen CM ; Abacar, A. Social capital, community based governance and resilience in an African artisanal river fishery. *Water SA Vol. 35 No 1*. 2009.
- Nelson, F. *An analysis of international law, national legislation, judgments, and institutions as they interrelate with territories and areas conserved by indigenous peoples and local communities. Report No. 2. Africa Regional*. Natural Justice in Bangalore and Kalpavriksh in Pune and Delhi. 2012.
- Nelson, Fred. *Developing Alternative Frameworks for Community-based Conservation: Piloting Payments for Environmental Services (PES) in Tanzania's Simanjiro Plains*. WCS/TransLinks project, 2008 Maliasili Initiative. 2008.
- Nelson, Fred; Agrawal, Arun. Patronage or Participation? Community-based Natural Resource Management Reform in Sub-Saharan Africa. *Development and Change 39(4):557-585*, Blackwell Publishing, 2008.
- Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. New York: Cambridge University Press.
- Ostrom, Elinor; Benjamin, Paul. 1993. *Design Principles and the Performance of Farmer-Managed Irrigation Systems in Nepal*. In Performance Measurement in Farmer-Managed Irrigation Systems ed. Manor, Shaul; Chambouleyron, Jorge. Colombo, Sri Lanka: IIMI.
- Paudel, Naya S.; Jana, Sudeep; Rai, Jailab. *Protected areas and rights movements: The inadequacies of Nepal's participatory conservation*. ForestAction. 2010.
- Poteete, A.R. Defining Political Community and Rights to Natural Resources in Botswana. *Development and Change*, Institute of Social Studies, the Hague. 2009.
- Pravat, Satyal. *Country Profile Report: Forestry Sector in Nepal*. Forests Monitor, Cambridge (UK). 2004.
- Quazi, Shimona A.; Bushley, Bryan R.; Miles, Wendy B. Introduction: Participation and the collaborative management of protected areas in Bangladesh. Honolulu: East-West Center; Dhaka: Nishorgo Support Project, Bangladesh Forest Department. 2008.

- Ra, K.; Pichdara, L.; Dararath, Y.; Jiao, X; Smith-Hall, C. *Towards understanding household-level forest reliance in Cambodia – study sites, methods, and preliminary findings*. University of Copenhagen. 2011.
- Radachowsky, Jeremy; Ramos, Victor; McNab, Roan; Baur, Erick H.; Kazakov, Nikolay. Forest concessions in the Maya Biosphere Reserve, Guatemala: A decade later. *Forest Ecology and Management*, Elsevier. 2012.
- Raik, Daniela. Forest Management in Madagascar: An Historical Overview. *Madagascar Conservation & Development*. 2007.
- Raik, Daniela; Decker, Daniel. A Multi-sector Framework for Assessing Community-Based Forest Management: Lessons from Madagascar. *Ecology and Society* 12(1): 14, Resilience Alliance. 2007
- Ratner, Blake D. Community Management by Decree? Lessons From Cambodia's Fisheries Reform. *Society and Natural Resources*, Taylor & Francis Group. 2006.
- Reed, David. *Economic Change Governance and Natural Resource Wealth: The Political Economy of Change in Southern Africa*. Routledge. 2001
- Reed, David. *Escaping Poverty's Grasp: The Environmental Foundations of Poverty Reduction*. Earthscan Publications Ltd. 2006
- Ribot, Jesse C. Democratic Decentralization of Natural Resources: Institutional Choice and Discretionary Power Transfers in Sub-Saharan Africa. *Public Administration and Development*, John Wiley & Sons. 2003.
- Ribot, Jesse C., and Anne M. Larson, eds. *Democratic Decentralisation through a Natural Resources Lens*. London: Routledge. 2005.
- Rights and Resources. *Rights and Resources Initiative Cambodia*. 2012.
- Rihoy, Elizabeth; Chirozva, Chaka; Anstey, Simon. 'People are not Happy' - speaking up for Adaptive Natural Resource Governance in Mahenye. University of the Western Cape. 2007.
- Robbins, Paul. *Political Ecology: A Critical Introduction*. Wiley-Blackwell. 2004.
- Roe, D.; Nelson, F.; Sandbrook, C. *Community management of natural resources in Africa: Impacts, experiences and future directions*. Natural Resource Issues No. 18. International Institute for Environment and Development (IIE). London. 2009.
- Scherr, Sara; White, Andy, D, Kaimowitz, Making Marktes Work for Forest Communities, Policy Brief, Forest Trends, 2002
- Shackelton, C.M., T.J. Willis, K. Brown and N.V.C. Polunin, Reflecting on the next generation of models for community-based natural resource management, Editorial, *Environmental Conservation* 37 (1): 1-4 2010
- Shackleton, Sheona; Campbell, Bruce; Wollenberg, Eva and Edmunds, David. *Devolution and Community-Based Natural Resource Management: Creating Space for Local People to Participate and Benefit?* ODI Natural Resource Perspectives. Programme for Land and Agrarian Studies (PLAAS). 2002
- Singh, B.K.; Chapagain, D.P. Trends in forest ownership, forest resources tenure and institutional arrangements: are they contributing to better forest management and poverty reduction? Community and leasehold forestry for the poor: Nepal case study. *Understanding Forest Tenure in South and Southeast Asia*, Food and Agriculture Organization. Undated.

- Sokhun, H.E. Ty; Ratanakoma, Long; Bradley, Amanda; Durschinger, Leslie. *Community Forestry REDD Project Oddar Meanchey Cambodia*. PACT. 2009.
- Sultana, P., and Thompson, P.M. *Methods of Consensus Building for Community Based Fisheries Management in Bangladesh and the Mekong Delta*. CAPRI Working Paper 30, CGIAR Systemwide Program on Collective Action and Property Rights, International Food Policy Research Institute, Washington. 2003
- Tschinkel, Henry. *What really works in watershed management? Some lessons learned for Guatemala*. USAID. 2001.
- Turner, S. 2004, A crisis in CBNRM? Affirming the commons in southern Africa, paper to be presented at the 10th IASCP Conference, Oaxaca
- Uphoff, Norman T.; Esman, Milton J.; and Krishna, Anirudh. *Reasons for Success: Learning from Instructive Experiences in Rural Development*. Kumarian Press Books on International Development. Kumarian Press. 1998
- USAID Guatemala. *48 Cantones de Totonicapan*. USAID. 2011.
- USAID, *Lessons Learned from Community Forestry and their Relevance for REDD+, Forest Carbon Markets and Communities*, 2013
- USAID. *Nature, Wealth and Power: Emerging Best Practice for Revitalizing Rural Africa*. International Resources Group, 2002
- W.de Jong B.Pokorny, C.Cornejo, P.Pacheco, D.Stoian, C.Sabogal B.Louman. Opportunities and Challenges for Community forestry: Lessons from Tropical America. Chapter 6.9 in: Alfaro, R., Kanninen, M., Lobovikov, M., Mery, G., Swallow, B., Varjo, J. (Eds.). *Future of Forests – Responding to Global Changes*, pp 299-314. World Forestry Society and Environment. 2010.
- Waylen, Kerry; Fisher A; McGowan PJK; Thirgood SJ; Gulland, and EJ Milner. 2010. *Effect of Local Cultural Context on the Success of Community-Based Conservation Interventions*. Conservation Biology. Blackwell Publishing Inc.
- Winrock International; Ford Foundation. *Emerging Issues in Community Forestry in Nepal*. 2002.
- World Bank, *Mainstreaming Adaptation to Climate Change in Agriculture and Natural Resource Management projects, Guidance Notes*, Climate Change Team, Environment Department, undated
- World Bank, *Climate Smart Agriculture A Call to Action*, undated
- Veit, Peter ed. *Africa's Valuable Assets: a reader in natural resource management*. World Resource Institute. Baltimore, MD WRI. 1998

ANNEX I. SUMMARY OF CONSTRAINTS

NATURE:
<p>Differing management objectives (IIED 2009); Scale discord – ecological versus social and economic perspectives (IIED 2009); Lack of long term investment in capacity building (IIED 2009); Isolated separate sectoral policies: proliferation of CBNRM committees at village level (DAI/Stocktaking 2010); Lack of coordination especially among external stakeholders (DAI/Stocktaking 2010); CBNRM platforms : limited membership no database (DAI/Stocktaking 2010); Inadequate land use planning/zoning (DAI/Stocktaking 2010); Conflicting land uses/contradictory policies (DAI/Stocktaking 2010); No single model (Nurse and Malla 2005); Foresters as agents of protection and enforcement (Nurse and Malla 2005); Some cases plantation and protection orientation (Nurse and Malla 2005); Different resources bases – hills versus terai - Use of other laws (Nurse and Malla 2005); Complexity – political, social economic cultural environmental (Nurse and Malla 2005); Wide range of development pathways local conditions and needs IIED 2009; CF too narrowly viewed (Nurse and Malla 2005); Limited to degraded sites and very local levels (Nurse and Malla 2005); Inappropriate technologies (de Jong 2010); Setting up of FMP and AOP (de Jong 2010); Lack of technical staff, funding, inappropriate models (de Jong 2010); Weak forest governance organisations (Banana 1999); Inadequate financial and human capacity (Banana 1999); Conflicting land uses/contradictory policies (DAI/Stocktaking 2010); Inadequate land use planning/zoning (DAI/Stocktaking 2010); Insecure land tenure (DAI/Stocktaking 2010); Conflict of rights – ownership constrained by environmental rules (Nurse and Malla 2005); Decentralization of responsibilities and not rights and management (Nurse and Malla 2005); Different resources bases – hills versus terai - Use of other laws (Nurse and Malla 2005); Barrier is the conception and the implementation of CBNRM. Assumption that traditional institutions and knowledge do not exist (Nurse and Malla 2005); Scale discord – ecological versus social and economic perspectives (IIED 2009)</p>
WEALTH:
<p>Distribution of benefits (IIED 2009); Marketing of CF products (ICIMOD, 2006); Fair sharing of benefits (ICIMOD,2006); Low level of revenue, no household dividends (cost > benefits) (DAI/Stocktaking 2010); Lack of business entrepreneurial skills (DAI/Stocktaking 2010); Lack of reinvestment of revenue (DAI/Stocktaking 2010); Corruption management of resources (DAI/Stocktaking 2010); Poorly functioning organizations (Nurse and Malla 2005); A priori focus on value chain hinder more adequate exploration of appropriate mechanisms for improvements of local needs and consumption (de Jong 2010); Generally poor financial situation – low value resources (de Jong 2010); Often first market contact for NR products (de Jong 2010); Little connection with downstream actors (de Jong 2010); Market may demand standards, volumes and timeliness (de Jong 2010); Access to financial services (de Jong 2010); Different priorities on wealth accumulation (de Jong 2010); “local moral economy” (de Jong 2010); CFE trade-offs between economic and social goals (de Jong 2010); Opportunity costs of land (de Jong 2010); Forestry economically marginal (de Jong 2010); Poor returns compared to agriculture (de Jong 2010); Other land uses more profitable (Banana 1999); Economic incentives do not favor forestry (Banana 1999); Distribution of benefits (IIED 2009); Fair sharing of benefits (ICIMOD, 2006); Marketing of CF products (ICIMOD, 2006); Low level of revenue, no household dividends (cost > benefits) (DAI/Stocktaking 2010)</p>
POWER:
<p>Few cases of formal authority over resources (IIED 2009); Conflicts between local groups and powerful actors (IIED 2009); Institutions that are not downwardly accountable (IIED 2009); Conflict between locally accountable governance and traditional systems/authorities (IIED 2009); Partial devolution, partial</p>

empowerment (DAI/Stocktaking 2010); Insecure land tenure (DAI/Stocktaking 2010); Elite capture versus general membership (DAI/Stocktaking 2010); No state support or local initiatives (Nurse and Malla 2005); Assumption that traditional institutions and knowledge do not exist (Nurse and Malla 2005); Barrier is partial rights which allows government to avoid postpone fundamental rights walker 2004, mahnaty et al 2006; Conflict of rights – ownership constrained by environmental rules (Nurse and Malla 2005); Decentralization of responsibilities and not rights and management (Nurse and Malla 2005); Resources as a political tool IIED 2009; Little influence on downstream actors (de Jong 2010); Transfer of legal rights (de Jong 2010); Difficulties in building capacity and small holder business organization (de Jong 2010); Legal formalization and high transaction costs (de Jong 2010); Controlling outside use (de Jong 2010); Inadequate consideration of the socio-economic and cultural realities (de Jong 2010); Different values and objectives of actors (de Jong 2010); Legal barriers and transaction costs (de Jong 2010); Land excisions by government (Banana 1999); Corruption (Banana 1999); Privatization of the commons (Banana 1999); Public sector dominance (Banana 1999); Lack of defined and enforceable property rights (Banana 1999); Weak and conflicting policies (Banana 1999); Conflicts between local groups and powerful actors (IIED 2009); Institutions that are not downwardly accountable (IIED 2009); Conflict between locally accountable governance and traditional systems/authorities (IIED 2009); Corruption management of resources (DAI/Stocktaking 2010); No state support or local initiatives (Nurse and Malla 2005); Lack of sustainable and intensive forest management livelihoods, governance and role of stakeholders issues (Nurse and Malla 2005); Barrier is partial rights which allows government to avoid postpone fundamental rights (Walker 2004, Mahnaty et al 2006); No accountability (DAI/Stocktaking 2010); Lack of business entrepreneurial skills (DAI/Stocktaking 2010); Lack of reinvestment of revenue (DAI/Stocktaking 2010); Partial devolution, partial empowerment (DAI/Stocktaking 2010); Sustainability of CBNRM – donor driven, inorganic (DAI/Stocktaking 2010); Lack of coordination especially among external stakeholders (DAI/Stocktaking 2010)

OTHER:

Victim of its own success (IIED 2009); Sustainability of CBNRM – donor driven, inorganic (DAI/Stocktaking 2010); Lack of sustainable and intensive forest management livelihoods, governance and role of stakeholders issues (Nurse and Malla 2005); Barrier is the conception and the implementation of CBNRM. A privileging of the “nature” entry point over others; Some progress but not yet mainstream except in rare countries (Nurse and Malla 2005); High population pressure (Banana 1999); Few cases of formal authority over resources (IIED 2009); Differing management objectives (IIED 2009); Lack of long term investment in capacity building (IIED 2009); No single model (Nurse and Malla 2005); CF too narrowly viewed (Nurse and Malla 2005); Limited to degraded sites and very local levels (Nurse and Malla 2005); Some progress but not yet mainstream except in rare countries (Nurse and Malla 2005); Poorly functioning organizations (Nurse and Malla 2005); Complexity – political, social economic cultural environmental (Nurse and Malla 2005); Foresters as agents of protection and enforcement (Nurse and Malla 2005); Elite capture versus general membership (DAI/Stocktaking 2010); CBNRM platforms : limited membership no database (DAI/Stocktaking 2010); Isolated separate sectoral policies: proliferation of CBNRM committees at village level (DAI/Stocktaking 2010); Victim of its own success (IIED 2009)

U.S. Agency for International Development

1300 Pennsylvania Avenue, NW

Washington, DC 20523

Tel: (202) 712-0000

Fax: (202) 216-3524

www.usaid.gov