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*NRCF (Natural Resources Consultative Forum)*  
*CBNRMF (Community-Based Natural Resource Management Forum)*  
*UNZA (University of Zambia)*  
*ACF (Agricultural Consultative Forum) and*  
*FSRP (Food Security Research Project)*

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**NATURAL RESOURCE MANAGEMENT, FOOD  
SECURITY, AND RURAL DEVELOPMENT  
IN ZAMBIA: MOVING FROM  
RESEARCH EVIDENCE TO ACTION**

**PROCEEDINGS OF THE PUBLIC FORUM**

By

**Phyllis Simasiku,  
Antony Chapoto, Robert Richardson, Mwape Sichilongo  
Gelson Tembo, Michael Weber and Alimakio Zulu**

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**03 December, 2009**

**Taj Pamodzi Hotel, Lusaka, Zambia**

**By: Phyllis Simasiku,  
Antony Chapoto, Robert Richardson, Mwape Sichilongo  
Gelson Tembo, Michael Weber and Alimakio Zulu**

**Collaborating Partners**

**NRCF (Natural Resources Consultative Forum)  
CBNRMF (Community-Based Natural Resource Management Forum)  
UNZA (University of Zambia)  
ACF (Agricultural Consultative Forum) and  
FSRP (Food Security Research Project)**

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The views expressed in this document are exclusively those of the authors.

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## EXECUTIVE SUMMARY

Natural resource use, including land, and rural population location is an important topic for Zambia's development strategy. Among other efforts, the Government of Zambia (GRZ) has designated 22% of total land area, as Game Management Areas (GMAs) for human settlements and wildlife conservation. Other GRZ programmes seek to improve food security and agricultural productivity, including the use and improvement of conservation farming techniques. GRZ is currently reviewing policies in the agricultural, forestry, fisheries, wildlife and land sectors. Research in these fields has much to contribute to effective management of GMAs, increased agricultural productivity and improved welfare, especially for the rural population.

The Agricultural Consultative Forum/Food Security Research Project (ACF/FSRP), the Natural Resources Consultative Forum (NRCF), the Community Based Natural Resources Management Forum (CBNRMF) and the University of Zambia (UNZA) jointly organised a one-day public outreach forum on the 3<sup>rd</sup> of December, 2009 at the Taj Pamodzi Hotel in Lusaka. The forum "Insights on Natural Resources Management and Rural Development in Zambia: Moving from Research Evidence to Action" was intended to reach out to many stakeholders and create awareness about the effect and performance of policy and programmes in natural resources management and rural development.

Participants were drawn from a cross section of stakeholders within and outside government, Chiefs, community based organisations, private sector, cooperating partners, government officers and Members of Parliament. The Minister of Tourism, Environment and Natural Resources officially opened the forum.

The objectives of the outreach were:

- To share research findings on studies related to natural resources management in Game Management Areas (GMAs) and Access to land in Zambia and how these relate to rural welfare in Zambia.
- To contribute to the current policy and legislation review processes in the relevant natural resources sectors
- To provide input into the formulation of the Sixth National Development Plan
- To collaborate in identifying and distributing Zambia- specific research and outreach publications related to the issues covered by this forum

The one day programme consisted of three plenary sessions. Sessions I and II had three presentations, each followed by questions, clarifications and discussions in plenary. Session III was a guided discussion held in plenary which focused on selected topics arising from the presentations.

The first three presentations were on research studies conducted to evaluate the impact of wildlife management policies on communities' welfare and conservation in GMAs. Data for these studies were obtained from a survey entitled "Impact on Game Management Areas and Household Welfare (IGMAW)" conducted by CSO in 2006. It covered 14 GMAs in areas around four park systems namely: Bangweulu, Kafue, Lower Zambezi, and Luangwa. Interviews with 139 Community Leaders and 2,769 households were conducted. 3 areas outside the GMAs were selected as control areas. Reports from private sector and ZAWA, as well as animal population census results from ZAWA and cooperating partners were some of the literature used for analysing commercial and ecological aspects.

The first study by NRCF sought to evaluate the impact of wildlife management policies on communities by analysing the commercial, ecological and social performance of the wildlife-based tourism industry. The study also assessed impacts on conservation by analysing the status of the habitat and the animal population trends in relation to the objectives of GMAs as buffer zones for the protection of wildlife, which in turn provides benefits to resident communities.

Results showed that the commercial performance of the hunting industry was declining as shown by various factors which included revenues from hunting and trophy sizes of major species such as lion and leopard. Revenues from hunting disbursed by ZAWA to CRBs have declined since 2004. Incomes fell by K170 million in 2005 (from K3,836,419,397 to K3,665,535,264) and by K50 million in 2006 (K3,617,228,394). Trophy sizes for major species harvested between 1983 and 2006 are becoming smaller. An assessment of the ecological status of GMAs was also negative. The wildlife population trends showed sharp declines after 1998. Habitats have been degraded because of human land use practices as seen from satellite imagery analysis. The key conclusion drawn was that GMAs have not achieved the purpose for which they were intended, which reflects failure of current GMA policy.

In the other two studies, also using the IGMAW data, household welfare was studied using separate variables to examine household consumption and household incomes.

Results from the household consumption study included the following: 1) that on average, households in GMAs had more diversified economic activities, including tourism, but possessed fewer assets; 2) There were no significant consumption differences between households in GMAs and non-GMA households; 3) however, the GMA institution accounted for 66% of per capita consumption in households that are located in GMAs; and 4) within the GMA, participation in community resource boards (CRBs) and village action groups (VAGs) accounted for 44 percent of household consumption.

Results from the income assessment showed that GMA households on average had lower average income compared to non-GMA households. However, households in prime GMAs had 17% higher income than households in other rural areas. The presence of a tourist lodge in the community contributed another 18% of household income.

Sources of income in GMAs were broadly categorised into two groups: 1) wage employment; and 2) self employment. Households in prime GMAs were 7.8% more likely to be employed and expected to earn more (116%) from wage employment while households in secondary or specialized GMAs were 7.4% more likely to report wage income. Households in prime GMAs were more likely to report income from self employment (6.9%). Household size (number of children and adults) and infrastructure also contributed to self-employment income

The study concludes that prime GMAs and tourist lodges contribute positively to rural household income; however households in GMAs are expected to incur greater losses from crop damage (average = Kw 30,079). The effect is greater in prime GMAs.

Importantly both studies demonstrated that gains from the GMAs accrued primarily to relatively wealthier households.

The fourth presentation was a study that examined access to land for small scale farmers. Limited and restricted access to land by small scale farmers is perceived as a problem. It is an increasing impediment to the achievement of poverty reduction goals. The majority of small scale farmers cultivate small parcels of less than a hectare, and agricultural productivity is also

low. Yet there remains a great deal of unutilized land in Zambia, much of it under customary tenure. Transfer of land from customary to state tenure is seen as an option to make more land available. Views are divergent on this matter. Opposing views see land transfer as a threat to authority of chiefs and a disadvantage to the poor. Chiefs would lose power and the poor would lose access to land. Supporting views cite increased tenure security and reduced land conflicts as advantages.

Those rural residents far away from towns, who have more land and are related to a headman perceive that land is still available for allocation where they live. It is seen to be unavailable mostly by female-headed households and those closer to towns and roads. Research evidence shows great disparities in farm sizes within communities. About 25% of the rural poor have mean farm sizes of cultivated plus fallow land of 0.62 ha and 50% of smallholders have on average 1.28 ha.

Farm blocks are a policy option to offer bigger and secure farms but proposed new farm block are remotely located, in areas with few people and therefore far from markets and services. Government investment in farm blocks could marginalize the small scale farmers who comprise the majority of rural households. Also, the policy to prioritize financial support to maize does not seem to be helping reduce poverty. The bulk of the 2009 budget funds, 8.2% Food Reserve Agency (FRA) and 35.3% Fertiliser Support Programme (FSP), went to support maize cultivation. Despite these maize support programmes, maize productivity has remained almost constant while rural poverty has remained high. Increased access to land is an opportunity for reducing poverty when complemented with a balanced financing plan for complementary factors.

The study concluded that limited access to land, current policy for land development and small holder farming practices are positively associated with high levels of poverty and therefore have implications for rural poverty reduction strategies inside and outside GMAs.

The presentation on conservation farming CF addressed the phenomenon of land degradation and soil fertility loss with the associated challenges to increase productivity. Conservation farming was defined as minimum tillage founded on 3 key principles: minimising soil disturbance, maximising soil cover and diversifying cropping patterns. CF was compared to other conventional tillage practices in terms of labour intensity, weed occurrence, land disturbance and productivity,

Results show that the perception that CF is not being adopted because it is labour-intensive compared to conventional tillage is not supported by research evidence. Research has shown that in the first year CF has slightly higher labour input of 40 to 50 standard person days (SPDs /ha) but this is reduced from year 2 onwards to 30 to 35 SPDs/ha which is the range for labour under most conventional farming practices. CF minimum tillage does not demand more labour and does not increase weed pressure. Conversely it has demonstrated a lot more advantages over conventional tillage. Disturbed area is less than 10%. Productivity is higher.

Adoption is estimated at 270,000 farmers on portions of their land. This includes 2006/20077 baseline of 93,000 farmers. Low rates of adoption may be attributed to lack of programme consistency by major NGOs, poor delivery of input packs, misperceptions of the benefits, and poor training by implementers.

The final presentation was about an innovative approach which integrates conservation with improvement of household welfare - the COMACO (*Community Markets for Conservation*) model. COMACO is a limited company by guarantee that works as a Public Private Partnership (PPP) with local people in GMAs. COMACO's strategy is to engage in business partnerships with

communities that agree to conserve natural resources, mainly wildlife, forests, land/soils and water.

COMACO targets activities that threaten conservation objectives, such as poaching and charcoal production, and aims to build capacity for groups that engage in these activities. These groups are trained in alternative livelihood skills like vegetable growing, beekeeping and carpentry, and given tools to start new forms of livelihood. Farmers are trained in conservation farming as part of efforts to improve crop production. Emphasis is on food security but excess produce is purchased by COMACO and sold to retail outlets in urban areas.

Measures of success include improved human welfare and positive trends in wildlife populations for 30% of the species monitored (including elephants). Other benefits from COMACO include a huge saving of government resources related to law enforcement, public safety, better food security and income generation. The challenge is how to conserve land, soils water and forests particularly in watershed areas on the plateaus of Eastern Zambia where serious soil erosion threatens the survival of the Luangwa river system and the tourism industry.

Session III plenary discussion ended with a resolution for a team of experts to analyse in detail some of the issues that were raised and formulate recommendations which would form part of the forum proceedings. The output of these consultations was a summary of policy recommendations whose main features are presented below

### ***1. Governance of Natural Resources***

Service delivery at all levels of governance needs to be restructured and strengthened in order to promote and improve economic development and management of natural resources in both open and protected areas. New strategies based on appropriate resource management systems are needed which promote broad-based participation and address household benefits. Such changes are more likely to be appreciated and offer incentives for more effective community-based natural resource management.

### ***2. Policy and Law Review Processes***

Efforts are needed to be more transparent and inclusive when reviewing policies and laws. Formation of a technical committee of qualified experts knowledgeable about wildlife management issues in game management areas to advise MTENR should be considered.

### ***3. Public-Private Sector Partnerships***

Efforts are needed to facilitate pooling of resources and interests among the public sector, private sector, non-governmental organizations and communities to stimulate investment. Likewise active but regulated participation is needed in the management of natural resources including formulation of appropriate policies and legislation.

### ***4. Business Oriented Approach from a Strengthened Private Sector Involvement***

More progress is needed to adopt business-oriented natural resource management approaches, to explore and fully exploit a wide set of available opportunities, including the virtually unexploited field of medicinal plants through well streamlined donor and private sector investment and contributions for research, marketing and regulatory mechanisms.

### ***5. Land Access and Security of Tenure for Improved Smallholder Food Security***

Efforts are needed to devise more effective ways to improve access and secure rights to land and other natural resources for various stakeholders particularly for smallholder farmers. Regional and local integrated land use plans with defined resource rights for institutions, individuals and communities can facilitate regulation and reduce land use conflicts. Wildlife



habitats and areas used for agriculture must be clearly mapped out in order to strengthen protection of animal habitats, while also finding ways to improve smallholder food security and welfare.

There is likewise a need to more adequately develop approaches to raise productivity of smallholders' agricultural land through greatly expanded applied research and extension, and through complementary infrastructure improvements.

*Several issues were proposed for further investigation. These have been grouped into subject themes as follows.*

- i. CBNRM, natural resources management and food security: appraisals of current practices in and outside government;
- ii. Land access and security of tenure: ways to improve land tenure security, access and user rights for other natural resources on customary land.
- iii. Conservation farming: improved extension services to increase adoption of innovative and more productive practices in agriculture and natural resource management, and to ensure effective transfer of technologies in these sectors such as in conservation farming.
- iv. PPPs and business environment: current government policies acknowledge the importance of partnerships yet an implementation challenge remains of turning policy into action.

The forum further proposed a continuation of dialogue with government through a smaller group of stakeholders which should comprise people who understand issues and research done in and about GMAs in order to facilitate empirically-based policy recommendations being considered in the ongoing policy and legislative reviews.

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## **LIST OF ABBREVIATIONS**

ACF	Agricultural Consultative Forum
CBNRMF	Community-Based Natural Resources Management Forum
CBU	Copperbelt University
CFU	Conservation Farming Unit
COMACO	Community Markets for Conservation
CP	Cooperating Partners
CRB	Community Resource Boards
CSO	Central Statistical Office
FAO	Food and Agricultural Organization
FSRP	Food Security Research Project
GRZ	Government of the Republic of Zambia
NRCF	Natural Resources Consultative Forum
PPP	Public Private Sector Partnership
UNZA	University of Zambia
VAG	Village Action Groups
ZAWA	Zambia Wildlife Authority

# OUTREACH FORUM PROGRAMME

DATE: Thursday, December 3, 2009, Taj Pamodzi Hotel, Lusaka

- 8:30 – 9:30hrs Registration
- 9:30 – 9:55hrs Welcome Chance Kabaghe (FSRP)
- 9:55 – 10:10hrs Opening Remarks: Catherine Namugala MP, Minister of Tourism, Environment and Natural Resources
- 10:10 – 11:10hrs Panel Session I: Community-Based Natural Resource Management

## **PRESENTATIONS:**

Alimakio Zulu (NRCF) and Mwape Sichilongo (CBNRMF): The impact of wildlife management policies on communities and conservation in Game Management Areas in Zambia

Dr. Gelson Tembo, (UNZA) “Household Consumption and Natural Resource Management around National Parks in Zambia”

Dr. Robert Richardson, (FSRP/MSU) “The Impacts of Wildlife Conservation Policies on Rural Welfare in Zambia”

- 11:10 – 11:45hrs Plenary Discussion
- 11:45 – 12:00hrs *B R E A K*
- 12:00 – 13:30hrs Panel Session II: Land Use and Intensification of Agricultural Production

## **PRESENTATIONS:**

Antony Chapoto (FSRP), “The Challenge of Integrating the Goals of Productive Land Use and Broad-based Agricultural Development in Zambia

Peter Aagard (CFU), “Conservation Farming and Related Natural Resource Policies for Sustainable Agricultural Intensification”

Dr. Dale Lewis (Wildlife Conservation Society), “Wildlife Conservation Society: Insights from COMACO Model”

- 13:35 – 14:30hrs *Buffet LUNCH*
- 14:30 – 15:30hrs Plenary Discussion
- 15:30 – 1730 Guided Plenary Discussion

## **Topics:**

- 1) Integrated land use planning and community-based natural resource management
- 2) Land access and poverty reduction
- 3) Conservation farming and Wildlife Conservation Society’s COMACO model

- 17:30 – 17:45hrs: Conclusions and adjournment

Downloadable Resource Directory on Natural Resources, Food Security and Pro-Poor Tourism  
<http://www.aec.msu.edu/fs2/zambia/resources/index.htm>

# 1.0 INTRODUCTION

The Agricultural Consultative Forum/Food Security Research Project(ACF/FSRP),the Natural Resources Consultative Forum(NRCF), the Community Based Natural Resources Management Forum (CBNRMF) and the University of Zambia jointly organised a one day outreach public forum on the 3<sup>rd</sup> December, 2009 at the Taj Pamodzi Hotel in Lusaka. The forum, “Insights on Natural Resource Management and Rural Development in Zambia: Moving from Research Evidence to Action” was intended to reach out to many stakeholders and create awareness about impacts and effectiveness of policies governing natural resources management, food security and rural development. Participants were drawn from a cross section of stakeholders within and outside government; including Chiefs, Community Based Organisations, the Private Sector, Cooperating Partners, Government Ministries and Members of Parliament. The objectives of the outreach were to:

- i) To share research findings on studies related to natural resources management in Game Management Areas (GMAs) and Access to land in Zambia and how these relate to rural welfare in Zambia;
- ii) To contribute to the current policy and legislation review processes in the relevant natural resources sectors;
- iii) To provide input into the formulation of the Sixth National Development Plan; and
- iv) To collaborate in identifying and posting to the web the important Zambia specific, and general research and outreach publications in the areas covered by this forum (see Appendix 3 – Downloadable Resource Directory).

Zambia has designated vast land, 22% of total land area, as Game Management Areas (GMAs). These are buffer zones surrounding national parks and serve as important areas for human settlements and wildlife conservation. Over the years, GMAs have increasingly come under immense pressure due to population increase and economic growth. Natural resources provide a basis for sustainable tourism development because tourism is a vehicle for economic growth due to its potential to generate employment and foster rural development. Government also places great importance on agriculture. It is therefore vital to improve the management of GMAs in order to improve the livelihood of the people living in those areas, the habitat and wildlife resources. Government is currently reviewing policies in the forestry, fisheries and wildlife sectors. Research in the field of natural resources and rural welfare can assist government to make well informed decisions that will contribute to effective management of GMAs, increased agricultural productivity and improved welfare for the people

## **2.0 PANEL SESSION I: COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT**

The first panel session focused on Game Management Areas (GMAs) and addressed community-based natural resource management. Three presentations were made. These were

- i. The Impact of Wildlife Management Policies on Communities and Conservation in Game Management Areas in Zambia, by Alimakio Zulu (from the NRCF secretariat); supplementary discussion by Mwape Sichilongo (from CBNRMF secretariat)
- ii. Household Consumption and Natural Resource Management around National Parks in Zambia, by Gelson Tembo (from the University of Zambia, School of Agricultural Sciences, Department of Agricultural Economics)
- iii. The Impacts of Wildlife Conservation Policies on Rural Welfare in Zambia, by Robert Richardson (from Food Security Research Project, Michigan State University)

### **2.1 THE IMPACT OF WILDLIFE MANAGEMENT POLICIES ON COMMUNITIES AND CONSERVATION IN GAME MANAGEMENT AREAS IN ZAMBIA. BY ALIMAKIO ZULU**

#### *GMAs- why they were established*

GMAs were established to act as buffer zones to National Parks (NPs) in order to protect wild animals and their habitats and to support a viable wildlife-based tourism industry, which contributes significantly to the national economy and to the welfare rural communities in GMAs. The National Parks and Wildlife Policy and the Wildlife Act of 1998 administered by the Zambia Wildlife Authority (ZAWA) instituted the concept of community based natural resource management (CBNRM) and legally established community resource boards (CRBs) as local level community-based institutions for managing wildlife. This was driven by the increasing threat to the survival of natural resources and the realization that future generations would face increased risks of hunger and poverty which would compel them to further diminish their natural resources. After ten years of implementing the wildlife legislation, it appears that GMA governance through CRBs is failing to achieve the purpose for which GMAs were established.

#### *The study*

A study was undertaken to evaluate the social, commercial and ecological impacts of the community based natural resources management policies in the GMAs. The study looked at the GMA status from 3 perspectives:

- Social: the welfare of communities in GMAs
- Commercial: the trends in the wildlife based businesses in the GMAs
- Ecological: population of wild animals and the status of habitats

Data were collected through the Impact of Game Management Areas on Household Welfare (IGMAW) survey, conducted in October, 2006 by the Central Statistical Office (CSO). Households in 14 GMAs and 3 control areas were surveyed. A total of 2,649 households were interviewed. Data were analysed by researchers at the University of Zambia. Poverty assessments were supplemented by data from the living conditions monitoring survey reports by CSO.

Ecological data and commercial performance data were drawn from literature review. Trophy quality, animal population, bed capacities and revenue data were obtained from reports from the private sector and from ZAWA. Maps showing settlement patterns are based on GIS information derived from satellite imagery analyses.

## *Results*

### *Social: welfare of communities*

The study found that on average, households in GMAs gain from living in GMAs, but benefits accrue to households that are relatively already well off. This is supported by audit reports of CRBs in the Kafue National Park system which revealed that a larger proportion of the expenditure went to allowances, accommodation and meetings. More detailed analyses of social impacts are presented later in the papers by Tembo and Richardson.

### *Commercial: trends in wildlife based businesses*

Commercial performance was evaluated in terms of revenues earned from safari hunting, which is the largest source of revenue to ZAWA and the CRBs. Hunting revenues disbursed by ZAWA to CRBs have declined since 2004. Revenue fell by K170 million in 2005 (to K3, 665,535,264) and by K50 million in 2006 (to K3, 617,228,394). Declining trends of trophy quality game have been manifested for major species such as lion, leopard, sable, roan and buffalo harvested between 1983 and 2006. Declining trends of quota utilization have also been manifested in these major species from 1995 to 2005. Regarding non-consumptive tourism, only 3 GMAs have developed bed capacities to a meaningful magnitude for this purpose. A comparative analysis of Zambia's hunting revenues with that of other countries in Southern Africa showed that Zambia's revenue is far below what is realized by countries in this region.

### *Ecological: population of wild animals and the status of habitats*

Animal population data from Lupande GMA and South Luangwa National Park were used to graphically depict the trends. After 1998, the year that the Wildlife Act was enacted, the populations appeared to be sharply declining (case of South Luangwa National Park and Lupande GMA). A special case was noted for lechwe, where population trends are nearly stable but with a remarkable difference between the Kafue and Bangweulu wetlands. In the Kafue area, populations appear to be declining while in the Bangweulu an upward trend was evident.

Habitats are threatened in most GMAs as most of them are increasingly settled. Some GMAs like Bbilili south of Kafue National Park are almost fully settled. Land clearing for extensive agricultural practices and settlement and tree felling for charcoal production are major causes of habitat loss.

The status of GMAs based on ZAWA's classifications of hunting blocks shows that the general trend is towards under-stocked and depleted.

### *Conclusion*

Data available shows that, on average, social, ecological and wildlife based commercial trends in GMAs are on the decline. The analysis of this scenario points to policy failure. The key conclusion then is that GMAs are not meeting the purpose they were meant for.

## **2.2. HOUSEHOLD CONSUMPTION AND NATURAL RESOURCE MANAGEMENT AROUND NATIONAL PARKS IN ZAMBIA. BY GELSON TEMBO**

### *Introduction*

Nature tourism development is regarded as a potential growth frontier in Zambia. The CBNRM program in GMAs aims to achieve two "mutually reinforcing" objectives: 1) wildlife conservation through patrols by village scouts and land use plans, and 2) rural development through provision of infrastructure and employment.

### *Objectives of the study*

The objectives of the study were to:

1. Determine the welfare effects of the GMA institution and participation in natural resource management through CRBs and Village Action Groups (VAGs).

2. Determine the distributional effects by examining if poor households benefit more.

The study used data from the IGMAW survey, conducted by CSO in 2006. 139 Community and 2,769 household interviews were conducted in areas around four park systems namely: Bangweulu Kafue, Lower Zambezi, and Luangwa.

A community is equivalent to CSO's Standard Enumeration Area (SEA). Approximately 60% of the sample was located in GMAs while 40% was non-GMA as control areas. Consumption expenditure was used as the measure of household welfare.

### *Estimation Methods*

Impacts of the GMA institution and of participation in natural resource management through CRBs and VAGs were determined by *Treatment Effects Regression*, which entails joint estimation of outcome and treatment relationships. The same procedure was used to determine impacts on sub-samples across park systems and household wealth status. See the main study document for details of methods used.

### *Results*

#### *Effect of GMAs on household welfare*

Households in GMAs are more likely to participate in CRBs and VAGs; they have more diversified economic activities, including tourism but have fewer assets and are more likely to be female-headed, less-educated and further away from all-weather roads. There were no significant consumption differences between GMAs and non GMAs. However, the GMA effect is significant and accounts for 66% of per capita consumption in GMAs. The CRB/VAG effect is also positive and significant, accounting for 44% of per capita consumption expenditure. However, the benefits accrue only among wealthier households and in remote park systems with limited alternative economic opportunities.

#### *Distributional effect*

Impact was also assessed by wealth category. Poor and non-poor households are equally likely to participate in natural resource management activities, but level of participation varies by wealth stratum. The non-poor are more likely to participate at the CRB level which is directly in charge of funds from ZAWA whereas the poor participate at VAG level, where resources are limited and participation is more loosely defined. This and evidence from past studies (e.g., Mulenga et al 2003) and ZAWA administrative records suggest that *elite capture* cannot be ruled out. Surprisingly, GMAs in Kafue and Lower Zambezi have more recent infrastructure development, but household level benefits are not significant.

#### *Conclusion*

The CBNRM program is beneficial to household welfare as measured by consumption expenditures, but only in GMAs with limited economic opportunities and among wealthier households.

Infrastructure development is evident, but cannot be attributed to the GMA institution and does not translate into household level gains.



### *Suggestions*

- i) Impediments to effective participation by the majority need to be understood and addressed.
- ii) There is a need to review the incentive structure.

## **2.3 THE IMPACTS OF WILDLIFE CONSERVATION POLICIES ON RURAL WELFARE IN ZAMBIA. BY ROBERT RICHARDSON**

### *Introduction*

Zambia Wildlife Authority (ZAWA) shares hunting license revenues and wildlife management responsibilities with communities through Community Resource Boards (CRBs) and Village Action Groups (VAGs). Community-Based Natural Resource Management has dual objectives of wildlife conservation and rural development. This is achieved through employment of village scouts and implementation of development projects.

### *The Study*

The study seeks to answer three research questions

1. What is the effect of GMAs on household income?
2. What are the *sources* of income that generate the GMA effect?
3. What are the effects of GMAs on crop losses from wildlife damage?

The study analyses impacts in terms of benefits and costs. The identified benefits are rural employment, revenue sharing, meat distributed after hunting and development projects. Costs are crop damage and opportunity cost of alternative land uses.

### *Data and methods*

Data were obtained from the IGMAW survey conducted by CSO in 2006. Income was used as the measure of household welfare. Two statistical methods were used: ordinary least squares (OLS) regression was used to estimate the determinants of household income, and two-stage regression was used to estimate the sources of income, and the probability and value of crop losses from wildlife damage.

### *Results*

#### *Effect of GMAs on household income*

The GMA effect on household income is a function of household and community characteristics (such as education, size of household, assets, and infrastructure). In general GMA households have lower average income, are more remote, have less education and fewer assets. However, households in prime GMAs have 17% higher income than households in other rural areas, controlling for other factors. The presence of a tourist lodge in the SEA contributes another 18% of household income.

In the analysis, households were stratified into quintiles to examine how the GMA effect is distributed. Gains from living in a prime GMA accrue to the wealthiest 40% of the population. The poorest 40% (and 60%) of the sample are not significantly affected by GMAs. The wealthiest 40% of the sample are significantly and positively affected by GMAs. Income gains from living in a GMA are likely to be captured by non-poor segments of the population with better access to financial and human capital.

### *Sources of income that generate the GMA effect*

Two-stage regression was used to estimate the probability of earning income from wage employment and the determinants of wage income. The same approach was used for self-employment income.

Results showed that households in prime GMAs were 7.8% more likely to be employed. Households in secondary or specialized GMAs were 7.4% more likely to report wage income. Households in communities where there was a tourist lodge were 6.6% more likely to report income from wage employment.

Furthermore, households in prime GMAs can be expected to earn 116% more on average from wage employment than households in the control areas.

Households in prime GMAs were 6.9% more likely to report income from self employment. The effect was positive and significant, but less than for wage income. Household size (number of children and adults) and infrastructure also contributed to self-employment income.

### *Effect of GMAs on crop losses from wildlife damage*

Households in prime GMAs are 16.1% more likely to experience crop losses from wildlife damages. Households in secondary or specialized GMAs are 12.2% more likely to report crop damages. Households in GMAs are expected to incur greater losses from crop damage (average = Kw 30,079). The effect is greater in prime GMAs.

### *Conclusions*

Prime GMAs and tourist lodges contribute positively to rural household income. Gains accrue primarily to non-poor households. GMA effect is positively associated with income from wage and self employment. The results suggest a need for policies to build capacity for participation by poor households.

Households in prime GMAs are positively associated with both probability and value of crop damage losses. The results suggest a possible broader role for village scouts to curb crop damage, as well as consideration of a mechanism for compensating farmers for losses.

## **2.4 SUMMARY OF DISCUSSIONS ON WILDLIFE CONSERVATION/NATURAL RESOURCE MANAGEMENT**

The discussions on natural resource management from the three plenary sessions are consolidated and presented below. Sub headings have been created for easy reference.

### *(1) Opportunity for assessment and baseline for evaluation of future changes*

CBNRM Forum secretariat regarded the GMA study as a baseline for assessing the efforts being made in CBNRM. The CBNRMF therefore sought proposals, from the forum, for ways to influence policy and turn recommendations into action in order to improve CBNRM performance and reverse land degradation.

### *(2) Study Limitations*

The GMA study was found to have limitations. It did not present a balanced view of GMAs and did not consider many other factors that affect the status of GMAs. It was perceived by some to be overly negative and painting a gloomy picture when positive achievement could have been cited. Further that good examples exist that could be shown as lessons for moving

forward. These include activities of other development organizations within CBNRM who are equally working in GMAs to achieve the same objectives.

In response to the observed limitations, the main explanation cited was the type of data used. Data available for use in the studies was collected at both household and community level but did not analyse the effect of investments in community physical infrastructure such as schools, health centres and roads on household welfare. This was accepted as one of main limitations of the studies on GMA welfare. ZAWA resource distribution and effects on the household benefits need further exploring. The studies presented showed that GMA activities are beneficial to households but there are challenges being faced as well. Issues were being brought out in the context of the study though incentives, rights and capacity building of the communities including participation in decision making which need to be attended to.

The findings from the two studies presented were based on empirical data and it was the role of the forum provided by the workshop to help resolve the issues that have been discovered. Since implementation of the GMA activities is at the VAG and not household level, there was a view to examine whether service delivery was failing somewhere or the whole system needed restructuring. The CRB structure had some support from others who attributed its weakness to failures at implementation level. It was also observed that the CRBs are voluntary organizations and hence there may be a serious problem of lack of management capacity .

### *(3) Determining Household and community benefits:*

The focus on household welfare does not capture the benefits from CRBs accurately since money realised in the GMAs goes into community projects and not directly into households. It was suggested that the study should have translated or quantified the investments into direct benefits to assess the contribution made by the developmental projects and whether people have benefited.

### *(4) Appreciation of difficulties faced by ZAWA*

There were also views that the study had not considered several factors which were important for understanding the difficulties faced by ZAWA and the current status of the GMAs. 1998 was the year that Parliament passed the current Zambia Wildlife Act. This set the stage for the establishment of the Zambia Wildlife Authority. The institutional transformation process left a lean staff which could not cope with protecting the wildlife. The funds committed by donors to finance ZAWA, the new wildlife institution were withdrawn. Consequently there was inadequate manpower and less law enforcement.

### *(5) Political interference in the hunting industry*

Safari hunting contributes the bulk of revenues for ZAWA and the CRBs. In the period 2001 to 2003 there was a Presidential ban on hunting and therefore ZAWA was deprived of its main source of income.

### *(6) Historical development of GMAs*

Important to this study too is the historical development of GMAs, how the Parks and GMAs were drawn. Before Independence GMAs were designated as controlled hunting areas reserved specifically for hunting. Around the Kafue National Park, unlike the South Luangwa National Park there were initially no settlements supposed to be in the adjacent lands, GMAs. These were bordered by open areas which were sparsely settled. The open areas have been lost to human settlements, now the GMAs are quickly being lost and parks are being encroached upon.

*(7) Participation in CRBs and VAGs*

The conclusion that only the rich seem to participate was challenged. A contrary observation was that a person may be educated and poor but can participate as a CRB member. It was also observed that participation by CRB members cannot be separated from participation by VAG because CRB members are drawn from VAGs.

*(8) Review of Government policies*

Government policies are being reviewed in the natural resources sectors. Government is not going to proceed with formulation of a protected areas policy as envisaged in the Reclassification Project but government has instead opted to revise the wildlife policy and Act.

*(9) Perceived lack of benefits for poor GMA residents*

It was unfortunate that resident communities in GMAs do not seem to benefit when reports from Kenya and Uganda reveal that people derive significant benefit from living alongside wildlife. A call was made for a comparative study to show how wildlife management in other African countries has benefited their rural communities.

*(10) Need for holistic approach in country comparative studies*

Comparative country studies need to acknowledge differences in economic and business environments in the countries being compared. There is need to look critically at the factors that drive the industry in South Africa when comparing income earned from hunting in the region. We must realise that South Africa has many game ranches which are free to set own prices while Zambia uses a quota and prices are set by ZAWA. For example, there are about 5,000 game ranches in South Africa while Zambia only has about 35 safari operators and is therefore quite disadvantaged in terms of benefits accruing from wildlife conservation efforts. There is need to look broadly at the entire supply chain and not only farm-gate prices taking into account accessibility to markets, political bans and the fact that new entrants into the sector need a learning curve among others.

*(11) Human/Animal conflict:*

Deaths of human beings and livestock are critical economic costs to communities residing in GMAs. They deserve to be reported on.

*(12) Governance in local structures*

Questions were raised concerning governance in the local structures, the CRBs and VAGs. Should the local governance structure be redefined if they are seen to be not conducive? Is the VAG the more participatory unit as it was intended? Should the entire system be redesigned? Are there other things that can be done to improve delivery?

Sympathy expressed for the weak performance of community structures; that the forum should realise that the issue of institutional capacity is complex. Great responsibilities are placed upon community structures but no capacities have been given to them to match their legal responsibilities.

*(13) Evaluation of CRB and CBNRM performance*

There has been tremendous increase in community participation since the launch of the CBNRM policy in 1998 but it is not known whether empirical evidence is available as to whether wildlife numbers increased or decreased following this.

While it is acknowledged that there are tremendous improvements in relations between GMA residents and ZAWA it was difficult to establish whether there was, as a result, any progress achieved in increasing animal populations. This is worsened by the absence of animal surveys

in recent years. It is difficult at this stage for ZAWA to confidently establish progress because it has not done country-wide wildlife surveys. The first of such surveys was only done in 2008 and this will be used as a baseline for the ones to come later. It is, however, important to note the effect of other factors such as GMA encroachments as well as donor funding. While such a stock could be useful, some felt that there are many other variables that would affect the performance of wildlife management under the CBNRM programme.

*(14) Effect/Impact of other policies on GMAs*

The forum was cautioned not to rush to conclusion that policy failure is responsible for degradation of GMAs because there are other policies like forestry, water and land impacting on activities in a GMA.

## **2.5 POLICY RECOMMENDATIONS AND OTHER SUGGESTIONS FROM SESSION I: PANEL ON COMMUNITY BASED NATURAL RESOURCES MANAGEMENT.**

*1. Explore partnerships such as public-private-community partnerships:*

- a) The success of PPPs requires improvements to existing policies and legal frameworks.
- b) Legislation should have a clear incentive framework to stimulate communities to appreciate the objectives of PPPs.
- c) Furthermore, it should provide for a clearer definition of communities' rights to natural resources. Security of tenure would be legally enshrined in the agreements and policies.

*2. Adopt business-oriented approaches.*

- a) Donors will continue to support some activities, BUT such investments are rarely long-term and do not allow methodologies to mature and local capacity to be installed.
- b) Therefore business-oriented approaches should be adopted in order to guarantee continued investments in community development activities.
- c) Local people must be encouraged to engage in businesses. The recently enacted law, the Zambia Citizen's Empowerment Act, is expected to enhance local participation in business.

*3. Legalize Community Structures.*

- a) Community structures should be registered under the relevant legislation to grant them legal status enabling them to deal with other entities as equal partners and enter into legally binding agreements.
- b) Resource ownership should only be given upon a community showing proof of interest, capacity and the means to assume responsibility for the management of the resources. As such, communities must define their boundaries, membership, roles and responsibilities, produce action plans and define benefit-sharing mechanisms.
- c) Devolved rights should include adequate authority and responsibility for the management, benefit and disposal of resources within agreed frameworks as well as the right to exclude others who are not defined participants.

*4. Diversify away from wildlife.*

- a) A new wildlife management policy must address communities' access to other, non-wildlife, natural resources, which the majority of poor households depend upon. This will expand the horizon of opportunities.
- b) The government has prioritized the agricultural sector as a vehicle for reducing rural poverty and is providing incentives for agricultural development. The agricultural expansion however should be implemented in a manner that does not compromise the objectives of the GMAs.

*5. Position ZAWA as regulator and advisor rather than implementer*

- a) Managing a wildlife estate of 19 national parks and 36 GMAs covering more than 30 percent of the country's territory is overwhelming.
- b) ZAWA faces challenges in maintaining the national parks. The task given to ZAWA is too ambitious for a single institution unless its function evolves from *hands-on* to regulatory
- c) ZAWA's staff comes from a culture of conservation and wildlife management rather than community development. Consequently, ZAWA tends to allocate its resources to the most pressing conservation needs, i.e. Surveillance of its national parks.

*6. Compensate farmers for losses caused by wild animals*

*7. Engage village scouts in patrols to curb crop losses and other human-animal conflict*

*Other suggestions for consideration*

1. A study to compare the benefits at household level in Zambia with other countries would be useful.
2. Review governance aspect of the CRB and link it to incentives.
3. Review policies to incorporate capacity building for participation by poor households?
4. Suggest broader roles for village scouts to curb crop damage
5. Devise mechanisms for compensating farmers for losses?
6. Explore ways to determine the impact of development projects themselves, recognizing limitations of data.
7. Now is the time to make a decision/choice: Is it wildlife or is it people to prioritize in GMAs?

## **3.0 PANEL SESSION II: LAND USE AND INTENSIFICATION OF AGRICULTURAL PRODUCTION**

### **3.1 THE CHALLENGE OF INTEGRATING THE GOALS OF PRODUCTIVE LAND USE AND BROAD-BASED AGRICULTURAL DEVELOPMENT IN ZAMBIA. BY ANTONY CHAPOTO**

The study addresses access to Land and its implications for rural poverty reduction at the national-level, which includes households both inside and outside GMAs. It also examines implications of finding for current policy for land development. Data was drawn from nation-wide Supplemental Surveys, conducted as a complement to Post Harvest Surveys conducted in 2001, 2004, and 2008 by CSO and FSRP respectively.

#### *The Problem*

1. Land constraints, among others, are increasingly impeding achievement of poverty reduction goals inside & outside GMAs
2. Land productivity is far below potential – in part due to inadequate investment in land and related factors for smallholder farming areas
3. There remains a great deal of unutilized land in Zambia:

*Objectives of the study are to discuss the extent of land pressures within customary land (smallholder) sector in order:*

1. To show how land disparities within the smallholder sector affect agricultural growth and poverty reduction goals
2. To report traditional authorities' views about transfer of customary land to the state & other issues
3. To consider alternative land policy options for addressing the goals of broad-based rural development and food security

#### *Data and methods*

The nationally representative empirical data base on small holders in Zambia is from rural household surveys conducted by CSO and FSRP in 2001, 2004 and 2008. Data were supplemented in 2008 by information gathered from nationally representative interviews with village headmen.

#### *Findings*

Leaving the relatively small number of commercial Zambian farmers aside, most rural farmers own small farms. But there is considerable variation in access to land and household income performance among smallholders. For example, in 2004, the top 50% of maize sales from smallholders came from 2.5% of the farmers who have an average farm size of 4.6 hectares (ha). The rest came from 26% of the small holders whose cultivated farm sizes averaged 2.0 ha. However the majority (72%) of smallholder farmers did not sell maize, and these households cultivate an average farm size of 1.3 ha. And many among this majority live on much smaller farms. In the 2008 survey, the middle category increased slightly to 28% and average farm sizes decreased to 1.9 ha. The population of small holder farmers who do not sell maize declined to 68%, and average farm size was 1.2 ha. The top category selling 50 % of the national smallholder maize crop increased to 3.2% while their average farm size increased to 4.8 ha.

Overall the poverty incidence in the rural population is still very high--about 80% compared to 34% for the urban population in 2006 based on studies from CSO.

What have we learned about tradition leaders' views on the transfer of land from customary tenure to State land? Of the 1053 headmen who were interviewed in 2008, 82% responded that they believe it would be bad policy to transfer land from the traditional sector to the State. The remainder (18%) said it would be a good policy because it would provide security of tenure and reduce land conflicts. The 82% who were opposed argued that traditional authorities would lose power and the poor would lose access to land.

In the first Supplemental Survey, households were asked directly about their perceptions of the availability of unallocated land in their communities. Those who indicated that unallocated land was available were more likely to already have more land, were related to the headman, and were farther away from roads and towns. Those who answered no to the availability question were more likely to be among female-headed households, were located nearer to towns and roads, and were more likely to have lived longer in the village.

One option is for Government policy to try to favour the development of farm blocks but these are remotely located, in areas that have few people and without effective private sector involvement. Farm block development will be difficult to implement and sustain.

If GRZ puts significant money into farm blocks, this could leave out the majority. What is the right way forward on this issue?

There are disparities in funding in the agricultural sector budget. For example, the 2009 public budget for the sector shows that 8.2% is allocated to the Food Reserve Agency (FRA) and 35.3% to the Fertilizer Support Programme (FSP). Both support maize production with public sector subsidies that lower input prices and raise output prices. With relatively few resources for other productivity enhancing investment like research and extension raises questions of whether agriculture is going to achieve sustainable improvements with this funding pattern.

A Result of this prior funding approach over the years is that:

- Productivity has remained almost constant despite the maize support programme
- Rural poverty has remained high
- Production per hectare from fertilizer users is almost static and for non fertilizer users it is declining.

There is an opportunity with greater access to land

- There is unutilized productive land in Zambia – how best to utilize it and what to do to help the 1.5 million smallholder farms in Zambia (roughly 60% of the population) is the challenge

The Land Bill of 1995 outlines the following land development proposals:

- Encouraging chiefs to transfer land from customary system to state land. The State then provides title to entrepreneurs to make productive use of the land
- Farm Blocks development-. The State plans to invests in infrastructure (roads, dams, electrification, main irrigation facilities). This is likely to be a major plank of the Sixth National Development Plan for the agricultural sector. Some investment in settlement schemes and then
- Encouraging Private investment in farmblock and settlement schemes



Most locations of Farm Blocks are somewhat distant. So far, the State has not involved the private sector in design of new Farm Block schemes. The public-private partnership concept has not been implemented.

#### *Summary and conclusions*

1. Land constraints and low productivity of smallholder agriculture are leading to high rural poverty. Despite urban migration the absolute number of rural households in poverty continues to grow
2. Rural settlement follow closely public investment in rural infrastructure
3. Land constraints in a land-abundant country is not a paradox because economically viable arable land requires access to basic services, water, schools, roads, and markets in the customary system, where land could be allocated
4. The basic public investments to make additional settlement economically viable have yet been made in many areas of Zambia
5. Complementary investments in land productivity enhancements (research, extension, etc.) are underfunded

#### *Policy implications/suggestions*

The study suggests a review of the agricultural policy in the following dimensions:

- Address land constraints for small holders
- Consider additional investment for land development targeted at existing small scale farmers
- Consider greater investment in public goods to improve the foundation for productivity growth e.g. infrastructure, extension, research
- Land use and productivity improvements need to be addressed carefully, and jointly .

### **3.2 CONSERVATION FARMING AND RELATED NATURAL RESOURCE POLICIES FOR SUSTAINABLE AGRICULTURAL INTENSIFICATION. BY PETER AARGARD**

#### *Introduction*

The rationale for CF (conservation farming) research is motivated by the prevailing tillage/farming practice among smallholder farmers of abandoning pieces of land when productivity is lost after several years of use. This raises challenges to (i) increase productivity and (ii) identify markets for the crops produced..

CF in Zambia combines practices of improved reduced tillage (IRT) and/or conservation tillage (CT), with a practice of combinations of crops wherein about 30% land farmed should be occupied by legumes.

CF research has been flexible, accommodating a wide range of planting configurations, many different crops and cropping systems, including rotations, inter-crops, relays and agro-forestry trees. It can accommodate non-organic and organic supplements or combinations of these. The key principles of CF are to: i) Minimise soil disturbance to the extent possible, and ii) Maximise soil cover to the extent possible and iii) Diversify cropping patterns to the extent possible.

Conservation Agriculture (CA) is simply conservation farming with the establishment and survival of a minimum of 50 *Faidherbia albida* trees per hectare. *Faidherbia albida* also known locally as *Musangu* is being used in trials to improve soil fertility.

The presentation focused on two main issues:

- (i) The perception that Conservation Farming (CF) is labour intensive and

(ii) The perception that adoption of CF is low among Small Scale Farmers

#### *Findings*

(i) The perception was discussed that Conservation Farming (CF) is labour intensive. Conventional tillage practices were compared with CF in terms of labour intensity expressed in Standard Persons per Day per hectare (ha). A Standard Person Day equals six hours per day. CF is a dry Season Hoe Tillage option in Zambia which involves digging basins measuring 12x30x20cms deep. Work can commence in May/June. Labour is thus spread over several months. Soil movement is 80 tons/ha in first year. CF has slightly higher labour input of 40 to 50 SPD /ha from the second year onwards, when labour is reduced to 30 to 35 SPD's/ha. In the conventional option of dry season overall hoeing, labour required is 100 to 116 SPD/ha. In the option of Wet Season Overall Hoeing in Zambia labour required is 25 to 35 SPD/ha.

(ii) The perception that adoption of CF is low among small scale farmers

Adoption is estimated at 270,000 farmers on portions of land. This is based on a 2006/7 baseline study of 93,000 farmers. This level of adoption is seen to be a commendable achievement when compared to Zimbabwe with 50,000 beneficiaries and adoption at about 30,000 farmers. Elsewhere in East Central and Southern Africa promotion is negligible. Reasons for low rates of adoption are lack of consistency by major NGOs and poor delivery of input packs and poor training.

#### *Factors associated with low productivity*

Important factors identified with low productivity are land degradation caused mainly by the conventional method of repeated ploughing and soil compaction, and late planting.

With the above practice, a compact soil layer develops at about 12-14cms, degrades land. In these drier season's panned soils, root development is stunted, causing severe moisture stress. Rainfall cannot infiltrate the soil, and soil is also washed away. In wetter seasons, compacted soils cause water logging from impeded drainage. When soils are exhausted farmers **migrate** and encroach on primary or rejuvenated woodlands to exploit accumulated fertility. Top soil loss is the reason for farmers migrating from the grain belts of Zambia, particularly from the Tonga plateau of Southern Province.

In ox ploughing areas, late planting is a result of farmers having lost animals from animal diseases. They now queue to wait for hire of oxen. This delays their farming (especially planting dates) and leads to losses. An estimated 1.7 million hectares are planted and then abandoned because of late planting. The cost of hiring oxen to plough is between ZMK 225,000 to ZMK 275,000 per hectare. Late ploughing results and crops fail even in years with good rainfall. There is no weed invasion benefit.

#### *Conclusions*

Results have shown that CF minimum tillage does not demand more labour, and does not increase weed pressure compared to other conventional tillage practices in Zambia. The success of CF is reflected in increased yields and small scale farmer's improved welfare. Indicators of improved welfare are more money in farmer's pockets which enable, farmers to meet their basic needs and send children to school, better housing, better fed and better clothed families.

### **3.3 INSIGHTS FROM THE COMACO MODEL. BY DALE LEWIS**

Community Markets for Conservation (COMACO) is a limited company by guarantee which works with local people and other stakeholders, local government and chiefs. COMACO's strategy is to engage in business partnership with communities that agree to conserve natural resources, mainly wildlife, forests, land/soils and water. Areas of operation include Chama, Mambwe, Serenje, Chinsali, Nyimba and Luangwa districts.

#### *Issues*

COMACO operates as a company but targets threat groups such as poachers and charcoal producers for their transformation. It works as well with farmers who are food insecure and practice unsustainable farming methods. The programme works with traditional rulers and headmen to identify target families. These are given training in alternative skills. Trained members of the group are given tools for livelihood skills. Farmers are trained in conservation farming as part of efforts to improve soil fertility and intensify food production. Emphasis is on household food security first but excess produce is purchased by COMACO and sold to retail outlets in urban areas as processed, value-added products or to commodity markets as raw, unprocessed commodities.

On the plateau, watersheds are degraded by agricultural practices and charcoal production. Zambia is losing tons of soils from erosion in these areas, which is contributing to a range of related, downriver costs borne largely by Government. COMACO helps to reduce these costs.

#### *Indicators of success*

Success is viewed from conservation perspective and household welfare. Results of aerial surveys done in the Luangwa valley showed that except for eland, populations for species targeted are either improving or stable. Other benefits are saving for government – huge saving of resources which would be spent on arresting poachers, saving lives, better food security, and better income for rural poor to support health and education needs. Organic products are now sold in major retail outlets in towns and cities providing better income per household. Families are able to take their children to school

#### *Challenges*

The challenge is how to integrate human welfare with goals of conserving land, soils, water and forests. Water and watershed management requires urgent attention. Many tributaries of the Luangwa are at risk of drying up. Zambia is losing tons of soils from erosion, a loss that needs to be determined in monetary terms. Should the current trends continue the Luangwa River will be at risk of drying up for periods long enough to threaten wildlife and tourism. When food and income security is addressed farmers can then reflect on matters such as conservation, which is what COMACO is able to do. then discussions on how to improve conservation can become more creative and acceptable.

*Conclusion:*

The COMACO Company demonstrates new potential solutions for conservation by linking food security and markets to conservation and farming. The approach is at a relatively early phase and is attracting considerable interest and research to help strengthen the approach further.

### **3.4 SUMMARY OF PLENARY DISCUSSION**

*Issue: Synergies between wildlife conservation and farming in GMAs*

Some participants did not see the linkage between land issues and GMAs, and requested to know the relevance of discussing land and conservation farming issues in relation to wildlife and matters relating to GMAs? One observation was that there was normally limited time in discussing land issues in the perspective of wildlife and GMAs as land issues are not a mandate for ZAWA. The forum offered such an opportunity. COMACO has seen synergies for campaigns with regard to land issues and is working with ZAWA to address some pressing issues in this regard within its catchment areas, though more still has to be done. COMACO inculcates within its clientele that GMAs need to be run as businesses, that money can be created from natural resources and that farmers and wildlife are complimentary rather than opposites as both depend on land.

*Issue: Conservation farming in Zambia is now growing.*

Would it be reasonable to say that most of agriculture in Zambia will be under conservation farming by say 2020, or there is still space for other types of agriculture one asked? Of land under conservation in the world only 0.4% is located in Africa. There are currently about 240,000 farmers practicing conservation farming in Zambia and it is expected that the number of adopters will increase to between 400,000 and 450,000; but it should be borne in mind that conservation agriculture is not for everybody. At the moment, about 60 to 70% of the farmers in Mumbwa use conservation agriculture and these farmers are better off for example in terms of asset ownership.

*Issue: Concern for Small scale farmers' use of herbicides*

Herbicides in conservation agriculture can be done away with according to some experts. The forum was informed that herbicides usage per se has no adverse effects. The problem that is being faced is improper and ineffective use of these products, especially by smallholder farmers. About 5 hours need to be invested to train a farmer on proper herbicide use. Farmers in the US have been using herbicides for over 130 years without side effects, according to advocates of CF.

*Issue: High capital costs in the COMACO approach*

The COMACO model is operating its marketing activities with a working capital of about US\$ 1 million. Questions were raised concerning sustainability of such expensive operations and some sought to know what type of exit strategy COMACO has in place. COMACO incurs high transaction costs in its marketing activities. The high transaction costs are linked to bad roads, training and small volumes of trade but the company competes with established companies which are big, multinational and have less transaction costs through economies of scale. However, COMACO as a company is growing with the communities who are regarded as partners. COMACO looks at its future in terms of its sustainability/as a business rather than an exit strategy. The ultimate goal is to make farmers better producers (self employment) through reliable and increasingly diversified conservation-friendly production and markets plans, and to plough back money in the community. In this way it is hoped that in the long run the company would recover its investments in the communities and ultimately exit from donor support.

*Issue: Rural poverty reduction and land tenure*

Rural poverty reduction in Zambia is closely linked to the dual land tenure system where state-land has title while customary land does not, and therefore can not be used to secure investment funding. It was suggested that a solution could be to allow traditional leaders to issue certificates of title to customary land which would be bankable. This proposal is currently being considered by the National Constitution Commission. However an observation was made that once customary land was made bankable then it could potentially be sold by financing institutions and be eventually lost by traditional authorities.

In addition, there are concerns with security of land tenure in GMAs due to conflicts and displacements. Sometimes mining and/or exploration licenses create conflicts just as much as settlements and farming.

## 4.0 GUIDED PLENARY DISCUSSION

Moderators led guided plenary discussions of the issues outlined in the research presentations by posing questions that emerged from the research findings. Questions and summaries of the discussion are presented below.

*Discussion question: Is there need for an umbrella body and one natural resource apex? Consider legislative content and institutional capacity for implementation*

The forum discussed possibilities of bringing together the natural resource agencies under one institution for improved coordination. The forum resolved that this was unnecessary, that there were adequate provisions in existing structures to decentralize management of natural resources, from provincial through district to sub-district levels with well spelt out roles for chiefs. Current legislation in place affected development at the sub-district level as it does not clearly spell out the roles of local leaders and hence their authority is quite often undermined. Traditional leaders or chiefs need to be involved in the formulation, implementation and monitoring and evaluation of programmes affecting their communities.

*Discussion question: Management focus is on protected areas. What about management of natural resources in open areas?*

Government's role should be legislation and effective enforcement of protection of natural resources in open areas but active management should be devolved to local communities. One suggestion was to have provincial and district land use plans. Open areas could be delegated to chiefdoms with more active participation of communities. Resources to protect should not only be wildlife but all common property resources. However, legal backing is needed for effective protection of these resources.

*Discussion question: How can broad-based community participation be enhanced?*

How do chiefs feel about power to control, for example, charcoal burning or any other resource use? Some chiefs have banned charcoal burning and are involving officers from the Forestry Department to do this but most chiefs are not aware how far the development of the Forestry Policy is in terms of assigning them rights as proposed previously in joint forestry management since they have not been involved in the process of developing it. The chiefs advised that chiefs' roles should be spelt out clearly within the policy from the outset.

According to the Forestry Department (represented in the meeting), the Forestry Policy review was advanced and a draft 2009 policy document had already been produced. A suggestion was made to the forum to send resolutions from the meeting to the consultant finalising the document for possible inclusion. Another proposal was to empower local courts to address basic natural resources use regulation such as farming on steep slopes, illegal tree cutting and snaring. Emphasis was placed on the need to educate communities to develop a sense of ownership of community property resources. Community members need to appreciate the benefits for them to cooperate.

*Discussion question: To what extent should natural resource rights be devolved to community based organisations in the CBNRM?*

Conservation is not a new concept according to some traditional leaders, as it has been practiced traditionally since time immemorial. Abolishing the Chiefs and Natives Act and replacing it with the Local government Authority Act removed the chief's authority to enforce natural resources conservation. The result was high levels of degradation. The Forestry Act of 1972 was repealed in 1998 when joint forestry management was introduced, but still chiefs do not have sufficiently effective authority because the policy was not implemented. Natural resources management was best left to the communities with Government providing a regulatory framework.

*Discussion question: How can we improve access to land for the poor majority?*

An accepted National Constitutional Conference proposal is to recognise ownership of land in villages and recommends that chiefs be given authority to sign documents of ownership. Ownership would revert to the chief when this land is no longer used by those to whom it was given. Parliament is expected to enact the legislation as soon as the constitution is amended and adopted. Land will then be bankable but sensitisation is necessary at the traditional level for transparency and to avoid land selling. The new law being developed is also going to make land speculation illegal.

*Discussion question: How best can access to land for settlements, agriculture and other land uses be regulated in GMAs to allow for social and economic uses of all natural resources while maintaining the ecological functions of GMAs?*

Zoning was recommended as a way of separating areas for protected natural resources away from those for conservation farming. People living in GMAs should also be supported to grow their own food. Fences may be considered to fence out wildlife in order to minimize conflicts with humans. People in GMAs must really see the benefits from wildlife conservation if it is to be appreciated. Government efforts include the Reclassification project which is trying to identify other areas for conservation instead of current GMAs where there are conflicts. Another option considered is to move animals to un-inhabited areas.

*Discussion question: Is conservation farming an answer to increasing productivity for small holders and attaining conservation of the soil?*

CF is an answer to increasing small scale farmer's productivity. It is cheaper. While conventional ploughing takes 120l diesel/ha while minimum tillage only takes 25-30 l/ha. Another advantage is that it does not destroy the soil (no oxidation of organic matter). Present farmers and other people need to be taught its principles and practices.

*Discussion question: Can the marketing institutions (CTCs) in the COMACO model be sustained? Can the model be adopted by community-based organisations (CBOs)?*

Using CRBs as an example, the COMACO approach can be linked to CBOs but CBOs would need capacity building and infrastructure development as well as Zambian professional staff. Commodities need to be pooled from single CTCs in order to reduce transaction costs. The model needs another 4-5 years before it can really be shown off. The idea of mainstreaming the model into line ministries was not favoured as the COMACO model is a business partnership with the local communities and should be viewed as such.

## 5.0 Summary of Policy Implications and Considerations

### 5.1 GOVERNANCE OF NATURAL RESOURCES

5.1.1 *Discussion:* Economic growth and urbanisation in Zambia coexist with persistent high levels of rural poverty and food insecurity that have increased demands on natural resources and contributed to accelerated environmental degradation. Service delivery at all levels of governance needs to be restructured if the promotion of economic development and management of natural resources is to improve. Improved broad-based human welfare and environmental outcomes are possible. New strategies based on appropriate resource management systems which promote broad-based participation and address household benefits are more likely to be appreciated and offer incentives for more effective community-based natural resource management. At present, benefits are captured mostly by non-poor members who dominate the membership in local-level management structures.

5.1.1 *Recommended Actions:*

- (a) Build more local-level capacities to effectively participate in decision-making, benefit-sharing, and natural resource management. This may be done in public-private-NGO-community partnerships;
- (b) Review and strengthen the incentive structure for community-based natural resource management. This calls for a restructuring of the benefit sharing schemes;
- (c) Carry out comparative country studies on the impact of the CBNRM model, and effectiveness of participation by poor households.

5.1.2 *Discussion:* Stakeholders are strongly concerned about the weak performance of government agencies with respect to effective development as well as enforcement of laws and regulations. The Forest Department was identified as one good example of such failure as charcoal production and trade seems to be taking place with almost no controls. In fact, at the moment, the only sub-sector where some policing is evident is wildlife.

5.1.2 *Recommended Actions:*

- (a) Improve management capacity and to strengthen enforcement of laws and regulations in relation to all natural resources. This may entail training, increased awareness, increased human and financial resource allocation, improved coordination with other institutions, and harmonisation of legal and policy frameworks among other possible actions.
- (b) Explore more innovative approaches to resource development and enhancement through partnerships. This will require creating an enabling policy environment for other stakeholders (NGOs, private sector, communities) to effectively participate in managing natural resources. Some rights of ownership need to be gradually devolved.

5.1.3 *Discussion:* Resources in open areas (land, watersheds, biodiversity) have been neglected as they are considered common property. Soil erosion, gully formation, deforestation, and cultivation on hill slopes and watershed areas are not checked or controlled. No institution seems responsible for managing land and the environment in general. Some chiefs do not reside on their lands and hence have no authority on how its resources are used.

5.1.3 *Recommended Actions:*

- (a) Strengthen options for custodianship of natural resources in open areas by local chiefs and their communities. This may entail legislative changes and their strict implementation.



(b) Promote farming practices that do not degrade the environment and natural resources. This requires significant strengthening of extension as well as stricter monitoring in key resource use areas. The MACO and the MTENR will need to draw upon each other's synergies and work together if this is to be achieved. There is need for a government agency under the MTENR that is tasked to monitor land-use practices and that reinforces leadership by provincial government authorities to help lead and coordinate provincial land use plans. Such monitoring can be implemented in partnership with local government and community-based institutions to contribute local land use planning efforts.

## **5.2 POLICY AND LAW REVIEW PROCESSES**

5.2.1 *Discussion:* Policy review processes are argued not to be transparent enough. For example, some chiefs have expressed ignorance of the just-ended wildlife and forestry policy review processes. The House of Chiefs and the private sector are among the stakeholders whose interests are argued to be undermined by weak enforcement of laws in the natural resource sector.

5.2.1 *Recommended Action:*

(a) Be more transparent and inclusive when reviewing policies and laws. The just-ended reviews of the forestry and wildlife policies should be re-opened and subjected to further consultations with a wider set of stakeholders, who feel left out. Engage with the house of chiefs when conducting reviews of policies.

5.2.2 *Discussion:* Lease agreements for hunting concessions will expire in 2012. There are clauses in the concessions that are linked to the Wildlife Act. Reviewing the Act may lead to some of the clauses being legally unsupported. Thus, the review of the Wildlife Policy and Act must be completed in good time to allow for tendering and drafting of new concessions and marketing before the existing ones expire. New leaseholders must have enough time to market their areas to avoid loss of revenue to ZAWA.

5.2.2 *Recommended Action:*

(a) Commence the review of the Wildlife Policy and Act soon to allow preparations of the tender process and lease agreements. A technical committee of qualified experts knowledgeable about wildlife management issues in game management areas should advise MTENR on how to i) restructure the safari hunting industry to better support conservation and community needs and ii) reduce the cost of wildlife management by ZAWA

## **5.3 Public-Private Sector Partnerships (PPPs)**

5.3.1 *Discussion:* Capacity to manage natural resources is limited at many levels. Communities are limited in terms of technical knowledge and their abilities to understand investment initiatives and to negotiate effectively with investors and programme implementers. The capacity of CBOs to adopt business approach requires a lot of training to transfer entrepreneurship skills. Public resources, both human and financial, are limited, rendering the government incapable of effectively managing the natural resource estate on its own. Increased capacity to manage natural resources requires substantial financial resources, which often is more easily mobilised by the private sector and NGO partners. Therefore, one of the strategies commonly advocated in recent years is to facilitate pooling of resources and interests among the public sector, private sector players, non-governmental organizations and communities. If well-designed and well-managed, these partnerships could generate useful synergies.

### 5.3.1 *Recommended Actions:*

(a) Expedite and facilitate participation of all stakeholders in the legislative review processes. The success of PPPs requires improvements on existing policies and legal frameworks.

(b) For new legislation, consider more innovative models of conservation and rural development. For example, models that foster private sector investment in forestry establishment and wildlife conservation should be considered.

(c) The public sector needs to find more and effective ways to position itself as a facilitator, monitor and regulator, while encouraging active but regulated participation of other key stakeholders, including the communities, NGOs and private sector.

## **5.4 BUSINESS-ORIENTED APPROACHES FROM A STRENGTHENED PRIVATE SECTOR INVOLVEMENT**

5.4.1 *Discussion:* Natural resources management at the moment relies heavily on support from the government, the private sector and donors. However, private sector and donor support are short-term and largely uncoordinated and unpredictable. There is need to streamline private sector investment and contributions.

### 5.4.1 *Recommended Actions:*

(a) Pool and coordinate private sector support and contributions. Zambia can learn from innovative approaches used by other countries. South Africa, for example, pools resources from banks and other private contributors under the Tourism Enterprise Promotion (TEP) initiative.

(b) Undertake comparative studies that involves visiting and learning from other countries. This should be undertaken by a multi-disciplinary team comprising professionals comprising researchers, business individuals and houses, and the government.

5.4.2 *Discussion:* There is a lot of emphasis at the moment on wildlife resources in GMAs. Other natural resources are not given as much attention and their potentials are virtually unexplored such as medicinal plants. Phytotrade estimates a potential regional value of US\$ 3 billion for eight oil producing species of wild fruit, from recent surveys, provided reliable markets can be established. Some of these species are found in most forest types of Zambia

Business-oriented natural resource management needs to explore and fully exploit a wide set of available opportunities.

### 5.4.2 *Recommended Actions:*

(a) Revamp and enhance research that is aimed at identifying nature-based business opportunities and ways to exploit them.

(b) Proactively cultivate an enabling business environment, including increased avenues for accessing financing at low interest rates, and tax incentives. This is especially important for local entrepreneurs with no access to cheaper external funding but would like to venture into natural resource-based enterprises.

(c) Undertake marketing and promotion activities for the nature-based products, as a country. For example, South Africa markets the Victoria Falls as if it were within its borders. Zambia needs to be more aggressive in penetrating markets for her natural resources.

## 5.5 LAND ACCESS AND SECURITY OF TENURE FOR IMPROVED SMALLHOLDER FOOD SECURITY

5.5.1 *Discussion:* Zambia is generally regarded as a land-abundant country. Yet research evidence indicates that the majority of smallholder farmers own and cultivate very small portions of land, and farm sizes are decreasing with time. Research also shows that smallholder households with larger portions of land are better off, and those with small portions are generally poor. Moreover, land productivity is generally very low among smallholder farmers. It appears, therefore, that poverty reduction in rural areas is closely related to land access among other factors. Even when one has access to land, they typically do not have security of tenure and other complementary land-enhancing and settlement productivity services are often lacking. Displacements to give way for large-scale investors and wildlife are common occurrences. Ability to secure funding with land as collateral is even further fetched.

### 5.5.1 *Recommended Actions:*

- (a) Devise more effective ways to improve access to land on the part of smallholders. Complement the policy of farm blocks with more localized programmes. Zoning, for example, has been proposed to increase land access for smallholder households in GMAs.
- (b) Raise the value of land in these remote areas by improving infrastructure such as roads, and communication facilities. Doing so would also attract private-sector investment and improve settlement of existing farm blocks in GMAs.
- (c) Find more effective ways of securing individual (smallholder) household tenure and communal rights to land and other natural resources. The idea of traditional certificates of title from chiefs is being considered by the National Constitution Review Commission (NCC), and was proposed during the outreach forum.
- (d) Develop enhanced approaches to raise productivity of smallholders' agricultural land through greatly expanded applied research and extension.

5.5.2 *Discussion:* Co-existence with wildlife cannot be without human-wildlife conflicts. These need to be minimized to the extent possible. GMAs still have land parcels where agriculture can be promoted. However, migration into wildlife habitats and other protected areas must be strictly controlled. Animal habitats and area that have to be placed under agriculture must be clearly mapped out. Now is the time to prioritise conservation areas and strengthen protection of animal habitats, while also finding ways to improve smallholder welfare.

### 5.5.2 *Recommended Actions:*

- (a) Review and analyse the status of GMAs in view of expanding human settlements.
- (b) Develop more effective ways to safe-guard animal habitats with legal instruments.
- (c) Develop and implement regional and local integrated land use plans.
- (d) Define resource rights for institutions, individuals and communities to make regulation easy.
- (e) Coordinate with local government to resolve land conflicts among chiefs so as to increase land access by historically displaced groups.
- (f) Assist communities to invest their land in wildlife use with reciprocal rights to own majority shares or revenue benefits that might accrue from PPP ventures.

## 6.0 OTHER RECOMMENDATIONS

### 6.1 ISSUES FOR FURTHER INVESTIGATION

#### *Issue: CBNRM, Natural Resources Management and Food Security*

- i. Undertake a comprehensive assessment of benefits to communities from ZAWA funds and from other CBNRM programmes being implemented in GMAs.
- ii. Undertake a comparative country study of wildlife based CBNRM, examining issues such as community incentives, rights, capacity building, impediments to broad based participation,
- iii. Explore the effectiveness of governance structures since service delivery is failing for both wildlife management as well as community development. Consider possibilities of restructuring governance of natural resources.
- iv. Monitoring and evaluation of the CBNRM programme are essential. Evaluate the current programme to establish whether animals have increased and communities have benefited since the establishment of CRBs.
- v. Law enforcement and/or monitoring for natural resources are generally weak but worst in the forest sector. Evaluate the possibility of devolving management to a new institution or to local authorities, local communities in view of the poor performance of Forest Department as evidenced by the uncontrolled charcoal industry.
- vi. Consider reducing ZAWA's roles and functions. ZAWA is inadequately funded and cannot cope with managing Parks and GMAs. In some areas the private sector (concession holders) is responsible for supporting anti poaching activities e.g. Lumimba GMA is reported to have only four village scouts.
- vii. Human/Animal conflicts: crops, livestock and human losses are high. Explore ways of reducing these conflicts and facilitate agricultural production for residents in GMAs and around national parks. Pay more attention to food security as a policy matter and support that with actions e.g. consider crop protection as an additional responsibility for village scouts. Devise means of compensating individuals for their losses.

#### *Issue: Land access and Security of tenure*

- i. Insecurity of tenure and limited access to land on customary land perpetuate poverty. Villagers often displaced in some GMAs after considerable investment has been made by poor people. Lack of collateral for village land discourages investment. Historical displacements still have effects for some communities that have no proper land boundaries legally defined for them which has continued and lead to conflicts e.g. Kabulwebulwe in Mumbwa GMA. Government needs to resolve these conflicts.
- ii. Unclear resource rights in GMAs, makes regulation difficult or leads to common property syndrome – land, lakes, rivers, forests in GMAs. Some chiefs do not reside on their lands and hence have minimal say on how it is used
- iii. Poor infrastructure in rural areas/GMAs – roads are bad, no electricity, crop storage facilities are limited or do not exist in most areas. Hence areas are unattractive for investment. Crop marketing is difficult.

#### *Issue: Conservation Farming/ Improper and ineffective use of techniques*

- i. Technological transfer: Training of farmers for proper use of agricultural chemicals such as herbicides must be enforced to avoid environmental hazards.
- ii. Provide information on any comprehensive assessments of CFU that have been done so far which give a balanced view. If none have been done, carryout such assessments.

- iii. Productivity-more research on the agronomic as well as economic potential of CF is needed, especially under on-farm conditions, as well as under research station settings.
- iv. Marketing- in view of the prevailing market conditions should this be part of the package or do farmers have to sort it out themselves?
- v. Extension services.- how promotion and training can be scaled up, who bears the cost etc?

*Issue: Natural resource management legislative and Institutional capacity*

- i. Is decentralisation the solution – District, sub district levels with well spelt out roles for chiefs to manage natural resources? Currently legislation does not spell out roles of local level structures hence their authority is undermined.
- ii. Inadequate funding to institutions managing natural resources
- iii. Lack of or poor institutional coordination. The problem of unharmonised laws and policies persists
- iv. Mainstreaming, linking conservation and development how can planning for various land uses or integrated planning for GMAs be best achieved?

*Issue: PPPs and Business Environment*

Policies seem to acknowledge the importance of Partnerships. How much is being done? What else should be done to facilitate implementation of PPPs?

## **6.2 AWARENESS/OUTREACH**

There is need for broader dissemination of the research results presented in this forum

- i. Find ways to communicate resolutions from this forum to current policy formulation processes in Government.
- ii. Impart skills in Forestry management including charcoal production techniques and tree planting.
- iii. Empower CBOs with entrepreneurship skills. Expertise to build capacity in business management for CBOs is needed such as training on value adding, pricing, marketing, packaging, and lobbying for their interests

## **6.3 OUTSTANDING ISSUES**

The following issues were not discussed thoroughly due to lack of time.

- i. How can broad-based community participation be enhanced?
- ii. To what extent should natural resource rights be devolved to community based organisations in the CBNRM?
- iii. How can we improve access to land for the poor majority?
- iv. Land tenure conflicts in GMA
- v. Human animal conflicts in GMAs particularly the issue of compensation
- vi. Access to game meat by residents of GMAs

## **6.4 SUGGESTED STUDIES**

### *6.4.1 Natural Resources Conservation*

- i. There is lack of data on the impact of development projects in the CBNRM. Carry out inventories and assess impacts of such projects.
- ii. Collect current data on animal populations to show trends
- iii. Carry out studies to show the real economic value of wildlife (this is necessary if the Zambian people are to be enticed to conserve wildlife)
- iv. Identify positive indigenous knowledge values on conservation of natural resources and consider adopting them into modern conservation systems

### *6.4.2. Land Access*

- i. Conduct land audit type studies to show how much land is still under customary tenure/how much of it has been converted into State land
- ii. Address tenure conflicts between mining rights and conservation in GMAs
- iii. Identify and designate open areas suitable for wildlife conservation and consider degazetting GMAs that are currently heavily settled
- iv. Seek and consider other means of ensuring security of tenure on customary land

## **7.0 CONCLUSIONS AND WAY FORWARD**

The Director FSRP on behalf of all the organizing institutions thanked all participants for the success of the forum. Special tribute was given to the Traditional Leaders and the members of parliament for responding to the invitation and participating with great enthusiasm. The plenary discussion ended with a recommendation for a team of experts to analyse raised issues in detail, consolidate them and in consultation with other concerned policy makers formulate recommendations. The recommendations which would form part of the forum proceedings should then be submitted to the Minister of Tourism, Environment and Natural Resources. The institutions proposed for the team were Forest Department, CBNRMF, NRCF, House of Chiefs chairperson, Conservation Farming Unit, UNZA, Zambia Land Alliance, ZAWA, FAO, COMACO and World Bank. The FSRP performed secretarial and coordination functions. Not all representatives were able to attend follow up meetings but some contributions were received by e-mail and by telephone.

1. The output of the consultations was a summary of policy recommendations which forms part of this proceedings report.
2. A draft proceedings report was circulated to all participants for comments before being finalized and circulated to all forum participants.
3. The Forum suggested that there be continuity in discussing the issues raised until they are fully considered in the policy formulation process

Due to lack of time no discussions were held for short term actions that could be contributed to the Sixth National Development Plan .

# LIST OF APPENDICES

## APPENDIX 1 POWER POINT PRESENTATIONS

Appendix 1 a. The Impact of Wildlife Management Policies On Communities And Conservation In Game Management Areas Of Zambia. Downloadable at:

[http://www.aec.msu.edu/fs2/zambia/AZ\\_GMA\\_STUDY\\_IMPACT\\_OF\\_POLICIES.pdf](http://www.aec.msu.edu/fs2/zambia/AZ_GMA_STUDY_IMPACT_OF_POLICIES.pdf)

Appendix 1 b. Household Consumption and Natural Resources Management Around National Parks In Zambia. Downloadable at:

[http://www.aec.msu.edu/fs2/zambia/GTGMA\\_Consumption\\_Impact\\_03Dec09.pdf](http://www.aec.msu.edu/fs2/zambia/GTGMA_Consumption_Impact_03Dec09.pdf)

Appendix 1 c. The Impacts of Wildlife Conservation Policies on Rural Welfare in Zambia.

Downloadable at: [http://www.aec.msu.edu/fs2/zambia/RRNRM\\_outreach\\_forum\\_presentation.pdf](http://www.aec.msu.edu/fs2/zambia/RRNRM_outreach_forum_presentation.pdf)

Appendix 1 d. The Challenge of Integrating the Goals of Productive Land Use and Broad-Based Agricultural Development in Zambia. Downloadable at:

[http://www.aec.msu.edu/fs2/zambia/AC\\_Zambia\\_Land\\_NRForum\\_Dec3\\_2009.pdf](http://www.aec.msu.edu/fs2/zambia/AC_Zambia_Land_NRForum_Dec3_2009.pdf)

Appendix 1 e. Conservation Farming Unit. Downloadable at:

[http://www.aec.msu.edu/fs2/zambia/PH\\_FSRP\\_NATURAL\\_RESOURCES.pdf](http://www.aec.msu.edu/fs2/zambia/PH_FSRP_NATURAL_RESOURCES.pdf)

Appendix 1 f. Improving the lives of poor farmers, rewarding farming practices that protect nature: COMACO. [http://www.aec.msu.edu/fs2/zambia/Dales\\_Lewis\\_Presentation.pdf](http://www.aec.msu.edu/fs2/zambia/Dales_Lewis_Presentation.pdf)

## APPENDIX 2 BACKGROUND POLICY BRIEFS

Appendix 2 a. The Impact of Wildlife Management Policies On Communities And Conservation In Game Management Areas Of Zambia: Message to Policy Makers. Downloadable at:

<http://www.aec.msu.edu/fs2/zambia/resources/Final%20NCRF.pdf>

Appendix 2 b. Impact of Natural Resources Conservation Policies on Household Consumption around Zambian National Parks. Downloadable at: <http://www.aec.msu.edu/fs2/zambia/ps35.pdf>

Appendix 2 c. The Impacts of Wildlife Conservation Policies on Rural Welfare in Zambia.

Downloadable at: <http://www.aec.msu.edu/fs2/zambia/ps33.pdf>

Appendix 2 d. Access to Land and Poverty Reduction in Rural Zambia: Connecting the Policy Issues. Downloadable at: <http://www.aec.msu.edu/fs2/zambia/ps34.pdf>

Appendix 2 e. Enhancing Food Security through Conservation Farming and Conservation Agriculture. Downloadable at:

[http://www.conservationagriculture.org/assets/images/media/20070329\\_121608\\_Brief4-CF&CAandFoodSecurity.pdf](http://www.conservationagriculture.org/assets/images/media/20070329_121608_Brief4-CF&CAandFoodSecurity.pdf)

Appendix 2 f. Community Markets for Conservation (COMACO) Scaling up Conservation Impact through Markets that Change Livelihoods. Downloadable at:

[http://www.aec.msu.edu/fs2/zambia/Community\\_Markets\\_for\\_Conservation.pdf](http://www.aec.msu.edu/fs2/zambia/Community_Markets_for_Conservation.pdf)

Appendix 2 g. The COMACO Model for Increasing Small holder Farm Productivity and Decreasing Wildlife Poaching in the Luangwa Valley in Zambia. Downloadable at:

[http://www.ecoagriculture.org/documents/files/doc\\_62.pdf](http://www.ecoagriculture.org/documents/files/doc_62.pdf)



## APPENDIX 3 DOWNLOADABLE RESOURCE DIRECTORY

# NATURAL RESOURCE MANAGEMENT, PRO-POOR TOURISM, FOOD SECURITY AND RURAL DEVELOPMENT

A COLLABORATIVE EFFORT TO LOCATE AND MAKE ACCESSIBLE RESOURCE MATERIALS

NRCF (Natural Resources Consultative Forum)  
CBNRMF (Community-Based Natural Resource Management Forum)  
UNZA (University of Zambia)  
ACF (Agricultural Consultative Forum)/FSRP (Food Security Research Project)

### FSRP Policy Briefs [Top](#)

- [Impact Of Natural Resource Conservation Policies On Household Consumption Around Zambian National Parks.](#) Gelson Tembo, Sushenjit Bandyopadhyay and Jean-Michel Pavy. Number 35, October 2009.
- [Access To Land And Poverty Reduction In Rural Zambia: Connecting The Policy Issues.](#) T. S. Jayne, Ballard Zulu, Gear Kajoba and M. T. Weber. Number 34, Sept 2009.
- [The Impacts of Wildlife Conservation Policies on Rural Household Welfare in Zambia.](#) Ana Fernandez, Robert B. Richardson, David Tschirley, and Gelson Tembo. Number 33, September 2009.
- [The Impact of Wildlife Management Policies on Communities and Conservation in Game Management Areas in Zambia: Message to Policy Makers.](#) Phyllis Simasiku, Hopeson I. Simwanza, Gelson Tembo, Sushenjit Bandyopadhyay and Jean-Michel Pavy. Published by the Natural Resources Consultative Forum NRCF). June 2008 Policy Brief posted by FSRP.

### FSRP Research Publications [Top](#)

- [Wildlife Conservation in Zambia: Impacts on Rural Household Welfare.](#) Ana Fernandez, Robert B. Richardson, David Tschirley, and Gelson Tembo. Working Paper No. 41. September 2009.
- [Access to Land, and Poverty Reduction in Rural Zambia: Connecting the Policy Issues.](#) T.S. Jayne, Ballard Zulu, Gear Kajoba, and M.T. Weber. Working Paper No. 34. October 2008.

### FSRP Outreach Presentations [Top](#)

- [The status of customary land and how it affects the rights of indigenous local communities.](#) Submission by FSRP to the Parliamentary Committee on Agriculture and Lands Study, January 2010.
- Insights on Natural Resource Management and Rural Development in Zambia: Moving From Research Evidence to Action. Collaborating Partner Public Forum. Pamodzi Hotel, 03 December, 2009
  - [Forum Final Programme](#)
  - [Opening Comments](#) - Honorable Minister of Minister of Tourism, Environment and Natural Resources
  - Forum Summary Document and Suggestions for Action for SNDP and Beyond
    - [Recommendations for Policy Leaders in MTENR, MACO, Livestock and LANDS](#)
    - Proceedings Document
  - Panel Presentations on Community-Based Natural Resource Management
    - [The impact of wildlife management policies on communities and conservation in Game Management Areas in Zambia.](#) Alimakio Zulu(NRCF)and Mwape Sichilongo (CBNRMF)
    - [Household Consumption and Natural Resource Management around National Parks in Zambia.](#) Dr. Gelson Tembo, (UNZA)

- [The Impacts of Wildlife Conservation Policies on Rural Welfare in Zambia](#). Dr. Robert Richardson, (FSRP/MSU)
- Panel Presentations on Land Use and Intensification of agriculture/livestock production and potential for productivity enhancements
  - [The Challenge of Integrating the Goals of Productive Land Use and Broad-Based Agricultural Development In Zambia](#). Dr. Antony Chapoto (FSRP)
  - [Conservation Farming and Related Natural Resource Policies for Sustainable Agricultural Intensification-Two Key Issues](#). Peter Aagaard
  - [Improving the lives of poor farmers, rewarding farming practices that protect nature: COMACO](#). Dr. Dale Lewis, Wildlife Conservation Society
    - Supplemental Paper: [Community Markets for Conservation \(COMACO\): Scaling up Conservation Impact through Markets that Change Livelihoods](#). Dale Lewis.
- [The Impact of Wildlife Conservation on Rural Development in Zambia](#). Robert B. Richardson, Ana Fernandez and David Tschirley. Presented at Regional Science Association International (RSAI). San Francisco, CA. November 19, 2009.
- [Measuring the Effects of Natural Resource Conservation Policies on Household Welfare](#). Robert B. Richardson and David Tschirley. Brown Bag Seminar Series Department of Agricultural, Food and Resource Economics. November 10, 2009.
- [Integrating the Goals of Productive Land Use and Broad-Based Agricultural Development](#). T.S. Jayne. FSRP. Presentation at USAID/Zambia. November 9, 2009.
- [Household Consumption and Natural Resource Management around National Parks in Zambia](#). Gelson Tembo, UNZA. Presented at the Workshop Research and Outreach Towards Game Park and Natural Resource Management to Improve Rural Household Welfare in Zambia. October 27, 2009
- [The Impact of Wildlife Conservation Policies on Rural Welfare in Zambia](#). Robert Richardson, FSRP/MSU. October 27, 2009
- [Smallholder Land Access Research - Possible Interactions with Natural Resource & GMA Issues](#). See also [Table 1 and 2 handouts](#). Michael Weber, FSRP/MSU. Oct 27, 2009
- [Tourism and Wildlife Conservation in Africa: Measuring the Impacts to Rural Households](#). Robert B. Richardson and Ana Fernandez. Department of Agricultural, Food and Resource Economics (AFRE) Brown Bag Seminar Series. November 18, 2008.

## Background Publications – Zambia Specific

### *Natural resources and/or pro-poor tourism*

- [The Impact Of Wildlife Management Policies On Communities And Conservation In Game Management Areas In Zambia: Message To Policy Makers](#). June 2008. by Phyllis Simasiku, Hopeson I. Simwanza, Gelson Tembo, Sushenjit Bandyopadhyay and Jean-Michel Pavy. Natural Resources Consultative Forum of Zambia.
- [Creating and Protecting Zambia's Wealth: Experiences and Next Steps in Environmental Mainstreaming](#). 2009. by Lubinda Aongola, Stephen Bass, Juliana Chileshe, Julius Daka, Barry Dalal-Clayton, Imasiku Liayo, Joseph Makumba, Maswabi Maimbolwa, Kalaluka Munyinda, Nosiku Munyinda, David Ndopu, Imasiku Nyambe, Adam Pope and Mwape Sichilongo.
- [Household Consumption and Natural Resource Management around National Parks in Zambia](#). 2009. Sushenjit Bandyopadhyay and Gelson Tembo World Bank Policy Research Working Paper 4932.
- [Opportunities and challenges for sustainable management of miombo woodlands: the Zambian perspective](#). 2008. Fabian M. Malambo and Stephen Syampungani. Copperbelt University, School of Natural Resources. Working Papers of the Finnish Forest Research Institute 98: 125–130.
- [Economic and Poverty Impact of Nature-based Tourism](#). Zambia. 2007. World Bank Report No. 43373-ZM. (14 MB)
- [Contribution of dry forests to rural livelihoods and the national economy in Zambia](#). 2007. Charles B.L. Jumbe, Samuel Mulenga Bwalya and Madeleen Husselman. CIFOR.
- [Review And Synthesis Of Lessons Learned Concerning Optimum Forms Of Community Management Structures For Multiple Resource Management In Zambia And Southern And Eastern Africa](#). 2008. Development Services And Initiatives (DSI)

- ADMADE
  - Lessons Learned Papers
    - [African College for CBNRM](#). Around 2000-2004.
    - [Next Generation Approaches to CBNRM Institutions in Zambia: Building on a Decade of Experience](#)
  - [An Evaluation Today and the Future: Policy Issues and Directions](#). Paul Andre DeGeorges. 1992.
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### **Background Presentations – General**

- [The challenge of improved natural resource management practices adoption in African agriculture: A social science perspective](#). 2000. by Chris Barrett, Frank Place, Abdillahi Aboud, and Doug Brown. ICRAF - Nairobi

### **Recommended Web Site Resources – Zambia Specific**

- [ZAWA](#) –(Zambia Wildlife Authority)
- [ZLA](#) – (Zambia Land Alliance)
- [MTENR](#) – (Ministry of Tourism, Environment and Natural Resources - Environment and Natural Resources Projects)
- [ZARI](#) (Zambian Agricultural Research Institute)
- [COMACO](#) (Community Markets for Conservation - Zambia).
- [CFU](#) – (Conservation Farming Unit)

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